Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMLC028775B

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
BARNSDALL FEDERAL SWD 1

2. Name of Operator
APACHE CORPORATION
Contact: SORINA FLORES
E-Mail: sorina.flores@apachecorp.com

9. API Well No.
30-015-42468-00-X1

3a. Address
303 VETERANS AIRPARK LANE SUITE 3000
MIDLAND, TX 79705

3b. Phone No. (include area code)
Ph: 432-818-1167

10. Field and Pool, or Exploratory
UNKNOWN

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 27 T17S R29E NWNE 330FNL 1880FEL
32.811794 N Lat, 104.059645 W Lon

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

BLM-CO-1463 NATIONWIDE / NMB000736

Apache proposes to change the csg/cmt & pool to Wolfcamp; Cisco

CASING PROGRAM

HOLE SZ	DEPTH	OD CSG	WT	COLLAR	GRADE	MUD WT	COLL SF	BURST SF	TENSION SF
17-1/2"	0-130'	13-3/8"	48#	STC	H40	8.6ppg	740	1730	322k
12.439	1.429	59.611							
12-1/4"	0-4000'	9-5/8"	40#	LTC	J55	10.0ppg	2570	3950	520k
1.236	1.429	3.409							
	4000-4500'	9-5/8"	40#	LTC	HCK55		4230	3950	694k

SUBJECT TO LIKE APPROVAL BY STATE

Accepted for record
NMOCD
8-19-2014

SEE ATTACHED FOR CONDITIONS OF APPROVAL

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 19 2014

RECEIVED

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #252949 verified by the BLM Well Information System
For APACHE CORPORATION, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER MASON on 08/11/2014 (14JAM0378SE)

Name *(Printed/Typed)* SORINA FLORES — Title SUBMITTING CONTACT

Signature (Electronic Submission) — Date 07/14/2014

APPROVED
AUG 12 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____ Date _____

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Office _____

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #252949 that would not fit on the form

32. Additional remarks, continued

1.808 1.624 40.952
8-3/4" 0-10000' 7" 29# LTC HCL80 9.8ppg 9200 8160 623k
1.805 1.306 2.526
Caloulated Safety Factors based on:
Burst: Mud gradient in annulus for all strings except 7" which uses a 0.30 psi/ft formation pore pressure as backup. Csg is filled with 8.44ppg FW & pressure tested up to 70% of respective casing string's min.burst rating, but not to exceed 5000 psi. Collapse: Mud gradient in annulus and full evacuation of csg. Tension: Hole and casing filled with mud.

CMT PROGRAM
Surface (TOC-Surf) 100% excess cmt. Cmt with:
Single Slurry: 580sx Cl C w/1% CaCl2 (14.8 wt,1.34 yld,6.32 gal wtr/sk)
Comp Strengths: 12hr- 813psi 24 hr- 1205psi

If lost circ is encountered while drlg the 17-1/2" hole, 200sx Cl C thixotropic cmt(14.4wt,1.55yld,6.65gal/sk) may be pumped ahead of cmt slurry shown above. If cmt does not circ to surf, appropriate BLM office shall be notified. TOC shall be determined by a method approved by BLM. Operator will propose a remediation method & request BLM approval.

Interm (TOC-Surf) 100% excess cmt. Cmt with:
Lead: 1140 sx Cl C 35/65 Poz w/6% Bentonite + 5% Salt(12.4wt,2.11yld,11.65 gal water/sk) Comp Strengths: 12 hr ? 257 psi 24 hr ? 579 psi

Tail: 260 sx Class C (14.8 wt, 1.33 yld, 6.31 gal water/sk)
Compressive Strengths: 12hr? 813 psi 24hr? 1205 psi

If water flow is encountered, Apache may 2-stage Interm csg. A DVT may be used in the 9-5/8" Interm csg. An ECP may be placed below DVT. Csg slips may be set before cmtg. TD of the 12-1/4" hole at +/- 4500'. Assuming DVT set at +/- 2200', the following cmt will be used: Cmt 1st Stage w/ +/- 1100 sx Cl C (14.8#, 1.33 yld, 6.31 gal water/sk) Cmt 2nd Stage w/ +/- 1100sx Cl C (14.8#, 1.33 yld, 6.31 gal water/sk) If DVT is set at a different depth, cmt volumes will be adjusted accordingly.

Production: (TOC: ~3000' from surf, 35% excess cmt) Cmt with:
Lead: 395sx Cl H 35/65 Poz w/ 6% Bentonite + 5% Salt (12.4wt,2.11yld,11.65 gal water/sk) Comp Strengths: 12hr? 324 psi 24hr? 569 psi

Tail: 470 sx Class H 50/50 Poz w/2% Bentonite + 5% Salt (4.2wt, 1.30yld, 5.81gal water/sk) Comp Strengths: 12hr? 210 psi 24psi? 879 psi

The above cmt volumes may be revised based on fluid caliper measurement.

****PLEASE SEE ATTACHMENT SINCE NO ROOM TO FILL OUT THE REST OF SUNDRY****

DRILLING PLAN: BLM COMPLIANCE

(Supplement to BLM 3160-3)

APACHE CORPORATION (OGRID: 873) BARNSDALL FEDERAL SWD #1

Projected TD: 10000' GL: 3560' 330' FNL & 1880' FEL UL: B SEC: 27 T17S R29E EDDY COUNTY, NM

1. GEOLOGIC NAME OF SURFACE FORMATION: Eolian/Piedmond Alluvial Deposits

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Quaternary Aeolian	Surf	Glorieta	3555'
Rustler	Surf	Yeso	3700' (Oil)
Top of Salt	160'	ABO	5846' (Oil)
Base of Salt	701'	Wolfcamp	7468' (Oil)
Yates	820'	Cisco	8149' (Oil)
Seven Rivers	1056'	Strawn	9940'
Queen	1716'		
Grayburg	2050'		
San Andres	2450' (Oil)		
Avg Depth to Ground Water:	~91'	TD	10000'

All fresh water & prospectively valuable minerals, as described by BLM, encountered during drlg, will be recorded by depth & adequately protected. All oil & gas shows within zones of correlative rights will be tested to determine commercial potential. The surface fresh water sands will be protected by setting 13-3/8" csg @ 130' & circ cmt back to surface. All intervals will be isolated by setting 7" csg to TD & circ cmt above the base of 9-5/8" csg.

3. CASING PROGRAM: All casing is new & API approved

HOLE SIZE	DEPTH	OD CSG	WEIGHT	COLLAR	GRADE	Mud Wt	COLLAPSE Rating/SF*	BURST Rating/SF*	TENSION Rating/SF*
17-1/2"	0' – 130'	13-3/8"	48#	STC	H-40	8.6 ppg	740/12.439	1730/1.429	322k/59.611
12-1/4"	0' – 4000' 4000' – 4500'	9-5/8" 9-5/8"	40# 40#	LTC LTC	J-55 HCK-55	10.0 ppg	2570/1.236 4230/1.808	3950/1.429 3950/1.624	520k/3.409 694k/40.952
8-3/4"	0 – 10000'	7"	29#	LTC	HCL-80	9.8 ppg	9200/1.805	8160/1.306	623k/2.526

* Calculated Safety Factors based on:

Burst: Mud gradient in annulus for all strings except 7" which uses a 0.30 psi/ft formation pore pressure as backup. Casing is filled with 8.4 ppg fresh water and pressure tested up to 70% of respective casing string's minimum burst rating, but not to exceed 5000 psi.

Collapse: Mud gradient in annulus and full evacuation of casing.

Tension: Hole and casing filled with mud.

4. CEMENT PROGRAM:

A. Surface (TOC – Surface) **100% excess cmt** Cmt with:

Single Slurry: 580 sx Cl C w/ 1% CaCl2 *(14.8 wt, 1.34 yld, 6.32 gal water/sk)*

*Compressive Strengths : **12 hr** – 813 psi **24 hr** – 1205 psi*

If lost circ is encountered while drlg the 17-1/2" hole, 200 sx Cl C thixotropic cmt *(14.4 wt, 1.55 yld, 6.65 gal/sk)* may be pumped ahead of cmt slurry shown above. If cmt does not circ to surf, appropriate BLM office shall be notified. TOC shall be determined by a method approved by BLM. Operator will propose a remediation method & request BLM approval.

B. Intermediate (TOC – Surface) **100% excess cmt **, Cmt with:

Lead: 1140 sx Cl C 35/65 Poz w/6% Bentonite + 5% Salt *(12.4wt, 2.11 yld, 11.65 gal water/sk)*

*Compressive Strengths: **12 hr** – 257 psi **24 hr** – 579 psi*

Tail: 260 sx Class C *(14.8 wt, 1.33 yld, 6.31 gal water/sk)*

*Compressive Strengths: **12 hr** – 813 psi **24 hr** – 1205 psi*

If water flow is encountered, Apache may 2-stage Intermediate csg. A DVT may be used in the 9-5/8" Intermediate csg. An ECP may be placed below DVT. Csg slips may be set before cmtg. TD of the 12-1/4" hole at +/- 4500'. Assuming DVT set at +/- 2200', the following cmt will be used: Cmt 1st Stage w/ +/- 1100 sx Cl C (14.8#, 1.33 yld, 6.31 gal water/sk) Cmt 2nd Stage w/ +/- 1100sx Cl C (14.8#, 1.33 yld, 6.31 gal water/sk) If DVT is set at a different depth, cmt volumes will be adjusted accordingly.

C. Production: (TOC: ~3000' from surface, 35% excess cmt) Cmt with:

Lead: 395 sx Cl H 35/65 Poz w/ 6% Bentonite + 5% Salt *(12.4 wt, 2.11 yld, 11.65 gal water/sk)*

*Compressive Strengths: **12 hr** – 324 psi **24 hr** – 569 psi*

Tail: 470 sx Class H 50/50 Poz w/2% Bentonite + 5% Salt *(14.2 wt, 1.30 yld, 5.81 gal water/sk)*

*Compressive Strengths: **12 hr** – 210 psi **24 psi** – 879 psi*

The above cmt volumes may be revised based on fluid caliper measurement.

5. PROPOSED CONTROL EQUIPMENT

EXHIBIT 3 shows a 13-5/8" 5M psi WP BOP consisting of an annular bag type preventer. This BOP will be nippled up on the 13-3/8" surface csg head & tested to 2000psi using a test plug. After intermediate csg is set & cmt'd a 13-5/8" 5M BOP consisting of an annular bag type preventer, middle pipe rams, and bottom blind rams *(see EXHIBIT 3A)* will be installed & utilized continuously until TD is reached. The BOP will be tested at 5000 psi (maximum surface pressure is not expected to exceed 5M psi). BHP is calculated to be approx 5720 psi. All BOPs & associated equipment will be tested as per BLM *Drilling Operations Order #2*. The BOPs will be operated and checked each 24 hr period & the blind rams will be operated & checked when the drill pipe is out of the hole. Function tests will be documented on the daily driller's log. *"EXHIBIT 3 "* also shows a 3M psi choke manifold with a 3" blow down line. *EXHIBIT 3 & 3A* also show a 5M psi choke manifold with a 3" blow down line. Full opening stabbing valve & kelly cock will be on derrick floor in case of need. No abnormal pressures or temperatures are expected in this well. No nearby wells have encountered any well control problems.

6. AUXILIARY WELL CONTROL EQUIPMENT / MONITORING EQUIPMENT:

13-5/8" 3000 psi annular preventer (3M BOP/BOPE to be used as a 2M system)
13-5/8" 5000 psi double BOP (blind & pipe rams) and annular preventer
4-1/2" x 5000 psi kelly valve
13-5/8" 5000 psi mud cross – H2S detector on production hole
Gate-type safety valve - 3" choke line from BOP to manifold
2" adjustable chokes – 3" blow down line
Fill up line as per *Onshore Order 2*

7. PROPOSED MUD CIRCULATION SYSTEM: (Closed Loop System)

INTERVAL	MW (ppg)	VISC (sec/qt)	FLUID LOSS (cc)	MUD TYPE
0' –130'	8.3 – 8.8	34 - 38	NC	Fresh Water
130' to 4500'	9.9 – 10.0	28 - 29	NC	Brine
4500' – 10000'	9.5 – 10.2	28 - 29	NC	Brine

Visual mud monitoring equipment shall be in place to detect volume changes. A mud test shall be performed every 24 hrs after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH. The necessary mud products for weight addition & fluid loss control will be on location at all times. In order to run open hole logs & casing, the above mud properties may be altered to meet these needs.

8. LOGGING, CORING & TESTING PROGRAM:

A. OH logs: Dual Laterolog, MSFL, CNL, Litho-Density, Gamma Ray, Sonic & Caliper from TD back to 9-5/8" csg shoe.
B. Run CNL, Gamma Ray from 9-5/8" csg shoe back to surface. Mudlogging is planned from 3000' to TD.
C. Mudlogging is planned from 3000' to TD.
D. No cores or DSTs are planned at this time.
E. Additional testing will be initiated subsequent to setting the 7" production casing. Specific intervals will be targeted based on log evaluation and geological sample shows.

9. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. There is known presence of H_2S in this area. If H_2S is encountered the operator will comply with the provisions of *Onshore Oil & Gas Order No. 6.* Lost circulation may occur. If lost circulation is encountered, LCM will be available and used to regain circulation. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 5720 psi & estimated BHT : 160°.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after BLM has approved APD. Anticipated spud date will be after Santa Fe and BLM approvals and as soon as an appropriate rig is available. Move in operations and drilling is expected to take approximately 40 days. If production casing is run then an additional 90 days will be needed to complete well and construct surface facilities and/or lay injection lines in order to place well on injection.

11. OTHER FACETS OF OPERATION:

After running csg, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible injection zones. The Devonian formation will be perforated & stimulated. The proposed well will be tested as an SWD well.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Apache Corporation**
LEASE NO.:	**NMLC-028775B**
WELL NAME & NO.:	**Barnsdall Federal SWD 1**
SURFACE HOLE FOOTAGE:	**0330' FNL & 1880' FEL**
LOCATION:	**Section 27, T. 17 S., R 29 E., NMPM**
COUNTY:	**Eddy County, New Mexico**
API:	**30-015-42468**

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Grayburg** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.** Resistivity and induction logs shall be run and submitted to the BLM to verify that the Wolfcamp/Cisco has no hydrocarbon production.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of water flows in the Artesia Group.
Possibility of lost circulation in the Artesia Group, Rustler, Grayburg, and San Andres.
Abnormal pressures may be encountered when penetrating the Wolfcamp formation and all subsequent gas bearing formations afterwards.

1. The **13-3/8** inch surface casing shall be set at approximately **130** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

   b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

   c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

   d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Contingency Intermediate Cement:

Operator has proposed DV tool at depth of 2200', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the 7 inch production casing is:

   ☒ Cement as proposed by operator. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

   b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

   c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

   d. The results of the test shall be reported to the appropriate BLM office.

   e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

   f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

   g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WELL COMPLETION

A NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:

1. **Properly evaluate the injection zone utilizing open hole logs, swab testing and/or any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.**
2. **Restrict the injection fluid to the approved formation.**

If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.

G. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 081214