

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: RSC Resources L P  
 Well Name & No. Wolf Pack 1 Federal Com # 1  
 Location: 860'FNL, 660'FEL, SEC1, T17S, R29E, Eddy County, NM  
 Lease: NM-13814

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**I. DRILLING OPERATIONS REQUIREMENTS:**

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness.

1. Spudding
2. Cementing casing: 13.375 inch 9.625 inch 5.5 inch
3. BOP tests

- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- Lea County call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612

B. A **Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan** should be activated approximately **500 feet prior to drilling into the Grayburg formation**. A copy of the plan shall be posted at the drilling site.

C. 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.

D. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

E. If floor controls are required, (3M or Greater) 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 are located, this does not include the dog house or stairway area.

**II. CASING:**

A. The 13.375 inch surface casing shall be set **ABOVE THE SALT, SHOULD IT OCCUR MORE SHALLOW, AT LEAST 25 FEET INTO THE RUSTLER ANHYDRITE @ approximately 400 feet** and cement circulated to the surface.

1. 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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the 9.625 inch intermediate casing is **circulate cement to the surface**. If cement does not circulate see A.1 thru 4.

C. The minimum required fill of cement behind the 5.5 inch production casing is **cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string**.

D. 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.

### **III. PRESSURE CONTROL:**

A. 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.

B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the intermediate casing well bore shall be 2000 psi.

C. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 9.625 inch casing shall be 3000 psi.

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

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. BOP/BOPE must be tested by an independent service within 500 feet of the top of the **Wolfcamp** Formation. This test does not exclude the test prior to drilling out the casing shoe as per onshore order No. 2.
6. A variance to test the **2M BOP and BOPE** to the reduced pressure of 1000 psi with the rig pumps is approved.

### **IV. 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. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

### **V. Hazards:**

1. Our geologist has identified potential for flows in the Salado and Artesia, lost circulation in the Grayburg and San Andres and over pressured zones in the Strawn, Atoka and Morrow.

**Engineering may be contacted at 505-706-2779 for variances if necessary.**

**FWright 2/16/07**