

## PLUG AND ABANDONMENT PROCEDURE

4-24-00

### **Graham "B" WN Federal #8**

South Blanco Pictured Cliffs  
1850' FNL. & 1450' FWL, Section 3, T27N, R8W  
San Juan County, New Mexico  
Lat: 36° 36.4 / Long: 107° 40.3

Note: All cement volumes use 100% excess outside pipe and 50' excess inside pipe. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures.

1. Install and test location rig anchors. Prepare blow pit. Comply with all NMOCD, BLM, and Conoco safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. NU relief line and blow down well; kill with water as necessary. ND wellhead and NU BOP. Test BOP.
2. TOH with 67 joints 2-3/8" tubing and inspect, if necessary LD. Round-trip 4-1/2" gauge ring to 2060' or as deep as possible.
3. **Plug #1 (Pictured Cliffs perforations and Fruitland tops, 2060' – 1802')**: Set 4-1/2" wireline CIBP at 2060'. TIH with tubing and tag CIBP. Load casing with water and circulate clean. Pressure test casing to 500#. If casing does not test, spot or tag subsequent plugs as appropriate. Mix 24 sxs Class B cement and spot a balanced plug inside casing above the CIBP to isolate the Pictured Cliffs perforations and to cover Fruitland tops. If casing leak, increase to 34 sxs. PUH.
4. **Plug #2 (Kirtland and Ojo Alamo tops, 1344' – 1130')**: Mix 20 sxs Class B cement and spot balanced plug inside casing to cover through Ojo Alamo top. If casing leak, increase to 30 sxs. TOH with tubing.
5. **Isolate Casing Leak**: If the casing does not pressure test after setting plug #2, then PU 4-1/2" packer and isolate the casing leak. Determine if well will circulate out bradenhead. Depending on the depth of the casing leak, increase one the following plugs, if practical, to cover bad casing area.
6. **Plug #3 (Nacimiento top, 574' – 474')**: Perforate 2 squeeze holes at 574'. Establish rate into squeeze holes if casing tested. Set 4-1/2" cement retainer at 524'. Establish rate into squeeze holes. Mix 51 sxs Class B cement, squeeze 39 sxs cement outside 4-1/2" casing and leave 12 sxs cement inside casing to cover Nacimiento top. TOH and LD tubing.
7. **Plug #4 (8-5/8" Surface casing, 236' - Surface)**: Perforate 3 HSC squeeze holes at 236'. Establish circulation out bradenhead valve. Mix and pump approximately 100 sxs Class B cement down 4-1/2" casing and circulate good cement out bradenhead valve. Note if well has a bradenhead water flow after setting plug #3, then do not perforate at 236'. Fill the inside of the 4-1/2" casing from 236' to surface with 18 sxs cement. TOH and LD tubing. Pump 100 sxs into bradenhead and shut well in. WOC overnight.
8. ND BOP and cut off casing below surface. Install P&A marker with cement to comply with regulations. RD, move off location, cut off anchors and restore location.