

Item 13 - Completion Procedure

Pioneer Federal Com No. 1

Page 3

07-21-91 Opened well. 0 psig on 4 1/2" csg. 0 psig on annulus (4 1/2" x 8 5/8"). RIH w/4 1/2" RTTS on 2 3/8" tbg. Set @ 4973'. Tested & held 1100 psig on annulus. RU Wedge. Tested lub to 1200 psig. RIH. Shot 4 JSPF @ 5410'. 0 psig on tbg. RD Wedge. Established inj into perf @ 2600 psig 3 BPM. Good returns after pumping 335 bbls of 10# brine between 8 5/8" & 4 1/2" csg. Released RTTS. POOH. RIH w/4 1/2" SVEZ drill retainer. Set @ 5285'. Tested & held 900 psig on annulus. Cemented annulus between 8 5/8" x 4 1/2" using 950 sks of Howco lite w/2% CaCl₂, 1/4# flocele, 2# gilsonite tailed w/500 sks of class "C" w/5# gilsonite, 1/4# flocele, 2% CaCl₂, .4% Halad-4. Lead 13.5#. Tail 14.4#. Initial pressure - 1600 psig @ 3 1/2 BPM. Final pressure - 2600 psig @ 3 1/2 BPM. Cmt did not circ. 70 bbls of fluid back while cementing. Small amount of gas. Stung out of retainer @ 5285'. Reversed out leaving 1/2 bbl of cmt on retainer. POOH. Shut down. Secured well.

07/22/91 SD for Sunday.

07/23/91 WOC.

07/24/91 WOC.

07/25/91 Opened well. 0 psig on 4 1/2" csg & 4 1/2" x 8 5/8" annulus. ND BOP & tbg head. NU new 11" 5m x 7 1/16" 5m WKM tbg head w/2-2" flanged valves. NU BOP & 11" stripping on top of drilling spool. Tested seals to 4500 psig. Closed blind rams. Tested to 3500 psig. RIH w/3 7/8" bit, float sub (double) 6-3 1/8" DC's on 2 3/8" tbg. Tagged cmt @ 5265'. Tested pipe rams to 3500 psig. Drilled cmt & retainer from 5265'-5286'. PU. SI and secured well for night.

07/26/91 Opened well. 0 psig. Drilled on retainer from 5286'-87'. Cmt 5287-5470'. Cleaned hole. POOH. PU 4 1/2" RTTS on 2 3/8" tbg. Set @ 5388'. Tested annulus to 1000 psig. Held OK. Tested sqz perf @ 5410' to 3500 psig. Held OK. SI & SWFN.

07/27/91 Test equipment/drill cmt & CIBP. Opened well. 0 psig. Released RTTS @ 5388'. POOH. RU Wedge lubricator. Tested on ground to 4000 psig. Max press for Star pump. Installed on drilling spool. Tested to 2000 psig. Ran CBL-GR from 5497' to 2300'. GIH w/3 stds of 3 1/8" DC's (L/D). GIH w/3 3/4" bit, double float sub on 2 3/8" tbg. Tagged top of plug @ 7830'. Ran Baker storm pkr on top of 2 3/8" tbg. Landed & set pkr @ 40'. NU snubbing equipment. SI & secured well for night.