

Daily test gauge pressures were recorded:

7/12/91	-	Casing Pressure	876 psi	--	Tubing Pressure	402 psi
7/13/91	"	"	840	"	"	383
7/14/91	"	"	840	"	"	376
7/15/91	"	"	836	"	"	372
7/16/91	"	"	825	"	"	368
7/17/91	"	"	820	"	"	362

Cavern pressure has stabilized for test.

July 19, 1991 a dual pen pressure recorder was connected to the well head. A 0 to 500 psi to the tubing and a 0 to 2000 psi to the casing. Valves and fittings were installed on the tubing and casing for connecting a deadweight tester. A deadweight tester with measurement capability of from 5 to 2,000 psi in increments of 0.1 psi was used for the test.

7:10 P.M. started pumping nitrogen down the casing at 300 SCF/minute.

7:50 P.M. had pumped 11,200 SCF of N₂. Nitrogen/LPG interface below the casing seat as indicated by the N₂ injection pressure leveling off. Pumped 3,000 SCF of N₂ below the casing seat. Total volume of nitrogen pumped was 14,200 SCF. $\Delta T = 0$ at 8:00 P.M. 7/19/91.

Date	-	Real Time	-	ΔT	-	Casing Pressure	-	Tubing Pressure	-	ΔP_c	-	ΔP_t
7/19/91		8:00 P.M.		0		1171.0		370.5				
7/20/91		12:30 P.M.		16.5		1168.4		369.8		-0.7		-2.6
Flange on nitrogen side started large leak. Shut well in and repaired leak.												
7/21/91		12:45 P.M.		40.75		1115.2		355.1		-14.7		-53.2
The much larger drop in the casing pressure as compared to the drop in the tubing pressure indicates that the loss of the nitrogen due to the leak caused the nitrogen/LPG interface to move above the casing seat. Now testing casing seat with LPG which is still a valid test.												
7/22/91		11:00 A.M.		63.0		1106.7		350.7		-4.4		-8.5
7/23/91		10:45 A.M.		86.75		1097.0		348.2		-2.5		-9.7
Found a casing valve leaking out the stem and grease fitting. Greased valve and stopped the stem leak but still leaking out grease fitting.												
7/24/91		11:10 A.M.		111.15		1094.8		347.5		-0.7		-2.2
7/25/91		12:50 P.M.		136.8		1091.5		346.3		-1.2		-3.3
7/26/91		12:00 (noon)		159.8		1089.3		345.5		-0.8		-2.2
The larger ΔP_c to ΔP_t indicates that a small nitrogen leak is allowing the nitrogen/LPG interface to move up annulus approximately 6 ft/day. The brine pressure is true well pressure.												