THE DIA-LOG COMPANY

COMPANY - RICE ENGINEERING & OPERATING, INC.

LEASE & WELL - GLADIOLA SWD F-7

On November 7, 1959, the Dia-Log multi-step caliper was run on this well. There were two gauges run. They were the 7/32" and 3/16" remaining wall. From 9800' to T.D. the weight of the 5½" casing is 20# per ft. The thickness of the metal is .361 to (allowable tolerance) .316. The 7/32 gauge (.219) (60.6 to 69.3%) found no pipe less than this setting. From the surface to 9800' the weight of the pipe is 17# per ft.' The thickness of the metal is .304 to (allowable tolerance .266. The 7/32 (.219), thinking in percentage of original wall thickness, is 72.% to 82.4%. On this run it would appear that the pipe with thinner spots are scattered uniformly over the full 9800'. There were 151 joints that were -7/32 and 92 joints that were +7/32. The type of corrosion could be called pin point in that each pit is singular and individual. A majority of the joints that were labled -7/32" had either one or two pits, a number had numerous pits. In the light of the results found on the 3/16" remaining wall run which were negligible it would appear that the pitting of the pipe was more than initial but not severe. The 3/16" run found two places less than this setting, they were at 5664' and 9585'. Since these two places were in collars they do not carry the full detrimental effect as if they were removed from the collar some distance. The line of thought, according to our experience, as a result of this log; we would believe that under normal conditions that this string of pipe would be good for some extended time.

On 8-12-60, The Dia-Log multi-step caliper was again run on this same well. There were 3 gauges run. They were the 7/32", 3/16", and 1/8" remaining wall. Again as before from 9800' to T.D. in the 20# per ft. pipe, the 7/32" remaining wall run did not show any pits. In the light of findings in the lighter pipe, it could be that if a 1/4" or 9/32" run had been made, pits would have been found. This is purely guessing. From the surface to 9800', in the 17# pipe, the 7/32" remaining wall run indicated that with the exception of about a dozen joints, all of the pipe was less than this setting. The 3/16" gauge was then run. On this run 116 joints were found to be less than this setting. These pitted joints are mixed over the total 9800', however, the joints with numerous pits are predominately in the upper part of the string. Comparing the log run 11-7-59 and the one now, it is fairly obvious that there is more pipe that is less than 3/16" remaining wall now, than there was pipe less than 7/32" then. This being true the general level of pipe thickness has been diminished by more than 1/32". In the light of the results found on the 1/8" remaining wall run, it might be more fitting to set the general level at some 1/16" less with pin

points as indicated on chart even more so. The 1/8" run showed 4 individual, singular pits. Since their depths were scattered as shown; 2355', 2530', 3755' and 6050', it would indicate that the deterioration of the string is uniform. The total log does not show that to be true. It indicates that there are more pits in the top part, thought there is no spot in that area with a -1/8" reading. Since considerable scale was cleaned off of this pipe in the upper part of well before the caliper tool could be run, it is just possible that the deeper pits, if any, were filled with hard scale. As no run was made with a remaining wall setting of less than 1/8", the depth of these 4 pits are not truly known. They could be anywhere between just thinner than 1/8" to approaching 0. The early log indicated the pipe was reasonably good. During the time between the first and second log considerable metal was lost due to corrosion. It seems fitting to estimate that if loss of metal continues at the same rate that the life expectance of the string of pipe is of short duration.