

UNDERGROUND PIPE

C. L. Ezell*

Our farm is located about 2 miles south and west of Canutillo. It is classified land under the Rio Grande project which as you know has had gravity water allotments for the past several years. We have continuously used an alfalfa-cotton rotation program and the cotton has yielded an average of about two bales per acre. The land has been leveled to a gradient of 1/4" to 100 ft. side fall and end fall. Alfalfa borders are over 125 ft. wide. Cotton land is also bordered every 44 rows and four row equipment is used.

In 1950 we drilled our first irrigation well at a cost of \$9050. This well is 146 ft. deep and produces about 2500 G.P.M. In 1951 we installed the first unit of underground pipe. This pipe was 24" galvanized, corrugated pipe installed with leak proof collars and the top of the pipe is about 8 inches below ground level. The system is covered and equipment passes over the covered pipe out to the road side. Cost of unit 1 was \$5349.97 including pipe, collars, gates or valves, concrete air breathers and excavating and installing 1200 line or feet of pipe. The pump discharges into a concrete riser used as a distribution box.

In 1953 the line was extended 1900 linear feet at a cost of \$8186.02 and in 1954 the final extension was completed requiring 1630 linear ft. of pipe and costing \$7089.76 making the entire 4730 linear feet of pipeline cost \$20,625.75. This installation furnishes water for 178 acres of land and the average cost of the pipeline per acre was \$116.00.

By converting from an open ditch system to underground pipe we reclaimed about six acres of land and eliminated ditch cleaning, evaporation and seepage losses, gopher problems, and reduced the labor requirement for irrigation by one half. The pipe line is carried on a 15 year depreciation schedule for tax purposes. Deterioration of the line so far has been negligible. The corrugations appear to assist in scouring the system and sedimentation has not been a problem in spite of the small slope which characterizes the entire system.

In January 1955 our second well was drilled, also to a depth of 146 feet and yielding 2500 G.P.M. This well cost \$5197.88 and was drilled about 150 yards south of the first well. Both pumps are powered by electricity costing \$15.00 per horsepower year, as a minimum charge. The total cost of the two wells is \$14,247.88 or approximately \$80 per irrigated acre. Adding in the \$116 average cost of the pipeline per acre, this average cost per acre of the complete system comes to approximately \$200.00. Chemical analysis of the well water shows 2.23 tons all salts, per acre foot with a low sodium percentage.

*Farmer, Canutillo, Texas

Even when a normal supply of gravity water is available we propose to use well water for at least four alfalfa irrigations.

We are proud of our irrigation system. It connects with the project water system so that gravity water can be used. It requires almost no maintenance. The corrugated metal pipe is much lighter than concrete pipe and has fewer joints. It requires therefore much less labor to install and the corrugations assist in scouring. No weeds grow on my ditch banks and no weed seed is water spread on the farm except when gravity water is used. We farm right over the pipe and no land is lost in ditches.

It was a pleasure for me and Mrs. Ezell to be here and we have enjoyed the Conference very much.