

Gulf #7 Zahorsky,
Sec. 14-20S-11W,
Elevation 1756'

All measurements from top of kelly bushing, 2' above floor.

Top Arbuckle 3263' Drilled to 3264' Porous, saturated.
Cored 3264-3325'. Drilled 3325-3355'.

3355
3263

92'

ZONES OF POROSITY.

3263-3273 Intercrystalline porosity and porosity in fine, close-spaced vugs. Good permeability and saturation. Formation porosity estimated to be 10%. Acidization will increase rate of recovery.

Initial. This zone of porosity, 3263-73', is a pay zone and is estimated to have an acidized initial of 3000 bbls.

3273-3274 Dense dolomite, green shale, and massive dolomite with fractures filled with calcite. This is a shut-off in the cores but may not be effective over a very large area.

3274-3281 Dolomite, massive, with scattered vugs and abundant fractures. Some of the fractures are in part filled with calcite. This zone should be acidized more than once and acidization should release oil not recoverable otherwise. Formation porosity estimated at 3-5%.

3281-3283 Dolomite, highly oolitic, with interstitial porosity. Good permeability and saturation. Formation porosity estimated at 12%.

Initial. This zone of porosity, 3274-3283', is a pay zone and is estimated to have an acidized initial of from 1000-1500 bbls.

3283-3292½ Dolomite, massive cherty. Scattered vugs and fractures which show saturation. Both formation porosity and permeability are low. This zone would not pay for perforation and acidization.

3292½-3301½ Dolomite, interbedded dense and oolitic. The oolitic streaks show some porosity and good saturation but it is probable that the oolitic layers are discontinuous and that formation permeability is low.

Initial. This zone, 3292½-3301½', is estimated to have an acidized potential of 30-50 bbls.

3301½-3309 Dolomite, massive, with scattered large vugs and many fractures. Fair permeability and good saturation in vugs and fractures. Would require acidization. Formation porosity estimated to be 2-3%.

3309-3310' 3" Dolomite, cavernous porosity. May have formation porosity as high as 15%. Saturation difficult to judge as rotary probably washed out most of free oil. Dried cores showed good saturation. This correlates with producing horizon from 3312-3315' in the #1 Zahorsky and, because of depletion, may contain some water.

Initial. The porosity zone from 3301 $\frac{1}{2}$ '-3310' 3" is a pay zone and is estimated to have an acidized potential of from 400-600 bbls. This estimate discounts the effect of depletion by the #1 Zahorsky.

3310' 3"-3325 Dolomites, ranging from massive and non-porous to slightly porous and vugular cherty dolomite. Some of the porosity shows saturation but there does not appear to be enough saturation to fill the porosity. There is no visible evidence of water. Formation porosity and permeability are low and it is questionable if these beds would produce any fluid at all. Mr. Price was of the opinion that the top of water might be 3314'. The beds between 3310' 3"-3314 being virtually non-porous.

3325-3355 This interval was drilled. Cuttings were cherty dolomites and the degree of saturation and porosity was impossible to judge. Certainly there were no zones of high porosity and saturation in this interval.

Recommended perforation procedure:

Perforate from 3309-3311' and acidize. This high porosity zone may carry some water due to depletion by the #1 Zahorsky. If water content is too high, it may be necessary to squeeze off.

Perforate from 3301 $\frac{1}{2}$ '-3309' and acidize.

Potential from these two zones estimated to be from 400-600 bbls.

Perforate from 3274-3283' and acidize twice in order to remove calcite from fractures in interval from 3274-3281'. Potential from these two zones, 3274-3281', and 3281-3283', estimated to be from 1000-1500 bbls.

Perforate from 3263-3273' and acidize. Estimated initial from this zone is 3000 bbls.