

FATHER'S DAY CELEBRATION FOR ALL DADS



FROM **JERRY MCHUGH, JR.**
AND **SAN JUAN RESOURCES**

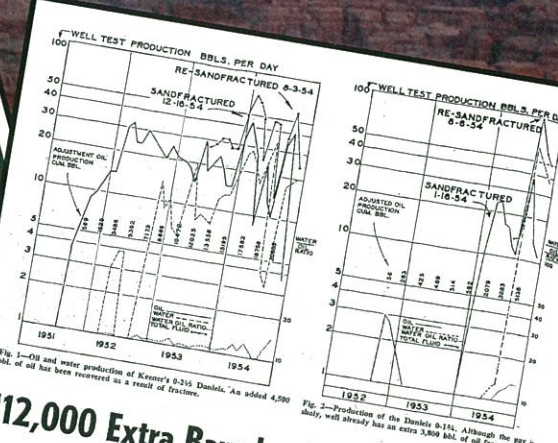


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page 84 . . . GREEN LIGHT FOR GAS . . .
Cabinet Report Paves Way to Amend Gas Act

**Jerry's father,
Jerome McHugh Sr.'s,
1955 O&G article on
hydraulic fracturing in Oklahoma.**



112,000 Extra Barrels of Oil in 11 Months ... by fracturing water-flood producers

The author says . . .

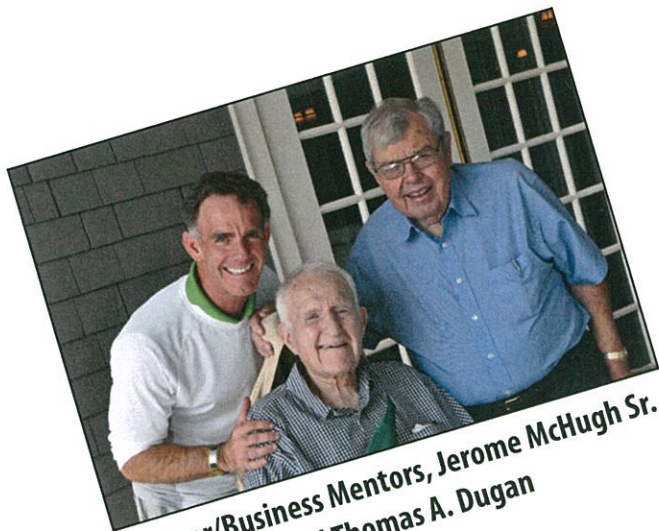
With more than a year to judge the results of hydraulic fracturing in water floods, these are some of our conclusions about it:

1. Probably, a fracture treatment is more effective when the well has been shot originally. The shot creates many small fractures in the sand face. These are lengthened and multiplied by fracture treatment, thus, the relative permeability of the sand is raised.
2. Good records of injected water and fluid produced pay off. They are necessary to show how good the flood sweep is; and in turn, they show which wells need to be treated.
3. Newly drilled wells should be cored. All the wells treated by Keener were newly drilled and were about the sand as much information as was possible. Though this was costly at the beginning, we feel that it pays off. Moreover, if old wells were used as producers in the flood, casing would usually have been set in a shale section above the oil sand. This being the case, it would be dangerous to attempt a fracture with so much open hole sections and those of low permeability seem to react better to fracturing than cleaner sections. The same is true in water-flood production.
4. In primary production, shaly bitumens react better to fracturing than cleaner sections. The same may be true in water-flood production.
5. Even in clean sands, fracturing may raise oil flow. Keener's Shaller 0-1 has a clean sand section and had produced over 12,000 bbl. per acre before fracture. Its ultimate production will be more as a result of fracturing. We feel this is due to the higher velocity of water traveling through the sand scouring out more oil.
6. Where there is a gas sand on top or very near the oil sand, there is a possibility of fracturing into the gas zone and thus increasing water production from this zone.

By Jerome P. McHugh

KEENER OIL CO. broke a lot of rules about flooding when it hydraulically fractured 24 of the productive wells in a long-established Bartlesville sand water flood. The company fractured some of its worst and some of its best producers in a Weber pool in Washington County, Oklahoma, and three failures. Twenty-one successes and three failures. An average bbl. of crude in 11 months. An estimated increase in average recovery of 29 per cent. Keener is well satisfied with the outcome.

The Bartlesville sand in Weber pool of northeastern Oklahoma is an off-shore bar type of development at a depth of 1,200 ft. There is a gas sand in some areas above the oil sand, frequently separated by a shale break. There is no natural water drive, nor is there a water sand underlying the oil sand. There are areas in the field where the Bartlesville sand has been watered



**Career/Business Mentors, Jerome McHugh Sr.
and Thomas A. Dugan**

