

AMERICAN WARRIOR, INC.

BEULER #1 - MEOR FIELD TRIAL - Case #210

Oil Field Name: Ringwald
Location: NW/4-SW/4-NW/4, SEC 33, T18S, R10W, Rice Co., Kansas

Oil Field History: Field discovered in 1949
 Estimated Number of Wells - 8

The Beuler #1 is part of a consolidated three well lease (two production wells & one injection well). The Beuler #1 averaged 1.35 BOPD & 3 BWPD and the total lease averaged 8.71 BOPD just prior to MEOR treatment with Wel-Prep 5.

Beuler #1 Completion History:

Date Drilled	1949
Recompleted.....	1964
Completion Depth.....	3,157 ft.
Casing Depth.....	3,125 ft.
Perforations	2,689-94 ft.
Avg. oil production at completion.....	117 bbl/day
Oil/Water ratio at completion.....	9 : 1
Oil production 1990 (Before WP-5 Treatment).....	1.35 bbl/day
Oil/Water ratio 1990 (Before Treatment)	1 : 2
Type of Formation	Topeka Limestone
Down Hole Temperature	90 - 95° F
Thickness of Oil Bearing Formation.....	5 ft.
Porosity	20%
API Gravity	30-31°
Type Oil	Paraffinic
Shut-In Gas Pressure - 1990	20 PSI
Initial MEOR Treatment Date:.....	12/14/1990

INITIAL TREATMENT METHOD:

Well bore fluids were pumped down, then 20 gallons of #2 diesel were injected through the well annulus followed by 15 gallons of Wel-Prep 5 Oil Recovery Fluid. One drum of lease water was then injected and the well was shut-in. A seven (7) day shut-in was planned, however cold weather necessitated an 13 day shut-in. Following this extended shut-in period, the well bore fluids were circulated for two (2) hours and the well turned back into production 12/27/1990.

IMMEDIATE PRE-TREATMENT

POST-TREATMENT

Beuler #1:	1.35 bbl/day	2.43 bbl/day
Lease Production:	8.71 bbls/day	9.79 bbls/day
		To 01/21/1991

COMMENTS: Although an individual well test was not done on the Beuler #1 following its initial MEOR treatment, total lease production increased from 8.7 to 9.8 bbls per day after having been steady at 8.7 bbls/day for the previous two months. Since the microbial treatment of the Beuler #1 was the only thing done to the lease, we can assume the #1 increased from 1.35 to 2.43 bbls/day or 80%. For the 25 days after its initial Wel-Prep 5

treatment, the Lease averaged 9.87 BOPD. Incremental oil produced as of 01/21/1991 is 25 barrels. The Beuler lease was treated on 2/88 with 1,000 gal. 15% HCL with no appreciable results.