

MINUTE ITEM

This Calendar Item No. 35
was submitted for information
only, no action thereon
being necessary.

INFORMATIVE
CALENDAR ITEM

35

3/81
ThompsonREVIEW OF PILOT SCALE DEMONSTRATION
OF MICELLAR-POLYMER WATERFLOODING TECHNIQUES
FOR ENHANCED OIL RECOVERY, WILMINGTON OIL FIELD

This demonstration project was commenced with a 50/50 joint venture cost sharing by the City of Long Beach and the Federal Department of Energy (DOE) of the first \$7,000,000 of expenditures. The DOE's 50% commitment of \$3,500,000 in cost has been fulfilled. The DOE does not share in any revenue from the oil produced. Total expenditure through December, 1980, was about \$9,500,000, offset by the above DOE 50% share and a minor amount of additional oil income after favorable oil rate response was first noted in January, 1980.

This enhanced recovery pilot project is in a small portion of the HXa sub-pool of the Upper Terminal Zone in Fault Block VB of the Wilmington Field. The pilot pattern is a line drive: four injectors (backed by a sealing fault) driving oil toward six producers. This portion of the reservoir was fully depleted, being at the economic limit, when the pilot demonstration was started in mid-1978.

Briefly described, the process is intended to recover trapped oil left behind after conventional waterflood, using a soap-like (micellar) slug followed by thickened (polymer) water. Slug injection ended in October, 1979, followed by polymer injection that will continue until October, 1981, to be followed then by plain injection water.

Project response has been favorable in a technical sense: by the end of 1980 the oil rate had increased five-fold and the produced water rate had decreased by almost one-half. To date the project is running at about 34% of the efficiency of the ideal-conditions laboratory work, about normal when applying such laboratory findings to field practice. At time of writing there is a slight indication that the continuing favorable response might reverse soon (as it must eventually). Until the reversal is confirmed in the next few months it is not possible to predict the remaining behavior of the project.

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A pilot project of this type is intended to provide technical information, and not necessarily be an economic success. This is confirmed to date: well repair and other expenses have been higher than were expected, and only by February, 1981, was the cumulative value of the additional oil recovery equal to the cost of the micellar slug alone. The project will be, though, a valuable benchmark for planning and evaluating any future applications of the process -- that was the intent behind the DCE's participation.

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