

MINUTE ITEM

This Calendar Item No. 26 was approved as Minute Item No. 26 by the State Lands Commission by a vote of 7 to 0 at its 11/30/77 meeting.

INFORMATIVE
CALENDAR ITEM

26.

11/77
Thompson.

REVIEW OF PILOT SCALE DEMONSTRATION OF
CAUSTIC WATERFLOODING TECHNIQUES FOR
ENHANCED OIL RECOVERY, LONG BEACH UNIT
WILMINGTON OIL FIELD, LOS ANGELES COUNTY

The State Lands Commission, at its September 1976 meeting, approved a request by the City of Long Beach to enter into a cost-sharing contract with the United States Energy Research and Development Administration (ERDA) to conduct a pilot scale demonstration of caustic waterflooding techniques for enhanced oil recovery in Fault Block VII of the Long Beach Unit.

Under the terms of the contract, the City and the federal government agreed to share in \$11.6 million of the cost of the demonstration on a 60/40 basis respectively, and the parties will share similarly in any increased oil production during the life of the project. As of the end of September, one year into the project, total expenditures were \$2,438,395.

During the first project year, facilities have been designed for the caustic injection plant and long lead time items have been ordered. A small scale caustic injection test has been conducted and the injection well fluid sampled during injection and after back flowing following the test. Results of the test indicated that the caustic solution can be injected without an adverse increase in injection pressure, and that the caustic appeared to remain in solution satisfactorily. A separate well tester has been installed to permit more frequent gauging of production while the caustic is being injected. An outside engineering firm has been selected to develop a reservoir model for predicting the flood performance. Data are being collected and maps prepared by the Field Contractor for use in developing and testing the model.

Equipment has been installed to test two ion exchange resins for softening the oil field produced water prior to treating it with the caustic for reinjection into the reservoir.

Down hole mechanical failures in both production and injection wells have been more extensive than originally anticipated. To date, one production well has been repaired, one redrilled

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as planned, and a third production well is scheduled for redrilling. Four injection wells have been redrilled.

Laboratory core testing has been delayed pending development of a process for handling cores that have been frozen for preservation. A new process appears to be satisfactory. The project is being continued and it is now expected that the injection of the caustic slug will commence in March, 1978, about five months later than originally planned.

The staff will continue to inform the Commission, semiannually, regarding the status of this project for enhanced oil recovery.