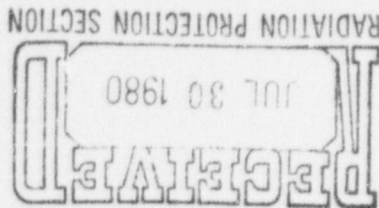


Mobil Oil Corporation

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DENVER, COLORADO 80217

ENERGY MINERALS DIVISION — U.S.



July 25, 1980

Mr. Gerald Stewart
Program Manager
725 St. Michaels Drive
Crown Building
Santa Fe, New Mexico 87503

Radioactive Materials License (NM-MOB-UL-00)
Pilot In Situ Leach Test
Section 9 Crownpoint Project
Radiological Data Evaluation

Dear Mr. Stewart:

Review of the data collected for the Crownpoint Project, Pilot In Situ Leach Test monitor wells show no excursion has occurred, however, anomalous gross α and β data have been observed in three of the monitor wells. In USGS Mine Plan Approval stipulations, when gross α and β data show an increase to two or more times the baseline value determined for a monitor well, the sample(s) in which the elevated concentrations were measured would be analyzed for Th-230, Pb-210, Ra-226, and Ra-228. This has been done. A review and analysis of these data have been performed. The following is a summary of the findings of the analysis. Attached is a copy of the report and detail of the analysis.

Radioactivity data for the monitoring wells at the Pilot In Situ Leach test were evaluated. Several possibilities exist for the erratic and unpredictable radioactive concentrations observed in some of the monitor wells.

A review of the alpha and beta contributions to radioactivity levels in a highly mineralized area such as the Crownpoint area of New Mexico indicates that several isotopes in the uranium and thorium decay series may contribute to activity levels. The major contributors in the uranium decay series are uranium-238, thorium-230, and radium-226. The primary beta contributor in the uranium decay series is lead-210 (bismuth-210). Major alpha contributors of the thorium decay series are thorium-232, thorium-228, and radium-224.

The radiological data as presented in the text and in several tables in the attached report show that the high radiation levels have occurred in samples from monitor wells 221, 224, and 225. A review of the geology, hydrology, and operational characteristics of the project indicates contributions from the production field are not probable. The ground-water flow, although very slow, is in a direction from the monitor wells in the south toward the production field. The mineralogy of the area

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indicates that it is highly mineralized with respect to radiation-containing formation. This, together with the groundwater characteristics of the San Juan Basin aquifer, would tend to provide erratic and expected high concentrations of radioactivity in the groundwater.

Well field monitoring indicates that no excursions have occurred and it can be reasonably assumed that radioactivity levels above baseline values in the perimeter monitoring wells are not contributed to by production field activities.

If there are any additional questions which you have concerning these data, the analysis and/or the attached report, please contact me at (303) 572-2731. Mobil will continue to collect and submit these data as specified in the pilot test project approvals.

Sincerely,



D. A. Bauer
Environmental Regulatory
Services Manager

DAB:gh

cc: G. A. Cresswell (w/o attachment)
B. A. Dennis (w/attachment)
R. D. Peirce (w/attachment)

See Data file for attachment