

acquired under the Homestead Acts prior to the introduction of exceptions for minerals. These fee ranch properties lie principally in the creek beds which form the drainage pattern of the center of the basin. Such privately owned properties, which generally follow the irregularly long, narrow pattern of the creeks, create capricious and irregular divisions of the surrounding public domain. It is evident that the orderly utilization of the public domain demands that they be consolidated.

TOSCO estimates that approximately 65% of the acreage containing approximately 84% of the oil in place is in the public domain and the Naval reserve properties. Approximately 22% of the acreage, containing only approximately 11% of the oil, is incontestably privately owned. The remaining 13% of the acreage, containing about 5% of the oil, is affected by disputes between private claimants and the Department of the Interior concerning oil shale mining claims. (Additional portions of the public domain may now be affected by various mining claims covering other minerals.)

Expressed in terms of estimates of barrels in place, the total of high quality reserves in Colorado is estimated by TOSCO to be approximately 481 billion barrels, of which 406 billion is in the public domain and Naval reserve, 51.5 billion is privately owned, and 23.5 billion is contested.

The reserves at the rim of the basin are generally well adapted to mining operations followed by above-ground retorting, but are unsuited to processing "in place" for a variety of reasons, chief among which are the relatively narrow horizon of high quality material and the absence of sufficient cap rock to contain processing operations.

By contrast, the reserves towards the center of the basin being both deeper and thicker may, if a suitable technique is evolved, be susceptible of retorting in place. Whether they ultimately are or not, it is apparent that they are technologically susceptible of mining and above-ground retorting operations. The cost of such retorting operations has been established. Preliminary study by TOSCO of the economics of suitable mining and disposal in the terrain in the center of the basin has produced encouraging results.

In short, although in situ techniques may ultimately prove useful in the center portion of the basin, they are not likely to be applicable to the rim; while above-ground mining and retorting operations appear to be universally applicable, subject only to detailed analysis of the costs of particular locations. If the reports of other minerals particularly of sodium and aluminum compounds extensive in amount and requiring treatment at the surface of the ground are borne out, mining and above-ground retorting at such locations seems the only course.

FEDERAL LEASING POLICY—THE PROPOSED REGULATIONS

Against the background of this brief statement of some of the revelant facts, it is appropriate to turn to the questions of policy, first to those raised by the proposed Leasing Regulations. In response to the Department's invitation to interested parties to submit comments on the Proposed Regulations, we have submitted to the Department our comments in some detail. For the Committee's convenience and possible interest, we are attaching to these remarks and submit for the record a copy of our Comments.

I would like to devote the time available today to consideration not of details but of some of the broader questions of policy which we feel arise out of the program embodied in the Proposed Regulations.

I shall discuss two matters. The first concerns the need, which we think is amply established by the facts, for the prompt commencement of an additional program of leasing for commercial production. Such a program is not embodied in the Proposed Regulations. The second concerns the research and development leasing which is embodied in the Proposed Regulations. Despite the large efforts and constructive intentions of the Department, the program in our view fails to meet its stated objective of stimulating production research and industrial development.

Leasing for Commercial Production

The Proposed Regulations embody the view, which we share, that it is appropriate to encourage future production research and development by making available public domain reserves for research, and, thereafter, for production. We are unable to reconcile that view, however, with the absence of provision for produc-