

It is a source of dismay, however, that the proposals are so drafted that no businessman would be likely to risk his time and money in shale oil if he had any reasonable alternative.

Shale oil is an emerging industry. Extraction and refining of shale oil has not yet been achieved in this country on a commercial scale. I am sure they will be. The industry needs a substantial investment of time, manpower and money, backed up with a good share of stockholder patience. In our opinion, the proposed regulations fail to set the necessary framework for development of an oil shale industry. I will comment on various aspects of the proposed regulations and offer our suggestions for improvement.

I. The Department's proposal for selection of acres for leasing provides that the Secretary will publish notices from time to time designating areas for the conduct of particular types of mining, extraction or processing which will be made available for leasing. Areas are to be selected with a view to encouraging research on a variety of mining and processing methods under a variety of conditions, taking into consideration principles of conservation and environmental protection. No more than 30,000 acres are to be so designated.

We suggest the following selection procedures as preferable:

(1) A committee composed of representatives of the Bureau of Land Management, the Geological Survey, and the Bureau of Mines prepare a leasing map of oil shale lands divided into blocks, each of which, in the opinion of the committee, would constitute a logical and economically feasible development tract.

(2) Each block limited to either about 5,000 acres maximum, or or lesser acreage containing not more than about 1 billion barrels of economic reserves—and I add at this point economic reserves usually are considered to be those reserves that contain 25 gallons per ton of shale oil potential or higher.

May I explain at this point also, because of the varying depths of the oil shale seams, I think there has been some reference to that today, some seams are as thin as 30 feet, some 60, some 100, some up to 2,000, and obviously, if you gave a lease out of 5,000 acres and a 60-foot seam, that would contain, let us say, x barrels of oil.

If you gave out a lease which had 2,000 feet of thickness and you gave out 5,000 acres, you would give 2,000 divided by 60, some approximately 33 times as much oil to the potential leaseholder. So we think, naturally, in the public interest the Secretary of the Interior should be able to vary the acreage depending upon the quality of the shale oil reserves underneath the particular block outlined by the committee that I previously described.

The CHAIRMAN (presiding). Mr. Hartley, on that point, is the information regarding the formation of the geological area we are talking about known, in the judgment of industry people like yourself?

Mr. HARTLEY. I would think that the people in the Bureau of Mines, Geological Survey people, have spent a lot of taxpayers' money getting this information, and I consider it to be pretty reliable; at least within the degree of accuracy that is required here as to whether you are talking about a billion barrels or 900 million, and I do not think that is of particular concern. The area in general, the geological formation, is pretty well known.