

in potential, is still a low grade mineral that will require the greatest ingenuity technologically to create from it any wealth whatsoever. We also urged that private enterprise, not only in words but in fact, be assigned primary responsibility for oil shale development and that wherever possible competition be demanded in all endeavors associated with the establishment of the industry.

CONSERVATION

Before concluding this statement there is one additional aspect of oil shale development on which I should like to comment, a problem that is of concern to the Secretary, to the members of this Committee, to the industry and to the public. That is the subject of pollution, of alteration of the environment, of the prevention of waste, and other matters that are described by the term *conservation*.

We all know, especially those of us who live in Colorado, Utah and Wyoming, that we can tolerate no conditions in an oil shale industry such as have been created in the past by the indifference to damage to the surroundings by some mining and milling operations. At the same time we must recognize that any large industry will change the ecology. We should not fear this because, since little industry exists in the areas involved, we have an opportunity to build a model industrial community.

Nor should we fear mining as such. As long as we extract minerals from the ground and treat them for the recovery of valuable components, the digging of ores and the disposal of solid, liquid and gaseous wastes will be with us. There are methods now and others are being developed to prevent the problems that have seemed to be an inseparable part of heavy industry, mining in particular. It is in this area that Federally-supported research and state and Federal regulation should be channeled. We can and do have mining operations that are assets not only financially but in a scenic and aesthetic sense. Oil shale can and should be developed in this same way.

I have emphasized mining as the basic approach to oil shale utilization. *In situ* or in place treatment of oil shale both with and without the application of nuclear explosions, is held out as the means to avoid the necessity of mining. As I discussed with you at the earlier hearings we do not have a practical *in situ* retorting method nor is there a certainty that one can be developed. In some ways the technological problems are as tough as those encountered in space exploration and with oil shale there are economic bounds within which one must stay.

We should continue research into concepts for *in situ* retorting because certain of our deposits do not seem amenable to present mining methods. By the same token large reserves are not recoverable by an *in situ* retorting approach now being considered. This is especially true of nuclear *in situ* methods.

My point is that we must necessarily proceed with oil shale development using a mining approach. Strict discipline and control must be exercised to ensure that long term pollution and despoilment problems are not created. Even if practical *in situ* methods are developed, mining is going to be a part of the industry by this should not be cause for alarm.

COMMENTS ON THE PROPOSED FEDERAL OIL SHALE LEASING REGULATION

(Prepared by Cameron & Jones, Inc., Denver, Colo.)

CAMERON & JONES, INC.,
Denver, Colo., August 14, 1967.

DIRECTOR, BUREAU OF LAND MANAGEMENT,
Department of the Interior,
Washington, D.C.

DEAR SIR: In accordance with Notice of Proposed Rule Making published in the Federal Register, Vol. 32, No. 90, Wednesday, May 10, 1967, page 7086 (43 CFR, Part 3170) OIL SHALE, and the extension of time for comment, Federal Register, Vol. 32, No. 115, Thursday, June 15, 1967, we are pleased to present comments and recommendations for your consideration in amending the subject regulation.