of capital investment is enormous, and long-range planning is mandatory. Immediate availability of selected lands must be established within the framework of a policy that will assure future availability as required by a healthy industry. This is the objective of alternative (2) and the strongest stimulation of an emerging industry would be achieved by such a policy.

DEPLETION ALLOWANCE AND EXPLORATORY COSTS

When a lease is given the lessee becomes the owner of the asset he has leased. The public interest is served by the bonuses and royalties paid for the lease. It is a cardinal principal of our tax law that the tax fall only on income and not on the capital that produces the income. Historically and traditionally the depletion allowance has been aimed at providing for the return, to the owner, of the value of the capital asset that is used and not replenished as it is produced and sold. In an oil shale industry this depletion concept must be taken into consideration along with exceptional and unusual costs of exploration and development. Geological information that exists about present oil shale deposits is generalized at best. Specific details require close spaced core drilling, costly process research, and plant construction all tailored to the probems of a particular lease-hold. This investment must be added to the cost of land-lease acquisition. All this investment may be considered as "exploratory costs" that would be abandoned at any time upon the decision to cease activity. If activity continues the mining and retorting plant with a capacity of 50,000 barrels of oil per day must be built at an approximate cost of $100,000,000 before the first return on investment can be achieved.

VIEWS OF JOSEPH L. FISHER

The general object of government policy, as noted in the main body of the report, should be to offer encouragement to private industry in the development of the oil shale resource with full and proper protection of the public interest. In the matter of precisely how to stimulate the development of oil shale (see Section IV) there are differences of view among the Board members, although all agree on the general developmental objective. These differences, I believe, are due largely to a lack of sufficient knowledge as to the technical and economic merits of various mining and processing methods. My preference is for a course which would emphasize research and experimentation as the next phase in the creation of a competitive oil shale industry.

This could be achieved in two ways: (1) by providing access to Federal oil shale land, with public interest safeguards, for purposes of research and experimentation on any and all phases of shale oil technology, in the hope that this would stimulate interest in pursuing such research; and (2) by government contracting with private industry, universities, foundations, etc., for specific lines of research, or if necessary conducting research itself. I would not want to exclude either of the two avenues. Whichever course is followed, or if both are followed, I would hope that qualified companies and perhaps groups of companies would want to undertake the actual doing of the research preparatory to development of an oil shale industry.

Leasing for purposes of stimulating research and closely related development (not including commercial scale development) has the advantage that it relies more on private initiative and may make for an easier transition to commercial leasing, once this is warranted. At the same time, such leases, which would actually be more in the nature of permits, should be sufficiently qualified so as to prevent land speculation (see below). Finally, and quite importantly, providing access to Federal land might encourage companies not now owning any suitable land, to engage in research and development of the various phases of extracting and processing the material.

As against these merits of leasing or permits, there is the undeniable fact that in the past industry as a whole has not been especially aggressive in its R & D activities regarding shale oil; this despite the fact that more than 160,000 acres of oil shale land are owned by oil companies. It is possible, therefore, that research permits will not quicken the pace of progress. Therefore, government, both Federal and State, should be ready to play a more active role in sponsoring or conducting research if it becomes evident that the leasing route does not elicit a satisfactory response. Most of the research, in this case, could probably be arranged through contract with private companies, but some might also be done directly. Important research is now being done in Government laboratories.