

Senator METCALF. I see. They will be incorporated in the record immediately after your statement. Senator Fannin.

Senator FANNIN. Mr. Tippy, I agree that we certainly do have some problems and I think that most of the States are vitally interested in conservation. The people are making demands now at the State level that I think are assisting greatly in bringing about correction of some of the problems we have had in the past.

Water is a scarce commodity in many areas and an extremely scarce commodity in the West. I was wondering, when you mentioned this Colorado oil shale, just what you had in mind.

Mr. TIPPY. According to the information I have been able to read on the subject, Senator Fannin, if the shale is mined off the surface in conventional methods and extracted through the application of heat only a few gallons of oil are produced per ton of rock and the rest must of course be dumped somewhere around the refining site.

Certain persons have proposed that something like Operation Gasbuggy be experimentally tested in the oil shale lands to see if the in situ process could liquify the oil beneath the surface of the earth and not create this problem of disposal of spent rock.

Senator FANNIN. I know that experiments are going forward in that direction. I agree with you that we should do everything within our power not only in the oil shale industry but in all industries to see what can be done without disturbing the areas.

In your testimony you stated you do not favor national standards and that they could cause some serious dislocations in some of the areas of the country. Have you been out in the oil shale area of Colorado?

Mr. TIPPY. Senator, I grew up in Arizona and have vacationed in Colorado a number of times.

Senator FANNIN. The possible problems inherent in overburden are yet speculative. I think we should certainly take every precaution but we still do not have a proven economic process for obtaining the oil from the shale, so I think that your thoughts are good from the standpoint of trying to utilize our modern devices, our nuclear energy and all to process, but we still have the problem of economics at all times to consider. You know how difficult it would be to continue our copper mining in Arizona if this proposed legislation were passed. It would just be impractical and economically impossible to carry through.

Mr. TIPPY. I really don't know who, Senator, is suggesting that all open pit copper mines be filled.

Senator METCALF. We use the oil shale residue to fill those big pits.

Senator FANNIN. We need a cooperative program to do that. I think you probably have been down in the Bisbee area and have seen some of the open pit mines there and the wonders of that area. Whether or not mother nature produced them or they were produced by man, they are still beautiful sites to me.

Thank you very much.

Senator METCALF. I want to thank you, Mr. Tippy. I have been impressed as these hearings were going along that, while this legislation is prospective in character, and the Secretary made a strong point that it was prospective, although some of the witnesses suggested that perhaps it had to be strengthened, many witnesses have pointed out what