

great extent upon what the leasing policy of the Federal Government is going to be.

Captain MILLER. That is right, sir.

Senator ALLOTT. Thank you very much. And I do appreciate your testimony this morning.

Captain MILLER. Thank you, sir.

The CHAIRMAN. Senator Moss?

Senator MOSS. Captain Miller, I, too, appreciate the fine work that you have done in this field and appreciate your testimony here today. I take it from your statement that you are convinced that the state of the art is already advanced to the point that we should be moving directly to large scale production. Does this mean that you hold out little or no hope for the *in situ* retorting process?

Captain MILLER. I am not very enthusiastic on the possibilities of *in situ* production.

Senator MOSS. So your reference to the state of the art is the method of taking the rock out and crushing it?

Captain MILLER. The conventional method, mining, crushing, retorting.

Senator MOSS. Is there a rough estimate now on the cost of production of a barrel of oil by the retorting process, taking care of all these problems of restoring the rock and so on?

Captain MILLER. Let me put it this way, Senator. The Government spent in the neighborhood of \$17 million at Rifle, another \$6 million in basic research at Fort Laramie Station. They did not complete the job with that expenditure of money. That is the reason for the operation at Rifle today. The Union Oil Co. took 2 years and their own money and built a plant that processed the shale and got all the answers they wanted. The cost figures I do not have. At one time it was stated at an American Mining Congress meeting in Denver that they had gotten the cost down to below a dollar a barrel. How far below, I do not know. But they, in 2 years, found out the answers and tore the plant down and said at that time if they had the same depletion allowance that petroleum has, they would be competitive. That was a statement made by the president when they closed down.

Senator MOSS. So it is in the relative range of difference between the depletion allowances?

Captain MILLER. That was the statement made.

Senator MOSS. Thank you very much.

The CHAIRMAN. Senator Jordan?

Senator JORDAN. No questions.

The CHAIRMAN. Senator Hansen?

Senator HANSEN. I want to commend you for the excellent statement you have made, Captain Miller.

Captain MILLER. Thank you.

Senator HANSEN. I am not sure I understood how much money you said had been spent in basic research at the Laramie Station.

Captain MILLER. As I recall the figure, \$6 million—a total of \$23 million expended by the Government on the program.

Senator HANSEN. \$17 million at Rifle and about \$6 million at Laramie?

Captain MILLER. Six.