Title: Mercury in Oil Shale, Problems and Solutions

Abstract: As a naturally occurring mineral product, oil shale contains many of the potential environmental issues of other minerals. Mercury has been measured commonly at significantly higher concentration than that found in coal on a per BTU basis. For ground oil shale samples, much of the mercury is emitted at modest temperatures between 100° and 200°C. The mercury occurs primarily in elemental form, though some oxidized species also occur. The goal of our work has been threefold: to determine the distribution of mercury throughout the western mineral deposits, to conduct mass balance experiments to predict disposition of the mercury following above ground retorting and in situ processes, and to develop a solution which would cost effectively deal with mercury capture before emission to the environment. Current experiments indicate that the mercury is not likely to remain in the solids or be trapped within the condensable water. The most likely emission source for mercury will be gases given off during heating. Suitable sorbents should provide sufficient gas phase mercury capture to meet regulatory concerns.

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