

Technical and environmental aspects of oil shale assessment for western U.S. deposits

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The oil shale deposits in Colorado, Utah, and Wyoming are among the richest in the world with a total estimated in-place resource of 4.3 trillion barrels of oil. This exceeds the 2000 U.S. Geological Survey World Energy Assessment mean estimate of 2.7 trillion barrels of total worldwide crude oil resources. The latest U.S.G.S. assessment of western U.S. oil shale has generated resource-in-place databases for the major basins that are expected to be of great utility to potential oil shale developers, geologic researchers, and resource management agencies. However, this assessment was not meant to and does not address several essential issues relevant to the development of this potentially immense resource. How much shale oil is technically recoverable? What retort methods should be applied at specific locations and within specific stratigraphic units? What is the character of the products that are generated and extracted? What are the potential environmental impacts and how will they affect communities and ecosystems? Current research is addressing these questions and has advanced sufficiently to begin the development of assessment methodology to obtain estimates of technically recoverable products generated by different retorting technology and the environmental impacts of these processes on a site- and method-specific basis. In this presentation, an overview of how to approach these related assessments will be discussed, with the expectation that this will initiate dialog regarding how best to approach the evaluation of recoverable oil shale resources.