

## **Can shale oil and water mix?**

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The vast oil shale resources of Colorado, Utah and Wyoming will undoubtedly be the initial target for industry development. These resources lie within the Upper Colorado River Basin where there is keen public awareness regarding the river's ability to sustain long-term regional development. Water availability and water quality concerns influenced past oil shale development in the 1970s and 1980s, and are likely to do so again as industry proceeds with renewed development plans.

Very little research has been conducted over the past 20 years on oil shale technologies. Advances that have been made are often proprietary with little information made available to the public. Past data suggests that for each barrel of shale oil produced, 2 to 5 barrels of water will be required. Even if these volumes were cut in half, water requirements could constrain long-term oil shale development. Opportunities exist to develop and deploy improved water management practices and innovative water recovery and reuse technologies for oil shale processing.

This paper investigates the relationship between oil shale development and the water resources of the Upper Colorado River Basin. Specifically, water requirements for the development of oil shale are discussed within the context of current and forecasted regional demand for water. Water quality issues and the potential impact of an oil shale industry are also addressed. As oil shale R&D proceeds, numerous challenges and opportunities will emerge to reduce water consumption and assure continued protection of the region's water quality. Some of these challenges and opportunities will be discussed.