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Hail the Shale

More drilling options.

By Mary Fallin

The debate over exploiting America's domestic oil and gas reserves has focused primarily on the Arctic National Wildlife Refuge, and on offshore regions currently off-limits to exploration. While we should drill in those areas to reduce our reliance on oil imports, a third resource, the vast oil-shale deposits in the Rocky Mountain West, could be even more crucial in our quest for energy independence.

The Green River formation underlying parts of Wyoming, Utah, and Colorado could hold as many as two trillion barrels of oil, trapped in rocks relatively close to the surface. Production from those deposits could reach ten million barrels of oil per day — virtually tripling our current domestic production — according to a report by the Department of Energy.

It takes a geologist to fully understand the potential of oil shale. In simple terms, oil shale is sedimentary rock saturated with a petrochemical substance called kerogen. It's oil that didn't quite make it to liquid status.

Kerogen is extracted by heating the oil shale to between 650 and 700 degrees. The process is similar to that being used in Canada to extract oil from tar sands. Canada has estimated its potential reserves from tar sand at 174 billion barrels of oil, but America's oil shale reserves could far surpass the most optimistic Canadian estimates.

Initial methods for extracting kerogen from oil shale involved mining the rock, like an ore, and heating it through industrial processes. However, work is underway by at least one oil company to drill into the oil-shale deposits, insert heating elements, and wait for the kerogen to bubble to the surface, much like the traditional means of drilling for oil.

This would lessen surface disturbances and environmental damage, a vital concern when we talk about opening millions of acres of Rocky Mountain wilderness to exploration.

New developments in the Rocky Mountains are just part of a promising energy story. The Barnett Shale formation in north Texas was off limits to production for decades, until new technologies like hydraulic fracturing made these natural-gas reserves economically feasible to pump out of the ground. Today the Barnett Shale is one of the most prolific fields in the nation.

Perhaps the best news is that America is home to the largest oil-shale deposits on earth. According to a report by the Department of Energy's Argonne National Laboratory, "even a moderate estimate of 800

billion barrels of recoverable oil from oil shale in the Green River Formation is three times greater than the proven oil reserves of Saudi Arabia."

Imagine a scenario where most of America's oil needs flowed from ANWR, offshore, traditional onshore wells, and the oil shales of the Rocky Mountain region. "Present U. S. demand for petroleum products is about 20 million barrels per day," the Argonne report said. "If oil shale could be used to meet a quarter of that demand, the estimated 800 billion barrels of recoverable oil from the Green River Formation would last for more than 400 years."

Extracting these huge oil reserves will require capital and attention to environmental issues. But it's hardly a Manhattan Project.

Most significantly, more than 70 percent of the Green River Formation lies beneath federal lands. As a nation, we already own one of the largest potential oil reserves on the planet. If we fail to use it, the alternative is clear — increasing dependence on OPEC oil, ever-higher prices and a return to the energy crisis of the 1970s.

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