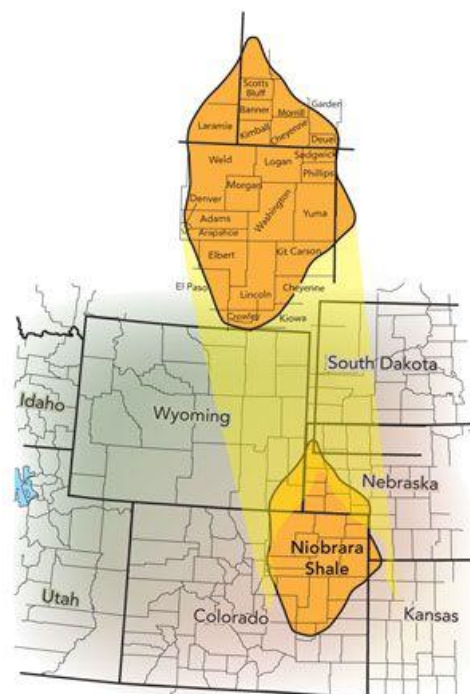




The Niobrara



*Approximate

Classification

The Niobrara formation is roughly 82-87 Million years old, and was formed in the Upper Cretaceous period of the Mesozoic era. The formation is composed of two structural units: Smoky Hill Chalk which overlies the Fort Hays Limestone.

While the Niobrara formation extends from Canada to New Mexico, only certain parts of the formation are capable of producing oil and natural gas. Currently, the most productive zones are in the Denver-Julesberg basin of northeast Colorado and southeastern Wyoming. Exploration activities in Colorado are occurring around the state, including the northwestern county of Rio Moffatt, the Piceance Basin, and southeastern Colorado's El Paso County.

Depth

The average depth for Niobrara petroleum producing zones are approximately 7,000 feet deep. As the Niobrara extends east the play shallows at depths of around 3,000 feet, becoming a biogenic natural gas zone. Biogenic gas is a naturally occurring gas from bacteria and or other naturally occurring processes. Typically, biogenic gas is at shallower depths than what is extracted from natural gas processes.



The Niobrara

Technology

Until recently, this shale oil play's resources were inaccessible through conventional drilling methods. Thanks to more innovation in drilling techniques horizontal drilling and multi-stage hydraulic fracturing have made this formation an economically viable resource.

Types of Reserves

The Niobrara is a predominantly liquids rich play of oil and natural gas liquids in eastern Colorado. The Niobrara formation does also have a biogenic gas area in eastern Colorado.

Recent wells in the Piceance Basin of western Colorado have produced dry natural gas from the Niobrara.

Estimated Reserves & Recoverable Reserves

The Niobrara formation is still a relatively new play in the exploration phase. Consequently, estimated reserve figures vary greatly. Some analysts have assessed the play at approximately 2 billion barrels of recoverable oil reserves.

Famous wells

Two of the most notable wells drilled in the Niobrara formation are EOG's Jake well and Noble Energy's Gemini well. The Jake well, which was drilled in October 2009, produced an average of 1,750 barrels of oil per day for the first few days, producing 50,000 barrels over 90 days. Noble Energy's Gemini well was a 16-stage fracture treatment which produced 1,110 barrels per day at its peak.

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