

# Piceance



**ExxonMobil**

Taking on the world's toughest energy challenges.™



In the Piceance Basin on Colorado's Western Slope, time has preserved the rich traditions and resources of the region's past. Throughout the rugged terrain, the hunting, ranching and sheep herding that have been staples of life for generations continue today. But deep below the surface is another product of history, a resource millions of years in the making but just as significant as the treasures on the land above it.

The Piceance Basin contains trillions of cubic feet of natural gas, offering an immense amount of energy in America's backyard. ExxonMobil and its predecessors have been operating here since the 1950s, producing modest amounts of gas that were relatively easy to extract. The majority of the gas, however, is trapped in scattered pockets deep underground in rocks as dense as cement. Although the industry has known about these "tight gas" deposits for decades, they were generally deemed too difficult and expensive to recover.

But ExxonMobil scientists and engineers rose to the challenge. After more than 10 years of intensive research and development, they developed the proprietary **Multi-Zone Stimulation Technology (MZST)** and **Just-in-Time Perforating (JITP)** system. These innovative technologies enable recovery of more gas with greater precision while respecting the environment.

ExxonMobil's application of advanced technology in the Piceance Basin is securing a source of clean-burning energy for the United States' future, but in a way that is mindful of the history, land and culture of western Colorado.

## increasing domestic energy supplies

Rio Blanco County, home of ExxonMobil's Piceance project, covers an area larger than 3,000 square miles and contains enough clean-burning, domestic natural gas to benefit millions of people. With interest in approximately 300,000 acres in the Piceance Basin, ExxonMobil's leases hold a potential recoverable resource of more than 45 trillion cubic feet of gas over the life of the project. That's enough natural gas to power 50 million homes for almost a decade. While this expansive gas resource will take years to produce, ExxonMobil is committed to increasing natural gas production more efficiently and with less environmental impact.



## applying advanced technology

To look at the Piceance facilities on the surface, one would see relatively minor activity. But an intricate system is underground, driven by advanced technology that has made the method of fracturing reservoir rock to release tight gas more efficient, economic and environmentally sensitive.

First, the **Fast-Drill Process**, another ExxonMobil proprietary technology, is used to drill the wells efficiently. Next, **MZST** is used to fracture the dense rock containing the tight gas pockets, a process made possible by **JITP**. Working from the bottom of the well up, specialists perforate the well casing

where tight gas reservoirs have been identified. To allow the gas to flow, deposits are stimulated by forcing high-pressure sand and recycled water from production operations through the perforations while protecting the groundwater. This creates a network of highly permeable pathways that extend hundreds of feet from the well bore. Gas flows into the well via the newly created pathways, and this process can be repeated in rapid succession for up to 50 gas-rich zones within a single well.

## reducing the environmental footprint

Natural gas production is just one of several uses of the land in the Piceance Basin. Respectful of that fact, ExxonMobil applies its technology and processes in an effort to make the smallest environmental footprint possible. Multiple wells are drilled from a single surface development, and each well can develop 20 acres below ground. These multiple well pads reduce surface disturbance, as well as vehicle traffic.

Water conservation is also a top priority in the Piceance Basin. ExxonMobil has piloted a system that takes the water coming out of the ground during gas recovery and reuses it for other processes, which reduces both freshwater usage and truck traffic by about 80 percent. Additionally, a pipeline system carrying the produced water and freshwater further reduces associated traffic.

## investing in the region and its people

The relatively remote location of communities in the Piceance Basin makes high-quality healthcare and education two of the region's top priorities. To improve the area's emergency medical care, ExxonMobil is helping upgrade the helicopter ambulance service at St. Mary's Hospital, the only Level II trauma center between Denver and Salt Lake City. Additional contributions to local institutions are supporting improvements in K-12 math and science education. For example, several local elementary teachers have attended the Mickelson ExxonMobil Teachers Academy, a week-long training program focused on math and science teaching strategies.

ExxonMobil also is providing support to preserve the land and customs in western Colorado. The company is contributing to investigations of land reclamation strategies in the Piceance Basin, in addition to sponsoring the annual Meeker Classic Sheepdog Championship Trials, a tradition reinforcing the importance of the area's ranching culture.

## respecting the land and wildlife

As part of its operations in the Piceance Basin, ExxonMobil conducts extensive plant, wildlife and archaeological surveys to ensure that its operations will not disrupt the living and historical assets of the region. These surveys are in addition to the collaborative research ExxonMobil is undertaking with local educational institutions and government agencies to study how development of the Piceance Basin can work in harmony with native wildlife habitats and plant species.



## building long-term partnerships

With this increased natural gas production in the Piceance Basin and the planning underway for additional investments, ExxonMobil is committed to building long-term partnerships in Rio Blanco County and northwest Colorado. ExxonMobil's goal is to provide energy in a safe, environmentally sound manner, while continuing to support economic development and quality of life in the surrounding area.



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