

# Case History: Parachute, Colorado



**FERGUSON  
BEAUREGARD™**  
New Intelligence In Problem Solving™  
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Utilizing new technology pioneered by Ferguson Beaugard, natural gas powerhouses thrive in the rugged Piceance Basin

## All's Well That Ends Well

Thanks to technology pioneered by Ferguson Beaugard, the rugged, remote terrain around Parachute, CO, has become a source of enviable natural gas returns for leading exploration companies operating in the area. Parachute, located in the far west-central portion of the state, about 30 miles up I-70 from Grand Junction, sits in the middle of the fertile Piceance Basin, putting it at the epicenter of the region's natural-gas production operations.

This Ferguson Beaugard technology has aided one of the leading natural gas producers in the United States, and one of the premier operators in the Piceance Basin, maximize the potential of its more than 1,500 wells that produce some 700 million cubic feet of natural gas per day in the area, or enough natural gas to supply the energy needed to heat roughly 2.5 million homes on a daily basis.

While the terrain in the Piceance Basin makes even getting to the drilling sites a Herculean task, extracting the natural gas is no day at the park either since it is tucked away in non-conventional tight-sand formations at depths ranging from 5,600 to 12,000 feet. But the payoff is worth the effort as Piceance Basin wells have an average proven production life of more than 30 years.

But while the topography of the area hasn't changed, advances in technology created by Ferguson Beaugard has made production and well optimization in the area more efficient, productive, economical and safe.

For over 25 years Ferguson Beaugard has been at the forefront of the industry search for innovative solutions to production problems. From self-contained plunger lift systems and electronic controllers to fully integrated, remotely managed production systems, our goal is to deliver immediate results for you.

### *FB Experience Can Benefit You Five Ways:*

1. Innovations in oil and gas production technology
2. Flexibility to develop customized solutions for specific needs
3. Practicality to build systems that offer immediate return on investment
4. Foresight to recommend systems that are easy to maintain and update
5. Commitment to share knowledge and continue research and development.

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Because of the ruggedness of the area, “pad” drilling is the preferred way to extract the natural gas from deep beneath the Earth’s surface because it allows access to multiple wells from a concentrated area in the midst of hard-to-traverse terrain. To illustrate the point, the largest pad in the area has 24 wells on it. While concentrating the wells in pad-drilling formations does somewhat ease the job of monitoring them, with more than 1,500

wells in the basin, that still means a lot of time-consuming hopscotching over inhospitable ridges, canyons and valleys to check out operations, trips that can be made dangerous by the threat of rock slides and nearly impossible during inclement winter weather.

In addition, each pad may have a number of wellheads that are owned by different concerns. Each well on a pad produces a combination of natural gas, oil and water, with each going to a specific collection point on-site. While the relatively small amounts of oil and water that are produced are kept in storage tanks, which are emptied when necessary, the natural gas is sent down a pipeline to a compression station in a process called “custody transfer.” At the compression station, it is determined how much useable gas came from each wellhead—called “custody transfer metering”—so that each wellhead owner receives royalties for the exact amount of natural gas that was produced from his wellhead.

That’s where Ferguson Beaugard’s many technological advances enter the picture. Leading companies use Ferguson Beaugard’s plunger-lift, Remoter Terminal Unit, Electronic Flow Meter and iNodes technologies to make its Piceance operations the most efficient in the industry.

First off, Ferguson Beaugard’s plunger-lift systems are designed to increase and optimize production in oil and natural gas wells that have marginal flow characteristics, like many of those found near Parachute. The function of plunger lift is to provide a mechanical interface between produced liquids and natural gas. Using the well’s own energy for lift, liquids are pushed to the surface by the movement of a free-traveling plunger, in the process eliminating liquid fallback and increasing the well’s lifting efficiency. In short, plunger-lift technology from Ferguson Beaugard has helped make Piceance wells some of the top producing wells in the world.

When the natural gas reaches the gas-gathering and separation station, the customer utilizes Ferguson Beaugard Electronic Flow Meters (EFMs) to provide an accurate, reliable flow measurement from the wellhead.

The equipment, however, most crucial to the increased efficiency and production of Piceance Basin wells are Ferguson Beaugard’s Remote Terminal Units (RTUs) and iNodes smart sensors.

The Auto-Cycle™ Plus, for example, is a compact RTU designed for complete stand-alone operation in the harsh environmental conditions found in the Piceance Basin. Incorporating a versatile microcomputer electronics module and software program system, the Auto-Cycle™ Plus RTU offers continuous monitoring and control of the well-production process, eliminating the need for costly and dangerous excursions to wellheads to check on or set up operations and run cycles.

While plunger-lift, EFMs and RTUs optimize the production cycle, Ferguson Beaugard’s iNodes technology ties them all together. iNodes are a family of smart sensors designed to aid in production monitoring and optimization through the use of next-generation distributed computing. iNodes are designed to install without trenching; monitor tank levels, pressure and flow continuously; point out exception conditions and issue alarms; and deliver summarized production data via satellite.

With all of this new technology in place, there was one last challenge that needed to be overcome: communication. While the iNodes offers the ability for the RTUs to communicate with each other—determining the order that the wells should be plunger-lifted to optimize flow, for instance—the unevenness of the terrain can make this communication problematic.

This hurdle is cleared by installing communication towers at strategic points in the area. This allows an RTU to communicate with another RTU that it has line-of-sight with, which in turn can bounce that signal off a communication tower to another RTU, with the information eventually working its way to the main office in Parachute, or as far away as Grand Junction.



“The biggest challenge is communications,” explained Curt Berg, Ferguson Beaugard’s Regional Manager for the area. “Getting the communications from all of those sites in all of those canyons back to the office is tough, but the new radio technology has helped us out more than anything else. We just bounce the signal from one well to another until it reaches the office.”

That’s just another in the many ways that Ferguson Beaugard and its customers have worked together to take what the terrain has given them and turned it to their advantage, in the process turning the daunting Piceance Basin into a model example of how productivity, measurement accuracy and environmental protection can be maximized despite the challenges faced.