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# NewsQuest

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## Doubling Down in Dixie

QPC and QGC team up on project that doubles capacity of pipeline serving the southern Utah community of St. George. [SEE PAGE 2.](#)



# QGC and QPC join forces to make sure southern Utah has the gas to grow

**Joint project doubles capacity on existing line installed in 1997**

“Occasionally, however, a project comes along that proves to be an exception to the rule, blurs the normal boundaries and provides a rare opportunity for the companies to collaborate.”

Despite sharing a common corporate parent, as companies go, the lines between Questar Gas and Questar Pipeline are usually pretty clearly drawn. Examples are easy to spot. For instance, employees for each company work on separate floors of the Questar Center. As an interstate pipeline company, QPC is regulated by the federal government, while Questar Gas is subject to the jurisdiction of the state utility commissions of Utah and Wyoming. City gates are actual physical demarcations where QPC's system ends and QGC's system begins.

Occasionally, however, a project comes along that proves to be an exception to the rule, blurs the normal boundaries and provides a rare opportunity for the companies to collaborate. Exhibit A: the Washington County System Reinforcement Project in southern Utah.

“A real interesting angle to this story is that you have the two companies working together on a Questar Gas facility where

Questar Pipeline was asked to support the engineering effort, Questar Pipeline and Questar Gas managed construction, Questar Gas handles the daily operations, and Questar Pipeline's automation and stationary equipment department provide ongoing support,” said Jack Ahern, QPC project manager.

The facility in this case is Feeder Line 81. Originally constructed as a four-inch-diameter steel pipeline in the late 1980s and later upsized with eight-inch-diameter steel pipe in 1997 and in 2001 to meet increasing demand for natural gas, FL 81 takes gas from the Kern River Pipeline near the town of Central, Utah, and carries it about 26 miles southeast to St. George, for decades one of the state's fastest growing communities.

Mountain Fuel, Questar Gas's predecessor, first brought natural gas service to Washington County (which is located in the southwest corner of Utah and includes St. George) in 1988 when the company extended its Southbound Pipeline from Cedar city, located approximately 50 miles to the north. At that time, Washington





County's population was 45,000 — and growing. By 2010, the population of Washington County had tripled to over 145,000 residents.

"The whole premise of this project was to meet the increasing load in Washington County," Ahern said.

"Before we started planning this project, we estimated we had enough wiggle room for a little more than 10 percent increase in demand in the St. George area, and at the rates of population growth forecasted at that time we were running out fast," said Mike Platt, QGC system design engineer. "With these improvements, the system can now easily accommodate approximately 40 percent increase in customer demand before we need to install further system enhancements."

Several options were considered, including building a new, larger pipeline. After careful analysis, the most cost-effective solution, according to Ahern, proved to be increasing the capacity of FL 81 by constructing a compressor station upstream at the Central tap coming off Kern River. FL 81 was originally built and tested to withstand a maximum operating pressure of 1,000 pounds per square inch (psi). It was officially commissioned with a maximum allowed operating pressure (MOAP) of 720 psi, but had been operating on average well below that at 650 psi.

Planning for the Washington County System Reinforcement Project began in earnest in 2011. The project that emerged included three components: installing a compression facility at Central, analyzing FL 81 to confirm it could still handle the higher operating pressure, and construction of a new regulator station in St. George to lower the pressure of the gas in FL 81 from 1,000 psi down to 720 psi before it entered the system serving local homes and businesses. When finished, the project would more than double the capacity of FL 81 from about 23 million cubic feet of gas per day (MMcf/d) to 47 MMcf/d.

Construction of the new compression station at Central began in May 2013. Work was initially delayed when biologists discovered a family of raptors had

established a nest on a nearby power pole. "Fortunately, we were able to develop a mitigation plan with the U.S. Fish and Wildlife Service that shortened the delay," said Ahern. Biologists monitored the nests daily for several weeks until they were satisfied that construction activity would pose no risk to the hatchlings.

The new station was completed in November 2013. Denton Johnson, QPC design engineer, and Steve Grover, QPC



automation engineer, worked very closely with a third-party engineering consultant to design the station and ensure it met necessary operating requirements. In addition to a 1,380-horsepower Caterpillar G3516 engine mated to an Ariel reciprocating compressor, the company installed new meters, piping, valve assemblies and odorant facilities. Since the station is within a thousand feet of nearby residents, the company paid particular attention to minimizing noise and visual impacts. "The compressor building is acoustically insulated," Ahern said. "We also installed exhaust silencers on the compressor, the standby generator and the blow-down valves. To help the facility blend in with the surroundings, we buried pipe or positioned it behind or inside buildings and also painted the buildings green."

The company also heeded a suggestion from a local Citizens Emergency Response Team and installed a waterline and fire

*QGC completed construction of its new compressor station for Feeder Line 81 near Central, Utah, in November 2013.*

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# QGC and QPC join forces to make sure southern Utah has the gas to grow

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hydrants to protect the station from potential wildfires, which have been known to occur on the surrounding arid hillsides.

At the other end of the line, in St. George, consideration of visual impacts also played a crucial role. To build a new regulator station, QGC purchased seven acres from the state of Utah on a hillside on the edge of town overlooking a busy intersection at Bluff Street and Snow Canyon Parkway. According to Seth Plaizier, QGC senior engineer, who oversaw construction of the station, more than 4,000 truckloads of dirt were moved in a three-week period to get a flat space large enough to work on. "We were dealing with a 60-foot elevation change and needed to carve out an area the size of a football field to build on," said Plaizier.

That kind of work can leave a mark, and the city of St. George took a very active role in making sure the site didn't end up an eyesore. "We worked very closely with the city to get the right look and feel," said

Plaizier. "We generated 24 renderings of the site with 12 different layouts. The city helped choose the color and type of fencing we used and the color of the buildings. We were very concerned about preserving the views for nearby residents and passing motorists."

QGC's efforts paid off. Mark Goble, a landscape architect who works in the park planning division for the city of St. George, was very complimentary. "Questar Gas (was) very cooperative in reaching the desired aesthetics for the project," Goble said. "I was able to provide input on wall design and colors, plant selection and landscape design, which was implemented."

Construction on the Bluff Street regulator station, officially designated as station WH0030, began in October 2013 and was completed last March.

Burke Peterson, QGC associate engineer high-pressure design, was in charge of making sure FL 81 could still handle the 1,000 psi it was originally built for. After a

thorough inspection, it was decided to dig up the line at 49 separate locations (primarily road crossings) and re-bury it with a lightweight flowable fill called Cell-Crete, which lowers potential stress on the pipe from heavy traffic above.

After final testing, the entire project will be placed into service by late July 2014.

"I personally want to thank everyone who was involved in this project," said Ahern. "A lot of people and departments from both companies cooperated to make this a success, including operations, construction, stationary equipment, engineering and automation services. Jeff Loveless (QGC measurement and control) and his guys in Springville did a great job. They had to climb a steep learning curve and demonstrated a lot of ownership."



## A TEAM EFFORT

Successful completion of the Washington County System Reinforcement Project required the knowledge, effort and dedication of a large number of employees and several departments from both Questar Gas and Questar Pipeline, as well as outside contractors. Here's a list of all those who contributed. Thanks to: Kim Blair, Brad Hasty, Jack Ahern, Mike Gill, and Mike Platt for determining the alternative solution for expanding gas supply to St. George; Gae Lynn Froyd, Brett Brown, Bronson Little and the employees of QGC's St. George and Cedar City offices for their support and willingness to help make the project a success; Craig Howard,

Ross Wilson, Jeff Loveless, Brett Comas, Dwaine Zobell, Lee Mettmann and the fleet CNG department for providing the trailers and people needed to hold the 1,000 services in six communities along FL 81; integrity management engineering and operation groups for supporting the pigging and cleaning of FL81; Denton Johnson and Steve Grover for supporting all phases of the project, from inception through station design, construction and commissioning; Seth Plaizier and Burke Peterson for supporting the FL 81 evaluation and upgrade; Mark Stewart and Scott Bassett for environmental efforts; Benjamin Loveland and safety services; Bryan Niebergall, Layne Carter and the measurement and control department for supporting design, construction and commissioning; Cory Gale, Russ Lozier, Kelly Wilson and

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