

# BlackDiamond® 12" Dent/Gouge Repair in USA

## BlackDiamond® 12" Dent/Gouge Repair in USA

United States

### Pipe Details

- Customer: Gas Transmission Company
- Pipe Diameter: 12"
- Design Pressure: 255 psi
- Pipe Contents: Natural Gas
- Pipe Defect: Dents with Gouges and External Pitting

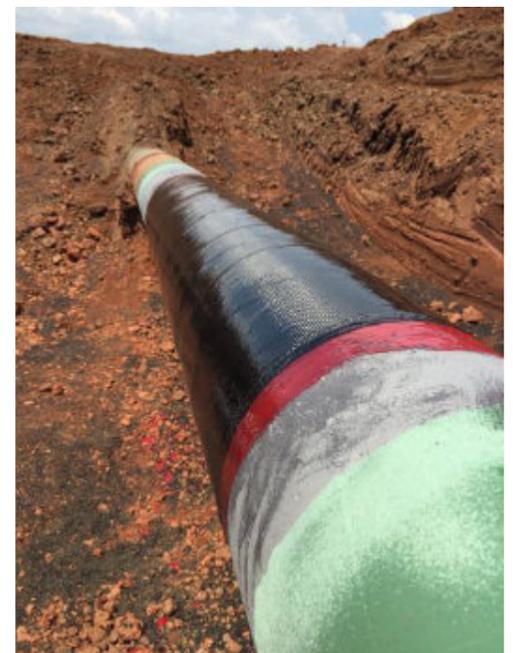
### Summary

This gas transmission pipeline was suffering from dents with gouges and external pitting. Many miles of pipeline would have to be blocked in and purged in order to cut the line and weld in a fresh section of pipe. The company also could have welded on a "Type B" steel sleeve, but the result would be a costly repair with heavy equipment and lots of hot work, lost production time, and lost customer satisfaction.

CSNRI' team of engineers designed repairs for each defect according to ASME PCC-2 Article 4.1, and recommended a BlackDiamond® repair solution. Only 3 layers of BlackDiamond® were required to repair the defect, even with the type of anomaly that existed on the pipe.

CSNRI mobilized a trainer on-site to conduct the training and supervise the installation. The ambient temperature was 100 degrees Fahrenheit, creating a tough environment for installation. Once trained, the small team of newly certified installers worked quickly in the heat to install 3 layers of carbon fiber over a 5 foot repair length, according to the calculations prepared by the CSNRI engineer. The actual installation time was less than an hour. No heavy equipment or hotwork was required for the installation, and the line remained in operation with no disruption in production. Below are photos of the completed repair.

Conventional repairs are identifiable in the data collected by the magnetic flux leakage inspection tool, but traditional Clock Spring composite repairs could not be identified until a minor modification to the installation process rendered them visible to the tool.



The repair was inspected for defects, and then checked to ensure that a sufficient cure was achieved using a Shore D Hardness tester. Once the repair was sufficiently cured, it was coated, and the trench was backfilled.

This pipeline was able to maintain full operation throughout the repair with no need to shut down or reduce capacity. CSNRI successfully designed and implemented this permanent repair (50+ years) with a cost-effective and reliable solution.

There are nearly 3,000 trained Clock Spring installers around the world who are qualified to provide repairs with Clock Spring products. Clock Spring regularly offers [training classes](#) for installers and can custom design training for individual company needs.