# Closed Loop Gas Capture:
# Improving Gas Capture Through Redundancy

Closed Loop Gas Capture (CLGC) is a process that provides an alternative to flaring or shutting in producing wells due to temporary downstream market interruptions, such as when transportation or gas gathering markets temporarily reduce their capacity to transport gas from a producing field or area.

Currently, temporary market interruptions are a lingering source of flaring in the Permian Basin. During periods of market interruption, CLGC diverts gas from compressor stations or a gas gathering system through a pipeline to be metered and injected into a nearby well. The flow path of the well is temporarily reversed during the injection period. After the injection period, the well is produced conventionally using existing production and measurement equipment.

By reducing dependency on market runtime and using existing infrastructure, CLGC is designed to provide multiple environmental and operational benefits, including:

- **Minimizing Flaring Emissions** – by providing a real-time, automated response to reduced market takeaway.
- **Improving Recovery of Resources** – by enabling the continued production of oil that might have been shut in and the recovery of gas that might otherwise need to be flared.
- **Limiting Surface Disturbance** – by using existing compressors, wells, and production facilities, and requiring minimal additional pipeline infrastructure.

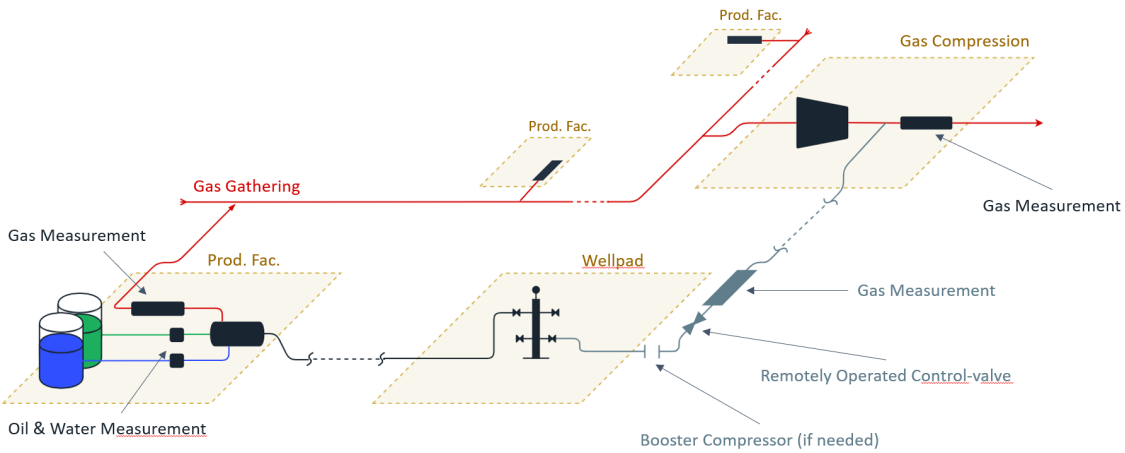


*Figure 1 - Closed Loop Gas Capture Schematic*

## Environmental Stewardship

Temporary downstream market interruptions, such as the shutdown of facilities and pipelines for maintenance and repair, can affect the ability to transport gas to processing facilities and result in the need to shut in producing oil wells or flare associated gas. In 2020, a multi-disciplinary team of EOG employees developed CLGC to provide an additional alternative to dealing with temporary downstream market interruptions.

Developing this concept required not only implementing a new technical procedure, but also working with the State of New Mexico to develop a regulatory framework for permitting CLGC projects.

Before approaching the regulatory agencies in New Mexico to propose the project, EOG technical teams selected a well suitable for injection that fit certain reservoir, geologic, structural, and land ownership parameters. The New Mexico Oil Conservation Division allowed EOG to apply for approval of CLGC as a pilot project through an administrative hearing. The pilot project was designed to allow both EOG and the agency to collect and analyze data regarding this type of injection.

EOG conducted a pilot test of CLGC in the Permian Basin in 2020. Results of this pilot test were successful and EOG is now working on expanding its pilot project to additional wells and operating areas. By engaging with regulators and other industry stakeholders, EOG has also worked to make CLGC available as an industry-wide alternative solution, and other producers have since begun to submit CLGC applications to NMOCD for review.

CLGC is a prime example of how EOG's innovative and collaborative culture is helping develop creative solutions to improve recovery of resources and minimize emissions.