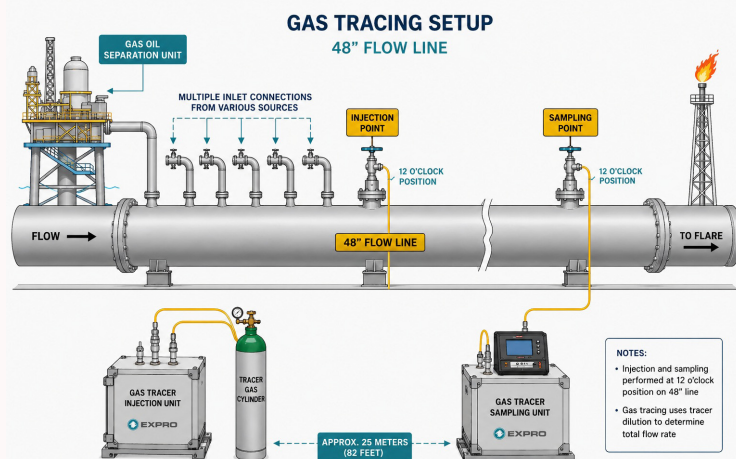


Expro Excellence

Improving Flow Assurance with Gas Tracer Monitoring

Well Flow Management | Flow Surveillance



Objectives and background

- The operator required independent verification of gas flow measurement on a **48-inch flare line**, as the readings from the permanently installed thermal meter were not considered sufficiently reliable
- Accurate flare gas measurement was essential for operational monitoring, flare reporting, emissions estimation, and measurement assurance
- The flare system experienced **low, unstable and highly transient flow conditions**, with gas entering the flare header from multiple upstream sources including separator outlets and relief systems
- Due to the large pipe size and the requirement to avoid shutdown or piping modifications, **Gas Tracing** was selected as the most suitable temporary verification technique

Expro Excellence

- Expro deployed its **Gas Tracing** solution using existing injection and sampling ports, eliminating the need for any permanent modifications to the pipeline
- A known quantity of tracer gas was injected into the flare line and sampled approximately **25 metres downstream** after complete mixing
- The total gas flow rate was calculated using the tracer dilution (mass balance) principle, providing a representative measurement of the **entire pipeline flow**
- The measured flow rates were independently compared with the permanently installed thermal meter throughout two monitoring campaigns

Value to the customer

- Provided an **independent reference measurement** to assess the performance of the installed thermal meter
- Demonstrated that the installed thermal meter was considerably **over-reading** as compared with the Gas Tracing measurements under the observed operating conditions
- Enabled evidence-based assessment of flare measurement performance without interrupting production
- Eliminated the need for costly pipeline modifications or installation of an inline flow meter
- Improved confidence in flare gas reporting, emissions estimation and operational decision-making
- Delivered a **temporary, portable and minimal intrusive** verification solution using existing pipeline connections

Insight



Increased Productivity

