

CO₂ gathering network services

Supporting energy transition

As the globe targets significant reductions in carbon emissions, the energy industry is adapting at an ever-increasing pace.

And, as more operators turn to processes such as sequestration and tertiary recovery to meet energy transition goals, concerns around the pipelines transporting CO₂ have increased.

Because CO₂ is heavier than air, as well as colorless and odorless, a leak could go undetected, allowing the CO₂ to spread low along the ground or in confined spaces, displacing oxygen and creating numerous health and safety risks.

Pipeline threats exist everywhere, and they are ever present. Whether it's an external threat like nearby excavation, or an internal threat like the very product the pipeline carries, or coating on the pipeline itself, maintaining pipelines and the ability to predict potential problems with pipeline stability has never been more important than it is now.

Repurposing decommissioned lines

Operators are now faced with the need to recommission previously decommissioned pipelines, which raises concerns around understanding the condition and worthiness of these dormant lines.

To meet approaching environmental requirement deadlines, Baker Hughes, Process & Pipeline Services (PPS) is prepared to partner with operators to reduce concerns around the safe

operation of those pipelines with our **fitness for service** solutions.

One source; complete solutions for years to come

Our Carbon Capture Services leverage the MagneScan super high resolution tool, along side strain-based integrity assessment, to provide the right solution for your business.

Baker Hughes' MagneScan tool sets the standard for reliable metal loss inspection results. Designed to withstand harsh operating conditions, it has proven its versatility in a wide range of applications in every type of pipeline – dry or liquid, overland or subsea.

Super high resolution detection/sizing of smallest defects (pinholes) improves accuracy of sizing, drawing on Baker Hughes' unparalleled inspection experience to bring the highest levels of accuracy to data analysis and interpretation. MagneScan detects:

- internal and external pitting
- general corrosion
- metal loss associated with dents and under casings
- repair shells
- metal object
- girth weld anomalies

Our magnet brush design results in a higher magnetic field introduced into the pipe wall, and an increased magnetic response from defects. Furthermore, the tri-axial sensors on all of our MagneScan tools:

Features and benefits

- Corrosion management and response planning
- Our highest-definition tools have the capability to detect pinhole-sized features, seeing the most minute areas of metal loss
- Detect and assess girth weld cracking, based on an extensive experience of detecting and correctly identifying manufacturing defects
- Detect bending strain and axial strain following external events to support geohazard management programs and identify new threat locations
- Revalidate pipeline integrity
- Cleaning to prepare for CO₂
- Inert system prior to commissioning
- Clean new or existing compressors

Additional services

- Flooding, cleaning, gauging and testing (FCGT)
- Pigging and gauging
- Dewatering and drying
- Pipeline conditioning
- ThreatScan – real time impact detection



- Discriminate axial features compared to single axis MFL
- Generate distinguishable signals for pin-holes on a reliable and repeatable basis
- Allow the overlay of data streams to ensure complexity is understood and accounted for in sizing methodology
- Eliminate the need for supplementary Transverse or 45-degree inspection data for metal loss features
- Provide sizing methodologies based on 100,000s of defect morphologies
- Confirmed specification based on 150,000 plus dig results, correlated to the inspection signals

Baker Hughes' AXISS™ service measures axial strain in pipelines. It is the solution needed to mitigate axial strains prior to developing into injurious values that may cause pipeline failures. AXISS offers a number of key advantages for axial strain monitoring:

- Enables cost-effective and continuous measurement of axial strain along the entire pipeline's length;
- Measures small changes in strain conditions over the lifetime of the pipeline;
- Provides proactive risk management by detecting critical strain conditions due to areas of known and unknown geohazards or other causes of pipeline axial loading.

Previously, this type of assessment required localized strain monitoring at known high-risk sites. AXISS can be run

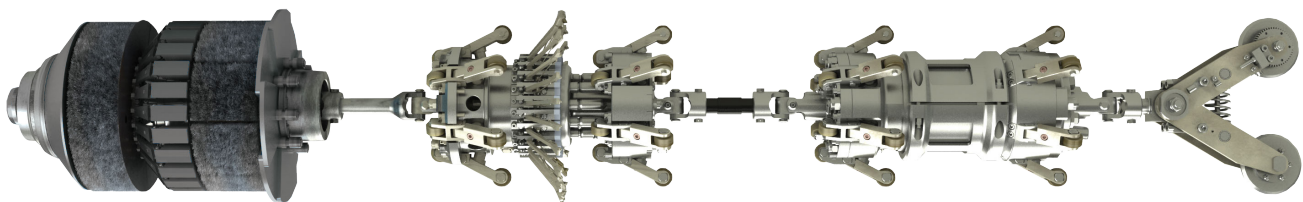
simultaneously with our MagneScan tool. Together, these two technologies provide an accurate measurement of both bending and axial strains which can be assessed by our integrity engineers to determine any areas where the total strain demand is exceeding the capacity of the system.

Using industry leading technology like RunCom™, the PPS suite of run-comparison software, we can analyze data from multiple in-line inspections, performing a direct and quantitative comparison to help operators understand the risk from corrosion growth to the future integrity of the pipeline so you can mitigate it before it becomes a problem.

PPS has a long history of providing accurate and reliable data on pipeline conditions and complete pipeline integrity solutions. That means you have one source providing information on the current condition of a pipeline, reducing risk and minimizing costs by avoiding unnecessary repairs while achieving regulatory and Health, Safety and Environmental compliance.

So when it comes to re-commissioning an out of service pipeline, Baker Hughes PPS has the technology, services, and people you can trust to provide the confidence you need for a new era of operations.

Contact a PPS team member and let us customize a solution to meet your particular needs.



MagneScan SHR+ (super high resolution plus) tool

Baker Hughes 