Did you know that since the 1960s, pipeline operators have been using an increasingly sophisticated technology called smart pigs to ‘see’ inside their pipelines?

In fact, these 'pigs', which stands for pipeline inspection gauges, are one of the industry’s main diagnostic tools. They travel through a pipeline to monitor its health, diagnose issues such as metal defects, forecast potential challenges and report any issues to the pipeline operator.

Smart pigs come in a range of sizes with varying features, customized to fit the pipeline they are monitoring.

**ONBOARD BATTERIES**
Power the collection of data, which is stored in the smart pig.

**SENSORS**
Detect anomalies and defects in the pipeline, and are able to determine if a potential issue is on the inside or outside of a pipeline.

**SEALING DISKS**
Allow the smart pig to flow with the product and speed controls ensure it doesn’t go too fast. Smart pigs can travel up to 3 to 5 m/sec and still gather good data.

**ODOMETER WHEELS**
Centralize the pig and take an accurate reading of the tool’s speed and distance travelled through the pipeline.

**DATA CANISTERS**
Store the data the smart pig collects as it travels through the line.

**GPS TRACKING**
Enables pipeline operators to pinpoint the exact location of the potential anomaly.

**MAGNETS**
Fill the pipeline with a powerful magnetic field as the smart pig passes through. The magnetic field is used to detect metal loss in the pipeline – if there is corrosion the magnetic field will 'leak' out of the pipeline in that area and be detected by the sensors.

**IT’S CALLED ‘SMART’ FOR A REASON!**

Can inspect in all sorts of conditions, including liquids and gas pipelines, low pressure or heavy-walled pipelines.

A pipeline does not need to be shut down to be inspected; a smart pig moves with the flow of the product.

Can detect a broad range of problems, including dents, wrinkles, pipeline movement from ground disturbance and changes in wall thickness and pipe coating.

Advancements in sensors, batteries and software continue to improve its monitoring and detection capabilities.