

## DAS Scrapper Tracking

Added benefits to the DAS Acoustic Distributed sensing for pipeline leak detection technology are the ability to also monitor for third party events, and for PIG TRACKING. We notice in the PIG tracking with our DAS the evidence of stalls or inefficient movement by the PIG In certain sections of the pipeline, which could be an indication of a design problem in a certain area or an issue with the pipeline itself. Being able to see this with the DAS does help identify any problem area before it becomes a potential catastrophic concern downstream. This ability to monitor in real-time the PIG velocity, stuck position, and high noise position or protrusion.

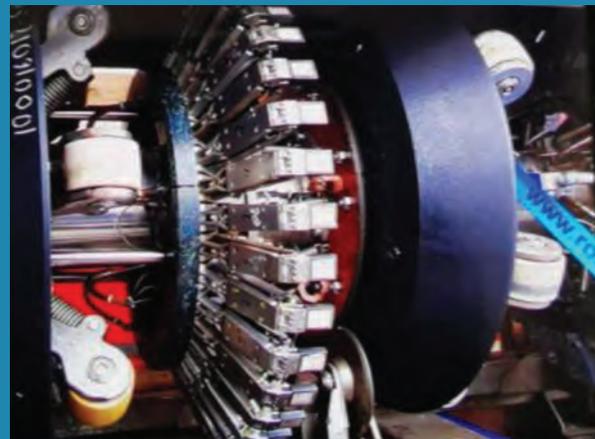


### DAS tracing output:

- ✓ Real-time PIG velocity profile
- ✓ Points of interest (stuck position, high noise position protrusion)
- ✓ PIG may get stuck and loose itself as  $\Delta P$  builds up

### PIG velocity may be affected by:

- ✓ Elevation profile, speed changes as the PIG goes up and down the hill, up and down crossings
- ✓ Flow velocity and consequently PIG velocity changes as pressure goes down
- ✓ Scrapers change speed as they accumulate dirt
- ✓ PIGs used to push liquids change speed, as they collect liquid at low points
- ✓ Hit protrusions (T junctions), welds, valves
- ✓ Bends



Instrumented PIG