

# Unified Pigging Records, Corrosion Logs & PM to Stop a Catastrophic Failure

#### CLIENT PROFILE

A national pipeline operator managing hundreds of kilometers of crude, refined product, natural gas, and multi-product transmission lines. Their network spans remote terrains, high-risk zones, and critical industrial corridors, requiring precise monitoring of corrosion, pressure integrity, pigging cycles, and right-of-way (ROW) patrols.

Any failure in the network could cause severe environmental, financial, and safety consequences.

#### CHALLENGE

The operator was facing escalating risks across their high-priority pipeline sections:

- Pigging activities logged manually, with inconsistent records of runs, anomalies, and cleaning output.
- Corrosion monitoring data scattered across spreadsheets, lab reports, and emails.
- Difficult to correlate ultrasonic thickness readings, CP (Cathodic Protection) data, and hotspot progression.
- Preventive maintenance (PM) overdue on block valves, cathodic protection stations, pumps, and pressure relief systems.
- ROW patrol findings not linked to pipeline sections, causing missed early warnings.
- No unified system to detect when multiple risk factors aligned on the same line segment.





## Solution Provided by Asset Infinity

Asset Infinity deployed a comprehensive Pipeline Integrity & Reliability Platform, bringing pigging, corrosion, PM, and inspection logs into a single ecosystem.

#### **Pigging Lifecycle Tracking**

- Every pigging run recorded digitally with:
  - Launch & receive timestamps
  - Differential pressure trends
  - Debris analysis
  - Cleaning metrics
  - Anomaly flags
- Supervisors received auto-alerts if pigging cycles were overdue.

### Corrosion & CP Monitoring Consolidation

- Ultrasonic thickness readings logged with geotagged evidence.
- CP station outputs captured systematically (rectifier readings, potentials, trends).
- Corrosion hotspots visualised on a pipeline-section map.
- Auto-generated early warnings for thinning trends beyond tolerance.

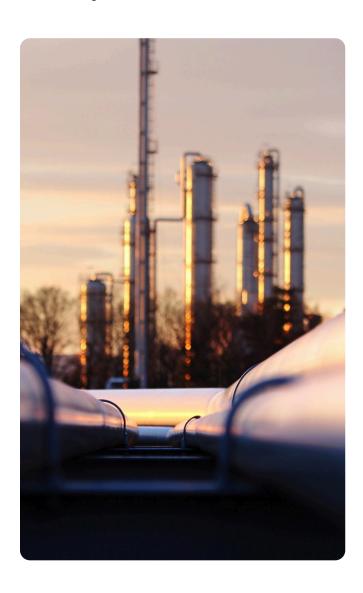
#### **Preventive Maintenance Automation**

- PM schedules created for:
  - Block valves
  - Relief systems
  - Booster pumps
  - Compressor stations
  - CP/AC mitigation systems
  - Metering stations
- Missed PM escalated immediately to area managers.



#### **ROW Patrol & Integrity Observations**

- Field patrollers recorded encroachments, leaks, exposed pipes, vegetation risks, and third-party activity from a mobile app.
- All findings mapped to specific pipeline chainage and kilometer markers.



#### Integrated Pipeline Health Dashboard

- Unified view combining pigging results, corrosion data, ROW findings, PM compliance, and failure patterns.
- Enabled engineering teams to detect highrisk correlations, such as:
  - CP low output + thinning trend
  - Repeated pigging debris + corrosion hotspot
  - Missed PM + observed vibration or pressure deviations

This made potential failures visible months before they became dangerous.



#### MEASURABLE BENEFITS

- Major line failure prevented by identifying a high-risk corrosion segment early.
- 42% reduction in overdue PM within the first 90 days.
- Unified integrity logs improved engineering decisions and early interventions.
- · Visibility into high-risk hotspots allowed timely reinforcement and repair.
- Faster pigging documentation improved operational readiness and audit compliance.

## IMPLEMENTATION & ROLLOUT

- Rolled out across critical pipeline corridors first, then expanded to the full network.
- Technicians, ROW patrollers, corrosion engineers, and integrity teams trained to use mobile workflows.
- Existing historical corrosion and pigging logs migrated into the sustem.
- Deployment completed with zero operational interruption.

#### **OUTCOME & IMPACT**

The pipeline operator achieved:

- A consolidated and accurate view of pipeline health.
- Early detection of a corrosion-prone segment that could have led to rupture.
- Stronger coordination between integrity, maintenance, and field teams.
- Proactive interventions that reduced both safety risk and repair cost.
- Stronger audit, regulatory, and environmental compliance posture.



#### CONCLUSION

By unifying pigging logs, corrosion monitoring, preventive maintenance, and ROW inspections, Asset Infinity helped the pipeline operator prevent a major line failure, building a stronger integrity management framework and significantly reducing operational risk.