# Root Cause Analysis Report

## Pipeline Leak Incident

**Client:** G'Day Gas Distributors Pty Ltd

**Pipeline:** Wallumbilla Gladstone Pipeline

**Section:** Chinchilla to Biloela (300 - 450 km)

**Date:** July 29th, 2024

### Incident Summary

During the pigging operations conducted on July 29th, 2024, for the Chinchilla to Biloela section of the Wallumbilla Gladstone Pipeline, a potential leak or breach was detected at approximately 320 km from the Chinchilla station. Immediate actions were taken to address the potential leak, including notification to authorities, detailed inspections, and pipeline shutdown for repairs.

### Root Cause Analysis

A comprehensive investigation was conducted to determine the root cause of the leak incident. The following factors were identified as contributing causes:

| Cause | Description |
|---|---|
| Material Defect | Detailed inspections revealed a defect in the pipeline material at the leak location, potentially caused by a manufacturing flaw or undetected damage during installation. |
| Environmental Factors | The pipeline section where the leak occurred was subject to soil movement and erosion due to heavy rainfall events, which may have contributed to increased stress on the pipeline material. |
| Corrosion | Analyses of the affected area indicated signs of localized corrosion, which could have weakened the pipeline material over time and led to the eventual breach. |
| Maintenance Gaps | A review of maintenance records revealed that the affected section had not undergone a comprehensive inline inspection in the past five years, which may have allowed the defect and corrosion to go undetected. |

## Corrective Actions

- Repair and replacement of the affected pipeline section with new materials that meet the highest quality standards.
- Implementation of enhanced corrosion monitoring and prevention measures, including cathodic protection and coatings.
- Review and update of maintenance schedules to ensure more frequent inline inspections and pigging operations.
- Evaluation of pipeline routing and installation methods to mitigate environmental factors, such as soil movement and erosion.
- Comprehensive training and awareness programs for pipeline maintenance personnel to improve defect identification and reporting.

## Conclusion

The root cause analysis identified multiple contributing factors that led to the pipeline leak incident, including material defects, environmental factors, corrosion, and maintenance gaps. Corrective actions have been implemented to address these issues and prevent similar incidents from occurring in the future. Ongoing monitoring, inspections, and adherence to industry best practices will be crucial to maintaining the integrity and safe operation of the pipeline.

**Prepared by:**
Piping Validation Services (PVS)