

# Learning From Incident: Condensate Export Loss of Primary Containment

24 April 2023

# LFI: Condensate Leak From Offshore Export Line

## What Happened?

- Mass balance on the condensate was not converging between export and landed flow meters.
- Investigation by Process Engineer led to the discovery of a leak on the land shores about 500m away from the beach crossing (Nov 2022).

## Background

- Dwindling gas reserves resulted in a poor separation of the sea water from condensate at the rig since 2019.
- Large amount of sea water exported together with condensate to Onshore separator.

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## Background Continued

- The pipeline service was indirectly changed to handling large amount of sea water compared to condensate high flows.
- Pipeline corrosion treatment became ineffective with concentration levels detected being lower than required despite increased injection rate.
- Corrosion inhibitor was designed for 2% water / 98% hydrocarbons.
- Cathodic protection compromised by the presence of sea water forming a bridge on the insulation joint.
- In 2020, pigging exercise had identified the exact spot as area of concern with material loss and remaining life of 24 months
- Temporal repairs by means of leak seal device was completed in Feb 2023

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## Barrier Elements That Failed

- ***Mitigation control against escalation:*** Mode of operation proved impossible to isolate source of LPOC resulting in an environmental incident of ground contamination in a residential area.
- ***Safety management control:*** The leak was identified as material loss on the welding seam attributed to poor corrosion treatment and compromised cathodic protection.
- ***Safety management control:*** The causation of the incident showed lack of recognizing process change (MOC).
- ***Leadership and Commitment:*** Management's reluctance to implement recommendations from pigging exercise report

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## Incident Classification

- The incident was regarded as Tier 1, uncontrolled release of flammable product (straight run gasoline) for three months

## Take Away Learnings

- Recognize change and apply MOC procedure to evaluate impact of change.
- Implementation of risk improvement recommendations
- Millions of rands spent on ground remediation and temporal repairs could have been avoided by a technical review (MOC process)
- Continuously review OSP (oil spillage procedure) for fit for purpose

# *Questions*