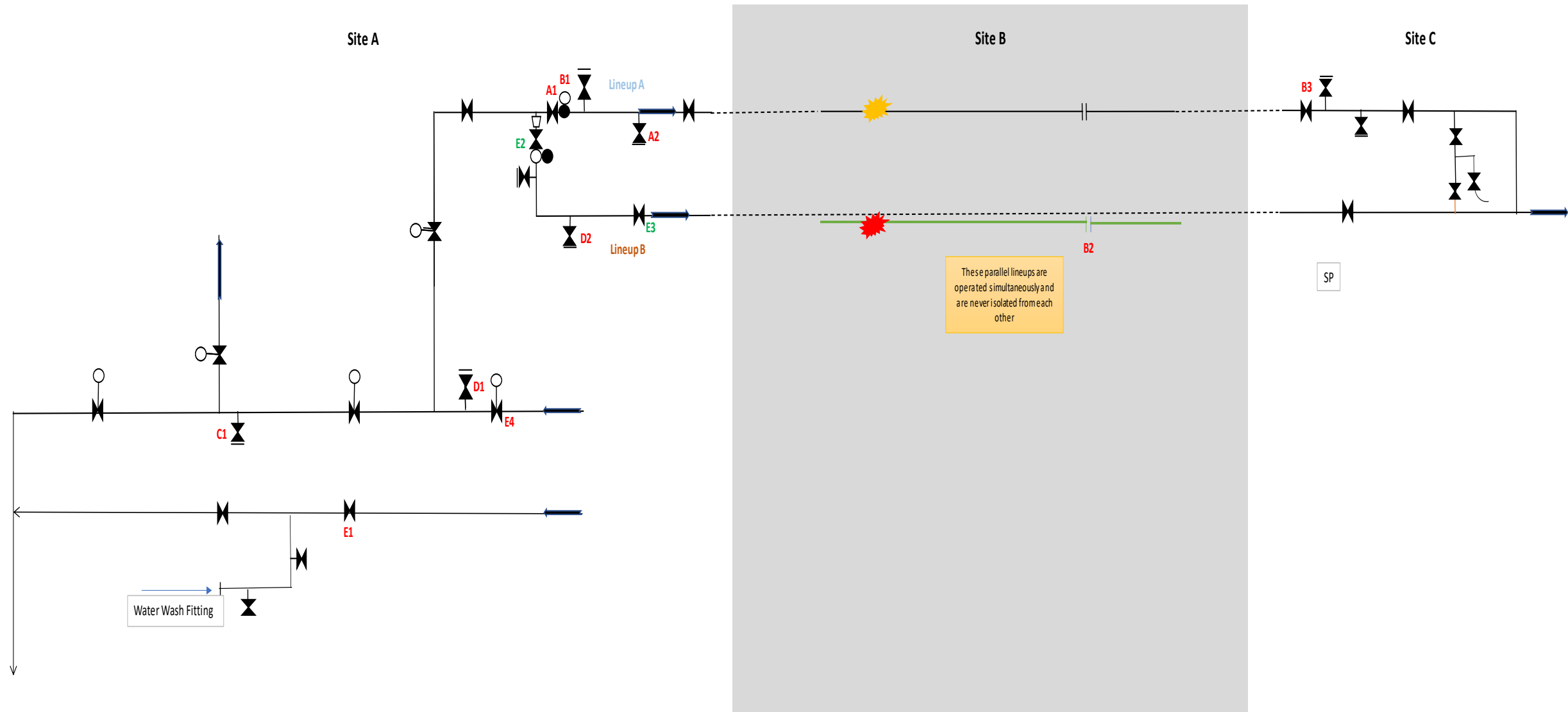


Incident Learning: Mogas Line Leak after Decommissioning



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1. BRIEF DESCRIPTION OF EVENTS

Incident 1 - Approximately 162kg of Mogas was released from a Mogas line (Lineup B) when the cold cut of the line progressed through wall on the bottom half. The Mogas, which continued to be released for 30-45 minutes, was contained in a drip tray and cleared using the gulley sucker. The leak was arrested with the installation of a clamp. This was classified as an API Tier 2 incident

Incident 2 – 1332kg Mogas was released when the line was pressurized with fire water in an attempt to push the Mogas from the upstream piping to Site C via Lineup B. The line split at the cold cut area releasing the contents of the 6” 100m pipe. This was classified as an API Tier 1 incident.

2. BACKGROUND

There are 2 parallel Mogas rundown lines that run across Sites. Lineup A was believed to be the only line that came up at Site B before entering Site C, whilst Lineup B was believed to run underground from Site A all the way to Site C.

The Mogas rundown line at Site B (Lineup B) developed a leak due to external corrosion. Due to the belief that Lineup A was the line with the leak, this line was decontaminated and water washed in preparation to remediate the corrosion.

Subsequent to this leak, the upstream Mogas line needed to be evacuated to prepare for inspection of the line. Because Lineup B was thought to have been the healthy system, operations attempted to use Line-up B to pump out the upstream section of piping. Failure to pump out the system was attributed to the diaphragm pump being used, hence during this period Lineup B was being filled with Mogas.

3. IMPACT

- Potential for a VCE and serious injury to people/fatalities if an ignition source was present.
- Increase in risk due to use of Gulley Sucker vacuum pump on low flash product
- Mogas transfers between Sites via the rundown line stopped for an extended period

Incident Learning: Learnings for Implementation

1. ROOT CAUSE

- The incorrect identification of the leaking line.
- Decontamination of the incorrect line in preparation for the cold cutting activity.

2. INVESTIGATION INSIGHTS

a) Incorrect Line Identification

- Operations staff have been taught these routings by on-site line identification. There was a very high level of confidence in this routing. Training to include EFD line identification instead of using PFD's only.
- There are inaccuracies and inconsistencies in the EFD's for these 2 lines. This increased the difficulty in following the line routing, especially on underground piping. Underground lines to be mapped for the cross-Site transfer lines and EFDs to be updated accordingly.
- Reasonable checks were performed to verify the right line was prepared for maintenance on the day. However, due to the high confidence level that the correct line had been decontaminated and isolated, no further checks were done prior to the cold cut despite the long duration between the two activities.

b) **Risk tolerance of Mogas releases may be high.**

- Despite a combination of strong and weak signals that the incorrect line may have been decontaminated and isolated, there was a low frequency of reporting and escalation of deviations surrounding the events following the initial leak.

c) **Use of gulley sucker on Low Flash Material**

- The risk associated with the use of the Gulley sucker vacuum pump for low flash material was not recognized. Water Draining procedures to be reviewed for systems with the potential to have low flash material.