Diesel Spill at the Gooseneck-18 April 2023

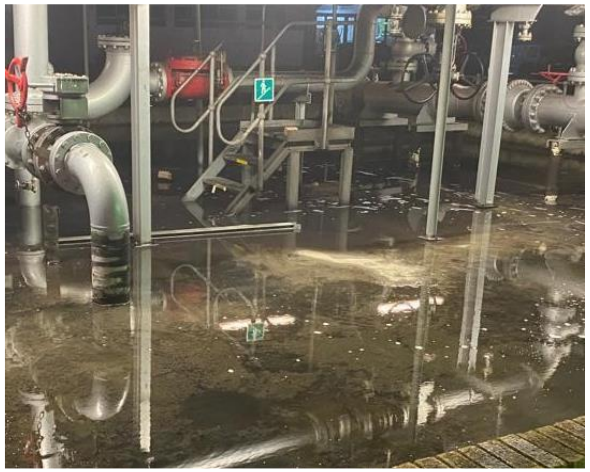
1. Description of event

A spill was discovered at about 5am on the 18th April, where diesel was reported to be leaking from the pumphouse on Koeberg road, the refinery blending and shipping team as well as the refinery Fire Department were notified and deployed to the site. A high point bleeder was found in the open position and diesel was spraying from it. Traces of diesel has found its way into the nearby Theo Marais Canal as well as the Diep River via a stormwater channel and covered a 3km distance downstream. The spill has contaminated the water, wildlife and vegetation. Our contractor reported 82 barrels of product has been recovered from the site and canal using booms, peat sorb as well as super suckers.
The estimates for the volume of diesel released were inconclusive

2. Immediate actions taken

Astron Energy Fire department was deployed and isolated the open bleeder valve.
The spill cleanup contractor responded to commence clean up activities.
Fact Gathering has commenced for a taproot investigation
The spill was reported as a NEMA section 30 to the local environmental authorities.
An incident alert was distributed to the Refinery to share initial lessons learnt. Discussions and coaching have been conducted with the relevant operations personnel.
A bar plug has been placed on the bleeder valve.

3. Sketch/Photograph



Gooseneck valve station bunded area covered with DieseL

4. Summary of main causes

Evidence reviewed thus far reveals: The Gooseneck valve was not intrusively locked out and tagged out (LOTO), the open bleeder valve was not tagged prior to handing the equipment over to the maintenance crew.
Maintenance had handed the equipment back to operations without having the permit signed off.
The Pre-Start Up Safety Review (PSSR) paperwork was not completed and therefore there was no confirmation of the bleeder valve position prior to putting the line in service.

5. Investigation follow up actions

The Environmental team is assessing the environmental impact on the affected area including a 3-kilometer stretch of the canal downstream of the spill. Absorbent booms were put in place in the canal and replaced regularly.
Surface water sampling confirmed presence of diesel as far as R27 bridge on 20 April
Daily assessments of the canal by boat, undertaken from 26 Apr to 5 May –reported rainbow sheens visible. Sheen sampling conducted on the 26th April confirmed the presence of diesel sheening at various locations along the canal up to R27 bridge; awaiting results from 4 May.
In consultation with relevant external stakeholders, booms were removed on the 5th May as debris & sewage building up along booms and no diesel sheen
Weekly boat surveys continue.
A soil & groundwater assessment around the Gooseneck and appropriate ecosystem monitoring for the canal are being determined.
Confirmed as a Process Safety API Tier 2 event.

6. Lessons Learnt

Operations and maintenance to ensure the systems that will be worked on by maintenance are intrusively locked out and tagged out before the work can commence
The Pre-Start Up Safety Review (PSSR) must be completed and line ups confirmed before commissioning equipment.
Permits must be closed out and signed of by the responsible parties when maintenance is completed