



# Incident Findings

## MEK Fire Incident (29 April 2025)

9 May 2025

# Incident Summary

On the 29 April 2025 at 16:05 , during the demolition activities at SAFOR, at the MEK (unit 4) a flash fire occurred while downsizing a drum filter (D40103). The demolition excavator operator was sectioning the drum with a hydraulic shear attachment, when he identified smoke emitted inside the internal drum of the vessel. After lifting the drum with the hydraulic shears for further inspection a flash fire occurred. The Engen Fire Department was notified and extinguished the fire.



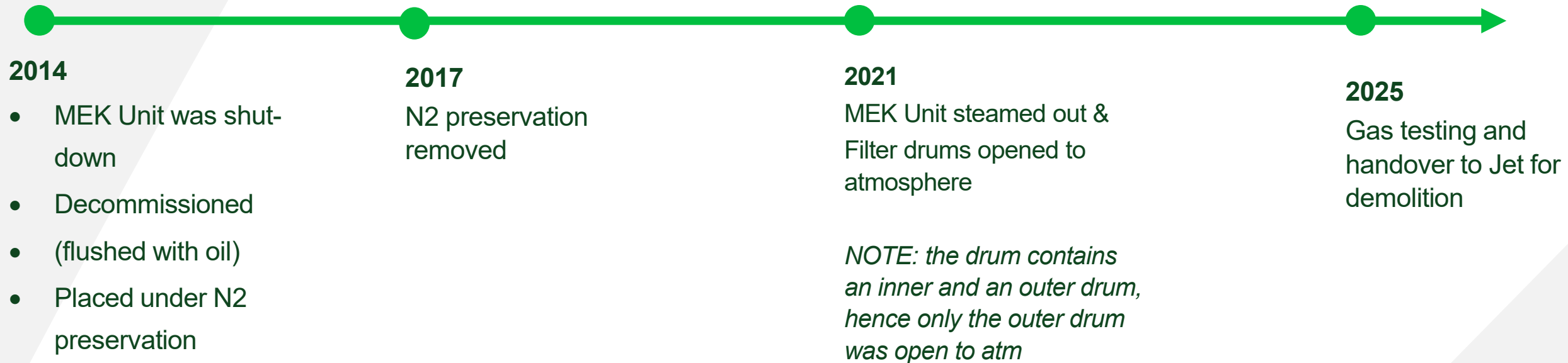
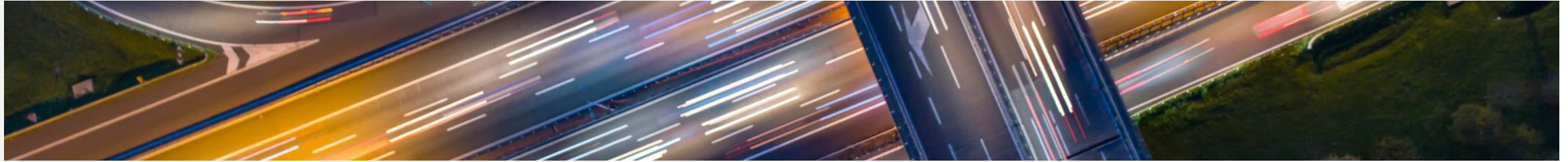
# Drum Vessel Internals & tubes exposed after downsizing the outer vessel







# Background : Historical information



# Pre-checks before handover to JET

1. Sight glasses were open for several years
2. Under pre-demo prep : Equipment was visually inspected from the outside – no signs of solvent present and no smells on all 3 vessels

*Note: Equipment was not listed on the Exceptions list due to gas test on the openings which raised no concerns*

3. Prior to handover to Jet (as part of the handover documents) - Gas test was done on all open sight glasses (confirmed LEL free on outer drum)
4. Handover document ensured precaution that unit is not HC-free – only cold-cutting



# Incident Timeline (1)

- **The First Filter Drum was sectioned approximately three weeks prior to incident – with no concerns noted**
- **The Second Drum sectioning commenced on the 22<sup>nd</sup> of April and was completed by 11:30am on the 29<sup>th</sup> of April 2025**
- **The third Drum sectioning commenced by 12:40pm on 29 April 2025**
- **The method used by the operator was to remove all material surrounding the drums to create access around the drum.**
- **The operator sheared an opening into the drum side wall, to create access for the hydraulic shear attachment to section the internals.**
- **During this phase, the operator noticed smoke towards the far side of the drum, he lifted the drum with the excavator to confirm what he was observing, when he noticed a sudden flash of flames.**
- **At approx. 16:04 the operator released the drum and retreated to safe location away from the fire**

## Incident Timeline (2)

- **At approx. 16:05 the site manager, JP Van den Ende, requested the site supervisor, Zamisimo Mntambo immediately notify the fire department via the Engen two-way radio.**
- **The fire monitors were accessed and activated by approx.. 16:06.**
- **All demolition personnel were evacuated.**
- **The Fire Department arrived at 16:10 and started fighting the fire with foam at 16:15.**
- **The fire was extinguished by 16:22.**
- **The fire department confirmed that they were satisfied that the fire was fully extinguished and that they will monitor the area during night shift.**
- **A Jet Demolition safety officer and supervisor remained at the area until 17:40 to visually confirm that the fire didn't reignite**

# VE RAM Risk Ranking

## F. INCIDENT CLASSIFICATION, REPORTING AND INVESTIGATION

SEVERITY	CONSEQUENCES				INCREASING LIKELIHOOD				
	People	Assets	Environment	Reputation	A	B	C	D	E
					Never heard of in the Industry	Heard of in the Industry	Has happened in the Organisation or more than once per year in the Industry	Has happened at the Location or more than once per year in the Organisation	Has happened more than once per year at the Location
0	No injury or health effect	No damage	No effect	No impact					
1	Slight injury or health effect	Slight damage	Slight effect	Slight impact					
2	Minor injury or health effect	Minor damage	Minor effect	Minor impact					
3	Major injury or health effect	Moderate damage	Moderate effect	Moderate impact					
4	PTD or up to 3 fatalities	Major damage	Major effect	Major impact					
5	More than 3 fatalities	Massive damage	Massive effect	Massive impact					

FIGURE 1: VIVO ENERGY HSSEQ RISK ASSESSMENT MATRIX

The **actual** Consequence Severity on the RAM is used to determine the requirements for incident notification and reporting. Refer to the VE Incident Reporting Procedure and matrix for the applicable guidelines.

Actual RAM ratings of incidents should be expressed in the form 'Assets 3' or 'Environment 4'. Note that incidents may have Consequences in more than one PAER category. When using the RAM diagram to display the actual RAM rating of an incident, it is recommended to show the ratings as boxes on the Consequence scale as shown in Appendix 4, Example 4.

For the example in Section 3 involving a leak of fuel oil via the drain system into the sea, the consequences might be the financial loss of fuel oil not recovered and vaporised, environmental damage to the beach and adverse attention by the national media. The consequences might also extend to harm to the people clearing up the spill should they inhale vapours or come in contact with the fuel oil. The RAM Consequence Severity might be People 3, Assets 2, Environment 3 and Reputation 4.

For accident investigation, all incidents with an actual RAM 4 and above ratings, TRIPOD investigation shall be carried out in identifying the root causes. Incident rating of 3 that has a high potential of 4 and above, TRIPOD investigation should be considered as per Management discretion. All incidents with less than RAM 3 (0-2) rating shall have a basic incident investigation in order to identify and capture the learnings.

# RCAT Process : Step 4

SEVERITY	CONSEQUENCES				INCREASING LIKELIHOOD				
	People	Assets	Environment	Reputation	A	B	C	D	E
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0	No injury or health effect	No damage	No effect	No impact					
1	Slight injury or health effect	Slight damage	Slight effect	Slight impact					
2	Minor injury or health effect	Minor damage	Minor effect	Minor impact	X				
3	Major injury or health effect	Moderate damage	Moderate effect	Moderate impact					
4	PTD or up to 3 fatalities	Major damage	Major effect	Major impact					
5	More than 3 fatalities	Massive damage	Massive effect	Massive impact					

**During cold-cutting with hydraulic shears during the DSS activities – solvent from the inner drum of vessel D40103 was exposed resulting in a flash fire**

- Localised flash fire for approx. 20min
- Plumes of black smoke emitting from filter insulation
- 1 community complaint to authorities who then contacted Engen
- Distribution of video footage by community member to Jet and authorities – (no details if shared on social media)

**2A (VERY LOW)**

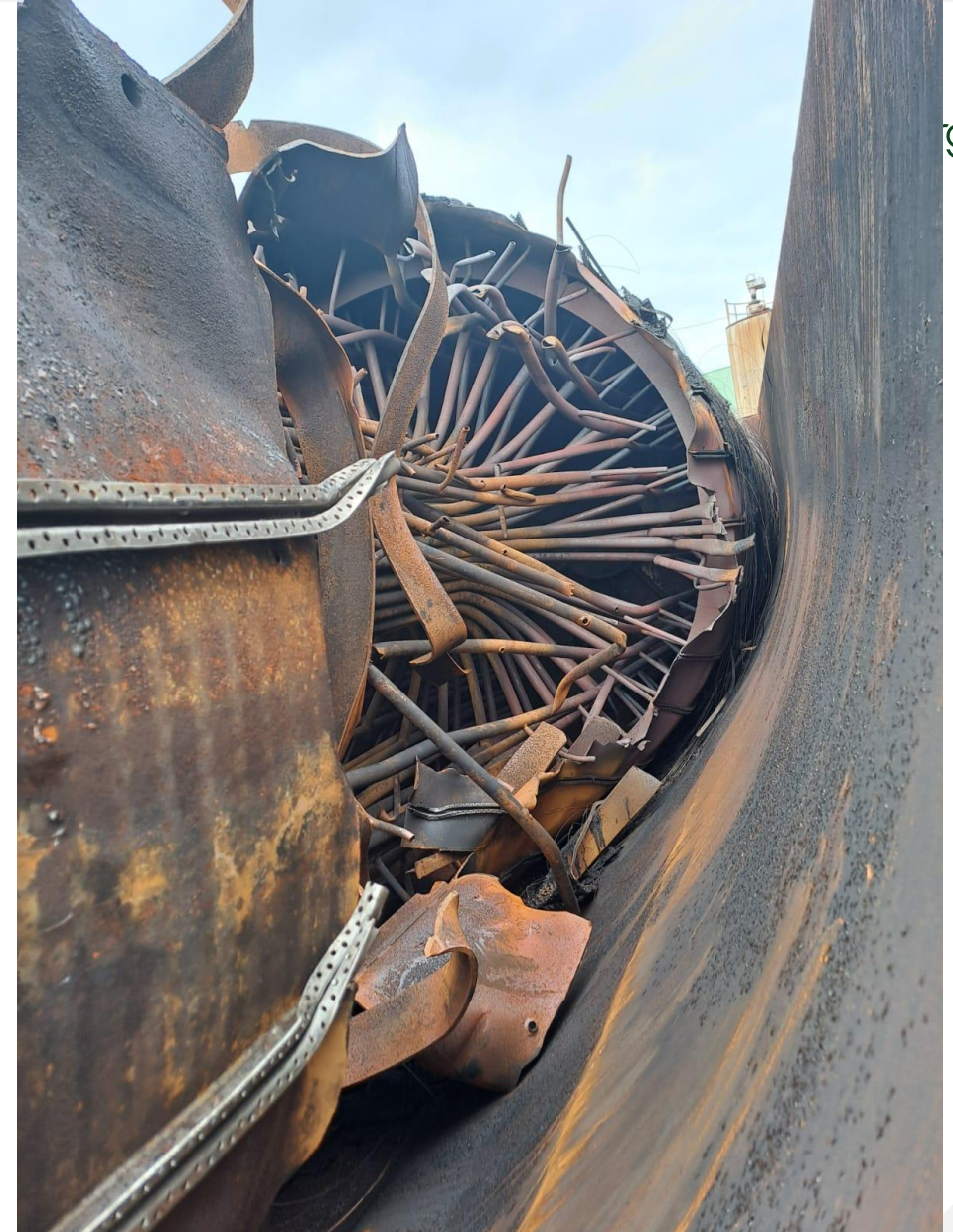
FIGURE 1: VIVO ENERGY HSSEQ RISK ASSESSMENT MATRIX

# Presence of solvents in the drum filter

It would not have been possible to completely deinventory and clean this drums (D40-103). The likelihood of solvents in the tubes due to

Not easy to flush and perform an effective steam out(due to configuration of the tubes)

Process upset (ie filter cloth torn, wax ingress)



# Corrective Actions

## **1. Treat vessels with complicated internals differently ie. (Jet /Engen)**

1.1 Drill holes or cold-cut piercing to create access to perform gas test after felling towers/vessels and before proceeding with downsizing and sectioning

1.2 For vessels with complicated internals must place logical hold points (gas testing) when downsizing before inner vessel / internals are reached

1.3 Identify these vessels: Engen may need to list all the vessels identified with complicated internals

## **2. Team review & agree on how to implement recommendation 1 effectively (Engen )**

## **3. Jet to have charged hose and foam line on stand-by when downsizing vessels/equipment with inner and outer sections (Jet)**

**After paying the high price of an incident, we often miss opportunities to learn from it**



# Learnings

1. Emergency response Plan where first response to incidents by Jet as per current Preparedness Plan and Engen Fire dept on stand-by (as per current philosophy) was proven to be effective
2. Methods of moving vessels to an open area before downsizing was effective (to identify and address incidents quickly in the event of an emergency) and to allow access for fire-fighting
3. Jet method of cold-cutting using mechanically (and no man-handling) is effective and prevented injury
4. Increased gas testing (ie. Verification after Jet testing) has been implemented
5. Daily engagements with Jet | Engen for planning and 24 hr lookahead

# Next Steps

1. Update RCAT incident format report in word
2. Obtain footage from Neville (CCTV)
3. Obtain interviews from two interviewees
4. Presentation to GM
5. Submit report to authorities



**THANK YOU**

