

CASE STUDY

Refrigerant Quality Analysis Helps Troubleshoot Underperforming Critical Refinery System

BACKGROUND

About the Customer

A leading supplier, distributor, transporter, and retailer of petroleum and associated products in Australia. To effectively serve its extensive customer base across Australia, it must efficiently manage and operate a diverse infrastructure network.

About A-Gas

A-Gas is a world leader in the supply and lifecycle management of refrigerants and associated products and services. Through its market-leading recovery, reclamation, and repurposing processes, A-Gas captures refrigerants and fire protection gases for future re-use or safe destruction, preventing harmful release into the atmosphere.

For over 30 years, A-Gas has supported its clients and partners on their environmental journey by supplying lower global warming gases and actively increasing the circularity of the industries it serves, building a sustainable future.

CHALLENGE

At one of their key high-risk infrastructure sites, the customer was experiencing severe performance issues with a critical operational system containing a nine-tonne charge of high global warming potential (GWP) and ozone-depleting refrigerant gas. After ruling out other factors, it needed to identify whether the refrigerant was contaminated.

The customer needed the gas recovered safely to avoid the release of gas into the atmosphere. Additionally, the customer wanted to verify the amount of refrigerant in the system to assess any loss from potential system leaks.

AT A GLANCE

Challenges

- Supporting the customer with resolving its system operating problems.
- Accurately verifying the amount of refrigerant to measure potential losses.
- Recovering refrigerant with a high global warming potential at a high-risk site, while preventing its release into the atmosphere.

Benefits

- Thorough analysis of system fluids revealed refrigerant and oil complied with AHRI 700 standards, avoiding the need to replace a significant amount of refrigerant.
- Extending the lifecycle of the refrigerant, providing cost savings.
- Safe recovery of high GWP refrigerant, preventing its release into atmosphere.



"By gaining insight into the quality of fluids circulating through its critical system, the client achieved substantial cost savings and effectively ruled out contaminated system fluids as a concern, while exploring alternative potential causes."

Daniel Tanaskovic

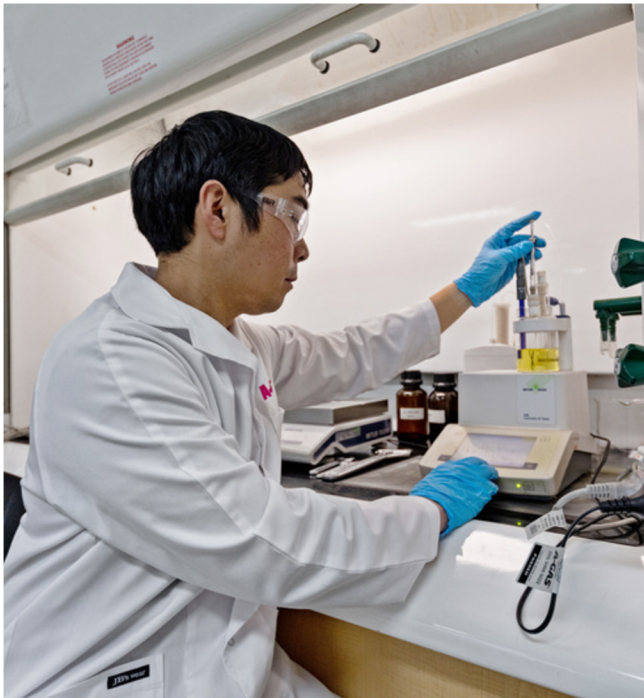
Sales and Operations Manager,
A-Gas Rapid Recovery Australia

SOLUTION

Due to the client's complex needs, A-Gas Rapid Recovery was commissioned to recover refrigerant gas from the underperforming system. Rapid Recovery's mobile high-speed recovery equipment and pump down cylinders, together with hoses running up to 75 metres long, allowed the Rapid Recovery technician to safely and efficiently recover a large amount of high GWP refrigerant from the system, without compromising safety. The recovered refrigerant was weighed on-site to verify the amount of refrigerant that was in the system.

Using the A-Gas REFRIG HEAL+H CHECK™ kit, samples of the refrigerant gas and oil from the system were taken and sent back to A-Gas' laboratory for analysis.

REFRIG HEAL+H CHECK™ is a unique tool which provides a comprehensive analysis of refrigerant gas and oil running through a system, reporting results against AHRI 700 Standard.



RESULTS

The laboratory analysis results confirmed that the refrigerant and oil in the customer's system met all AHRI 700 specifications, indicating that neither the refrigerant nor the oil quality posed significant performance issues. As a result, there was no need for the customer to replace the nine tonnes of refrigerant with virgin product, resulting in substantial cost savings.

CONCLUSION

A-Gas' expertise provided the customer with a solution that enabled it to maintain its operational capacity throughout the recovery and analysis processes. The A-Gas REFRIG HEAL+H CHECK™ analytical kit uses global testing standards to fully understand the total health of a system. The results assisted the client to further investigate other factors that may be impacting its system's performance.

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Refrigerant quality analysis validates conformance to AHRI 700 Standard in critical refinery system