

CASE STUDY

CoMic™ – Highlights Need for Increased Corrosion Inhibitor Use



BACKGROUND An offshore UK oil and gas operator employed the CoMic™ methodology as a means of determining optimal dose of corrosion inhibitor across the facility. The facility comprised of production and processing facilities and oil was exported to shore via a pipeline for final re-sale. The corrosion inhibitor in use was primarily oil soluble due to its requirement to protect the oil export pipeline. The oil soluble nature of the product meant that traditional residual techniques for corrosion inhibitor detection were not appropriate. Therefore, the unique methodology employed by CoMic™ was required.

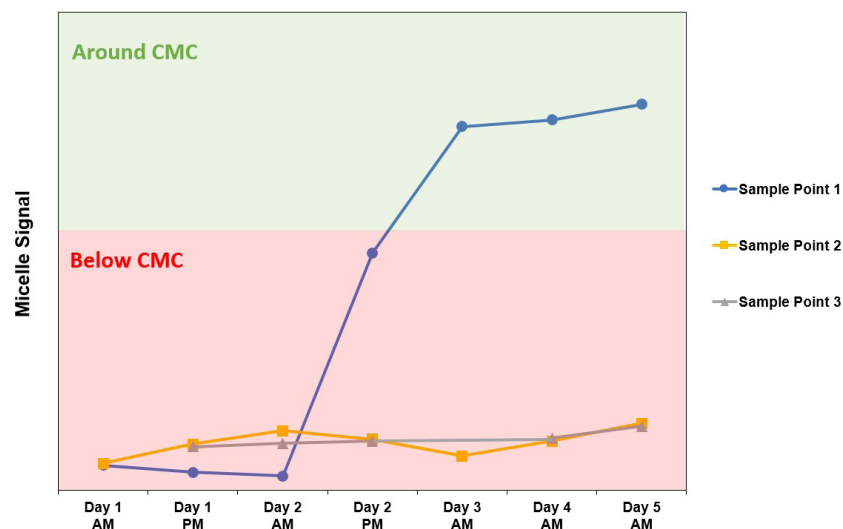
The use of CoMic™ allows optimal dose rate of film-forming corrosion inhibitors to be determined by determining micelle presence. Film-forming corrosion inhibitors, such as that in use on this facility, form micelles when the ‘Critical Micelle Concentration’, or optimal dose, has been achieved. A field deployment covering five days was carried out to ascertain micelle presence across the asset.

TESTING

The investigation involved onsite sampling from three sample points across the facility, performing CoMic™ analysis to determine micelle presence and manipulation of the dose rate according to the results.

Initial analysis on Day 1 showed a lack of micelle presence, the operator was informed and investigation revealed corrosion inhibitor was not being dosed. This was rectified and results showed that the system required an approximate equilibrium time of 10 – 28 hours to achieve adequate corrosion inhibitor coverage, indicated by the positive presence of micelles.

Samples taken from Points 2 and 3, which were co-mingled fluids, showed no micelles and highlighted these areas of the facility may be at risk from under dosing.



A game changing service to help achieve optimal usage of corrosion inhibitor

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SUMMARY Onsite testing allowed the operator to assess corrosion inhibitor dose across the facility. Results were fed into the integrity management system and dose rates were changed accordingly.

PROBLEM	SOLUTION	RESULT
Corrosion inhibitor availability required to be understood across production facility	CoMic™, a unique onsite analysis, to determine the CMC and therefore optimal dose	CoMic™ detected micelle presence and highlighted areas with no micelles. Integrity management procedures were reviewed accordingly

FOR UNDER-DOSED SYSTEMS, BETTER MANAGING INTEGRITY WITH TECHNOLOGIES SUCH AS COMIC™ HELPS MITIGATE THE RISK OF INCURRING HIGH COSTS; PIPELINES COST CA. \$3M PER KM TO REPLACE

FOR OVER-DOSED SYSTEMS, COST SAVINGS CAN BE SIGNIFICANT. FOR ONE CUSTOMER SAVINGS OF >\$0.4M A YEAR ARE ANTICIPATED



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