ID FAN BEARING FAULT DETECTED

Machine Sentry® condition monitoring identifies a step change in vibration on a safety-critical ID fan motor, allowing bearing replacement to be planned before failure

A UK water and wastewater operator uses a safety-critical induced draught (ID) fan as part of its plant operations. The availability of this asset is essential, with an unexpected failure carrying the potential to contribute to a plant shutdown.

Ongoing condition monitoring through the Machine Sentry® platform provided visibility of the fan motor's vibration behaviour over time. When a significant change developed in March 2026, the monitoring data gave the maintenance team the warning needed to plan corrective work at a suitable time and minimise disruption.

THE CHALLENGE

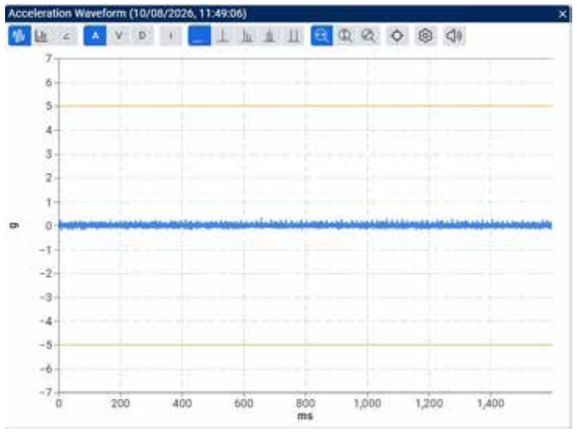
Condition monitoring identified a recurring annual issue with the ID fan motor. In March 2026, vibration data showed a significant change, with increased high-frequency activity indicating developing bearing defects.

As the ID fan is safety critical, continued deterioration could have caused asset failure and potentially contributed to a wider plant shutdown.

OUR APPROACH

AVT Reliability reviewed the vibration trends in Machine Sentry®, confirming evidence of developing bearing defects and recommending motor bearing replacement.

Continued monitoring allowed the maintenance team to plan the intervention without an immediate reactive shutdown.



OUR FINDINGS

The March 2026 data showed a clear change from the fan motor's previous vibration behaviour. High-frequency activity within the spectrum and time waveform was consistent with bearing deterioration, supporting the recommendation to replace the motor bearings before the condition progressed further.

An action was raised with the site team and the work was scheduled for April 2026.

"The value here was being able to see a clear change in the motor's established vibration behaviour before the bearing condition developed into a failure."
AVT Reliability Engineer

OUR SOLUTION

The motor bearings were replaced in April 2026. Post-maintenance vibration readings were then collected, providing a direct comparison with the condition identified before the work was completed.

The combination of early warning and continued monitoring allowed the site to schedule the work around its maintenance requirements rather than respond to an unexpected failure of a safety-critical asset.

THE OUTCOME

Machine Sentry provided the condition history and diagnostic data needed to identify a developing bearing fault and support a planned maintenance decision.

For the operator, the principal benefit was the ability to intervene at a suitable time with minimal disruption while reducing the risk of an unexpected ID fan failure and associated plant shutdown.

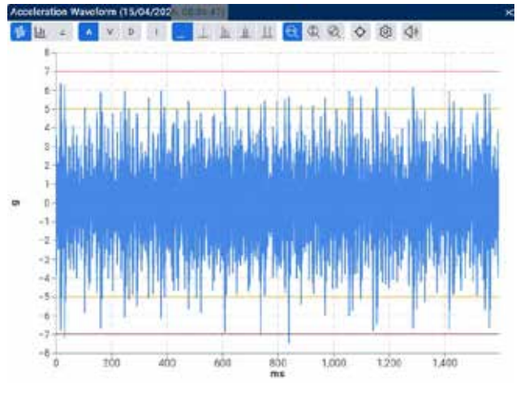
CONDITION MONITORING FOR CRITICAL ASSETS

For safety and production-critical equipment, condition monitoring provides maintenance teams with evidence of developing faults while there is still time to plan an appropriate response.

By trending vibration data within Machine Sentry and analysing changes using tools such as spectra and time waveforms, AVT Reliability engineers can distinguish developing mechanical issues from normal operating variation and support condition-based maintenance decisions before asset availability is affected.

AT A GLANCE

Client:	UK Water and Wastewater Operator
Industry:	Water and Wastewater
Equipment:	Safety-critical ID fan and motor
Services:	Condition Monitoring; Vibration Analysis
Products:	Machine Sentry®
Key findings:	A step change in acceleration and high-frequency vibration indicated developing motor bearing defects
Key action:	Motor bearings replaced during planned maintenance in April 2026



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