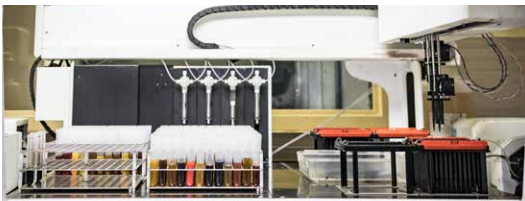# PROTECT YOUR INVESTMENT

Analyzing fluids from your equipment fleet will prevent overheating and excessive wear of important machine components. Prevent damage by keeping a tab on the condition of your fluids.

S•O•Sᔆᴹ FLUID ANALYSIS LAB

The Toromont Fluid Analysis Lab team's interpretation of fluid test results are supported by nearly 40 years of heavy equipment database records and experience as well as a recertification by Caterpillar as a world-class lab.

The process is designed to turn fluid analysis data into valuable information. This information is used to manage equipment and schedule maintenance while **minimizing operating costs and equipment downtime.**

Lubricant analysis is the best way to detect wear, contaminants and the potential failure of internal components.

In this program, state-of-the-art equipment is used to detect anomalies in oils, coolants and fuels.

Cat S·O·Sᔆᴹ Services Standardization 2013-2016-2020

COLLECTING THE SAMPLE

Reliable analysis starts with a representative sample. The way in which a sample is taken is the basis of a quality analysis for reliable and usable data. A representative sample regularly provides a representative result.

A representative sample should be taken while the oil is still hot. Start with the cleanest systems.

⚠ **Never use the same pump to collect oil and coolant.**

IDENTIFYING THE SAMPLE

Information about the oil collected from a compartment is important for the diagnosis of the machine. This includes the number of oil and machine hours, the oil grade and the type of compartment. This information is the key to a correct, accurate interpretation. In addition, it is useful to provide a reason or an abnormal observation on the machine.

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OIL ANALYSIS PROGRAM

We offer a combination of tests to evaluate the condition of your machine components: metal analysis, oil condition, viscosity, antifreeze and fuel detection, water contamination, wear particles, and other internal and external contaminants.

METAL ANALYSIS

Metal analysis is performed using atomic emission spectroscopy (AES) and generates ppm readings of wear metals, contaminants and additives. Toromont's laboratory has four instruments to analyze 23 elements, including sulfur in diesel and lithium in grease.

INFRARED ANALYSIS

Oil condition is determined by Fourier-transform infrared spectroscopy (FTIR). With the use of biodegradable oils, FTIR analysis is a reliable tool for validating the quality and success of the conversion. The spectrum of a mineral oil and that of a biodegradable oil differ, allowing identification of nature by the wavelength of the compounds.

VISCOSITY

Viscosity is the most important property of an oil. The analysis verifies the condition of the oil by comparing it with the viscosity value when the oil is new. Normal viscosity ensures adequate lubrication. The measurement is performed in temperature-controlled baths . The capillary action is calibrated and validated using a certified standard.

WATER CONTAMINATION

Water is the number one enemy of oil. It can cause oil emulsion and reduce its lubricating properties. The presence of water in oils creates cavitation and causes premature wear.

COOLANT ANALYSIS PROGRAM

Cooling system problems contribute to more than 50% of all engine related failures.Coolant testing is an easy check to determine whether your coolant has the right chemical balance for maximum system protection and cooling efficiency.

GLYCOL /FUEL CONTAMINATION

In the engine, a damaged radiator, corrosion or electrochemical erosion can cause contamination with glycol, a coolant. Such contamination has a devastating effect on the engine by transforming the oil into highly corrosive glycolic acid. Fuel contamination, on the other hand, lowers the viscosity and reduces the lubricating film. Its presence causes metal-metal contact, which increases the risk of component wear.

FUEL ANALYSIS PROGRAM

It is an assessment of the general condition of the fuel. Poor fuel can cause poor combustion, premature fouling, corrosion, and problems with injectors.

ADDITIONAL TESTS IN OIL ANALYSIS INCLUDE:

• Ferrous particle contamination
• Acid number and base number analysis (TAN/TBN)
• ISO 4406 particle count according to the International Organization for Standardization
• Water analysis by Karl Fisher (KF)
• Bio Oil Conversion Validation (CONV)
• Pentane insolubles for locomotives (PI)
• Flash point and fire point

3 WAYS TO RETURN YOUR SAMPLES:

1. Drop off your samples at one of the Toromont branches
2. Canada Post prepaid labels
3. Sign in to your Toromont Hub account to print sample return labels.

CONTACT US FOR MORE INFO

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