

OFF-HIGHWAY

Take regular samples representative of normal operating conditions. Send them to POLARIS for testing and analysis.



POLARIS processes the sample. Testing is completed, recommendations are made and a data analysis report is generated.



POLARIS sends the results to the customer via mail, fax or e-mail. The customer evaluates the recommended course of action.



Customer takes action and performs the necessary maintenance.



Harsh operating conditions, extreme load variations and the high-dollar costs involved in equipment replacement make oil analysis a necessary part of doing business in the construction, mining and agricultural segments of the off-highway industry. Routine testing identifies small problems before they become major failures allowing you to meet the demands of your customers on time. Maximize asset reliability and regain control of your production schedules with an effective oil analysis program by POLARIS Laboratories... ***it costs so little to protect so much.***

- Improve Asset Reliability
- Increase Equipment Life
- Maximize Equipment Performance
- Extend Oil Drain Intervals



**POLARIS
Laboratories, LLC**

It's not just oil analysis. It's what we do with it.

TOLL FREE 877-808-3750 • www.polarislabs.com

ISO 17025 CERTIFIED



OIL ANALYSIS

The heavy-duty equipment required by most construction, mining and agricultural applications is often exposed to extreme, uncontrollable environmental factors for long periods of time, yet is still expected to maintain maximum performance levels. Contamination and wear are eminent and when left unchecked, can halt production in a heartbeat. Monitoring the condition of both the fluid and the unit through oil analysis identifies wear-causing contaminants and their effect on component performance. Base sampling frequency on the unit's criticality to production, as well as the costs involved in replacement or repair.

Diesel Engines

Routinely monitoring a diesel engine oil's viscosity, as well as its ability to neutralize acids and disperse and suspend soot particles produced during combustion can indicate whether or not anti-wear additive and dispersant/detergent levels are providing sufficient engine protection.

TEST PACKAGES - OIL

Basic - monitors both the unit and the fluid for wear and contamination

- 24 Metals by ICP
- Viscosity @ 100C
- % Fuel Dilution
- % Soot
- %Water by Crackle

Advanced - adds TBN and Oxidation/Nitration to safely extend oil drain intervals by determining the fluid's suitability for continued use

- 24 Metals by ICP
- Viscosity @ 100C
- % Fuel Dilution
- % Soot
- % Water by Crackle
- Total Base Number
- Oxidation/Nitration

TEST PACKAGES - DIESEL FUEL

Go/No Go – can detect problems causing fuel filter plugging and determine fuel's impact on fuel filter life

- Pour Point
- Water & Sediment
- Bacteria, Fungi & Mold
- Thermal Stability
- ICP Metals

Fuel Quality - can determine if product in bulk storage tanks complies with required supplier specifications

Test include Go/No Go package plus:

- Viscosity
- % Sulfur
- API Gravity
- Flash Point
- Cetane Index
- Cloud Point

TEST PACKAGES - COOLANT

Conventional – detects corrosive chemicals that cause pitting, monitors silicate levels to avoid gel plugging and helps ensure compliance with OEM antifreeze concentration recommendations to avoid summer boil over and winter freezing

- ICP Metals
- Freeze Point
- % Antifreeze
- Nitrites
- pH
- SCA#

Organic Acid – monitors carboxylic acid level to determine if enough is present for the proper chemical reactions to occur and can help determine the presence of non-compatible coolant or fluid

- ICP Metals
- Freeze Point
- % Antifreeze
- Nitrites
- pH
- Carboxylic Acid

Gear Systems

Although contamination by dirt and water should be closely monitored in manual transmissions, differentials, final drives and planetaries, the biggest concern for these systems is the type of wear occurring. Direct Read Ferrography detects the amount of ferrous wear occurring by providing a ratio of large to small ferrous particles, which is extremely helpful in trend analysis.

TEST PACKAGES

Basic

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40C
- Total Acid Number

Advanced

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40C
- Total Acid Number
- Oxidation
- Particle Quantifier and/or DR Ferrography

Hydraulics

Hydraulic systems, including automatic powershift transmissions, require the fluid's viscosity to be low enough to minimize friction loss, yet high enough to prevent fluid leakage and provide satisfactory protection against wear. It should have good oxidation stability to prevent sludge from forming, sufficient water separability and air release properties and resistance to foaming.

TEST PACKAGES

Basic

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40C
- Total Acid Number
- Oxidation

Advanced

- 24 Metals by ICP
- % Water by Crackle
- Viscosity @ 40C
- Total Acid Number
- Oxidation
- Particle Count