

## WIND INDUSTRY

Wind turbines represent a large investment requiring a high level of mechanical reliability for decades to come.

Routine fluid analysis helps you maintain oil integrity, restrict external contamination and detect failure conditions early.

This tool is an essential element of your reliability strategy that helps you mitigate downtime.

### Get the edge with **routine fluid analysis**

- Detect failures at an early stage
- Manage your contamination control efforts
- Confirm oil selection and condition
- Identify necessary shutdown work
- Plan and schedule upcoming mechanical repairs
- Prolong the useful life of your components
- Optimize your oil drain intervals
- Better manage spare parts inventory
- Integrate with other condition-monitoring techniques



# Wind Test Packages

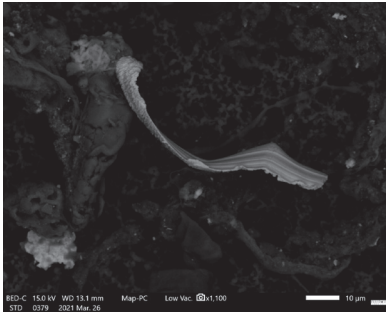
Fluid Life offers specially designed, industry specific test packages to support your equipment reliability needs. A variety of individual tests are also available on an à la carte basis.

TEST	Wind Turbine Package
Spectroscopy (25 Elements)	•
Viscosity (40C or 100C)	•
% Water by Karl Fisher	•
Oxidation by FTIR (Non-Gears)	•
Total Acid Number	•
ISO Particle Count	•
Total Magnetic Iron	•



## Additional Testing Options

GREASE ANALYSIS TEST PACKAGES	Grease Screening	Grease Standard	Grease Advanced
<b>Applications</b> *May require additional, triggered or custom tests. Contact Fluid Life for more information.	<ul style="list-style-type: none"> <li>• Small electric motors</li> <li>• Chain grease</li> <li>• Mobile joints</li> <li>• Wheel bearings</li> </ul>	<ul style="list-style-type: none"> <li>• Large electric motors</li> <li>• Automatic greasing systems</li> <li>• Robot arms</li> </ul>	<ul style="list-style-type: none"> <li>• Large diameter bearings</li> <li>• Troubleshooting bearing failures*</li> <li>• Confirmation of grease quality, stability, compatibility*</li> </ul>
<b>Total Magnetic Iron</b> PQ Equivalent	•	•	•
<b>Oxidation by FTIR</b>	•	•	•
<b>Color</b>	•	•	•
<b>ICP Spectrometry</b> 25 Elements		•	
<b>Penetration Test</b> Unworked		•	•
<b>RULER</b> Remaining Useful Life			•
<b>Analytical Ferrography</b>			•
<b>Sample Volume</b>	10ml	10ml	10ml



## SEM-EDS Wear Debris Analysis

- Scanning Electron Microscopy – Energy Dispersive Spectroscopy (SEM-EDS) wear debris and large particle analysis to determine the size and composition of hundreds of particles per sample in lubricating oil, grease, filters, and process materials.
- Prepaid kits are not available for SEM-EDS analysis and are performed on an individual basis.

SEMO Basic Oil	SEM-X Basic Other	SEMS Custom Analysis
<b>Sample Type</b> Oil	<b>Sample Type</b> Filters, Spinner Filters, Grease	<b>Sample Type</b> Any suitable sample – specific situational analysis
<b>SEM Analysis</b> Defined report and deliverable	<b>SEM Analysis</b> Defined report and deliverable	<b>SEM Analysis</b> Open ended custom service tailored to needs
<b>Outputs</b> Basic Report SEM micrographs, particle count & classification, observations, and Reliability review.	<b>Outputs</b> Basic Report SEM micrographs, particle count & classification, observations, and Reliability review.	<b>Outputs</b> Variable – based on requirements Includes SEM micrographs, particle count & classification, observations, and Reliability review. Structured to address a specific concern.

## Fluid Analysis Program Features

- ISO 17025 laboratory quality system
- Custom test packages for the wind industry
- Flexible sample registration options
- Expedient freight options
- Next day laboratory turnaround available
- Convenient and flexible reporting options
- Sample Rank™ results evaluation
- myLab™ on-line data management toolkit
- Reliability consulting services
- Professional training seminars
- Four laboratories across North America and 40+ years experience
- Customer Care toll-free support

**Contact Fluid Life to purchase your test kits and associated sampling supplies.**

We're a company that's All Ways Reliable. From analysis and evaluation to planning and strategy, Fluid Life has the expertise to help you achieve a higher level of reliability.

**FLUID LIFE**  
EQUIPMENT RELIABILITY SERVICES

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