



## TECHNIQUES FOR PREDICTIVE MAINTENANCE AND FAULT DIAGNOSIS By USED OIL ANALYSES COURSE

This one day course will describe how oil analysis should be used as part of reliability management. We will cover the different techniques available on your condition monitoring reports and how to use this information effectively. The course also looks into field techniques that can aid faster analysis of your equipment reliability.

Case studies will be used to demonstrate the effectiveness of used oil analysis. Finally showing how to achieve reduced operational costs and minimize unplanned downtime on your equipment.

### YOU SHOULD ATTEND

- If you are responsible for equipment reliability
- If you want to learn more about the valuable information that you can get for used oil analysis
- If you need to become more proactive in your predictive maintenance program.

This Seminar is designed for people working in industries involving:

Power Generation, Pulp and Paper, Aviation, Marine, Biodiesel, Military, Motor Racing, Mining, Lubrication supplies and Manufacturing.

### COMMENTS OF PAST ATTENDEES

*"An excellent short seminar—providing a weighted balance of product awareness, application in industry and most importantly the hands-on technical support required by customers purchasing and using oil analysis equipment"*

Wayne Dearness, Oil & Toil Pty Ltd

*"Excellent value for money, an informative and well presented introduction to oil analysis techniques"*

Rob Thomas, LUBE M.A.T.E

### ABOUT THE GUEST PRESENTER

Jorge Riveras has been working in the field of analytical instrumentation and quality control for over 20 years. He has written several technical articles in the field of analytical instruments, predictive maintenance, marketing and management. Mr. Riveras graduated as a Mechanical Engineer and holds a Masters in Business and Administration specializing in International Business and is currently a Doctoral candidate. He is a member of the American Society of Mechanical Engineers (ASME), the Society of Tribologist and Lubrication Engineers (STLE), American Marketing Association (AMA) and the Academy of International Business (AIB). He has been an Adjunct Professor at Suffolk University Boston, teaching fellow at Harvard University and a usual guest lecturer in many universities.

### VENUES AND DATES

Monday the 9th of November 2009

Burswood Convention Centre

Perth, WA

Wednesday the 11th of November 2009

Hotel George Williams

Brisbane, QLD

Cost per person

\$120.00

**Introduction – Predictive Maintenance Concepts.**

**1. Ferrography**

- The Particles of Wear I - Break-In of a Surface, The Six Regimes of Sliding Wear, Cutting Wear, Rolling Contact Fatigue, Gear Tooth Wear. Examples.
- The Particles of Wear II, Heat Treating of a Ferrogram, Identification of Non-ferrous Metal Wear
- Particles, Contaminants, Corrosive Wear and Friction Polymers.

**2. Particle Analysis**

- Different techniques. Existing norms, ISO codes, comparisons and applications.
- Wear Rate, Filtration and Buildup of Wear Particle Concentration in Lubricating Oil, Implications for Spectrometric, Ferrographic and particle counting measurements.

**3. Detection of Wear Metal**

- Case studies. Applications
- Larger particle generation, implications and analysis methods.

**4. Lubricant Condition**

- Monitoring Lubricant Degradation and Contamination
- A Rapid Method for Determining Lubricant Chemistry. Handheld Infrared Technologies

**5. Viscosity**

- The importance of correct viscosity.
- Different types and existing technologies. Viscosity in used oils. The ASTM D 445 Norm, Automation.

**6. Other Chemical and Physical Tests.**

**7. Considerations for Commercial Oil Analysis Laboratory Operation**

The course will include morning tea, lunch and afternoon tea. Tea and coffee will be served throughout the day.

**BOOKING**

Name : \_\_\_\_\_ Position : \_\_\_\_\_  
Company : \_\_\_\_\_ Ph : \_\_\_\_\_  
Address : \_\_\_\_\_  
Email : \_\_\_\_\_

I would like to attend the seminar in  Perth  Brisbane

Payment :

Purchase Order Number : \_\_\_\_\_  
 Credit Card : (Your credit card will charge \$120 per attendee.)

Type :  Visa  Mastercard  Diners  Amex

Card Holder Name : \_\_\_\_\_

Card Number: \_\_\_\_\_

Exp: \_\_\_\_\_ Security Code: \_\_\_\_\_

Signature : \_\_\_\_\_

**Return by fax to +61 (0)2 4392 4368**

**or e-mail to [accounts@particletest.com.au](mailto:accounts@particletest.com.au)**

**If you don't receive confirmation in 48 hrs please call +61 (0)2 4304 1088.**