WEAR CHECK® AFRICA
A member of the Set Point group

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WEAR CHECK
CONDITION MONITORING
THROUGH OIL ANALYSIS

INTERNATIONAL PARTNERSHIP WILL DEVELOP ADVANCED DEBRIS ANALYSIS INSTRUMENT

Pictured at the annual WearCheck International meeting in Wales in July are Paul Swan of WearCheck Africa, Zahir Shamsi of Australia, Gwyn Simmonds of the United Kingdom, Jesus Terradillos of Spain, Akos Nemesnyik of Hungary, Larry Baddock of WearCheck Africa, Bill Quesnel Senior of Canada, Jon Fazenbacker of the USA, Andre Verlinden of Belgium, Bill Quesnel Junior of Canada, Judit Bereckzi of Hungary and Bob Cutler of the United Kingdom.

WearCheck Africa is set to develop an advanced new particle counter in partnership with the nine member organisations of WearCheck International (WCI) and a leading instrument manufacturer.

This was decided at the annual meeting of WCI in Llandudno, United Kingdom in July, which was attended by IS manager Larry Baddock and lab manager Paul Swan of WearCheck Africa along with WCI members from North America, the United Kingdom, Europe and Australia.

'Almost all the WCI member companies have agreed to collaborate on the development of a sophisticated particle counter which meets the specific needs of a high volume, time-driven commercial laboratory,' said Paul. 'They have committed to a financial contribution and the sharing of technical expertise.'

Negotiations are already underway with a US-based instrument manufacturer. When complete, the new analytical instrument will place the WCI group at the forefront of particle counting technology.

Particle counters and quantifiers are an essential tool in the oil analysis toolbox, providing critical data on the particle counts and morphology of wear debris in used oil samples. This provides valuable information for predictive maintenance engineers on the health of mechanical systems in equipment ranging from earthmovers to hydraulic machines and aircraft engines.

'The new instrument will offer improvements on existing technology in virtually all respects, including image resolution, accuracy, consistency,

speed and cost of sample processing,' said Paul. 'Because it will be fully automated, it will speed up a process which is currently largely manual, resulting in increased efficiencies.'

'The WCI meeting was also highly productive in other ways such as collaboration on software development,' said Paul. 'It also always provides a valuable opportunity to network, share ideas and compare experiences. Each member company gave presentations on oil analysis developments and trends in their country, reflecting a common thread of strong growth in the demand for industrial samples globally.'

WCI has member companies in South Africa, Australia, Belgium, Canada, Germany, England, Hungary, Spain and the USA.

WearCheck Africa continues to lead the group in terms of sample volume, processing 417 000 samples last year.

OIL ANALYSIS HELPS WESTERN CAPE PROVINCIAL ROAD BUILDING FLEET ACHIEVE 11:1 RETURN ON INVESTMENT

Handrè Strydom, chief mechanical engineer for the Western Cape Department of Transport's mechanical services section, inspects one of the Case 621D front end loaders on the WearCheck programme.

The Mechanical Services section of the Western Cape Provincial Government's Department of Transport is currently achieving a return on investment of roughly 11 to 1 on its condition monitoring expenditure.

An integral part of this is WearCheck's oil analysis programme which the organisation has been using since 1987.

According to chief mechanical engineer, Handrè Strydom, about 460 of the fleet's 2400 units are on the WearCheck programme. These are mainly construction plant and heavy vehicles which are part of the road building and road maintenance fleet that the mechanical services section provides for the civil engineering section of the department.

'We concentrate on monitoring the expensive compartments of the bigger and more expensive machines and vehicles,' Mr Strydom said.

Construction machines and vehicles are serviced and maintained according to a strict preventive maintenance programme. The taking of oil samples from expensive components is scheduled to correspond with these service intervals.

Oil analysis results are recorded and any deviation from the norm is investigated and the problem rectified within a specific time frame. Monthly reports are used to manage the oil analysis programme and to train technical staff to run the programme more effectively. These are also used in an annual fleet maintenance competition where all the depots compete for a floating trophy.

Mr Strydom described a recent example of how oil analysis saved the department a substantial amount of money.

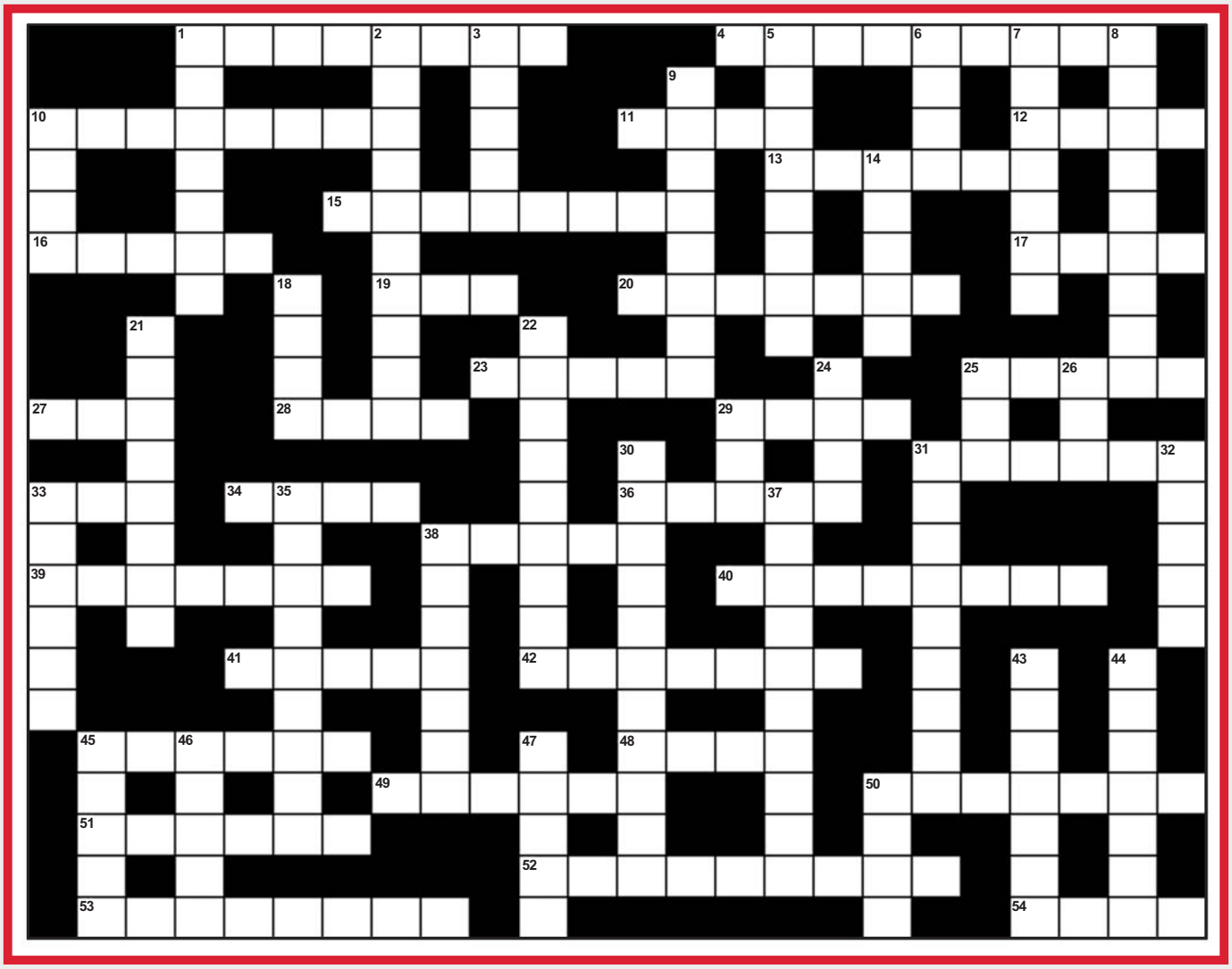
'When the engine of a Komatsu GD530A motor grader was contaminated by the intake of unfiltered air due to a faulty air intake hose to the air compressor, WearCheck picked up the problem immediately. The problem could be rectified early enough to save the engine and air compressor, saving the department approximately R70 000.'

'The benefits of the WearCheck programme far outweigh the cost of oil analysis,' Mr Strydom said.

TEST YOUR KNOWLEDGE. . .
AND WIN A SPUR DINNER VOUCHER

WearCheck's John Evans has devised this crossword specially for customers to test their knowledge of oil analysis. Answers can be found in Technical Bulletins on WearCheck's web site: www.wearcheck.co.za/Bulletins.htm

If you would like to stand in line to win a Spur dinner voucher, fax your completed crossword to (031) 700-5471 for the attention of Melanie Hynd by 15 September 2007. (Don't forget to fill in your name, company and phone number in the space provided.) Enjoy!



Name: ..... Company: ..... Phone number: .....

Across

1. Valve found at the base of a sump from which samples might be taken.
4. Old software package written by WearCheck to manage oil analysis programmes.
10. One of the functions of a lubricant is to reduce this.
11. Contaminant consisting of partially burned fuel.
12. Activity to get the peak performance out of an engine.
13. Major component of the alloy bronze.

Down

1. Method for removing oil from a component.
2. The unit of kinematic viscosity measurement.
3. Type of base from which refined lubricants are derived.
5. Current software used to view oil analysis data.
6. Type of detector for magnetic debris.
7. Type of 'pressure' additive found in gear oils.
8. Type of viscosity measurement associated with used oil analysis.

15. Where WearCheck's head office is located.
16. Gearbox type found in helicopters.
17. Average wear reading of a group of results.
19. Acronym for Total Base Number.
20. Metal associated with the detergent in an oil's additive package.
23. The highest SAE grade for engine oils.
25. Copper can do this from an oil cooler.
27. Microscopic particle examination or debris analysis.
28. Diesel, petrol or gas.
29. Type of fastener.
31. White …… laboratory solvent.
33. Service meter reading.
34. One of the functions of a lubricant is to do this.
36. Oil fraction or end that evaporates easily.
38. What you might get from WearCheck's customer services.
39. Another name for absolute viscosity.
40. A chemical introduced into an oil in order to give it a specific property.
41. Common liquid contaminant found in oil.
42. Common solid contaminant found in oil.
45. Generic term for solid contamination of oil.
48. Marine oil samples might come from here.
49. Oil that has been thickened with a soap.
50. The TBN additive neutralises this property of engine oil.
51. Number used to measure ignition quality of diesel.
52. An oil's resistance to flow.
53. List that determines service intervals.
54. Brake or clutch….

9. Lubrication regime where full fluid films are absent.
10. Fourier transform infra red spectrometer.
14. Asperities stand ….. of bearing surfaces.
18. Engine oil is often changed when its TBN reaches this value.
21. Physical action that reduces the viscosity of multigrade oils.
22. The interpretation of the laboratory results.
24. Imperial measure of volume for oil.
25. Type of seal.
26. Required for fuel to burn.
29. Toothed wheel.
30. Rating that measures how dirty an oil is.
31. Class of lubricants made in a laboratory.
32. … base number or acid number.
33. Metal that indicates an internal coolant leak.
35. Degradation of the oil through excessive heat.
37. Chemical breakdown of an oil by the attack of water.
38. The kinematic viscosity of an SAE 10W is this fraction of an SAE 50.
43. Oil heavily contaminated with soot is said to be this.
44. Engine components often made of aluminium.
45. Another name for services.
46. A group of oil samples.
47. Clean method for taking oil samples.
50. American Society for Testing and Materials.

NEW RUSTENBURG DEPOT OPENS

WearCheck has opened a new depot in Rustenburg for the convenience of customers in this region.

Any samples delivered to the depot will be couriered to the Johannesburg office at no cost. Customers can also buy kits here.

The new depot is located at:
Unit 6, Platinum Industrial Park
Boron Street
(off van Belkum Street)
Rustenburg Ext. 4
Tel: (014) 596-5700

PRAAT ONS AFRIKAANS?

Dit is 'n algemene wanopvatting dat ons personeel in Pinetown, anders as in ons Johannesburgse takkantoor, nie Afrikaans magtig is nie.

Om in Afrikaans in Pinetown gehelp te word, kontak:
Lorain de Bruin vir NetCheck/databasis navrae
Daan Burger vir diagnose navrae
Kay Meyrick vir kliente navrae.

INDUSTRIAL KITS

These are designed specifically for industrial plant such as industrial gearboxes, hydraulic systems and bearings. The test profile covers wear metals, contaminants, additives and lubricant condition. A written interpretation of laboratory results is supplied.

PRODUCT CODES:
WIM10 (for mailing kits – including prepaid, preaddressed mailing tubes which conform to post office regulations)

WIM20 (kits for hand delivery - with outer tubes for easy handling suitable for delivery by a courier company or customer to the Pinetown or Croydon laboratories)

WHAT'S ON YOUR MIND?

If you have feedback of any sort you'd like to give us – praise, problems or suggestions - there is no need to wait for a customer survey. Feel free to email us at any time on support@wearcheck.co.za

LUBE TIP

PARTICLE COUNTING NEW LUBRICANTS

QUESTION:

We are constantly debating the issue that one cannot accurately particle count new fluids because of additive interference. This is particularly true with 15W40 diesel engine oil. The VI improvers and others argue that the dispersants seem to be the main issues. Do you know of a process to eliminate this interference in order to accurately particle count this oil or multigrade new fluids?

ANSWER:

You are right, some additives can interfere with the particle count. Perhaps the biggest offender is the silicone defoamant, which is not dissolved in the fluid but rather suspended as microglobules in the 5 to 10 micron range.

Some additives, like detergents, are not properly dissolved at ambient temperatures, and heating the oil to 180°F before performing the particle count will improve the solubility of these additives (but still not do anything for the defoamant). The use of Group II mineral base stocks, which have poorer additive-solvency properties than Group I oils, unfortunately compounds this problem.

Performing a particle count via particle imaging can overcome some of these additive interferences. As a second option you could try a pore-blockage particle count, but realize that you won't get 3-digit counts and also the results likely won't correlate with the optical particle count. Otherwise, just live with it - recognize that it happens and as long as you follow the same particle counting procedure every time, you will have trendable results. Use a known-clean sample to set your baseline.

Watch for a report in an upcoming issue of Practicing Oil Analysis Magazine which investigates this subject in more detail (www.practicingoilanalysis.com).

- Courtesy of Ashley Mayer of Noria Corporation (a former WearCheck employee)

MAKING HEADWAY

DIAGNOSTIC ASSISTANT

Shashay Rampersad

Shashay Rampersad has been promoted to diagnostic assistant in the mini lab. Formerly a night shift laboratory assistant in the main Pinetown lab, Shashay has been with WearCheck since May 2002. As part of the diagnostic team he is responsible for preparing RPD slides as well as aircraft and industrial filters for ferrographic and filtergram analysis. He also operates the Karl Fischer coulometer which measures very low levels of water contamination, mainly in turbine refrigeration and compressor samples. Another of his duties is the taking of regular samples on site for various industrial customers. Should you have a need for this service please phone Shashay on (031) 700-5460.

RECYCLING ASSISTANT

Aaron Mchunu

Aaron Mchunu has been promoted from sample room assistant to waste disposal and recycling assistant. Aaron now looks after the recycling plant that recovers solvents for re-use in the laboratory. He joined WearCheck in November 1999.

NEW JOHANNESBURG ADMIN STAFF

The Johannesburg office has two new ladies looking after admin and sales - Belinda van Rensburg (left) who started at WearCheck in May, and Michelle van Dyk who was appointed in mid-April.

OUT AND ABOUT

John Evans

WearCheck diagnostic manager John Evans spoke on the effective management of an oil analysis programme at MECSA, the Mechanical Engineering Conference of SA, organised by the Institute for International Research in Johannesburg in March. WearCheck also sponsored one of the lunches at the 5-day event, which was attended by close on 100 people - mostly maintenance engineers from the industrial sector.

A number of presentations to meetings of the SA Institute of Tribology have been scheduled this year. In April, Lourens Swanepoel of ELB Equipment talked about a condition monitoring exercise using WearCheck's oil analysis programme which saved a customer R1,9 million. WearCheck's Wade de Chalain spoke on the realities of diesel fuel in South Africa to members of the Institute in Johannesburg in May and will be giving the same presentation to the Durban and Cape Town branches.

FLYING VISIT FROM THE AIR FORCE

WearCheck's Daan Burger (right) recently hosted Major Reinier de Vries (left) and Lt Colonel Keith Andrew of the SA Air Force at the Pinetown lab.

Officers from the Product Support System unit at Waterkloof Air Force Base in Pretoria recently paid WearCheck's Pinetown laboratory a visit for technical discussions and to foster good communication. Samples from the SA Air Force's VIP fleet are submitted to WearCheck on a regular basis.

SUB-STANTIAL SAMPLE!

WearCheck receives samples and enquiries from all over the world – some recent ones coming from Afghanistan, Indonesia, Uganda and even an SA Navy submarine!

EMPLOYMENT OPPORTUNITIES

WearCheck currently has vacancies. If you are interested in an employment opportunity with the company, please visit our web site: www.wearcheck.co.za/careers.htm

TRAINING COURSES

Course	Johannesburg
NetCheck: Software	15 October
WearCheck 1: Oil analysis orientation	16 October
WearCheck 2: Understanding oil analysis	17 October
WearCheck 3: Report interpretation	18 October
WearCheck 4: Management	19 October
Machinery & Lubrication: Level One	1-3 October
Machinery & Lubrication: Level Two	4-5 October

The WearCheck courses are full day and cost R 1550 plus VAT with the exception of Course 4 which is half day and costs R550 plus VAT. For bookings phone Michelle van Dyk on (011) 392-6322.

The Machinery and Lubrication (MLA) courses are run in joint venture with the ABB School of Maintenance. Level One is a three-day course costing R5456.85 plus VAT. Level Two is a two-day course costing R4354.35 plus VAT. For more information and bookings phone Lisa-Anne Fairley on (011) 236-7342 or Michelle van van Dyk on (011) 392-6322.

If you would prefer to receive future issues of WearCheck Monitor and Technical Bulletin via e-mail instead of in printed form, please e-mail a request to: support@wearcheck.co.za

THE LEADER IN OIL AND FUEL ANALYSIS

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