

# Wearcheck now offers coolant analysis

WEARCHECK customers will now be able to keep their engine coolant systems in peak condition thanks to Wearcheck's new coolant analysis service which was introduced in August.

'More than half of all premature engine failures can be traced back to cooling system problems,' says John Evans, diagnostic manager: mobile equipment. 'By taking samples from the radiator periodically, many coolant problems can be picked up well before they



translate into unnecessary repair costs.'

The new test determines glycol concentration, freezing and boiling points, pH and nitrite concentration as well as total dissolved solids, the PQ<sup>®</sup> index, and the presence of oil, precipitate and foam. Colour, odour and appearance are also recorded.

Chemist Paul Swan (right) discusses the increasingly popular coolant analysis service with diagnostic assistants Clive Govender (left) and Trevor Pillay.

## Season's Greetings

We would like to extend our warmest good wishes to all customers over the festive season.

Once again, we will be asking you to be a part of what has become an annual tradition at Wearcheck. Instead of sending out Christmas cards, a donation is made to the READ organisation which untiringly

promotes literacy in disadvantaged communities, giving thousands of rural children the foundations for a more promising future.

Thank you for sharing in this initiative and for your continued valued support. May 2003 be an exceptionally successful year for you all.

The service operates in exactly the same way that oil analysis does. The coolant kits look the same as the oil analysis kits except bottle lids and submission forms are pink. Reports, either posted or sent via NetCheck, will state whether the coolant is fit for further use or needs to be changed. Unacceptable coolant condition will be communicated by fax or phone for immediate action.

Says John, 'If a box of ten postal sample kits is bought, customers are paying just R40 (excl. VAT) for a sample and gaining peace of mind that their coolant is suitable for continued use. The service has been in operation for several months now and has proved a huge success.'

■ The Pinetown diagnostics department is happy to answer any queries on the new service. Orders can be placed through Vasthie or Charmaine in Pinetown on (031) 700-5460 or Adele in Johannesburg on (011) 392-6322. ✓

# Oil analysis saves Syferfontein R1,7 million

AN OIL analysis and quality control programme implemented at Syferfontein Colliery near Secunda has saved the mine an estimated R1,73 million over the past financial year.

Syferfontein, which supplies coal to Sasol Synfuels Secunda, has 45 units of equipment on the Wearcheck programme ranging from draglines, drills, haul trucks and track type dozers to secondary equipment such as front-end loaders, graders, water tankers, tyre dozers, trucks and LDVs.

The quality control programme was implemented earlier this year following repeated failures of the final

drives on the 789 dump trucks without warning, resulting in massive repair costs and high downtime figures.

In November last year Syferfontein's condition monitoring specialist, Johann Swart, asked Wearcheck's Jan Backer to assist them in solving the problem. An investigation was launched and as much information as possible was gathered on the oil condition, contaminants, maintenance practices, environmental influences and operating conditions.

'Because of the common oil compartment of the differential and two final drives, we were able to see an increase in wear metals through standard

oil analysis but this made it very difficult to pinpoint the component that was failing,' explained Jan. 'I then asked Syferfontein's maintenance team to gather magnetic plug debris to accompany every sample hoping to identify the origin of the wear, and we hit the jackpot. Ferrography on the magnetic plug debris revealed all. Because of the layout of the component and the size and weight of the wear particles, the debris found on the magnetic plugs was representative of the specific component.'

With the use of ferrographic analysis it was possible to trend the wear on these final drives with a high level of accuracy. When the alarm level was reached, the measurement of wheel deflection was recommended. By comparing these measurements with given specs, the amount of bearing wear could be determined. Whenever these measurements were above given specs the strip-down of the final drive could be planned.

'After implementing ferrographic analysis we encountered only one unplanned failure on a final drive, which was due to a broken retainer bolt,' said Syferfontein condition monitoring specialist, Johann Swart.

'Complete oil changes were reduced to 17 this financial year in comparison to the 35 changes the previous year which amounts to a saving of 10 980 litres of oil.'

A basic quality control programme was put in place and, for the past eight months, failures have been eliminated completely. The programme involves:

detect early stages of hydraulic oil transfer into differentials.

■ An allotted torque wrench to do final drive bearing preloads.

■ Measurement of wheel deflections every 500 hours.

■ Replacement of all critical bolts with every final drive rebuilt.

■ Assigning one person exclusively to take oil samples to ensure representative oil samples continuously.

■ Inspecting magnetic drain plugs.

■ Effective communication between Syferfontein's condition monitoring department and key personnel at Wearcheck.

'We also take oil samples in advance of planned maintenance to improve maintenance planning and minimise downtime caused by components with concealed problems,' said Johann Swart. 'The Wearcheck programme is an integral part of our formal predictive and preventive maintenance plan.'

## Snippets

■ A recent request to be added to the mailing list of Wearcheck Technical Bulletin came from a sergeant in the US Navy at Pensacola.

■ More than 80 customer groups visited the stand set up by Wearcheck with Set Point Analytics at the Electra Mining Exhibition in Johannesburg from 30 September - 4 October.

■ Plans are well underway for the staging of the annual Wearcheck International meeting in Durban in June 2003.



Wollie Wolhuter and Johann Swart, condition monitoring specialists at Syferfontein Colliery near Secunda, standing next to the wheel of one of the 789 dump trucks.

# Long service is the norm at Wearcheck

A NUMBER of Wearcheck employees celebrate long service anniversaries with the company this year.

Says managing director, Lesley Crawford, 'Congratulations to everyone who has reached a milestone with us. Long service has been a feature of Wearcheck since its inception 28 years ago. Two thirds of our employees have been with the company for five years or longer, while one third have at least ten years of service. Loyalty and continuity of service are great assets which I believe have a positive impact on our performance.'

Another interesting statistic is that the collective experience of the diagnostics staff amounts to more than 100 years.

## 2002 Long Service Anniversaries

### 20 years

Pearl Joseph, Rowan Maartens

### 15 years

Eva Govender

### 10 years

Jill Durant, Nesta Mbhele

### 5 years

Jan Backer, Cathy Bolton, Shireen Brijlal, Adele Lemmer, Isaac Mabaso, Colin Naicker, Brigitte Brown, Kay Pillay, Neil Robinson, Karen van Staden. ✓

## Training works for customers

THIRTEEN employees of Alpha Stone and Readymix KZN completed Wearcheck's Level 1 and 2 technical training courses during September, presented at their Durban plant by Wearcheck technical advisor Jan Backer.

According to their maintenance planning technical assistant, Gerhardt Roets, everyone thoroughly enjoyed the two days of training.

'The feedback I received was that all involved certainly learned a lot of new things as well as remembering why we do oil analysis in the first place,' said Gerhardt. 'The notes were easy to follow, and combining this with practical experience in the field made the discussions interesting.'

All 13 employees completed Course 1 and ten of them went on to do Course 2. ✓



## Perfect pass in quality audit

WEARCHECK passed its SABS audit in August with flying colours and not a single finding, completing Wearcheck's ISO 9001:2000 quality registration.

'This perfect score is the result of a great deal of effort and team work on the part of each and every staff member in the company and they have every reason to be proud of the result,' said quality administrator, Melanie Hynd.

Wearcheck is one of a small number of companies country-wide which have successfully converted to the new upgraded quality system. ✓

The Johannesburg team were delighted with the results of the recent quality audit (left to right): Cathy Bolton, Joel Masondo, Devi Armugam, Josie Rakolota, Wade de Chalain, Quintus Mosiya, Jill Durant, Keith Finlayson, Linda Scott, Wendy Holiday, Jan Backer, Adele Lemmer, Isaac Mabaso.

### FILTER ANALYSIS COULD HELP YOU

WEARCHECK filter kits are designed to enable customers to send a section of an oil filter to the lab for examination. Debris is extracted and deposited onto a filter membrane for examination under a microscope. A photograph of the magnified debris is attached to the detailed analysis report. The product code is: WFK Filter Kit ✓

## Lube tip

### How particles affect the machine

ABRASIVE particles are responsible for much of the wear leading to premature failure of mechanical components. Under sliding conditions, clearance-sized particles enter the oil film between surfaces and cut away material much like a lathe cuts metal. Under rolling contact conditions, particles transfer concentrated load between two surfaces in relative motion, resulting in surface fatigue, pitting and spalling. Particle-contaminated oil travelling at high velocity can also cause erosive wear. ✓

- Courtesy of Noria Corporation

# Wearcheck celebrates long links with St Giles

WEARCHECK shared in the 50th anniversary celebrations of the St Giles Association for the Handicapped at a special ceremony in Durban during June.

The company's links with St Giles go back to 1976 when, as one of the first customers of their newly established workshop, Wearcheck gave the association what was to be an ongoing contract for the packing of its oil analysis kits.

'For some of the association's members, this was the first paycheck they had ever earned in their lives,' recalls managing director, Lesley Crawford.

Today, a team of between four and eight St Giles members packs about 1000 Wearcheck kits a day and their work is recognised by a statement which is printed on each kit.

Colin Meiring, PRO for the association, thanked Wearcheck for its many years of support at the anniversary function which was attended by Lesley Crawford and admin manager Karen van Staden. Wearcheck is one of the association's four largest customers. ✓



Lesley Crawford attended the 50th Anniversary celebration of the St Giles Association for the Handicapped which packs Wearcheck's kits. With her is their PRO Colin Meiring.

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## Wearcheck Training Courses 2003

DATE	COURSE	COST (excl VAT)	VENUE
17 March	Course One	R350	Johannesburg
18 March	Course Two	R750	Johannesburg
18-19 March	NetCheck	R1550	Johannesburg
19 May	Course One	R350	Pinetown
20 May	Course Two	R750	Pinetown
20-21 May	NetCheck	R1550	Pinetown
16 June	Course One	R350	Johannesburg
17 June	Course Two	R750	Johannesburg
17-18 June	NetCheck	R1550	Johannesburg
15 September	Course One	R350	Pinetown
16 September	Course Two	R750	Pinetown
16-17 September	NetCheck	R1550	Pinetown
13 October	Course One	R350	Johannesburg
14 October	Course Two	R750	Johannesburg
14-15 October	NetCheck	R1550	Johannesburg

### Technical Training: Course One

A practical introduction to oil analysis. This half-day course for sample takers, artisans and semi-skilled personnel is usually run on site in English, Afrikaans or Zulu.

### Technical Training: Course Two

The applications of oil analysis. 08h00-16h00. This course covers the functions and classifications of lubricants, the value of oil analysis, reporting procedures, tests and their significance, sampling methods and case studies.

### NetCheck Training

Two-day course: 08h00 - 16h00. Day one provides an introduction to lubrication and oil analysis. Day two covers the installation and use of NetCheck.

For bookings phone Cathy Bolton or Wendy Holiday on (011) 392-6322 or email: [jhbsupport@wearcheck.co.za](mailto:jhbsupport@wearcheck.co.za).