

INNOVATION IN ACTION RESULTING IN SAVINGS OF R9,6 MILLION!

The strategic intent of Kumba Iron Ore to reduce production cost by \$10 per tonne not only sparked innovation and collaboration that resulted in significant cost savings, but it also contributed meaningfully to safety, improved productivity and sustainable results.

“We set an objective of extending the service intervals of the fleet of six Komatsu 730-8 trucks from 250 hours to 500 hours at Kolomela mine. The collaborative efforts of our team of internal and external stakeholders, resulted in much more than what we aimed for,” said Janus van Zyl, senior specialist engineer maintenance systems based at Head Office, who headed the project.

THE BENEFITS

The project succeeded in doubling the service intervals. Because of the extended service intervals, the benefit resulted in 72 additional production shifts per year. The potential direct production benefit was that an additional 400,000 tonnes of waste could be hauled, with a cost avoidance, or saving, to the value of R9,6 million per annum, for the remainder of the fleet life.

This initiative also resulted in the following indirect benefits:

- Reducing other Heavy Mobile Equipment (HME) downtime due to less congestion in the workshop.
- Reducing oil usage with approximately 16,000 litres per annum, contributing to less hazardous environmental waste.
- Reducing contractor labour cost due to 50% less services.
- Schedule alignment of all trucks to 500 hours service assisting the Operating Model process.
- Enhancing safety – less maintenance required less man-machine interfacing.



The winning team are from the left Janus van Zyl, Ricardo Mendes, David Fourie, Burgert Müller, Louis Jordaan, Martha Sekgopi, Katholo Moloagae, Maynard Dicks, Gawie Rossouw and Dean Puntis.

WHAT WE'VE DONE

“We decided on the 500 hour service intervals because that would align them with other trucks' service intervals and enhance planning significantly. Because these trucks were not designed to be serviced at 500 hour intervals, we had to reconfigure some of the maintenance critical components on these trucks,” Janus said.

Changes required related to engine oil degradation, diesel fuel cleanliness and fuel filtration dirt holding capacity. Engine oil degradation was addressed by

changing diesel injection timing and additional engine oil bypass filtration. Intense oil condition monitoring was done during the test phase. Diesel filtration was upgraded to provide better ISO cleanliness levels as well as increased dirt holding capacity. Testing was done to 750 hours and still indicated a healthy system, and confirmed the low risk to extend only to 500 hours. To ensure diligence and technology cross pollination, all these tests were done in cooperation with the Original Equipment Manufacturers (OEMs) and third party vendors.



6 x 180 tonne trucks = move additional **400,000 waste** per year
Savings of **R9,6 million** escalating each year

THE TEAM: The team involved in this project included Kumba Centurion Gate, Kolomela mine, Komatsu (OEM), Cummins (engine OEM) and Ultra Depth Filtration (filters). The project lasted 18 months – from conceptualisation in July 2016 to implementation in December 2017.