



**CLEAN OIL
BRIGHT IDEAS**

Gear Oil Symons Crushers, Iron Ore

CJC™ Application Study

**Application Study
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Mr. Piet Hoffman
Kumba Iron Ore's
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South Africa



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CUSTOMER

Kumba Iron Ore's Sishen Mine
Northern Cape, South Africa.
Started up in 1954.
Today, they produce 39 million tonnes of iron ore per year.

THE SYSTEM

7 Symons Crushers, 90 tonnes
Oil volume: 1400 litres
Oil type: Gear Oil, ISO VG 150

THE PROBLEM

High ingress of dirt particles into the lube oil system through a water flow seal under the crusher head. The water flow seal sometimes causes water ingress into the lube oil system. In turn, the dirt particles and the water in the oil contribute to component wear, subsequently resulting in high amount of metallic particles being suspended in the lube oil. This extreme metallic and dust particle contamination and the high water ingress is always present in the crusher.

THE SOLUTION

CJC™ Filter Separator PTU3 27/108 P-E2H1PW with a flow rate of 400 litres/h, 2 x 4.4 kW preheaters and **4 x CJC™ Filter Inserts BLAT 27/27**, capable of retaining up to 16 litres of contaminants.

FINANCIAL BENEFITS

Numerous benefits in wear reduction. Replacement of bronze bushings alone for each crusher costs around EUR 35,000. Normally, each set would be replaced up to 2 times per year, but at Sishen they have seen a reduction of maintenance costs of more than 50% after installation of the CJC™ Filter Separator. Kumba Iron Ore's Sishen Mine has 19 of these crushers in operation, and a total annual saving - only in these bronze bushings - could thus be in excess of EUR 600,000.

THE RESULT

The filter removed 13 litres of water in the first 24 hours, continuing to remove water for another 2 weeks.

In 3 months, the ISO level was reduced from 24/22 to an astounding 16/11. **This is an extremely good result for such a dirty environment.**

Kumba Iron Ore's Sishen Mine, South Africa



The CJC™ Filter Separator PTU3 27/108 P installed at one of the 7 Symons Crushers of Kumba Iron Ore's Sishen Mine

THE RESULT

	Before CJC™ Filtration	After Three Months of CJC™ Filtration
ISO Code	24/22	16/11
Water, PPM	52,000	40

COMMENTS

Senior Tribologist at Anglo American, Mr. Dave J. Gamble:
*The CJC™ Filter will release benefits as reduced downtime for maintenance, greatly reduced wear and consequent failures, increased availability, utilisation and production. All together, this results in extended oil life time.
This filter can easily clean the oil according to my recommendations, which is 16/14 on this type of application.*