CLEAN OIL
BRIGHT IDEAS

Hydraulic Oil
Mining Shovel, Electro-Hydraulic

CJC™ Application Study

Application Study written by:

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CUSTOMER

Major oil sands mine in Alberta, Canada.

SYSTEM

System: Hydraulic crowd system on a 100 tonne mining shovel
Oil Type: 0W20 Hydraulic Oil
Oil Volume: 3,785 L

PROBLEM

This particular shovel has a sophisticated hydraulic system for controlling the massive crowd cylinder. The shovel uses a separate pre-cleaning tank and filtration circuit that all oil must be run through prior to being transferred into the main oil reservoir. With a looming deadline to commission the shovel, it was determined that an additional filtration system should be used to improve the cleanliness of the new oil stored on-site. This would allow the on-board filtration systems to operate more efficiently, lower the overall contamination level, and greatly expedite the entire process.

SOLUTION

An emergency call prompted the rapid delivery of the **CJC™ Mobile Flushing Unit, MFU** (a Fine Filter HDU 27/108 GP-DE2H1MPTY) specially equipped with features including integrated tank, heaters, and particle counter. **4 x CJC™ Filter Inserts B 27/27** provide 3 micron absolute filtration, and capacity for more than 25 kg of contamination. Automatic flow compensation allows the CJC™ MFU to handle oils at very low temperatures or high viscosities with no monitoring or adjustment.

TEST

Oil was drawn from the drum and passed through the filter into the CJC™ MFU tank. The tank holds 280 L of oil, enough for a full barrel at a time. When the tank was full, a change of valve positions allowed the CJC™ MFU to circulate and clean the oil in the tank.

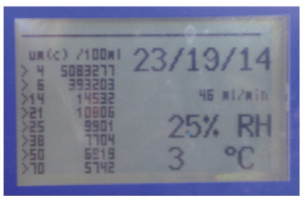
RESULT

After only 30 minutes, ISO particle count went from 23/19/14 to 14/13/11 – an average 95% reduction, and almost 18 times below the machine's upper cleanliness limit. Switching the outlet valve allowed the clean batches of oil to be pumped up to the tank in the shovel.

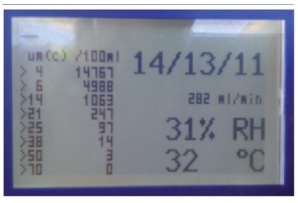
Including filling, filtration, and transferring to the shovel, the overall oil processing time was **reduced from nearly 1 week to roughly 1 hour per batch!**

This mining shovel is one of the largest in the world

CJC™ MFU processing oil during shovel assembly.
At right is the massive crowd cylinder



*ISO Code **before** installation of the CJC ™ MFU*



*ISO Code **after** installation of the CJC ™ MFU*

THE RESULT

	Before CJC™ MFU	After CJC™ MFU
ISO Code	23/19/14	14/13/11

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