Cone Crusher Throws Dirt into Bearings —

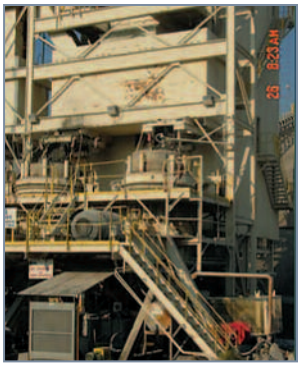
Spinner II® Oil Cleaning Centrifuge Removes It

Profit Builder No. 403

Helpful Sales Tools for Representatives of Spinner II Products

SPINNER II® Oil-Cleaning Centrifuges

Scenario



Nordberg has a worldwide reputation for building rugged, high-throughput cone crushers. These heavy-duty machines are used in the aggregate and mining industries to create sized aggregate from big rocks.

One of the key operating systems on a cone crusher is the lube circuit. On a large crusher, the lube circuit pushes 65 gallons (246.1 liters) of oil per minute through the crusher bearings. However, these crushers run in some of the worst dirt-filled environments. Airborne dirt continuously crosses through the bearing seals, dumping a tremendous amount of abrasives into the lube circuit. If this dirt is not controlled, excessive wear and failure result. The impact is severe: shutdown of a cone crusher means thousands of dollars of lost profit while repairs are completed.

Solution

A major U.S. aggregate producer with Nordberg crushers decided to apply a Spinner II Model 3600 centrifuge to reduce the dirt load in the bearing lube oil. The unit was mounted on the sump, gravity drained and supplied with oil using a 22-gpm (83.3-L/min) pump.

Results

Cycling the sump's 300 gallons (1,135.6 liters) once every 15 minutes, the centrifuge removed large amounts of debris. In just 90 hours, the centrifuge extracted four pounds of abrasive solids. Gravimetric oil assays show the dirt load began at 0.77 oz/gal (5,800 mg/liter) and dropped to 0.29 oz/gal (2,200 mg/liter) after 200 hours of operation. At 540 hours, the dirt load decreased to 0.1 oz/gal (800 mg/liter) and an additional six pounds (2.7 kilograms) of debris was found in the turbine.

On a cone crusher, a Spinner II centrifuge can convert oil flow into a powerful trap for removing wear-causing debris. For you and your mining/aggregate customers, that presents a tremendous opportunity — a reliable, effective way to clean oil in crusher lube systems without the waste and expense of disposable elements.