

Accumulator & Cooler Division **SUCCESS STORY: Albian Sands****KLEENVENT® CONQUERS THE ALBIAN SANDS****CUSTOMER**

Albian Sands

**CHALLENGE**

Eliminate contamination in the hydraulic system that is introduced through the reservoir breather, thereby reducing the machine down time, filter usage and maintaining oil cleanliness.

**SOLUTION**

KleenVent® Reservoir Isolators

**VALUE**

By adding a KleenVent filter usage is reduced and oil retention is increased. Savings are realized by reduced labor costs, oil usage and oil disposal, filter usage and down time.

In the demanding Canadian oil sands, income – perhaps more than anywhere in the world – is measured by the minute. It is here that contamination poses the greatest challenge to mining companies concerned only with keeping shovels operating around-the-clock.

Global mining companies rely on today's innovative mining shovels for their superior digging force and rapid cycle times. They also demand ultimate reliability and uptime from their shovel fleet to ensure maximum productivity and profitability.

In 2003, rope shovels began work at the Albian Sands Muskeg River Mine north of Fort McMurray, Alberta, Canada. Albian Sands Energy Inc. had one goal – to create the most modern and efficient oil sands operations in Alberta.

After one year, a fleet of four shovels was operating at 96% availability, exceeding even the manufacturer's original expectations. Still, each inoperable machine hour held the potential for significant profit loss in the Canadian oil sands where income is very closely related to time.

**THE CHALLENGE**

Oil sands – a naturally occurring mixture of sand or clay, water and an extremely dense and viscous form of petroleum called bitumen – pose a stern challenge to hydraulic system engineers who must safeguard mining machines against contamination.



With a 110-ton single-pass capability, the shovels could move an immense amount of material with each bucket fill, at the same time releasing an abundance of particulate into the air. Drawn through the shovel's reservoir breather vent, these particles threatened to undermine the operational integrity of vital upstream components, particularly pumps and motors.

The naturally moist air of the Albian Sands presented a further challenge. As it cooled and condensed, water deposits could fall into an earthmover's reservoir, fouling its fluid supply. Above saturation level, hydraulic oil loses lubricity, oxidizes and turns acidic. This can leave critical components vulnerable to wear and corrosion, as well as clog filters and increase the likelihood of air entrainment/pump cavitation.

**THE SOLUTION**

Early in 2008, the manufacturer – ever seeking ways to improve the dependability of its rope shovels – needed advanced protection against ingestion of the



Albian Sands airborne contaminants. The manufacturer contacted Parker's Accumulator and Cooler Division (ACD) to inquire about KleenVent® reservoir isolators. Unlike conventional breather-vent filters, the KleenVent provides a positive separation without the possibility of clogging. The isolator utilizes an bladder as a "lung" where the changes in gas volume in a hydraulic system's reservoir can be trapped and prevented from mixing with the outside atmosphere. A KleenVent reservoir isolator is estimated to pay for itself in less than one year through reduced hydraulic system rebuild, maintenance and machine downtime costs.

A team from ACD traveled to the OEM to look at the application. At first they considered installation of an 80-gallon KleenVent adjacent to the shovels' power unit. However, upon

realizing the remarkably small spatial envelopes, they abandoned their initial plan in favor of a "six-pack" solution.

Instead ACD engineered a bundle of six 20-gallon isolators, installed near the power unit where space allowed.

## THE RESULT

For three years following ACD's KleenVent fix, manufacturer feedback has been overwhelmingly positive. Shovel fleet uptime has increased and maintenance engineers report hydraulic fluid cleanliness levels previously thought unattainable. Today, ACD continues to work closely with the manufacturer to engineer even smarter solutions to conquer the Canadian oil sands.



## CONTACT

To discuss KleenVent solutions for your mobile or industrial application, contact Accumulator and Cooler Division at **815-636-4100** or visit our website **[www.parker.com/accumulator](http://www.parker.com/accumulator)**.

