



ENVIRONMENTAL TECHNOLOGY

Huge water savings for uranium mine

A Namibian uranium mine had 24 Krebbs pumps sealed with gland packing. To operate correctly the packing was flushed with around 5 cubic meters of water per hour. In total the mine uses 20,000-25,000 cubic meters of water per day at a cost of N\$960,000-N\$1,200,000 per day.

In addition the packing required regular maintenance and replacement every 10 days. The mine operator approached AESSEAL® for a better solution. AESSEAL® recommended a CDPH™ dual mechanical seal with a 20 bar FDU seal support system. The CDPH™ has been specifically designed for sealing slurries with large ports to ensure the maximum flow of barrier fluid, large internal clearances and non-clogging multi-spring design to maximise seal reliability and life. The seal is hydraulically balanced ensuring it will withstand process upset.

Since installing the seal the customer has improved MTBF from 10 days to 3 months. Production has improved as leaking water that used to dilute the concentration has been eliminated and a significant volume of water has been saved.

Return on investment

Current water usage per pump = 5m³ / hour based on 22 operating day = 2,640 5m³ / month

Cost of water = N\$48 / 1 m³ therefore per operating month = N\$126,720 / pump / month

Initially upgrade 12 pumps cost of water = 12 x 126,720 = N\$1,520,640 / month

To cost to upgrade 1 pump = N\$537,000

The total cost to upgrade 12 pumps = N\$6,444,000

The ROI = 4.2 months, after which the savings per month are N\$1,696,464

Savings per year are N\$20,357,568 (US\$1,367,157/yr / €1,405,622/yr)

‘Payback in just over 4 months’

Industry:	Mining
Product:	CDPH and FDU
Application:	Uranium mining
MTBF Increase:	800%
Savings:	US\$1,367,157 per year
Reference N.O:	ROI-2020-096



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