WCD4™ IMPROVES 400% WEAR LIFE

WILFLEY®

DURABLE. WATERLESS SEALING. INDUSTRIAL PUMPS.

The Customer:
Codelco, Division Chuquicamata

Country:
Chile

Market:
Copper

Application:
Doré Plant, Anodic Slurry

Product:
A9 pump with WCD4 material

BACKGROUND

Codelco Chuquicamata is the largest open pit copper mine in the world, located in the north of Chile, just outside Calama. It began operations in 1952 and has copper reserves of 40 years.

THE CHALLENGE

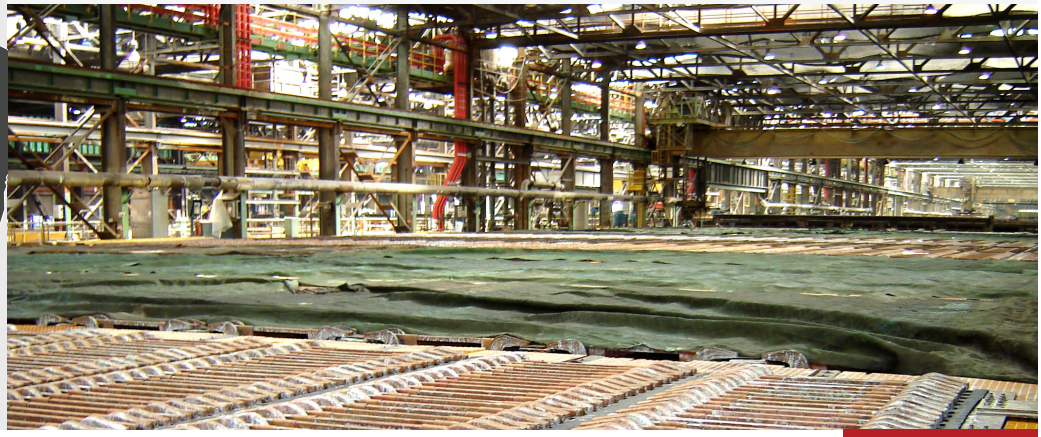
Chuquicamata wanted to improve wear life and seal reliability in their pumps handling Anodic Slurry. There were using Alloy 20 with a wear life of six months. The Anodic slurry is a subproduct from the Copper Electrolytic Refinery and has content of precious materials as gold, silver and weak sulfuric acid. The combination of acid and solids were a challenge to mechanical seals.

THE SOLUTION

The Wilfley team suggested to use the WCD4™, Wilfley's proprietary material that is chemically similar to ASTM A890, but with an average hardness of 345 Brinell. In addition, the Wilfley team recommended a Wilfley A9 pump with its **Wilfley Waterless Seal Technology.**

THE RESULT

The pump was still in operation after two years of continuous operation and components were found in good condition and returned to service. Thanks to the Wilfley A9 and its material WCD4™ , Chuquicamata was able to reduce the maintenance shutdowns by extending the life of the pump.



PUMP MATERIAL COMPARISON

	Alloy 20	WCD4
Brinell Hardness	180	340
Wear Life	6 months	2 years

WCD4™

WCD4™ is chemically identical to standard CD4MCuN but has significantly improved mechanical properties and corrosion resistance. These improvements are achieved through proprietary manufacturing processes developed at Wilfley.

WCD4™

WCD4™ is ideal for erosion-corrosion applications in extremely corrosive environments. Pump wear parts made from WCD4™ are expected to have **exceptional** wear life due to its increased hardness and improved corrosion resistance.

	Typical Hardness	Typical Tensile Strength	Typical Yield Strength	Typical Elongation
Wilfley WCD4	340 HBN	164,000 psi	113,000 psi	16%
Increase over standard CD4MCu	38%	64%	61%	Same

Tel: +1-303-779-1777
Email: pumps@wilfley.com
www.wilfley.com
5870 E. 56th Avenue Commerce City, CO 80022 USA

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