

## Challenge

### Issue

Mine production impacted by insufficient pump performance to meet required 300M<sup>3</sup>/hour flow.

### Goals

- Avoid purchasing additional pumps with an acquisition cost of \$25K and operational cost of \$3.5K
- Meet flow demand and reduce maintenance and operational costs

### Root Cause

After 20,000 hours operation in acidic mine water with entrained solids degraded pump internals and critical tolerances.



Bank of dewatering pumps

## Solution

### Preparation

Surfaces grit blasted to Sa 2.5 with 3 mil (75 µm) angular profile.

### Application

1. Apply **ARC 858**, to rebuild pump back to tolerances where abrasion and erosion had damaged casing and impeller
2. Apply **ARC MX2** in high wear regions to address abrasive suspended solids
3. Apply final topcoat of **ARC 855** for additional corrosion protection and to improve flow efficiency



Pumps rebuilt with ARC 858 and ARC MX2. Top coated with ARC 855

## Results

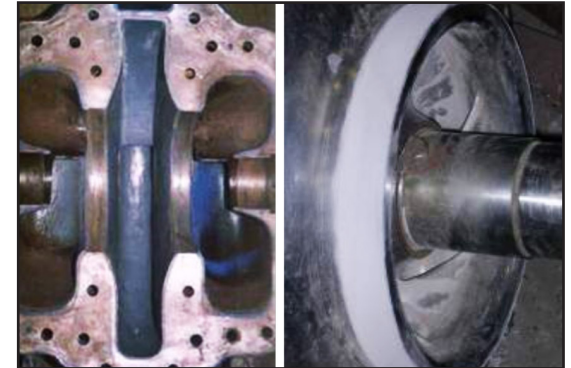
### Inspection Results

After repair, pumps operated at >94% of OEM efficiency with 3% less energy consumed.

### Cost Avoidance

- New pump installation/operation \$28.50K
- ARC material and labor **-\$ 6.80K**
- Associated energy saving **-\$ 3.29K**
- Total 1<sup>st</sup> year savings (per pump) \$18.41K

\$=USD



Coated sections of pump