

Challenge

Issue

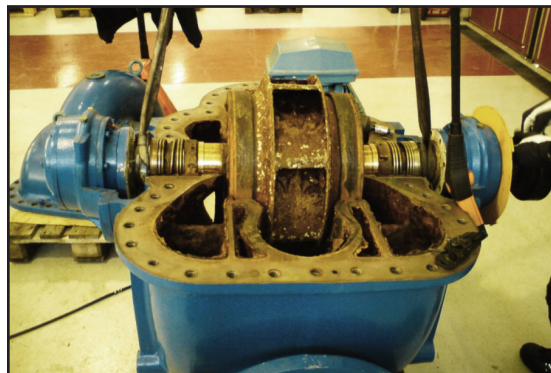
Insufficient influent flow results in purchasing new pumps to meet demand.

Goal

To increase pump performance and reduce energy consumption while meeting influent flow requirements.

Root Cause

Raw sewage with entrained solids degraded pump internals, with erosion and corrosion, leading to increased frictional resistance and energy consumption.



Eroded and corroded pump with old mechanical packing

Solution

Preparation

- Pressure wash and decontaminate for chlorides
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

1. Rebuild pitted surfaces and smooth to tolerance with **ARC 858**
2. Apply two-coat application of **ARC 855** for enhanced smoothness and corrosion/erosion resistance



ARC coated surface after dynamically balancing of impeller

Results

Annualized First Year Savings

Cost Comparison

New pump upgrade:	\$120K
ARC pump overhaul:	-\$ 70K
Year 1 cost avoidance:	\$ 50K
Annualized energy costs (old pump):	\$303K
Energy costs for ARC pump:	-\$243K
Total first year savings:	\$ 59K

- Overall pump efficiency increase: 65% to 88%
 \$=USD



Reinstalled pump undergoing efficiency measurements