



● MINING

Gypsum Mine Pump Scaling Case Study **Italy**

A *HydroFLOW*® unit was installed on a gypsum mine dewatering system, reducing severe calcium sulphate and carbonate scaling and keeping the pump operational after 3 months.

3 mths Continuous Operation	200mm Pipe Diameter Treated	700m Pipeline Length	90m Vertical Lift Height
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⇒ **BEFORE & AFTER**

● **BEFORE**

- Pump blocked every three months
- Impellers clogged with hard scale
- Regular acid cleaning required

● **AFTER**

- ✓ Pump remained operational
- ✓ Only light powder coating found
- ✓ Scale formed as suspended crystals



BEFORE

Pump condition at trial start



AFTER

Pump after 3 months operation

OVERVIEW

An Italian gypsum mine required continuous removal of water from underground caverns. High calcium, sulphate and bicarbonate levels created severe calcium sulphate and carbonate scaling.

CHALLENGE

Severe gypsum and carbonate scaling caused recurring pump failures and costly maintenance.

- Pump impellers blocked due to heavy scale deposits
- Engine overheating caused by scaling build-up
- Acid cleaning required every three months
- Metal rings and hydraulic joints cracked

SOLUTION

A *HydroFLOW*® custom 200mm unit was installed on the flexible pipeline between the underground pump and mine entrance, approximately 350m from the pump.

UNIT INSTALLED

1x *HydroFLOW*® custom 200mm

PIPE DIAMETER

200mm

INSTALLATION DATE

1 August 2012

PIPELINE LENGTH

700m



INSTALLATION

Installed unit



SITE

Underground pump



SITE

Underground pump

RESULTS

Pump Stayed Operational

Pump continued operating after the three month trial period.

Reduced Hard Scale

Inspection found only a light powder coating inside the pump.

Suspended Crystals

Minerals formed powder-like crystals in suspension instead of hard scale.

3 Month Operation

Trial ran for three months under severe gypsum mine water conditions.

Pump Protection

Treatment reduced scale-related blockage risk in the dewatering pump.

700m Signal Range

Treatment remained effective across the 700m pipeline.

KEY TAKEAWAY**Summary**

An Italian gypsum mine installed a *HydroFLOW*® custom 200mm unit on a dewatering pipeline affected by severe calcium sulphate and carbonate scaling. After three months, the pump remained operational and inspection found only a light powder coating, with minerals forming suspended crystals instead of hard scale.

3 mths

CONTINUOUS OPERATION

200mm

PIPE DIAMETER

700m

PIPELINE LENGTH

RELATED CASE STUDY

Norilsk Mining Water Treatment Study

Russia

Hydropath technology was deployed at a Norilsk mining operation in Russia to combat scale buildup in water transport pipes. Flow rates were maintained consistently, intervals between cleanings extended 9x, and the total mass of water pumped increased 2.26x.

9x Longer Cycles

Extended time between pipe cleaning interventions by nine times

2.26x More Output

More than doubled the total mass of water pumped per cycle

Steady Flow Rate

Maintained consistent flow rates by preventing scale restrictions

HYDROPATH **Ready to reduce scale-related maintenance?**

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