# Mineral Processing - Brine Transportation

**Case Study** | No.8

## Reduction of material build-up in brine and brine/acid lines

**SQM,**
**Pedro Valvidia Mine**
Chile | 2010

### Working conditions:

Ambient temperature -5°C to 0°C (32°F to 23°F). High level of material build-up and corrosion inside the pipe. Working pressure: 15 bar

### Pipes used:

Pexgol and elbows 160x14.6, Class 15

### Application:

Brine and acid transportation

### Length:

12 meters

### The Challenge

As the brine water and acid solution was being transported by the initial HDPE pipeline, salts were sticking to the pipe walls, reducing the inner diameter. Due to the low ambient temperatures, deposits of calcium sulfate formed on the inner wall of the pipes and on the elbows.
The matter was critical since the problem forced complete halting of work at the plant as well as lot of maintenance and reduction of production capacity.

### The Solution

SQM decided to replace its HDPE pipes and elbows with Pexgol's. Due to the especially smooth internal surface of Pexgol's pipes and elbows, the replacement of HDPE pipes with Pexgol eliminated the problem of chemical deposits. This resulted in fewer work interruptions and improved production capacity.
The production and transportation of Pexgol's pipes in coils also reduces the number of joints and possibility of clogging. As a result, it reduced maintenance costs and brought the end of frequent forced halts in the work processes at the plant.
The original mean time between failures (MTBF) of the HDPE pipes was one month. Since changing to Pexgol in 2010, no sign of failure has been detected.

**Golan Plastic Products Ltd.** Kibbutz Shaar Hagolan, 15145, ISRAEL
T. +972-77-9021040 | F. +972-77-9021010 | golan@golan-plastic.com | www.pexgol.com

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PEXGOL X-LINKED PIPING SOLUTIONS

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### Advantages

- **High resistance to wear:**
  Pexgol is the preferred solution for abrasive materials transportation. Typically resists three times more than HDPE and twice more than steel.
- **Excellent chemical and corrosion resistance:**
  Pexgol pipes can resist a wide range of chemical agents, slurries, toxic and radioactive materials.
- **High temperature resistance:**
  Working temperatures can range from -50°C/-58°F up to 110°C/230°F.
- **Superb internal and external corrosion resistance:**
  Our pipes are proven to withstand decades of exposure to corrosive environments, with non-stop performance in some of the world's harshest environments.
- **Low weight:**
  Compared to steel or rubber, Pexgol's solution results in reduced transportation, storage and labor costs due to lower weight per meter.
- **Long pipe sections:**
  Pexgol's pipes can be supplied in long lengths coils, reducing number of joints, installation time and risk.
- **Creep and impact resistance:**
  Pexgol's crosslinking piping solution can withstand high amounts of axial and radial stresses and are highly resistant to impact, fracture and fatigue.
  Our pipes are also completely resistant to cracks – even when dragged over sharp rocky terrain and coagulated salt crystals.

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