

SUCCESS STORY

MONITORING WATER WELLS AROUND A MINE IN CHILE++

COUNTRY:

Chile

PROJECT TYPE:

Hydrogeological control

SECTOR:

Mining

MAIN PRODUCT:

Loadsensing | The Wireless Monitoring System

Challenge

Located at 3,000m above sea level in the Atacama Desert of northern Chile, the mining and hydrometallurgical operation of this mine is 4km away from the mine and smelter. In the beginning of the mining operations, the initial target capacity was 150,000t/y of copper cathodes but optimization during construction raised the rating to 180,000t/y by the commissioning date. Traditionally, piezometers around the pit have been monitored by isolated standalone dataloggers which store information on an internal memory. Data was collected manually every month. The mining operator wanted to automatize and increase the hydrogeological control with more data and additional well points on the new and deepest open pit levels. With more than 60 wells in a huge area of 7.5miles by 3miles, the challenge of doing it wirelessly was enormous.

Solution

Worldsensing, partnering with Geosinergia, replaced the old RST dataloggers with 60 Loadsensing 5 channel wireless units which monitor 24/7 pore water pressure measured by the old RST piezometers, which were not replaced. The pore water pressure can be easily surveyed in real-time via a web browser from the Loadsensing visualization software. Due to the highly complex orography four Loadsensing Gateways were needed.

Benefits

The Loadsensing remote monitoring system now enables automatic and wireless data gathering on a daily basis, improving the information quality and frequency to the mining operator, who can now optimize copper production in a safer way. The Loadsensing system was selected due to its long-range radio, low-power consumption, easy implementation and compatibility with existing RST sensors.

With Loadsensing, the mine monitors pore pressures for waste disposal around the open pit copper mine in one of the hottest parts of the world, the Atacama Desert. The acquired data is crucial for ensuring mine safety and optimal operations.

Facts & Figures

- 60 VW multi - level RST piezometers on the surroundings of the pit
- Various piezometers in each borehole
- Immediate detection of any risk
- 60 VW 5 channel Loadsensing wireless data nodes
- 4 Loadsensing gateways



Figure 1:
Loadsensing VW 5 channel data node



Find out more:

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