



Mining Engineering and Construction Services

Client
Resolution Copper Company

Location
Arizona, USA

Mine Water Treatment Plant

Project Highlights

- Provided design and construction of a new mine water treatment plant and associated infrastructure
- Worked more than 50,000 hours with no lost-time injuries or incidents

Project Description

CH2M HILL provided design and construction services for a water treatment plant to treat water resulting from dewatering and re-opening of an existing underground copper mine. The plant uses the high-density sludge process to reduce the volume of storage required for treating solids. The plant also incorporates concurrent softening with soda ash to reduce the precipitable dissolved solids in the treated effluent.

Monomedia sand filtration is used to meet the receiving water body's water quality criteria. The plant is designed for an initial capacity of 2,500 gallons per minute (gpm) during the dewatering phase, and to allow turndown to 300 to 800 gpm during the operation phase without any mechanical modification; only process control system adjustments will be needed.

The overall plant cost was substantially reduced by reusing and refitting an existing thickener, constructing an additional thickener on an adjacent existing foundation, and reusing existing tunnels and an existing pump house building. Associated facilities included an equalization basin, influent pipeline, effluent pipeline (2 miles long), and two impoundments for storage of treatment solids.