

A copper producer mines for greater employee efficiency.

Client:

The flagship mine of a low-cost copper producer

Challenge:

The management team at a large, open-pit mine had already established improvement initiatives to achieve greater operational efficiency, but weren't seeing fast enough results. USC Consulting was called in to help accelerate the process.

Process:

The first step was to meet with the mine managers to gain an understanding of the scope and objectives of the site improvement project. We then conducted a two-week feasibility study to review major processes and methodologies. Armed with the results, we presented our recommendation that identified key areas requiring priority attention, along with a detailed plan for quickly implementing the changes.

The implementation phase included several initiatives aimed at improving employee involvement. We jointly developed recommendations with mine personnel that advised on how to gain better control of their operation, using the classic concepts of Kaizen, total productive maintenance and employee involvement prototyping.

With a special emphasis placed on recovering more copper from milled tonnage. The team facilitated, trained and helped implement statistical process control in the flotation process. This enabled mill control room operators to better understand and maintain key processes within the target range to achieve cleaner densities.

Performance Results:

- Mine cost-per-ton decreased by 23.5%
- Concentrate grade improved by 7.1%
- Density control improved by 1.3%
- Production in tons mined increased by 22%

Conclusion:

As the mine staff implemented the recommended process improvements, their costs dropped and measurable results materialized. The mine also saw increased productivity,



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shorter cycle times, higher quality, and improved yields. In just a short time, the improvement estimates established during the feasibility study were met and exceeded. As a result, new benchmarks were established for milled tons per day, tons mined, pounds of copper produced, recovery and concentrate grade.

We helped the client to also uncover other opportunities for improvement, including use of the dispatch system. Working together with the dispatchers, we reviewed the current system using process mapping analysis. Through the implementation of better techniques, the mine streamlined a more effective dispatch process. By synchronizing the loaders, shovels and trucks in the pit, we helped the mine increase tonnage by 15% to 25%.