USC CONSULTING GROUP™

Empowering. Performance.

A gold mine digs deeper to sustain continuous improvements.

Client:

A high grade South American gold mine, divided into three long vein structures, employing approximately 600 people and producing about 1,500 tons of ore per day.

Challenge:

The mine used the bench and fill method as their primary means to recover the ore. This yielded higher productivity per exploitation unit and lower exploitation costs by lowering the cut-off grade. Already considered one of the world's lowest cost producers, the mine operators believed its effectiveness could be further improved.

"We wanted to institutionalize our culture of continuous improvement by training and equipping our employees to sustain it, despite any unforeseen conditions we may encounter in the future," said the mine's president. "So, we decided to look for a consultant that had a good foundation in the mining industry, a broad range of experience gained from previous successful implementations, and who demonstrated sensitivity to our human resources and cultural issues."

Process:

Since much of the change that needed to be made was cultural, we recommended guiding a handpicked team of mine workers through the improvement process. This entailed training and equipping them with the techniques and operations management skills to not only deliver long-term benefits through lowered direct cost, but also establish a knowledge base that perpetuated the process. This way, team members could continue to implement changes within and outside their areas of responsibility for years to come.

To accomplish these goals, we formed a twelve-person project team made up of mine workers, supported by USCCG team members. Employees from all areas and all levels were selected, based on basic computer skills, good interpersonal skills, their ability to work as part of a team and a "good to excellent" performance rating in previous assignments.

We then used proven techniques to expose and recover waste, and to simplify the process through standardization and automation wherever possible. We started by focusing on the variability of existing systems and the resulting lost time. Finally, we put a Management Operating System (MOS) in place to measure lost time and track key

performance indicators of productivity. This drove a Pareto analysis, which generated action items to create change.

Following this proven blueprint, the project team identified opportunities for reducing variability in execution, improving maintenance effectiveness and reducing execution cycle times. We also utilized tools and techniques such as employee involvement prototyping, value stream mapping and analysis, capacity planning, performance metrics review and weekly operating reports. By installing visibility management and implementing a comprehensive auditing process to ensure perpetuation of new operating systems and methodologies, we helped the mine continue to expand its knowledge and solidify its base of continuous improvement.

Performance Results:

- Increased mill throughput 7% to 12%
- Improved effective underground equipment utilization by 30% to 50%
- Increased mine productivity 10% to 15%
- Reduced cost per ton by 1%
- Realized a projected savings of $1.2 to $1.6 million annually

Conclusion:

Results were impressive. Equipment utilization improved dramatically, leading to increases in productivity and throughput in the underground mining operation. Improvement in maintenance management also led to an improvement in mill productivity. The projected value delivered by the team was estimated at $1.2 to $1.6 million annually.

Even better, when asked at the end of the project how confident he felt about dealing with an unknowable future, the mine's general manager responded, "Thanks to the knowledge and skills we've gained through this engagement, I've never felt better prepared to face tomorrow, come what may."