that the service life of mechanical mining equipment requires more regular maintenance that that encountered in most other harsh environments.

The use of hot dip galvanizing was motivated by the fact that painted equipment requires more regular maintenance, which in turn is expensive and a corresponding short working cycles within the harsh mining environment. Paint simply does not provide an extended service life within most mining conditions. Past experience has shown that a service life will range from a few weeks to 2 or 3 months maximum. Subsequent maintenance and refurbishment of equipment is far more difficult and costly as well as being disruptive to mining operations.

Refurbishment of painted equipment requires shot blast cleaning and a full repaint operation in order to

Environmental conditions

Environmental conditions in an underground mining environment can vary from sever to extremely corrosive. Conditions include hot humid atmospheres, cooling water contamination as well as being subjected to mechanical damage resulting from physical handling and actual working conditions at the working face. Experience has shown
achieve an acceptable and presentable product to the client. This requirement does not arise in the case of a hot dip galvanized machine. The intervals between maintenance periods are also extended and maintenance requirements are greatly simplified.

**The site**
Two platinum mines were selected for testing the hot dip galvanized drilling machine. The machine spent three months at the first location followed by a further month at the second mine. After a period of four months in actual working conditions, the machine was recovered for maintenance at which time the effects of corrosion damage was examined.

**Our findings**
The hot dip galvanized steel components were standing up to the condition extremely well with no discernable deterioration. Comparisons to painted and uncoated components on the machine, clearly demonstrated the differences in corrosion control performance. Early performance indications were very encouraging and that potential economic benefits could be significant.

**Conclusion**
benefits for all structural steel components. These benefits reduce maintenance costs; extend the working life of equipment, which in turn has direct economical benefits for the mine owner.

Hot dip galvanizing of close tolerance machine components represents a significant departure from the past. The application of hot dip galvanizing steel should be seriously considered whenever environmental conditions are known to be highly corrosive.