

Sparge reduces risk of on-site cyanide mixing

Tasmania, Australia

ELIMINATING HAZARDS THROUGH COLLABORATION

As signatories to the ICMC, 'B' Gold Mine approached Orica to assist in improving the safe handling of cyanide at its facility. 'B' Gold Mine was using a typical box mixing facility at the time.

Orica's experienced technical team worked with the management of 'B' Gold Mine in Australia to help eliminate the hazards of mixing and using cyanide on-site. In 2006, an Orica Mini-Sparge cyanide mixing process was identified as a key component of achieving this goal.

The unit was installed in a collaborative project between 'B' Gold Mine and Orica. It consisted of a 20 tonne ISO tank, a Mini-Sparge pump and a full control system integrated into the existing infrastructure.



'B' Gold Mine cyanide Mini-Sparge unit

To ensure the safe operation and mixing of cyanide, the system was subjected to Orica's hazard study process to improve safety.

Procedures were developed in conjunction with an operator training program – and now 240 tonnes of cyanide per year is dissolved using this system on-site, with less than 1% of the original risk of an incident.

Since installation of the cyanide Mini-Sparge unit at 'B' Gold Mine, site operators and management have observed greatly improved ergonomics and procedural safety at the plant leading to an overall improvement in mine site safety.

Other benefits include reductions in the reliance on PPE and the loss of containment during transportation, the elimination of hazardous packaging waste and a less labour intensive process.

Technology alone, however, does not deliver results. Orica's experienced technical team worked with the site operators before, during and after the installation to ensure that the full safety and operational benefits of their products would be realised.



Before: Typical bag mixing operation with full PPE



After: Single push button to operate with the operator isolated from the hazard.

WHAT WERE THE KEY OUTCOMES?

Reduced risk of handling cyanide on-site, to less than 1% of the original risk score

Improved security and reduced risk of environmental incidents during transportation

Improvement in resource utilisation and elimination of packaging waste for a sustainable supply chain solution

THE OUTCOME

The collaboration at 'B' Gold Mine reduced the risk rating for the on-site mixing of 20 tonnes of cyanide to less than 1% of the original risk score. The reduction in risk score has been achieved through engineering the solution, rather than reliance on administrative and PPE controls. It has also resulted in reduced transport, security and environmental risk.

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ADVANTAGES OF USING ORICA'S TECHNICAL TEAM FOR SITE SUPPORT ARE:

Experience in installing and operating more than 43 Full Sparge and Mini-Sparge units worldwide

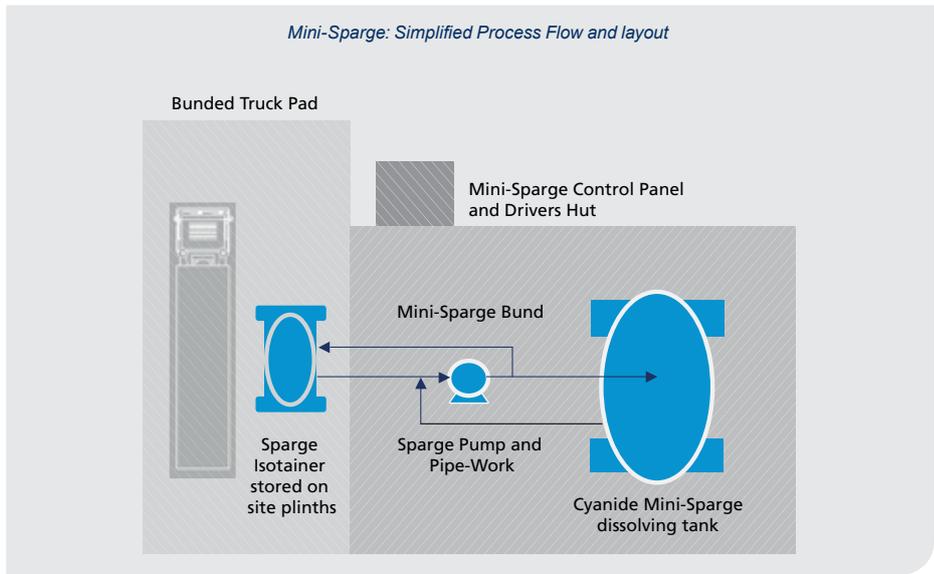
Best practice knowledge transfer due to Orica's broad customer network

Ability to develop a product to suit each client's cyanide demand

Efficient process design and delivery

Annual inspections and site reports ensure assets are in correct working order

Maintenance and troubleshooting support



WHO WAS THE CLIENT?

'B' Gold Mine, commissioned in 1999, is located in the north-east region of Tasmania approximately 200 kilometres north of Hobart. The mine is a signatory to the International Cyanide Management Code (ICMC) and as such employs leading practices in cyanide management.

WHAT CHALLENGE DID THEY FACE?

'B' Gold Mine operated a conventional CIP gold processing plant, originally with a 1 tonne box mixing system. The mine was investigating methods of eliminating the risk of on-site cyanide mixing. It needed a cost effective solution that could fit into the existing site infrastructure.

HOW DID ORICA SUPPORT AND HELP?

Orica worked with the management of 'B' Gold Mine in Australia to help eliminate the hazards of mixing and managing cyanide on-site, by installing an Orica cyanide Mini-Sparge process. Orica's assistance in conducting risk assessment and hazard studies of the new process was a key component of the acceptance of the project. Orica's experience in design and installation made the improvements simple for 'B' Gold Mine because Orica delivered the system ready to use. Orica installed and monitored the mini sparge plant before training the on-site staff in cyanide handling and the mini sparge operation. Orica continues to provide ongoing support to 'B' Gold Mine.