

# Orica's cyanide analysers increase efficiency

Carosue Dam, Western Australia

## WHO WAS THE CLIENT?

Carosue Dam is a processing plant located within the South Laverton gold field, 120 km North East of Kalgoorlie, Western Australia. The site processes 2.5Mtpa of gold-bearing ore, which is above the plant's nameplate capacity of 2.4Mtpa. Every year, it produces 130,000 ounces of gold.

## WHAT WERE THE CHALLENGES?

Staff at the plant wanted to significantly reduce cyanide costs through automatic cyanide addition, based on Orica's analysis technology. They targeted cyanide reagent cost savings of around 15%, through better cyanide addition control and the removal of cyanide spikes and troughs. Working this way could also contribute to a slight increase in gold recovery, due to fewer periods of inadequate cyanide concentration.

## HOW DID ORICA HELP?

The OCM5000 On-Line Free Cyanide Analyser is specifically designed to enable automatic cyanide additions to gold leach circuits. This is achieved by performing quick automated cyanide analyses from two points in the leaching circuit and providing results for the automatic cyanide addition system. OCM5000 was installed at the head of the CIL circuit at Carosue Dam to target 220-250 ppm of free cyanide.



Carosue Dam's on-site analyser enclosure

THE BENEFITS OF AUTOMATED CYANIDE ADDITION WITH OCM5000:

On average 14.5% drop in cyanide consumption

Annualised savings of \$1.2M based on first six months of operation

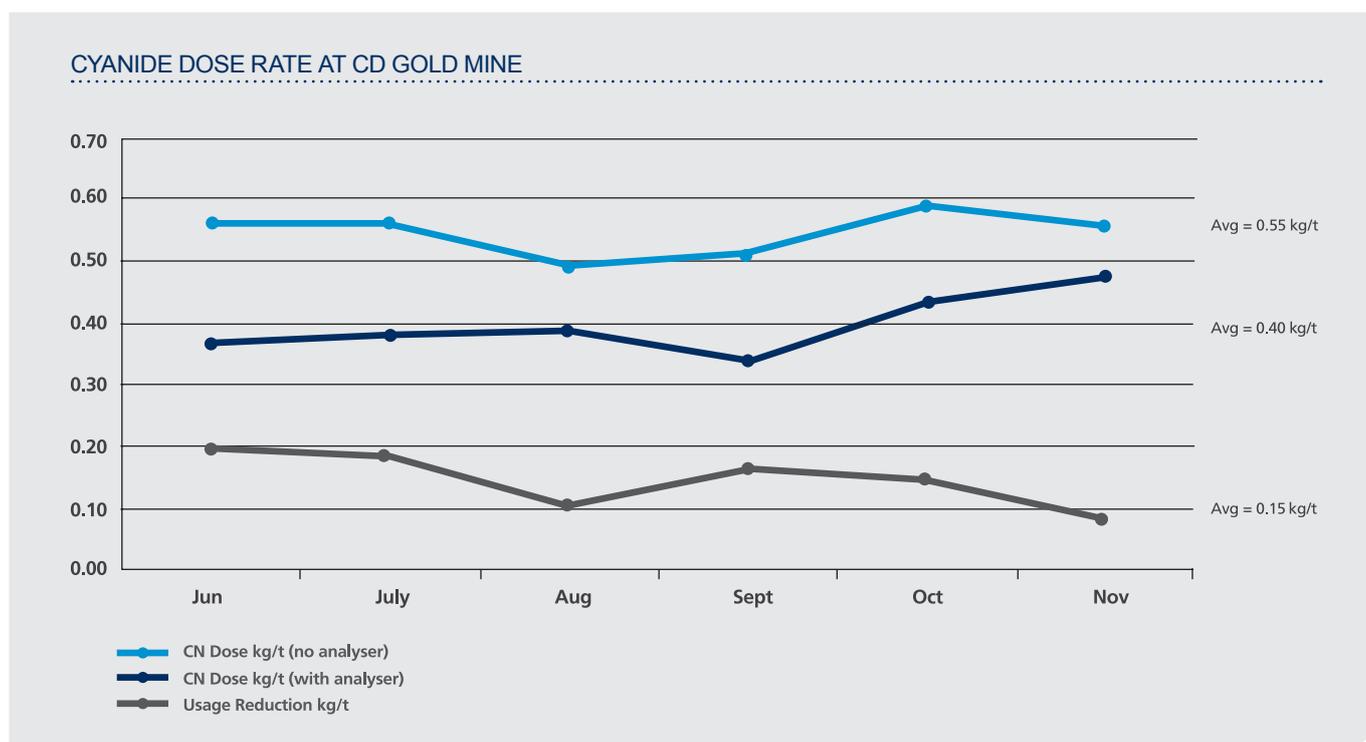
100% return on investment in less than two months



Carosue Dam's OCM5000 On-Line Free Cyanide Analyser

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## THE OUTCOME

Installation of the automatic cyanide control system with the OCM5000 On-Line Free Cyanide Analyser immediately reduced cyanide consumption. It fell from 0.55 kg/t to 0.36 kg/t in just one month. This was the lowest level since operations resumed at the plant in 2010. Over the next six months the OCM5000 continued to provide cyanide savings, through a 27% reduction in cyanide costs.

The savings represented around \$1.2M in lower operational costs per year. In around one month, the automatic cyanide addition system had already paid for itself. Based on the site's historical data and the plant's configuration, Orica has been able to identify further opportunities to lower reagent consumption and possibly increase gold recovery.