## **Online Gold Analysis at Evolution Mining Mt Carlton**

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## ABSTRACT

Gekko Systems have collaborated with the CSIRO and Evolution Mining's Mt Carlton operation to complete the first successful site-based trial of an on-stream analyser capable of directly reading gold in slurries and solutions to sub-ppm levels. Developed by the CSIRO and commercialised by Gekko, the XRF-based analyser was installed in the flotation circuit at Mt Carlton and is the first of its type to be installed and trialled in an operating environment.

The collaboration has seen Gekko, CSIRO and Mt Carlton retrofit CSIROs lab analyser into a modular integrated solution. The analyser, known as the OLGA (OnLine Gold Analyser) delivers a real time hourly rolling average of the gold grade in the targeted process stream, a measurement that is updated every ten minutes and is fed back directly into the plant DCS.

Before the installation of the OLGA, Mt Carlton operational staff used spot assays (taken every 6 hours) and shift composites to make decisions regarding day-to-day operation of the plant. The turnaround time of these assays was >6hrs due to the requirement to dry and prep the samples.

The OLGA has now been successful trialled on the flotation feed and flotation tails at Mt Carlton and has been providing real time feedback to operational staff since December 2018. Having access to real time feedback of the grades in these streams in higher resolution data than previous sampling intervals has enabled Mt Carlton operational staff to make real time decisions regarding the operation of the plant. The OLGA is capable of detecting short excursions (which were not visible in the existing assay regime) and also longer-term trends and significant deviations.

This paper discusses the motivations for the OLGA installation, the benefits of OLGA versus existing assay technology, the challenges associated with the trialling of new technology, the results of the trial and the ongoing utilisation/future possibilities of the data provided by the OLGA at Mt Carlton.

Keywords: real time measurement, automation, process control, gold, flotation