

## Improved understanding of the chemical recovery of copper

**New CSIRO research supported by the Minerals Research Institute of Western Australia (MRIWA) examines the in-situ chemical recovery of copper from natural ores. This technology could allow metal to be extracted without the disruption accompanying conventional mine development.**

Supported by the Minerals Research Institute of Western Australia (MRIWA) and industry sponsor BASF, a team of researchers led by Dr Laura Kuhar at the CSIRO has delivered new understanding of the chemical reactivity of copper ore systems.

By allowing valuable metal to be extracted without developing a conventional mine and processing and storing large volumes of waste rock, in-situ chemical recovery offers the potential of reducing both the cost of mining and its impacts.

Understanding the interactions between real ore systems and potential chemical recovery solutions is key both to unlocking the economic benefits of the technology and to predicting and addressing potential environmental impacts of the chemical solvents used.

This project successfully identified the chemical mechanisms by which ore minerals break down to release copper into solution, and the by-products created by these reactions under different environmental conditions.

The findings of this research will help scientists predict the response of natural copper deposits and surrounding rocks to a range of chemical solvents enabling copper to be dissolved and brought to the surface.

In releasing the report detailing this research, MRIWA CEO Nicole Roocke said “This work offers the potential of a new approach to resource development, delivering the resources we need while decreasing impact of mining on the landscape.”

“By reducing both the direct and environmental costs of development, this technology could help prolong the operation of existing mines in Western Australia or allow copper to be extracted from ore bodies that are uneconomic to mine using conventional methods.

“Through supporting this innovative research, MRIWA is working to ensure a comprehensive understanding of potential environmental impacts of the extraction technique while enabling sustainability of our state’s minerals industry.”

The technical report summarising the research findings can be found here:

<https://www.mriwa.wa.gov.au/research-projects/project-portfolio/understanding-fluid-rock-interactions-and-lixiviant-oxidant-behaviour-for-the-in-situ-recovery-of-metals-from-deep-ore-bodies>.

For more information on MRIWA’s research program, contact Nicole Roocke, MRIWA on 08 6180 4343