TRAILBLAZER
RESOURCES TECHNOLOGY & CRITICAL MINERALS

JAMES COOK UNIVERSITY AUSTRALIA

Resources Technology and Critical Minerals Trailblazer

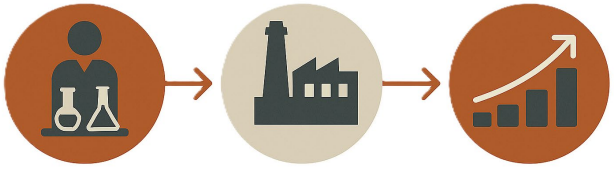
Transforming how industry, universities and research work together

Supporting optimization of resource operations by developing new technologies

Equipping innovators with the skills and knowledge to transform the sector

Project

Emerging Technologies for Advanced Geochemical Exploration Undercover



RESEARCH → INDUSTRY COLLABORATION → IMPACT

Curtin University

IN COLLABORATION WITH

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

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Emerging Technologies for Advanced Geochemical Exploration Undercover

Project Description

Problem

Exploration for ore deposits undercover has had limited success.

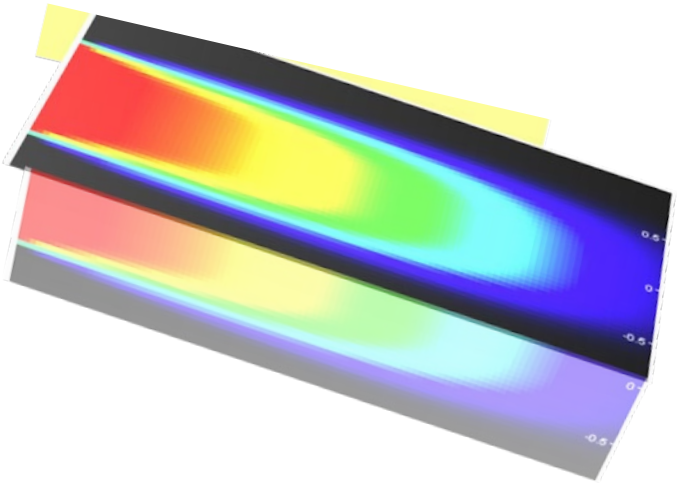
Groundwater chemistry can be a powerful exploration tool but current methods for isotope analysis have precision and accuracy problems due to groundwater salinity.

Aims

Develop analytical methodology to improve geochemical data obtained from saline groundwater.

Quantify isotopic anomalies developed around Cu deposits in the Mount Isa and Cloncurry regions.

Integrate results with groundwater modelling to identify isotopic dispersion signatures associated with mineralisation.



Partnerships

Collaborators

James Cook University – Geoscience, Engineering

Industry – Anglo American, Strategic Energy Resources, AIC Mines

Project Lead

Dr Alex McCoy-West, JCU

Contributions

Industry ~ $2.4m

Trailblazer ~ $0.7m

Total Project Value ~ $3.1m

June 2026
For further information on JCU Trailblazer projects please send enquiries to: EGRU@jcu.edu.au

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