



Mine Closure 2024

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on Mine Closure

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Volume One



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Editors

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Australian Centre for Geomechanics

The Australian Centre for Geomechanics (ACG) was formally established in 1992 as a University of Western Australia not-for-profit research centre in order to promote research excellence and continuing education in geomechanics, with particular emphasis on its application to the mineral and energy extraction sections of Australia's resources industry.

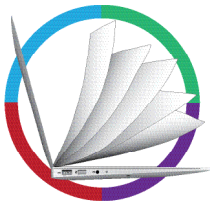
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- CSIRO Mineral Resources
- The University of Western Australia — Civil, Environmental and Mining Engineering

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Preface

The 17th International Conference on Mine Closure returns to Perth, Australia, the location of the inaugural conference in 2006. The number of papers submitted to this year's conference is testament to how the topic of mine closure has become part of core business for responsible mining companies. There are now teams of specialised and highly experienced mine closure practitioners working across the industry, focusing on ensuring favourable post-closure outcomes for both stakeholders and the environment.

The enormous interest in submitting papers for consideration for presentation at this year's conference, and consequent inclusion in this fully peer-reviewed proceedings, necessitated a program model of three parallel sessions. This is a testament to the quality of submissions received. The large number of papers included here is despite the fact that the final acceptance rate for presented papers was 48% of those submitted for consideration. The diversity of authorship from across academia and industry is also tribute to the unique value provided through these proceedings in documenting and sharing knowledge and innovations in practice from multiple perspectives and disciplines.

This year, we are focusing on emphasising papers presented at the conference within the framework of the United Nations Sustainable Development Goals (UN SDGs). According to the UN, 'The SDGs aim to transform our world. They are a call to action to end poverty and inequality, protect the planet, and ensure that all people enjoy health, justice, and prosperity.' These goals map closely on to what good mine closure should aim for as an outcome, and many of our themes in previous conferences map closely to these. To help us look beyond the mines we wish to close, we hope to encourage a broader appreciation of what our industry and conference can achieve on the global stage. The 17 UN SDGs are:

- | | |
|--|--|
| 1. No poverty (SDG 1) | 10. Reduced inequalities (SDG 10) |
| 2. Zero hunger (SDG 2) | 11. Sustainable cities and communities (SDG 11) |
| 3. Good health and well-being (SDG 3) | 12. Responsible consumption and production (SDG 12) |
| 4. Quality education (SDG 4) | 13. Climate action (SDG 13) |
| 5. Gender equality (SDG 5) | 14. Life below water (SDG 14) |
| 6. Clean water and sanitation (SDG 6) | 15. Life on land (SDG 15) |
| 7. Affordable and clean energy (SDG 7) | 16. Peace, justice, and strong institutions (SDG 16) |
| 8. Decent work and economic growth (SDG 8) | 17. Partnerships for the goals (SDG 17) |
| 9. Industry, innovation and infrastructure (SDG 9) | |

To emphasise the contribution of the 17th International Conference on Mine Closure to these SDGs, specific SDGs addressed in each session have been identified as follows:

Relinquishment and legacy management	SDG 3, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17
Stakeholders and communities	SDG 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17
Ecosystem reconstruction	SDG 3, 6, 8, 13, 14, 15
Modelling and risk	SDG 3, 6, 9, 12, 14, 15
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Landform design	SDG 6, 9, 12, 15,
Mine closure planning	SDG 6, 8, 9, 11, 12, 13, 14, 15, 16, 17
Tailings management	SDG 6, 9, 12, 14, 15
Abandoned mines	SDG 3, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
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Landforms, drainage and erosion	SDG 6, 9, 12, 14, 15,
Financing and cost estimation	SDG 1, 2, 3, 8, 9, 10, 11, 12, 14, 15, 16, 17
Risk and hazards	SDG 3, 6, 9, 12, 14, 15
Post-mining land use	SDG 3, 6, 8, 13, 14, 15
Legislation and regulation	SDG 3, 6, 8, 11, 12, 13, 14, 15, 16, 17

We hope that making these explicit links will foster and encourage discussion at this year's conference on how our activities can continue to make meaningful contributions to society and perhaps even broaden the scope and quantum of addressing the seventeen SDGs.

The conference proceedings are freely available from the ACG Online Repository of Conference Proceedings courtesy of Open Access Sponsors, Klohn Crippen Berger and Mine Earth Pty Ltd. The papers can be accessed by scanning the QR code or from papers.acg.uwa.edu.au/mc2024.



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