

Mine Waste and Tailings Conference 2021

TABLE OF CONTENTS

FINANCIAL AND SOCIAL LICENCE TO OPERATE	4
Spatial distribution of geohazards in Western Australia and Imposed risks to tailings storage facility inventory J Penman, H Liu and N Turner	5
No assumptions, no surprises M Longbottom and G Deans	14
A review of risk management for tailings dams; learnings from other high hazard industries M Erskine and R Mills.....	20
GOVERNANCE AND RESILIENCE, GUIDELINES AND STANDARDS	38
Will introduction of EoRs improve governance of TSFs in Australia? L Boczek.....	39
Deck hands needed! Experience necessary – addressing the impending qualified tailings professional resource shortage D L Spencer, C N Hatton, C A Bareither, K J Ward and J Scalia IV.....	44
Rio Tinto's strategic assurance response to the Brumadinho tailings dam failure J Lapwood, S Pal and M Pascoe.....	54
INNOVATIVE MINE WASTE MANAGEMENT, INCLUDING INTEGRATED AND CO-DISPOSAL OF TAILINGS AND COARSE WASTES	64
CHPP waste pumped co-disposal – some myths and truths S J Henderson	65
Hydrogeological characteristics of co-disposed tailings and coarse rejects from coal processing K Koosmen, S Fityus and J Simmons.....	72
Technology integration for tailings storage facility construction A R Hollis and M Heddon	89
Developing a TSF design concept – experience helps but numbers don't lie L D Munroand and S A Jackson	98
Using technology to support best practice for tailings storage facilities (TSF) management, governance and disclosure N Pollock, H Arvidson and A Walker	110
Geotechnical assessment for the waste rock backfilling of the decommissioned Rum Jungle Open Cut Pit A Rayner, B Tarrant, D O'Toole, J Hartnett and P Davies	118
Mine waste characterisation	141
Assessment of Robertson (2010a) CPTu state parameter inversion method within Been et al. (1987) CPTu inversion parameter framework K Smith	142
Some considerations on the engineering performance of subaqueously-deposited silts D Reid	158
A comparison of CPT based state parameter estimates in coal boiler ash	

B Wentzinger.....	176
The effect of vane shear rotation speed on the estimation of tailings undrained strength B Wentzinger and Y Keulemans	184
BHP and management standard: a global approach to reducing geochemical risk and minimising closure uncertainties M Stimpfl, T Cooper, J Heyes, J P Pearce and R Staines	191
Cone penetration testing of gold tailings in a small calibration chamber J Ayala, A Fourie and D Reid.....	199
Improvements in estimating strengths of loose tailings: results from the TAILLIQ research project A Fourie, D Reid, J Ayala, A Russell, T Vo, M Rahman and J Vinod.....	207
Machine learning to estimate fines content of tailings using gamma cone penetration testing I Entezari, T Boulter, S McGregor and J Sharp.....	218
Mine waste facility closure case histories and costs	227
Groundwater modelling support for closure approvals at Ranger Uranium Mine J Sigda, T Jones, C Cheng, J Pickens, J Ewing, S Paulka and D Staggs	228
Legacy tailings dam closure with a bituminous geomembrane cover M Medina, R J Longey and J Alexander.....	246
Mine waste monitoring, surveillance, Emergency Response Plans and regulation.....	252
How to select appropriate instrumentation to safeguard TSFs against credible failure modes P J Chapman	253
Trends in real-time instrumentation and monitoring techniques for tailings dams L Clarkson, D Williams, P Redcliffe and F van der Wal	264
Mine waste water balance and management.....	278
Accelerated aging testing of geomembranes for tailings liquor J Folwell, F Gassner and G Phillips.....	279
Operational aspects and case histories.....	290
Dredging fine tailings S H Burgmans and B Anderson.....	291
Targeting dilatancy in upstream construction D M Brett, A Li, Q Gu, J Chan and A Simmons	303
Empowering tailings operators through education D Brett	317
Evolution and technical considerations to manage tailings at the RPP-140 mining title (Antioquia – Colombia) E Wolff and B García	321
Taming the dragon – the art of transitioning from reactive to proactive tailings management through strategic operator engagement C N Hatton and K Ward	328
Phreatic uncertainty in the unsaturated zone of tailings storage facilities: an examination of two Australian case studies E J Coyle and L A Millington	338
Stability of tailings dams, and tailings run-out and impact	343
Fiber optic distributed sensing system for monitoring of tailings storage facilities D Inaudi, R Belli, R Walde and R Blin	344

Geostatistical analyses of cone penetration testing data of a tailings storage facility in a semi-arid setting B Moosapoor and P Chapman.....	354
Analysis of downstream field behavior of long-runout tailings flows using remote sensing N M Rana, N Ghahramani, S G Evans, S McDougall and A Take.....	368
Critical state soil mechanics in filtered TSF design J Rola	380
Assessing static liquefaction for upstream tailings dams A L Li, A Fourie, A Litwinowicz and M Laxman	389
An assessment of the rate of construction of an upstream raised tailings dam P Garvey, J J Moreno and J Willis	406
Comparison of two and three-dimensional seepage analysis in tailings dams – a case study N Yarahmadi	418
A preliminary benchmarking numerical modelling exercise for tailings-flow runout analysis N Ghahramani, N M Rana, S Liu, H J Chen, D Clohan, S McDougall, S G Evans and A Take	427
Physical modelling of tailings dam breach: exploring overtopping following shear failure M McKellar, A Walsh, S McDougall, S G Evans and W A Take	438
Parametric assessment of tailings liquefaction and earthquake induced embankment deformations using FLAC M Munro and B Ghahreman-Nejad.....	447
Selection of undrained shear strength parameters of residual soils and their application in stability analysis B Dareeu, T Rowles, Y Xu and A Dissanayake.....	461
Tailings dewatering and placement.....	470
Full PSD rejects shear strength testing for co-disposal and assisted tailings dewatering technique selection J Li, S Fityus, D Payne, S Vaughan and G Burton	471
TerraFlowing™ – an innovative and flexible method for tailings dewatering N R Steward and D Stephenson	485
Solid bowl decanter centrifuges – the alternative technology M Player, R Klug and N Schwarz.....	495
The underdog mechanical alternative for tailings dewatering: the screw press W Wimmler, S Whitton and L Wimmler.....	503
Effect of mud farming on the dewatering of bauxite residue F E Herrera Cabrera, D J Williams and C Zhang	520