

**GLOBAL TAILINGS STANDARDS
AND OPPORTUNITIES**
FOR THE MINE OF THE FUTURE
ONLINE CONFERENCE

15, 17, 19, 22, 24, 26 NOVEMBER 2021

Final Programme

Day 1–Monday 15 November 2021

- 09:00–09:30 **Zoom Login**
- 09:30–09:35 **Zoom Logistics**
SAIMM
- 09:35–09:45 **Welcome and Opening**
A.S. Macfarlane, *Conference Chairperson*
- 09:45–09:55 **SAIMM Presidential Address**
I.J. Geldenhuys

Session 1: Management and Governance

Session Chair: G. Howell, *SRK Consulting, South Africa*

- 09:55–10:25 **Keynote Address: The global industry standard on tailings management: Origins, content and ICMM response**
A. Davy, *International Council on Mining and Metals, United Kingdom*
- 10:25–10:55 **Keynote Address: An Owner's perspective on implementing the global industry standard for tailings management**
R.A. Cooper, *Sibanye Stillwater Limited, South Africa*
- 10:55–11:10 **Q&A**
- 11:10–11:25 **Morning Break**
- 11:25–11:40 **The future of mining with zero mine waste**
C. Vuillier¹, M. Ingwersen², A. Peys³, Y. Menard⁴ and A. Price⁵, ¹*Circular Mine, Australia*, ²*MEKS Solutions, Australia*, ³*Vito NV, Belgium*, ⁴*Bureau de Recherche Géologiques et Minières (BRGM), France*, and ⁵*Soil Cyclers, Australia*
- 11:40–11:55 **Engineering geological characterization of sites for greenfield tailings dam and extensions with reference to the requirements of GISTM**
P. Aucamp and J. Stiff, *SRK Consulting, South Africa*
- 11:55–12:10 **Monitoring systems and modern technologies - their application in better managing the risks posed by tailings storage facilities at all phases of the facility lifecycle**
K. Mistry and J. Dutchman, *Fraser Alexander (Pty) Ltd, South Africa*

- 12:10–12:25 **Practical steps to global industry standards on tailings management compliance for operational tailings storage facilities in South Africa**
S.D. Dladla and S.D. Ramsamy, *Fraser Alexander, South Africa*
- 12:25–12:40 **Q&A**
- 12:40–13:10 **Lunch Break**
- 13:10–13:25 **Survey feedback on requirements for GISTM appointees**
C. MacRobert, *Stellenbosch University, South Africa*
- 13:25–13:55 **Panel discussion: Adoption and implementation of GISTM, and the impact on the Southern African environment**
- 13:55 **Day 1 Close**

Day 2–Wednesday 17 November 2021

- 09:30–10:00 **Zoom Login**
- 10:00–10:05 **Zoom logistics**
SAIMM
- 10:05–10:10 **Welcome and Opening**
A.S. Macfarlane, *Conference Chairperson*
- 10:10–10:20 **Address by the South African Institute of Civil Engineering**
J. Breyl, *Jones and Wagener, South Africa*
- Session 2: Affected Communities**
Session Chair: L. Spies, *SRK Consulting*
- 10:20–10:50 **Keynote Address: Historic and current management of gold tailings and proposed management by integration**
M. Liefferink, *Federation for a Sustainable Environment, South Africa*
- 10:50–11:20 **Keynote Address**
P. De Pasquale, *International Institute for Sustainable Development, Switzerland*
- 11:20–11:40 **Environmental and social management system approach for tailings management**
J. Burke and F. Lake, *SRK Consulting, South Africa*
- 11:40–11:55 **Q&A**
- 11:55–12:10 **Morning Break**

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- 12:10–12:25 **The manual design of drainage systems for upstream constructed tailings storage facilities**
K. Uderstadt and G. Howell, *SRK Consulting, South Africa*
- 12:25–12:55 **Keynote Address: People live downstream! Building communities into tailings planning, management and closure**
C. Anderson, *Yirri Global LLC, USA*
- 12:55–13:10 **Q&A**
- 13:10–13:40 **Lunch Break**
- 13:40–14:10 **Panel discussion: Implications and opportunities for affected communities**
- 14:10 **Day 2 Close**
- Day 3–Friday 19 November 2021**
- 09:30–10:00 **Zoom Login**
- 10:00–10:05 **Zoom logistics**
SAIMM
- 10:05–10:10 **Welcome and Opening**
A.S. Macfarlane, *Conference Chairperson*
- 10:10–10:20 **Address by the Mine Metallurgical Managers Association**
- Session 3: Integrated Knowledge Base**
Session Chair: F. Hoertkom, *Karlsruhe University of Applied Sciences, Germany*
- 10:20–10:50 **Keynote Address: Integration of global standards into the Southern African environment**
A.S. Macfarlane, *South Africa*
- 10:50–11:05 **Helping safeguard tailing storage facilities with digital twin technology**
T. Krom, *Seequent Environmental Segment, Denmark*
- 11:05–11:20 **Evaporation and infiltration observations during and post-deposition on platinum tailings in a semi-arid environment**
S.A. Lorentz¹, B. Gray², and A. Clulow², ¹*SRK Consulting* and ²*University of KwaZulu-Natal, South Africa*
- 11:20–11:35 **Q&A**
- 11:35–11:50 **Morning Break**
- 11:50–12:05 **Rainfall-induced transient pressure wave mechanisms and pore water pressure dynamics in tailings**
C. Theron¹ and S.A. Lorentz², ¹*Cape Peninsula University of Technology* and ²*SRK Consulting, South Africa*
- 12:05–12:20 **Robust drainage analysis and design for tailings storage facilities: A generic study**
W. Rouncivell, S. Imrie, G. Howell, S. Seroalo, and A. Vicente, *SRK Consulting, South Africa*
- 12:20–12:35 **Q&A**
- 12:35–13:05 **Lunch Break**
- 13:05–13:20 **A limit equilibrium approach to the use of stability bunds for the design of an HDPE-lined tailings storage facility**
J.D. Visagie and T. Bezuidenhout, *SRK Consulting, South Africa*
- 13:20–13:35 **Improving tailing dry stacking is dependent on belt filtration efficiency aided by filtration chemicals**
N. Mautsa¹, J. Farmer², T.D. Chikuni², and E. Kalipi³, ¹*Kemira South Africa*, ²*KHeat Exchange Products, Namibia*, and ³*Navachab Mine, Namibia*
- 13:35–13:50 **Q&A**
- 13:50 **Day 3 Close**
- Day 4–Monday 22 November 2021**
- 09:00–09:30 **Zoom Login**
- 09:30–09:40 **Zoom logistics**
SAIMM
- 09:40–09:50 **Welcome and Opening**
A.S. Macfarlane, *Conference Chairperson*
- Session 3: Integrated Knowledge Base (continued)**
Session Chair: L.A. Torres-Cruz, *University of the Witwatersrand*
- 09:50–10:20 **Keynote Address: Construction of a new TSF**
Impala Platinum, South Africa
- 10:20–10:35 **Review of chemistries and applications critical for tailing dry stacking**
R. Pretorius¹, N. Mautsa², M. Mbonami², B. Nel², J. Miller¹, M. Penttinen³, X. Yin⁴, and M. Pelaez⁴, ¹*Kemira, Germany*, ²*Kemira, South Africa*, ³*Kemira, Finland*, ⁴*Kemira, USA*

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- 10:35–10:50 **The impact of weak foundation material properties on the design and stability of a tailings storage facility**
J.H. Viljoen, *Knight Piésold (Pty) Ltd, South Africa*
- 10:50–11:05 **Q&A**
- 11:05–11:20 **Morning Break**
- 11:20–12:05 **Keynote Address: Geoff Blight Oration**
D. van Zyl, *University of British Columbia, Canada*
- 12:05–12:35 **Lunch Break**
- 12:35–13:20 **Keynote Address: SAICE tailings medal**
J. Wates, *John Wates Consulting, South Africa*
- 13:20–13:40 **Screening of seismic records to perform time-history dynamic analyses of tailings dams: A power-spectral-based approach**
N.A. Labanda^{1,3}, M.G. Sottile^{1,2}, I.A. Cueto^{1,2}, and A.O. Sfriso^{1,2}, ¹SRK Consulting, Argentina, ²Universidad de Buenos Aires, Argentina, ³Curtin University, Australia
- 13:40 **Day 4 Close**
- Day 5–Wednesday 24 November 2021**
- 09:00–09:30 **Zoom Login**
- 09:30–09:35 **Zoom logistics**
SAIMM
- 09:35–09:40 **Welcome and Opening**
A.S. Macfarlane, *Conference Chairperson*
- Session 4: Design, Construction, Operation and Monitoring**
- Session chair: A. Coetzee, Implats, South Africa**
- 09:40–09:55 **Management of risks associated with operating tailings facilities in South Africa's changing environment**
S. Dladla, *Fraser Alexander, South Africa*
- 09:55–10:10 **Satellite based monitoring of tailing storage facilities**
N.C. Steenkamp, *Pinkmatter Solutions, South Africa*
- 10:10–10:25 **Remote sensing of the decant pond of tailings dams: Insights from a South African case**
C. O'Donovan, E. Adam, and L.A. Torres-Cruz, *University of the Witwatersrand, South Africa*
- 10:25–10:40 **Investigation of the stability of a fly ash pond facility using 2D and 3D slope stability analysis**
M. Ferentinou¹, L. de Kooker¹, I. Musonda¹, and K. Esmaeili², ¹University of Johannesburg, South Africa and ²University of Toronto, Canada
- 10:40–10:55 **Monitoring of closed and legacy tailings facilities**
A. Bovim¹, S. Barry¹, K.L. Morton², and N. Prevost¹, ¹Insightterra and ²KLM Consulting Services (Pty) Ltd, South Africa
- 10:55–11:10 **Q&A**
- 11:10–11:25 **Morning Break**
- 11:25–11:40 **Opportunity for value addition: Remining of LG, MG and UG2 tailing storage facilities**
K. Shame-Letsoalo, *Mintek, South Africa*
- 11:40–11:55 **Advances in tailings monitoring - a hydrogeologist's perspective**
K.L. Morton, *KLM Consulting Services (Pty) Ltd, South Africa*
- 11:55–12:10 **Remote data collection, safety evaluation and monitoring of tailings storage facilities**
D. Epstein¹ and I. Hammond², ¹Geotheta Consulting and ²Delta Scan, South Africa
- 12:10–12:25 **A review of EN 16907 in a South African context**
F. Hörtkorn¹ and Y. Narainsamy², ¹Karlsruhe University of Applied Sciences, Germany and ²University of Pretoria, South Africa
- 12:25–12:40 **Numerical modelling of the interaction between tailings and a Penstock Tower**
F.L. Spinazzola¹, M.G. Sottile^{1,2}, A.O. Sfriso^{1,2}, and G. Howell³, ¹SRK Consulting, Argentina, ²Universidad de Buenos Aires and ³SRK Consulting, South Africa
- 12:40–12:55 **Q&A**
- 12:55–13:25 **Lunch Break**

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Session 5: Public Disclosure and Access to Information

Session chair: K.L. Morton, *KLM Consulting Services (Pty) Ltd*

13:25–14:05 **Keynote Address: Insights from tailings data disclosed by mining houses to institutional investors**

L.A. Torres-Cruz, *University of the Witwatersrand, South Africa*

14:05–14:35 **Keynote Address: The investor's perspective**

A. Matthews, *Church of England Pensions Board, United Kingdom*

14:35–14:50 **Q&A**

14:50 **Day 5 Close**

Day 6–Friday 26 November 2021

09:00–09:30 **Zoom Login**

09:30–09:35 **Zoom logistics**
SAIMM

09:35–09:40 **Welcome and Opening**

A.S. Macfarlane, *Conference Chairperson*

Session 6: Emergency Response and long-term recovery

Session chair: K.L. Morton, *KLM Consulting Services (Pty) Ltd*

09:40–09:55 **A comparison between HEC-RAS 6.0 and FLO-2D as tools used in tailings dam breach analyses**

A. Scholtz and S. Chetty, *SRK Consulting, South Africa*

09:55–10:10 **Tailings studies at the University of Pretoria**
S.W. Jacobsz and Y. Narainsamy, *University of Pretoria, South Africa*

10:10–10:25 **SANS Update**
A. Copeland, *Knight Piésold*

10:25–10:40 **Q&A**

10:40–10:55 **Morning Break**

10:55–12:55 **Session 7: Crafting the future through dialogues: a multistakeholder, structured and facilitated global dialogue on the following topics:**

- What are the burning issues for NGOs and stakeholders?
- How does industry communicate with stakeholders and communities?
- What levels of disclosure are adequate and necessary to meet stakeholder needs?
- What is required in terms of research and development?
- How do non-ICMM companies and countries comply?
- How enforceable should guidelines be?
- How does this fit into ESG reporting requirements?
- What is Board responsibility?

12:55 **Conference Close**