

Seminário Técnico Internacional sobre Barragens de Rejeitos e o Futuro da Mineração em Minas Gerais

International Technical Seminar: Tailings Dams and the Future of Mining in Minas Gerais State

ORGANIZAÇÃO



IBRAM
INSTITUTO BRASILEIRO DE MINERAÇÃO
Brazilian Mining Association
Câmara Mineira de Brasil

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GOVERNO
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MINAS GERAIS



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ICMM's work on tailings

Tom Butler, CEO
17 April 2019

Coverage of the Brumadinho incident

THE WALL STREET JOURNAL



Behind Vale's Deadly Dam Collapse: Multiple Warnings That Went Unheeded

For months, inspectors worried about the safety of a giant mine-dam perched over a town in Brazil but blessed it anyway

FINANCIAL TIMES

Opinion **The Commodities Note** [+ Add to myFT](#)

Vale's catastrophic dam failure highlights industry shortcomings

Mining executives must ramp up efforts to enforce standards in order to restore trust

Mining [+ Add to myFT](#)

Vale under scrutiny after second mine disaster in Brazil

Iron ore producer faces risk of large fines and lawsuits as death toll mounts in Minas Gerais



Rescue crew work in the tailings dam that burst, in Brumadinho, Brazil © Reuters

Mining [+ Add to myFT](#)

Global miners count the cost of their failings

Environmental, social and governance metrics steer investors away from sector making news for all the wrong reasons



Bloomberg

Business
Brazil's Costly Mining Failures Tied to Cheap Waste Storage



Vale suspended from Corporate Human Rights Benchmark over dam disaster



L'ÉVÉNEMENT

«Ce n'est pas un accident! C'est un crime!»

The Telegraph

Business
Brazil's latest mining disaster is a tragedy foretold



REUTERS

ENVIRONMENT JANUARY 26, 2019 / 4:08 PM / 12 DAYS AGO

Second Vale dam burst in Brazil likely to curb mining risk appetite



THE TIMES

Mining disaster at Brumadinho in Brazil puts focus on safety of dams around world



The Guardian

Brazil dam collapse: bodies pulled from toxic mud as hope fades for survivors

The New York Times

Brazil Arrests 8 at Mining Giant Vale Over Deadly Dam Collapse

Council is strongly supportive of the proposed actions in response to Brumadinho

- A. High level review – fully independent
- B. International Standard: Includes a consequence-based classification system and associated disclosure
- C. Supporting Guidance: Performance based Risk Informed System for Design, Operations and Closure (PBRISD) recommended by Prof. Morgenstern, a conformance guide for ICMM's tailings governance framework, critical controls management framework
- D. Short-term training on tailing management guidance, based on member interest.
- E. Supporting longer term research and training
- F. Building capacity within ICMM

COUNCIL'S COMMITMENTS

- A. High level non-technical review
- B. TSF classification system
- C. Develop PBRISD guidance
- D. Training on tailings guidance**
- E. Research/education**
- F. Capacity within ICMM**

MEANS OF DELIVERY

- A. Independent review to develop an int'l standard*
- B. Independent review to develop an int'l standard*
- C. Tailings WGs to develop + external oversight
- D. Tailings WGs to determine**
- E. Tailings WGs to determine**
- F. ICMM to address**

* Tailings Working Groups to provide expert input in an advisory manner and as sounding board

Underscoring the importance of independence

- We are committed as an industry to a step change in performance to restore the confidence of key stakeholders, including investors and host communities
- A wholly industry-owned process will not be regarded as credible and will therefore serve no purpose
- The appointment of a Chair regarded as objective and impartial to oversee the expert panel is a critical success factor
- ICMM has committed to engaging representatives from civil society, communities, industry, investors, and multilateral organisations, as well as engineers and subject matter experts, to determine the detailed scope of the review. Gaining the confidence that their views have been listened to is also a critical success factor
- All parties should be equally invested in providing a timely solution members can implement, while avoiding an unworkable outcome that would inhibit uptake

Outcome is development of international standard



- Consequence-based classification system with requirements for each level
- Credible independent review
- Emergency planning and preparedness

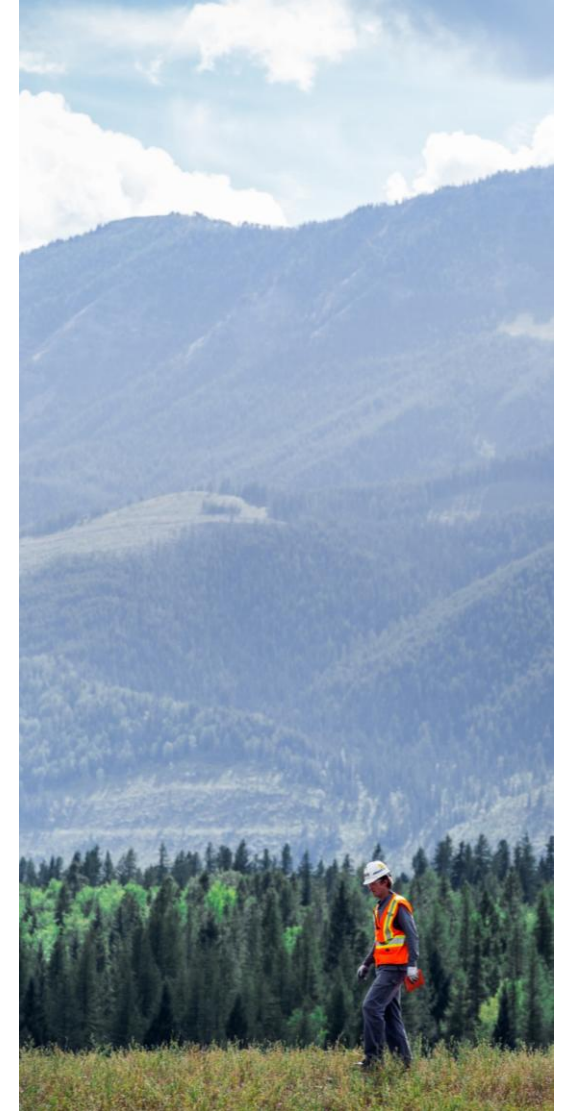
How various pieces of work connect together



- ICMM position statement on tailings governance
- Future requirements of international standard
- ICMM guidance that responds to Prof. Morgenstern and incorporates other materials
- ICOLD, ANCOLD, CDA, JCOLD, SANCOLD, etc.

Tailings Aspirational Goal (set in 2017):

“We agree to work collectively to advance progress over the next 10-15 years towards developing superior and cost-effective alternatives to conventional wet tailings storage facilities.”



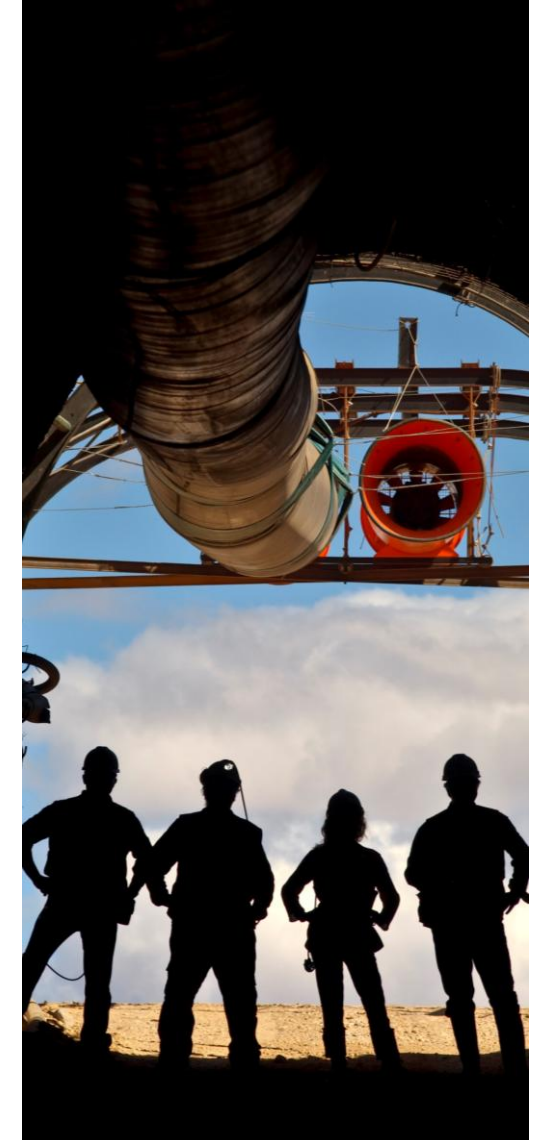
On-going project activities

Three tracks of work:

Track 1: Identify alternative methods of mineral recovery, to significantly reduce or eliminate tailings waste (>15 years)

Track 2: Remove moisture from tailings and strengthen tailings (5-10years)

Track 3: Strengthen operational performance for tailings storage facilities; enhance implementation of tailings Position Statement (3-5 years)

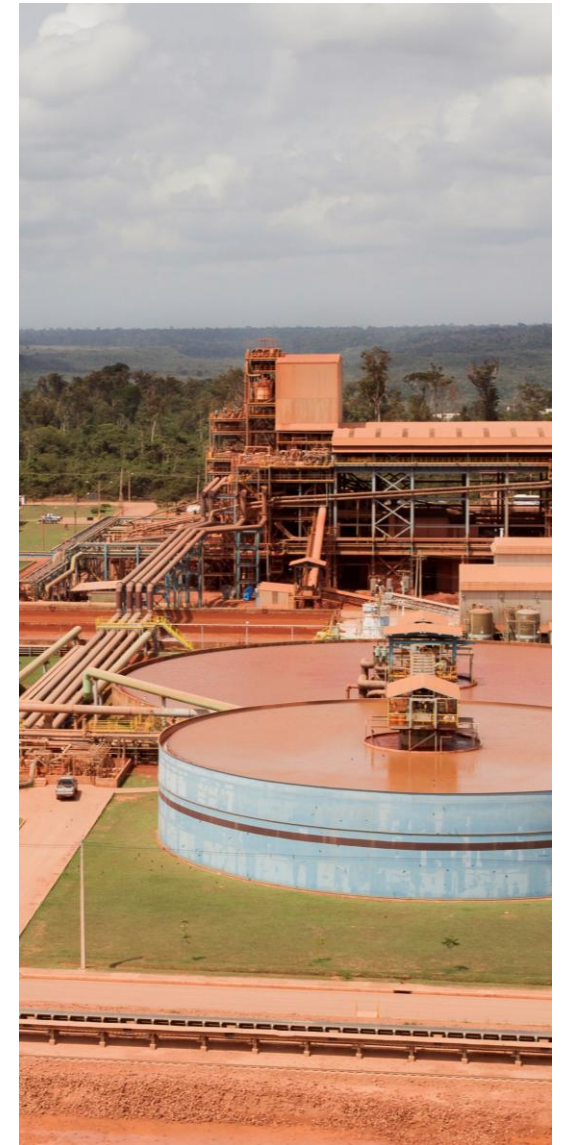


On-going project activities

- A **landscape review of technologies** for 1) alternative mineral recovery and associated waste minimisation and 2) dewatering tailings
- **Vendor marketplace sessions** to identify collaborators among vendors, academics and practitioners
- **Member survey** to understand what initiatives are currently underway in reducing /eliminating tailings, remove moisture from tailings, and monitor TSFs. This will identify best practices and a picture of the 'market' to vendors



Any Questions?



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