

TAILINGS AND MINE WASTE 2026



SHORT COURSE

TRANSFORMING TAILINGS AND MINE WASTE INTO VALUE

Unlocking Value and Innovation in Mine Waste Management: Tailings Reprocessing and Re-use for Sustainable Mining and Construction

Date: November 8, 2026

Duration: Full-day

Information provided here is subject to change.

Objective:

The aim is to provide mining professionals with practical tools to extract the highest level of value from tailings and waste rock; reducing on-site storage while improving economics, safety, easing approvals and long-term legacy outcomes - creating value-added products with construction industry partners without disrupting core operations.

The course highlights collaboration and sustainability and focuses on low-risk solutions already being implemented at mines and quarries. The aim is to help mines reimagine tailings, not as waste but, as a resource with real economic and environmental value. This is about current opportunity and future potential, delivering operational, environmental, and economic benefits.

Course Summary:

Waste is a function of perspective, not composition. Unlock the potential of mining waste with this dynamic, interactive course, designed for mining professionals seeking practical solutions and innovative strategies. Discover global trends, proven technologies, and case studies on remining, reprocessing, and repurposing mine waste for operational, environmental, and economic gains. Through engaging presentations, interactive discussion, participants will learn how to turn tailings into valuable resources, reduce costs, ease approvals, and create value-added products, all without disrupting core operations. Join us to transform your approach and deliver benefits today.

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On completion, participants will:

- Understand the value proposition and risk reduction potential of tailings reuse.
- Understand global drivers, constraints, and opportunities for tailings reprocessing and repurposing.
- Understand who the end users are and what makes mine waste valuable to them.
- Identify markets, processes, and collaborative models to extract value from tailings.
- Gain insight into case studies and real-world applications like the Nemo and FACET Projects.
- Learn tools for resource assessment and decision-making to transition from waste to resource/products.
- Understand existing and emerging technologies and innovations that enable tailings reprocessing.
- Participate in critical discussions to reflect on operational readiness and organizational enablers.
- Take away practical knowledge and strategic guidance applicable to site-specific contexts.

Detailed Course Description:

As the mining industry faces increasing pressure to meet global demand for metals while minimizing its environmental footprint, remining and reprocessing mine tailings and waste rock has emerged as a transformative solution. Using advanced technologies, mining companies can turn legacy waste into valuable resources, recovering precious and critical metals e.g. rare earth elements, cobalt, copper, gallium etc. that were previously uneconomic to extract. The remaining, generally larger fraction, clean tailings, rich in minerals such as quartz, aluminosilicates and other silicate materials can be used in construction as alkali-activated, cement replacement geopolymers, bricks, aggregates, ceramics and pigments. Phosphates and sulfurous minerals can be used in technosols and landform products for closure and rehabilitation. Water can be reclaimed and AMD seepage better managed.

Modern methods - like AI-driven sensor-based ore sorting processing, coupled with improved existing technologies such as coarse and fine particle flotation - enable more efficient metal recovery from tailings, reducing reliance on new mining and aligning with circular economy goals.

This course equips mining professionals with tools to turn mine waste into valuable resources. It features expert sessions, case studies, group discussions, and Q&A across four modules:

- **Module 1 covers drivers and challenges in reprocessing tailings.**

This introductory module explores the fundamental drivers, and challenges associated with tailings and waste rock reprocessing and repurposing. Participants will examine the global landscape, including regulatory trends and the technical, environmental, and economic factors that influence the reclassifications of tailings as a resource. Critical discussions will address key barriers such environmental regulation and construction industry perception and adoption of

new feed stocks and demonstrate how system-level thinking and strategic approaches can unlock new prospects.

- **Module 2 explores opportunities market potential, value extraction and collaborative models.**

Participants will examine how to identify the value and market opportunities within tailings. The module will review analysis methods and value extraction, both from the ore body and the tailings as a feed to a reprocessing facility and explore different metal recovery strategies. Topics include market location, demand, expectations, product compliance, regulatory framework and collaborative frameworks for tailings repurposing e.g. with quarries and construction companies. A series of case studies will offer insights into real-world applications and innovation pathways.

- **Module 3 focuses on tailings management with a circular approach and operational readiness.**

This module emphasizes techniques for integrating tailings into the circular economy, specifically recycling and repurposing materials for industrial applications, construction and with the view to minimizing environmental impact including carbon sequestration opportunities. Practical sessions guide participants through risk assessment, compliance requirements, and operational planning for implementing reprocessing projects effectively. A series of case studies will be presented.

- **Module 4 highlights innovations, emerging technologies, and future directions.**

The final module showcases breakthroughs in processing, including AI-based ore sorting, enhanced flotation, bio-leaching and water reclamation systems, and discusses how these advances shape future industry standards. Group workshops encourage critical thinking about scalable solutions, adaptation to evolving regulations, and leadership in sustainable mining.

Participants will gain actionable knowledge and frameworks to help transform mine waste sustainably.

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Presenters:



Charles Vuillier

GHD Australia, Technical Director: Tailings and Repurposing

Over 30 years' experience in tailings management, geotechnical engineering, water management, and waste recycling. Charles' career has been characterised by a strong commitment to environmental sustainability, particularly in sustainable mine waste management over the last six years.

He is a leader in the application of various technologies, leveraging detailed chemical and mineralogical analysis for metal recovery and mine waste repurposing into construction materials and agricultural soil options. This approach reduces mine waste volume, de-risking mine sites, and produces a large amount of raw material for the construction industry, demonstrating a clear alignment with ESG and Circular Economy principles.

Charles was a speaker at GHD's August 2026 "Accredited Technical Masterclass on Tailings repurposing and reuse: from risk management to tailings creation".



Wesley Herweynen

GHD Australia, Dams and Geotechnical Engineer

Wesley is an experienced civil engineer with professional and research experience focusing on tailings and mine waste management. He has been involved in all aspects of tailings dam design, including concept, feasibility and detailed engineering design. Wesley also has experience in construction supervision of tailings dams and supervising geotechnical field investigations. His research experience includes studying the consolidation and shear strength behaviour of tailings and coal ash materials, including running and interpreting advanced geotechnical laboratory testing. Wesley has been involved in tailings projects in the USA, Australia, Peru and Brazil.



Gonzalo Suazo

GHD Chile, Business Group Leader - Earth Science

Gonzalo is a Civil Engineer with a Ph.D. in Geotechnical Engineering and 14 years' experience in mining waste management across Chile, Brazil, the Philippines, and Australia. He has led all phases of tailings storage facility design, including conceptual to detailed engineering, and has overseen projects using both traditional and innovative tailings disposal methods. Gonzalo has contributed to regulatory development as an advisor to Chile's Ministry of Mining and has published extensively on geotechnics and

monitoring techniques. He currently leads a team of 40 at Earth Sciences, managing national and international projects.



Dave Clark

GHD APAC and North America, Mining Market Leader

Dave possesses more than 30 years' experience in the resources sector, spanning senior specialist technical roles and strategic advisory leadership positions. His current roles involve market development leadership for GHD's core and advisory businesses across Australia and the Americas in the resources sector. This includes strategic business development, client relationship management, and major program delivery. Providing vision and direction for the resources market in line with GHD's strategy, Dave has a strong understanding of the resources sector megatrends and what this means across the regions, for our clients and for GHD's business.



Caitlin Ruiz

GHD Senior Tailings Engineer, USA

Caitlin has around 10 years of experience specialising in tailings engineering, mine waste management, and dam safety across North America and Australia. She has extensive expertise in the design, assessment, and governance of tailings storage facilities (TSFs), with a strong focus on aligning projects with international best-practice frameworks, including the Global Industry Standard on Tailings Management (GISTM).

Her technical experience spans the full lifecycle of TSFs, including geotechnical investigations, site characterisation, detailed design, construction support, operational performance evaluation, and closure.

Caitlin recently facilitated and contributed to GHD's August 2026 "Accredited Technical Masterclass on Tailings repurposing and reuse: from risk management to tailings creation".



Tyler Dixon

GHD Senior Tailings & Dams Engineer, Canada

Tyler is a geotechnical engineer, specialising in tailings dam design and construction, embankment dam safety, alternative mine waste solutions, and closure management.

Having supported more than 20 mining sites and nearly 100 dams globally, Tyler brings experience spanning the full lifecycle of tailings storage facilities, from concept and permitting through operation and closure.

As Engineer of Record for three closed TSFs / legacy assets in British Columbia, Tyler has a particular interest in TSF closure, tailings repurposing, resource recovery, and long-term tailings management and stewardship.

Tyler was a speaker at GHD's August 2026 "Accredited Technical Masterclass on Tailings repurposing and reuse: from risk management to tailings creation".



Nicolas de la Maza

GHD Chile, Tailings Engineer

Nicolas is a senior Tailings Engineer with experience delivering tailings and geotechnical projects, worldwide, across multiple stages of facility design, including concept, feasibility, detailed engineering, and closure planning. His portfolio includes notable projects such as the BHP GISTM Conformance Validation, the Renison Engineer of Record Services, MEP2 Integrated Waste Landform, Didipio LoM Study and Raise Detailed Design, AMSA Dam Safety Review, and RTA Weipa Operations Support Services, among others.

Nicolas brings strong technical capabilities and proficiency in a range of software tools related to geotechnical and tailings engineering. He is recognised for his proactive approach and critical thinking skills.