

In-person Workshop by Klohn Crippen Berger

Responsible Tailings Stewardship: Managing Multidisciplinary Challenges in a Changing World

Instructors: **Andrew Witte**, Klohn Crippen Berger, Canada; **Vicki Nguyen**, Klohn Crippen Berger, Canada; **Orlando Bravo**, Klohn Crippen Berger, South America; **Anita Parbhakar-Fox**, Klohn Crippen Berger, Australia

WHEN	WHERE	LANGUAGE	LENGTH
Monday 28 th September	Sheraton Hotel	English	6.5 hours

DESCRIPTION

Mining projects are increasingly challenged to deliver greater value while managing uncertainty, reducing business continuity risks, and controlling costs. Sound business decisions require an understanding of how technical uncertainty evolves throughout the mining life cycle and how it influences project economics, risk, and long-term performance. Geological, geochemical, and geotechnical uncertainties can significantly affect mine design, operational performance, closure liabilities, and ultimately project viability. This workshop will explore the critical links between geochemical processes and geotechnical performance, with emphasis on deformation mechanisms, closure cost implications, and secondary prospectivity. Participants will gain practical insights into integrating scientific understanding with risk-informed business case development and decision-making.

GENERAL OBJECTIVES

- 1. Early Mine Planning: Design the End State First**
Explore how closure-led thinking can transform mine planning, reduce future liabilities, and create more sustainable, cost-effective operations from day one.
- 2. Rethinking Tailings Dam Design: From Factors of Safety to Performance-Based Outcomes**
Demonstrate how deformation modelling can provide a more realistic understanding of tailings dam behaviour and support risk-informed, performance-driven design decisions.
- 3. Lessons from Recent Mine Closures: Smarter Strategies to Minimise Dewatering Costs**
Share practical closure experiences and innovative approaches that significantly reduce dewatering requirements, costs, and long-term environmental risks.
- 4. Unlocking Value Beyond Closure: The Emerging Opportunity of Secondary Tailings Prospectivity**
Examine how advances in technology, economics, and resource recovery are transforming legacy tailings from liabilities into valuable future assets.

CONTENT AND PROGRAMME

9:30-9:45	The tailings lifecycle- introduction	Anita Parbhakar-Fox
9:45 - 10:45	Module 1: Early Mine Planning - Designing the End-State First	Andrew Witte
10:45 - 11:00	Questions and discussion on Module 1	
11:00 - 11:10	Break 1	
11:10 - 12:00	Module 2: Performance-based design for the tailings dam life cycle	Vicki Nguyen
12:00 - 12:10	Questions and discussion on Module 2	
12:10 - 13:10	Break 2- Lunch	
13:10 - 14:00	Module 3: Recent closure experiences, minimizing dewatering costs	Orlando Bravo
14:00 - 14:10	Questions and discussion on Module 3	
14:10 - 14:20	Break 3	
14:20 - 15:10	Module 4: Beyond mine closure: Repurposing tailings- myths and opportunities	Anita Parbhakar-Fox
15:10 - 15:20	Questions and discussion on Module 4	
15:20 - 15:30	Break 4	
15:30 - 16:00	Workshop discussion and closure of the course	Anita Parbhakar-Fox

LECTURER(S) BIO

Andrew Witte, M.Eng., P.Eng., is a Senior Geotechnical Engineer and Principal at Klohn Crippen Berger in their Mining Environment Group based in Vancouver. He specializes in the design, construction, safe operation, and closure of earthfill and rockfill embankment dams. Andrew is the lead engineer for several major cyclone sand tailings dams in British Columbia and holds various design and review roles for numerous other proposed, operating, and closed tailings dams, each with their unique challenges. He is the chair of KCB's Engineer of Record Steering Committee and leads the Mining Environment Group's Tailings Practice Area, while also volunteering with various industry associations such as the Mining Association of Canada's Tailings Working Group.

Vicki Nguyen, P.Eng., is a Senior Geotechnical Engineer and Technical Lead at Klohn Crippen Berger Ltd in Calgary, AB. She has over 15 years of experience and has led probabilistic and deterministic seismic hazard assessments and deformation models in FLAC 2D and 3D to assess and design slope stabilization measures, estimate seismic deformations, and calibrate model parameters based on field and instrumentation data for tailings facilities, dam structures, and slope stabilization projects around the world. Notable projects include 2D seismic deformation modelling and seismic hazard assessments for sites in Ecuador, Peru, the Dominican Republic, and Papua New Guinea that are subject to significant seismic loading.

Orlando Bravo, B. Eng, CIP, is the Operations Manager, at Klohn Crippen Berger Ltd in Peru. He brings more than 26 years' experience delivering multidisciplinary mining and civil engineering projects from conceptual studies through to detailed design and construction. He has led geotechnical, geological, hydrological, hydraulic, hydrogeological, environmental, and civil engineering teams for major mining projects across Latin America, Canada, and Papua New Guinea. Orlando provides deep technical expertise in tailings storage facilities, waste rock landforms, mine closure, and geotechnical investigations, including the design, operation, and risk management of tailings facilities. His extensive experience in independent reviews, due diligence assessments, and Engineer of Record roles is complemented by a strong leadership background, having directed engineering and operations teams across South America for more than a decade.

Anita Parbhakar-Fox, PhD, is the Technical and Innovation Lead for Geosciences- Australia at Klohn Crippen Berger Ltd. Anita has over 20 years' experience spanning academia, industry, and consulting. Anita has led internationally recognised research in mine waste characterisation and geometallurgy, including founding the MIWATCH Group at The University of Queensland and holding leadership roles within the Sustainable Minerals Institute and ARC-funded initiatives. Her work has focused on advancing mine waste as a potential resource for metal recovery in support of the energy transition, through major collaborations with government and industry where she has worked extensively across Australia with additional projects in Europe, North and South America. Before joining KCB, she served as Global Principal Characterisation at BHP. Anita has authored 45+ academic journal publications and has supervised > 20 PhD, MSc and BSc (Hons) students.