

Mine Water Solutions in Extreme Environments 2015

Short Course 3: Mine Dewatering and Mine Water Management

Presenters

- Geoff Beale, Mining Hydrogeologist, Schlumberger, USA
- Shane O'Neill, Principle Hydrogeologist, Schlumberger, Canada

Background and technical rationale

The course is based on industry experience and working case studies supported by conceptual hydrogeology and water management theory.

Who should attend?

This course is aimed at professionals in technical and management positions related to mining hydrogeology, mine dewatering, pit slope engineering and mine water management

Course Outline

07:30-08:30	Registration
08:30-10:30	Module 1: Introduction <ul style="list-style-type: none"> • General principles of mine dewatering • Open pit vs. underground dewatering • Setting up a dewatering program • Practical data collection • The importance of monitoring
	Module 2: Fractured rock hydrogeology <ul style="list-style-type: none"> • Fundamental parameters • Permeability and groundwater flow • Development of a conceptual model • Differences between porous medium and fracture flow • Modelling and prediction of flow rates
10:30-11:00	Coffee break
11:00-12:30	Module 3: Mine dewatering <ul style="list-style-type: none"> • Underground dewatering • Open pit dewatering • Design of a dewatering well field • Pit slope depressurization • Downstream water management
12:30-13:30	Lunch
13:30-15:00	Module 4: Water balance and water management <ul style="list-style-type: none"> • Goals of a mine water balance • Design vs. operational water balances • Climate and probabilistic modelling • Site Inventory and data collection • Model ownership and maintenance
15:00-15:30	Coffee break PM
15:30-17:00	Module 5: Mine closure <ul style="list-style-type: none"> • General principles of mine closure • Underground mine closure • Open pit mine closure • Development of a closure plan • Implementation and monitoring
17:00-17:30	Wrap-up

Instructor Bios

Geoff Beale

Mining Hydrogeologist
Schlumberger, USA



Geoff Beale is a worldwide expert in mine hydrology and mine water management. He has 37 years hands-on experience in the extractive and mining industries. He travels globally and works as a senior technical expert for many of the large mining houses. He has worked on over 250 mining projects in over 50 countries, in all mining commodities, and in all of the world's climatic regions. Geoff was one of the founder members of the Water Management Consultants Group in 1989, and was principal with the company through to the time of its acquisition by Schlumberger in 2007. Geoff is most noted for his global knowledge of open pit and underground mine dewatering projects, and has been involved with many of the world's largest dewatering operations. In addition, he has broad experience in the operation and environmental aspects of leach pads, waste rock facilities and tailing systems. He has extensive mine closure experience, and has been a lead player in the closure program at a number of mine sites.

Shane O'Neill, M. Sc. P. Geo.

Principal Hydrogeologist
Schlumberger, Canada



Mr. O'Neill is a professional geologist with over 26 years of experience in extractive and mining hydrogeology and water resources management, having worked in both Europe and North America. He has extensive experience in mine water management, including design of both surface and underground dewatering and depressurizing systems. Mr. O'Neill's specialist areas are groundwater resource assessments, integration of hydrogeology with geotechnical engineering as part of pit slope stability analyses and overall impact assessment of mining projects on groundwater. Shane has a special interest in fracture flow, hydrochemistry and hydromechanical coupling.