



5<sup>th</sup> International Conference on  
Mine Closure

23→26 November 2010, Sheraton Miramar Hotel & Convention Center, Viña del Mar, Chile.

## MINE CLOSURE 2010 PROGRAMME

### TUESDAY, 23 NOVEMBER

15:00–19:00 **Registration**

17:45–18:15 **Authors and session chairs coordination meeting**

19:00–20:00 **Conference opening ceremony**

Welcoming words. Jacques Wiertz, Mine Closure 2010 Technical Coordinator, Universidad de Chile

Opening address “Redefining the life-of-the-mine”, Roger Higgins, Mine Closure 2010 Chairman, Senior VP Copper, Teck, Canada

20:00–21:30 **Welcome reception, trade show area.**

End of day 1.

### WEDNESDAY, 24 NOVEMBER

#### VERGARA BALLROOMS B & C

08:20–08:30 Day 2 Programme Presentation

#### PLENARY SESSION 1

Chair: Roger Higgins, Teck Resources Ltd, Canada

08:30–09:15 **Working with Communities to Prepare for Life after Mining**

Caroline Digby, Post-Mining Alliance, The Eden Project, UK

09:15–10:00 **Selection of Tree Species as Assets for Mine Phytoremediation Using the Genus *Rhus* (Anacardiaceae) as a Model**

Ntebogeng Mokgalaka-Matlala, Thierry Regnier and S. Combrinck, Department of Chemistry, Tshwane University of Technology, South Africa; Isabel Weiersbye, School of Animal, Plant & Environmental Sciences, University of the Witwatersrand, South Africa

**10:00–10:50** Coffee break/poster session, Vergara Ballroom A/trade show area.

	<b>VERGARA BALLROOM B</b>	<b>VERGARA BALLROOM C</b>
10:50–12:30	<p><b>SESSION 1: STAKEHOLDER ENGAGEMENT</b></p> <p>Chair: Caroline Digby, Post-Mining Alliance, UK</p>	<p><b>SESSION 2: MINE SITE RECLAMATION AND REHABILITATION</b></p> <p>Chair: Rosanna Ginocchio, CIMM, Chile</p>
10:50–11:10	<p><b>Strategic Planning for Mine Closure: Community Sustainability Experiences in Northern British Columbia, Canada</b></p> <p><u>Janis Shandro</u>, Marcelo M. Veiga, Malcolm Scoble and Mieke Koehoorn, The University of British Columbia, Canada</p>	<p><b>A Review of Landscape Rehabilitation Frameworks in Ecosystem Engineering for Mine Closure</b></p> <p><u>Jessica Drake</u> and Richard Greene, The Australian National University; Ben Macdonald, CSIRO Land &amp; Water, Australia; John Field, The Australian National University; Garry Pearson, Barrick (Cowal) Limited Gold Mine, Australia</p>
11:10–11:30	<p><b>Tea and Cake: Talking with Communities about Life after Mining</b></p> <p><u>Juliet Rose</u>, Post-Mining Alliance, Eden Project, UK; H.L Morgan, Sensory Trust, UK</p>	<p><b>Barrick Gold Corporation's Standardised Protocols for Reclamation Monitoring and Final Relinquishment</b></p> <p><u>Steven R. Viert</u> and Jesse H. Dillon, Cedar Creek Associates Inc, USA; David Blaxland, Barrick Gold of Australia; Ron Espell, Barrick Gold Corporation, USA</p>
11:30–11:50	<p><b>Community Planning and Interaction — Pend Oreille Mine Case Study</b></p> <p>David W. Godlewski, Teck American Inc, USA; <u>Mark Brown</u>, Teck Washington Inc, USA</p>	<p><b>Britannia Mine Remediation Project — Integrating Ecological Monitoring with Remediation Activities</b></p> <p><u>Barbara G. Wernick</u>, Lee H. Nikl and Shawn R. Seguin, Golder Associates Ltd, Canada; Geoff Sinnett, British Columbia Ministry of Agriculture and Lands, Canada</p>
11:50–12:10	<p><b>Britannia Mine Remediation Project — Community Consultation</b></p> <p><u>Lee Nikl</u> and Barbara Wernick, Golder Associates Ltd, Canada; Geoff Sinnett, British Columbia Ministry of Agriculture and Lands, Canada</p>	<p><b>Revisiting Closure Requirements — A Review of the Process Undertaken to Close the Sullivan No. 1 Shaft Waste Dump</b></p> <p>Mark Phillip, O’Kane Consultants Inc, USA; Walter Kuit, Teck Resources Ltd, Canada; Bruce Dawson, Teck Metals Ltd, Canada; Daryl Hockley, SRK Consulting Inc, Canada; <u>Mike O’Kane</u>, O’Kane Consultants Inc, Canada</p>
12:10–	<p><b>Managing Social Dimensions of Mine Closure</b></p>	<p><b>Bats in the Adit: Addressing Safety Risks and Preserving Bat</b></p>

12:30	Úrsula Weber, Anglo American, Chile	<b>Habitat</b> Janet E. Deisley, Teck Resources Ltd, Canada; <u>David J. Abranovic</u> , ERM Group Inc, USA
-------	-------------------------------------	--

**12:30–14:00** Lunch, *Maria Luisa Bombal Ballroom*.

	<b>VERGARA BALLROOM B</b>	<b>VERGARA BALLROOM C</b>
14:00– 15:40	<b>SESSION 3: COMMUNITY DEVELOPMENT</b>  Chair: Jenny Botha, University of the Witwatersrand, South Africa	<b>SESSION 4: PHYTOSTABILISATION AND PHYTOREMEDIATION</b>  Chair: Thierry Regnier, Tshwane University of Technology, South Africa
14:00– 14:20	<b>Canadian Abandoned Mines: Indian and Northern Affairs Programme Update and Case Study</b> Michael Nahir and Lou Spagnuolo, Northern Contaminated Sites Programme, Government of Canada	<b>Phytostabilisation of Acid and Metal-Contaminated Soils near a Copper Smelter in Central Chile: Laboratory Assay</b> <u>Rosanna Ginocchio</u> , Centro de Investigación Minera y Metalúrgica, Chile; Valeska Cárcamo, Universidad de Chile; Luz María de la Fuente, Elena Bustamante and Elizabeth Trangolao, Centro de Investigación Minera y Metalúrgica, Chile; Alexander Neaman, P. Universidad Católica de Valparaíso & CREAS, Chile
14:20– 14:40	<b>Environmental Remediation Works Stimulate Renewed Interest in Mine Heritage and Tourism at Britannia Beach</b> Gerry O'Hara, Golder Associates Ltd, Canada; Jerry Bordian, Britannia Bay Properties, Canada; Kirstin Clausen, British Columbia Museum of Mining, Canada; <u>Barbara Wernick</u> , Golder Associates Ltd, Canada	<b>The Effectiveness of Gypsum and Mulches in Mine Site Rehabilitation: Short-Term Effects on Surface Soil Stability and Plant Growth</b> J.K. Smits, D. Summerfield and <u>Richard Greene</u> , The Australian National University; A. Johnston, Barrick (Cowal) Limited Gold Mine, Australia; David J. Tongway and J. B. Field, The Australian National University
14:40– 15:00	<b>Settlement Patterns at Ok Tedi: Stakeholders, 'Corner' Settlers and Invaders</b> Phillipa Carr, The Australian National University	<b>Colonisation of Rehabilitated Lands by Termites (Dictyoptera), Rio Tinto Alcan Gove Bauxite Mine, Northern Territory, Australia</b> <u>Alister Spain</u> , School of Earth & Environment, The University of Western Australia, Australia; D.A. Hinz, Independent Consultant, Australia; Mark Tibbett, Centre for Land Rehabilitation, The University of Western Australia
15:00–	<b>Designing the Reclaimed Landscape — Integrating Landscape</b>	<b>Effect of Fertiliser on Early-Successional Jarrah Forest Restored</b>

15:20	<b>Architecture into the Mining Process</b> Jenna J. Buchko and Michael Hitch, University of British Columbia, Canada	<b>after Bauxite Mining in South-Western Australia</b> Rachel J. Standish and Mark Tibbett, Centre for Land Rehabilitation, The University of Western Australia, Australia; S. Vlahos and B. A. Stokes, BHP Billiton Worsley Alumina Pty Ltd, Australia; R. Hobbs, Centre for Land Rehabilitation, The University of Western Australia
15:20–15:40	<b>Sustainable Development Activities during Closure of the Homestake Gold Mine</b> Todd A. Duex, Homestake Mining Co., USA	<b>Development of Physical, Chemical and Biological Soil Properties at the Rio Tinto Alcan Gove Bauxite Mine, Northern Territory, Australia</b> David Tongway, CSIRO Ecosystems Sciences, Australia. Presented by Richard Greene, The Australian National University

**15:40–16:10** Coffee break, trade show area.

## VERGARA BALLROOMS B & C

### SESSION 5: ACID AND NEUTRAL ROCK DRAINAGE

Chair: Bjorn Weeks, Golder Associates, Chile

**16:10–16:30 The GARD Guide: An International Dynamic Tool**

Gilles Tremblay, Natural Resources Canada

**16:30–16:50 European Waste Characterisation Standards for Acid/Neutral Rock Drainage Prevention**

Ingar Walder, Kjeøy Research & Education Centre, Norway; Irena Twardowska, Polish Academy of Sciences, Poland ; Margareta Wahlstrom and Tommi Kaartinen, Technical Research Centre of Finland (VTT); Johannes A. Drielsma, European Association of Mining Industries (Euromines), Belgium

**16:50–17:10 Acid Drainage Prediction of Mining Wastes Using Complementary Static Chemical Tests**

Claudia Garcés, May-Lin Almendras and Claudio Quiroz, Arcadis, Chile

**17:10–17:30 Predicting Long-Term Seepage Chemistry of Base Metal Mine Tailings in an Arid Tropical Climate, Mount Isa, Australia**

Bronwen Forsyth, Mansour Edraki and Thomas Baumgartl, Centre for Mined Land Rehabilitation, SMI, The University of Queensland, Australia

**17:30–17:50 Geochemical Assessment of Waste Rock at the Antamina Mine as Part of the Closure of Waste Dumps**

Celedonio Aranda, Compañía Minera Antamina S.A., Peru

17:50–18:10 **New Methods for Hydraulic Characterisation of Mine Waste and Cover System Materials**  
Jason M. Keller, Tzung-Mow Yao, Michael A. Milczarek, Dale P. Hammermeister and Robert C. Rice, GeoSystems Analysis Inc, USA

18:30–19:30 **Wine tasting**, *Maria Luisa Bombal Ballroom*.

19:30–21:00 **Cheese & wine**, *terrace/swimming pool area*.

End of day 2.

## THURSDAY, 25 NOVEMBER

### VERGARA BALLROOMS B & C

08:20–08:30 Day 3 Programme Presentation

#### PLENARY SESSION 2

Chair: Andy Fourie, Australian Centre for Geomechanics

08:30–09:15 **Corporate (Ir)responsibility: What Is it Really Worth when Times Are Tough?**  
Sonia Finucane, Bioscope Environmental Consulting Pty Ltd, Australia; Talitha Santini, The University of Western Australia

09:15–10:00 **Polaris Mine — Decommissioning and Reclamation in Canada's Arctic**  
Bruce J. Donald, Teck Resources Ltd, Canada

10:00–10:50 **Coffee break/poster session**, *Vergara Ballroom A/trade show area*.

	VERGARA BALLROOM B	VERGARA BALLROOM C
10:50–12:30	<b>SESSION 6: CLOSURE PLANNING</b> Chair: Eduardo Pizarro, Golder Associates, Chile	<b>SESSION 7: MINING LEGACIES AND RELINQUISHMENT</b> Chair: Shannon Mackenzie, Mine Earth Pty Ltd, Australia
10:50–	<b>Development of the Pierina Mine Closure Plan — Learning</b>	<b>Manitoba's Orphaned and Abandoned Mine Site</b>

11:10	<b>Opportunities</b> Raul Orellana, Pierina Mine, Minera Barrick Misquichilca, Peru; Marcelo Robledo, Barrick South America, Chile	<b>Rehabilitation Programme — 10 Years in the Making</b> Doina Priscu and Ernest Armitt, Manitoba Innovation, Energy and Mines, Canada; Caius Priscu, AMEC Earth and Environmental, Canada
11:10– 11:30	<b>Integrated Water Balance and Water Quality Modelling for Mine Closure Planning at Antamina</b> Roald Strand, Brent Usher and Chris Strachotta, Klohn Crippen Berger Ltd, Australia; Jim Jackson, Cia Minera Antamina, Peru	<b>Mine Closure Case Studies of Orphaned and Abandoned Mines in Canada</b> Gilles A. Tremblay and Charlene Hogan, Natural Resources Canada
11:30– 11:50	<b>Mount Leyshon Gold Mine Automated Monitoring Network: Meeting Environmental and Social Commitments</b> Rory Haymont, Newmont Asia Pacific, Australia; Andrew Vitale, GHD Pty Ltd, Australia	<b>Britannia Mine Remediation Project — Reclaiming the Shoreline</b> Barbara Wernick, Lee Nikl and Gerry O'Hara, Golder Associates Ltd, Canada; Geoff Sinnett, British Columbia Ministry of Agriculture and Lands, Canada
11:50– 12:10	<b>Integration of Antapaccay Project with Tintaya Progressive Closure Plan</b> Mauricio Quiroz, Xstrata Copper Project Development Division, Chile; L.A. Espinoza and L. Espinoza, Xstrata Tintaya, Peru	<b>New Landscapes: New Lives</b> Georgina Pearman, Post-Mining Alliance, Eden Project, UK
12:10– 12:30	<b>The Role of Risk Assessment in Mine Closure Planning</b> Christopher Wren, MIRARCO, Canada; Chad Pearson, Xstrata Nickel, Canada; Quentin Smith, Vale, Canada	<b>Rescue of Sewell Mine Campsite, Chile, UNESCO World Heritage Site</b> Felipe Ravinet, Sewell Foundation, Codelco, Chile

**12:30–14:00** Lunch, *Maria Luisa Bombal Ballroom*.

## VERGARA BALLROOMS B & C

### SESSION 8: COVER DESIGN CONSTRUCTION AND MONITORING

Chair: Mike O’Kane, O’Kane Consultants Inc, Canada

- 14:00–14:20 **Designing Covers to Minimise Infiltration and Evaluating Construction-Related Greenhouse Gas Emissions to Support Sustainable Mine Closure**  
Ryan T. Jakubowski, Douglas S. Oliver and James E. Thompson, MWH Americas Inc, USA
- 14:20–14:40 **Salinity/ pH Interactions and Rooting Morphology in Monolayer Soil Covers above Copper Tailings**

Michael A. Milczarek, GeoSystems Analysis Inc, USA; F. M. Steward Jr. and Wesley Word, Freeport McMoRan Copper & Gold Inc, USA; Margaret Buchanan and Jason Keller, GeoSystems Analysis Inc., USA

14:40–15:00 **Management of Overburden Storage Areas at the Mount Whaleback Mine — A Review of 12 Years of Cover System Performance Monitoring and Application to Closure**

Greg Meiers, O’Kane Consultants Inc, Canada; B. Huys, J. Heyes and K. Sommerville, BHP Billiton Iron Ore Pty Ltd., Australia; David Christensen and Mike O’Kane, O’Kane Consultants Inc, Canada

15:00–15:20 **Instrumentation for Use in Field Cover Trials: An Illustration of the Importance of Soil Specific Calibration**

Jianlei Sun and Andy Fourie, The University of Western Australia; Sam T. S. Yuen, The University of Melbourne, Australia

15:20–15:40 **Final Results of the Cover System Test Panel Trials at the Pierina Mine**

Raul Orellana and William Ludwick, Minera Barrick Misquichilca S.A., Peru; Guosheng Zhan and Walter Baumann, Barrick Gold Corporation, USA ; Michael A. Milczarek, Robert C. Rice, Tzung-Mow Yao and Jason M. Keller, GeoSystems Analysis Inc, USA

15:40–16:10 **Coffee break, trade show area.**

## VERGARA BALLROOMS B & C

### SESSION 9: A LEGACY-BASED FRAMEWORK FOR CLOSURE PLANNING

Chair: Jacques Wiertz, Universidad de Chile

16:10–16:30 **From Mine Wasteland to Biofuel Cropland — The Ontario Experience**

Alan Lock, Jennifer Hargreaves and Graeme A. Spiers, MIRARCO, Laurentian University, Canada; Peter Beckett, Laurentian University, Canada; Bryan Tisch, Natural Resources, Canada; Stephen Hall, MIRARCO, Laurentian University, Canada

16:30–16:50 **Microbial Diversity of Gold Mine Effluent as a Source of New Biocontrol Agents against Fruit Pathogens**

Thierry Regnier, Department of Chemistry, Tshwane University of Technology, South Africa; M.P. Roux-Van Der Merwe, J. Badenhorst, T. Manyapelo and J. Kemp, Department of Biotechnology & Food Technology, Tshwane University of Technology, South Africa

16:50–17:10 **Ethnobotanic and Forage Uses of Plants on Mine Properties in the Witwatersrand Basin Gold Fields, South Africa**

Jenny Botha and Isabel M. Weiersbye, University of the Witwatersrand, South Africa

17:10–17:30 Discussion

19:00–22:30 **Reception, trade show area. Conference dinner, Maria Luisa Bombal Ballroom.**

End of Day 3

## FRIDAY, 26 NOVEMBER

## VERGARA BALLROOMS B & C

08:20–08:30 Day 4 Programme Presentation

### PLENARY SESSION 3

Chair: Mark Tibbett, Centre for Land Rehabilitation, The University of Western Australia

08:30–09:15 **Many Voices, One Plan: Eliciting and Integrating Stakeholder Feedback**

Daryl Hockley, SRK Consulting, Canada; Gary Coulter, Teck American Inc, USA

09:15–10:00 **The Ok Tedi Mine: Applying Good Practice Initiatives in Planning for the Closure of a Large and Complex Mine**

Shannon Mackenzie, Mine Earth Pty Ltd, Australia; Ani Topurua and Musje Werror, Ok Tedi Mining Ltd, Papua New Guinea

10:00–10:50 **Coffee break/poster session, Vergara Ballroom A/trade show area.**

	VERGARA BALLROOM B	VERGARA BALLROOM C
10:50–12:30	<b>SESSION 10: PLANNING AND FINANCING CLOSURE</b>  Chair: Gilles Tremblay, Natural Resources Canada	<b>SESSION 11: TAILINGS DEPOSITS CLOSURE</b>  Chair: Mike Milczarek, GeoSystems Analysis Inc, USA
10:50–11:10	<b>Antamina Closure Plan: A Top-Level Practice</b> Antonio Mendoza, Compañía Minera Antamina S.A., Peru	<b>Closure Planning for a Tailings Storage Facility in Western Australia</b> Kristie Bonstrom, O’Kane Consultants Pty Ltd, Australia; Denise Chapman, O’Kane Consultants Inc, Canada; David Swain, Perth, Australia; Mike O’Kane, O’Kane Consultants Inc, Canada
11:10–11:30	<b>Closure Planning for a Long-Lived Copper and Gold Mining Operation in Papua, Indonesia</b> Andi Mukhsia, <u>Johnny M. Prewitt</u> and Wisnu Susetyo, PT Freeport Indonesia, Indonesia	<b>Oil Sands Pond Closure — Sand, Sun and Soft Tailings</b> P. Sean Wells, Suncor Energy, Canada
11:30–11:50	<b>Closure Plan: A Tool for Mine Management and Cost Savings</b> <u>Alexandre Pulino</u> , Eduardo Chapadeiro, Alexandre Pena, Aloysio Saliba, Golder Associates, Brazil	<b>Design and Construction of the Reclamation Surface for the First Oil Sands Tailings Pond</b> <u>Brad Russell</u> and Gord McKenna, BGC Engineering, Canada; Matt Leblanc, P. Sean Wells and Bruce Anderson, Suncor

		Energy, Canada
11:50– 12:10	<b>Financial Guarantee of Closure Costs</b> <u>Joaquim Pimenta de Ávila</u> , Pimenta de Ávila Consultoria, Brazil; Marta Sawaya, Ministério Público do Estado de Minas Gerais, Brazil	<b>Wetlands: A Solution to the Decommissioning of Mining Tailings Dams</b> <u>Makoto Namba</u> , Bureau de Projetos e Consultoria, Brazil; Patricia Akinaga, Akinaga Arquitetura and Design Urbano S/S Ltda, Brazil; Ilton Cunha, Vale Manganes, Brazil; German Vinueza, Vale, Brazil; Gustavo Fontes, Vale Manganes, Brazil; Arsenio Negro, Bureau de Projetos e Consultoria, Brazil
12:10– 12:30	<b>Discussion</b>	<b>Evolution of Geochemical and Mineralogical Parameters During In Situ Remediation of a Marine Shore Tailings Deposit by the Implementation of a Wetland</b> Nouhou Diaby and <u>Bernhard Dold</u> , Universidad de Concepción, Chile

**12:30–14:00** Lunch, *Maria Luisa Bombal Ballroom*.

## VERGARA BALLROOMS B & C

### SESSION 12: RECENT CLOSURE CASE STUDIES

Chair: Marcelo Robledo, Barrick South America, Chile

- 14:00–14:20 **The Pueblo Viejo Mine: A Case Study in Successful Brownfield Remediation and Redevelopment**  
Holton L. Burns, Pueblo Viejo Dominicana Corporation, Dominican Republic; Doug Griffin, Rescan Environmental Services Ltd, Canada
- 14:20–14:40 **Integrating Biodiversity, Wildlife Monitoring and Traditional Knowledge in Reclamation at Highland Valley Copper**  
Mark R. Freberg and Jaimie L. Dickson, Teck Highland Valley Copper Partnership, Canada
- 14:40–15:00 **Site-Specific Investigation, Risk Assessment and Clean-Up of an Inactive Mine Site in the Chilean Andes**  
Garry Davies, Ecofirma, Canada; Bjorn Weeks, Golder Associates S.A., Chile; Guy Gilron, Teck Resources Ltd, Canada; Blair McDonald, Golder Associates Ltd, Canada
- 15:00–15:20 **Closure Plan for Environmental Mining Liabilities**  
Richard Azabache, Cía. de Minas Buenaventura S.A.A., Peru; José Paz, Paz Hermoza Ingenieros S.A.C., Peru
- 15:20–15:40 **Pond 1 — Closure of the First Oil Sands Tailings Pond**  
H. Bruce Anderson and P. Sean Wells, Suncor Energy Inc Oil Sands, Canada

- 15:40–16:00 **Lo Aguirre Mine — Income Generation during the Physical and Chemical Stabilisation of Heap Leaching Tailings**  
Manuel Bascuñan and Daniel Galleguillos, Nueva Pudahuel S. A., Chile; Ricardo Arias, DGAMin Ltda., Chile
- 16:00–16:30 **Final comments and conference balance**  
Jacques Wiertz, Universidad de Chile; Andy Fourie, Australian Centre for Geomechanics; Mark Tibbett, Centre for Land Rehabilitation, The University of Western Australia
- 16:30–16:45 Mine Closure 2011 presentation
- 17:00–19:00 Farewell reception, terrace/swimming pool area.**

## **POSTERS**

### **Mining in the Vicinity of Water Reservoirs in Hard Coal Mines in the Upper Silesian Coal Basin, Poland**

Przemysław Bukowski, Central Mining Institute in Katowice, Poland

### **High-Alpine Areas in the Andes of North-Central Chile: A Remarkable Source of Metal-Tolerant Plants for Phytoremediation of Mine Sites**

Rosanna Ginocchio, Elena Bustamante, Luz María de la Fuente, Jean François Casale and Jean Paul De La Harpe, Centro de Investigación Minera y Metalúrgica, Chile; Josefina Hepp, Facultad de Agronomía e Ingeniería Forestal, P. Universidad católica de Chile; Vinka Anic and Luis Felipe Hinojosa, Facultad de Ciencias – Instituto de Ecología y Biodiversidad (IEB), Universidad de Chile

### **Comparative Study of Two Methods of Degraded Areas Recovery Used in Design of Bauxite Mine, Paragominas, Pará, Brazil**

Andreas Kiekebusch, Vale, Brazil

### **Mine Closure Plan Design for Paragominas Bauxite Mine**

Wilker Araujo, Vale, Brazil

### **The Use of Life Stake to Facilitate Tree Growth in the Openings of an Ex-Mining Land: Newmont Minahasa Raya Inc Case Study**

Irdika Mansur, Bogor Agricultural University and SEAMEO BIOTROP, Indonesia; Kadar Wiryanto, David Sompie and Jerry Kojansow, Newmont Minahasa Raya Inc, Indonesia

### **Mining Gold and Inherit Green Gold for Sustainable Environment**

Kadar Wiryanto, David Sompie and Jerry Kojansow, Newmont Minahasa Raya Inc, Indonesia; Irdika Mansur, Bogor Agricultural University and SEAMEO BIOTROP, Indonesia

**Long-Term Optimisation of Waste Rock Dump Effluent Quality**

Violeta Valenzuela, Minera IRL S.A., Peru

**Environmental and Educational Planning for Mine Closure in Saudi Arabia**

Saad Mogren, M. Fazle Haq and A.O. Al-Jasser, King Saud University, Saudi Arabia

**STUDENT POSTERS**

**Predicting Long-Term Seepage Chemistry of Base Metal Mine Tailings in an Arid Tropical Climate, Mount Isa, Australia**

Bronwen Forsyth, Mansour Edraki and Thomas Baumgartl, Centre for Mined Land Rehabilitation, SMI, The University of Queensland, Australia

**The Effect of Coarse Waste Rock Material on Store and Release Cover Performance**

Anne Schneider, Thomas Baumgartl, David Mulligan and David Doley, Centre for Mined Land Rehabilitation, SMI, The University of Queensland, Australia

**Pan de Azúcar Mining Legacy: Geological, Environmental and Geochemical Characterisation**

Jessica Murray and Alicia Kirschbaum, Universidad Nacional de Salta, Argentina; Bernhard Dold, Universidad de Concepción, Chile

**Natural and Anthropogenic Sources of Heavy Metals in the Historically Impacted City of Oruro, Bolivian Antiplano**

Joseline Tapia, Universidad de Chile

**Mine Tailings Electrokinetic Remediation Using Pulsed Sinusoidal Electric Field**

Marcela Cubillos, A. Rojo and K.H. Hansen, Universidad Técnica Federico Santa María, Chile

**Acid Mine Drainage Prediction Tests: Comparison and Reproducibility**

Carolina Bahamondez, Universidad de Chile