In April 2014, mining industry environmental specialists and engineers, geochemists, leading researchers, consultants, regulators and students from across Australia and around the world will gather in Adelaide to explore emerging trends and issues related to Acid and Metalliferous Drainage/Acid Rock drainage (AMD/ARD) assessment and remediation. This year’s program will consist of a one day short course, followed by a four day workshop and inclusive field trip.

The triennial 8th Australian Acid and Metalliferous Drainage (AMD) Workshop is presented by SMI Knowledge Transfer (SMI KT), a unit within JKTech with cooperation from the Department of Manufacturing, Innovation, Trade, Resources and Energy (DMITRE), Government of South Australia. The workshop and associated short course and site visits will provide excellent opportunities to share with speakers and delegates, unbiased expertise and advocacy with respect to the causes, management and amelioration of the impacts of AMD and Acid Sulphate Soils.

The workshop theme, “What’s Working, What’s Not and What Could Be”, emphasises the need for companies to ensure their AMD risk assessment processes truly communicate a clear message to senior management, to learn from observations of the practical long-term implications of climatic extremes and to integrate appropriate emerging treatment technologies and research into perpetuity maintenance.

Key sessions will include: The Business Case for Improved AMD Management; A Global View on Acid and Metalliferous Drainage; Future Implications for AMD Management in Australasia; and Managing AMD - What’s Working, What’s Not and What Could Be; which covers planning mined-waste storage structures, rehabilitation issues, treatment technologies, new research, regulatory issues, monitoring measures, and long-term risk assessment studies.

The workshop, with its extensive program of 45 plus presentations, field trips, poster display and exhibition booths will offer delegates the opportunity to experience some of Adelaide’s many unique offerings through the workshop’s exciting social program.

**Benefits of attending:**

- **Hear the business case for improved AMD/ARD practices and what you could do to avoid unnecessary costs that could compromise your project**
- **Develop practical methods for ensuring you fully comply with environmental legislation whilst still achieving your desired business outcomes**
- **Compare and share innovative approaches relating to material characterisation, planning and design to prevent or minimise the impacts of acid drainage**
- **Learn how to identify knowledge gaps and the need for alternative approaches for acid drainage management and control**
- **Analyse geotechnical issues concerning the gradual decay of mined-waste storage structures and what they could mean for your current and future projects**
- **Examine proven, innovative strategies for dealing with the real timelines in managing AMD and how they could be key to risk mitigation**
- **Meet and network with some of the mining industry’s most foremost AMD/ARD management specialists, researchers, government regulators and students**

**CONTACT**

Bruce Barrie  
T  07 3365 5980  
E  b.barrie@jktech.com.au  
Inclusions

Delegates will receive:

• Short Course and/or Workshop book including presenters' slides and space for note-taking,

• A complete set of refereed papers on CD (workshop delegates only),

• Leading Practice Sustainable Development handbooks on CD,

• Arrival tea/coffee, morning/afternoon tea, and lunch,

• Welcome Event on Monday 28 April 2014,

• Workshop Dinner on Tuesday 29 April 2014 (workshop delegates only),

• Field trip to the historic Brukunga Mine Site (workshop delegates only).

Audience

• Environmental Managers
• Environmental Consultants
• Environmental Advisors/Officers
• Mine Planners
• Project Managers
• Sustainability Managers
• Government Regulatory Agencies
• Rehabilitation Practitioners
• Geochemists
• Researchers
• HSE Managers
• Recent Graduates
• Students

Partnership and Exhibition Opportunities:

SMI Knowledge Transfer invites companies, consultants, researchers, government and non-government agencies to raise their profile by participating in various levels of partnership, sponsorship and trade exhibitions for AMD 2014.

The workshop provides an opportunity to share with the mining industry, regulators, researchers, consultants and the community, unbiased expertise and advocacy with respect to innovative approaches to managing AMD that might have relevance to their own sites or projects.

Sponsorship of the 8th Australian Workshop on Acid and Metalliferous Drainage presents an excellent opportunity for your company or organisation: to be recognised internationally for their capability in the field of AMD/ARD prevention and remediation (including Acid Sulphate Soils) with their operations and clients; To contribute to knowledge transfer of AMD/ARD/ASS issues; To engage with workshop participants; and to contribute to the success of this long running workshop.

For a full list of opportunities please visit www.jktech.com.au/8th-AMD
Short Course Program

MONDAY 28 APRIL 2014

Welcome and Introduction
Mr Bruce Barrie
JKTech

ACID AND METALLIFEROUS DRAINAGE – AN OVERVIEW
Acid and Metalliferous Drainage (AMD): Understanding AMD and its Implications for Mine Operations
Dr Alan Robertson
RGS Environmental Pty Ltd

Case Study – Savage River Mine

AMD – UNDERSTANDING THE CAUSES
Understanding The Role of Water in AMD Geochemistry
Dr Jeff Taylor
Earth Systems Pty Ltd

Learning from the Past - A Case Study
Dr Andrew Garvie
SRK Consulting (Australasia) Pty Ltd

AMD – PLANNING, PREDICTION AND PREVENTION
Managing AMD from Mine Waste Materials
Prof David Williams
The University of Queensland

Timelines and Risk Profiles in Rehabilitation of Mined Landforms
Prof David Williams
The University of Queensland

AMD – MONITORING AND TREATMENT
Understanding the Short and Long Term Effects of AMD on Revegetation
Emer Prof Clive Bell
Former ACMER Executive Director

Leading Practice Monitoring
Dr Jeff Taylor
Earth Systems Pty Ltd

Active and Passive Treatment

INAP and the 9th ICARD
Dr Terry Chatwin
INAP

Welcome Event

Monday 28 April | 05.30pm
Oli’s Function Room, Hotel Grand Chancellor Adelaide on Hindley
Canapés and beverages provided

Supported by:
# Workshop Program

## TUESDAY 29 APRIL 2014

<table>
<thead>
<tr>
<th>Event</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome and Introduction</td>
<td>Mr Bruce Barrie, JKTech</td>
</tr>
<tr>
<td>Opening Address</td>
<td>Hon. Tom Koutsantonis MP</td>
</tr>
<tr>
<td>Government of South Australia</td>
<td></td>
</tr>
<tr>
<td>Workshop Major Partner Address</td>
<td>Mr Mike O’Kane O’Kane Consultants Pty Ltd</td>
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## FROM BOARDROOMS TO MINE SITES - THE BUSINESS CASE FOR IMPROVED AMD MANAGEMENT

<table>
<thead>
<tr>
<th>Event</th>
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<tbody>
<tr>
<td>Keynote Address: Detailed Characterisation of the Waste Rock Dumps at the Kennecott Utah Copper Bingham Canyon Mine – Optionality for Closure</td>
<td>Mr Paul Brown, Rio Tinto</td>
</tr>
<tr>
<td>Commercial Implementation of Mine Closure Research Bringing Tools to Practice for Management Decisions</td>
<td>M. O’Kane, G. McKenna, and C. Qualizza</td>
</tr>
<tr>
<td>Leading Practice Solutions for ARD Prevention and Control. A Key to Achieving a Sustainable Future for Mineral Resource Development</td>
<td>S. Miller</td>
</tr>
</tbody>
</table>

## FUTURE IMPLICATIONS FOR AMD MANAGEMENT IN AUSTRALASIA

<table>
<thead>
<tr>
<th>Event</th>
<th>Presenter(s)</th>
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</thead>
<tbody>
<tr>
<td>Keynote Address: Savage River Rehabilitation Project – 2002 to 2013</td>
<td>Prof David Williams, The University of Queensland</td>
</tr>
<tr>
<td>Management of Pyrrhotite Tailings – A Ten Year Case Study on Continuous Learning and Improvement</td>
<td>A. M. Robertson, N. Kawashima, R.St C. Smart, and R. Schumann</td>
</tr>
<tr>
<td>Beyond the PAF Cell</td>
<td>S.R. Pearce</td>
</tr>
<tr>
<td>Overall Acid Production Rates in Mine Wastes</td>
<td>A. Garvie, C. Linklater, J. Chapman, and A. Watson</td>
</tr>
</tbody>
</table>

## FUTURE IMPLICATIONS FOR AMD MANAGEMENT IN AUSTRALASIA - A

<table>
<thead>
<tr>
<th>Event</th>
<th>Presenter(s)</th>
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</thead>
<tbody>
<tr>
<td>The Rum Jungle National Partnership Agreement</td>
<td>T. Laurencont and M. Rider</td>
</tr>
<tr>
<td>Rehabilitation Planning at the Rum Jungle Mine Site</td>
<td>P. Ferguson, C. Wels, and T. Laurencont</td>
</tr>
<tr>
<td>The Neutralisation Potential of Biotite and Phlogopite Dissolution at the Brukunga Pyrite Mine, South Australia</td>
<td>F. Ali, J. Webb, and J. Taylor</td>
</tr>
</tbody>
</table>

## FUTURE IMPLICATIONS FOR AMD MANAGEMENT IN AUSTRALASIA - B

<table>
<thead>
<tr>
<th>Event</th>
<th>Presenter(s)</th>
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</thead>
<tbody>
<tr>
<td>What Do Elevated Background Contaminant Concentrations Mean for AMD Risk Assessment and Management in Western Australia?</td>
<td>C.D. McCullough and J.J. Pearce</td>
</tr>
<tr>
<td>Field and Desktop Waste Rock Classification Guide for a Metalliferous Mine in the Northern Territory, Australia</td>
<td>M. Landers, B. Usher, D. Faulkner and P. Marinelli</td>
</tr>
<tr>
<td>Interactive Panel Discussion Future Implications for AMD Management in Australasia</td>
<td>Invited Panellists</td>
</tr>
</tbody>
</table>

## Workshop Dinner

**Tuesday 29 April | Buses depart 06:15pm**
The Gallery Room, National Wine Centre of Australia
Three-course dinner and beverages included
Workshop Program

**WEDNESDAY 30 APRIL 2014**

**Welcome and Introduction**

Mr Bruce Barrie, JKTech

**A GLOBAL VIEW ON ACID AND METALLIFEROUS DRAINAGE**

Keynote Address:
INAP Update and Outcomes of 9th ICARD in Ottawa

Dr Terry Chatwin, INAP

Designer Tailings: Improving the Management of Tailings Through Collaborative Research


**MANAGING AMD - WHAT'S WORKING, WHAT'S NOT AND WHAT COULD BE**

Cover Systems.... Are We There Yet?

M. O'Kane

**WASTE ROCK LANDFORMS AND COVER DESIGN**

| Evaluation of Three Different Cover Systems Utilizing Geosynthetic Layers Constructed in a Seasonally Humid Geographic Location for the Closure of Coal Waste Rock Piles | G.P. Meiers, M. O'Kane, D. Mayich, and M. Barteaux | Biogeochemical Processes Governing Natural Pyrite Oxidation and Release of Acid Metalliferous Drainage | Y.T. Chen, J.T. Li, and W.S. Shu |

**PASSIVE AND ACTIVE WATER TREATMENT OPTIONS IN MANAGING AMD**

| Passive Treatment of Antimony in New Zealand by Two Methods: Formation of Stibnite in a Sulphate-Reducing Bioreactor and Adsorption onto AMD Precipitates | D. Trumm and J. Pope |
| Instrumentation in Waste Dumps | S. Pearce and M. Barteaux |
Workshop Program

FRIDAY 2 MAY 2014

Welcome and Introduction

PASSIVE AND ACTIVE WATER TREATMENT OPTIONS IN MANAGING AMD (Cont.)

The Dynamic Neutralising Behaviour of Alkaline Waste Rocks (Chlorite Calcite Schist) in Flow-Through Treatment of AMD Waters


Lunch included

EMERGING TECHNOLOGIES AND RESEARCH

Integration of Water Chemistry and Acidity Components: A New AMD Assessment Model

P. H. Pham, B. Noller, S. Golding, and M. Edraki

EMERGING TECHNOLOGIES AND RESEARCH - A

Gypsum Sludge and Tailings at Brukunga Mine Used as Partial Clay Substitute for Making Construction Materials: A Lab Scale Study

Y. Tian, R. Mollehuara, I. Gajjar, and P. Baker

The Inert Gas Mixture (IGM) Technology to Prevent Acid Mine Drainage

P. Pham, B. Noller, S. Golding, and M. Edraki

EMERGING TECHNOLOGIES AND RESEARCH - B

Tools for Assisting with the Assessment of Acid and Metalliferous Drainage (AMD)

J. Waters, S. Pape, and J. Taylor

Domaining Acid Rock Drainage Risks Using Geometallurgical Data

L. Ameglio and H. Barrie

Neutralisation of Aluminium-rich Acid Mine Drainage to Form a Magnetic Sludge

W. Stanford and J. Webb

Wither Lime? AMD Treatment via In-Situ Hydrotalcite Precipitation (Virtual Curtain) Technology

A. Parbhakar-Fox and B.G. Lottermoser

Geochemical and Geotechnical Investigations at the Reddale Coal Mine, Reefton, New Zealand

P. Weber, W. Olds, and M. Pizey

Cost Reduction Using Water Technologies

S.P. Costin

EMERGING TECHNOLOGIES AND RESEARCH (Cont.)

Invited Panel Discussion Workshop Review

Invited Panellists

Workshop Conclusion and Thanks

JKTech

Posters

Draintube™ Geocomposite Drainage and Lining Solution for the Mining Industry

L. Ameglio and Y. Durkheim

Use of Biosolids for the Treatment of Acidic Metalliferous Mine Drainage

J. Robinson

Coupled Physical and Chemical Weathering Processes Influencing AMD Predictions

J. Pearce, R. Green, A. Rate, and G. Steyl
Venue
Hindley Rooms
Hotel Grand Chancellor Adelaide on Hindley
65 Hindley Street, Adelaide SA 5000
+61 8 8231 5552
www.ghihotels.com

Cost

<table>
<thead>
<tr>
<th>Registration</th>
<th>Early Bird</th>
<th>Normal Registration</th>
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<tbody>
<tr>
<td>Due on or before:</td>
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<tr>
<td>Short Course</td>
<td>28 April</td>
<td>Friday 28 February</td>
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<tr>
<td></td>
<td>$900 incl GST</td>
<td>$995 incl GST</td>
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<tr>
<td>Workshop + Field Trip</td>
<td>29 April - 2 May</td>
<td>$2425 incl GST</td>
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<td>$2725 incl GST</td>
<td>$3195 incl GST</td>
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<tr>
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<td>28 April - 2 May</td>
<td>$2425 incl GST</td>
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<td></td>
<td>$2725 incl GST</td>
<td>$3195 incl GST</td>
</tr>
<tr>
<td>Full Time Student</td>
<td>28 April - 2 May</td>
<td>$595 incl GST</td>
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<td></td>
<td>$595 incl GST</td>
<td>$595 incl GST</td>
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</table>

*A fee of $110/person including GST will be applicable for late registrations received after Friday 4 April 2014.
*Group rates are applicable for 3 or more people from the same company attending the same dates.

Registration
To register please visit www.jktech.com.au/8th-AMD

‘Register and Pay’ will enable you to give contact details and make payment via credit card online.

‘Register Only’ will enable you to give contact details online with a follow up call from a SMI KT staff member regarding alternative payment details.

Timings
Professional development events will generally commence at 8.30am and conclude at 5.00pm. Please take note of the specific start times in the Program (downloadable on the website). Times may be subject to slight variations.

Accommodation

<table>
<thead>
<tr>
<th>Hotel Grand Chancellor</th>
<th>The Sebel Playford Adelaide</th>
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</thead>
<tbody>
<tr>
<td>65 Hindley Street</td>
<td>120 North Terrace</td>
</tr>
<tr>
<td>Adelaide SA 5000</td>
<td>Adelaide SA 5000</td>
</tr>
<tr>
<td>+61 8 8231 5552</td>
<td>+61 8 8213 8888</td>
</tr>
<tr>
<td><a href="http://www.ghihotels.com">www.ghihotels.com</a></td>
<td><a href="http://www.mirvachotels.com">www.mirvachotels.com</a></td>
</tr>
</tbody>
</table>

Cancellation
SMI Knowledge Transfer reserves the right to cancel any course at its discretion. Whilst we endeavour to make every effort not to do this, there could be circumstances beyond our control (e.g. insufficient numbers) that may prevent us from going ahead. In light of this, if you need to fly, we suggest that you purchase a fully flexible airline ticket.

Cancellations 28 to 15 days prior to course commencement: AUD110.00 administration fee payable
Cancellations 14 to 8 days prior to course commencement: 50% of registration fee payable
Cancellations 7 days or less prior to course commencement: 100% of registration fee payable
Non-attendance at course: 100% of registration fee payable

If you would like a copy of our Standard Terms and Conditions for Provision of Training (including our full cancellation policy), please visit www.jktech.com.au/terms-and-conditions
Pre & Post Touring Options

Festivals and food. Arts and culture. Shopping and sports. This is Adelaide - the Australian city where there's always something on. Adelaide's generous boulevards and elegant architecture provide the perfect backdrop for all sorts of holiday activities. No matter what takes your interest, there's something that will pique your curiosity.

The below are simply a taste of Adelaide's offerings - for further information visit www.southaustralia.com

Rawnsley Park Station: Flinders Ranges Discovery Tours

Flinders Ranges Discovery four wheel drive tours take in the most spectacular scenery of the Flinders Ranges, and showcase the wildlife, geology, Aboriginal and European history of the region.

Kangaroo Island SeaLink

Kangaroo Island SeaLink offers a wide range of touring product on Kangaroo Island, including great day tours that will take you to most of the main highlights of this beautiful Island.

Barossa Wineries Day Tour

Visit four wineries before lunch, with an antipasto platter after the first cellar door tasting. Whistler Wines is the destination for lunch where a gourmet three course meal is provided, followed by a special visit to Illipara Fortified Wine Store.

Lyndoch Lavender Farm & Cafe

www.lyndochlavenderfarm.com.au

Awarded 2010 best ‘Tourist Attraction’ at the South Australian Tourism Awards. A multi-award winning Barossa Valley tourist attraction which entertains visitors with its beautiful rural surrounds, working lavender farm, quality merchandise, with tasting delights at The Lavender Kitchen.

North Terrace

If you want to immerse yourself in SA’s rich arts and culture then this is the “cultural boulevard” for the South Australian Museum, Adelaide Botanic Garden, National Wine Centre and just around the corner is the National Aboriginal Cultural Institute - Tandanya.

‘Eat Streets’

In Adelaide, you’ll find entire streets devoted to dining. These ‘eat streets’ are a mix of cafes, pubs and restaurants. Try Gouger Street, Rundle Street, Hutt Street, or Hindley Street within Adelaide city. Venture further to coastal suburbs Glenelg and Henley Beach to view the sun setting over the ocean.

Adelaide Central Market

Here you’ll find a huge range of fresh food, all under one roof - fruit and vegetables, meat and poultry, seafood, gourmet cheeses, bakery products, sweets, nuts and health foods. Shoppers can also take a break in some of the hippest cafes in Adelaide. The Market is open from Tuesday to Saturday each week.

Moonta Mines Museum

Erected in 1878, this building now houses displays on the Cornish miners’ lifestyles - mining, lodges and societies, sports and pastimes, death and hardship. Other exhibits include costume displays, china, silverware, photographs, memorabilia, a classroom furnished circa 1900, and World Wars.