



The International Network for Acid Prevention

An organization of international mining companies dedicated to a reduction in the liability associated with sulphide mine materials

July 2004

NEWSLETTER

www.inap.com.au

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CONTACT DETAILS

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As always, we welcome your feedback regarding our newsletters. Also, if you have information to be posted in our next newsletter or to be removed from our newsletter distribution list, please contact [Amber Young](mailto:amber.young@riotinto.com) by email amber.young@riotinto.com

1. Working meeting in Sudbury

INAP recently held a member's workshop in Sudbury, Canada in conjunction with a Mining Environment Neutral Drainage (MEND) meeting on sludge disposal and neutral drainage issues (see the Global Alliance with Regional Organizations section below for further information on the MEND meeting).

The meeting was structured as a short course on dry covers for management and operations personnel from the member companies. The programme began with a series of presentations covering many aspects of waste rock dumps and covers, including the internal structure and geo-chemistry of dumps, long-term cover performance, and groundwater considerations. The focus was then placed on recent pit-fill work at the Whistle mine that was carried out to deal with the 7 million tonnes of acid generating waste rock. A visit to the Whistle mine was followed by a series of interactive discussions on the different options for dealing with waste rock dumps once they have started to generate acid.

Several key findings were identified during the workshop:

- The importance of planning for closure was emphasized, including robust accounting of the full cost of design and construction at closure.
- Having a good understanding of background conditions is important, particularly for groundwater flows which can have a significant long-term impact on pits, and dumps.
- A better understanding of how closed sites perform in the long term – particularly backfilled pits – is key, to help improve closure management and post closure remediation. A focus on case studies on post closure performance would be a useful step in this direction.

The event was considered a success by the participants and provided a rare opportunity for people from different mine sites to share experiences on acid drainage and dry covers. INAP will be aiming to repeat the exercise in other regions.

2. Expect changes to the web site

The OpCom is pleased to announce that the INAP web site is undergoing major changes. The new look is expected to go live at the end of August. We invite you to visit the site (www.inap.com.au) and welcome any comments:

3. Global Alliance with Regional Organizations

INAP continues to hold regular meetings and teleconferences with the Global Alliance partners. The most recent meeting was in Sudbury, with information exchanged on completed and upcoming projects.

Opportunities for collaboration were discussed – particularly on a MEND project to update an Acid Drainage Prediction Manual and regarding participation at the 11th Annual British Columbia MEND Acid Rock Drainage/Metal Leaching workshop (see Acid Drainage Events below for further information).

The next meeting of the Global Alliance partners is planned for September, 2004 in Newcastle, UK at the International Mine Water Association (IMWA) symposium (see 'Other News' section below for further information). In the meantime, the Global Alliance partners will meet regularly by teleconference.

INAP is pleased to report on discussions with the newly formed Partnership for Acid Drainage Research in Europe (PADRE) group to become the European node of the Global Alliance. PADRE will be launched as the acid drainage branch of IMWA at the upcoming symposium in Newcastle. We expect to make a formal announcement regarding its incorporation into the Global Alliance at the same time.

ACMER NEWS

ACMER has recently had their 5-year business plan endorsed by the Boards of both the ACMER and the Minerals Council of Australia (MCA). This plan includes MCA financial support and an increased focus on technology transfer – particularly on sustainable development.

Recently completed and new projects, which are relevant to the INAP Global Alliance, include:

- Methods for Water Quality Assessment of Ephemeral Stream and Lake Systems (completed project)
- Designing Effective Store-Release Covers for the Long-Term Containment of Mine Waste – The Role of Vegetation (stage 1 expected to be completed in August 2004, followed by a workshop on Aug 24th to define stage 2)
- Risk Assessment of the Effects of Cyanide-Bearing Tailings Solutions on Wildlife (on-going project linked to the International Cyanide Code)

Technology Transfer activities include the following:

- MCA Sustainable Development Extension Program, based on the 10 principles of the International Council on Mining and Metals (ICMM).
- Sustainable Development Practices on Mine Sites – Tools and Techniques – a course that was held in Johannesburg, South Africa from 8-10 March 2004 as a joint activity between the University of the Witwatersrand, the University of Cape Town, and ACMER.
- Short Course on Environmental Management for the Minerals Industry – an introductory ACMER course held in Brisbane on 21-22 April 2004.
- 6 workshops around Australia aimed at improving the capacity of small-medium gold producers to use and manage cyanide. A set of four videos on cyanide management and use are available from ACMER (see www.acmer.com.au).
- A workshop to be held in Perth from 26-27 Aug on the design and management of tailings facilities to minimise environmental impacts during operation and closure. The workshop will be followed, on 28 August 2004, by a short course on “Designing Sustainable Covers for Mine Wastes” which will be conducted by Mike O’Kane of O’Kane Consultants Inc., Canada, and Assoc Prof David Williams of the University of Queensland.

ADTI news

Molycorp and the University of Utah Research Team have signed a contract to perform a "cutting-edge" research project to predict long-term physical stability of sulphide-bearing mine-rock piles subject to weathering, oxidation and acid generation at its Questa, New Mexico molybdenum mine. Molycorp

hopes this study will address the effects of weathering on moisture movement through the piles and on the resultant, mechanical properties of the waste rock piles over time. ADTI – Metal Mining Sector is providing an independent technical review team that will work closely with Molycorp.

The project tasks include: mineral and chemical characterization, accelerated weathering studies, hydrogeochemical & weathering rate modeling, unsaturated & saturated flow modeling, geotechnical stability modeling, and stability risk assessment. The Utah Research Team includes: Dr. G. Ward Wilson, University of British Columbia; Dr. Dirk van Zyl, University of Nevada-Reno; Dr. Virginia McLemore, New Mexico Bureau of Geology & Mineral Resources, Dr. Edward Trujillo, University of Utah, Mr. Kim Lapakko, Minnesota Department of Natural Resources; Dr. Del Fredlund, University of Saskatchewan; Dr. Andrew Campbell, New Mexico Institute of Mining and Technology; Dr. Terrence Chatwin, University of Utah; Dr. D. Jack Adams, Weber State University; Dr. Virgil Lueth, New Mexico Bureau of Geology & Mineral Resources; and Mr. George Robinson of R2, Inc., among others.

MEND News

A 2-day workshop on Sludge Management and Treatment of Weak Acid or Neutral pH Drainage was held in Sudbury, Ontario, Canada in May 2004. Approximately 110 delegates attended the session sponsored by MEND, the Ontario Ministry of Northern Development and Mines, and The Mining Innovation, Rehabilitation and Applied Research Corporation (MIRARCO). INAP assisted in securing several presentations. The first day on Sludge Management featured presentations on the characterization of the sludge, material handling, final disposal plans, operating costs, and research on the improvement of sludge properties. The second day on Treatment of Weak Acid or Near Neutral pH Drainage covered field-scale work, practical constraints, and operating costs. The presentations will be available on CD in September - information on ordering it will be posted on the MEND web site. Following the success of the workshop, requests were made for this to become an annual event in Eastern Canada.

The MEND Report on Potential Information Requirements in Metal Leaching and Acid Rock Drainage (ML/ARD) Assessment and Mitigation Work is now available. The list was first put together as a guide for authors of case studies, and has been modified to serve as a general guide for the mining industry, regulators, public reviewing their work, as well as educators and students. Digital copies of the report are currently available from the MEND Secretariat. The French version is in final review and, both versions will be made available on the web site in late September.

Proceedings from the 10th Annual BC/MEND ML/ARD Workshop held in Vancouver in Dec, 2003 are now available. Key themes were characterization of wastes, changes in ARD generating wastes, and recent MEND projects. Workshop proceedings are now available on CD for \$50 CDN and can be ordered from BiTech Publishing at: www.bitech.ca.

The CD with the British Columbia (BC) Reclamation Symposium is now available. This CD contains 26 years of papers (1977-2002) in a digital and searchable format. The symposium was sponsored by the BC Technical and Research Committee on Reclamation (TRCR) to share knowledge about mine reclamation. The CD can be ordered from the Infomine web site at: www.infomine.com/publications/books/trcr19772002.asp.

The 2nd Symposium on Mines and the Environment, is planned for Rouyn-Noranda on May 15 to 18, 2005. The Université du Québec en Abitibi-Témiscamingue (UQAT), in collaboration with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), the Ministère des Ressources naturelles du Québec, and MEND are involved in the preparation of this event. Two-full days of technical presentations on the following themes are planned: rehabilitation, waste rock, sustainable mineral processing, tailings management, paste tailings and paste backfill, contaminated water, toxicity and regulatory. Simultaneous translation will be available for the technical sessions.

Other news

The Freiberg Mining Academy (TU Bergakademie Freiberg) and the International Mine Water Association (IMWA – PADRE) held a workshop about mine water treatment issues on June 18th. 52 delegates, including colleagues from the United States (DK Nordstom), Canada (M Kalin), and Australia (B Lottermoser), attended the Freiberg meeting in which 13 presentations about passive and active mine water treatment were given. Proceedings with full papers (some papers in German, some in English) are available at a price of \$US/€ 25 + shipping from the IMWA Secretary General Christian Wolkersdorfer – Vor dem Meißner Tor 10 – D-09599 Freiberg/Sachsen or send an e-mail to info@IMWA.info.

4. Opportunity for feedback on a Sustainable Development Reporting System for the Mining Industry – ICMM-GRI Project

In 2003, the Global Reporting Initiative (GRI) and the International Council for Mining and Metals (ICMM) convened a multi-stakeholder working group with the purpose of developing a Mining and Metals Sector Supplement to the 2002 Sustainability Reporting Guidelines.

A draft of the Supplement is now available for public comment. GRI and ICMM welcome all suggestions on how to improve the document. Several sections are relevant to acid drainage issues throughout the supplement. The deadline for submitting comments is 23 August 2004. Consult the [ICMM web site](#) for more information:

5. Upcoming Meetings

Don't miss the following meetings related to acid drainage.

* Potential INAP and Regional Organization meetings are indicated with an asterisk.

- **ACMER Workshop on Operational Mine Water Management**
Aug 16-18, 2004, Kalgoorlie, Australia.
- **M-WINE Workshop** following the **32nd International Geological Congress (IGC)**
Aug 20, 2004, Florence, Italy
Sessions focussing on 'Biogeochemical studies of the environmental impacts of mining on ground Surface waters' and 'Water - Rock Interaction: Acid Mine Drainage'
- **CLRA / ACRSD 2004 Annual Meeting "Restoration on the Edge"**
August 24-26 2004 in Victoria, British Columbia, Canada
- **The Centre of Excellence for Sustainable Mine Lakes "2004 Acid Sulfate Soils Workshop"** focussing on aquatic assessment and management. To request a copy of the brochure and registration info, contact **Amber Young**.
September 1-3 2004, Western Australia
- **NWFS – Northwest Field School 2004 – Intro to Metal Leaching and Acid Rock Drainage**
September 13-17 2004 in Smithers, British Columbia, Canada
- ***Mine Water 2004 – IMWA Symposium**
Sept 20 – 24 2004, Newcastle, UK
- **Tailings and Mine Waste '04**
Oct 10-13, 2004 in Vail, Colorado, USA
To submit an abstract or for more information, contact **Linda Hinshaw** from the Department of Civil Engineering at Colorado State University.
- ***Minerals Council of Australia (MCA) Inaugural Global Sustainable Development Conference**
Oct 25-29, 2004, Melbourne, Australia
- **Pit Lakes 2004**
November 16-18, Reno, Nevada
No registration fee to attend the workshop.

- **WISA – Water Institute of South Africa** - Conference on Mine Closure
November 16 – 17, 2004, Randfontein Estates Sports Club,
Johannesburg, South Africa
- ***11th Annual BC/MEND Metal Leaching/Acid Rock Drainage Workshop. This year's theme is Dry Covers, Segregation of Wastes, and Prediction.**
Dec 1-2, 2004, Vancouver, Canada
Contact Mr. **Gilles Tremblay** (+1 613 992 0968) or Dr. **Bill Price** (+1 250 847 9335).
- **ARCSACC – Assessment and Remediation of Contaminated Sites in Arctic and Cold Climates**
May 8-10 2005 in Edmonton, Canada
- **2nd Symposium on Mines and the Environment**
May 15-18, 2005, Rouyn-Noranda, Quebec, Canada
Organized by the Université du Québec en Abitibi-Témiscamingue (UQAT), the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), the Ministère des Ressources naturelles du Québec, and MEND
- **International Conference on Mining and the Environment and Metals and Energy Recovery “Securing the Future”.**
June 27-July 1 2005, Skelleftea, Sweden
- **7th International Conference on Acid Rock Drainage (ICARD)**
March 26-30, 2006, St Louis, Missouri, USA
- **SWEMP 2006 – 9th International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production**
May 2006 in Athens, Greece