



## The International Network for Acid Prevention

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

May 2003

**NEWSLETTER**

[www.inap.com.au](http://www.inap.com.au)

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This newsletter is published by the INAP Operating Committee (OpCom) and is available via the INAP web site <http://www.inap.com.au>. For further information in the first instance please contact the INAP Technical Manager, **Anne-Marie Fleury**.

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### **1. Update on INAP's Call for Proposals**

In February 2003, INAP issued a public Call for Proposals. The document was distributed through the member companies, posted on the web site, sent

to the public distribution list, and disseminated through the International Council on Mining and Metals (ICMM).

The Operating Committee (OpCom) was happy to note a significant response; over 50 proposals were received from Canada, the U.S.A., Australia, South Africa, and Europe reflecting a high level of interest in INAP.

INAP is presently examining the proposals with partner regional organisations. Projects will be selected through an established set of criteria. The OpCom is committed to providing constructive feedback in a timely manner to all the proponents. Whenever possible opportunities for in-kind support, information on similar projects, or alternative funding sources will be provided.

INAP will continue to accept proposals throughout the year. However the preferred period is during the Call for Proposals; the next one is planned for mid 2004.

## **2. Summary of Heap Leach Closure Workshop**

On March 25 and 26, 2003 the Mining Life-Cycle Center from the Mackay School of Mines at the University of Nevada in Reno organized a Heap Leach Closure Workshop that was co-sponsored by INAP. The meetings were held in Elko, Nevada, USA, and also provided a venue for INAP's Operating Committee meeting and the Acid Drainage Technology Initiative Metal Mining Sector's (ADTI-MMS) informational and workbook sessions.

The workshop was very well attended with 115 participants from diverse sectors; 42 from the mining industry, 25 from regulatory agencies, 29 from consulting companies, 11 academics and 8 students.

The 21 presentations covered a wide range of topics including detailed seepage modeling, closure case studies, cover design, arsenic and sulphate treatment, and monitoring results. Four of the INAP research projects were also presented during the Workshop. The abstracts and most of the presentations are available at <http://www.unr.edu/mines/mlc>.

Knowledge and experience on mine closure, and specifically heap leach facility closure, is growing. In most cases the monitoring results of closed facilities are very encouraging. Evaporative covers are performing well and the importance of vegetation for the removal of moisture through evapotranspiration is clearly demonstrated. Examples were provided for the covers at the Barrick Goldstrike and Couer Rochester heap leach facilities.

Observing the drain-down behaviour in a heap or parts of a heap when irrigation has ceased can provide input for estimates of the long-term drain-down. A phenomenon that was discussed was how drain-down flow and time are affected by the percentage of fines in the heap. Results from the Yankee

heap owned by Placer Dome indicate the necessity to use low flow rates for rinsing the residual cyanide which may be associated with the fine fraction of the heap material. The No. 4 sieve seems to be a logical dividing point of coarse and fine materials.

Knowledge and experience on passive treatment of heap and waste rock effluent is also growing. Newmont developed a series of passive treatment cells at the closure of their Hollister project. Monitoring results to date show that these are performing well. Passive treatment will undoubtedly develop further as results from ongoing monitoring are studied.

Many positive comments were received from the workshop participants. It was also an opportunity to introduce a larger group of professionals to the activities of INAP and ADTI-MMS. INAP would like to thank Dirk van Zyl for his efforts coordinating this very successful workshop. The next major workshop will be on tailings impoundment closure, hopefully in late 2003 in Elko, Nevada.

### **3. Public Distribution of the INAP Newsletter**

Improving outreach to the public is central to the network's overall objectives. A public distribution list has been created for the newsletter to become a better communications means with non-INAP members. Please send contact details for potentially interested parties to the **Technical Manager**.

### **4. Creating a Database of Industry Experience**

The OpCom is in the process of creating a database of information on acid drainage. INAP invites members and the public to submit documents. An outline of the type of information solicited is available and will soon be posted on the web site, it includes: conference presentations from member companies, data from closed sites, public consultation documents, or Environmental Impact Assessments, among others.

### **5. Partner Regional Organisations**

Regular meetings are held with the partner regional organisations: the Australian Centre for Mining Environmental Research (ACMER), the Acid Drainage Technology Initiative (ADTI) in the U.S.A, and the Mining Environment Neutral Drainage (MEND/NEDEM) programme in Canada. Discussions have resulted in the identification of common areas of work between regional organisations and information exchange on abandoned mines and risk assessment training. INAP and partner organizations are also currently working together to identify opportunities for cooperation through the 2003 project proposals.

### ACMER News

ACMER successfully obtained funding from the Commonwealth Department of Industry, Tourism and Resources (DITR) to conduct seven **Regional Workshops on Cyanide** use and management for Australian small-medium gold producers. The first workshops are planned for Kalgoorlie, Mt Magnet and Perth in Western Australia on May 5, 7 and 9, 2003, respectively. The workshop will provide an outline of the new International Cyanide Management Code and cover best practice cyanide management.

Matching funds for the workshops have been obtained from (1) the Australian Gold Council, (2) the Minerals Council of Australia, together with (3) the NSW Minerals Council, NT Minerals Council, Victorian Minerals and Energy Council, the WA Chamber of Minerals and Energy, and individual mining companies. In addition, a number of State government departments have agreed to provide both cash and in-kind support.

A workshop on **Water Quality Issues in Final Voids, Salt Lakes and Ephemeral Streams** will be held in Perth, Western Australia on May 12 –13, 2003 and involves 14 speakers from industry, government, academic institutions and consulting firms. The workshop will provide an opportunity for discussion on current void water quality models and approaches, emerging technologies in modelling void water quality, and on how to deal with the application of the new Australian Water Quality Guidelines in ephemeral stream and lake systems for mines in semi-arid and arid environments.

### MEND News

The MEND/NEDEM programme has a series of reports on acid drainage research in Canada from the past 20 years. This information is available by contacting **Gilles Tremblay** and includes research on wet covers, acid drainage prediction tests, and treatment.

## 6. The 6th International Conference on Acid Rock Drainage (ICARD)

Many INAP members will be attending the upcoming 6<sup>th</sup> ICARD in Cairns, Australia from July 12-17, 2003. There will be an INAP booth at the event that will provide an excellent opportunity for INAP and partner regional organizations to meet and discuss with members and the public.

Registrations continue to roll in for the 6th ICARD, they can be made on-line at <http://www.ausimm.com/>.

## 7. Update on INAP Research Projects

The following is a summary of the status of on-going INAP research projects. More information, including project reports and presentations, is available by contacting the [Technical Manager](#).

**Treatment of Sulphate in Mine Effluents:** A literature review of the state-of-the-art treatment processes designed to reduce the concentration of sulphate and metals in mine effluents. A draft of the final report is currently being reviewed by INAP.

**Tailings and Waste Rock Co-Mix:** A project to examine the stability and hydraulic conductivity of covers made of different co-mixtures of mine waste. The final report is being reviewed.

**Rum Jungle Waste Rock Cover:** A study to determine the reasons for the deterioration of the earthen cover on a waste rock dump at Rum Jungle, Northern Territory, Australia and summarize important lessons for the design, use and long-term risk of covers. A draft of the final report is being reviewed.

**Long-term Performance of Dry Covers:** A study to improve the mining industry's ability to accurately predict the long-term performance of dry covers on waste. A draft of the final report is expected to be reviewed this month.

**Scale-Up Business Plan Development:** The development of a business plan to undertake large-scale waste rock pile testing to improve prediction techniques for sulphide containing waste dumps. The OpCom is reviewing a draft version.

**Hydrologic and Geochemical Characterization of Waste Rock Dumps:** A study to understand the geochemical and hydrological nature of two acid-producing waste rock dumps that were being dismantled. The research has been completed and a summary report will be written before the 6<sup>th</sup> ICARD.

**Passivation of Acid Generating Materials:** A project to evaluate a new technology to passivate acid generating materials. Testing is underway and is expected to last till September 2003.

## 8. Web site Changes and Other Items

Work on web site changes has taken longer than expected. The changes should 'go live' by mid May, at which time INAP will invite the public to view the new web site.

### **Collaboration with other Projects**

Part of INAP's mandate is to identify synergies between projects. The OpCom will be seeking to discuss possibilities with AMIRA regarding their P387b project on Neutralizing Mineral Reactions for Control of Acid Mine Drainage.

### Engagement with European groups

The OpCom has had contact with several groups and individuals working on mine drainage in Europe. The OpCom Chair and Technical Manager recently met with Bernhard Dohl from the Mining Water Interdisciplinary Network Europe (M-WINE). INAP would like to encourage members to attend the 2<sup>nd</sup> M-WINE annual meeting to be held in Lisbon, Portugal June 27 – July 3, 2003. Contact **Bernhard Dohl** for more information. INAP is also discussing potential collaboration with the **International Mine Water Association (IMWA)**.

## 9. Upcoming Meetings

Upcoming meetings that may be of interest are listed below. Note INAP and Regional Organisation meetings highlighted within boxes.

- **ACMER Workshop on the Use and Management of Cyanide by Gold Producers**  
May 5-9, 2003, Kalgoorlie, Mt Magnet, and Perth, Western Australia
- **The Canadian Institute of Mining, Metallurgy and Petroleum organizing the CIM Mining Industry Conference & Exhibition**  
May 4-7, 2003, Montreal, Canada
- **ACMER Workshop Water Quality Issues in Final Voids, Salt Lakes and Ephemeral Streams**  
May 12-13, 2003, Perth, Western Australia
- **The 7th International Conference of International Affiliation of Land Reclamationists (IALR)**  
May 13-16, 2003, Runcorn, North West England.
- **Mining and the Environment 3** Meeting hosted by Laurentian University  
May 25-28, 2003, **Sudbury**, Canada
- **International Conference on Mine Waste Management** - BAT Project Application  
June 2-3, 2003, Wroclaw, Poland - hosted by CUPRUM as announced by Euromines
- **ACMER Management of Metals and Metalloids in Mining Workshop**  
June 2-3, 2003 Melbourne, Australia
- **The 1st International Symposium on Processing & Disposal of Mineral Industry Wastes (PDMIW '03)**, organized by Minerals Engineering International (MEI) in collaboration with the Technical University of Delft, The Netherlands, and the Camborne School of Mines, UK.

June 18-20, 2003, Falmouth, UK

- **2<sup>nd</sup> Mine Water Interdisciplinary Network Europe (M-WINE)** Short Course and Workshop, organized by the Portuguese Instituto Geológico e Mineiro  
June 27 – July 2, 2003, Lisbon, Portugal

- **The 6<sup>th</sup> International Conference on Acid Rock Drainage (ICARD)**  
**INAP meetings to be held in conjunction with this event**  
July 12-18, 2003 Cairns, Australia

- **Tailings and Mine Waste '03**, Colorado State University  
Oct 12-15, 2003, Vail, Colorado
- **ICMM Annual Meetings**  
Oct 13-16, 2003, London, UK
- **International Mine Water Association (IMWA) 8<sup>th</sup> Congress**  
Oct 20-25, 2003, Johannesburg, Gauteng, South Africa
- **Implementing Sustainable Development in Mining: From Talk to Action** Chamber of Mines of South Africa  
Nov 3-5, 2003, Johannesburg, South Africa
- **Minerals Council of Australia Sustainable Development Conference**  
Nov 10-14, 2003, Brisbane, Australia

- **10<sup>th</sup> Annual BC MEND Metal Leaching/Acid Rock Drainage Workshop**  
**INAP meetings to be held in conjunction with this event**  
Dec 2-3, 2003, SFU Harbour Centre, Vancouver, Canada

- **8<sup>th</sup> International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production (SWEMP)**  
May 17-20, 2004, Antalya, Turkey
- **SME Annual Meeting**  
February 2004, Denver, Colorado, USA  
**ADTI-MMS members to co-chair several sessions.**

## 10. Next Newsletter

The next newsletter will be prepared following the July meeting in Cairns in conjunction with the 6<sup>th</sup> ICARD.