



## The International Network for Acid Prevention

An organization of international mining companies that seeks the prevention of acid rock drainage (ARD) and metal leaching in support of responsible mineral development.

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The past two months have been very busy for INAP. We have been focusing on the completion of the GARD Guide™. We have also been working with the joint ICARD and Securing the Future planning committee. The 8<sup>th</sup> ICARD promises to be an excellent technical program with great opportunities to network with ARD practitioners from across the globe. Speaking of the international scope of INAP, the global reach of INAP and the Global Alliance may expand, as we have recently received requests from groups in China, Brazil and Indonesia to join the Global Alliance

## 1. GARD Guide

After almost two years of tireless work, the GARD Guide team is putting the finishing touches on the web-based GARD Guide™. The team has been ably directed by Keith Ferguson, the GARD Guide Champion with Rens Verburg and Nico Beauuidenhout, project managers from Golder Associates, as GARD Guide consultants. The “Final” version will be rolled out at the 8<sup>th</sup> ICARD in Skelleftea, Sweden. Because of its wikipedia format, the Guide will be easily updated and improved; hence, this document may never have a “Final” version.

Over the past year, INAP, the GARD Guide team and the Global Alliance have been presenting papers, publishing papers and organizing workshops to engage experts in vetting as well as promote and publicize the GARD Guide. These activities included: the Sixth Australian Workshop on Acid and Metalliferous Drainage in Bernie, Tasmania; the 6<sup>th</sup> International Acid Sulfate Soils Conference and Acid Rock Drainage Symposium in Guangzhou, China; the SME Annual Meeting in Denver, CO; the GARD Guide workshop in Brisbane, Queensland; the West Virginia Mine Waste Taskforce Workshop in Morgantown, WV, the Mine Waste Conference in Paulson, MT; and the European GARD Guide Workshop in Stockholm, Sweden.

GARD Guide articles were or will be published in the April 2008 *Gold and Minerals Gazette*, the June 2008 and July 2009 *Mining Engineering* and an upcoming edition of the *International Mine Water Journal*.

Later this year, GARD Guide workshop and training sessions are planned for the Water in Mining 2009 Conference in Perth, Australia in September 2009 and the International Mine Water Conference in Pretoria, South Africa in October 2009

During the next phase of the GARD Guide, we will be concentrating on four major elements

- **Organization Engagement** - INAP will continue to engage international organizations such as ICMM, IFC/WB and UNEP and potential certification projects (e.g. CN code, CJRP etc.) to integrate the Guide into those organization's activities and to seek funding/support.

- **Promotion of the GARD Guide** - Promotion of the GARD Guide includes the preparation of articles and presentations at conferences.
- **Training** - Training on application of the GARD Guide is warranted in developing countries. A pilot training course is planned for the International Mine Water Conference (IMWC) in South Africa in October 2009.
- **GARD Guide Development** - The GARD Guide requires further development and it appears unlikely that the Wiki model relying on volunteers will be successful on its own. More mini-case studies should be developed and added to the Guide. A teacher's training kit should be considered.

## 2. ICARD

The 8<sup>th</sup> International Conference on Acid Rock Drainage will be held in conjunction with Securing the Future at the Expolaris Conference Centre in Skelleftea, Sweden on June 23 to 26, 2009. The conference program contains over 140 high quality oral presentations and 70 posters ranging from basic understanding of ARD to policies for sustainable mining. The over 250 participants will be offered the food and culture of northern Sweden in a relaxed and hospitable atmosphere that lends itself to networking with old friends and meeting with new associates. The conference will be followed by three field trips to exciting historical as well as active mine sites.

INAP and Global Alliance Meetings will be held preceding the ICARD Conference. At the end of the ICARD Conference, we will hold a bid meeting to hear proposals from groups that would like to organize the 9<sup>th</sup> ICARD in 2012. Presently, we are anticipating two proposals.

## 3. Global Alliance

Two major topics of discussion have been addressed in recent Global Alliance (GA) meetings and conference calls. First, has been the expansion of the Global Alliance to new regions of the Globe. Secondly, we are considering an expanded roll for the GA in the path forward for the next phase of the GARD Guide.

With regard the expansion of the GA, INAP has recently received requests from groups in China, Brazil and Indonesia to join the Global Alliance. We understand that representatives from some of these groups will be attending the 8<sup>th</sup> ICARD. This will give the GA and INAP an opportunity to meet and discuss future opportunities and objectives with these organizations. If in our assessment, it would be a good match, we will move forward with a Statement of Mutual Intent to be signed by all parties.

The next phase of the GARD Guide™ includes further promotion and engagement of global ARD practitioners in the training and application of the GARD Guide content and principles. This phase will require a broader

involvement of mining stakeholders including: industry technical and managerial personnel, governmental regulators, financial advisors and lenders, environmental, community and non-governmental organization. We look forward to renewed and expanded engagement of the Global Alliance in this phase of the GARD Guide™. These expanded activities will be discussed in the upcoming GA meeting in Skelleftea and in future GA Conference Calls.

We will have another newsletter following the 8<sup>th</sup> ICARD to update you on what transpired at the meeting.

#### **4. INAP OpCom Chair Report: Jim Robertson**

The recent global financial crisis has affected all commodities and consequently all sectors of the mining industry. As all INAP members companies have been impacted this has resulted in major austerity measures being invoked by all companies to manage discretionary spending and limiting travel. Despite these conditions INAP has had no company withdraw their membership or issue any notice of less commitment to the objectives of INAP's mandates. As this is not the first period of financial stress that INAP has weathered, the activities may be reduced but steady progress continues to be made.

The three objectives of the year were to complete the GARD Guide document with a rollout plan for the next two years, to raise the profile of INAP through lectures, brochures and new membership companies and to continue support of current research projects. The progress made on each from December 2008 to April 2009 is summarized as follows:

- The primary focus has been on completing the GARD Guide through the final expanded review by a broadened audience of experts and the general public. Several lectures and workshops have been delivered around the globe by INAP and Global Alliance members, the GARD Consultants and the Technical Manager as part of the GARD Guide roll out process. The delivery of the Guide has continued on schedule for the ICARD conference in Skelleftea, Sweden in June 2009, where it will be officially released. The project is on budget.
- The program to advertise INAP has been mainly conducted through the GARD Guide rollout presentations and workshops, which have provided good opportunities to introduce INAP as the owners of the Guide and also explain the broader INAP mandate.
- Planning for the INAP water treatment workshop in Phoenix Arizona for October 2009 is proceeding. In addition, some members are assisting on the technical committees for the water treatment workshop planned by the Water Research Commission in South Africa for October 2009.

The INAP annual budget developed in December 2008 is being followed successfully and tracked closely by the technical manager.

The auditors have been officially changed from Price Waterhouse Coopers Ltd. to OWB Pty Ltd. The first audit report by Graeme Dunn of OWB was provided for the 2008 year to comply with the INAP governance procedures and the INAP Board reporting requirements.

Dr. Robin Batterham from Rio Tinto, the Chair of the INAP Board stepped down in February 2009. Bruce Kelly from RioTinto has agreed to fill this position as an interim measure.

The commitment to support the 8<sup>th</sup> ICARD conference in Sweden continued with active participation by members in planning the conference, the review of technical papers, and the delivery of financial support to the planning committee. Several technical papers prepared by INAP companies are included in the agenda and in the ICARD Proceedings.

## **5. INAP Technical Manager's Report: Terrence Chatwin**

### ***Operating Plan 2009***

INAP's number one priority for 2009 is the finalization and roll out of the GARD Guide™. Other activities that are of high priority are the support and successful implementation of the 8<sup>th</sup> ICARD in Skelleftea, Sweden on June 23 – 26, 2009 and the Water Treatment Workshop in Tucson, AZ during the first week of October 2009.

An ongoing challenge for INAP is how to inform stakeholders in developing countries of the GARD Guide™ and how to train new ARD practitioners in uses and applications of the Guide. These activities with the continual updating and improvement of the GARD Guide will need to be addressed in upcoming INAP OpCom and Board Meetings.

The basic objective of all of these high priority activities is to strengthen the INAP organization by increasing member engagement and enhancing INAP's value to its member companies by focusing on relevant collaborative research and technology transfer. We also want to expand INAP's support of the Global Alliance (GA).

Every 3 years, INAP sponsors the International Conference on Acid Rock Drainage (ICARD). This year the 8<sup>th</sup> ICARD will be held in Skelleftea, Sweden. The 8<sup>th</sup> ICARD has been organized in parallel with Securing the Future – Mining, Metals and the Environment in a Sustainable Society. It promises to be an excellent program with over 150 papers and posters. INAP will hold an OpCom and GA meeting in conjunction with the ICARD. We will also hear presentations from potential organizing committees from groups wishing to host the 9<sup>th</sup> ICARD in 2012.

In October 2009, INAP will sponsor a Water Treatment Workshop in Tucson, AZ speakers will include industry specialists, academics, consultants and other stakeholders. Event chairman, Tom Claridge, FMI, is seeking additional INAP members to participate with him, Hoe Teh, Barrick, and Linda Broughton, BHP Billiton on the planning committee.

In December 2009, INAP will hold its semi-annual Board and OpCom meetings in conjunction with the BC MEND ARD Workshop in Vancouver.

The INAP Board has suggested that non-member companies be invited to participate in INAP activities, and the Technical Manager and OpCom members are continuing to respond to this recommendation. The GARD Guide™ vetting process, INAP's technical workshops and the collaborative research and presentations are being used to engage other mining companies and stakeholders in the INAP network.

### Operating Plan Results

During the first 4 months of 2009, the following activities were performed:

- The Rev A version of GARD Guide™ has been completed, and it is open for internal INAP and broad stakeholder review;
- The OpCom and the technical Manager are continuing to implement activities defined in the INAP Strategic Planning meeting held in February 2008;
- To expand the awareness of the GARD Guide within the mining industry, INAP OpCom and Global Alliance members have made presentations, organized workshops and published papers on INAP and the GARD Guide;
  - Presentations on INAP and GARD Guide have been made at:
    - SME - Denver, February 2009 by Rich Borden, Rens Verburg, ADTI and Terry Chatwin
    - ICMM – Toronto, March 2009, Denis Kemp & Jim Robertson, INAP met with Tony Hodge & Anne Marie Fleury
    - WV Coal Mine Task Force – Morgantown, WV, 31 March 2009 by Keith Ferguson & Terry Chatwin
    - European GARD Guide Workshop – Stockholm, Apr 2009 by Terry Chatwin & Rens Verburg, ADTI
    - ICARD – Skelleftea, June 2009, Keith Ferguson, Terry Chatwin, Rich Borden, Nico Bezuidenhout & Rens Verburg
  - Workshops were organized to vet the GARD Guide:
    - ACMER GARD Guide Workshop – Brisbane, QU, 13 Mar 2009
    - WV Coal Mine Task Force – Morgantown, WV, 31 March 2009
    - European GARD Guide Workshop – Stockholm, SW, 23 Apr 2009
  - Papers or Articles were published on the GARD Guide in the following publications;
    - Mining Engineering, June 2009, “GARD Guide™ for Acid Prevention – Is Available ”
- INAP has developed a master activity list to track specific assignments pertaining to the GARD Guide Roll Out;

- INAP is supporting the following projects:
  - Store and Release Covers - ACMER – U of Queensland, U of Western Australia and U of Technology-Sydney
  - Pit Lake and Prediction Workbooks - ADTI
- INAP will continue to seek new members within the mining community;
  - Major Mining Companies
  - Mid-tier and Junior Companies

### **GARD Guide™**

The Rev A of the GARD Guide has been completed and has been placed on the internet in a Wiki format for internal INAP and broader stakeholder review. The Wiki will be used as the web device to compile and integrate changes to the GARD Guide document. Upon completion of the GARD Guide™, this site will be used to house and distribute the GARD Guide. The GARD Guide team under the direction of Keith Ferguson with strong support from Golder Associates has maintained the GARD Guide schedule within the proposed budget.

### **Linkage**

In an effort to seek funding for the Guide, Jim Robertson and Denis Kemp met with the Mining Association of Canada and obtained \$50,000 USD in financial support for the Roll Out of the GARD Guide™. As the GARD Guide is completed, INAP needs to expand its efforts to obtain support for the GARD Guide Roll Out.

Jim and Denis also met with Dr. Tony Hodge and Anne Marie Fleury of ICMM to discuss ways to form a strategic partnership between ICMM and INAP.

INAP has an active presence in the planning process for the 8<sup>th</sup> International Conference on Acid Rock Drainage (ICARD). Jim Robertson, Denis Kemp, Charles Bucknam and Terrence Chatwin have participated on the ICARD Organizing Committee. INAP member companies are major supporters of the 8<sup>th</sup> ICARD in Skelleftea, Sweden. INAP Board and OpCom meetings will be held prior to the ICARD in Skelleftea. A Global Alliance meeting will also be held in Skelleftea during that week.

### **Partnership with Global Alliance**

INAP continues to support the Global Alliance and to explore options for new partnerships, particularly in South America and Asia. This activity was one of the actions discussed at the recent Strategic Planning Meeting and in conference calls with Global Alliance members.

Recently, Clive Bell sent INAP an e-mail describing his efforts in engaging a broad group of academics, institute and industry personnel in China to form a group with the purpose of joining the Global Alliance. Attached to the e-mail was a list of members of the Chinese Network for Acid Mine Drainage that

included representatives of 14 universities, 4 research institutes and 4 mining companies.

INAP also has received e-mails from a group in Brazil indicating interest in joining the Global Alliance. They are located at the Federal University of Minas Gerais, and they have support from other universities, Vale and the State of Minas Gerais.

## Projects

A summary of current INAP projects is provided below. The 2009 focus has been on the completion and roll out of the GARD Guide™. As the GARD Guide is finalized, INAP anticipates that the GARD Guide™ expenditures will decrease and other research projects will be implemented. The Technical Manager has asked each OpCom member to submit a list of company research projects that would be of value to their company. The pursuit of these projects will be reviewed by the OpCom under the 2009 research program.

Project	Researcher	INAP Budget	Status
GARD Guide™ Preparation and Roll Out	Golder Associates	US\$429,000 over 3 calendar years	Rev A has been prepared by Golder and the GARD Guide team. It is on the web for internal INAP and broader stakeholder review.
Designing Effective Store-release Covers for the Long-term Containment of Mine Waste	ACMER. U of WA, U of Queensland, U of Technology - Sydney	US\$25,000/yr for 3 yrs	Activities in progress. Progress reports have been received. Last year of contribution is 2009
Workbook on Predicting ARD using Geochemical Mathematical Models	ADTI	US\$ 10,000	Waiting on deliverable.
Workbook on Pit Lake Characterization, Modeling, and Remediation Approaches	ADTI	US\$ 10,000	Proposal on hold.



## 6. Up-Coming Events

8<sup>th</sup> International Conference on Acid Rock Drainage, Skelleftea, Sweden, June 22-28, 2009. Contact: Lars-Ake Lindahl <mailto:Lars-Ake.Lindahl@metallgruppen.se>

22-26 June 2009 Perth – Short Course on ‘Practical Monitoring for Improved Environmental Performance’. – Contact: Ron McLean 61-7-3346-4503, [R.McLean@acmer.uq.edu.au](mailto:R.McLean@acmer.uq.edu.au)

3<sup>rd</sup> National Conference on Ecosystem Restoration (NCER) 2009, Los Angeles, California, July 20-24, 2009. Contact: Tom St. Clair at 904-232-1774 or by email at: [GSTClair@pbsj.com](mailto:GSTClair@pbsj.com).

Water in Mining 2009, Perth, Western Australia, 15-17 September 2009. Register online: [www.ausimm.com](http://www.ausimm.com).

IMWA Symposium 2009 and Water Institute of Southern Africa’s Mine Water Division: Pretoria (South Africa), 19 - 23 October, 2009, CSIR Conference Centre, Pretoria - [www.wisa.org.za/minewater2009.htm](http://www.wisa.org.za/minewater2009.htm).

11th International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production. 16-19 November, 2009, Banff, Alberta, Canada. Contact: Dr. Raj K. Singhal Email: [singhal@shaw.ca](mailto:singhal@shaw.ca), Official Websites: <http://www.mpes-cami-swemp.com/>

2010 SME Annual Meeting and Exhibit. Phoenix, Arizona, Phoenix Convention Center. 28 February – 3 March 2010. [www.smenet.org](http://www.smenet.org).

ASMR 27<sup>th</sup> Annual Meeting 2010 will likely be in Pittsburgh with Margaret Dunn (Stream Restoration, Inc.) and Lois Uranowski (OSM) as co-hosts. The dates and hotel have not been established.

Mine Waste 2010. Sheraton Perth Hotel, Western Australia. 6-10 September, 2010. [www.minewaste2010.com](http://www.minewaste2010.com).

ASMR 28<sup>th</sup> Annual Meeting will be in Bismarck, ND at the Ramkoda Hotel with Steve Schroeder the host. Additional information will be added here when it is nearer the meetings. The date has been set for June 12-16, 2011.