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Environment and Security (ENVSEC) Initiative in South Eastern Europe (SEE):
Improving regional cooperation for risk management from pollution hotspots as
well as the transboundary management of shared natural resources

Mining for Closure:

Innovations for contaminated mine waters assessment,
management and remediation

Technical workshop on innovative techniques and technologies for
contaminated mine waters assessment, management and remediation
March 26 – 29, 2007; Brestovacka Spa, Bor, Serbia

Workshop summary report

Background:

The workshop was organized within the framework of the Environment & Security Initiative (ENVSEC). ENVSEC is an initiative of five organizations – UNEP, UNDP, OSCE, UNECE and the REC. NATO through its Science for Peace programme is also aligned with the ENVSEC Initiative as an associate member.

Following the Declaration of the Ministerial-level meeting in Cluj-Napoca, Romania, in May 2005, and within the ongoing ENVSEC work in SEE, the desk assessment of the region's mining hotspots was updated with additional local information obtained by Dr. Phillip Peck and Mr. Alexander Zinke during a series of field missions to Albania, Bosnia and Herzegovina, Montenegro, Serbia (including Kosovo) and FYR Macedonia, from February to May 2006. Their mission so far has identified some fifteen or more sites that pose substantial transboundary risk to the environment, public health and safety, and to the regional socio-political stability in SEE. The next step has been to determine suitable measures needed to remediate and reduce the environmental risk at some selected pilot sites, chosen in a regional context, as well as to contribute to regional capacity building, to address problems of contaminated mine water at sites with respect to their assessment, management, and remediation.



Summary of the workshop:

The workshop was jointly sponsored by the Canadian International Development Agency (CIDA), and the Austrian Development Agency (ADA). CIDA also provided technical support and assistance of two Canadian experts in mining environmental issues, and supported the ENVSEC mining programme for SEE, as well as field visits to some of the selected sites.

Several world class authorities on acidic mine water treatment participated at the workshop: Mr. Gilles Tremblay and Dr. Nand Davé of the Natural Resources



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Canada (NRCan), Dr. Gunther Pieplow of Wisutec, Germany, Mr. Chris McCormick and Dr. Adam Jarvis of the UK, and experts from the regions, Dr. Dejan Milenic (Serbia), Dr. Zvezdan Karadzic (BiH) and Mr. Dejan Mirakovski (FYR Macedonia), among others.

The NRCan experts also extended their Balkan visit to undertake field visits to some of the mining sites in Albania (Kukes, Kalimash, Fushe Arez, Repsi, Kurbenash, Rreshen and Rubic) and Bosnia and Herzegovina (Srebrenica and Vares), which were identified in the ENVSEC programme as high priority sites in the 2006 mission of Dr. Peck and Mr. Zinke. The purpose of the mine site visits was to determine simple, affordable and technically suitable options of remediation at some of these sites.

The main objectives of the workshop were:

- Identification of common regional problems and needs related to contaminated mine waters
- Building of initial capacities to address problems at regional and local levels for assessment, management and remediation of contaminated mine waters and impacted sites
- Provision of information on suitable technical options for the region, particularly focusing on innovative, local and cost effective measures for risk reduction and management of contaminated mine waters



The immediate outcome of the workshop and site visit package was to provisionally identify and design a possible remediation solution for at least one site per country visited to enable well defined and more concrete follow up work at three to five mining sites in the Western Balkans countries.



On the occasion of the ENVSEC workshop, the Ambassador of Canada, H. E. Robert McDougall, and Mr. David Foxall, Counsellor and CIDA representative, hosted a reception and buffet dinner on Sunday, March 25, 2007 at the Canadian Embassy Residence, U i ka 33, Dedinje, for the workshop participants. Also present at the reception-dinner were the representatives of the Ministry of Science and Environment Protection of Serbia, Directorate for Environment protection (Director, Mr. Miroslav Nikcevic, Deputy Director, Mr. Miroslav Spasojevic, Assistant

Director Mr. Jagos Raicevic, along the representatives of the Directorate who were attendees at the workshop), Ms. Ann Collins, from CIDA in Ottawa, Ms. Sandra Wibmer from ADA in Vienna, Mr. Dusan Vasiljevic of OSCE presence in Serbia, Mr. Simon Davies, of the European Agency for Reconstruction, as well as Ms. Andjelka Mihajlov of the Environmental Ambassadors.

The workshop was organized by UNEP together with the Regional Environmental Center (REC) field office in Serbia, which facilitated and managed all local and workshop requirements. It was attended by 40 participants of the following South East European countries: Bosnia and Herzegovina, the FYR of Macedonia, Romania and Serbia, including Kosovo-UNMIK. The workshop attendees were from



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the Ministries of the Environment, Universities, Mining Industry (Tuzla, Bor, Majdanpek, Sasa, Buchim mines) and NGOs, as well as from various international organisations (Austrian Development Agency, REC Serbia, OSCE Presence in Serbia, UNEP, UNDP Kosovo) and international consultants from the above countries. Their contact details are given in the List of Participants.

Regional experts made presentations and provided examples on general mining and environmental related challenges of their regions. Balkans specific problems, relevant to the workshop, were presented and illustrated, thereby facilitating the understanding of the regional components of the issues.

All attendees also visited two local mining sites where serious environmental pollution was occurring – Bor and Majdanpek. Apart from further visualising the extent of the issue, it also allowed the participants and decision makers to experience firsthand the problems addressed by the workshop. Participation of several internationally recognised experts on mining policy, mine pollution management and mine site remediation created a synergetic environment in which relevant topics were presented and discussed.



Two case studies were considered in breakout sessions. Each was led by an international expert, where participants were actively involved in the creative process of identification, designing and development of a suitable treatment scheme for managing each of the contaminated mine site. The aim of the case studies was to allow participants to have close examination of the process and options given during the development of a remediation plan, and in the eventual implementation of a treatment



scheme. Decision-makers and other stakeholders increased their capacity to identify and deal with regional issues on contaminated mine waters. Attendees, mining decision-makers and practitioners from the Western Balkan countries, were introduced to best practices on innovative techniques and technologies for contaminated mine water assessment, management and remediation. Further dissemination of the contents considered in the case studies would be provided, which would be useful in selection and application of the best treatment scheme for

managing contaminated mine waters in the Balkan region. Through the forum provided by this project, close interaction between attendees and speakers was facilitated and networking was promoted.

The outcome of the site visits would further facilitate the prioritisation of hotspots requiring follow up measures for immediate and long-term risk management, as well as during impending emergency. Experts and participants learn from site visits and from the information exchange during the workshop interactions, so more coherent answers on local concerns could be considered and delivered. Assessment of sites visited by international experts would be of substantial value for the ongoing mining project seeking to assess and prioritise sites of concern, and in the selection of project demonstration sites in the Western Balkans.



A full technical report of the workshop is being prepared and it will be available for downloading from the ENVSEC internet site at www.envsec.org.