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## PREFACE

*The purpose of this book (monograph) is to describe various environmental consequences of NATO bombing in Federal Republic of Yugoslavia from March 24 to June 10, 1999, and to give some recommendations for the environmental recovery of Yugoslavia. During the NATO bombing campaign in 1999, 78 industrial facilities and 45 energy installations were damaged or destroyed, releasing thousands of tons of various carcinogenic, mutagenic and toxic chemicals, including some persistent organic pollutants banned by the Stockholm convention for human use. Over 150,000 tons of oil and oil derivatives and 367,000 tons of kerosene were burned, more than 20,000 residential buildings were destroyed, and at least 31,000 rounds of thirty millimeter DU munitions were fired. G17 has estimated the damage to the infrastructure at over US\$30 billion.*

*The monograph is based on the papers presented at the First International Conference on Environmental Recovery of Yugoslavia, Belgrade, September 27 – 30, 2001. The conference included 142 presentations by 320 authors from 21 countries as well as three teleconference presentations from the U.S. Environmental Protection Agency (EPA). About 80 papers are included in the presented form, and some papers (about 30) are included in a modified (extended or completed) form. In order to have a more complete coverage in the book of important relevant topics, several contributions not presented at ENRY2001 are also included.*

*An assessment of environmental damage and prospects for environmental remediation are presented. The status of the region up to 1991 (including preexisting ecological characteristics, as well as social and economical development), and the changes between 1991 and 2001 that include the effects of external economic sanctions, civil wars, and the NATO bombing in 1999 are included in the assessments.*

*The ENRY2001 Activity Report and the Conference Conclusions and Recommendations are also included. These reports give a short overview of the various analyses presented at the ENRY2001 Conference, as well as conclusions and recommendations by several working groups. The general recommendations include the pressing need for: (a) establishment of a centralized environmental recovery and protection agency in FRY; (b) comprehensive assessment of environmental status in FRY; (c) risk assessment of contaminated sites and their ranking to establish clean-up priorities; and (d) immediate start of the "hot spots" remediation.*

*This book will be of use to researchers around the world, as well as to national and international agencies and organizations involved in assessment, remediation and prevention of environmental damage caused by wars and technological pollution.*

*Finally, we want to express our gratitude to colleagues, students and countless number of other volunteers who shared their enthusiasm, knowledge and talent with us in order to make this conference and this book possible.*

*Editors*

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## FIRST INTERNATIONAL CONFERENCE ON ENVIRONMENTAL RECOVERY OF YUGOSLAVIA (ENRY2001)

*Preface by  
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At the outset of the Third Millennium, in addition to the global pollution issues, Yugoslavia is facing daunting challenges of having to deal with devastation to its environment and natural resources, ecological damage in vicinity of industrial plants especially due to 1999 NATO bombing and lowering of quality of life, including life shortening, due to a decade of debilitating international economic sanctions and isolation.

These challenges have been discussed by both governmental (republic, city and borough level) and non-governmental entities, business organizations, at scientific and professional meetings and by independent experts in their papers published domestically and internationally. It was felt by many that there was a need to include the Serbian Diaspora experts, especially those who have reached level of prominence in their respective professions, in a joint search for appropriate remedial actions and environmental recovery of Yugoslavia. In this spirit the First International Conference on Environmental Recovery of Yugoslavia (ENRY2001) represents a huge undertaking for the science, technology and the society in general. The organizers, professors in the U.S., Jasmina Vujić and Tatjana Jevremović, with their bold initiative pleaded with objectivity and internationalism of science and availability of remarkable environmental accomplishments in order to assist in the cleanup of devastated environment not only in Yugoslavia but also in the whole region. Their initiative provided a direct avenue for presenting the problems before the international community by the affected businesses as well as by city and borough management.

Over 100 papers will be presented by domestic experts and about 40 by international including those from the Serbian Diaspora. The U.S. Environmental Protection Agency (EPA) seminar needs to be singled out. It will present methodologies for identification and resolution of the problems at polluted sites employing state-of-the art cost effective remedies. At the same time, most encouragingly so, the Serbian youth will be provided with an opportunity to present their ideas and environmental conscience. One should also single out contributions regarding public health effects from NATO bombing and use of depleted uranium weaponry.

Originality and comprehensiveness of problem resolutions places this conference amongst the premier events in Yugoslavia. By virtue of accepting the sponsorship, the Serbian Orthodox Church, the governments of Federal Republic of Yugoslavia and the Republic of Serbia have immensely enhanced importance of the conference. This level of support obligates the participants to define resolutely the conclusions as well as to propose cost-effective solutions compatible with the international regulatory standards, recommendations, standards and conventions addressing fully the specifics of Yugoslavia. In addition to geophysics and geochemistry aspects, key factors of environmental recovery will be in the domain of strategic economic and social development that must be based on the principles of sustainability. In this respect, the conference needs to demonstrate coupling of creative forces and those individuals empowered to make political decisions in the field of environmental protection and advancement. A measure of success for implementation of conference conclusions will be analyzed at follow up conferences. However, the implementation solutions will be judged by mediation of the Agency for Environmental Recovery established during preparations for this first conference. In closing, one needs to emphasize that all activities from initiation to provision of financial resources and implementation of solutions represent a role model for joint efforts between the Serbian Diaspora and motherland in search of most complex solutions for recovery and advancement of our nation.

*In Belgrade, September 2001*