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ADVANCED WASTEWATER TREATMENT

Report No 3.

PROCEEDINGS OF A POLISH-SWEDISH SEMINAR

Nowy Targ, October 1-2, 1998.

Stockholm 1998

Joint Polish - Swedish Reports

Bengt Hultman and Jerzy Kurbiel
(Editors)

Report
Division of Water Resources Engineering
Department of Civil and Environmental Engineering
Royal Institute of Technology



M I A S T O
NOWY TARG



SEMINAR

**NOWY TARG -
THE FORUM OF POLISH-SWEDISH COOPERATION IN
WATER PROTECTION**

***OPERATION AND RESEARCH EXPERIENCE
OF SBR WASTEWATER TREATMENT PLANTS***

**NOWY TARG
OCTOBER 1 - 2, 1998**

The Seminar is organized under the auspices
of the Water Protection Department of the Ministry of Environmental Protection, Natural
Resources and Forestry,
and the National Environmental Fund,
with the cooperation of the Regional Water Management Board in Cracow

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PREFACE

This report series on "Advanced wastewater treatment" has been realized as a part of the collaboration between the Technical University of Cracow, the City of Nowy Targ, the municipal water and sewage works in Nowy Targ and the Royal Institute of Technology, KTH, in Stockholm. Two earlier reports are:

Report No 1. Phosphorus removal from wastewater. A literature review. Stanislaw Rybicki, 1997.

Report No 2. Proceedings of a Polish-Swedish seminar, KTH, May 30, 1997.

In this report, No 3, is compiled papers in English from the seminar "Nowy Targ - The forum of Polish-Swedish co-operation in water protection", October 1-2. The papers are also available as a conference proceeding in Polish.

Anna Stypka is gratefully acknowledged for translation of several of the papers originally written in Polish into English and for giving many valuable comments on different manuscripts. Erik Levlin and Elzbieta Plaza have contributed in many ways in editing the English version of the seminar. Several other persons have given valuable comments and advices and this help is much appreciated.

Financial support for the joint Polish-Swedish co-operation has been obtained from the Swedish Institute (SI) (Support for University Co-operation with Central and East Europe). This support made it possible to develop a close Polish-Swedish co-operation during a three year period.

Stockholm in September 1998

Bengt Hultman

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Dear Participants,

The goal of the Seminar is to present the newest achievements SBR design, operation and research technologies. Particular attention will be paid to sludge handling problems encountered at these plants and their possible solutions.

The City of Nowy Targ, the host of our seminar, has one of the largest wastewater treatment plants in Europe operating with the SBR technology. The plant was built in cooperation with the Swedish specialists. The plant has been in operation for over 3 years and during this time it has played an important role in an efficient and comprehensive protection of two major wastewater recipients in this region: the Dunajec River and the Czorsztyn Reservoir. The day -to-day operation of the plant has revealed some problems; the most difficult one deals with the presence of chromium concentration in the raw wastewater discharged to the plant from small tanneries located in this area.

To cope with this and others environmental issues the Polish-Swedish Consortium was established in 1995. The Consortium has provided valuable technological support in solving operational and technical problems at the plant; it has also promoted educational awareness within the region.

ORGANIZING COMMITTEE

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