POSSIBLE CANDIDATES AS RIVER BASIN SPECIFIC POLLUTANTS IN THE ROMANIAN TISZA RIVER WATERSHED

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In this work, we present an example of methodology to establish the Specific Pollutants of a River Basin based on the monitoring results of 30 priority substances and other 34 substances from different classes of chemicals, which are not included on the list of priority substances, in the Romanian Tisza River Watershed.

The Specific Pollutants defined by the Water Framework Directives (WFD) are all priority substances stipulated in the WFD Annex X and other substances discharged in significant quantities into the water body. For the priority substances, the Environmental Quality Standards (EQS) were considered while for the other substances the Ecological Safety Threshold based on the exposure limit of referred substances to the Predicted Environmental Concentration (PEC).

To fulfil the aim of our work, two indicators, the Frequency of Exceedance and the Extent of Exceedance of the Predicted No-Effect Concentrations (PNECs), were taken into account.

The target compounds were determined using different analytical techniques: gas chromatography (GC) for halogenated compounds, pesticides and plasticizers; liquid chromatography (LC) for polycyclic aromatic hydrocarbons and pharmaceuticals and atomic absorption spectroscopy (AAS) for heavy metals.

According to the obtained results, the river basin specific pollutants which can be considered for the Romanian Tisza River Watershed are: polycyclic aromatic hydrocarbons and heavy metals. For the other classes of priority substances no EQS exceedance was found.

Other classes of compounds not-included in the monitoring programmes found in the investigated area were some pharmaceuticals (anti-inflammatories, hormones, antibiotics) and some other organic compounds (organochlorine/organophosphorous pesticides and polycyclic aromatic hydrocarbons).

Acknowledgements: *Work within the NATO Science for Peace 984440/2014–2017 Project*

NATO OTAN *This activity is supported by:* The NATO **Science** for **Peace** and **Security** Programme