

## 0035 - The importance of Waste Water Treatment Plant monitoring for treated wastewater reuse – Case Study of Coruche's WWTP

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The reuse of treated wastewater had become as a valid option to minimize the water scarcity impacts. Nowadays there are high volumes of treated wastewater that allow them to be faced has a resource with several uses, such as industry, agriculture and non potable urban uses.

The main objective of this work was the assessment of WWTP technical conditions, for treated wastewater reuse. Field data analyses carried out through the processing of wastewater flow daily records and the collection and characterization of wastewater and treated wastewater samples. This allowed to assess the wastewater hydraulic performance, wastewater and treated wastewater concentrations, percentage of pollution load reduction and treated wastewater quality, according to the requirements for discharge on water body and for irrigation use. Furthermore field experiment was made in order to assess the potential of treated wastewater reuse for irrigation, through its interaction with the soil and the plants.

During the analysis period, was found that wastewater and treated wastewater have a significant variability referring to contaminants concentration and its hydraulic performance. The treated wastewater presented a considerable content of some nutrients as nitrogen ( $19 - 67 \text{ mg L}^{-1}$ ) and phosphorus ( $2 - 6 \text{ mg L}^{-1}$ ), as well as low content of heavy metals. Field experiment showed that grass irrigation with treated wastewater resulted in an improved grass quality that may be enhanced with the application of sewage sludge *in situ* into the soil.

In this study were obtained results which provided useful information for implementing a treated wastewater management plan from small / medium size WWTP's, presenting options for treated wastewater discharge on water body, preserving water resources and contributing to implementation of *Plano Nacional do Uso Eficiente da Água* (PNUEA) in urban and agricultural components.