

**Case study:**

**THE NATIONAL WATER COMMISSION**

**México. 2015.**

**Client problem**

IBTech® collaborated with the Institute of Engineering of the UNAM (II-UNAM) in the project called "Evaluation of the physical and operating conditions of municipal wastewater treatment plants with a capacity of less than 100 L/s and formulation of the strategies to optimize its operation" for the National Water Commission (CONAGUA).

The project consisted in visiting a sample of 234 WWTP nationwide to carry out a technical diagnosis about the state of preservation of their facilities as well as the suitability of the process and technologies used in the treatment plants. Additionally, both in the influent and in the effluent, physiochemical parameters were evaluated to corroborate on site, compliance with Mexican regulations for discharge and/or water reuse.

For the case of processes like: activated sludges, facultative lagoons and oxidation ditches, the parameters dissolved oxygen, oxide-reduction potential and suspended volatiles solids were determined for further evaluation.

**IBTech®'s solution**

- Development of a format to collect the information related to the plant facilities and their process.
- Development of a general evaluation matrix (MEG in spanish) which granted a score on a scale of 0 to 100, based on the information collected on site.
- Elaboration of a process simulator to corroborate the convenience and sufficiency of the design in accordance with the original design criteria and the current situation. The above, based on the reported dimensions (those obtained on site contrasted with those provided in dimensional drawings).



Evaluation of the physical conditions of 234 WWTPs with capacity less than 100L/s



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**Results and proposals**

- Proposal for a new legal framework, since the Law of National Waters does not meet the existing needs in the country.
- As a conclusion, it was recommended that the legislation promotes:
  - Action under international standards of quality and transparency
  - Quality services, efficiency and sustainability
  - Incentives for the use of treated water and restriction of the demand for drinking water in activities that they can use treated water
  - Specialized staff.
  - The selection of technologies for wastewater treatment, considering technical, economic and environmental.
- Follow up on federal programs (APAZU OR PROTAR), which grant economic resources for operation and maintenance of the WWTP in exchange for good water quality.
- Creation of a federal entity that is responsible for:
  - Develop a National Plan for the development of national technology and highly trained human resources.
  - Support water operating organizations with operation and maintenance of water systems.
  - Establish a government inventory of the totality of the WWTP in the country.
  - Establish a national training program for operation and maintenance of the WWTP.
  - Define projects for management of river basins and sub-basins for reuse.




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Analysis of samples of 234 WWTPs with capacity less than 100L / s to determine the efficiency of the same.

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