

Macultepec, Tabasco, Mexico

below, right to left: views of treatment facility



above: surface flow constructed wetland

Macultepec is a city of 50,000 inhabitants located in the State of Tabasco. The Municipal sewer had been discharging untreated sewage into the nearby Bio-Reserve creating major environmental problems. Because of the cost of energy and the inability of local municipalities to charge for wastewater service, we needed to come up with an energy efficient and inexpensive solution.

In conjunction with our Mexican counterparts, we designed a totally passive treatment system that has no moving parts. Treatment consists of a primary sedimentation tank, a reed bed for treatment of solids, and surface flow constructed wetland. Treated effluent flows through fish ponds and then into the lake. Construction costs were \$NP500/person (about \$50) and operational costs are 50 centavos/person per month (50 cents).

Design flow = 10,600 m³/d Influent BOD = 800 mg/L Effluent BOD = 30 mg/L