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Integrated Watershed Pollution Control at Wujingang Canal, China

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With a drainage area of 400 square kilometers, Wujingang Canal is located at the economically developed Yangtz Delta of eastern China. As a major tributary, the canal contributes a significant amount of pollutant load to the Lake Tai. Over the past many years, water quality of the canal and its tributaries could not meet the lowest Category V of Chinese surface water quality standard, indicating that its water is not suitable for the purposes of irrigation or scenic views. Major pollution sources in the watershed include industries, residential households, agriculture, fishery, and animal feedlot operations. A comprehensive plan with a budget of 2 billion RMB for the Wujingang watershed pollution control was developed in 2008 and has been implemented progressively ever since. Major components of the plan include: (1) advanced treatment of wastewater from industries and municipal sewage plants for further removal of nitrogen and phosphorous; (2) industrial wastewater reuse; (3) contiguous treatment of sewage from rural residential households with cost-effective technologies such as tower ecofilter system; (4) recycling of rural wastes to generate high-value added products using technologies such as multi-phase anaerobic co-digestion; and (5) making full use of the local landscape and configuring physical, chemical, and biological pollutant treatment structures to build the “clean river network” for treatment of mildly polluted agricultural discharge and surface runoff. Through the implementation of the above measures, water quality of the Wujingang Canal and its tributaries is expected to improve to meet Category IV of Chinese surface water quality standard by 2012, and Category III standard by 2020.

Keywords
watershed pollution control, non-point source pollution, rural sewage, rural waste, Lake Tai