

WASTE STABILIZATION PONDS



Categorization of Technology

BIOLOGICAL → AEROBIC/ ANAEROBIC/ FACULTATIVE → SUSPENDED
Engineered Natural Treatment Systems using 'Bioremediation'

Technology Brief

The waste stabilization ponds (WSPs) are primarily divided in three categories namely anaerobic, facultative and maturation (or aerobic) ponds. The removal of BOD forms the basis for design of anaerobic and facultative ponds, whereas maturation ponds are designed for the removal of fecal bacteria. The algal-bacterial symbiosis is the key mechanism for BOD removal. Natural treatment systems such as WSPs have the advantage of better pathogen removal than mechanized systems. Waste stabilization ponds are capable of achieving 4-log removal of pathogens as against the 2-log removal for activated sludge process. Additionally, WSPs are resilient to organic and hydraulic shock loadings due to the long retention time. Waste stabilization ponds are identified as a potential sustainable alternative for wastewater treatment in the context of developing countries.