## Team 5: Phosphorus Removal Upgrade at Vernon, CT Water Pollution Control Facility

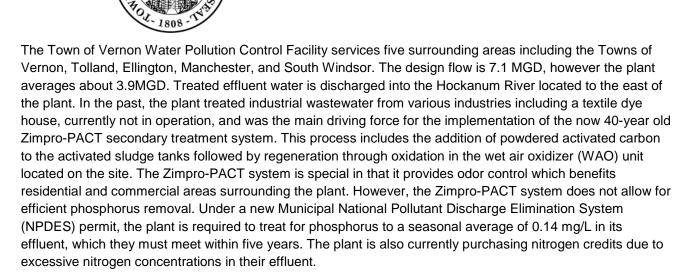
Sponsored by: Vernon, CT Water Pollution Control Facility

Sponsor Advisor: Steve Boske

OF



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Two methods of phosphorus removal have been considered in order to comply with the NPDES permit. This includes tertiary chemical addition and sedimentation as well as enhanced biological phosphorus removal (EBPR). Our EBPR design would replace the existing activated sludge tanks, thus also removing the PACT system; which would bypass many problems that arise with the corrosion of the wet air oxidizer by chemical coagulants. Typically, lower levels of phosphorus effluent can be achieved through EBPR alone, however lowest levels are achieved via a combination of processes. In order to reach an effluent phosphorus concentration as indicated in the NPDES permit, a tertiary polishing step is needed in order to further reduce phosphorus concentrations. Determination of our final design takes into consideration sizing constraints, budget, removal efficiency, current infrastructure, as well as potential for nitrogen removal.





