

Well and Onsite Wastewater Facts

WASTEWATER TECHNOLOGY

FSN - 7

Loudoun County Health Department

July 2016

Component Type: Treatment

Function: A suspended growth aerobic treatment unit (ATU) provides secondary treatment

Manufacturers: Numerous

First approved in Virginia: 1960's

Number installed in Loudoun County: 531

Allowance to reduce dispersal field footprint: Yes

Description of Use

This is a mini activated sludge treatment plant which functions like large municipal systems such as Blue Plains in Washington, DC. The microorganisms, highly adapted to decomposing wastewater, are suspended in the mixed liquor by air which is pumped in to a compartment in the tank. The air also supplies the oxygen needed by the microorganisms. The mixed liquor flows to a quiescent portion of the system where the sludge separates from the treated water. The sludge circulates back to the mixed liquor compartment and the water is discharged to the dispersal component of the system. These ATUs are also used in some discharging systems. The typical system removes 85% of the BOD and Suspended Solids. Special configurations allow for greater removals and some nitrogen removal.

Recommended Maintenance Required

These systems require maintenance by a trained professional. Maintenance of the ATU is required quarterly by the Department of Environmental Quality for discharging systems. Many of the maintenance providers recommend more frequent maintenance. The air blower requires filter changes several times a year. Periodic removal of built up sludge is required depending on the loading from the home. Checking of the system meters, pumps, sludge levels, quality of the sludge, and quality of effluent are some of the regular maintenance functions.

Suspended Growth ATU



Delta Whitewater



Aquarobic

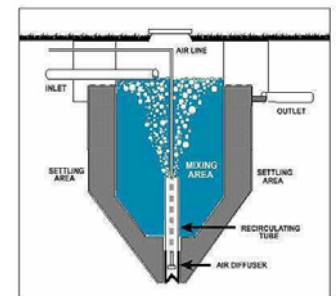


Figure 2—Another example of a possible aerobic unit design
Adapted with permission from Pennsylvania State University College of Agriculture Extension Service

Typical unit



B.E.S.T. 1 Installed