A Case Study;

AEROMIX

Pine Valley Meats
Norwalk, Wisconsin

Background

Pine Valley Meats is located at the southern end of the town. It is a progressive slaughtering and meat packaging company. More than 800 head of cattle are slaughtered every day. The blood, water from the floor washing, skin and body washing of the slaughtered animals are pumped into the wastewater treatment plant. The wastewater treatment plant consists of an anaerobic digester, followed by aeration, clarification and is discharged into a creek.

Problem

1. Excess fat in the wastewater was overloading the anaerobic digester.
2. The plant could not meet discharge levels from the secondary treatment system.
3. Foaming in the aeration tanks interfered with the treatment.

Solution

1. Remove the excess fat before it reached the anaerobic digester.
2. Expand the aeration tank system and aeration system.

Pine Valley meats decided to remove the excess fat before it reached the anaerobic digester. They fabricated a small holding tank with a chain driver surface skimmer. The holding tank is 20' x 40' with a 5' water depth. This gave 30 minutes hydraulic detention time.

The skimmer occupied a major portion of the holding tank. (2) 2HP ZEPHYR Induced Air Flotation Systems were installed in the month of October, 1991.
The ZEPHYR units floated about 5,000 lbs. of fat a day. This fat is skimmed off by the surface skimmer and removed to trucks through augur systems for disposal.

Results

1. Both the anaerobic digester and the aeration system work below their capacity.
2. There are no odor problems
3. The plant is meeting compliance levels throughout the year.

Benefits

1. Energy and cost savings; With (2) 2HP ZEPHYR's, Pine Valley Meats saved more than 100HP worth of aeration equipment in the aeration tank.
2. Slaughtering can increase without further capital investment.
3. The equipment requires very little maintenance.
4. No bulky and expensive equipment is required.
5. The simple modular design is easy to operate and maintain.
6. There is no need for a full-time operator to stand and watch the system.
7. The equipment is highly reliable.

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