

# Cream of the Crop

## New treatment system averts ice cream processor's shutdown

By Oren Gruber

One of the Southeast's largest ice cream processors approached Ecologix Environmental Systems to help it solve a problem with excessive fats, oils and grease (FOG) in its effluent wastewater. The levels of FOG in the wastewater were far above the county's limits and were causing problems in the county's lift stations. As a result, the county had given the plant a deadline of six months to fix the issue or face closure of the facility altogether. Furthermore, an odor problem also lingered around the processor's old wastewater treatment system because it was undersized and overwhelmed with high-strength wastewater.

### The Challenge

To prevent closure of the plant, the level of fats in its wastewater needed to be reduced to allowable standards mandated by the local county.

The plant also required assistance with the permitting of its new wastewater treatment system with the county authorities. Without the new permit, the plant would not be able to operate its new treatment system.

Lastly, offensive odor produced by the biological treatment system also needed to be eliminated.

### New System Needed

After the ice cream processor consulted with Ecologix about the issues at hand, it was determined that an entirely new treatment system would be required to bring the plant into full compliance and solve the problems associated with the wastewater. The company also would provide full support in helping acquire the proper permits from the county to construct and operate the new treatment system.

Ecologix designed and fabricated a physical/chemical treatment system that included an equalization tank, continuous removal of free-floating fats, chemical reaction tanks, a dissolved air flotation (DAF) system and sludge dewatering. The entire system was designed and fabricated in-house, as was the handling of the wastewater system permitting process for the client.

The old, failing system was demolished and replaced with a system that removes FOG and suspended solids, reduces biochemical oxygen demand (BOD) and eliminates offensive odors.

The deadline set by the county was met and the creamery has continued normal operations since installation.



The new treatment system at the plant removes FOG, reduces BOD and eliminates odors.

**Table 1. Initial (Pre-Treatment) Influent Composition Results**

Test Method	Analyte Name	Result	Units
EPA160.2	Total Suspended Solids	1940	mg/L
EPA1664	Oil & Grease	1290	mg/L
EPA405.1	Biological Oxygen Demand	6190	mg/L

**Table 2. Post-Treatment Effluent Composition Results**

Test Method	Analyte Name	Result	Units
EPA160.2	Total Suspended Solids	6	mg/L
EPA1664	Oil & Grease	8	mg/L
EPA405.1	Biological Oxygen Demand	3560	mg/L

**Results**

- FOG levels from the plant were reduced from an average of 1,290 mg/L to less than 10 mg/L;
- Total suspended solids (TSS) levels were reduced by more than 99%; and
- Biochemical oxygen demand (BOD) was reduced by almost 45%.

All of the above were accomplished using a primary

treatment system. No secondary or tertiary treatment has been incorporated.

Independent lab results of the ice cream facility's influent wastewater (before treatment) and effluent wastewater (post-treatment) at the plant are shown above. **IWWD**

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