

# PROJECT PROFILE

## Key Systems:

### Lift Station

Concrete lift station with duplex submersible pumps

### Aerobic Reactor

125,000 gallon bolted steel tank with coarse-bubble diffuser grid, rotary lobe blowers, a CO<sub>2</sub>-based pH control system, and level controls

### Dissolved Air Flotation

ETS Model RT-50LA DAF, stainless steel construction, Hellbender™ HB-60 recycle pump, top skimmer, bottom auger

### Flocculation System

Hellbender Mixing Systems flocculation tank and mixer with VFD control

### Sludge Handling System

Rotary gear pump and 10,000-gallon WAS holding tank with coarse-bubble aeration and level controls

### Effluent Sampling System

Controls and valving automatically collect flow-based effluent samples without a separate sampler

### System Controls

Custom control panel with Allen-Bradley PLC and wireless telemetry

### Turn-key Installation

Process design, engineering, installation, start-up, and training included

## TURN-KEY PRETREATMENT SYSTEM AT A FLUID MILK PROCESSING PLANT

Environmental Treatment Systems, Inc. recently completed the design, installation, and startup of an innovative treatment system for removal of BOD, TSS, and O&G from a wastewater generated by a new **organic fluid milk processing plant** in Colorado. The system was designed to biologically treat and clarify the plant wastewater **without the need for an initial pretreatment step**. The system was designed to remove 910 mg/L of BOD, 460 mg/L of TSS, and 500 mg/L of O&G from a 68,000 GPD flow.

Wastewater from the plant is collected in a lift station and transferred directly to the aerobic reactor tank, which is equipped with diffused aeration and a carbon dioxide-based pH control system. Mixed liquor from the reactor is fed by gravity under automatic flow control to a DAF for clarification and discharge to the POTW.

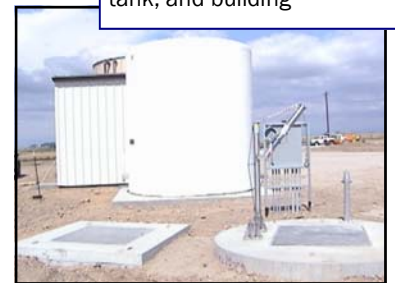
The system was constructed on a turn-key basis using local contractors. The blowers and aerobic reactor are located



RT-50LA DAF system clarifying reactor discharge

outdoors, and the clarification system and controls are housed inside a new pre-engineered steel building. The system is controlled from a central PLC-based custom control panel. Wireless communications transmit flow data directly to the POTW.

After the initial startup period, the system was exceeding expectations for BOD and TSS removal, even with chronic overloading.



Lift station, sludge storage tank, and building



Aerobic reactor tank with level and pH instrumentation

## SYSTEM PERFORMANCE

Parameter	Influent mg/L	Effluent mg/L	Removal %
BOD	1,990	27	98.6
TSS	500–1,000 to system 3,000-5,000 to DAF	N/A 12	N/A > 99

