



Case Study:

WASTEWATER TREATMENT FACILITY NORTH FLORIDA 2014

This case analyzes a North Florida treatment facility with a design flow of 0.019MGD. It treats on average 0.006MGD of domestic wastewater. It is an extended aeration facility, and the low flow results in long detention times in the collection system. The low flow also results in reduced nutrients for the biomass in the treatment facility.

Scope:

It was determined that the use of PX-700[®] could improve water quality parameters; and thereby, allow the treatment facility to effluent compliance goals for BOD removal and TSS removal.

PX-700[®] was used as a microbial bio-catalyst to maintain biomass during low flow periods by injecting the stimulant into the collection system and providing upstream wastewater treatment.

Facility personnel gathered samples for influent BOD and TSS and effluent BOD and TSS. Approximately 12 ounces was injected on a flow proportional basis each day of the treatment period so that the dosage of PX-700[®] added to the process was approximately 0.25mg/l daily.

Treatment Process:

The treatment process began July 11, 2014, and PX-700[®] was introduced into the collection system serving the wastewater treatment facility. The objective for the project was to decrease effluent discharge parameters for BOD and TSS from the facility.

Essentially, upstream treatment of the influent wastewater was instituted with the introduction of essential nutrients and aeration into the collection system at the master lift station. Twelve ounces of bio-stimulant was injected daily at a dosage of 0.25mg/l along with aeration.

Results:

Operator logs and analytical data note the treatment process on a daily basis. Facility records indicated that average daily influent BOD and TSS were about 220mg/l and that average daily effluent BOD and TSS were 28mg/l and 30mg/l respectively prior to initiating the upstream biological treatment of the facilities wastewater influent. The records indicate that the average daily influent BOD and TSS levels dropped to 2mg/l for each parameter.

The improvement in the levels of effluent TSS and BOD discharged each day at the facility dropped 93%. The treatment process allowed the plant biomass to normalize and to be maintained during the low flow periods. The operators had been utilizing dog food supplements to stimulate biomass production during low flows, and they had utilized powdered sugar and molasses to maintain the biomass. The PX-700[®] supplement was superior to the other methods that had been employed at the plant.