



GEM System - Easy Reductions in Biodiesel Industry

Biodiesel facilities take a lot of cooperation to operate. You need farmers, co-ops, financing, good feed stock, and a wastewater treatment system that can handle the demand.

Challenge

Three specific biodiesel streams were explored by CWT's Chief Scientist:

- Stream 1: The "hot well" stream proved to be the most challenging.
- Stream 2: The "wastewater stream", consisting of runoff from the hot well, glycerin room, and storm drains proved less challenging but the processor was hauling six tanker trucks of wastewater a day to a site over 85 miles away!
- Stream 3: While the "Protein scrubber" from the crush process produced low levels of FOG and COD, further reductions of TSS were required as the water discharged to the municipality.

Solution

An onsite demonstration was performed by CWT. All the water generated from the biodiesel site was easily treatable in the GEM System which would save hauling and surcharges. The ROI was 14 months. A GEM System 20/75 was installed with a screen, equalization (EQ) tank, a D-Loop and pH system, two chemical systems and a cone-bottom sludge tank. Rather than hauling 36,000 gpd of wastewater, the client saved time and money due to the advanced efficiencies of the GEM System.

TREATMENT	INFLUENT	EFFLUENT	PERCENT REDUCTION	pH COAG/CAT/ANI
SAMPLE 1: "HOT WELL" WATER				
TSS / ppm	4,800	13	99%	pH 9.0 800/40/15
COD / ppm	42,700	2,630	94%	
Turbidity / ppm	7,140	10	99%	
SAMPLE 2: "WASTEWATER TANK"				
TSS / ppm	200	17	91%	pH 5.5 0/20/10
COD / ppm	2,560	790	69%	
Turbidity / ppm	434	30	93%	
SAMPLE 3: "SCRUBBER / CRUSH PROCESS"				
TSS / ppm	183	0	100%	pH 5.5 0/50/10
COD / ppm	860	650	24%	
Turbidity / ppm	130	26	80%	