CASE STUDY

CANNING INDUSTRY

The canning industry has contributed greatly to the worldwide economy from the early 1800's to present. Providing healthy foods to the masses from war times through good times, the canning industry has provided the world with canned vegetables, fruits, juices, soups, meats, fish and pet foods. With great convenience of canned foods has also come tough scrutiny and ever-changing regulations.

Like any product, these changing regulations have overflowed from what goes into the can, to what is done with wastewater after production and canning.

CHALLENGE

Clean Water Technology (CWT) has been called upon by a number of industrial processors and canneries to assist in wastewater treatment.

Provided herein are data from five processors who are facing more stringent disposal requirements and through water conservation efforts, are sending increased contaminant loading to their wastewater systems.

SOLUTION

Aluminum Casting Company: Due to variances in the casting process at two sites owned by this company, CWT evaluated each site independently. The results for each facility showed that treatment via the GEM System provided the reductions below:

SITE 1	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	1,010	10	99%
COD/ppm	8,500	1,800	79%
Turbidity/ppm	<1,000	5	99%
FOG	25	1	96%
Treatment @ pH of 6.68 using 20 ppm Coagulant; 20 ppm Cationic; 10 ppm Anionic			
Conductivity: 3,350 microS/cm			

SITE 2	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	970	12	98%
COD/ppm	21,000	1,700	93%
Turbidity/ppm	<1,000	22	96%
Treatment @ pH of 6.68 using 100 ppm Coagulant; 40 ppm Cationic; 10 ppm Anionic			
Conductivity 3.650 microS/cm			

Pet Food Processors: Data from two pet food processing and canning facilities are provided herein. With both , the GEM System testing protocol showed exceptional reductions as detailed below:

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SITE 1	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	430	21	92%
COD/ppm	2,100	600	72%
Turbidity/ppm	780	8	99%
Treatment @ pH of 6.4 using 20 ppm Coagulant; 20 ppm Cationic; 10 ppm Anionic			

SITE 2	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	3,800	25	99%
COD/ppm	10,200	1,000	90%
Turbidity/ppm	<1,000	8	99%
Treatment @ pH of 6.5 using 20 ppm Coagulant; 10 ppm Cationic; 15 ppm Anionic			

Aluminum Ties: With a great number of aluminum fines, good screening combined with GEM Treatment would provide the expected values shown below:

SAMPLE 1	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	550	15	93%
COD/ppm	6,600	210	96%
Turbidity/ppm	989	3	99%
Treatment @ pH of 10.7 using 240 ppm Coagulant; 50 ppm Cationic; 20 ppm Anionic			

SAMPLE 2	BEFORE GEM TREATMENT	AFTER GEM TREATMENT	% REDUCTION
TSS/ppm	780	25	92%
COD/ppm	5,000	350	92%
Turbidity/ppm	975	5	99%
Treatment @ pH of 10.9 using 200 ppm Coagulant; 30 ppm Cationic; 5 ppm Anionic			

ECONOMICS

SURCHARGES: Utilizing the GEM System to treat these streams, TSS and FOG are expected to reduce current fees and surcharges on all sites shown herein. The GEM System will give you the best possible results by a primary treatment system, saving you money on surcharges or secondary systems.

ENERGY, CHEMICAL, SLUDGE COST REDUCTIONS: Other savings related to the advanced efficiencies of the GEM System included reduced footprint, reduced chemical usage, reduced energy consumption, and reduced sludge-related expenditures when compared to traditional dissolved air flotation (DAF) units.

HAULING: For those sites already using DAF technology, use of the GEM System is expected to provide solids off the beach at approximately 13% reaching a solids value of 20 - 30% after decant. For all sites, this is expected to reduce hauling by a minimum of 60%.