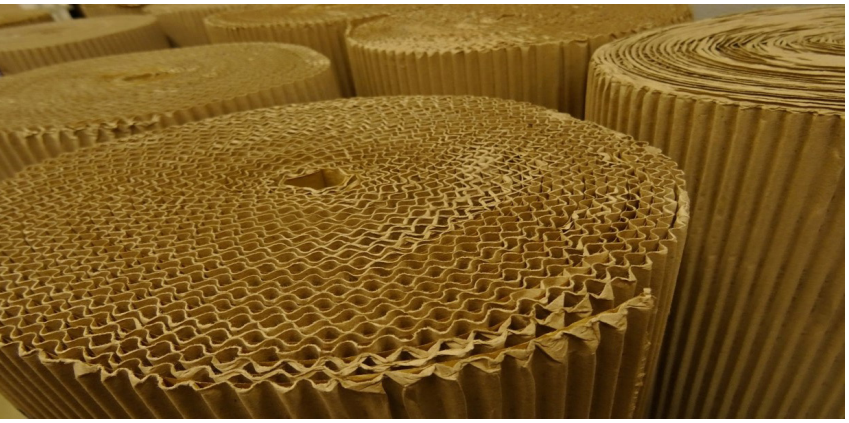
Corrugated Box Manufacturer Chooses RM-10® Flocculants to Cut Costs and Reduce Labor

The existing wastewater treatment process was highly labor intensive, requiring three shifts to treat 3,000 gallons per day of ink wastewater. In addition, the manufacturer also wanted to reduce phosphorous limits and sought help from CETCO who recommended RM-10 flocculants. As a result, the facility was able to treat the 3,000 gallons before noon each day with only one part-time operator. The facility consistently met their wastewater discharge limits (including phosphorous) and also benefited by eliminating diatomaceous earth and lime. Altogether the company saved over $50,000 annually in chemical usage costs.



PROJECT DETAILS

Corrugated box manufacturer

LOCATION

Wisconsin, USA

PRODUCTS USED

RM-10® flocculants

BACKGROUND

A Wisconsin-based corrugated manufacturing facility was treating wastewater on a daily basis with a rotary vacuum machine that used multiple chemicals. The treatment scheme was cumbersome and the operation used all three shifts to treat 3,000 gallons per day of ink wastewater. The manufacturer also wanted to consistently reduce phosphorus content down from the current 2 parts per million to below 0.1 parts per million in case the EPA lowered their limits in the future. Other benefits included eliminating the use of diatomaceous earth and lime from the treatment process.

Looking for a more efficient and cost-effective system, the manufacturer requested a better solution from CETCO.

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CETCO STEPS IN WITH RM-10® FLOCCULANTS

With an extensive background in working with corrugated companies, CETCO has designed solutions to specifically treat contaminants in wastewater generated by corrugated and high graphic ink processes. RM-10 flocculants are a comprehensive line of wastewater treatment products that break up oily emulsions and removes inks, oils, metals, and suspended solids from contaminated waste streams (RM-10 flocculants). A blend of proprietary components, RM-10 flocculants offer manufacturing facilities a single-step treatment process that generates clean water and a non-leaching sludge that passes the TCLP (toxicity characteristic leaching procedure). RM-10 flocculants combine multiple functions of traditional treatment simultaneously into one step for faster precipitation and settling of contaminants.

Available in granular, semi-granular, and powdered varieties, RM-10 flocculants can be easily introduced to a waste stream with a dry feeder, making them adaptable to various treatment systems, including batch and continuous flow treatment schemes.

THE CETCO PROCESS

After obtaining a representative sample of the wastewater, CETCO performs a treatability study at one of its 12 global R&D centers and laboratories. Coupled with local discharge limits, CETCO finds the optimal RM-10 flocculant blend that balances effectiveness with cost.

By collecting and analyzing samples in an off-site laboratory as opposed to doing it on-site with a customer, CETCO has the ability to access more treatment options. There are approximately 60 versions of RM-10 flocculants; utilizing the CETCO laboratory allows for customization and pinpointing the best solution for the manufacturer.

With a proposed solution in hand, CETCO can calculate the cost per gallon and compare it to the customer's current cost, arriving at an ROI for the purchase of any equipment and chemistry. Many times the payback is less than a year when compared to hauling or evaporation.

Once the treatment method is determined, running a larger scale test generates sufficient solids to conduct an in-house TCLP test.

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RM-10 flocculants are bentonite-based. The clay platelets encapsulate metals during flocculation. Pozzolonic reactions occur between the bentonite, proprietary ingredients, and the precipitated metal hydroxides, causing the sludge to be bound both chemically and physically to further reduce how much metal can dissolve. Because of this, CETCO is able to pass the TCLP test 99% of the time.

THE CORRUGATED FACILITY SOLUTION

Based on the treatability study for the Wisconsin operation, CETCO identified a simple treatment plan to lower the pH by adding less than one pound of RM-10 flocculants per 100 gallons of wastewater. The treatment plant using RM-10 flocculants reduced phosphorus allowing the client to meet their new 1 ppt discharge limit. The customer replaced their rotary vacuum system with a CE-400 automatic wastewater treatment machine, which allowed the facility to treat all 3,000 gallons of wastewater before noon each day with only one part-time operator.

CETCO's simple treatment allowed the customer to eliminate the use of diatomaceous earth and lime from their treatment process saving their company over $50,000 annually in chemical usage costs. Additional cost savings were obtained through reduced labor resulting in an ROI in less than one year.

SUMMARY

CETCO's RM-10 flocculants, in conjunction with an automated CE-400 wastewater treatment machine, enabled this corrugated manufacturing facility to treat 3,000 gallons of their ink wastewater before noon each day with only one part-time operator -- a significant time and cost improvement over their previous 24-hour-a-day operation that required three shifts. The comprehensive RM-10 treatment allows the facility to be compliant with all of their wastewater discharge limits (including phosphorus) consistently being met. The facility also benefited by the elimination of diatomaceous earth and lime saving the company over $50,000 annually in chemical usage costs.

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