



Environmentally Conscious Wastewater Solution

A leading company in the rag washing industry located in Castellon (Spain) specializes in washing and recycling contaminated industrial rags, giving a second life to this hazardous waste. This 5,000 m² facility is one of many international operations for this company. This service manages costs for the companies that generate the noxious rags and saves the environment from these pollutants.

The superior washing lines required a solution for the wastewater and sludge generated by its process.



Situation

With a 100 m³/day (26,417 g/d) treatment flow, the discharge had high concentrations of chemical oxygen demand (COD,) biological oxygen demand (BOD,) and total suspended solids (TSS.) As it received rags from all types of industries, they had variations in pH and heavy metals that made wastewater treatment difficult. In addition, the content of clays, varnishes and paint in the water contributed to the generation of sludge with hazardous waste characteristics, contributing to high management costs. The client required a truly efficient and scalable solution for a second phase of the project. This phase of treating the wastewater by means of physicochemical processes, needed to generate an effluent with the appropriate discharge characteristics and a more concentrated sludge, if possible.

Industry:
**Industrial
Laundry**

Benefit:

1. Handles variable load rates
2. Drier sludge
3. Removal of heavy metals
4. Expandable

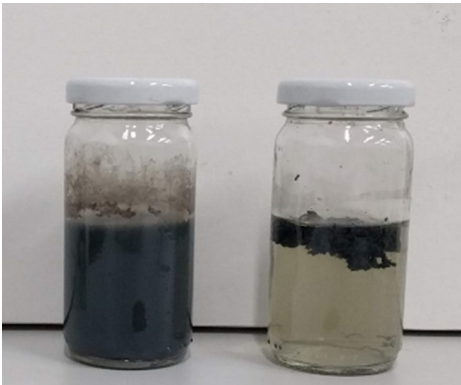
Inlet and outlet wastewater parameters:

PARAMETERS	INFLUENT	EFFLUENT	REMOVAL PERCENTAGE
TSS (ppm)	17,592	47	>99%
COD (total) (ppm)	11,200	2,870	72%
COD (dissolved) (ppm)	10,763	2780	75%
Turbidity (NTU)	>1.000	25	93%

Solution

Clean Water Technology (CWT) proposed a GEM[®] System 20/75 with a treatment capacity from 4 - 17m³/h (1,056 - 4,490 g/h.) In addition, screening before the homogenization tank, with pH adjustment and automatic chemical dosing pumps, was recommended. Applying the results obtained in CWT's laboratory, the GEM System was adjusted with the determined dosages of coagulant and flocculant.

The installed GEM System was configured for an initial flow rate of 9 m³/h (2377 g/h,) providing the advantage that the same equipment would be able to meet future needs. Another remarkable advantage is water-chemical mixing in the unique LSGM heads of the GEM System, making it possible to obtain a perfect mixture of chemicals and the water to be treated. In addition, the cake dryness obtained when the sludge is at rest, with values of around 20%, has saved the customer the need for additional dewatering systems.



Effluent from the installed GEM System and water from the floatation tank.



GEM System 20/75 in operation.

Conclusion

The GEM System once again exceeded the client's expectations achieving:

- Over 90% removal of TSS and turbidity
- COD removal over 70%
- Sludge management cost reduction
 - 7% dry sludge
 - 15-20% dryness after 24 hours

The excellent results obtained motivated the customer to promote the GEM[®] System in applications for the entire industry.

