Integrated Engineers, Inc.
we clean water • com

# Starch/Glue Manufacturer


This manufacturer was having difficulty with their wastewater containing high levels of TDS, increasing costs, and corrosion of their waste water equipment and building. The operation treats 20,000 gallons/day of a combination of starch and glues wash down water from the central manufacturing plant. The wastewater is equalized for flow in a 60,000 gallon EQ Tank and treated in 10,000 gallon batches.

The old treatment process was to use 200 gallons of ferric chloride (dropping the pH to 1.5) and 110 gallons of 50% caustic to raise the pH to 7.0+/-. After mixing for 5 minutes, an anionic flocculant was added with an additional 60 seconds of mixing. This created a slow settling shear sensitive floc. During the settling period, the press was pre-coated with 300 lbs. of diatomaceous earth (DE). After 6 hours, the batch tank was decanted and the 4-8 hour pressing operation was started with the plate & frame press. The dewatered cake was very inconsistent, ranging from wet (20% solids, requiring up to 6 man hours to clean the press) to fairly dry at 36% solids.

The Floccin-E proved to be very effective in reducing the TDS, reducing the treatment costs, and makes a drier cake (see the comparison below). The new treatment process is:

- add 12 gallons of 50% caustic to raise the pH to 10.5+/-, mix for 60 seconds
- add 400 lbs of Floccin-E, mix for 20 minutes
- Settle, decant, and press the sludge

The Floccin-E solids settle in 15 minutes thereby increasing the facility through put by 5 hours. The sludge dewaters faster and makes a drier cake (tested at over 40% solids). DE is no longer used.

A comparison of the processes is shown below:

| | Old Chemistry | Floccin-E Chemistry |
|---|---|---|
| Cost/batch | $900 | $450 |
| TDS | 8,500 μOhms/cm | 3,200 μOhms/cm |

40308 Greenwood Way
Oakhurst, Ca. 93644
Phone (559) 683-8284
Fax (559) 683-8913
www.wecleanwater.com
sales@wecleanwater.com