Paint Manufacturer Reuses Latex

A paint manufacturer engaged Dynatec to provide a system to separate latex from wastewater and reuse it in the production of paint.

The Problem

The company was using a chemically assisted, rotary drum vacuum precoat filter that was expensive to operate and created a lot of sludge which was expensive to dispose.

The Solution

The white paint wastewater was segregated from the colors, and processed separately. The concentrate of white latex solids were used in the manufacture of new white paint.

The paint solids from the colored paints can be concentrated to as high as 20% (typical paint contains between 45% and 55% solids) using wide channel ultrafiltration. The paint solids are concentrated and reused to make a grey paint. The water can be discharged to sewer, since it contains no solids, or it can be reused as wash water.

Special circulation pumps are also used to handle the high solids loadings.

Return on investment

The return on investment was high. The latex from the white paint wastewater is reused in the production process for manufacture of new paint. The paint solids from the colored paint wastewater is recovered as a saleable low quality paint product. The cost for disposal of the solids removed by the old chemical treatment system has been reduced by 90%. The wastewater from both processes is discharged to sewer.

Ultrafiltration excels at the clarification of solutions containing:
- Suspended solids
- Bacteria
- High concentrations of macromolecules including:
  - Oil and water
  - Fruit juice
  - Milk
  - Latex
  - Whey
  - Electro-coat paints
  - Pharmaceuticals
  - Poly-vinyl alcohol
  - Potable water
  - Tertiary wastewater
  - Some proteins
  - Some dyes
  - Oils
  - Colloidal or emulsified components