



Customer:

A wood pellets manufacturer incurring high costs associated with maintenance of their process equipment.

Project:

CleanWESP™ wastewater treatment program to reduce TSS & TDS to extend process equipment life.

Highlights:

- Regular RTO replacements and maintenance shut down time was costing millions
- Excess deposits from reused wastewater was gumming up process equipment
- ProChem's chemical treatment program shown to eliminate the need for costly down time and media replacements, reduce solid waste, and eliminate the need to store wastewater on site



Significant Cost Savings With Tailored Water Treatment Program at Wood Pellet Mill

THE CLIENT'S CHALLENGE

Although the facility was reusing their wastewater, they were incurring high costs for maintenance activities on their process equipment due to excess tars, saps, tannins, and lignins in the wastewater. These contaminants left deposits in the Wet Electrostatic Precipitators (WESPs), Regenerative Thermal Oxidizers (RTOs), and centrifuges.

- RTO media replacement every two to three years, costing them more than one million dollars each time
- Twice per month, the plant shut down production to clean out the equipment via hydroblasting
- Routine hydroblasting every other week costs the plant thousands of dollars and created large amounts of wastewater that needed treatment
- Their centrifuges were generating 100 tons or more of 80% (or greater) moisture solids that they had to dispose

THE PROCHEM SOLUTION

After analyzing the wastewater, ProChem designed a chemical treatment process, **CleanWESP™**, utilizing coagulant and polymer, and a new wastewater treatment system. This program removes the total suspended solids (TSS), tars, and saps while reducing the total dissolved solids (TDS) in the recycle tank water to provide the facility with cleaner water in the recycle tank and clean WESP flush water. Additionally, a treatment program was provided for the shutdown water, which will enable the facility to treat and discharge that water within the discharge permit limits (instead of storing it and shipping it off site).

THE WIN

The CleanWESP™ program will allow the facility to practically eliminate the high costs and maintenance activities they were experiencing, providing the following benefits:

- Eliminate the need for hauling water off site and storing wastewater on site
- Eliminate the need to frequently replace RTO media
- 80% reduction in labor costs required for routine planned maintenance
- Eliminate the need for hydroblasting to clean up the WESP and associated piping (the system can now be cleaned on site)
- Reduction in solid waste generation by 60 - 70%, by increasing solids in the filter cake, bringing the moisture to 40-50%
- 7,000 - 10,000 BTU/lb filter cake, which creates a potential fuel blending source from a product of their waste stream