

ISSUE

Due to crude tall oil's (CTO) use potential and high value, the recovery of it as well as possible was in the interest of this P&P company. The tall oil separation process requires the use of sulfuric acid, but the use of this chemical is regulated and it can be harmful to the equipment due to its corrosive tendencies.

The process also suffered from clogging and process stoppages caused by fouling, which required 20+ days a year for cleaning. Health and safety risks in turn rise with the need to clean pipes manually.

How to enhance tall oil separation to maximize revenue while keeping sulfuric acid levels under control and the whole process running smoothly without stoppages?



20+ DAYS
USED FOR CLEANING
PER YEAR

SOLUTION

Ultrasonic treatment with Altum's solution affects the bonds in the liquid, enhancing the separation of tall oil from other byproducts.

- Multichannel solution installed on the hydrodynamic separator (HDS) to enhance the effect of the acid added in the reactor.

RESULTS

- Ultrasonic treatment of the soap enhanced the separation of tall oil from the soap. Separation was verified by analyzing the lignin samples: no tall oil in lignin removal with sonication, and the separation of lignin from alkaline water was also enhanced.
- The yield percentage of crude tall oil increased by 4%.
- Less sulfuric acid needed: decrease from 150 to 110 kg/t.
- Increased uptime and safety due to decreased need for manual cleaning and production stoppages.



Before sonication: substantial amount of tall oil in the lignin removal



Altum's continuous sonication in use: no tall oil in the lignin removal



€1,2M / YEAR WORTH OF PRODUCTIVITY ENHANCEMENT



€150K / YEAR WORTH MORE OPERATION UPTIME



€90K / YEAR SAVINGS IN OPERATION COSTS



€1,5M PER YEAR OVERALL BENEFIT