Spraying Systems Co.®
Experts in Spray Technology

THE INSIDE STORY: HOW PULP, PAPER AND TISSUE MILLS ARE IMPROVING SUSTAINABILITY, SAVINGS AND SAFETY

What's their secret?

How have some pulp, paper and tissue mills saved millions of gallons of water, dramatically curtailed their energy use, enhanced worker safety and reduced both maintenance and downtime?

The answer is inside their chests and tanks.

This is a real-world story of improved sustainability, savings and safety. It will demonstrate point-by-point how automated tank cleaning realizes all four objectives for pulp, paper and tissue mills.

More importantly, you will see how a necessary maintenance function can be transformed into a proven efficiency driver across your mill. You will also learn how the inherent inefficiencies and risks of manual tank cleaning can be eliminated.

This is the inside story of automated tank cleaning and the substantial benefits and measurable ROI it is delivering every day at pulp, paper and tissue mills around the world.

INSIDE THE CHALLENGES: ISSUES WITH MANUAL CLEANING

For many pulp, paper and tissue mills, chest and tank cleaning is a manual process. They rely on workers with hoses and scrub brushes, or the fill and drain method. These options are time consuming, wasteful, difficult and potentially dangerous.

Major manual tank cleaning challenges

- Loss of production
- Cross-contamination, rework and waste
- Less consistent and effective cleaning
- Excessive maintenance time
- Significant labor
- Unnecessary safety risks
- Extensive water use

Automated tank cleaning eliminates all of these issues. For that reason alone, it is well worth implementing. However, this method achieves much greater long-term benefits, and it all starts with sustainability.

INSIDE SUSTAINABILITY:
EFFICIENCIES AND EFFECTIVENESS

To be considered truly successful, sustainability efforts must pass three critical benchmarks.

Successful sustainability efforts must:

1. Deliver enhanced, ongoing environmental efficiencies
2. Improve safety, or social sustainability
3. Maintain effectiveness without compromises

With the right equipment and guidance, automated tank cleaning provides an easy way to ensure all three benchmarks are met.

EFFICIENCIES THAT MATTER TO MILLS

Mills require a significant amount of water for operations. Reducing water use has become a critical goal for many mills. Automated chest and tank cleaning excels in this area. It also allows for a significant reduction in chemical use and energy. Here is a brief description of how these savings can materialize.

REDUCING WATER, CHEMICAL AND ENERGY USE

The big picture

Let's start with reduced water use. Automated tank cleaning offers the potential to save millions of gallons of water every year, dependent on cleaning requirements. This includes the number and size of chests, tanks, totes and drums in the mill.

Reduced chemical use occurs in tandem with water savings because these fluids are pumped into the tank simultaneously.

Saving water also contributes to reduced energy use. If water is heated for cleaning, using less water reduces the amount of heating required. Mills that use less water also reduce the energy required for pump operation.

Maximizing your savings

Factors such as impact, spray distance, flow rate, pressure, rotation speed and coverage all contribute to the equation. A tank cleaning specialist can analyze your needs and help realize the maximum amount of water, chemical and energy savings for your mill's specific applications.

One more point

Automated tank cleaning makes every drop count. That natural resource reduction is a big positive for the mill, environment, community, and your bottom line.

30-SECOND CASE STUDY

CHANGES IN PAPER MILL CLEANING OPERATION RESULTS IN 50% REDUCTION IN WATER USE

Problem

A paper mill using process water was spending a significant amount of time inspecting the cleaning nozzles in its headboxes. The sand in the mill water caused the nozzles to clog, which can result in paper defects or, even costlier, paper breaks. To avoid these potential problems, this mill was inspecting its headboxes three times a week. The inspections involved using a harness to lower a worker into the headboxes to evaluate the nozzles.

Solution

Stationary nozzles with no moving parts were installed that provide 360° coverage. These nozzles have large free passages to allow the sandy water to be used without clogging.

Result

A 50% decrease in flow rate saved 5.2 million gallons of water per year on headbox cleaning. Now, workers are only required to perform inspections and maintenance 12 times per year, down from 150 times per year. The mill recouped the investment in new nozzles in a few weeks and is saving approximately US$50,000 annually on water costs and labor. In addition, the change in headbox cleaning nozzles dramatically improved worker safety and the mill is now operating more sustainably.

Read the full case study

PUT THE IDEAS FROM THIS WHITE PAPER INTO PRACTICE AT YOUR PLANT

Learn more about a Spraying Systems Co. Sustainability Assessment at

spray.com/Services/Sustainability-Assessment

EFFECTIVENESS WITHOUT COMPROMISES

There's another form of sustainability with automated tank cleaning that pulp, paper and tissue mills should consider: sustained effectiveness. The consistent, reliable, repeatable cleaning of chests, tanks, totes and drums is a good way to ensure savings and productivity gains year after year.

Manual tank cleaning falls far short of automated tank cleaning in both sustainability and results. Here are four compelling reasons why automated tank cleaning is vastly superior.

1. DRAMATICALLY BETTER CLEANING

Automated tank and chest cleaning equipment optimizes the cleaning process. It is designed for higher impact and better coverage than manual cleaning.

2. REPEATABILITY

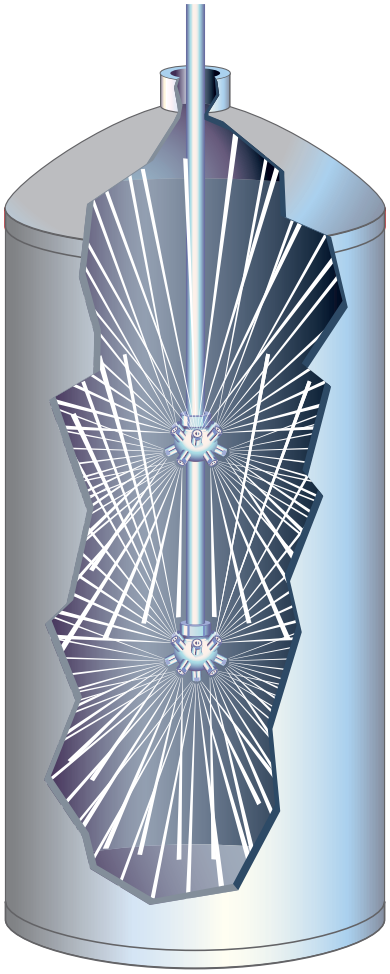
Optimal, consistent cleaning is the goal. Automated tank cleaning is performance-built to accomplish this end. Humans cannot. Human cleaning simply will not produce the same repeatability that automated cleaning ensures.

3. DEPENDABILITY

An automated tank cleaning system never has a bad day or an off shift. The mistakes that are unavoidable in manual cleaning reduce productivity, weaken results and risk wasted product. Automated tank cleaning is dependable, reliable and ready every time.

4. INCREASED UPTIME

Automated tank cleaning dramatically reduces cleaning time while delivering superior results. Some manufacturers report reductions in cleaning time up to 90%. That gets the chest or tank back into service faster for more uptime, productivity and increased profits.



30-SECOND CASE STUDY

AUTOMATING DUCT CLEANING REDUCES WATER USE BY 65% AND IMPROVES WORKER SAFETY

Problem

A company needed a more effective way to clean ductwork. The ductwork was slippery and hard to manage. In addition, the cleaning process was time-intensive and consumed a lot of water. Once the cleaning was complete, maintenance crews had to reinstall the ducts.

Solution

Automated tank cleaning nozzles were installed.

Result

Automation of the duct cleaning has dramatically reduced water use. The ducts are now cleaned using 65% less water in half the time as the manual method. In addition, workers are no longer required to climb ladders to dismantle the ductwork and handle slippery, unwieldy panels. The company recouped its investment in just a few months.

Read the full case study

INSIDE SAVINGS:
REDUCING OPERATING COSTS

Sustainability initiatives are good for the environment and a company's image. But how do they impact profits for the mill?

In the case of automated tank cleaning, the response is that sustainability pays significant dividends in the form of ongoing and predictable savings.

CONTROLLING AND REDUCING EXPENSES

The necessary costs of doing business in pulp, paper and tissue mills are undeniable. Energy consumption, maintenance and labor are essential. Spending too much on them is not.

ENERGY CONSUMPTION

As previously discussed, one of the largest single operating expenses in pulp, paper and tissue mills is energy.

Serious savings: Saving water translates into saving energy and extended pump wear life.

MAINTENANCE

The cost of downtime for equipment maintenance is another ongoing expense. However, delaying maintenance can lead to equipment failures, early replacement and lost production.

Serious savings: With automated tank cleaning maintenance is streamlined and improved. Costs are reduced through decreased downtime and cleaning consistency.

LABOR

Worker productivity is in lockstep with plant profits. Manual chest and tank cleaning is a costly, laborious, and time consuming process.

Serious savings: Automated tank cleaning reduces labor costs immediately and keeps the savings flowing each time chests, tanks, totes and drums are cleaned.

INSIDE SAFETY:
PROTECTING YOUR WORKERS

Worker safety is always a top priority in pulp, paper and tissue mills. The struggle to maintain productivity levels and ensure safe procedures is a delicate balancing act.

IDENTIFYING THE DANGERS

Manual chest and tank cleaning needlessly exposes workers to a number of inherent safety risks, as this brief list of potential hazards indicates.

- Harsh or dangerous chemicals
- Extremely hot water
- High-pressure hoses
- Risk of explosion in some instances
- PPE requirements, often involving clumsy full-body suits
- Confined spaces
- Slippery, hazardous work environments
- Lengthy cleaning times, which means increased risk exposures

ELIMINATING THE RISKS

It only takes one serious accident to shut a mill down. Manual cleaning exposes workers to hazards and environments that can be avoided.

Automated tank cleaning helps safeguard your workers, your mill and your reputation against the risks posed by manual cleaning. In addition, your workers can have increased productivity and job satisfaction. They can be deployed into other, more rewarding tasks.

SUMMARY

Pulp, paper and tissue mills can transform a necessary maintenance function into a proven efficiency driver with automated tank cleaning.

This cleaning method reduces water, chemical and energy use and improves sustainability. It saves significantly on ongoing maintenance expenses, greatly reduces labor costs and returns tanks into service much more quickly. Automated tank cleaning also protects workers against the unnecessary risks posed by manual cleaning.

For more information on operating more sustainably and profitably, visit spray.com/company/sustainability

GET YOUR OWN INSIDE STORY:
SCHEDULE AN EXPERT SUSTAINABILITY ASSESSMENT FOR YOUR MILL

Put the ideas from this white paper into practice. Learn proven sustainability and risk reduction methods with a complimentary Spraying Systems Co. Sustainability Assessment.*

This program brings cleaning sustainability specialists into your plant to uncover ways to:

- Reduce water, energy and chemical use
- Minimize waste and scrap
- Improve safety

After the assessment, you will receive a comprehensive report including recommendations to reduce waste, improve safety, ROI projections and an implementation plan.

Schedule your assessment at spray.com/Services/Sustainability-Assessment

*Sustainability Assessment is complimentary except travel reimbursement and nominal daily fee for assessment team.

ABOUT SPRAYING SYSTEMS CO.

We help companies around the world reduce water, energy and material use, decrease waste, minimize environmental impact and improve worker safety. Let our spray technology advance your sustainability initiatives.

Spraying Systems Co.®
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