



Beckart Environmental meets the wastewater challenge.

The February, 2004 issue of PAINT & COATINGS INDUSTRY magazine featured Beckart Environmental in a review of solutions to wastewater challenges, especially in paint line applications where disposal directly affects cost containment, process uptime, and ultimately the security of normal business operations in an age of tightening regulatory discharge standards. Significant levels of Total Suspended Solids (TSS), common in the waste streams of these applications, have a habit of clogging sewer lines that are expensive and time-consuming to repair, being surcharged heavily by local Publicly Operated Treatment Works (POTWs), and -- at the extreme -- contributing to off-premises line problems that negatively affect local infrastructure.

In the article, Beckart customer Edmund Allen Lumber of Mokenca, IL provided an excellent example of how several different forces at the industry, regulatory, and market level have converged to create a central role for wastewater disposal in business operations. The 105-year-old company, an early pre-finisher with its first staining machine installed in 1961, today is counted among the largest cedar wholesalers in the country. E.A. Lumber also has paint and coating operations engaged in the production of wood sidings and moldings, engineered board, fiber cement, and other building products.

By the turn of the millennium, paint line process wastewater containing high levels of TSS had grown to significant levels, with more anticipated as market growth continued. Faced with high surcharges, bi-monthly sewer line rodding charges that approached \$3,000, and with risking to an environmentally proactive corporate identity, the firm installed a Beckart Batch Filter Press treatment system in March, 2000. The system is designed to produce both clean water and a dry, locally landfillable filter cake.

Ken Ford, E.A. Lumber's president, relates that: "We're in a business that just can't afford downtime due to a wastewater issue. When we looked at treatment options, we really had to consider not only the quality of water that we could produce, but also the role that on-site wastewater treatment might play in strategic planning... things like expanding capacity because you can now handle higher volumes coming out of the paint lines. We didn't necessarily want to become pollution control experts, and so good guidance and minimal operator time and knowledge requirements were also fairly important."

Beckart Environmental had evaluated the firm's needs and recommended a 1,200 gallon Batch Filter Press treatment system based on several factors. The nature of E.A. Lumber's business -- extremely time-sensitive and producing widely varying waste streams -- dictated a design with a capacity to handle frequent washdowns from JIT delivery commitments and multiple color switchovers. The system was designed from the start to produce water suitable for reuse, with each batch of incoming raw wastewater free to use treated water from previous batches to achieve optimal dilution ratios prior to chemical treatment.



Incoming wastewater is held in the equalization tank, where mixers and air spargers may be used to balance out the solids and minimize BOD formation.



Sludge formed during the treatment process is dewatered and compacted in the Hy-Pack filter press, and can fall directly into a dumpster in the form of dry cakes.



Clear, treated water arrives in the filtrate tank, where it is subsequently routed to a larger filtrate holding tank for reuse or to the sewer.

This type of design, in combination with lab and field experimentation to build an effective and efficient chemical regimen, keeps cycle times relatively brief. With 5 flood-and-brush coating machines running 2 shifts currently, the firm is now capable of processing 3 batches of wastewater daily, if necessary.

Nearly the entire treatment system, from dilution measurement at start-up through the sludge transfer stages in the filter press cycle, is governed by a programmable logic controller. Operator time is limited to routine housekeeping and occasional manual overrides, such as when more clean water is on hand than necessary and a valve is opened for sewer discharge.

Since the treatment system's installation, E.A. Lumber has not been out-of-compliance for suspended solids. The company pays a small POTW surcharge (about \$40 monthly) for BOD, contained primarily by electro-mechanical devices that keep the water "lively" and BOD resistant.

"One of the huge advantages for us with this wastewater treatment system," Mr. Ford says, "is that we can continue to produce a waste stream throughout the day, and then batch cycle it at our convenience. We even have backup holding tanks so that if we get very busy very suddenly -- again, quick turnaround is the name of the game in our business -- we can continue with our washes and then get caught up on the treatment end later. Plus, we had experience with Beckart from a very small system we bought years ago. They're a firm that revolves around relationship sales, and it shows in their service. We're very satisfied."