Tech-Etch

A Process and Water Success Story

The Company

Tech-Etch is a growing, Massachusetts-based manufacturer of specialty precision products, including photo etched flat and formed parts, thin and flexible printed circuits, and electromagnetic interference (EMI) shielding products. Customers include leading companies in the aerospace, automotive, electronics, instrumentation, manufacturing, medical, and telecommunications industries, and the military/government sector. Tech-Etch has approximately 500 employees at three facilities: Plymouth and Fall River, Mass., and Litchfield Minn.

The Challenge

To stay competitive and drive growth by winning new business, Tech Etch several years ago decided to make significant investments to expand and upgrade its various manufacturing processes. The investment paid off, and new projects from both existing and new customers were coming in quickly.

The problem arose in the Plymouth facility, where the new processes and higher water usage was bringing Tech-Etch close to its permitted daily limit for sewer discharge. In addition to the permit issue, the company was incurring rising water and sewer costs.

In order to support continued growth, the company had two options. The first was to attain a permit for higher daily sewer discharge amounts. In addition to paying for the permitting and potential environmental assessment costs, Tech-Etch would also have had to pay for the additional water its new processes now required. The negative bottom-line impact made this option not feasible.

As a result, the Tech-Etch team looked at its second option. This strategy was to find a way to accommodate the new processes without requiring an increase in water usage or sewer discharge amounts. The goal was to support business growth while controlling water costs, and avoiding the expense and uncertainty of additional permitting.

Simply put, Tech-Etch needed to do more with the water they were presently using. That led them to research the various recycle processes for rinse waters.

The Approach

Tech-Etch contacted several companies that offered solutions for handling process rinse water. Each vendor offered competing technologies and alternative approaches. Process and Water offered Tech-Etch a consultative, solution-based approach to meeting its water challenges.

The Process and Water team developed a detailed plan that combined extensive discovery and client consulting with system engineering and manufacturing. Taking the time needed to gather all the pertinent data, Process and Water proposed a solution that was centered on Tech-Etch's unique process and business requirements, and brought together the best technologies to meet those needs.

Competing vendors in the evaluation process chose a product-driven approach. Rather than starting with the customer's needs and building a system around those requirements, they started with their own preferred products and technologies. Their proposals all offered the same thing -- to modify or adapt those technologies them to meet Tech-Etch's specific process requirements and budget. These 'retrofits' rose questions among the Tech-Etch team about the proposed systems' long-term durability, maintenance requirements, and operation costs.

Unlike the other vendors, Process and Water proposed a 'custom build to budget' approach. The critical difference was a focus on what Tech-Etch needed; Process and Water did not go in with a predetermined solution in mind, and then reshape it for the client. Process and Water asked "What do they really need, and what's the most effective, reliable, and cost-effective way to meet their needs?

With this approach, Process and Water could ensure that client got precisely what they required. Tech-Etch had an extensive wish list, including delivering advanced system with a very small footprint so it would fit in a process room where space was at a premium. Process and Water was able to meet every item on the client's wish list, and still keep the price competitive.

With its heavy focus on understanding Tech-Etch's needs, its openness to using best-fit technologies, and its flexibility in manufacturing all under one roof, Process and Water won the project.

The Solution

Process and Water designed a custom Ion Exchange Water Recycle system for Tech Etch's manufacturing process waste water. The system is fully automated and is designed to last for more than 20 years in a highly corrosive environment.

Process and Water's capabilities for delivering total solutions including design/build and service enabled it to custom manufacture a fiberglass skid for the system. Tech-Etch's previous system, like those in most facilities that run these types of processes, was mounted on metal skids. The problem is that with the types of chemicals used in the process corrodes the metal fabricated skids. Preventing corrosion to the metal skids was a constant battle for the Tech-Etch team, and a continual source of maintenance and upkeep work. The custom fiberglass skids on the Process and Water system completely eliminated this maintenance headache. Another corrosion-resisting aspect of the Process and Water system was that engineers eliminated all metal parts that could impact the system's performance and lifespan.

Results

The system enables Tech-Etch to achieve 98% recycle rate for its critical rinse waters, which were previously being discharged to town's sewer system. The Process and Water system allowed Tech-Etch to handle the water requirements of its revamped manufacturing processes while holding the line on water usage costs and sewer discharge amounts.

The system is so reliable and effective that it allowed Tech-Etch to redirect some of the recycled water to other processes within the facility. This 'bonus' rinse water continues to deliver financial, operational, and environmental benefits.

To this project, Process and Water brought a client-centric approach, and an ability to design, manufacture, and install a system that delivers outstanding performance within a very reasonable budget. In addition to the baseline system, Process and Water adds high-quality services in the form of regular maintenance and periodic system servicing.

The system has been up and running for approximately six years. Process and Water prides itself on measured performance and client satisfaction to validate its design and build approach for other potential clients.

Other system highlights:

- The system is still using the original ion exchange resins
- All original equipment (pumps, instrumentation, etc.) is still in operation without any replacement.
- Costs for all preventative/scheduled maintenance and consumables for the system are under original estimates.
- Water quality results continue to exceed expectations
- Client has reduced its incoming DI water system usage by 50% due to a reduction on make up on low quality events.

In describing their new system, and the overall experience in working with the Process and Water team, David Brisbois, Director of Environmental Health and Safety for Tech-Etch said "When our new processes pushed up against our permitted limit, we faced a real challenge. With the advances in rinse water recycle technologies, there were lots of options and choices for us to consider. The Process and Water team stood out because instead of pushing a particular solution, they first wanted to get to know us, understand our processes and business goals, and how rinse water handling factored in. Only after they got their arms around all that, did they come back with their recommended solution. The result is a true, turnkey solution delivers outstanding performance and reliability well within our budget. With Process and Water, we were able to address our water-related business problem, and continue on track with our growth plans. We couldn't be happier."

About Process and Water

Process and Water is a different kind of water purification and fluid-handling system company. It offers the high-end and custom systems customers expect from large companies, but with the personalized support and services that only smaller companies can deliver.

Providing innovative system design, development and manufacturing, Process and Water specializes in creating systems that not only meet customers' specific operational needs, but also their budget

requirements. The company's expert staff partners closely with customers in all phases of their projects, and offers preventative maintenance and technical support services that ensure uninterrupted operations. Big company capacities delivered with small company care – that's the Process and Water difference.

Founded in 2010, and headquartered in East Bridgewater, Mass., Process and Water is a subsidiary of Elevate Experts, a provider of strategy and management services to small- and mid-sized businesses. For more information on Process and Water, visit the company's website or call +1 (508) 456-4214.