



Treating the Hard to Treat

On Par: Removing Chrome, Cutting Costs in Wastewater Treatment Nets a Hole-In-One

Background

Founded in 1973, Southern Metal Processing in Alabama was the very first commercial polymer cleaning company in the U.S. and since then have maintained their footprint on the market as the largest commercial cleaning company worldwide, with plants on two continents and serving customers in markets around the globe.

The Ask

SMP cleans filters used in oil extraction and fracking. Their process involved not only cleaning filters, but also related packs, dies, and equipment used in the manufacture, processing, or recycling of polymer resins, man-made fibers, non-woven products, and extruded films. Their two U.S. facilities are capable of processing equipment in any configuration ranging from filter discs as small as ¼" O.D. to filter elements in excess of 10-feet in length to pipes, transfer lines, and heat exchangers weighing several thousand pounds each.

SMP cleans filters with ratings of 0.5 µm to 200 µm, including woven wire mesh, random metal fiber, and sintered metal powder media. They became known as one of the best in their industries, but a permit change by one of their local wastewater treatment facilities involving removal of chromium from their system meant they were working nearly around the clock to meet the new standards and also paying for daily off-site testing in a desperate effort to meet discharge limits.

Something had to change with their system, and company management admitted they were struggling with the revised pretreatment discharge

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permit that had lower metal and solid numbers than they had seen in the past. SMP had worked with a number of other vendors over the years, all of whom said they had the answers they needed, but their wastewater treatment system continued to struggle to meet city permit limits. The city then ratcheted up the targets even further.

The Audit

“It was the equivalent of asking Tiger Woods to take his game from the 60s to shooting an 18 on 18 holes in just 90 days,” says SMP’s V.P. of Operations of the requirement by the city. “We were not a problem operator; we were solid, but the game was changing.”

That’s when they called Hubbard-Hall for help with their wastewater system, and Industrial Wastewater Treatment Specialist Robin Deal and her team stepped in.

Over several days, Deal and her team performed numerous bench tests on the system and several weeks later helped SMP identify a number of critical factors impacting their water treatment system’s ability to generate the desired result.

More Practical, Affordable Testing

Starting with AquaPure HQ reducing agent, Deal and the Hubbard-Hall team followed up with AquaPure T-500 precipitant and AquaPure I-300, an iron coagulant. These products pulled out the chrome from the wastewater, along with other heavy metals such as copper.

SMP says issues of critical relevance to their effluent were brought to the front, which no other group had ever identified, and changed the approach of the treatment system at the most basic level. Along with some system design changes identified, SMP found they “could shoot that 18” and quickly had positioned themselves to meet the initial and immediate

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requirement goal to keep operating.

It took lots of testing to determine the precise dosing needed, but with time and effort, Hubbard-Hall’s Deal found the proportions that brought SMP into compliance.

Meeting the Standards and Reducing Costs

With the tests showing the chromium levels at under 1 ppm and copper undetectable, the city was satisfied with the results. That also meant that SMP could dial back on its amount of testing. The improved wastewater treatment benefited costs and capacity too.

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Before bringing in Hubbard-Hall, SMP could treat a maximum of 15,000 gallons per day. The regimen developed by Deal more than tripled maximum throughput, letting the company scale back operating hours and cutting costs. Eventually, they went to weekly on-site measurements, saving the company about \$500,000 annually in the process.

“Not only did we meet hurdles, but we began performing at a level with a buffer below critical measures that I can only qualify as letting me sleep a lot better at night,” the SMP VP says.

The Customer’s View

The Hubbard-Hall team demonstrated to SMP that throwing money at a solution to a problem isn’t always necessary but that the goal should be to define the core issues and address them holistically and systematically.

“We understand that most things can be solved with a lot of money, but that doesn’t mean it is cost-effective,” SMP says. “We have continued to work together on the next important hurdle, honing the changes both in upstream processes and wastewater treatment processes to impact the overall cost/gal of water treatment, a key to keeping us competitive in our market as pressure around environmental concerns continue to tighten and impact the cost of good water.”

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More importantly, SMP gained the trust of Hubbard-Hall and its team, and its top executives say they not only gained a solution to their persistent problem but that they also found a partner to help them in other areas of their operation.

“If they tell us to paint the wastewater building purple because for some reason it will help the treatment process, we will,” the SMP executive says.

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