

Terminally Successful

By Bill Holmes

It's not quite as dramatic as a pioneer looking to the horizon and seeing the entire West laid out in front of him, but when Glenn Gibisch surveys the landscape at 3 Rivers Terminal, which is located in Joliet, IL, and operated by industrial chemical packager and distributor Seeler Industries, he can easily envision a limitless future for his company and customers.

Gibisch is executive vice president and COO for 3 Rivers, which rests on 123 acres of industrial territory near Chicago. The terminal—currently consisting of 17 storage and 15 blend tanks used in the storage, handling and packaging of mostly hydrogen peroxide, but also caustics, amines, glycerin propylene, glycol and chemical deicers—was the brainchild of Seeler Industries nearly 30 years ago, when the company was primarily a distributor of hydrogen peroxide.

“We purchased our current property in Joliet in 1980, and over the years, we erected tanks and got into the peroxide-packaging industry,” says Gibisch. “Then in the early 1990s, we started focusing on developing a Midwest for-hire terminal that could handle peroxide. To that end, we have a more than 100-acre facility, and we're not even using half of it right now.”

The facility currently provides storage, transfer and packaging services to the chemical industry for both bulk liquid and dry chemicals in truck and rail quantities. The property also includes a barge dock should Seeler ever choose to expand into barge service. To accommodate its constantly growing customer base—“We have customers requesting that we put up four more tanks,” Gibisch adds—the terminal is served by seven truck-loading racks and 42 railcar-unloading positions.

These racks and railcar positions enable Seeler to offer transloading services, allowing loads that arrive via railcar to be transferred to tanker truck and vice versa. An on-site truck scale ensures quick and efficient product handling coupled with accurate inventory control.

In addition, Seeler offers drum-, tote-, bag- and package-filling services. The facility houses six drum/tote-filling stations that are capable of handling most chemical classifications with direct unloading access from tank truck, railcar, ISO container or blend tank. Bag-filling services see hopper railcars feed the bag-filling operation, which consists of 50- to 100-lb. valve-sealed bags, 3,500-lb. bulk sacks and open-head drums of various sizes. The packaging area allows liquid chemicals, hydrogen peroxide and peracetic acid to be packaged in various sizes, from quart bottles to 1-, 2.5- and 5-gallon units, with batch sizes up to 20,000 gallons.

With this array of available operations, the tank farm at 3 Rivers now features tank

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sizes ranging from 6,000 to 60,000 gallons, giving the facility a total storage capacity in excess of 650,000 gallons.

Minding The Store

When Seeler began its chemical-storage operations at the terminal in the mid-90s, there were some obvious challenges that needed to be confronted and overcome. With its history of distributing and packaging hydrogen peroxide, Seeler already knew the product's characteristics and any hurdles that would need to be cleared once the liquid-handling and -transfer business was up.

While hydrogen peroxide is classified as a weak acid, and is only slightly more viscous than water, its handling comes with a few cautions—namely that it can adversely affect pump seals, a crucial consideration when your business involves high-speed peroxide transfer from one form of transportation to another, or into and out of storage or blend tanks.

When 3 Rivers began operations, it relied on air-operated double-diaphragm (AODD) and side-channel pumps that came from a multitude of manufacturers. After several years using these systems, however, Seeler executives knew that for the business to succeed, the inefficient AODD and side-channel equipment must be replaced.

To accomplish this new direction, Seeler turned Semler Industries of Franklin Park, IL. Semler has been a value-added distributor for Blackmer® for more than 50 years, in addition to other industrial liquid-handling products for a century. Given its long history with Blackmer, Semler had one solution for Seeler: Better get Blackmer.

Blackmer, the largest manufacturer of sliding-vane pump and compressor technologies, is part of Dover Corp.'s Pump Solutions Group (PSG™), which was established in April 2008. Moreover, PSG not only includes Blackmer, but also Wilden® with its AODD pumps, Mouvex-Blackmer™ with its eccentric disc pumps, Griswold® with its ANSI centrifugal pumps, Almatec with pumps specifically designed for semiconductor and electronics markets, and Neptune® with its chemical metering pumps and feed systems.

"Blackmer is one of our core distributed products, and with our experience with Blackmer [in] many different markets, we know they are the best pump for loading and unloading applications. We're very comfortable putting them in applications where other pump brands just don't get the job done," says Loren W. Semler, Semler vice president of operations. "We do a lot of bulk plant work for the energy and transfer markets; Blackmer is the pump that we advise our customers to use."

Jack Of All Trades

So, in the early 1990s, a series of Blackmer pump styles, types and technologies were installed at 3 Rivers, bringing its operations to the cutting edge of efficiency and profitability. First to go were the majority of AODD pumps, which had become cost-prohibitive due to increasing compressed air costs for railcar transloading. In their place, Seeler installed Blackmer STX3 and SNP3J sliding-vane pumps.

According to Ron Mirshak, Semler product specialist for the Seeler Industries

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account, "Bringing in a variety of pump technologies from Blackmer has really brought down operating costs and increased efficiency; it's just been a winner."

The Blacker STX and SNP Series are energy-efficient sliding-vane pumps that are ideal for terminal applications. Both are constructed with 316 stainless steel for compatibility with chemicals, solvents, caustics, sulfates and many acids, yet are designed with non-metallic vanes that allow them to run dry for short periods, while also producing self-priming and line-stripping capabilities. The STX Series features external ball bearings, chemical mechanical seals and PTFE elastomers. The SNP Series is designed with metallized carbon sleeve bearings and PTFE impregnated shaft packing, with off-the-shelf commercial seals also available.

"We like these pumps because they move product at a very safe rate of 200 to 250 GPM, they clear the lines for us when we're done unloading trucks or ISO containers from overseas, they have a wide range of being able to move viscous materials at many different temperatures, and they are very easy to maintain," according to Gibisch.

In addition to the new sliding-vane pump technology, the plant employs Advanced™ Series AODD pump technology from Wilden. The 3-in. P1500 model boasts polypropylene construction, as well as PTFE diaphragms and ball valves, enabling it to stand up to rough service. Furthermore, Wilden's patented Pro-Flo® air distribution system improves the performance characteristics of AODD pumps by efficiently and reliably reciprocating the pump. Used to transfer various chemicals from railcars into and out of the blending barn, this pump has a maximum flow rate of 207 GPM and pressure of 125 PSI (8.6 BAR) for emptying and filling tank cars and other vessels quickly and safely, while its durability decreases downtime.

With the energy consumption and low-transfer rate problems solved, Seeler next focused on replacing the side-channel pumps with C Series eccentric-disc pumps from Mouvex-Blackmer of France.

"We bring the peroxide in at 70 percent and dilute it in the blending tanks, but we were bottlenecked at our truck- and railcar-unloading area with the old pumps because all of the peroxide is top-unloaded," mentions Gibisch. "When we brought in the C Series, it increased unloading rates from 45 to 90 GPM so that our capacity doubled—and it came at the right time since business was growing."

The C Series pump, which relies on the Mouvex Principle for its efficient operation, is designed without mechanical seals, thus eliminating leakage and reducing maintenance times. There are no expensive magnets needed because the pumps are direct-coupled to the gear-reduction unit or motor, and the pump design also allows the clearing of intake and discharge lines, while providing self-priming and dry-run capability.

After installing the C Series, which has been operating without fail for seven years, Seeler turned to Blackmer's System One centrifugal-style pump. "Now that we had the C Series pump filling the peroxide tanks, we needed the tanks to be circulated or the peroxide transferred out, so we installed a System One pump. It is ideal for this application because it's reliable. The trick with peroxide is using a pump that

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has seals that can handle it,” explains Gibisch.

Seeler is currently using four System One pumps at its terminal, including one in its blending barn where hydrogen peroxide and acetic acid are blended to make peracetic acid.

Time = Money

The benefits of incorporating Blackmer, Wilden and Mouvex-Blackmer products into its operations are tangible to Seeler Industries. In addition to offering the materials of construction necessary to handle the products that Seeler has on hand, the Blackmer and Wilden pumps also increase the overall efficiency of 3 Rivers.

Prior to the commitment to Dover products at the facility, a tanker truck would enter the property and from the time it rolled over the truck scale to the time it went back over the scale on its way out of the property—whether it was there to be loaded or unloaded—90 minutes elapsed with the most downtime being chewed up by inefficient pumping and loading systems.

The implementation of these Dover products, however, reduced that 90-minute scale-to-scale window to 66 minutes—and Seeler’s not satisfied yet—“We hope to get our scale-to-scale time down to 60 minutes,” says Gibisch, “and with our improved setup, we’re well on our way.”

These systems have also helped Seeler curb its electricity costs. With the AODD pumps gobbling up plant air, the utility bills were beginning to skyrocket. Though a recent change in the way electricity is billed in the area has kept Seeler’s electricity bills roughly the same, Gibisch shudders to think what those costs would be if the terminal still relied on the less-efficient AODD pumps.

“We’re doing twice as much work in volume, but our electric rate has stayed the same, even with the increase in electric rates,” according to Gibisch. “Again, that’s a tribute to the Blackmer pumps and their efficiency.”

Terminals have long been considered the perfect operating platform for Blackmer’s patented sliding-vane technology, but the setup at 3 Rivers shows that there are terminal applications that are well-suited for its other types of pump technology, too.

“I’ve been happy with Blackmer for more than 25 years, and Semler Industries and Ron Mirshak have always been there to offer their expertise and support,” admits Gibisch. “Wherever I’ve been, whenever we needed a pump, we got a Blackmer.”

Bill Holmes is the Energy & Transfer regional director for Pump Solutions Group (PSG), a part of Dover Corp., and you can contact him via 847.726.7565 or holmes@blackmer.com [1]. For more information about PSG, visit www.pumpsg.com [2]; for more information about Blackmer, call 616.241.161 or visit www.blackmer.com [3].

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