Smart Sand Benefits from Strong Working Relationship with McLanahan

"We appreciate McLanahan's sensitivity to our needs, including our desire to maximize reliability, maintenance and uptime."

Smart Sand Representative

Smart Sand, located in Tomah, Wis., provides "Mine to Wellsite" solutions for the unconventional energy exploration industry. This service starts with mining and processing frac sand, or proppant, which is a critical component of hydraulic fracturing (also called "fracking") operations for both natural gas and petroleum.

Smart Sand's products and services are focused on the delivery and storage of high-quality premium Northern White Sand — a type of frac sand known for its purity, sphericity, conductivity and high crush strength — to the basins where it is used in oil and natural gas extraction. They provide proppant in all standard and custom mesh sizes, as well as manufacture wellsite storage and proppant delivery equipment.

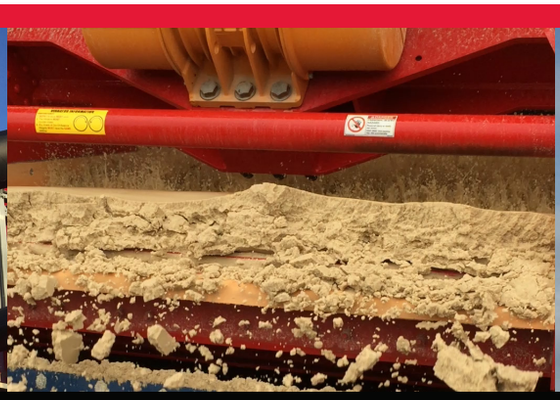
The company's primary facility in Oakdale, Wis., is situated on 1,250 acres and is accessible by two Class 1 rail lines, ensuring efficient delivery of premium Northern White frac sand direct to key producing regions.

Challenge

In 2014, Smart Sand decided to expand their Oakdale facility to include a new wet processing plant. They required a high-tonnage plant for hydraulically classifying sand to make +70 mesh (210 µm) and 70x140 mesh (210x105 µm) products, as well as a 140x400 mesh (105x37 µm) stockpile to minimize fines in the tailings. They were also looking for a way to thicken the effluent to minimize their settling pond requirements.

Smart Sand had worked with McLanahan and McLanahan's Wisconsin representative, MAB Equipment Company, on their initial plant design in 2011 and were pleased with both the equipment and McLanahan's service and support. The selection of McLanahan over other alternatives was driven by Smart Sand's engineering and design process.

"McLanahan impressed us with manufacturing quality, design, optionality and cross-compatibility



with components sourced from other vendors," a representative from Smart Sand said. "McLanahan is responsive and helpful in both design and engineering."

This led Smart Sand to partner with McLanahan and MAB Equipment to manufacture their new plant.

Solution

For Smart Sand's new plant, McLanahan provided four Hydrosizers™; four Hydrocyclones; two Dewatering Screens; an Ultra Sand Plant, consisting of two Separators™ and two Dewatering Screens; three Ultra Fines Recovery Plants, each consisting of eight Hydrocyclones and a Dewatering Screen; and two Thickeners. McLanahan furnished the entire support structure surrounding the plant, including the walkways, stairways, handrails and kick-plates, and design of piping.

The Hydrosizer™ plant washes, separates and dewaters Smart Sand's feed material to meet the specifications required of their final products. The feed material is split between the four Hydrocyclones, which deslime the sand particles and control the density of the feed to the Hydrosizers™. A hydraulically fluidized teeter bed inside each of the Hydrosizers™ determines the 70 mesh cutpoint, and the +70 mesh product underflow discharges onto the Dewatering Screens, which produce a drip-free sand ready for transport by conveyor belt.

Overflow from the Hydrosizers™ reports to the Ultra Sand Plant for separation of the 70x140 mesh material, discharging it as a drip-free product. The Ultra Fines Recovery Plant recovers the fine mesh material from the Hydrocylcones and discharges it as a drip-free 140x400 product.

The overflows from the Ultra Sand Plant and Ultra Fines Recovery Plants are sent to the Thickeners, which recover Smart Sand's process water for immediate reuse and help Smart Sand make the most of their resources.

"McLanahan Hydrosizers™, Hydrocyclones and Dewatering Screens allow us to size, wash and separate sand efficiently while recycling the water used in the process and maximizing product yield," said a Smart Sand representative.

Results

Since startup, the McLanahan Hydrosizer™ plant has provided Smart Sand with the high production tonnage they initially sought and has allowed them to benefit from the simplified maintenance that McLanahan incorporates into all of their equipment designs.

"McLanahan's equipment allows us to efficiently wash and separate raw sand at a competitive tons per hour rate," a Smart Sand representative said. "The footprint of the equipment is relatively small, and maintenance is straightforward."

The Hydrosizer™ plant also provides Smart Sand with the ability to keep up with market demand by giving them control over their product sizes during processing. They went from a 70 mesh cut down to a 140 mesh cut to adjust to market demands and can go up to a 50 mesh cut without equipment modification.

"The equipment allows for mesh size adjustments during processing, which allows us to more easily and efficiently meet changing customer needs," said a Smart Sand representative.

Besides increased flexibility, Smart Sand has also enjoyed the benefits of a strong working relationship with McLanahan and MAB Equipment through the years.

"Smart Sand has a strong working relationship with McLanahan," a Smart Sand representative said. "We have found McLanahan to be engaged when problems arise, and invested in quick and efficient outcomes. We appreciate McLanahan's sensitivity to our needs, including our desire to maximize reliability, maintenance and uptime."