By Craig Mandli

Wet well system curbs odor issues

Problem

In mid-2013, the Pacific Northwest Regional Wastewater Authority was receiving odor complaints from residents around a lift station and was experiencing odors in the plant as well.

Solution

Anue Water Technologies conducted a demonstration of **ozone and oxygen treatment** at the lift station. Data collection showed that the odors were most likely due to mercaptans. Ozone and oxygen treatment were delivered through two HydroSpear conditioning heads in the wet well at the lift station. The odors at the lift station soon vanished, and odor at the plant decreased markedly. Based on the results, the authority installed a Phantom FLD-60-15-H wet well system to deliver continuous ozone and oxygen treatment.

RESULT

The system has provided the same level of odor abatement as the demonstration system since startup. A benefit of reduced odor at the plant is less blower runtime, saving $2,000 to $3,000 per month on energy. **760/727-2683; www.anuewater.com.**

Golf course treatment facility solves debris-screening problem

Problem

The Olde Atlanta Club's Wastewater Treatment Facility in Suwanee, Georgia, had an aging wastewater treatment plant protected by original rotary screen assemblies that failed to intercept gritty material. Garrett Gladstone, operator in charge, needed an affordable solution.

Solution

The team chose **Drumtec** from **Aqualitec.** The system is internally fed, making it well suited to remove rocks, grit, organics, wipes, rags and fibers. Operators added a Compactec system that conveys and dewaters waste material and reduces waste volume.

RESULT

"Drumtec catches nearly all the debris that enters the treatment plant," Gladstone says. "And Compactec compacts the material so well that we now use a smaller dump container, while getting rid of more debris than before. Without all the extra material getting into the aeration basins, the treatment process operates much more efficiently." Operators don't need to clean the basins nearly as often, and a foam problem has disappeared. **855/650-2214; www.aqualitec.com.**

Rotary press efficient in dewatering ash slurry

Problem

The TZ Osborne Water Reclamation Facility in Greensboro, North Carolina, produces ash slurry from its incinerator that requires dewatering.

Solution

The facility selected a **rotary press** from **Fournier Industries** because it worked well with the polymer that was already used at the plant. The capture rate during testing was 90 percent. The press was installed in March of 2016.

RESULT

Ash slurry is sent to the press at 1 percent solids and dry cake in the range of 50 percent solids is produced. The rotary press is operating well and the staff is looking at the unit for treatment of pre-incineration sludge. **418/423-6912; www.rotary-press.com.**

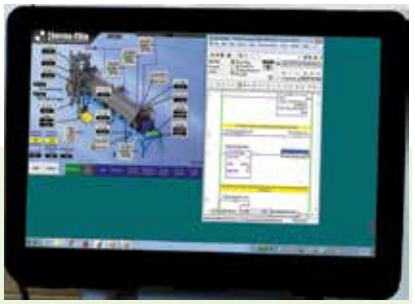
Plant improves process quality and uptime with mobile app

Problem

The Rio Dell (California) Wastewater Treatment Plant wanted to upgrade its biosolids management program.

Solution

The plant's **Therma-Flite BIO-SCRU dryer** came with software allowing the manufacturer's service team and the plant operator to modify the biosolids drying process. Rio Dell purchased Therma-Logic Connect service, which allows company service technicians to make remote adjustments to temperature, process rate and other parameters. "Therma-Flite's technician programmed warnings based on certain conditions, which automatically send notifications to my mobile device when the conditions change," says Rick Chicora, operator. "The majority of warnings I can handle right then from my mobile device. If the warning requires my Therma-Flite technician, I call or text him. He can access our dryer software from wherever he is. The issue gets fixed and I avoid a service visit."



RESULT

Running since December 2015, the service has improved uptime and overall process time by monitoring conditions and resolving issues before they become significant. The service deploys within 24 to 48 hours and works anywhere with a tablet provided by Therma-Flite and an Internet connection. The plant receives regular data review and efficiency monitoring, real-time condition monitoring and diagnostics and automatic upgrades as they become available. **707/747-5949; www.therma-flite.com.**

Bar screens used to replace catenary-type screens

Problem

The old screens at the Glenbard (Illinois) Wastewater Treatment Plant in Illinois had not functioned properly since 1999. Because this plant handles both wastewater and stormwater, flows range from 3 mgd to over 40 mgd. The lower flows often result in channel-clogging floatables and sediment.

Solution

MS Bar Screens from **Headworks International** were installed in 2004. They are designed to significantly reduce debris in downstream processes.

RESULT

The cleaning cycle has been reduced by more than half. "We have had some of the highest flow periods seen in 20 years and it performed flawlessly," says Erik Lanphier, wastewater authority manager. "Other than routine maintenance, we did not have to touch the screen during the first year of operation." Blinding on the screening field has not occurred. When Hurricane Ike dropped 101 billion gallons of water on Cook County, just one screen handled the deluge. **713/647-6667; www.headworksintl.com.**

Grit washer reduces disposal costs for plant

Problem

La Crosse Wastewater in western Wisconsin wanted to make its treatment processes more efficient and effective. Because of the odor, hazardous content and sheer weight of grit, disposal fees were quite significant. The utility looked for a grit washing system that would reduce cost and integrate with its automated plant operations.

Solution

The automated **COANDA Grit Washer RoSF 4** from **Huber Technology** reduced the hauling of 125 tons of grit at $65 per yard, saving $7,530 per year. The system yields sandbox-grade grit while returning organics to the treatment process. The clean grit is popular for landscaping, and the organics are now used for cover at the city's landfill.

RESULT

Fees were reduced by 79 percent. The grit washer requires little attention from maintenance staff and rare intervention from Huber's support team. **704/949-1010; www.huberforum.net.**

Bioset Process helps convert biosolids to commercial fertilizer product

Problem

The City of Orlando, Florida, has been moving away from land application of Class B biosolids. While investigating an experimental biosolids oxidation technology, the city delayed renovations to the anaerobic digesters at its Conserv II Water Reclamation Facility. After commercialization of the oxidation technology was delayed, the city began plant improvements.

Solution

An engineer estimated a $40 million cost for a Class A thermophilic anaerobic digestion system with sidestream treatment and combined heat and power. Convinced that the marketplace would deliver breakthrough biosolids treatment technology, the city sought an alternative to cover the next five to 10 years. The city installed **Schwing Bioset lime stabilization process** as a way to produce a commercial fertilizer product.

RESULT

The Bioset equipment was installed in spring of 2016. Schwing Bioset's sister company, Biosolids Distribution Services, which manages Class AA fertilizer grade biosolids in the Florida, manages the biosolids from the Orlando Bioset process. **715/247-3433; www.schwingbioset.com.**

Plant finds solution for land application of effluent water

Problem

In the city of Fayetteville, Arkansas, the Noland Wastewater Treatment Plant is located adjacent to the Midland Bermuda production area, which produces 230 tons of forage grass per year that is sold to local residents and farmers. The treatment plant has a 670-acre nutrient water reuse site. The plant mitigates up to 12.6 mgd of effluent water to be reused on the growing crops, but they needed a way to distribute the effluent water to the crops.

Solution

The plant purchased a total of four **T40x1250 Water-Reels** from **Kifco.** They are ideal for the reuse of nutrient water, applying the water with uniformity and reducing compaction of soil associated with tanker trucks. The units were equipped with an optional hydraulic turntable, hydraulic jack and five-wheel gun cart to decrease operating cost. They can distribute wastewater with up to 3 percent solids.

SOLUTION

The Water-Reels have effectively distributed the effluent water to the crops. **800/452-7017; www.kifco.com.**

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Rotary drum thickener increases solids output, reduces moving parts for sanitary district

Problem

The Sanitary District of Decatur, Illinois, had an aging dissolved air flotation thickening (DAFT) system that was not producing the thickened solids required by the digester. Solids content was 3 to 3.5 percent. Requirements also called for a reduction in moving parts on the next equipment installation.

Solution

The district installed three **ThickTech rotary drum thickeners** from **Parkson Corp.** taking up one-third of the footprint of the original units and containing far fewer moving parts.

RESULT

The district has increased the thickened solids content to 5.5 – 6 percent, reduced chemical costs and achieved its goal of a lower-maintenance system. **888/727-5766; www.parkson.com.**

Three-tank continuous sludge system efficiently pasteurizes digestate

Problem

Multons PLC in Stowmarket, England, pasteurizes 80,000 tons per year of liquid malt sludge at its plant while coping with noncontinuous flow of biosolids. The system must meet BSI PAS 110, a British Specification for Digestate similar to U.S. EPA Code of Federal Regulations, Title 40, Part 503 Class A.

Solution

The company installed a **Three-Tank Continuous Sludge Pasteurization System** from **HRS Heat Exchangers.** The system has an energy recovery section that transfers energy from the pasteurized biosolids to the unpasteurized biosolids, reducing energy consumption by up to 70 percent. A final heat exchanger uses water from the combined heat and power engine. Three tanks have several level/temperature probes so that the tanks can be filled to different capacities, allowing continuous and flexible production of digestate. A pump package and a control panel complete the system.

RESULT

The system efficiently pasteurizes the biosolids using 40 percent less energy. It runs continuously even when digestate stocks fluctuate, and tracks, traces and electronically reports data on digestate processed. The system reduced total cost of ownership, fits the space at the plant site, and saves 1,159 tons of carbon dioxide per year, the emission equivalent of 300 cars. **623/915 4328; www.hrs-heatexchangers.com.**

Vertical conveyors aid in increasing biosolids incineration potential

Problem

The merchant biosolids incineration facility in Naugatuck, Connecticut, receives dewatered biosolids from New York, Connecticut and Maine. Its progressive cavity pumps could not handle the wide range of solids consistencies and foreign objects in the material. The plant could process only three to four truckloads per day, and frequent blockages and breakdowns drove up maintenance costs.

Solution

The facility selected **SPIRAC vertical conveyors and live bottoms.** Imported biosolids are now mixed with materials dewatered on site in a receiving bunker and transported to the incineration feed silo.

RESULT

Production is consistently 12 to 14 truckloads per day (maximum licensed capacity). The high-capacity conveyors run at less than 50 percent duty. Over six years, maintenance has been minimal and downtime nearly eliminated. **770/632-9833; www.spirac.com.**

Grinding unit effectively replaces channel grinders

Problem

The Monterey Regional Water Pollution Control Agency in northern California was having a problem with channel grinders in 10 pump stations. The units were constantly breaking down and needing to be rebuilt.

Solution

"When we heard about the stack cutter assembly in **Franklin Miller's DIMMINUTOR,** we wanted to learn more," says Bret Boatman, maintenance supervisor. "The fact that the device has no bottom bearings was very attractive." The device automatically screens and grinds solids with a straight-through open channel design. It reduces plastics, wood, vegetable matter, disposables and other items to a fine particulate.

RESULT

"We have so much less downtime and maintenance costs on the new machines," says Boatman. The plant has switched out eight of its old units. **800/932-0599; www.franklinmiller.com.**

Grinder keeps waste flowing at amphitheatre

Problem

Concertgoers flocking to Red Rocks Amphitheatre and the surrounding Red Rocks Park District in Colorado increased loading to the wastewater treatment system. Huge amounts of clothing, rocks, wipes and rags clogged the drum grinders in the wastewater vaults daily, making it difficult to properly shred the debris. Replacing equipment in the water tanks annually was costly, and drum cleaning required three hours of manual labor.

Solution

MISCOwater, a local provider of wastewater processing equipment, recommended the **Muffin Monster** from **JWC Environmental** for its ruggedness and durability in breaking down wipes and other non-dispersibles.

RESULT

Since installation in the facility's first wastewater vault, debris has been captured and cut before traveling to the aerators. Crews no longer perform maintenance, remove clogs or replace water tank equipment. **800/331-2277; www.jwce.com.** tpo