



West Lafayette Wastewater Treatment Plant Gets A Grip On Grease Receiving

PROBLEM: Debris clogging grease pump

APPLICATION: Grease Screening

SOLUTION: Heavy Object Trap

Grease can cause big problems, but when managed properly, can also provide big dividends as a renewable energy source. The Wastewater Treatment Plant in West Lafayette Indiana has grease in abundance and is making the most of it! In 2012, the plant received an average of 18,000 gallons (68,140 liters) of grease per month. Although grease deliveries are not always daily, they can get multiple deliveries in one day. One small tanker truck can bring in 2000-3000 gallons (7,571-11,360 liters) while a large truck can bring in between 4000-5000 gallons (15,140-18,936 liters).

When the West Lafayette treatment plant implemented a major upgrade in 2009, they installed two microturbines for generating electricity to make use of the methane produced in their digesters. At the same time, they also installed a grease receiving station. This station conveys grease to the digesters to produce even more methane for the microturbines.

According to Jim Bjork, Maintenance Supervisor for the West Lafayette Wastewater Treatment Utility, "the initial grease receiving station we installed utilized a septage receiving trap that just couldn't handle the debris."

The incoming grease varied widely in consistency. Thick grease prevented debris – heavy metallic objects from settling in the metal trap. Thin consistency grease, on the other hand, would allow most of the debris to flow through into the grease tank. Since there was no grinder on the discharge side of this trap, debris entering the grease tank would get pulled into the grease pump, often causing blockage, severe damage and expensive repair to the pump.

To solve this problem, in 2011 the plant installed JWC Environmental's Heavy Object Trap (HOT). The HOT (model GRS) features an adjustable bar screen with 1/2-inch (12 mm) spacings. As grease trucks unload, all debris is captured with the screen. The liquid grease, unhindered by any solid objects, then flows smoothly downstream, without process disruption.

"The JWCE HOT has significantly reduced the amount of debris being discharged into our grease tank," says Bjork. "The unit's bar racks stop rags and lighter debris that flow easily, while the unit's basket catches heavier debris."

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Since it's easy to clean the HOT, operators open it frequently to check it, and if needed, clean it before a second truck comes in to offload. They also run hot water through the unit, which allows rinsing out of most of the grease from the basket while retaining the solids.

"Our return on investment has been excellent," says Bjork. "We now have much better grease screening, which means the grease pump sustains much less wear and tear."

The West Lafayette treatment plant also uses a really big 4-SHRED grinder to homogenize food waste that is brought into the facility from Purdue University's large cafeterias. The food waste is ground up and pumped into the sludge digesters to also help boost biogas production.

Whether it's grease waste or food waste receiving, JWC Environmental has a Monster solution that can make the process easier, cleaner and more efficient.

The HOT is available in six sizes and features an adjustable bar screen with 1/2" or 1" (12 or 25 mm) spacings, so site operators can change the capture rate of debris. As grease trucks unload, rocks, rags, knives, plastics and other debris are captured. In many installations a Muffin Monster® grinder then homogenizes the liquid grease – breaking clumps into an easy to pump slurry.

The optional 'MonsterTrack' metering and control system uses a flow meter to track septage and provide accurate billing data for the facility and a receipt for the hauler.

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Jim Bjork, Maintenance Supervisor



About JWC Environmental

JWC Environmental (JWC), a Sulzer Brand, is a world leader in solids reduction, removal systems and product destruction for municipal and industrial applications. JWC Monster Industrial shredders and grinders are uniquely designed to cut through the toughest solids and bring them down to size. Monster Industrial products are working every day, protecting equipment and destroying debris. They are found in applications like recycling, waste-to-energy, commercial facility sewage, food and beverage processing, agriculture, and oil and gas. Founded in 1973, the company has built and shipped more than 40,000 Monster grinders, shredders and screens to customers worldwide. More information on JWC Environmental is available at www.jwce.com

