

CASE STUDY

Rotoshear®
John Morrell & Company



Rotoshear® screens offer fast payback to pork processor

Problem

John Morrell & Company in Sioux City, Iowa, is a satisfied Parkson Rotostrainer® screen customer. They use a Rotostrainer, Model RSA2572, to handle non-grease bearing waste and keep sewer use fees in check.

Problem

The by-product recovery portion of the plant was equipped with two 16-year-old Rotostrainer® screens, brought in from another older plant. The used equipment still performed adequately but was beginning to show wear.

When the cylinders finally developed holes, Morrell decided to retire them altogether. Rather than merely replace the existing screens with “like” equipment, Morrell Company analyzed their production requirements and took the opportunity to modernize their wastewater treatment process. However, in order to replace and update equipment, all work had to be cost-justified.

Solution

First, the plant engineer addressed capacity to determine whether there was one screen that could handle the load of the existing two.

The solution was one Rotoshear® screen, Model HRS6096 x .040" (1.0 mm), which could easily handle the heavy grease load generated from pork processing. The cost of one Rotoshear® screen equaled that of two Rotostrainer® screens and furthermore had the advantages of occupying less space, simplifying clean-up and maintenance.

Rotostrainer® screens rely on doctor blades to clean off greasy build-up; however, blades and seals are wear items and require periodic replacement. The new Rotoshear® screen's internal spray system will automatically clean off build-up and provide years of maintenance-free service.

The existing plant wastewater system included dissolved air flotation (DAF). The Rotoshear® screen, placed in front of the DAF, provided excellent grease recovery.

Grease recovery was calculated at about 0.8 lb/head (.36 kg/head). At 0.8 lb/ head, it was easy to cost justify a new screen based solely on by-product recovery. One Rotoshear®, Model HRS6096 with .040" (1.0 mm) screen openings, was installed in May 1992, and has exceeded the company's expectations.

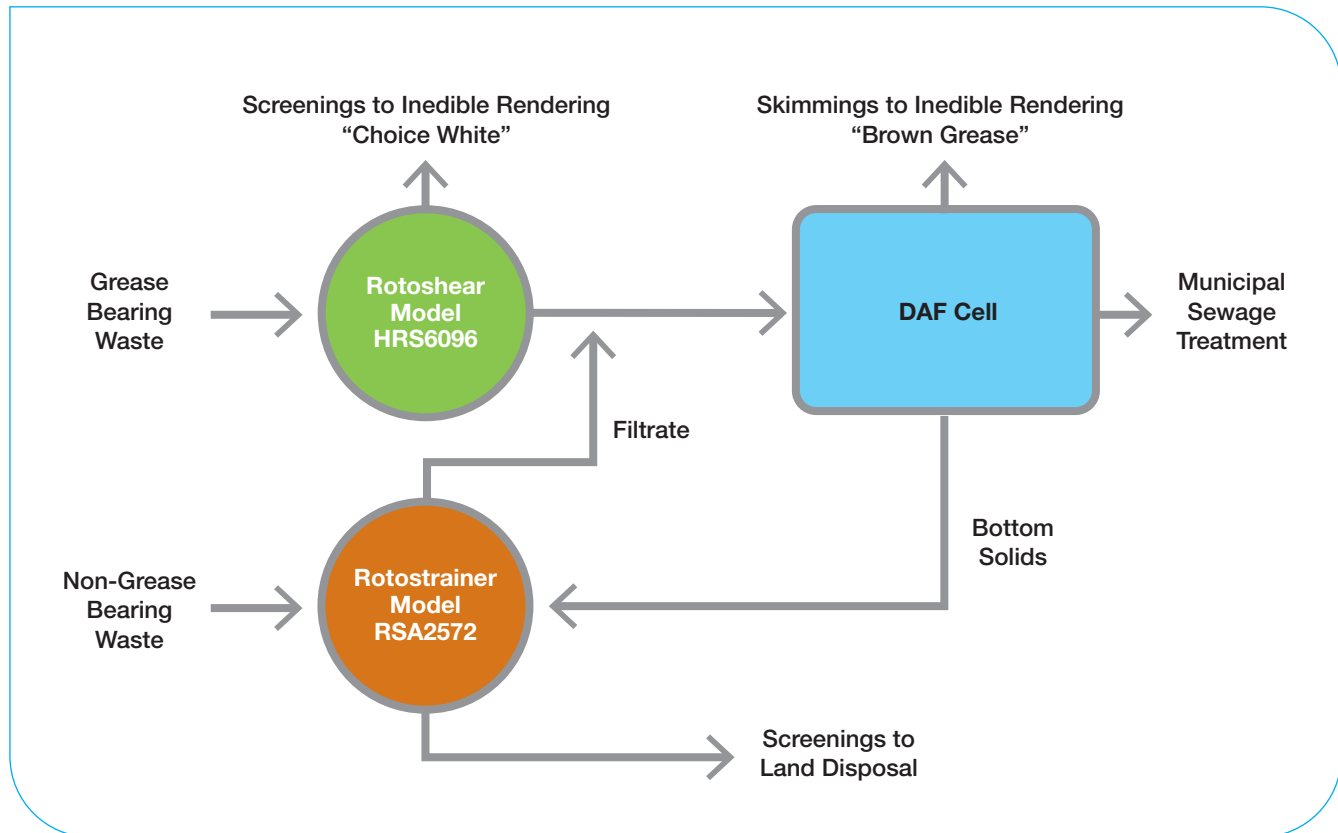
It shipped completely assembled so installation was easy. In addition, the selfcleaning Rotoshear® screen saves valuable manhours. It is hosed down daily. Currently, Morrell is operating on an 8 hour kill and 6 hour cleanup cycle.

However, with the current liquid/solid separation equipment, they could easily operate on a 24 hour a day schedule with a 16 hour kill and 8 hour clean-up.

Results

Morrell is extremely satisfied with the Rotoshear® screen and has realized grease recovery as anticipated. In addition, the improved reduction in solids and grease recovery resulted in a \$17,000 reduction in sewer use for the first month alone.

Based solely on this figure, the new screen paid for itself in only five months. ■



DESIGN DATA

Better by-product recovery (system grease and protein products) to justify capital expenditure for equipment

Product: One Rotoshear®, Model HRS6096 x .040"

Flow: 2000 GPM design peak; 1000 GPM average (Kill floor by gravity flow)



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