

EnviroGear Pumps Solve Seal Leakage and Bent Shaft Problems on a High-Melt Hydro Tallow Application

Specialty (Oils and Fats) Chemicals Manufacturer

EnviroGear pumps solve seal leakage and bent shaft problems on a high-melt hydro tallow application resulting in 2-year cost savings of \$17,450 with a 4-month payback and IIR of 328%.

Challenge

A leading specialty chemicals manufacturer sought a solution for a challenging transfer service. The hydro tallow being pumped solidified at temperatures below 160 deg. F. Their outdoor pump was referred to as “seasonal” because it worked relatively well during the warm times of the year but frequently failed in the winter. Because the pump ran multiple cycles each day, residual fluid remained in the pumping chamber. Even small amounts of residual fluid in the pumping chamber would solidify and cause the rotor shaft to twist at start-up.

This resulted in expensive repairs to the rotor and the replacement of a sophisticated seal.

Such incidents happened two to three times a year at a cost of \$3,400 for parts and labor each time. Further, heavy steaming of the pump and piping caused the stainless steel components to gall and wear out prematurely. The steaming procedure added to frequent seal failures at a cost of \$1,400 for parts and labor each time a seal failed.

Solution

In order to dramatically improve reliability of the service, EnviroGear Pump proposed the following configuration for the pumping system:

- EnviroGear model S1-32-SS pump with three large high-grade bushings to ensure that pump components run true to specified clearances even under high hydraulic loads and insufficient lubrication during steaming.
- Steam flush system equalizing pressure inside the pump during steaming to protect clearances.
- Premium quality Baldor motor and SEW-EuroDrive gear reducer.
- Emotron M20 shaft power monitors to detect abnormal motor loads and prevent pump failures.

EnviroGear Pump provided technical support 24/7 and guaranteed immediate response in case of any pump problems.

Results

The EnviroGear pump has been in service for two years and has required no maintenance. Also, no leakage incidents have occurred because of the seal-less character of the pump. The maintenance cost savings through the end of 2008 are \$17,450. As a result, the payback period for the pump was 4 months, and the IRR is 328%. The customer has placed multiple subsequent orders replacing their mechanically sealed pumps with EnviroGear seal-less pumps.

“With the help of PeopleFlo, we have resolved an issue of dealing with difficult high-melt products. We solved problems with bent shafts and failed seals due to the product setting up. The service that used to be a substantial maintenance cost has been reduced to virtually no maintenance problems.”

- Project and Maintenance Engineer, 30 years' experience in the chemical process industry