

CASE STUDY



The Challenge

DAF sludge with high level of entrained air and high viscosity

- + Diaphragm pump failed to handle air in DAF sludge
- + Lobe pump required constant maintenance
- + Recessed vortex pump failed to handle viscosity and solids

The Discflo Solution

Discflo pump ideal for sludge with entrained air/gas

Handles high viscosities due to laminar flow operation

No close tolerances ensures no clogging from solids

Test Turns Skeptic to “Disc-Believer”

Orange County Utilities, Florida

For over five years Orange County Utilities wrestled with pumping problems caused by the entrained air from their Dissolved Air Filtration System. After trying various pump designs, each with its own problems, they found the solution with the unique Discflo disc pump.

DAF is an important process that separates the solids out of the waste sludge. The DAF system pressurizes wastewater and then releases it causing millions of micro bubbles to form throughout the wastewater mixture. These bubbles attach to the sludge solids and float them to the surface, so the solids can be separated out and the liquid returned to the wastewater system. This high level of entrained air, however, makes it very difficult to pump. The sludge is also quite viscous, up to 500 cPs.

Gerber Pumps International, Discflo’s distributor in for the municipal wastewater sector, had worked with the County to find a solution since 1995. They initially presented the Discflo pump, but the County was afraid to take a chance on something so different, so instead, they selected a Double Disc Diaphragm pump. The pump though was incapable of handling the air in the DAF sludge.

The next attempt at a solution was a positive displacement lobe pump. While this pump could handle the sludge, it required constant maintenance. The cost of pump maintenance and rebuilds piled up quickly. The constant maintenance was draining the County’s budget. The pumps simply weren’t affordable. Back to square one.

The next decision was to try a recessed vortex pump. The failure of these pumps was quick and decisive. They couldn’t handle the viscosity or the solids content of the DAF Sludge.

In the meantime, Gerber Pumps built a trailer mounted demo rig, comprising a 604-14-2HHD Discflo pump with a 100 HP motor. In October 1999, they returned to the Orange County treatment plant to demonstrate the Discflo pump’s capabilities with their new rig and tested the pump on the DAF system.

According to Stephen Gerber “Seeing does make believing.” The demonstration made believers out of the Orange County Utilities’ staff. They agreed to purchase the pump under trail and test terms. Stephen reports, “Needless to say, they paid their invoice on time.” Not only were the County satisfied with their purchase, the facility is also looking at two more on-site applications as well as incorporating Discflo pumps into a current design build job.

Call Discflo now to find out how our pumps can solve your problems.