

CASE STUDY

Abrasive Acid Sludge Pumping

CF Industries, Plant City, Florida



Discflo pumps are being used with great success in a highly abrasive phosphoric acid sludge application at CF Industries' Plant City facilities in Florida. The first unit was installed in late 1997 for pumping sludge from the clarifier to the belt filter press to obtain gypsum. This material is high solids, in the 40-42% range, highly abrasive, and very acidic (a pH of 1.0), prompting the choice of CD4MCU metallurgy for the casing and Discpac. The sludge is also high viscous, varying from 100cP to 400cP, with a specific gravity of 1.63.

The Discflo unit replaced a hose pump, which cost the company \$2000 every six weeks in replacement parts. Says Discflo's Florida distributor Bert Gerber, "Since start-up, they (the Discflo pumps) have performed extremely well." Additional units were purchased by CF Industries in 1999 and 2000.

Discflo pumps are an ideal choice for the phosphate industry. They have been employed successfully both in the mining/ beneficiation area and the processing side of the business. Specific applications in the beneficiation area where Discflo pumps excel are in the reagentized feed area for handling abrasive rock gently to prevent damage, pumping DAF overflow, where product is both abrasive and foamy, and pumping shear-sensitive clays.

The extremely abrasive, corrosive and high solids fluids found in phosphate processing plants are also good applications for the Discflo pump. In DAP, MAP and GTSP areas in particular, the Discflo pump's non-contact, laminar-flow design reduces the maintenance requirements usually found with centrifugal and PC pumps. The Discflo pump has also outperformed both air-diaphragm and hose pumps, as shown in the CF Industries plant.

The Challenge

Very abrasive, high solids sludge

High maintenance bill for existing hose pumps

Highly corrosive, pH 1.0

The Discflo Solution

Discflo's "non-impingement" pumping design limits wear from abrasion and corrosion

No close tolerances, plus laminar flow, ensures clog-free operation

Slashed parts and maintenance costs, reduced downtime

DISCFLO
INTELLIGENT. SUSTAINABLE. SOLUTIONS

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