

Struvite Control Demonstration

at the City of Tulsa Southside Wastewater Treatment Plant

Struvite Problem

The Southside Wastewater Treatment Plant in Tulsa, Oklahoma has been battling struvite scale buildup on each of five belt filter presses. Scale removal is required frequently and is very labor intensive. The process of removing struvite accumulation involves the use of a 3,500psi pressure washer with a zero-degree tip, applying narrow passes to loosen and remove bits of scale at a time.

HydroFLOW Demonstration

The thin lines seen in the struvite on the picture below [Image 1] are a result of the high pressure washing. The larger area with bare metal was cleaned by this method in advance of the HydroFLOW installation as a control area for verification whether new struvite accumulated while testing the HydroFlow physical water conditioner.

A three-month demonstration trial of the HydroFLOW was started on February 17, 2017. The device was installed around the outside of a 6" ductile iron line [Image 2] that feeds anaerobically digested sludge into one of the belt filter presses. No pipes were drilled or cut during the installation.



Image 1 – Struvite Removed in Areas Prior to HydroFLOW Installation

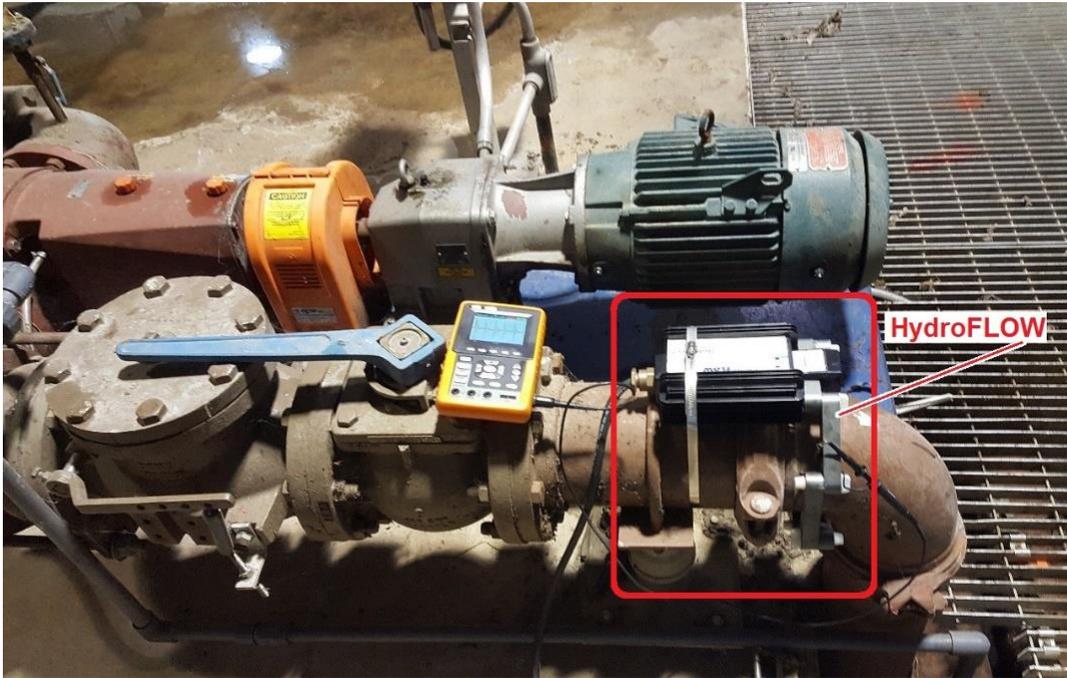


Image 2 – HydroFLOW Installed February 17, 2017

90 Day Demonstration Results

The HydroFlow operated continuously from February 17, 2017 until the conclusion of the test on May 31, 2017. At the end of the test the struvite had noticeably thinned in some areas. Also, some areas could be scraped to bare metal with a paint scraper. When the power washer was used in the same manner as before the test, pieces of scale 3-4" in diameter came off with significant ease of removal than before.

The areas of the press that been cleaned to bare metal before the test showed no signs of new struvite formation. Due to upcoming construction in the Dewatering Facility, the device was removed after the 3-month test period.

After the construction has been completed, the Southside plant hopes to install another HydroFlow and operate the device for a longer period and continue to monitor how it performs on struvite. Based on the positive results of the 3-month test the device shows promise and performed as advertised.



Image 3 – *HydroFLOW has Prevented New Struvite and Caused Easy Removal of Existing Struvite*

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