



## Case Study - Wastewater Ammonia Stripper - Scale (Twelve month evaluation)



Installer: Hydrowerks, *HydroFLOW* Master Distributor for IA, KS, MN, MO and NE.

Customer: Van Diest Supply Company, Webster City, Iowa.

Application: Wastewater Ammonia Strippers.

Unit: *HydroFLOW* C45 Water Conditioner.

Installation date: July 18, 2011.

Evaluation date: July 18, 2012.



**Background:**

Sam Low, Plant Engineer, contacted Hydrowerks in June 2011 regarding a scaling problem with their ammonia strippers.

**Problem:**

Prior to disposing wastewater in a lagoon, hazardous contaminants are removed using a series of filters. The filtered wastewater is then sent through a shell and tube heat exchanger.



Shell and tube heat exchanger



The warm wastewater is sprayed into the top of each ammonia stripper. Air is forced into the bottom of each stripper, causing the ammonia to evaporate. Each ammonia stripper is filled with plastic packing that assists the evaporation process.



Two ammonia strippers are shown in the center of the picture

The below pictures demonstrate what two weeks of processing wastewater through the ammonia strippers does to the plastic packing.



Clean plastic packing



Dirty plastic packing



Once the plastic packing becomes full of scale the entire wastewater processing system has to be shut down. The cleanup process typically takes two people an entire day; the plastic packing has to be sprayed with water, while still inside of the ammonia strippers, vacuumed out, and sprayed again with water. Once cleaned the packing is put back inside the ammonia strippers.

**Proposed solution:**

A C45 device was installed on the 1.25" outer diameter metal pipe leading to the heat exchanger, with the goal of reducing the scale accumulation rate by 25%.



Heat exchanger

HydroFLOW C45



**Results:**

The *HydroFLOW* device was able to extend the time between cleanings by a factor of eight; the customer can now go 4 months before needing to clean the packing material, which reduced the cleanings per year from 26 to 3 times.

**Quote from customer:**

Per Jason Scobee, Waste Management Manager: "We are very happy with the results that we have seen from the *HydroFLOW* water conditioner. The wastewater process continues uninterrupted thus no longer risking a shutdown to the manufacturing process."

**Estimated Return On Investment:**

1-2 months due to reduced maintenance and manufacturing downtime.

**Referral Information:**

Please contact Roland Eppert, President of Hydrowerks in order to receive the customer's contact information.

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