

Case Study

FMR-F

Flo-MultiRake Fine Bar Screen

Andover Kansas Selects an Enviro-Care Flo-MultiRake Fine Bar Screen

Overview

Andover Kansas is a residential community adjacent to the city of Wichita. Its population of 12,000 has easy access to city life while enjoying the benefits of living in a small town environment. Andover boasts many parks and outdoor recreation areas to support the family-oriented lifestyle of this decidedly bedroom community.

While Andover gives the impression of a small town, it is a progressive community with an eye on growth. A good example of this is the City of Andover WWTP. The original plant was built in 1977 and upgraded in 1993 and again in 1996 – each time with the future and process improvement in mind.

The 1977 Andover plant was an extended aeration process with an oxidation ditch, clarifier and digester. A 1993 process improvement was undertaken with the addition of a reciprocating rake, coarse bar screen with $\frac{3}{4}$ " (20 mm) bar spacing. The goal was to remove solids at the head of the plant to reduce maintenance and improve downstream processes.

The 1996 upgrades were made for expansion and with an eye toward meeting future, more stringent discharge regulations. An activated sludge plant was installed with an aeration basin and two clarifiers. The aeration process was enhanced again in 2011 by increasing the oxygen supply in the aeration basin.



FMR-F 600 Andover, Kansas

Problem

The $\frac{3}{4}$ " coarse, single rake, climber bar screen was not removing enough solids from the influent. Too many solids were getting through the larger openings in the screen and causing expensive problems with downstream processes. Another process improvement was needed.

"The best kind of process improvement is one that pays for itself." states Brian Walls, Andover's Wastewater Superintendent. "In this case, the ongoing cost of cleaning the aeration basin, removing rags from diffuser tubes, unclogging RAS pumps and improving the overall performance of the process had an obvious payback calculation."

The Enviro-Care Solution

In 2012, Andover began to investigate fine bar screens with smaller openings and multiple rakes. Finer screening can remove significantly more solids from the incoming flow and multiple rakes remove the solids faster with less headloss.

A selection criteria was established. The new screen should be a turnkey, direct fit replacement of the existing screen and easy enough to install that plant personnel could do the job. Other requirements included simple maintenance that could be performed at ground level, ease of operation, and a long-term warranty.

The Enviro-Care Flo-MultiRake Fine bar screen with ¼" (6 mm) bar spacing ticked all the boxes. Installation was easy and was performed by plant staff. Startup was smooth and plant personnel were trained during startup.

Results

The equipment has performed well and there is a noticeable decrease in the amount of rags in the process. The plant estimates that the Flo-MultiRake Fine Bar screen is removing 2-1/2 times more solids than the old screen. All maintenance can be done from the ground level and there is no reason to enter the wet well area.

Brian Walls summed it up nicely. *"We had spec'd out the bar screen to be a turnkey, plug and go set up. When we got it, it was. We did the install ourselves and had an electrician run the conduit and wiring to code. The control panel was preprogrammed and only needed minor adjustments to fit our needs. The bar screen fit perfectly in the pre-existing channel we had. This was probably one of the easiest projects we have done here. Enviro-Care partnering with EleMech to handle the controls has been great. We had some minor bugs in the beginning but both companies were very quick to respond and even called back after it was solved to ensure once again that it was. That is customer service!"*

For more information, contact:

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Multiple rakes reduce headloss.

"The bar screen fit perfectly in the pre-existing channel."

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A turnkey, "plug and go" retrofit.

