PRIME SOLUTION

CASE STUDY: THE PRIME ROTARY FAN PRESS

SEGMENT	SOLUTION	LOCATION	LAUNCH DATE
Municipal Water And WWT Plants	Rotary Fan Press 2.0	Madisonville, KY	March, 2015

CONSTANT EVOLUTION

To see how our systems perform in the market and to hear from the people working on the equipment, we visit our installations from time to time.

In this way we get first hand information about performance, maintenance and many other things we need to know for future developments and improvements.

On August 26, 2015 we revisited one of the bigger installations in Madisonville, Kentucky.

This new Rotary Fan Press 2.0 type 48 Quad was installed in March 2015, and replaced a double belt filter press, installed in 1996, when the treatment system of Madisonville was built.

We are using a series of questions to gather all system information, but also the information of the day-to-day operations from the actual operators.

City of Madisonville
1715 AC Slaton Road
Madisonville, KY 42431

Operators:
Dean Durham and George Durham

Q & A

Q: How many employees are at this facility?

A: We have 11 people at this facility, and about 6 are trained and able to run the Rotary Fan Press.

Q: How much water does this facility treat daily?

A: It will vary, but on the average we are doing 4.5 MGD

Q: What type of sludge is treated with the Rotary Fan Press?

A: Secondary sludge.

Q: Is there any pre-treatment before the sludge is pumped into the Rotary Fan Press?

A: No, we are using the old sludge pumps to bring the sludge into the treatment building, from there the Rotary Fan Press system takes over.

Q: How old is the sludge that is dewatered?

A: On average the sludge is 36 hours old before we dewater it.

Q: What are the typical feed solids?

A: After checking regularly since the Rotary Fan Press was installed we know that we have 3-4%.

Q: What is the flow going into the Rotary Fan Press?

A: It depends on the volume we have in the tank, but we start with 70 GPM and slowly increase the volume to 100 GPM. We know we can go higher and the system will follow whatever we would like to do, but up until now 100 GPM is enough.

Q: What is the dry result after dewatering?

A: Amazingly the outcome is always stabile at 20%, no matter if the incoming sludge is lower or higher in solids the system is always automatically adapting. That is much different than the old system we had where we always needed to pay attention, to avoid hours of cleaning."

Q: What is the capture rate?

A: We do not know, the returned water is going back to the head of the plant, but from what we can see the water is cleaner than we are used to. During Prime's on-site demo we had an average capture rate of 98.9%.

Q: Where is the dry sludge going?

A: The containers with dry solids are going to the landfill, **but since we have the Rotary Fan Press the volume went down from 31 Tons to 19 Tons** so the transport of the dry solids is a cost savings too, compared with the old system.

Q: How many residential units are connected to this treatment plant?

A: We think a little over 28,000

Q: Who operates the Rotary Fan Press?

A: We have 6 people able to operate the system, and slowly we are gaining trust in the system so we can walk away and do other jobs. The Rotary Fan Press is so stable compared with the old belt filters. If we did not pay constant attention to the belt filter, if anything was off, it would cost us many hours of cleaning. This new system will sound an alarm if a setting is out of limits and will stop, without polluting the whole building!

Q: What was the reason for choosing the Prime Rotary Fan Press over other options on the market?

A: Our manager, Alan, found the Prime system at one of the trade shows, together with centrifuges and a different fan press system. He requested an on site test from each system and the Prime system was performing the same as the centrifuge, but the centrifuge was using much more energy and force to dry the sludge. The other fan press system was close to the performance of the Prime system but was clearly built differently. That system was built with many more moving parts which can be a maintenance nightmare.

Q: Can you tell us why the Prime Rotary Fan Press was standing out from all other investigated options?

A: We looked at the maintenance and the energy consumption, and for both chose the Prime system. But besides that, the system looked clean and simple to operate. During the on site test, the Prime Solution system was running while the operator was talking to our manager. We, as operators, could not lose a moment of attention to the belt filter system, to avoid many hours of cleaning. All together the Prime system was matching our needs and expectations.

Q: Did you encounter any challenges implementing the Rotary Fan Press, and how did you surmount them?

A: Actually, the only thing we had trouble with was the removal of the old belt presses. They were so big and heavy that we spent more time removing them than the time we spent installing the Prime system. We also had the time to prepare the building for the much smaller Rotary Fan Press!

Q: Are there any more things you like to let us know about the Rotary Fan Press system?

A: Well, we do like the simplicity of the system. It is simple to start and to operate, we can experiment with polymers and settings without compromising the results. As mentioned, we are gaining confidence with the automatic settings of the system. We can do other job's and let the system run without supervising for long periods of time. If we need to put a number on the maintenance difference between the belt filter and the Rotary Fan Press it would be 1 to 10.

Q: How is your experience working with the Prime Solution team?

A: One thing we like to mention is that when Kyle, one of the Prime service engineers, did mess up the system by entering something wrong, he apologized and corrected the system immediately. For us, it was a good sign of the way the Prime team works. They are honest and treat us as partners. Also, during training they helped us until we really understood the system. It is very clear that we made the right choice and if you have customers who would like to hear our story, please have them call us.

NOT ALL SLUDGE IS CREATED EQUAL.

The Prime Rotary Fan Press
was designed to handle most common sludges, producing high cake solids and capture rates, while requiring less space, power and maintenance. It's strength is in it's simple design.

The Prime Rotary Fan Press 2.0
was designed for sludge that releases moisture at a slower rate. This ultra-advanced, simplified low-shear dewatering device with a patented internal mixing element will give you drier cake solids with higher throughputs at a lower cost.

The Prime Rotary Fan Screw Press®
is ideal if you need larger throughput in a smaller space. The RFSP uses the same reliable technology of the Prime Rotary Fan Press®, with the added technology of an additional compression zone and screw press technology. It's the best of both worlds.