Huber's Screw Press Helps Cardston WWTP Make Positive Impact on Community

"The Huber Screw Press has become the premiere piece of equipment in this plant. If we had known the quality of Huber's solutions, we would have chosen their fine screens over the ones that we selected a few years ago."

Barton W. Atwood, Water & Wastewater Utilities Foreman

The City of Cardston's Wastewater Treatment Plant is aging yet still performs well in providing the services that its population needs. The close knit community has had some issues with odors from the WWTP but it is a trade-off for free fertilizer the plant provides to local barley farmers.

One of the ways that Cardston has maintained WWTP performance is by employing leading technology within the wastewater treatment process. What the citizens of Cardston didn't know was that when the WWTP chose to install Huber's RoS3Q Screw Press, it would not only improve performance, but it would also change the plant's role in the community.
Water and Wastewater Utilities Foreman, Bart Atwood, had researched liquid separation solutions and formulated these goals for implementing new press technology:

- **Upgrade to current technology**
- **Improve the quality of end-products (water and biosolids)**
- **Reduce odors that caused community complaints**
- **Reduce costs associated with separation/pressing**
- **Increase efficiency for operators**

"I would never grab a handful of end product before in my bare hand – but I will now because it never leaves residue on my hands and it doesn't stink. With the belt press, my hand would have been filthy. The screw press processes our sludge dry and clean so that it doesn't even get you dirty. You can put your nose right up to it and there is no smell at all."

Issues:

Bart's existing belt press represents the old approach to liquid separation. There are new approaches to this process that include the screw press and centrifuge. Bart's research led him to the conclusion that the screw press type of solution would best help him meet his goals.

After visiting several installations of Huber's RoS3Q – and observing its simple yet effective operation firsthand – Bart made the decision to bring the Huber technology into the Cardston plant.

"The Huber screw press in particular is quiet and there is a minimal amount of water used for washing. Water conservation has been huge. We've gone from using 150 cubic meters a day to 100 cubic meters a week. The electrical demand is also much less than that of other presses out there. Overall, Huber's solution produces great results in conserving water and power."

Solution:

Bart and his team immediately noticed the small footprint of the RoS3Q. The new screw press took up less than half the space that the old belt press had occupied. This was striking for the operations team but not as striking as the fraction of time they needed to spend managing the screw press. While the belt press needed constant attention, the screw press required nothing past being turned on and off.

It seemed to Bart that he had gotten an additional team member because one of his operators was freed from the duty of tending the belt press.

There was another notable difference with the new technology: No odor. The screw press

more effectively separates the water from the biosolids – practically creating a dryer solid end-product. The resulting water is cleaner than the water that comes into the headworks and produces no gaseous odor as it is fed back into the channel as the water does in the belt press process. This was critical for Bart in fulfilling his goal of improving the plant's impact on the community.

"The odorless factor is tremendous and undoubtedly the most obvious to our community. This was a huge worry for me because I wanted to make our process better for our neighbors. With Huber's screw press, we have no odor complaints from the community. We want to be good citizens of the community. Eliminating odor was part one of that.

Premiere piece of equipment in the plant

The RoS3Q performs so efficiently that is has become the star of the show for Bart's team. The cost savings alone could earn it notoriety. After all, the savings impact man hours, transportation, storages and resources.

- It saves Bart's team time because it requires no operational management.
- It saves in trucking costs, spreading costs and storage costs because the biosolids are dryer and easier to handle. Prior to the RoS3Q, Bart's trucks ran two times a day. After implementing the RoS3Q this schedule was reduced to two times per week.
- It helps Cardston conserve water and electricity by requiring less of each to operate.

The automation bonus

The automation built into the RoS3Q gives Bart's team freedom. They are able to control shutdown and startup by just logging in. So issues that would have previously brought them into the plant from home during the night can be stopped remotely and addressed by the morning shift without impact to performance, maintenance or daily flow.

Obvious plant benefits keep aging plant competitive

Cardston WWTP has realized the powerful benefits of the RoS3Q. Although Cardston WWTP is older (30 years of operation) than some of the treatment plants of neighboring cities, it maintains its competitiveness – even in sensitive areas such as compliance. Cardston WWTP's chemical compliance test results have improved since installing the RoS3Q. Their compliance was never jeopardized with previous technology, but, as Bart notes, it is always good to have a wider margin in that area.

The RoS3Q is a solution that performs liquid/solid separation that:

- Requires less space
- Operates quietly
- Is really odorless
- Conserves water and power
- Is simple to maintain, operate

Industry insight enables Huber to gear its solutions to the demands and concerns of the wastewater treatment plant environment. For example, consider corrosion and simplicity. Corrosion is a big concern within an environment that is wrought with it. Huber manufactures everything from stainless steel so that corrosion is never a factor. Performance in a WWTP plummets when any component isn't simple for users to manage. Huber designs simplicity into every aspect of its solutions.

Becoming a good community citizen

Of utmost importance to Bart of implementing Huber's RoS3Q is how it has helped the plant become a better citizen of the Cardston community. While the conservation benefits in both water and energy have caught the attention of the neighbors, the most shocking change has been in the absence of odor surrounding the plant and its fertilizer. No longer do residents complain about foul smells emitted from the plant nor do they hold their noses when a plant truck makes a fertilizer delivery to a local farmer.

Four performance factors help Cardston WWTP become a better citizen:

1. Water usage has dropped from 150 cubic meters a day to 100 cubic meters a week.
2. Electricity demands are much less than with the previous belt press system.
3. Fewer truck routes to deliver biosolids reduce fuel consumption.
4. Cleaner processing eliminates odors that are offensive to neighbors

Durability, reliability and support

The RoS3Q is rock solid. Its stainless steel design keeps the screw press in mint condition. Its performance gives Bart and his team total confidence that the RoS3Q will just work. They can depend on it. Huber's customer support is also rock solid. The Cardston team can depend on immediate responses at the rare points that they actually need answers or help. Huber's support experts are available with assistance. When deeper expertise is required, Huber connects the best resources with the customer.

Huber's experience with municipalities and with wastewater processes is extensive as is its knowledge of the technologies it provides. This industry-technology insight allows Huber to work with organizations to ensure that systems are geared to perfectly match up to immediate tactical challenges and long-term strategic goals.

City of Cardston Wastewater Treatment Plant
Location: Cardston, Alberta, Canada

Website:
http://cardston.ca/residents/fees-rates-taxes/utilities

Facilities: 1
RoS3Q® Screw Press
The WWTP has a plant capacity of 11,000 cubic meters per day and manages an average daily flow of 4450 cubic meters.

The facility, which was built in 1983, has direct inflow from distribution system. The process is simple – a grinder with no preliminary treatment – sending direct screening to an RBC basin. Secondary treatment is provided by clarifiers - the end treatment of the water. From the clarifiers send biosolids to digesters where they are aerated and pressed out for land application.

Huber serves the municipal and industrial wastewater treatment market with high quality liquid-solid separation technology. Huber Technology offers the complete chain of screening, grit and sludge handling processes. The company is an original source manufacturer specializing in stainless steel fabrication of technologies for water and wastewater. Headquartered in 35,640 sq. ft. of office and manufacturing space in Huntersville, N.C., Huber Technology, Inc. Huber proven experience and expertise with over 25,000 installations worldwide.

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