

Dewatering Technology Dramatically Improves Operations at Robinson WWTP



“There has been a total dynamic transformation in our plant. The difference in the environment where we work every day is as different as day and night. It is a total paradigm shift. We can’t say it enough: ‘We love our Q-Press!’”
- Lawrence Quick, Superintendent of Public Works, Robinson WWTP

Robinson Wastewater Treatment Plant had technology in place, but it was a 1982 model belt filter press that - on average - produced a 15-18% solids end-product. Due to that degree of dryness, the sludge would not stay stacked up in the sludge storage building thus drastically reducing the plant’s limited storage space. Lawrence Quick and his team at Robinson WWTP knew that it was time to update their sludge dewatering process and they knew that better technology was out there.



The solution that Robinson WWTP chose for their technology upgrade was HUBER's Q-Press®.

Simple Solution for Simple Goal

What Quick and his team at Robinson WWTP really wanted was dryer sludge. That's pretty simple. Is it just coincidence that what attracted them to HUBER's Q-Press was its simplicity?

"The screwpress has a very basic design. It has few moving parts and requires very little effort to operate and maintain. We turn it on and it operates on its own. An operator checks the screw periodically for any type of alarm (which is infrequent), but that's it."

- Lawrence Quick, Superintendent of Public Works, Robinson WWTP

The Q-Press requires:

- Little effort or time to operate and maintain.
- Minimal schedule maintenance or repairs.
- Less space than the belt press.

The Q-Press unit is totally enclosed, so there is no splashing and spraying of wastewater in its vicinity. It is operationally efficient at removing solids, producing dryer and lighter sludge and discharging a much clearer filtrate water. Because of the screwpress, Robinson has been able to reduce their WWTP's total activated sludge solids inventory from

"Dryer sludge is very easy to handle. It compacts into light, stackable cake that allows us to use vertical space that we could never even consider as storage space before."

- Lawrence Quick, Superintendent of Public Works, Robinson WWTP

300,000 to 100,000 lbs. Since the sludge is dryer (avg 28% Total Solids, the shortage of storage space is a non-factor since dewatered sludge stays stacked up instead of running back down and occupying more of the limited floor space.

Here are a couple of beltpress-to-screwpress comparisons that Quick provided:

- 1** If the beltpress ran for more than 1 day per week, the wet sludge it produced would quickly fill the plant's storage. If too much sludge was produced, the storage building would get full and daily wasting at the plant would have to stop. The screwpress operates 4 days a week and never overloads the storage building since the sludge can be stacked to the ceiling.
- 2** Since switching to the screwpress, Robinson has been able to reduce the sludge blankets in their secondary clarifiers to around 1' - 2'. Before the screwpress, Robinson's secondary clarifiers were consistently around 12' - 13'. Additionally, due to the very high sludge age in the activated sludge system, dead bacteria collected in the stilling wells of the clarifiers and would require the use plant water spray to control it. This also created a scum layer on the surface of the clarifiers. Those issues have gone away and are not problems now.
- 3** The filtrate water is very clear on the discharge of the screwpress. In essence, the solids capture rate is very efficient so we do not return sludge back to the head of the plant. The old beltpress



had a terrible solids capture rate so we were reprocessing a lot of sludge that should have been removed from the system.

The Character of Sludge

From smelly soup to neat, low-odor cake, the character of Robinson WWTP's sludge changed. But these weren't the only changes. The amount of ammonia nitrogen in the sludge tripled. This sounds impressive, but what does it really mean? It means that the local farmers who use Robinson WWTP's sludge are thrilled! When it comes to the semi-

annual sludge land application events, the dryness of the final sludge makes it much easier to handle and generates much less odor.

Day-and-Night Difference

Quick and his WWTP team have noticed:

- A reduction in manpower for sludge processing.
- Improvements to sludge handling and storage.
- Improvements in sludge quality and filtrate clarity.
- A cleaner and less odorous plant atmosphere.
- Reductions in budgetary items associated with this process (maintenance and repairs).



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 with proven experience and expertise with over 40,000 installations worldwide.