



San Diego Experiences Benefits Beyond Contaminant Reduction

“The removal of contaminants or screenings, such as hair, fiber and sand from raw sludge was crucial to ensuring maximum efficiency within our digesters and throughout our treatment process.”

Ted Taylor, Senior P.T. Supervisor

Because inadequate screening was allowing hair, fiber and sand contaminants to work their way through its treatment process, The City of San Diego Public Utilities Department Wastewater Branch (the Branch) sought out sludge cleaning technology that they could integrate into their existing system.

In an interview with Senior Plant Technology Supervisor, Ted Taylor, Huber Technology learned how its sludge screening technology helped Ted and his crews realize benefits that reached far beyond simply reducing contaminants.

By putting six Strainpress® SP4 In-Line Sludge Screens units in place, the Branch realized benefits far beyond digester efficiencies.



“Strainpress® technology helps us reduce the burden on our pumps, our heat exchangers and our maintenance crews. We’ve significantly reduced costs that go along with these factors and we haven’t even included cost reductions in plant energy use and saved downtime.”

In addition to heightened performance, Ted and his crews have experienced:

- **Reduced downtime**
- **Reduced maintenance demand**
- **Extended equipment life cycle**
- **Fewer replacement parts**
- **Higher quality sludge end-product**
- **More efficient burning methane gas**

Challenge:

The Branch noticed heating and mixing problems as well as a significant build-up of sand at the bottom of its six digesters. It was discovered that this problem resulted from the inadequate screening of raw sludge. They were regularly cleaning a 10 to 15 foot layer of hair, plastic and grease from the top of the digester. These issues contributed to inadequate mixing within the digesters.

Faltering digester performance manifested in:

1. **Reduced gas production**
2. **Quality issues with end-product sludge**
3. **Frequent need for cleaning and repair**

Accompanying the performance issues were maintenance difficulties that consumed significant repair technician hours and increased the department’s replacement parts costs.

A Strainpress® pilot was tested using temporary piping outside of the digesters. The success of the test resulted in an upgrade to the treatment plant that included the installation of the fully integrated Strainpress® SP4s as feature of the plan.

Solution:

The Branch originally put five Strainpress® SP4 In-Line Sludge Screens units in place at its Point Loma facility. The technology was so beneficial that the five existing units were upgraded and an additional unit purchased, bringing the Branch’s grand total of Strainpress® sludge screens to six.

The Strainpress® systems screen sludge in-line without breaking line pressure. It is implemented within the existing structure to keep the process working very smoothly. Screenings are filtered out along the way. The equipment down the entire line is less prone to breakage and experiences reduced stress.

“We noticed stark increases in the performance of treatment equipment, such as the digesters, and increased efficiency across our entire process.”

Less matted hair & fiber = Improved process efficiencies

With less contaminants making their way through the whole process, performance indicators immediately showed improvements.

Less matted hair & fiber = Less maintenance & repair

After the Strainpress® implementation was complete, the maintenance team was able to reduce the frequency it cleans their twelve heat exchangers from a monthly to a quarterly schedule.

Additionally, far fewer repairs are needed, resulting in decreased parts, labor saving, and less process downtime. For example: Chopper pumps are used to re-circulate sludge during the treatment process. Because almost all the screenings and fibers that were causing

the problem at the chopper pumps are now extracted by the Strainpress® SP4, the chopper pump's lifecycle has been extended.

Less matter hair & fiber = Higher quality end-product

The quantity and quality of the methane gas have greatly improved as well as the sludge end-product.

Methane gas produced in the digesters is used to internally generate electricity. The Branch sells its surplus methane gas energy (enough to supply 2000 homes per month) to the electric grid.

Sludge is pumped to the metro bio-solid facility and used in soil augmentation. Improving the quality of its sludge enables the Branch to keep its sludge end-product graded at the level required for soil additive use.

"A reduction from 12 to 4 may not sound like much, but when you multiply the frequency by our dozen exchanges it is significant. 144 yearly cleanings are reduced to 48 that is a tremendous 67% reduction in workload and costs."

"Making sure that we do the best possible job in removing contaminant screenings before they reach the anaerobic digestion phase helps us maximize our potential for generating end-product. Without the Strainpress® Sludgecleaner SP4 technology, we would not produce the quantity or the quality methane gas and soil additive that we produce from our bio-solids today."

**The City of San Diego Public Utilities
Department Wastewater Branch**

Website:
<https://www.sandiego.gov/mwwd/facilities/ptloma/>

Facilities: 6

Strainpress: 6

Service Area: 450 square miles
in habited by 2.2+ million residents

Water Supply: 90% imported



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.