

Huber Technology Inc. Q-Press 440.2 Pilot Test

City of Sandpoint WWTP
723 S Ella Ave
Sandpoint, ID 83864

Test Date: September 9, 2024 - September 13, 2024



Attendants	Position	Association
Nicolas Hall	Technician	Huber Technology, Inc.
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1. Facility Specifications and Requirements

Table 1 Facility Details

City of Sandpoint WWTP	
Design Daily Flow	4.1-5.3 MGD
Sludge Type	Anaerobic
Sludge Age	28
Waste Sludge Flow	35,000 GPD
Solid Content	1.52%
Volatile Solids	77%
Existing Solids Handling	SHROOK - SIMON - HARTLE

2. Pilot Test Results

Table 2 represents the schedule which was followed throughout the testing period.

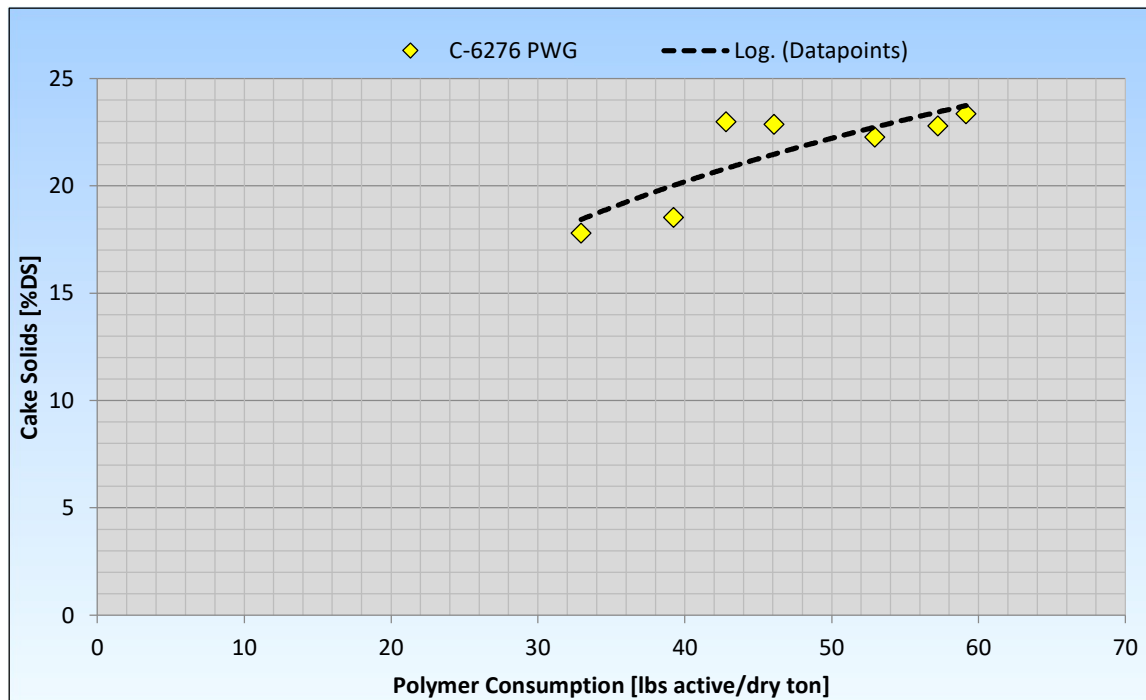
Table 2 Pilot Test Schedule

Day	Test Runs	Sludge Type	Polymers Used
Monday	Arrival / Setup	N/A	N/A
Tuesday	1 to 5	Anaerobic	C-6276 PWG
Wednesday	6 to 17	Anaerobic	C-6276 PWG
Thursday	18 to 25	Anaerobic	C-6276 PWG
Friday	Cleanup /Departure	N/A	N/A

2.1 Polymer Dosing Effect on Cake Solids

The screw press was operated with one polymer and multiple dosing rates ranging from 33-59 lbs active/dry ton. Figure 1 illustrates the effect that the polymer dosing had on the cake solids.

Figure 1 Polymer Dosing Effect on Cake Solids



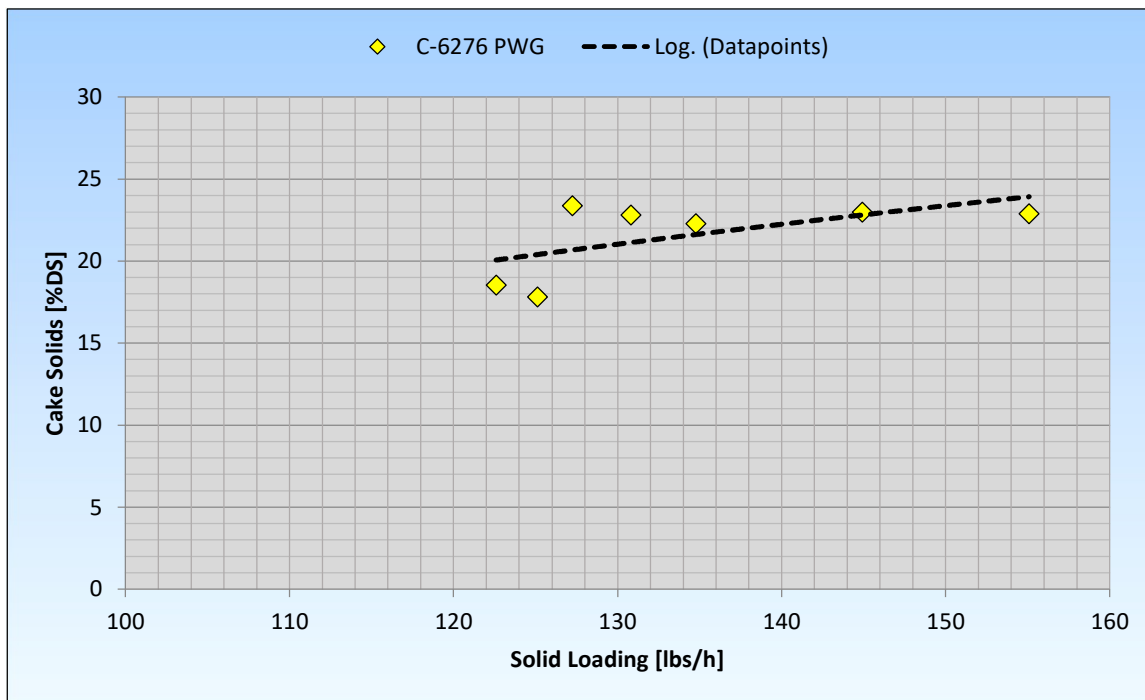
The cake solids were produced between 17.8% to 23.4% when using a polymer consumption of 33-59 lbs active/dry ton. The dry solid content is increasing with the increase of polymer consumption. The optimal polymer dosing range is between 40 and 53 lbs active/dry ton.

2.2 Solid and Hydraulic Loading Effect on Cake Solids

The screw press was operated using sludge with an inlet solid content of 1.5% and 1.8% DS. The sludge flow rate was set between 16.8 and 16.8 GPM resulting in a maximum solid loading of 155 lbs/hr.

The solid loading certainly affects the performance of the screw press and there is always an optimum loading for a certain set of parameters. Figure 2 shows that the median cake solids achievable with these parameters was 22.8 % DS.

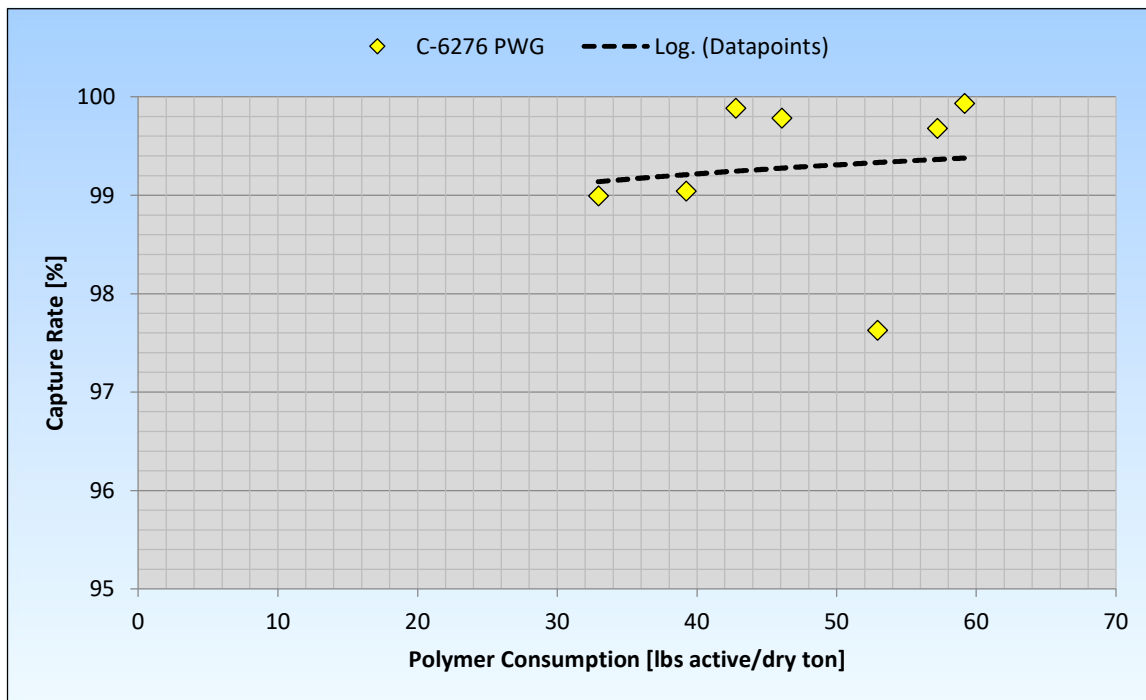
Figure 2 Solid Loading Effect on Cake Solids



2.3 Capture Rate

The median capture rate remained above 95% throughout the pilot demonstration. The capture rate is influenced by the polymer consumption which may be seen in the figure below.

Figure 3 Polymer Consumption and Capture Rate



As shown in Figure 3, the capture rate stayed consistent with increasing polymer consumption. The first few data points show a lower capture rate which is typical during the initial press setup. Once the optimal settings are determined, consistently high results can be expected.

3. Conclusion

The pilot test proved the capability of the Huber screw press to dewater the sludge at the City of Sandpoint WWTP. The optimal performance condition for the Q-Press was selected based on the data collected and is shown below in Table 3:

Table 3 Sludge Test Conclusion

Sludge Parameters	Optimum Running Condition (C-6276 PWG)
Flow Rate (GPM)	16.8
Solid Loading (lbs/hr) at % Feed Solid	135 at 1.6%
Polymer Consumption (lbs. active / dry ton)	40-53
Cake Produced (% DS)	18-22
Capture Rate (%)	>95
Screw Press Operational Parameters	Optimum Running Condition (C-6276 PWG)
Inlet Pressure (PSI)	1.4
Inlet Pressure at Min Speed (PSI)	2.0
Dilution Strength (%)	0.37
Screw Speed (%)	20.0

For the Anaerobic sludge, cake can be expected to be consistent in the range of 18%-22% with a filtrate which is clear and almost without any solids during dewatering mode when using between 40 and 55 lbs. active / dry ton of the polymer. Capture rate was observed to be above 95% throughout the pilot demonstration. HUBER recommends feeding the machine from a sludge source that is well mixed so that feed solids does not fluctuate and the unit produces consistent results.

We here at Huber Technology would like to extend our gratitude to everyone who participated in the safe and successful Q-Press 440.2 pilot tests this week at the wastewater treatment plant in Sandpoint, ID. We enjoyed the opportunity to present Huber Technology's capabilities of helping your facility operate at a more sustainable and efficient level of dewatering. Huber Technology looks forward to providing your facility highly reliable products in the future.

Appendices

Appendix A – Q-Press 440.2 Pilot Test Photos

Pilot Cake



Pilot Filtrate

