

College Station Water Services Department

City water distribution and treatment systems are a public service designed to provide clean and sanitary water to its citizens, remove waste water and maintain a healthy environment. In College station water is pumped out of the aquifers by eight different wells, it is then transferred 20 miles to the water pumping stations. Here it is sanitized before then being sent to the water towers. From the water tower gravity is the main driving force that sends it into homes. After the water is used it is now called waste water. The waste water goes through a multitude of steps to cleanse it such as filtration, aeration, biodecomposition, and UV light. After all of these steps it is then released into local streams.

Description of Experience

This summer, I have been interning with the College Station Water Department and have been able to learn how the systems work first hand. My duties and responsibilities would include assisting the wastewater laboratory in collecting and testing samples of water, providing support to the environmental technicians in the collection of bacteriological samples, perform water flushing, and any other duties assigned by my supervisor.



Left: Pete and I were performing what is known as a flushing. After construction crews install new water lines in developing neighborhoods, they hyper-chlorinate the lines to prevent bacterial growth. These lines must then be flushed out until the chlorine levels are back to normal.

Pete showed me all of the tasks that must be done in order to maintain water throughout the city.

Right: Camera crew inspecting and recording footage from inside a 6 inch water line. The camera crews do two main tasks; they search for causes of current problems so that they may be fixed, and they record footage for engineers to watch looking for any thing that my cause problems in the future.



Left: Cheryl performing an Ammonia test. When working with Cheryl she taught me how to perform the standard daily tests done in the lab. These included tests on BOD (Biological Oxygen Demand), *E-coli*, Ammonia, pH, DO (Dissolved Oxygen), and TSS (Total Suspended Solids).

Right: Charlie removing ash samples from furnace. Charlie showed me the process of how the waste water plant functions (basic diagram top right), how various types of samples are collected (whether it be water or sludge samples) ash tests and 30 min settlings. Most of what Charlie does is test to maintain a healthy "activated sludge" which is composed of bacteria, protozoans, and macro invertebrates. These microorganisms feed off of the organic matter present in raw sewage.

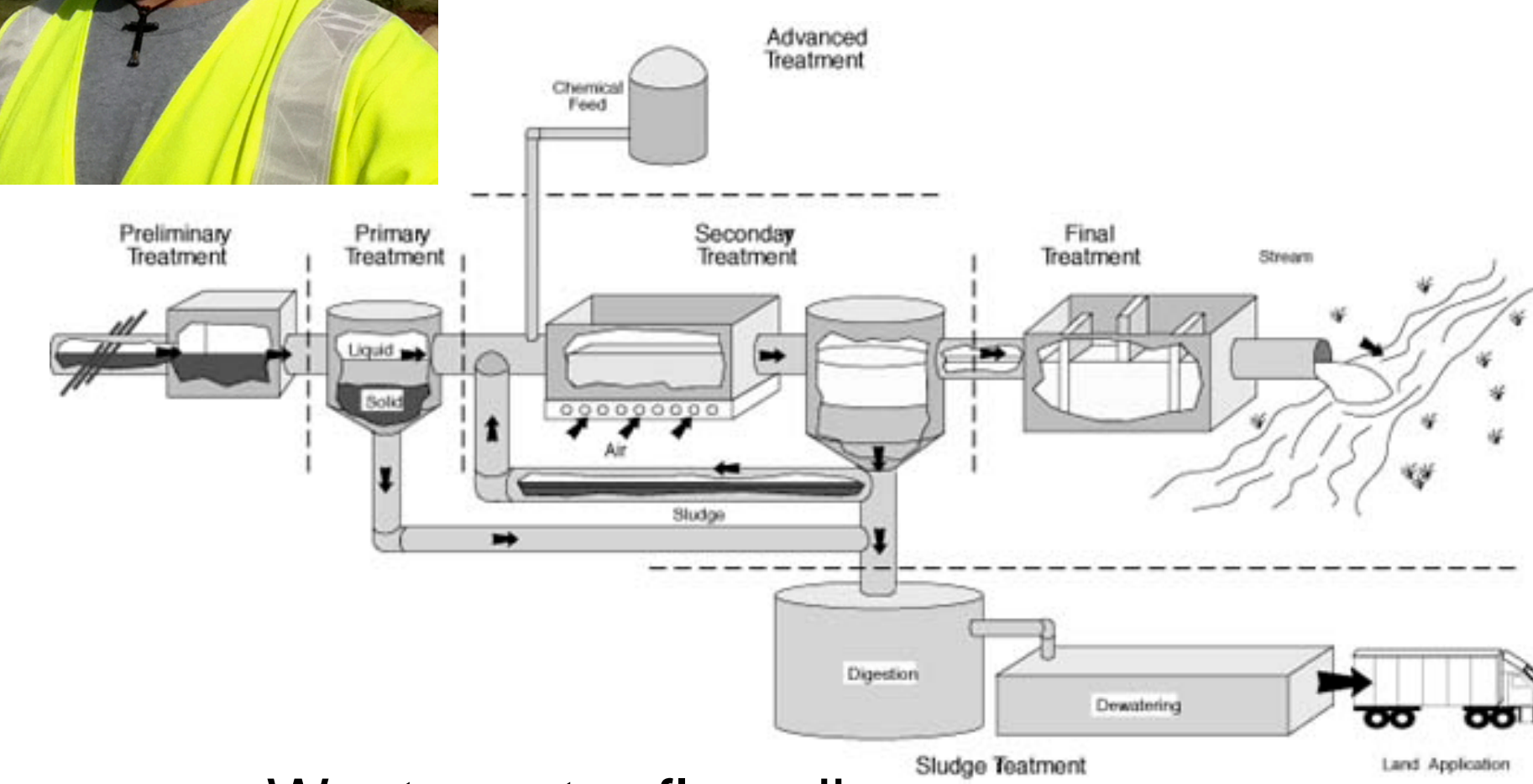


Internship Objectives

How do water distribution, wastewater treatment, and environmental systems function to provide necessary services for citizens in Texas cities?



My goal was to expand my knowledge and have a better understanding of water systems and be able to apply this knowledge to arising environmental problems in my future career.



Waste water flow diagram



Relationship to Career Goals

As a bioenvironmental sciences major with intentions to pursue a career in the environmental sciences, I maintain a personal interest in how water is treated and how it affects the environment. I would like to pursue a career doing research as an Environmental Specialist, with responsibilities to survey land, collect water, core and biotic samples, and test the overall health of biomes and ecological niches. I feel that learning how to test water samples in the lab was undoubtedly a transferable skill to my future career. By working with water services I have also increased my knowledge on contaminants to look for in water samples as well as larger more global water issues.

References

City of College Station : Water Services. (n.d.). Retrieved from <http://www.cstx.gov/index.aspx?page=821>

Woody Hayes Dr (n.d.). *Wastewater Treatment Principles and Regulations*, AEX-768-96. Retrieved from <http://ohioline.osu.edu/aex-fact/0768.html>

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