

City Of Oak Ridge Wastewater Treatment Plant

The city of Oak Ridge operates two wastewater treatment facilities that are staffed 365 days a year. The two plants treat an estimated 5.6 million gallons of wastewater a day and a combined 2.1 billion gallons a year. The operators at the wastewater plant perform daily operations of the main wastewater plant and the Rarity Ridge wastewater plant. These operations include running control tests on the different treatment process, evaluating the test results and making any necessary adjustments in the process to protect the receiving streams. The operators also perform upkeep, assist in collecting samples and lend a hand in required laboratory work.

During this eight-week internship, my responsibility covered completing samples, recording data, performing lab tests, and monitoring the equipment used throughout the process. My daily responsibilities consisted of morning rounds and sample collections such as mixed liquor, effluent, influent, digester supernate, press filtrate, waste, sludge, and press cake. After all samples were collected, the next process was analyzing the samples in the lab which consist of pH testing, alkalinity, total suspended solids, ammonia, nitrate, nitrite, biological oxygen demand on effluent and influent, and settleable solids. Both treatment facilities also had to test for radiation in its sludge due to the amount of factories in the vicinity that deal with radioactive materials. This is one of the very few

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wastewater treatment facilities required by the state and EPA to test for radiation in the country.

I was able to make a difference in this internship by stepping in from the first day and helping with everyday tasks. For example, I was able to lend a helping hand to the lab technician allowing the daily labs to be completed much earlier than normal and allowing the technician to help me learn the lab process by running duplicate tests to check our work for the remainder of the day. Also, my age and physical abilities enabled me to climb up and down ladders and complete samples quicker, allowing my co-workers more time to check daily maintenance logs and record data that is required for the NPDES permit for the EPA.

The eight weeks I have spent working at the wastewater plant has taught me many life lessons. This experience has helped me grow in the field of work I intend to pursue after graduation this spring. One of the main lessons learned is you have to get your hands dirty in the environmental science field. This job required a strong stomach and an ability to get the job done that you were tasked with, no matter how dirty, nasty, or stinky. Another lesson learned was the amount of regulations the EPA enforces and how much paper work and permits go into running a wastewater facility, not to mention the fines and investigations if an overflow event occurs. This internship has been a real

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eye-opener into the real-world work force and how important it is to keep a healthy operation and not violate any state or federal permits.

Another thing this internship taught me was how to work with older co-workers and how to successfully communicate with one another. A vast majority of my co-workers were able to retire at any time or were only a few years away. This will be a helpful skill in my career field, and in everyday life situations. I plan to take what this experience has taught me and go full force into the work world after graduating this spring. This opportunity has done nothing but reinforce my love for the career field I have chosen. I plan to take the knowledge obtained in this internship and make improvements to the processes learned to hopefully allow better technology at better prices for small to mid size municipalities. This will help keep our water clean, improve wastewater treatment, and keep the EPA fines to a minimum, which can be crippling for small to medium-sized municipalities. This new technology could also be helpful to larger or older treatment facilities that are having sewage failures due to urban sprawl and old-age equipment failures.