

Isabelle Endsley

19 July 2024

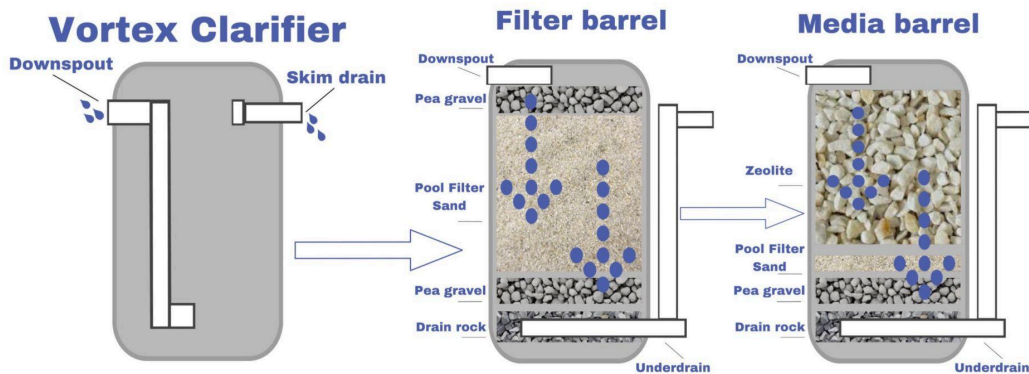
FURSCA, Summer 2024

### End of Summer FURSCA Report

Throughout my summer research, my focus has been to reduce the amount of contaminants of Zinc, Iron, Copper, and Lead in the tap water of Albion and Marshall Michigan. Tap water contamination can occur through transportation and exposure to pipes that can contain contaminants. In large amounts, these contaminants can have negative health impacts. Since water is essential to all communities, proper treatment is imperative. I spent my summer constructing a water filter and researching water treatment processes. The overall goal was to take pre-treated water samples from Albion and Marshall and utilize my filter to try and reduce the number of containments. Another aspect of my project was educating myself and others on the importance of water treatment and creating a solution for communities with poor water quality.

Now that my summer research is over, I am glad to say that I achieved some of my goals. I was able to successfully construct a water filter. This filter consisted of three different barrels, a vortex clarifier, a filter barrel, and a media barrel. These barrels utilized different types of media that helped reduce the levels of contaminants. Attached below is a diagram that shows the components of my filter as well as what the completed water filter looks like. Another aspect of my project was to take water samples and test the levels of contaminants. Unfortunately, I was not able to get data to try and complete my overall goal of reducing contaminants. Throughout my project, I have learned that collecting samples and doing lab testing can take a long time. I

was not able to obtain results by the end of my FURSCA research, however, I have personally gotten more out of this project in knowledge and connections.



Overall participating in FURSCA has given me knowledge that I will use throughout my future career. I am a rising senior and am in the combined engineering program at Albion College. I plan to go into water treatment in the future. By focusing my project on water treatment I have been able to gain experience in a field I want to go into. I also have made connections with people in the water industry because of FURSCA. I have been able to work alongside the Albion water treatment department and have been able to truly see what the water treatment industry is like. While still attending Albion College, I plan to present my summer research at the 2025 Elkin R. Isaac Research Symposium. I will also utilize my research to form my undergraduate honors thesis regarding water treatment. Overall this research experience has impacted my life positively. It has given me an insight into what my future career will look like. With the knowledge and connections that I have gained this summer, I am now even more passionate about water treatment. This experience has also allowed me to educate myself as well as others on why water treatment is important I would like to give special thanks to the Robert M. Teeter Research Endowment for allowing me to partake in FURSCA. I will forever be grateful for all FURSCA has given me!