

Capacity Analysis of AbbVie's Ultrapure Water Systems

A Major Qualifying Project Report

submitted to the Faculty

of the

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In partial fulfillment of the requirements for the

Degree of Bachelor of Science

by

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Approved:

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*This report represents the work of WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see <http://www.wpi.edu/academics/ugradstudies/project-learning.html>*

AbbVie is a global biopharmaceutical company which focuses on patient care and sustainability. Our team worked with the Worcester, Massachusetts AbbVie site to evaluate their current United States Pharmacopeia Purified Water (USP PW) usage and capacity. AbbVie's USP PW distribution systems were modeled to determine average flow rates, number of times their Storage Tank is filled per day, and current capacity of their piping systems. A theoretical analysis was also conducted by increasing the Storage Tank's current level operating band. The data collected was used to make recommendations to mitigate any identified constraints in preparation for future expansion.

This MQP contains information deemed confidential to the business interest of the industrial sponsor. Please contact Stephen Kmiotek at [skmiotek@wpi.edu](mailto:skmiotek@wpi.edu) for additional information.