April 2019

Capacity Analysis of AbbVie’s Pharmacopeia Purified Water System

Ashley Nicole Blanchard  
*Worcester Polytechnic Institute*

Dominique Tia O’Halloran  
*Worcester Polytechnic Institute*

Olivia Rose Verdone  
*Worcester Polytechnic Institute*

Follow this and additional works at: [https://digitalcommons.wpi.edu/mqp-all](https://digitalcommons.wpi.edu/mqp-all)

Repository Citation
Capacity Analysis of AbbVie’s Pharmacopeia Purified Water System

A Major Qualifying Project Report

submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

In partial fulfillment of the requirements for the

Degree of Bachelor of Science

By:

___________________________________
Ashley Blanchard

___________________________________
Dominique O’Halloran

___________________________________
Olivia Verdone

Date: April 19, 2019

Approved:

___________________________________
Professor Stephen Kmiotek, Major Advisor

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 site to evaluate their current United States Pharmacopeia Purified Water (USP PW) system usage and capacity to determine the feasibility for expansion. Our project focused on the USP PW storage tank in which we conducted an analysis to determine average flow rates, number of times the tank is filled per day, and the current capacity of their piping systems. We also conducted a theoretical analysis to assess the feasibility of utilizing a higher operating band. Using these findings, our team was able to identify any capacity constraints of the USP PW system. We then created provided recommendations to AbbVie to mitigate the identified constraints.

This MQP contains information deemed confidential to the business interest of the industrial sponsor. Please contact Stephen Kmiotek at sjkmiotek@wpi.edu for additional information.