

Project Overview

Nebraska Industrial Assessment Center Intern: Jacob Voigt

Major: Chemical Engineering

School: University of Nebraska-Lincoln

Summer Activities

Over the course of the summer, I was involved in four assessments. For these assessments I looked into eight possible recommendations of which five resulted in feasible opportunities and full recommendations. In addition, I worked to prepare and revise case studies for previous P3 interns.



Recommendations Description

In my first assessment I focused on the operation and use of the chiller, for which I prepared an AR to install a VFD on one of the chiller's compressors as this would reduce energy use. My second assessment was at a wastewater treatment plant. I worked on an AR to implement waste limits for the facility to reduce the large amount of industrial loading the facility receives. Additionally, I prepared an AR as to how ventilating the blower room would improve blower efficiency and reduce replacement costs. For the third assessment I worked on reduction of infrared oven heat loss resulted in feasible implementation. For the fourth assessment I was the lead student in preparing the full report for the facility and worked on a recommendation to install a deduct meter for the facility's irrigation system to reduce sewer costs.

My special project this summer was the preparation and revision of case studies for previous P3 interns. For this project, I prepared two new case studies and revised one previous case study. In addition to the case study reports, I prepared documentation on EPA impact reporting Excel sheets to officially document the impact of P3 interns work for the three facilities.

Results

The pollution prevention benefits and results prepared by the intern are summarized in Table 1:

Table 1: Summary of Pollution Prevention Benefits

Recommendation	Energy/Material Savings	Cost Savings
Install VFD on Chiller Compressor	24,472 kWh/year	\$2,225/year
Industrial Waste Limits and Surcharges	24,515 kWh/year	\$31,225/year
Ventilate the Blower Room	43,581 kWh/year	\$20,203/year
Install Air Seals on Infrared Curing Oven	71,745 kWh/year	\$1,772/year
Implement Deduct Meter for Irrigation System	N/A	\$5,954/year