

Project Overview

Industrial Placement

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Major: Civil Engineering

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Company Background

Quality Pork International, Inc. (QPI) is a pork processing plant located in Omaha, Nebraska. QPI skins, de-bones, and separates the muscles of the thigh and rump of the pork before shipping the meat to various ham processors around the world. QPI is the largest ham boning operation in the United States.

Project Description

The primary focus of this project was to evaluate and recommend water-use reduction options from the cleaning process at the plant. Since recommendations related to water treatment and recycling of cleaning water proved impracticable at this time, cleaning methods and equipment changes were suggested. In addition to water reduction solutions, options to reduce electricity and gas use and eliminate landfilled wastes were also developed.

Pollution Prevent Benefits

Table 1 below presents the recommendations for reductions with the corresponding pollution prevention benefit and potential annual savings.

Table 1. Summary of Pollution Prevention Recommendations, Benefits and Savings

Recommendation	Pollution Prevention Benefit	Potential Annual Savings (\$)
Implement an Environmental Management System (EMS)	Promote environmental efforts and increase likelihood of successful implementation of other recommendations	N/A
Install motion sensors on lights	Reduce electricity use by 43,500 kWh/yr	\$1,030
Implement a recycling program	Divert 491 tons/yr from landfill	\$20,000
Install air hand-dryers in restrooms	Reduce solid waste and improve employee health	\$12,000
Educate plant employees on importance of lost product	Goal to reduce product lost to rendering by 50%	\$125,000
Increase dry clean-up of equipment and floor	Reduce water use by 1,560,000 gal/yr and reduce potential lost product	\$12,600
Purchase water broom for floor cleaning	Reduce water use by 56,160 gal/yr	\$450
Repair leaks in automated cleaning system	Reduce water loss by 66,000 gal/yr	\$530
Install second automated spray bar system	Prevent employee injuries	N/A
Total Savings	43,500 kWh/yr electricity 491 tons solid waste 1,682,160 gal/yr water	\$171,610