

Schwan's Global Supply Chain, Inc. – Salina, Kansas, aka Tony's Pizza

Intern: Farai Brian Zvemunondiita Kwaramba
Major: Chemistry and Chemical Engineering
College: Southwestern College

The Company

Schwan's Global Supply Chain Inc is one of the world's largest producers and suppliers of frozen foods. The Tony's Pizza plant is the number one supplier of frozen pizza, producing several million pounds of product per year.

Project Background

Water is becoming one of the scarce and fast-depleting resources in Kansas. If improperly managed, excessive water consumption could result in environmental dismay. For this reason, the commodity has fallen under enormous restriction that has caused water usage to increase in cost. Therefore, Tony's Pizza, which is heavily dependent on water, has felt the fiscal impact and the environmental changes related to water usage. Farai's internship was focused on the quantitative and qualitative analysis of water usage.

Incentives for Change

Schwan's Global Supply Chain Inc., aka Tony's Pizza, is one of the largest user of water in Saline County. Tony's Pizza has a management team that understands the urgency of water conservation, which serves to reduce water usage and cost of production, hence, realizing a better environment for immediate society.

Projects Reviewed for Pollution Prevention Potential

1. Sinks and Water Trough Audit

Tony's Pizza uses water troughs and sinks as wash stations for hands, equipment, and raw materials. They are required to maintain their water at 100 F. To maintain this temperature, they must bleed off some water continuously at the wash stations. To reduce water usage, Farai introduced a recirculation system that reuses all the bleed-off water that was going down the drain. This resulted in 100% reduction of bleed-off water. He also introduced permanent flow restrictors that cut the flow rate at the faucet by 93%.

2. Sanitation Process Audit

Tony's Pizza conducts cleaning and sanitation of all equipment every night after production. This process uses the most amount of water annually. Farai introduced a high-pressure swivel-nozzle tip, which reduces the flow rate of the hoses used by 63 %. He also introduced the hydro squeegee for the cleaning floors that reduced water usage by 50%. He recommended amendments to the cleaning process that would cut water usage by 75%.

3. Facility Bathroom

Tony's Pizza is a campus that employs more than 1,700 employees and bathroom use is high. Farai introduced an inner-sensor faucet with a flow restriction that cuts the flow by 93% and ensures minimal use of water at bathroom sinks.

4. Refrigeration Audit

The refrigeration system uses conditioned water as a cooling agent for the freezing of the product. To attain cost reductions, Farai introduced the installation of water meters at the condensers that ensures claim for evaporation credit. He also recommended leak repairs and new sump tanks that would cut water losses by 100% and 50%, respectively.

5. Boiling and Cooling Systems

This audit resulted in the recommendation of blow-down recovery for the three boilers at the plant. It also called for leak repairs at the cooling towers throughout the campus. This reduced water loss in this system by 100 %.

Summary of all five audits:

Project Description	Percentage reduction
Plants sink and water troughs audit	92%
Sanitation process audit	70%
Facility bathrooms audit	89%
Refrigeration audit	43%
Boiling and cooling systems audit	74%