



Silgan Containers



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Organization Background

Silgan Containers is a subsidiary of Silgan Holdings Inc. and one of the largest suppliers of steel and aluminum food and non-food cans in North America. The company operates more than 20 manufacturing plants across the United States, serving major brands and food producers. The facility at Savage, Minnesota manufactures coated metal sheets for sister facilities and cans for products, such as Spam and canned vegetables.



"Being part of meaningful environmental impacts through MnTAP has been an incredibly rewarding experience, and I am truly grateful to the team at Silgan Containers for working with me. I am proud to see a company dedicated to making a positive environmental impact." ~ EC

Project Background

The Savage facility sought MnTAP's assistance on how to reduce waste, improve efficiency, and lower hazardous solvent use. The project's key focus areas included reducing scrap rates and solvent use during cleaning operations. Scrap disposal generates high disposal costs, and the facilities' solvent use classifies it as a Large Quantity Generator (LQG) of hazardous waste.

"At Silgan Containers, we're incredibly grateful for the dedication and insight Evin brought to investigating waste throughout the summer. His work has made a meaningful impact and helped us move closer to a more efficient and sustainable operation. We highly recommend MnTAP to any company looking to improve efficiency and reduce waste."

*~ George Hayducsko, former Plant Manager,
Silgan Containers Manufacturing Facility at Savage*

SOLUTIONS

Switch to Disposable Blades to Stop E-30 Wash

While switching to disposable blades may seem less sustainable, the reusable blade system generates nearly 12,120 gallons of hazardous waste annually. An investigation in the coating room identified the scraper blade systems used to clean the chiller roller as a major source of scrap and solvent use. The facility is now planning to convert the reusable blade system to a disposable system. This change would lead to reductions of 80% in E-30 solvent use, 69% in hazardous waste, and 20% in scrap on Line 2 of the coating operation. It would save 45 tons of E-30, 64.6 tons of sheets, and \$325,000 in hazardous waste and scrap.

Install Permanent Chemical Wash Basin

In the coating room, full deep cleanings sometimes occur when switching between enamel types, and this accounts for about 2,880 gallons of solvent annually. Of this amount, 960 gallons of solvent (used when trays are cleaned in a movable wash basin) must be drained. A permanent wash basin would limit draining, save E-30 solvent, and help the facility lower its generator status away from LQG. Since other options exist to reduce 960 gallons (or \$15,500 annually) without requiring permanent equipment changes, this remains a recommendation.

Solutions

Fix Compressed Air Leaks

Compressed air is used across multiple production lines for cans and can ends. Leaks significantly increase compressor load and energy consumption. The Fluke ii910 Acoustic Imager located several leaks, ranging from small fitting leaks to larger line losses, at the Savage facility. Repairing these leaks would reduce unnecessary compressor energy demand, lower electricity costs, and improve overall system efficiency. This recommendation would save 150,000 kWh and \$10,000 annually.

Repair Oven

The curing oven's second story has cracked glass panels that can cause heat loss and results in greater gas consumption to maintain curing temperatures. Beyond higher energy use, inconsistent oven temperatures can affect enamel quality and contribute to higher scrap rates if sheets are improperly cured. Replacing the cracked glass panels with insulated steel plates will lower wasted energy and natural gas consumption through better insulation and more stable oven performance. It will also reduce operating costs and support the Safe Quality Food (SQF) certification standards by maintaining reliable equipment and consistent product quality. This change would save 685 therms and \$500 per year.



Recommendation	Annual Reduction	Annual Savings	Status
Switch to disposable blades to stop E-30 wash	45 tons of E-30 64.6 tons of sheets	\$325,000	Planned
Install permanent chemical wash basing	960 gal E-30	\$15,500	Recommended
Fix compressed air leaks	150,000 kWh	\$10,000	Planned
Repair Oven	685 therms	\$500	Implemented

MnTAP Advisor: Ashwin Nambudiripad, Associate Engineer