

Haldex Brake Iola, Kansas

Intern: Lisa Enns

Major: Mechanical Engineer

School: Kansas State University

The Company

Haldex Brake is a provider of proprietary and innovative solutions to the vehicle industry. Haldex focuses on products in vehicles that enhance safety, environment and vehicle dynamics. The Iola, Kansas plant is in the commercial vehicle systems division. The plant manufactures air brake components for heavy duty trucks, and employs approximately 230 people.

Project Background

Lisa Enns' main project for the summer focused on water conservation. The Iola plant has already greatly reduced its water use in the last decade, but the chemical finishing department still uses approximately 1.8 million gallons per year. Enns had the opportunity to work on several pollution prevention projects, which included researching options for water usage reduction on the assembly lines, upgrading the lighting in common areas, and analyzing some of the heaters used in the plant for energy savings potential.

Projects Reviewed for P2 Potential

1. Conductivity Controls

Each year Haldex Brake uses approximately 729,720 gallons of water in their overflow rinse tanks. To decrease the water usage Enns recommended that they purchase conductivity control systems for all their tanks. Conductivity controls will maintain consistent water quality, while reducing the water flow to the tanks. Haldex Brake will see a savings \$6,000 to \$12,000 a year in the purchase, disposal, and treatment of water with the purchase of conductivity controls for their overflow rinse tanks.

2. Wastewater Treatment

The current wastewater treatment system at Haldex is almost 20 years old and does not allow for the reuse of the 1.56 million gallons of disposed water per year. Enns considered three main options for the reuse of this water: reverse osmosis, ion exchange, and evaporation. Enns concluded that an ion exchange system would be the best option for Haldex. The initial purchase price of this system would be \$46,683, but further research is still needed to conclude if this is a viable option for Haldex Brake.

3. Common Area Lighting

After reviewing the current lighting systems at Haldex, Enns decided to focus her research on common areas that are lit for 24 hours a day. This included break rooms, bathrooms, hallways, and lobby areas. Enns recommended replacing the current 34 W lamps with 25 W T-8 lamps. Enns also recommended replacing the current magnetic ballasts with electronic ballasts. This replacement will account for a savings of \$1,469 per year in electricity.

4. Tank Heaters

Haldex currently uses 4-24 kW heaters to heat their water tanks for 12 hours a day. Enns' research concluded that they could purchase 2-15 kW and 2-10 kW heaters to replace the current heaters. Assuming only two heaters run at the same time, Haldex would see a savings of \$3,526 per year in electricity. Enns briefly looked into using solar power to heat the water but further research is needed.

Summary of 2007 P2 intern recommendations for Haldex Brake Controls Division

Project Description	Environmental Impact	Annual Cost Savings	Status
Conductivity Controls	Reduce water use by 245,600 to 489,000 gallons/year	\$6,000- \$12,000	Trial Phase Implemented
Wastewater Treatment	Reduce water use by 1,561,565 gallons/year	\$38,300.00	Further Research Required
Common Area Lighting	Reduce 24,486 kWh of energy/year	\$1,469.00	Recommended
Tank Heaters	Reduce 82,490 kWh of energy/year	\$3,526.00	Recommended

