

Project Overview



Industrial Placement Intern: Tim Garnett

Major: Industrial and Manufacturing Systems Engineering

School: University of Missouri-Columbia

Company Background

Powermate Corporation in Kearney, NE employs approximately 600 people to manufacture and repair gas-powered electric generators. Other Powermate facilities in the Midwest produce air compressors and power washers. Materials used in production are steel tubes, engines, alternators (produced on-site), tires, and electrical wiring. Generators are packaged and shipped to a distribution center in Omaha, NE. The sales of generators increase during hurricane season, so production during the summer is at an all-time high. Production runs 24 hours a day, Monday through Saturday.

Project Description

The Environmental Health & Safety (EHS) department at Powermate sought assistance in 2006 to systematically track its waste streams. Creating a database to track solid waste was the first step in the project. A variety of solid wastes were then tracked and quantified, and suggestions for improvement were made regarding recycling programs and waste disposal.

Pollution Prevention Benefits

Source reduction of packaging waste was a goal for the summer, but that required working with international suppliers and will require more time and work. All recommendations made entail improvements over the current disposal method, or implementing new methods of disposal for solid wastes. Several recommendations require very little effort and no capital investment to implement. Some recommendations include purchasing equipment, training employees, testing new products, and/or other significant changes in order to be smoothly implemented.

Results

The pollution prevention benefits and results are summarized in Table 1 below:

Table 1: Pollution Prevention Benefits and Results

P2 Category	Annual Cost Savings	Hazardous/Landfill Waste Eliminated (per year)
Cardboard, Plastic, and Paper Recycling Program	\$96,720	64,800 lbs
Metal Recycling Improvements	\$13,560	none
Trash and Tire Disposal	\$3,960	90,000 lbs
Hazardous Waste Substitutions	\$2,820	2,300 lbs
TOTAL	\$117,060	157,100 lbs

Additional indirect or intangible benefits include:

- Eliminate employee exposure to hazardous solvents
- Prevent contamination of ground water
- Decrease future maintenance costs
- Eliminate tires and plastic wrap from the landfill