



Miller Manufacturing



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Organization Background

Miller Manufacturing is a farm, ranch, and pet product injection molding facility in Anoka, MN that is owned by the family-owned Frandsen Corporation. This facility is 185,000 square feet and employs 220 people. Brands under Miller are Little Giant, Hot Shot, Pet Lodge, API, Springer Magrath, and Double-Tuf.



“This summer I had the opportunity to gain hands-on experience working in a real-world manufacturing environment. I was challenged with complex problems to solve and given the autonomy and support to develop solutions that will help Miller Manufacturing and the environment. This experience helped me become a more well-rounded student and soon to be graduate. I’m grateful for the opportunity MnTAP made possible and loved my time at Miller Manufacturing.” ~ AW

Project Background

On an annual basis, Miller Manufacturing produces 315 tons of solid waste costing \$48,600 for disposal, and spends \$78,000/yr on electricity. The purpose of this project is to reduce waste and electricity use by refining their waste management practices and operating procedures.

Incentives To Change

Miller Manufacturing is committed to reducing waste and energy use. This will allow for Miller to improve their working environment, reduce their environmental impact and save money. Frandsen Corporation believes success is the result of employee efforts and behaviors. The Frandsen Way is 26 fundamentals that define their company culture. Fundamental 18 is “Do the Right Thing Always”. This is something that Miller Manufacturing believes in day in and day out. Miller’s green initiatives make it a priority to consider the environment and natural resources in the manufacturing of their products



SOLUTIONS

Increase Recycling

Used cardboard can be bailed and sold for \$160/ton, but the waste sort indicated over 20,000 lbs/yr is still ending up in the trash. Cardboard gaylords which can be sold for at least \$6 each are also sometimes put in the trash instead. By keeping this cardboard out of the trash Miller can earn \$1,600 as well as avoid \$1,000 in disposal costs. Implementing a single stream recycling system will keep an additional 10,300 lbs of bottles, cans, and paper out of the landfill, and a grant from Anoka County will cover the cost of the necessary bins.

Cardboard Sheet Replacement

Two almost identical cardboard sheets were found in inventory; one was 1% smaller, but less than half the cost. Switching to the smaller option provided annual savings of \$9,000 and 620 lb reduction in cardboard usage with no cost or impact on operations.

Reusable Shipping Containers

Some products molded at Miller’s Anoka facility go on for further processing in house or at their facility in Glencoe, MN. Currently these products are palletized with cardboard and shrink wrap until they are ready for the

Solutions

next step. Reusable shipping containers would eliminate the consumption of cardboard sheets and shrink-wrap. The upfront cost of about \$250-\$400 per container can be offset by grant funding and over \$23,500 in packaging savings.

Linerless Labels

Linerless labels are available that have a release coating on the front of each label allowing them to be rolled directly on to each other (like tape), eliminating the need for backing. These labels are available both pre-printed and for applications that must be printed at time of use. Linerless labels would eliminate 4,680 lbs/yr of liner waste and improve plant safety by eliminating a potential slip and trip hazard.

Regrind Reclamation

The waste sort found that 53% of the waste was plastic that could potentially be reground and reused, including



excess and off spec parts, sprue from the molding process, and leftover resin pellets. Reusing this material would not only reduce waste disposal costs by \$9,000 per year, but also save \$200,000 annually on resin purchases. One step Miller has already taken is dedicating a grinder for polycarbonate, which was previously not available. Miller continues to investigate ways to better manage their raw material and regrind processes.

Energy Projects

Energy projects were addressed by utilizing lighting and compressed air professionals. New LED lights, with motion sensors in lower traffic areas, will reduce electric costs by 50% annually, increase lumens by 20%, and be completely deductible through the CARES Act. A compressed air audit identified savings of \$8,300 and 94,500 kWh/yr, with a payback of less than four months after rebates.

“The Frandsen Corporation has used MnTAP in the past and had good results. Bringing on Anna for the summer continued that trend. MnTAP has a solid process and they listened to where we thought the areas of the greatest needs were. Anna was very much a self-starter and some of the results were achieved in a very short period of time. Overall we were pleased with the reductions of waste and energy usage”

*~ Dave Dickirson, General Manager
Miller Manufacturing*

Recommendation	Annual Reduction	Annual Savings	Status
Increase Recycling	30,300 lbs.	\$2,500	Recommended
Cardboard Sheet Replacement	620 lbs.	\$9,000	Implementing
Reusable Shipping Containers	16,500 lbs.	\$23,500	Investigating
Linerless Labels	4,680 lbs.	\$240	Investigating
Regrind Reclamation	171,000 lbs.	\$205,000	Parially Implemented
Energy Projects	559,000 kWh	\$63,000	Implementing

MnTAP Advisors: Jane Paulson, Senior Engineer