

## Metal Finishing » Pollution Prevention Case Study

# DeCaro Manufacturing

### Company Overview

DeCaro Manufacturing is a metal plating facility in Toronto that manufactures fireplaces, fireplace accessories, airport weight scales and other metal products. This 10-person operation is committed to protecting the environment and to incorporating environmental considerations into daily operations. The company strives to prevent pollution by eliminating or reducing the generation of wastes and by reducing its use of resources throughout its operations.



Frank DeCaro, Production Manager, in the plating room of the DeCaro facility

### P2 Assessment Process

To meet the objectives of the Toronto Region Sustainability Program, DeCaro underwent a pollution prevention assessment by a consulting firm, Cotter Associates Ltd. This review mapped all processes in the DeCaro facility and identified three main processes: degreasing, plating and painting. From this assessment, many pollution prevention opportunities were identified.

### Summary of Findings

During the evaluation the consultant recommended many cost saving and pollution prevention strategies for DeCaro Manufacturing. In the degreasing process, opportunities were identified to reduce evaporative losses and the use of trichloroethylene.

In plating, copper, zinc and cyanide could be conserved and the process in which they were being used, improved. In the painting operation, opportunities were identified to reduce the usage and resulting emissions of toluene and xylene.

**“By participating in this program we at DeCaro have come to realize that less pollutants in the air and water mean a better and healthier environment; and by using the savings from pollution prevention we can further reduce the use of hazardous materials and processings.”**

*Frank DeCaro, Production Manager,  
DeCaro Manufacturing*

# P2 Solutions, Environmental Results and Related Cost Savings

The table below summarizes P2 projects being undertaken by DeCaro from the list of P2 recommendations outlined in the assessment report. When implementation is complete, the P2 measures at DeCaro are projected to reduce annually:

• 2 tonnes VOCs

• 13.5 kilograms metals

• 27 tonnes hazardous waste

With annual savings of **\$6,000** and an overall payback of **3 years**.

Process	P2 Solutions	Environmental Reductions	Cost Savings & Payback
<b>Degreasing</b> Targeted Pollutants: Trichloroethylene	Reduce evaporative losses through modification of tank configuration and installation of cooling system	35% reduction in evaporative losses of trichloroethylene (560 kg/yr)	Annual savings of \$1.5 K
	Switch to caustic bath instead of solvent degreaser	50% reduction of trichloroethylene (800 kg/yr)	Annual savings of \$2.1 K
	Switch to non-chlorinated or water-based cleaners	100% reduction of trichloroethylene (1600 kg/yr)	Combined payback of 2.4 years
<b>Plating</b> Targeted Pollutants: Copper (Cu), Zinc (Zn), Cyanide (Cn)	Improvement of rinsing practices	10% reduction of Cu, Zn, Cn	Annual savings of \$100
	Installation of drip trays to catch drippage between tanks	5% reduction of Cu, Zn, Cn	Annual savings of \$30
	Operator training on importance of chemical conservation and proper care of equipment	10% reduction of Cu, Zn, Cn	Annual savings of \$100
<b>Painting</b> Targeted Pollutants: Toluene, Xylene	Replace current spray guns with high pressure low volume (HVLV) spray guns	15% reduction of paint consumption	Annual savings of \$400
	Replace spray paint with drip tray process	10% reduction of toluene and xylene	Annual savings of \$260
	Use water-based paints	50% reduction of toluene and xylene	Annual savings of \$1.3 K

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