



Toronto Region Sustainability Program Parker Pad & Printing

Lithographic
Printing
Sector

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COMPANY OVERVIEW

Parker Pad & Printing Ltd. is a 41-person full service, commercial lithographic printing company. The firm has three separately located production departments (total area - 3964 M²) – pre-press, printing & finishing, and a digital print on demand division – with production operations running for 18 hours five days per week. At the time of the Pollution Prevention (P2) assessment, the company was consolidating and re-locating to a new facility to amalgamate all divisions.

Parker Pad & Printing management is committed to comply with all applicable laws and regulations and wishes to apply for the Ecologo certification under the ECP58-94 Standard for lithographic printing. As part of their effort, the senior management commissioned the Pollution Prevention (P2) Assessment to be conducted under the Toronto Region Sustainability Program.

P2 ASSESSMENT PROCESS

Through the Toronto Region Sustainability Program, Parker Pad & Printing contracted John Piggott of EcoSafe environmental health & safety management to assess the facility's operations to identify the root causes of pollutants/waste streams and recommend solutions to prevent them. The review included process flow mapping, and examined their equipment usages, chemicals use and storage, along with their waste handling and discharging measures.

Throughout the assessment, the Production Manager and the Pressroom Foreman were directly involved in the plant inspections and provided access to information required. The assessment identified many P2 opportunities to resolve compliance issues including sewer use, air emissions and solid waste. The consultant provided the firm with a detailed report with a recommended action plan.



Parker Pad & Printing Ltd., facility in Markham, Ontario

SUMMARY OF FINDINGS

There were two significant areas recognized for pollution prevention opportunities. In the Pre-Press area, the computer to plate (CTP) processor used approximately 0.13 litres/sec of fresh wash water or 75 litres per plate processed. The rinse bath removed the developer and emulsified plate byproducts, which were then discharged. The average factor for each plate processed is approximately 180,000 litres/yr. In addition, the CTP developer generated liquid chemical wastes, which were disposed by a licensed waste company. The CTP developer (caustic with high pH) and the byproducts of plate development included high levels of Biological Oxygen Demand (BOD) levels, phenols, silver, and polymers.

Another major area of concern was from the spent fountain solution in the Pressroom that became contaminated with water extractable metals such as cobalt, chromium, copper, molybdenum, zinc, and other elements from the ink and solvents. Approximately 6000 litres/yr of the spent fountain solution waste were generated from this process and discharged to the sanitary sewer.

“Parker Pad has always been conscious of environmental and health & safety issues. Our recent move into our new custom designed facility allowed us to take full advantage of the OCETA program and incorporate pollution prevention in the planning stage. Working with the technical and regulatory expert, John Piggott of EcoSafe, we have eliminated our hazardous discharges, reduced our waste and saved some money. Knowing that we have a support system to ensure we meet or exceed all levels of government regulations offers peace of mind, and that is priceless.”

-Janis Parker, Parker Pad & Printing

P2 SOLUTIONS, ENVIRONMENTAL RESULTS, AND RELATED COST SAVINGS

P2 CASE STUDY

In order to prevent pollution and minimize costs in the Pre-press area, the possibility of installing a wash water-recirculating unit on the CTP plate processor is being investigated. The unit chosen will filter the recycled water and add periodic fresh water with a non-toxic biocide to eliminate the algae and bacteria in the water. This option will reduce the water usage by 126 tonnes/yr, and save approximately \$ 400 per year. In addition, Parker Pad is intending to install a CTP developer recirculating system, which will extend the developer life by 50-70% (re-using 1.2 tonnes/yr), saving at least \$ 9500 per year on chemical purchases and haulage costs.

In addition, Parker Pad & Printing is eliminating the discharge of fountain solution to the sewer by installing an Ultra-Filtration Membrane unit to treat the spent fountain solution and bucket wash water on-site prior to discharge or re-use. This recommendation from the pollution prevention assessment will save Parker Pad & Printing off-site disposal costs, which is expected to average \$200/month. If the fountain solution is re-used then a collection tank is utilized for the cleaned permeate. This option will recover 95% of fountain additive and reduce of 0.2 tonnes of VOCs and 14 tonnes of process wastes (including 3.8 kg/yr cobalt & 0.6 kg/yr manganese) annually, to save \$ 16000 per year over purchases of virgin chemistry and haulage costs with a payback of 4-6 months. These P2 measures will eliminate the firm's non-compliance issues with the Sewer Use By-law and demonstrate environmental due diligence.

Furthermore, Parker Pad & Printing will be installing a reverse osmosis system with centralized fountain dosing system for automatic blending to generate consistent water quality, improve print quality, and reduce manual labor. This will save the firm \$10,400 annually with a payback period of 4 months. The company also will recycle their ink cans and florescent light bulbs (containing mercury) to divert 0.6g/yr of mercury, 0.5 tonnes/yr of waste steel, and 0.3 tonnes/yr of waste ink from landfill, and benefit from further reductions in waste haulage costs.

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