History of Toxics Use Reduction Planning & Resource Conservation at our Webster, MA facility

Cranston Print Works Company

Presenters

Bernie Germain
Industrial Engineer
bgermain@cpw.com

Tim Weaver
Maintenance Supervisor & Wastewater Operator
tweaver@cpw.com

David Cabral
Environmental Engineer, ESS Group Inc.
dcabral@essgroup.com

T (508) 943-0520
F (774) 495-1730

Company History

- Cranston Print Works is the OLDEST textile printing company in the United States

- 1824: tiny cotton plant in Cranston, RI established by William Sprague, former RI Governor

- 1936: Cranston Print Works Company purchases mill in Webster, MA built by Samuel Slater in 1812.

Company Products

• CPW's print plant provides quality textile printing and finishing, using the latest technology and equipment.

•Cranston Print Works product line consists mainly of finished textile prints on 100% cotton fabric.

• Our customer base is the over the counter home sewing and crafts market.

•Our product line is distributed through large chain stores as well as small sewing/piece goods shops throughout the country.

Environmental Excellence

- Excellent open relationship with US EPA, Mass DEP, Mass OTA, and Webster Sewer Department

- 1996: Special Recognition at Governor's Toxic Use Reduction Awards Banquet (for Carbon Dioxide project)

- 2004: received Environmental Award from Worcester Business Journal and Massachusetts Audubon Society (for Water Conservation project)

- More CPW awards listed at www.cpw.com/Awards.htm

- Thank you to the OTA!

Examples discussed today

- Sulfuric Acid Substitution with Carbon Dioxide
- Water Conservation Study
- Boiler Replacement
- These examples are just the tip of the iceberg of projects done at Cranston's Webster Print Plant

OTA Case Study: Sulfuric Acid Use Reduction

- 1991: Cranston's fabric process generates highly alkaline wastewater (average pH of 11.4)
- Onsite Wastewater Treatment System reduces pH by using sulfuric acid
- In early 90s, sulfuric acid accounted for 80% of Cranston's TURA obligations
- TUR Team decides to substitute sulfuric acid with Carbon Dioxide
- Carbon Dioxide is not toxic, offers greater safety, more precise pH control, and lower operating costs

OTA Case Study: Sulfuric Acid Use Reduction

- Team of Engineers, Treatment Plant Operators, Chemists, and Management worked with OTA consultants, liquid CO_2 vendor, and aeration equipment vendor to plan change
- Onsite wastewater treatment basins equipped with jet aeration systems; designed to feed liquid carbon dioxide into wastewater basins
- CO_2 plus water forms carbonic acid
- Cranston's wastewater and maintenance personnel trained by CO_2 vendor
- Initial Cost: 600 man-hours and $115,000
- Annual Savings: $ 80,000
- Payback: less than 2 years

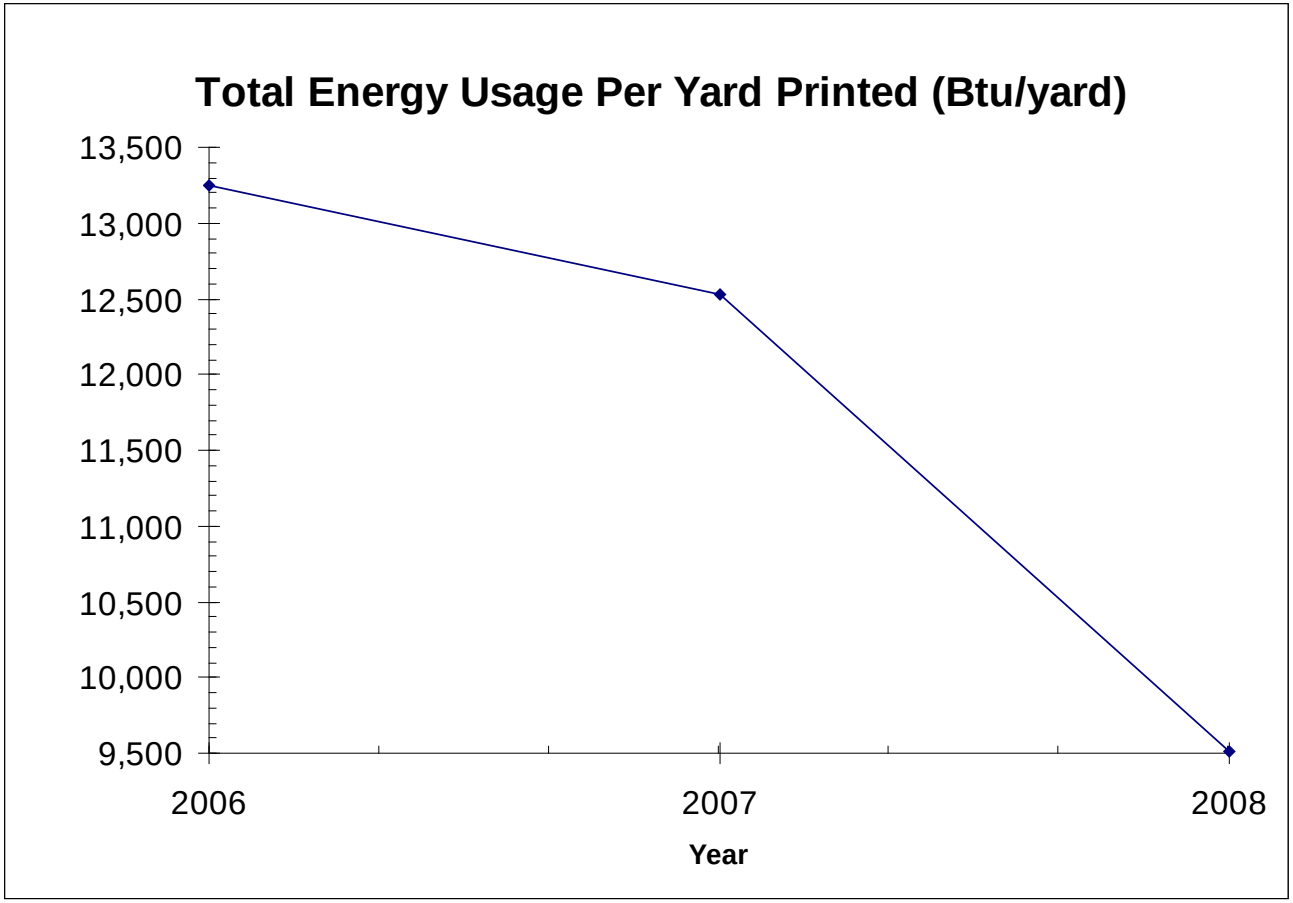
OTA Case Study: Water Conservation

- 1995: Cranston establishes Water Conservation Team
- Team consists of employees from engineering, maintenance, finishing, color shop, and printing
- Team identifies and implements 25 water reduction projects
- Examples include: water recycling in white frame and rope range singer processes; converted all print machines to recycled water, etc.
- End results:
  - Annual savings of 110 million gallons
  - Annual savings of $ 350,000
  - Wastewater per yard of fabric processed reduced from 1.2 gallons (1996) to 0.7 gallons (2002)

Resource Conservation Example: Energy Usage Reduction

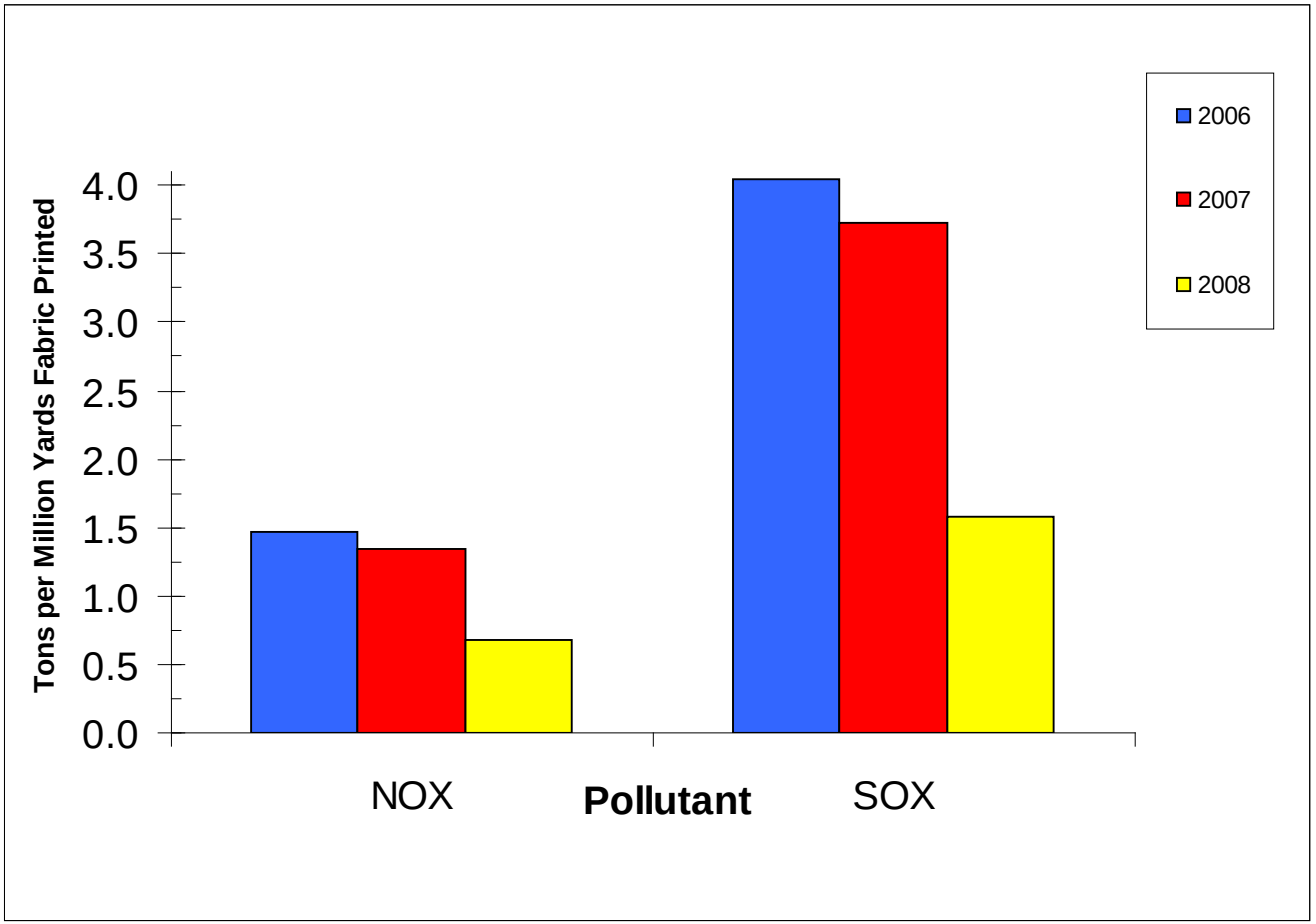
- Steam used during textile processes generated using onsite Boiler Room
- Boiler Room consisted of three No. 6 Fuel Oil fired Boilers
- High Maintenance and Operating Cost, Annual NOX testing, Annual DEP Operating Permit fees, ever increasing oil costs
- Additional Natural Gas capacity in Webster allows for exploring Natural Gas fired Boilers
- Natural Gas: lower emissions, no NOX testing, more efficient process
- Initial Cost: $ 800,000 (minus $ 200,000 rebate from National Grid) for 2x800 HP, low pressure, gas fired boilers
- Savings from reduced labor, fuel, Environmental fees
- Payback: 9 months

Resource Conservation Example: Energy Usage Reduction



Resource Conservation Example: Energy Usage Reduction

Change in Boiler Room → decrease in Air Emissions



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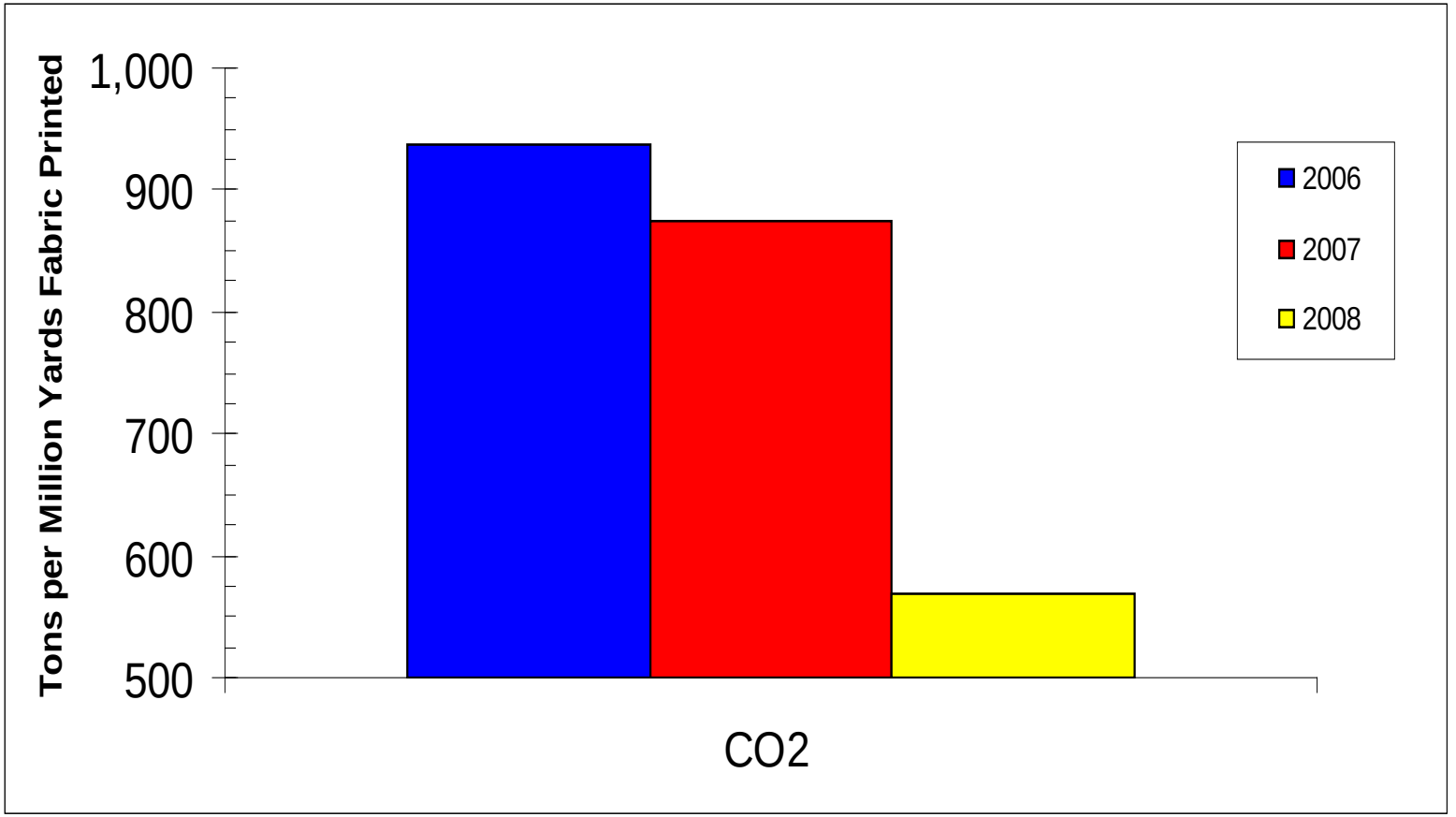

Our Next Challenge

- Textile Printing and Finishing to cease by June 2009

- All textile print and finishing to be outsourced to subcontractors

- Packaging and distribution will still operate in Webster, MA beyond June. Webster will also maintain marketing and customer service.

- Our design and sales operations will remain at the New York location.

- Liquidate Plant Machinery

- Close out Environmental Permits