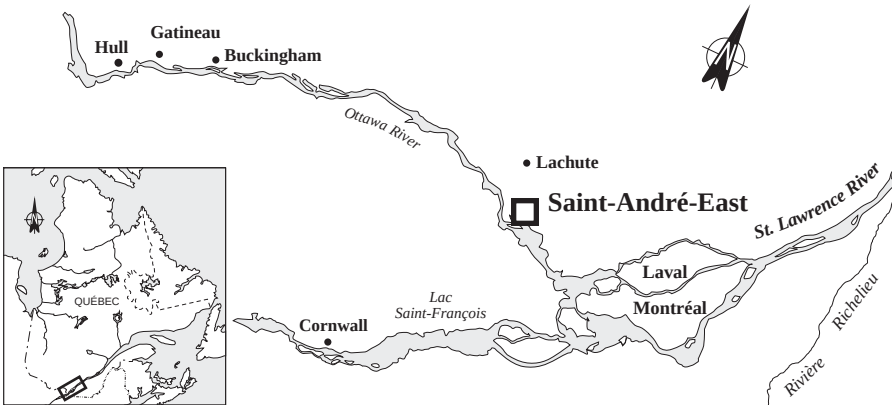
FACT SHEET 69

Goodfellow Inc.

4 du Moulin Street

Saint-André-East, Quebec

J0V 1X0



A list of 106 industrial plants has been established under St. Lawrence Vision 2000 (SLV 2000), the second phase of the St. Lawrence Action Plan, launched in 1988. The general objective is to reduce toxic effluent and virtually eliminate discharges of persistent toxic substances.

The 106 industrial plants designated under SLV 2000 are divided into four groups, each with a specific objective. The GOODFELLOW INC. plant in Saint-André-East is in Group 2, which comprises plants that have already implemented treatment programs but whose effluent may contain toxic substances.

The objective for Group 2 is maximum reduction of toxic effluent of targeted plants.

INDUSTRIAL PLANT

Wood preservation

The GOODFELLOW INC. plant in Saint-André-East treats timber only. The pieces of wood are already sized and drilled when they arrive. Incisions are made in the wood to promote penetration of solutions. The wood is then dried at 30° to 55° C. The ambient air is dehumidified with heat pumps then heated and reintroduced into the dryer. The wood achieves a humidity of 16 to 19% after two or three weeks of treatment. Next the preservative is applied - chromated copper arsenate or pentachlorophenol. In both cases, the wood is placed on carts and put in an autoclave. A vacuum is created for 20 to 60 minutes, and then the autoclave is filled with preservatives and hydrostatic pressure is applied for anywhere from 30 minutes to 18 hours. The preservative is then removed and routed to tanks, and the wood is stored sloping on a drip frame. The plant also has a flame-retarding treatment process. Annual production capacity of the plant is 14 200 t. In 1995, the plant operates at 65% design capacity and employs a work force of 26.

PRODUCTION

PRINCIPAL RAW MATERIALS

- Resinous timber
- Chromated copper arsenate (CCA - 50%)
- Pentachlorophenol (PCP - 98%)
- PCP solvent
- Flame retardants

FINISHED PRODUCTS

- CCA-treated wood
- PCP-treated wood
- Fire retardant treated wood
- Untreated wood

TREATMENT MEASURES

INITIAL EFFLUENT VALUES

No industrial effluent

According to company data, in 1993 the plant discharged no industrial effluent, only domestic sewage, rainwater and daily boiler blow down.

RESOURCES AND USES TO PRESERVE

Fishing and pleasure boating

The GOODFELLOW INC. plant in Saint-André-East is on the right bank of the du Nord River, about 5 km from its confluence with the St. Lawrence. Close to 38 species of fish inhabit the area. The wetlands of Fer à Cheval and Carillon bays offer favourable spawning and rearing areas for many species of fish. The area also provides nesting, feeding and brooding sites for waterfowl; 22 species of wild bird are found in the region. Certain spots are also suitable for nesting of great blue heron and survival of muskrat, river otter and mink. The du Nord River attracts sport fishermen and pleasure boaters. The first drinking water intake downstream of the plant is in Lac des Deux Montagnes and supplies the municipality of Deux-Montagnes.

ENVIRONMENTAL DISCHARGE OBJECTIVES

Environmental protection

Environmental discharge objectives are established to preserve local resources and uses. Expressed as maximum permissible loads and concentrations for effluent released into the environment, these guidelines are used to select treatment methods which best promote environmental protection. Discharge objectives for the GOODFELLOW INC. plant will be available by 1997.

EFFLUENT TREATMENT

Closed circuit

The industrial wastewater is filtered and recirculated in closed circuit within the plant process. Water extracted from the wood together with the filtrate is stored and then reused in the chromated copper arsenate treatment. Domestic sewage empties into a septic tank with a tile field. Rain water and water extracted daily from the boiler are discharged into the du Nord River.

PREVENTION AND CLEANUP MEASURES IMPLEMENTED

Connection to the future municipal wastewater treatment plant

No major changes to the plant process or the wastewater treatment system have been made at the GOODFELLOW INC. plant since 1993. The plant's domestic sewage is to be channeled to the Saint-André-East wastewater treatment plant as soon as it is built. The public sewerage system is under construction.

REGULATORY COMPLIANCE - WATER COMPONENT

No specific regulations

The GOODFELLOW INC. plant is subject to no specific regulations governing effluents.

POLLUTION ABATEMENT

CHIMIOTOX INDEX ABATEMENT OF TOXIC POLLUTION

Characterization planned for 1996

The Chimiotox index gauges the load of all toxic substances in industrial effluent using toxicity factors assigned to each contaminant. It is used, among other things, to monitor discharge trends over the years and determine the toxic contribution of each pollutant.

Since no exhaustive characterization of effluent from the GOODFELLOW INC. plant in Saint-André-East has been made, there are not enough data to calculate the Chimiotox index. Effluent characterization is planned for 1996. Table 1 will list characterization data and the Chimiotox values calculated from them.

Table 1 ***Chimiotox Index - Goodfellow Inc.***

Substance	Load (kg/d)	Toxic Weighting Factor	Chimiotox Units (CU)
Since no exhaustive characterization of effluent from the GOODFELLOW INC. plant in Saint-André-East has been made for SLV 2000, there are not enough data to calculate the Chimiotox index. Effluent characterization is planned for 1996; the results can then be used to calculate the Chimiotox index.			
CHIMIOTOX INDEX			**N/A**

VIRTUAL ELIMINATION OF PERSISTENT TOXIC SUBSTANCES

One long-range objective of SLV 2000 is the virtual elimination of eleven persistent and bioaccumulative toxic substances from the effluent of the 106 targeted plants along the St. Lawrence and its tributaries. The targeted substances are those designated by the International Joint Commission in August 1993: PCBs, DDT, dieldrin, toxaphene, dioxins, furans, mirex, mercury, lead alkyls, benzo(*a*)pyrene and hexachlorobenzene. To reach this objective, Protection has fixed the environmental discharge objectives set for applicable substances as its target by the end of SLV 2000 in 1998, thereby ensuring that all uses of the receiving environment are protected.

The 1996 characterization will show whether the effluent contains any of these persistent toxic substances.

PEEP TOXICITY REDUCTION

Bioassays in 1996

The Potential Ecotoxic Effects Probe, or PEEP, combines the results of six standardized bioassays measuring the toxic effects of effluent. The results are expressed on a logarithmic scale (1 to 10) of increasing toxicity and are used to monitor discharge trends over the years. A series of bioassays of effluent from the GOODFELLOW INC. in Saint-André-East are to be performed during the characterization planned for 1996.

REDUCTION IN SUBSTANCES MONITORED

No industrial effluent discharged

According to company data, in 1995 the plant did not discharge any process water; all industrial wastewater is recirculated. The plant discharges only domestic sewage, rainwater and water boiler extraction.

KEY POINTS

- **Domestic sewage to be channeled to the future municipal wastewater treatment plant, once it is built**
- **No process wastewater discharged**

Based on December 1995 inventory

ADDITIONAL INFORMATION

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