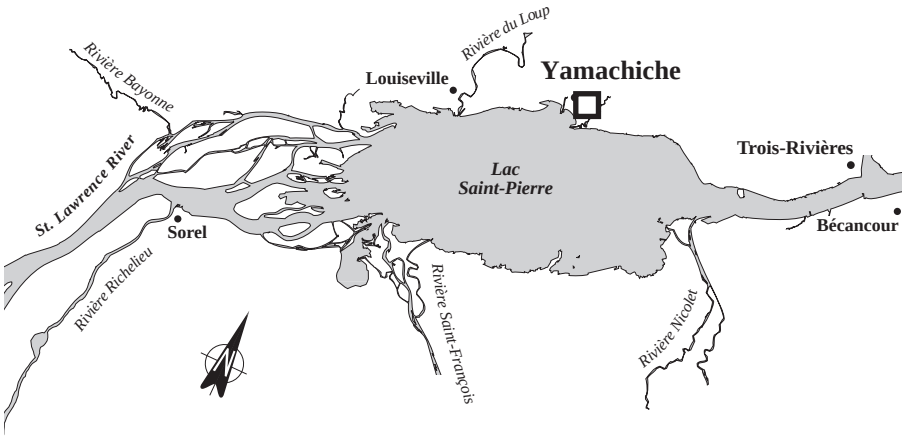
FACT SHEET 65

Duchesne & Fils ltée

333 Saint-Jean Street
Yamachiche, Quebec
G0X 3L0



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 overall 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 DUCHESNE & FILS LTÉE plant, located in Yamachiche, is part of Group 2, comprising the 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 discharges in targeted plants.

INDUSTRIAL PLANT

Ferrous metals plant

The DUCHESNE & FILS LTÉE plant in Yamachiche comprises several production units. A major fire in march 1998 has shut down a part of the activities, including the manufacturing of nails, precision nails, wire mesh and metal lath. Wire mesh and metal laths were produced by spot welding and metal expansion. The various steps in nail manufacturing included cleaning, drawing, production, finishing, packing, and storage.

DUCHESNE & FILS LTÉE comprises a steel sheeting plant and an aluminium siding plant where steel sheeting and aluminium are sent to forming units. The company has also a vinyl plant which produces polyethylene film.

PRODUCTION

PRINCIPAL RAW MATERIALS

- Steel sheeting
- Aluminum
- Wire stock
- Polyethylene resin
- PVC resin

FINISHED PRODUCTS

- Nails
- Profiled steel sheeting
- Aluminum siding
- Vinyl siding
- Wire mesh
- Metal lath
- Polyethylene film

TREATMENT MEASURES

INITIAL EFFLUENT VALUES

Very low discharge

Based on company data, in 1993 effluent discharge was essentially wastewater from pickling operations. The discharge rate was 10.1 m^3/d, containing notably:

- 1.12 kg/d of iron

RESOURCES AND USES TO PRESERVE

Many fish species

Wastewater from the DUCHESNE & FILS LTÉE plant is discharged into the Little Yamachiche river, a few kilometres from its confluence into lake Saint-Pierre. Downstream from the discharge point is a spawning area for walleye, sturgeon and sucker. The Little Yamachiche river is also an eel fattening area. The section of the river south of Highway 40 is a conservation and development zone for the north shore of lake Saint-Pierre. In springtime, it serves as a staging area for migrating waterfowl.

ENVIRONMENTAL DISCHARGE OBJECTIVES

Environmental protection

Environmental discharge objectives are established to preserve local resources and uses. These guidelines, expressed as maximum permissible loads and concentrations for effluent released into the environment, are used in choosing treatment methods which best promote environmental protection. There are no environmental discharge objectives for DUCHESNE & FILS LTÉE as the plant no longer discharges industrial wastewater.

EFFLUENT TREATMENT

Zero discharge

The new mechanical descaling process does not produce industrial wastewater. Until the burn down of part of the units in March 1998, indirect cooling water were treated in three aerated ponds. Domestic sewage and drainage waters are also treated in those three aerated ponds.

PREVENTION AND CLEANUP MEASURES IMPLEMENTED

Mechanical descaling process

Until November 1995, industrial wastewater produced by the pickling process was treated before being discharged into the Little Yamachiche river. It was sent to neutralization, iron precipitation and settling. Acid solutions were recovered and the sludge was filtered, then discharged. In November 1995, pickling was replaced by a new mechanical descaling process. The company has invested $1 million in this operation.

REGULATORY COMPLIANCE - WATER COMPONENT

Compliance with standards

DUCHESNE & FILS LTÉE meets the standards set by the certificate when it produces effluent.

POLLUTION ABATEMENT

CHIMIOTOX INDEX ABATEMENT OF TOXIC POLLUTION

No characterization

The Chimiotox index gauges the load of all toxic substances present in industrial effluent using the 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.

There has been no characterization of effluent under SLV 2000 since the DUCHESNE & FILS LTÉE plant no longer discharges industrial wastewater.

Table 1 ***Chimiotox Index - Duchesne & Fils ltée***

Substance	Load (kg/d)	Toxic Weighting Factor	Chimiotox Units (CU)
Since the DUCHESNE & FILS LTÉE plant no longer discharges industrial wastewater, no exhaustive characterization has been carried out and the Chimiotox index for this company cannot be calculated.			
CHIMIOTOX INDEX			**N/A**

VIRTUAL ELIMINATION OF PERSISTENT TOXIC SUBSTANCES

One long-range objective of SLV 2000 is the virtual elimination of eleven persistent bioaccumulative toxic substances from the effluent of 106 priority plants located on 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.

Since industrial wastewater is no longer discharged, no characterization has been done.

PEEP TOXICITY REDUCTION

No PEEP

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 of increasing toxicity ranging from 1 to 10 and are used to monitor discharge trends over the years. In the case of the DUCHESNE & FILS LTÉE plant, no exhaustive characterization was done.

REDUCTION IN SUBSTANCES MONITORED

Shut down of a part of the activities

Between November 1995 and March 1998, the new mechanical descaling process has been used all the time. Mechanical descaling, in contrast with acid pickling, did not generate liquid effluent. A major fire in March 1998 has shut down a part of the activities.

KEY POINTS

- **In 1995, replacement of pickling with a mechanical descaling process that does not produce liquid effluent; $1 million invested**
- **Shut down of a part of the activities consecutive to a major fire in March 1998**

Information revised March 1998

ADDITIONAL INFORMATION

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