

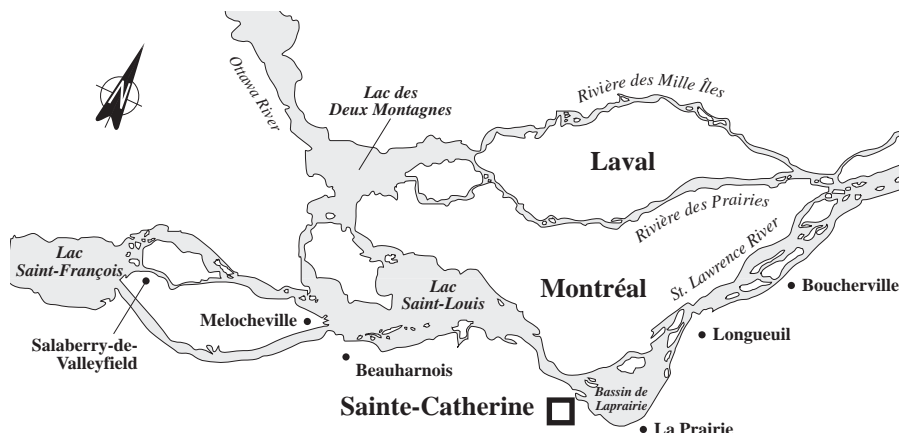
FACT SHEET 76

Nova PB Inc.

1200 Garnier St.

Sainte-Catherine, Quebec

JOL 1E0



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 NOVA PB INC. plant Sainte-Catherine is part of Group 2, comprising 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

Refined metallic lead production

The NOVA PB INC. plant in Sainte-Catherine produces thirty different grades of refined lead in a three-stage process that includes sorting of old batteries, melting and refining. Lead-bearing material is melted and reduced in a rotary furnace and requires the addition of substances such as coke, iron filings and sodium carbonate. The refinery has eight 100-t crucibles. The various grades of refined lead are cast in 30-kg or 1-t blocks. The plant has a production capacity of 100 000 t/yr. In 1995, the plant works at 45% capacity and employs 109 people.

PRODUCTION

PRINCIPAL RAW MATERIALS

- Old lead-acid batteries
- Lead-bearing materials
- Sodium carbonate
- Iron filings
- Alloy metals
- Waste oil
- Oil filters
- Paint pigments

FINISHED PRODUCTS

- Refined metallic lead
- Recycled polypropylene

TREATMENT MEASURES

INITIAL EFFLUENT VALUES

Mainly sulphates

Based on company data, in 1993 the plant had an effluent discharge of 243 m³/d, containing notably:

- 4617 kg/d of sulphates
- 0,049 kg/d of lead
- 0,041 kg/d of zinc

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 water quality based objectives for NOVA PB INC. as the company aims to eliminate industrial effluent from the plant in 1997.

EFFLUENT TREATMENT

Two-stage treatment

Industrial wastewater is first neutralized using sodium carbonate; suspended lead is recovered in a thickener and a drum filter and then re-used. The neutralized water and drainage water from the land around the plant are treated in the plant sewage treatment system, which includes a settling tank, a retention tank, a neutralization tank, a flocculation tank and a clarifier. The treated water is recirculated. The sedimentation tank is drained once a year and the sludge recycled in the plant. Domestic sewage is discharged into the public sewerage system connected to the sewage treatment plant of the Régie régionale du bassin de La Prairie, where it is treated using activated sludge.

PREVENTION AND CLEANUP MEASURES IMPLEMENTED

Changes to treatment system

In 1995, NOVA PB INC. modified its plant wastewater system to improve performance. Flocculants were replaced, a second neutralization unit was added, and the control system and analysis methods were improved. The company is currently building an after-burning unit and a gas conditioning chamber. When the after-burning unit is operational, the surplus treated water will be used in the conditioning chamber. This measure will enable the plant to satisfy the company's "Zero discharge" objective, except in the event of heavy rain or snowmelt, in which case the wastewater will be channeled to a pond and then treated before being discharged into the river.

REGULATORY COMPLIANCE - WATER COMPONENT

Compliance with standards

The NOVA PB INC. plant in Sainte-Catherine implemented measures under a wastewater treatment program (PAE) between January 1982 and February 1985. The plant is governed by the standards of an authorization issued on September 16, 1985, for the water treatment system and the standards of the certificate of authorization delivered on July 17, 1992. The company complies with the standards to which it is subject.

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.

Since NOVA PB INC. will discharge no further effluent in the normal course of its operations, no characterization will be carried out.

Table 1 *Chimiotox Index - Nova PB Inc.*

Substance	Load (kg/d)	Toxic Weighting Factor	Chimiotox Units (CU)
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There will be no exhaustive effluent characterization for the NOVA PB INC. plant in Sainte-Catherine, since the company will discharge no further effluent starting in 1997, except in the event of heavy rainfall or snowmelt.

CHIMIOTOX INDEX	N/A
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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 company plans to eliminate liquid effluent from the plant in 1997, so there will be no environmental discharge objective for this company.

PEEP TOXICITY REDUCTION

Elimination of toxicity in 1997

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 NOVA PB INC., no industrial effluent will be discharged beginning in 1997, except in the event of heavy rainfall or snowmelt.

REDUCTION IN SUBSTANCES MONITORED

"Zero discharge" objective

Based on company data, in 1995 the plant discharges 318 m³/d of effluent, containing notably:

- 9073 kg/d of sulphates
- 0.038 kg/d of zinc
- 0.032 kg/d of lead

From 1993 to 1995, no major changes were made to the process; sulphate discharge increased, while other discharge remained relatively stable. The plant aims to completely eliminate liquid effluent discharge in 1997, except during heavy rainfall or snowmelt, in which case the wastewater will be channeled to a pond and then treated.

KEY POINTS

- "Zero discharge" objective in 1997

ADDITIONAL INFORMATION

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