M E M O R A U D U M

TO: JOE CASTRILLI

FROM: Virginia Adamson

DATE: 25 August 1982

RE: Translation of Material from Jean Piette

Joe, here is the beginning of the translations of the above-mentioned material. I would appreciate having an opportunity to review the first typed copy of the material for grammar, and for any awkward wording in the translated text. I understand you need the material as soon as possible. But, if you find that you are not in urgent need of the translations early next week, could you please call and let me know so that I can look over the typed text? Thanks. My phone number is 925-7248.

Now, I would like to go over some of the problems I had translating these materials. You may want to ask Jean Piette or someone else in the Quebec Ministry the precise meaning of certain terms that come up in the letter and the Ministry of Health standards concerning the disposal of industrial waste.

D "arrete en conseil" - I translated as order-in-council and think that is the correct translation but have no formal text authority for that. You might want to check with Jean Piette. (The term shows up on p.1, paragraph 2°and on p.2, paragraph 3°,paragraph 4°)

2)"decliets dangereux" - I believe is equivalent to "hazarous wastes" (used throughout all material)

3)"permis d'expoitation" - see p.3, #5(b), line 3. Literally, this means an "exploitation permit" and that would certainly seem to convey the message, but may not be a proper English translation. Perhpas, an bureaucrat would call this a "development permit" or a "work permit" but these 2 terms lose the exact sense of the purpose of the permit.

Again, you may want to ask a Quebec Ministry person how they would translate the term.

4)"tenue de registre" - p.7, q.17, line 3 - I have translated as the holding of records (or of record books).

5)"systeme de manifeste" - p.7, q.17, line 3 - I have translated as tracking system, as per your q.17 in your letter to Jean Piette (see also p.8, q.23, line4).

B. Attachment - Standards for Disposing of Industrial Wastes (Ministry of Health, Quebec)

This material was very difficult to translate as many of the terms were quite technical in nature, and terms with which I do not believe I am familiar in the English alone French language. The most troublesome follow:

1) p.3 -1.3.4, line 4

"combustible d'appoint" -topping up fuel (?)
-balance fuel (?)
" bruleur d'appoint" -topping up burner?
-balance burner?

(both terms appear frequently)

2) p.4 -2.1.3, line 2

-"rebuts a forte Teneur"- waste with high water content?

3) p.6 -3.4.1.1., line 3

-"debit calorifique" - heat output?

4) p.8 -3.4.3.1.,line 1

-"chambre de combustion"- combustion chamber (?)

5) p.8 -3.4.3.3.,

-"La lecture des temporature devail de preference etre enregistree sure papiers a operation continue". - I translated this as: The reading of the temperatures should preferably be recorded on continuing operating paper". I think they are referring to a mechanical and not manual process of recording here (and if relevant to your paper, you may want to check with Quebec).

6) p.9 -3.4.5

-"souffleur d'air de combustion et d'atonusation" Air blower for combustion and atomization (or vaporization)?

7) p.11 -5.1, says I acre + 43,560 pi^2

-I do not know what pi represents

8) p.12 -6.1.

-"matieres particulees" -particulate matter?

9) p.12 -SO_2 -"anhydride sulfureux" (sulpher dioxide

10) p.14 -7.1. - I was not sure how to translate the sentence in that paragraph but think it means that

"No atmospherique pollution problem shall arise from an increase in the disposal capacity of the factory."

C. Quebec Policy on the Management of Industrial Wastes

1) p.5, 1st column, paragraph (5) - "bioaccumulable"
-bioaccumulate, bioamass(able)?

2) p.5, footnote *- intrants, extrants

-"intrants" might be Que use of "entrants" meaning incoming or incomer

-"extrants" - outgoer?

3) "elimination" - found throughout - generally I have translated this as "elimination" but have sometimes also used "depositing of" in the sense of getting rid of wastes.

4) p.11 - "reglement" - meaning rule - I have translated as Regulation.

5) p.14 - Column 1, 4th paragraph - could not make out first words on line 2-6.

****

A (?) means that there is some uncertainty as to the exact meaning of a word or phrase.

TRANSLATION OF MATERIAL FROM JEAN PIETTE, DIRECTOR OF LEGAL SERVICES FOR THE MINISTRY OF THE ENVIRONMENT, QUEBEC

7 July 1982

Mr. Joe Castrilli

RE: The Quebec Laws and Policies in Relation to Hazardous Wastes

Dear Friend:

As requested, I am pleased to give you the following information as well as the attached documents relating to the laws and policies of Quebec concerning hazardous wastes.

Firstly, I am sending a copy of the following documents:

1. The standards relating to the disposal of industrial wastes promulgated by the Minister of Health, 1970;

2. The regulation concerning the disposal of combustible wastes adopted by Order-in-Council (?) No.1967-72 from July 4, 1982 and in effect until October 8, 1975; (see memo)

3. The regulation relating to the management of liquid wastes adopted by Order-in-Council No.4306-75 from September 24, 1975 (still in force at this time);

4. The regulation relating to management of solid wastes adopted by Order-in-Council No.687-78 from March 8, 1978 (still in force at this time);

5. The general regulation relating to the evaluation and examination of environmental impacts adopted by decree no. 3734-80 from December 3, 1980 (still in force at this time);

6. The Environmental Quality Act (revised Statutes, Chapter Q-2);

7. The Quebec Policy on the Management of Industrial Wastes (May 1980).

I will now turn to answering, point by point, each of the questions that you asked us in relation to Quebec laws and policies on hazardous wastes, following the order of questions that you gave to us:

1(a) No

(b) Quebec regulates the elimination of hazardous wastes by the use of its general environmental protection legislation, that is, the Environmental Quality Act (Revised Statutes, Chapter 2-2), which includes, notably, an entire section (section 7 of Chapter 1) dedicated to the management of wastes, which includes hazardous wastes.

2. Yes. The Ministry of Environment of Quebec is responsible in a general fashion for the coordinator and application of Quebec policies and laws concerning hazardous wastes.

3. The Quebec laws and regulations have not yet defined by name those wastes, known as "toxic" or "dangerous". The Ministry of Environment has, however, just recently prepared a new draft of regulations on hazardous wastes which will include a definition of hazardous wastes. There will then be a referral to a list of categories of wastes considered to be hazardous. At the moment, the only definition that somewhat resembles a definition of hazardous wastes is that of "liquid wastes" which can be found in paragraph b and e of s.1 of the Regulation Relating to the Management of Liquid Wastes, a copy of which is herewith included.

4. Yes. Sections 114.1 and 115.1 of the Environmental Quality Act give the Minister of Enviroment powers of regulation (?). (Section 114.1) and direct intervention (Section 115.1) where there has been a spill of contaminants (which evidently includes hazardous wastes) in the environment. These provisions do not deal with the compensation of victims of pollution but foresee (especially through Section 113) that the cost (direct and indirect) accountable to the cleaning of the spilled contaminant can be invoiced to the person liable for the spill. There is even a possibility of unilateral intervention by the Minister of the Environment to prevent a spill of contaminants into the environment. As for the cleanup of abandoned landfill sites, it is possible for the Minister of Environment to intervene through the applications of Sections 25, 26, 27, 114.1 or 115.1 of the Environmental Quality Act.

5(a) Yes. Pursuant to the general rules of law which give the responsibility to Quebec, the person who is responsible for a hazardous wastes is that person who has been in possession, care or custody or ownership of the waste.

(b) Those firms which dispose of, process or transport liquid wastes must obtain a permit of exploitation (?)(or development (?)(?); see memo) pursuant to s.55 of the Environmental Quality Act and they must obtain a certificate previous to the installation of any new reservoir or establishment destined to receive liquid waste. As for solid toxic wastes, it is necessary to obtain a certificate

of authorization from the Cabinet of Quebec after an environmental impact study in order to install or enlarge any site for the elimination of toxic wastes (by treatment, incineration, landfill or burial or otherwise), whether it relates to liquid or solid wastes, as is provided through paragraph t of the first paragraph of Section 2 of the General Regulation Relating to the Evaluation and Examination of Environmental Impact.

6. Yes. Section 32 of the Regulation Relating to the Management of Liquid Wastes exempts the producers of liquid waste from a duty to obtain a certificate or a permit of exploitation pursuant to s.54 and 55 of the Environmental Quality Act. They are also exempt from certain technical provisions (guarantee, standards of localization) prescribed by the Regulation relating to the management of liquid wastes.

7. Yes. Section 70 of the Environmental Quality Act allows the government of Quebec to compell, by Regulation, the users or producers of hazardous waste to produce a balance sheet of materials in order to identify losses of toxic materials. This however has not yet been done and a draft of the Regulation concerning the management of hazardous wastes, which has recently been prepared by the Minister of Environment, does not provide anything in this regard. It is always possible, on the other hand, to refer to Section 120 of the Environmental Quality Act in order to request a user or a producer of a hazardous waste to submit such a balance sheet of material.

8(a) No. Section 54 and 55 of the Regulation Relating to the Management of Solid Wastes prohibits the deposit and depositing of a toxic waste in a landfill that is destined to receive urban waste. In the case of a landfill site for toxic wastes that has already been approved by the Minister of Environment pursuant to Section 22 of the Environmental Quality Act, it is not necessary to obtain a new permit each time that there is a need to deposit new toxic wastes, provided that this landfill site has specifically been created for this purpose, as provided in the authorizing certificate issued for the landfill site for toxic wastes.

(b) Yes. Authorizations are required from the Deputy Minister of the Environment and from Cabinet in order to establish any new landfill site for toxic wastes, pursuant to the provisions of s.22, 31.1 and 54 of the Environmental Quality Act.

(c) The plans and specifications of every project to establish or enlarge a waste disposal site for toxic wastes is required, by virtue of the second paragraph of s.22 of the Environmental Quality Act and by paragraph (e) of s.17 of the Regulations relating to the Management of Liquid Wastes.

(d) No. The Minister of Environment has assured that adequate precautions are taken in the framework of the environmental impact study which is required for the establishment or enlargement of any waste disposal site for toxic wastes (paragraph t) by the first paragraph of s.2 of the General Regulations relating to the Evaluation and Examination of Environmental Impact.

9(a) No.

(b) Yes. See s.'s 54 and 55 of the Regulation Relating to Management of Wastes.

10. No.

11. No.

12(a) Yes. A public hearing can be requested by citizens in relation to any project for establishing or enlarging a waste disposal site for toxic waste following the framework of the Procedures for the Evaluation and Study of Environment Impact, as is provided by s.31.3 of the Environmental Quality Act.

(b) Yes. The two first paragraphs of s.124 of the Environmental Quality Act require the previous publication in the official Gazette of Quebec of every draft of a Regulation of the adoption which is foreseen, pursuant to the Environmental Quality Act. The previous publication of the draft Regulation must be in effect at least sixty days before its adoption by Cabinet.

13. No.

14. No. However, the Minister of Environment has negotiated the deposit of a guarantee (in the form of caution money or asurety bond or guarantee,a bond or certified cheque) with those firms which store or eliminate polychloinated bipheyls. This guarantee is aimed to ensure respect of the Environmental Quality Act and can be used to repair any damage or spill of polychlorinated biphenyls that could be attributable to the firm which has put out the guarantee. This guarantee is, however, obtained through a contract and not by virtue of any distinct legal obligation. This deficiency will be remedied in the new draft of the Regulation on hazardous wastes which, as we have mentioned above, has recently been prepared by the Ministry of the Environment.

15. Such an inventory has been conducted. The complete results have, however, not yet become available. Certain disposal sites containing toxic or dangerous substances have however already been identified and surveys have been carried out in order to identify with greater precision the nature of environmental problems that they are liable to cause as well as the measurement required to show them. In the case of the disposal site

for toxic waste that had been developed at Ville Mercier between 1959 and 1972, it was necessary to adopt a particular regulation, a copy of which I also herewith attach, in order to prevent the progressive contamination of the underground water in the region.

16. No.

17. At this time, s.'s 28 to 30 of the Regulations Relating to the Management of Liquid Wastes requires the holding of records by the producers, transporters, and disposers of liquid wastes, which allows verification and control of the movement of liquid wastes in Quebec. However, this system has shown itself to be inadequate and a new system of tracking (?) (see memo) will be set up in the framework of the new draft of the Regulation on dangerous wastes, which I have noted above.

18. The new draft of the Regulation on hazardous wastes will not require a tracking system for the transport of hazardous wastes on property of the industry or firm where they are peoduced.

19. No.

20. The draft of the regulation on hazardous wastes will cover the interprovincial and international movement of hazardous wastes.

21. The draft of the federal Regulation on the transportation of dangerous merchandise possibly will have repercussions on the application of the new Quebec Regulation relating to hazardous wastes. It is, however, too early to make an informed judgment in this regard, since we have just become aware of the text of the draft to the Regulation which has been published in the appendix to the Canada Gazette (Part I), Saturday, June 19, 1982.

22. Not specifically. The cost and requirement occurring with respect to the Regulation Relating to the Management of Liquid Wastes does, however, have one effect in encouraging the producers of used oil to recycle.

23. The spreading of oil for dust control is subject to precise standards by virtue of s.4 to 6 of the Regulation Relating to the Management of Liquid Wastes. However, no system of tracking applies in that area as of yet.

24. See the answer to Question 22.

25. One estimate completed in 1981 appraised the quantity of industrial wastes produced in Quebec to be about 250,000 metric tons a year. This does not include, however, the wastes coming from the metallurgy industry, from the treatment of surface metals and from textiles.

I hope that the attached documents and the above information are of use to you and I send my warmest regards.

Jean Piette
Lawyer
Legal Services Branch
Ministry of Environment of Quebec

DRAFT OF TRANSLATION OF REGULATIONS ON PART OF A REGULATION FROM THE MINISTRY OF HEALTH OF THE QUEBEC GOVERNMENT ENTITLED STANDARDS RELATING TO THE DISPOSAL OF INDUSTRIAL WASTE

By virtue of s.2, Chapter 2 and s.'s 11 and 12, Chapter 13, or the Ministry of Health, the Minister can approve the installation of a factory for disposal of industrial wastes on the following conditions:

1. Submitting of complete plans and specifications of the disposal system including the site location where the factory for disposal of wastes will be installed.

2. Conformity of the proposed factory to the following section or to all other previous standards that are judged to be necessary by the Ministry of Health.

1. Wastes

1.1. Physical and Chemical Characteristics of Wastes

1.1.1. The physical and chemical characteristics of wastes must be known in order to determine the type of disposal.

1.1.2. The total annual quantity of wastes that will be burned and the daily and annual frequency of delivery of each waste to the disposal factory must be accurately provided at the time of the request for approval of a factory for waste disposal.

1.2. Identification of Wastes

1.2.1. Each waste must be classified and carry identification number.

1.2.2. The company providing the waste or wastes must give the truck driver from the transport company for the wastes a list indicating the identification number or numbers as well as the weight of the waste.

1.2.3. At its arrival on the site of the company that will be disposing of the waste, the driver of the truck will give the list mentioned in s.1.2.2. to the superintendant of the company who will indicate the area where the truck should unload.

A chart, visibly posted in the main office of the company that is disposing of the wastes, will indicate to the superintendant the source of the wastes, the quantity received, the date of reception, the number of identification, as noted in s.1.2.2. as well as the manner of disposal of the waste.

1.3. Mixture of Waste

1.3.1. Only a person who is competent in the area of handling, and having previously undergone intensive training by the owner of the disposal factory will carry out the mixture of wastes if such mixture of wastes is required.

1.3.2. The capacity limits of the incinerator must never be surpassed.

1.3.3. During the mixture of wastes, it is necessary to ascertain that the quantity of pollutants in the combustion of products do not surpass the standards of emission and of surrounding air, stipulated by s.'s 6.1 and 6.4, inclusively.

1.3.4. The feeding of wastes into the incinerator must be calculated in such a matter as to permit, at all times, an amount of air for combustion sufficient to complete burning of the wastes and of combustibles if a topping-up boiler (?) is required.

2. Storage of Waste

2.1. Liquid wastes must be stored in closed reservoirs of a capacity and number adequate to prevent any possibility of contamination of the ground or of the underground water level.

2.1.2. The total capacity of reservoirs must be determined according to the daily and annual capacity of the factory disposing of the wastes.

2.1.3. The pouring of liquid wastes into lagoons is prohibited. These wastes with high water content must be put into sedimention reservoirs (?) to decant the water.

2.1.4. The decanted water must be treated adequately before it is poured out. This process must be approved by the Department of Waters of Quebec.

2.2. Storage of Solid Wastes

2.2.1. Solid wastes must be stored in a closed area before their disposed.

3. Disposal of Wastes

3.1. Disposal of Liquid Wastes

3.1.1. All liquid wastes must be destroyed in a manner that is acceptable to the Ministry of Health.

3.2. Disposal of Solid Wastes

3.2.1. Solid wastes liable to contaminate the gound and the underground water level should be buried in a manner that is sanitary and that conforms to standards put down by the Ministry of Health.

3.3. Incinerators for Solid Wastes

3.3.1. An incinerator used for the destruction of solid combustible wastes must be of a type that is acceptable to the Ministry of Health. The quantities of pollutant emitted by the above-mentioned incinerator must not go beyond the standards of emission of surrounding air stipulated in s.'s 6.1-6.4 inclusively.

3.3.2. The cinders coming from incineration of wastes must be buried daily.

3.3.3. It is necessary to consider the possibility of installing a secondary combustionchamber in the event that the emission of pollution substances from the primary chamber cannot satisfy the emission standards for surrounding air stipulated in s.6.1-6.4.

3.3.4. Only someone duly qualified in the operation of an incinerator can put it into operation and supervise its function.

3.4. Incinerators of Liquid Wastes

3.4.1. Identification

3.4.1.1. The incinerator must be provided with a descriptive plaque indicating the type of wastes that are being burned, their hourly consumption in punds per hour as well as the heat output of the topping-up burner if this latter matter is required.

3.4.1.2. Instructions for operation of the incinerator must be posted in the incinerator chamber. These instructions must be prepared by the manufacturer or owner of the incinerator.

3.4.1.3. If a topping-up burner is required,this must be operated by light oil.

3.4.2. The Qualifications (Competence) of the Incinerator Operator

3.4.2.2. The incinerator used for the destruction of liquid or combustible wastes must be of a type that is acceptable to the Ministry of Health. The quantities of pollutant emitted by the said incinerator must not gobeyond those standards of emission for surrounding air stipulated in s.'s 6.1-6.4 inclusively.

3.4.2. Combustion in the Incinerator

3.4.3.1. The Temperature in the Combustion Chamber

The temperature in the combustion chamber (or combustion room?) where the incineration takes place must always be above 2000 degrees Farenheit regardless of the feeding input into the combustion chamber.

3.4.3.2. When a topping-up burner is used, the point of injection of wastes will be situated so that the temperature will never be below 2000 degrees Farenheit. The cooling down of the flame by any manner whatsoever is prohibited.

3.4.3.3. Thermcouples or the equivalent must be installed in critical areas in order to ascertain that the temperature in the incineration chamber is always above 2000 degrees Farenheit. The reading of these temperatures must be recorded on paper in a continual operation (or continually?)

3.4.3.4. Each combustion chamber for a liquid waste incinerator must be provided with an automatic flame detector which will instantly close the feeding of combustible wastes or combustible material in the burner.

3.4.4. The Retention Time of Wastes

3.4.4.1. The time of retention of wastes in the incinerator must be of sufficient length in order to assure total destruction of the waste.

3.4.5. An Air Blower for Combustion and Atomization (Vaporization/Pulverization:)

3.4.5.1. The quantity of air for combustion must never depend on the friction of the chimney (?).

3.4.5.2. The capacity in air for combustion of each air blower must be at least 125% of the quantity of air corresponding to the maximum output of the incinerator.

3.4.5.3. The incinerator for liquid wastes must be provided with at least two distinct burners. Each burner must be provided with its own air blower for combustion and an air-blower for atomization (or vaporization?) if air atomization is required. Such is also the case for every other apparatus used in the operation of the burner. The second burner will be used in the case of breakdown or malfunction of the first burner.

3.4.5.4. When the incinerator is not provided with a topping-up burner, the liquid residues will be atomized into vapour or evaporated.

3.4.6. Pre-heating of Liquid Combustible Wastes

3.4.6.1. Liquid wastes that are viscuous will be preheated prior to being incinerated. This preheating will allow superior atomization of the liquid during its incineration.

3. Chimney

4.1. The incinerators for solid and liquid wastes must be provided with one or several chimneys the height of which will be set by the speed and exit of gas, the temperature as well as the concentration at ground level.

5. Site

5.1. The site of the factory for disposable wastes must have a surface area of at least 60 acres.

1 acre = 43,560 pi^2 (see memo)

5.2. The company that wishes to establish an incineration complex must be prepared to dispose of all liquid wastes of the companies that it serves.

5.3. The disposal of all liquid industrial wastes by methods other than those indicated in the preceding sections is absolutely prohibited.

5.4. Only a body having a exploitation permit from the Ministry of Health is authorized to dispose of wastes as indicated in s.5.3.

6. Standards of Emission and of Surrounding Air

6.1. Particulate (?) Matter

The quantity of particulate matter emitted by whatever system must not go above .25lbs.by 1000 lbs. of corrected effluent on a base of 50% of excess air (?).

6.2. Sulphur Dioxide (SO_2)

6.2.2. Surrounding Air

The concentration of sulphur dioxide at ground level must not at any time go beyond .3 ppm for a ten minute sample.

6.2.2. Emission

The concentration of sulphur dioxide at the point of emission must never go beyond 1000 ppm corrected at 50% of excess air.

6.3. Smoke Index

The opacity of smoke must at no time go beyond the index number 1 index of the Ringalemand scale.

6.4. Halogenic Products

The emission of halogenic products into the atmosphere is prohibited.

7. General Provisions

7.1. No problem of pollution into the atmosphere should result from an increase in the capacity of disposal at the factory (see memo).

7.2. The equipment must be well maintained and the general cleanlinessof the site must constantly be surveyed by a

7.3. Any modification or infraction of any of the above sections will bring the automatic annullment of the approval.

7.4. The approval of the Minister will not dispense anyone from obtaining other permits provided by other laws.

The approval is subject to on the spot verification of a representative of the Ministry of Health.

QUEBEC POLICY ON THE MANAGEMENT OF INDUSTRIAL WASTES ISSUED BY THE GOVERNMENT OF QUEBEC, MINISTRY OF ENVIRONMENT, MAY 1981

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Dear Readers:

Industrialized Quebec annually produces a substantial quantity of wastes which are potentially hazardous to the environment. It is important to stress that the waster and air and land are threatened, as well as potable water, an indispensable resource of dimentation for the whole of Quebec. My Minister, conscious of his responsibilities, could not enitrely leave to the industries producing these wastes, the responsibility of intervening so these wastes could be recycled or destroyed. It is therefore from this point of view of positive action of the Ministry of the Environment that it gives me pleasure to present to you our policy for the management of industrial wastes. This brochure tries to cover the whole of the problem caused by these wastes and to bring forth some solutions for the safeguard of the environment. Up to now my Minister has asked industries to store those wastes that cannot be eliminated in existing centres.

In other respects, it has appeared important to us, as a first action, to encourage the establishment of centres for the disposal of industrial wastes that do not pose any danger toward the environment or to citizens; this measure will permit the elimination of wastes that are presently being stored and those that will inevitably be produced by the industry in the future.

Yet, in order to try to diminish future production, we, as a second measure, see the need to put into place programs that will encourage recovery and recycling, which always, evidently, take into consideration the protection of the environment but which will equally permit an economy appreciable of its resources.

We hope that this publication of the policy of the Ministry of the Environment on the management of industrial wastes will permit a better arrangement between all those interested, particularly the industries or the persons responsible for those wastes, as well as all those citizens who are concerned since they use Quebec's natural resources.

pg. 5 THE AIM OF THE POLICIES

Every human activity produces more or less substantial quantities of waste. Industrial activity in particular produces different types of wastes which require as many different types of specific treatment in order to assure their elimination without defacing the environment.

We can divide industrial wastes into two large classes: inactive wastes, potentially hazardous wastes.

Inactive wastes can be eliminated directly, especially by burial, without causing harm to the constituents of the environment (water, air, land). Those wastes which are potentially hazardous, by reason of their very nature, can have some ominous effects, as much on the health of man as on the environment.

Two properties make wastes potentially hazardous:

(a) reactivity: a waste is said to be reactive when it is explosive, combustible, corrosive, bio-accumulable (?) (see memo) or radioactive.

(b) toxicity: a waste is said to be toxic when it presents danger to human health and the environment.

Therefore, any residue possessing one or the other of the properties of reactivity or toxicity and which cannot be treated, recycled on the spot or directly eliminated without danger to the environment and which, by this very fact, must be transported outside of the industry before it is ultimately disposed of, is considered to be potentially hazardous waste.

This policy deals principally with these types of wastes.*

Industrial wastes that are potentially hazardous can be of a chemical or radioactive nature. As it is very difficult,on the one hand, to give a description that applies to those wastes that are potentially hazardous and, on the other hand, to differentiate inactive wastes, we have placed in the annex of this paper a list of the former types of wastes and their source. Radioactive wastes are not dealt with in this policy paper since there are already certain solutions in place, notably at Chalk River where they are transported at present.

Among other chemical industrial wastes, it is important to distinguish organic from inorganic, since their neutralization requires different treatments.

pg.7 THE PROBLEMS OF POTENTIALLY HAZARDOUS WASTES

The Production and Consumption of Goods and Services

The economic activities produced by advanced industrial societies bring with them harmful affects on the environment. The modernization and diversity of industries have given birth to a gamut of manufactured products and residues, thereby causing a critical problem in waste disposal. Discharged in the environment, a number of these substances can cause irreparable damage.

Industry and citizens are responsible for the problem, to the degree that the production and consumption of certain goods and services manufactured produce wastes.

Consumers live in a world where new products produced by industry invade the market and become used everyday. The accelerated production of these products and the use of them that follows, combined with the gowing presence of the chemical industry (replacing natural materials, like wood, for plastic) increase the quantity of potentially hazardous industrial wastes.

Our society of over-production and of over-consumption presents a very complex structure, especially considering the path going from the exploitation of primary resources to consumer practices, and going through the diverse industrial and commercial stages.

This situation forces us to intervene at each of these stages

*It is necessary however to differentiate chemical products of a high concentration that serve as intrants? in several chemical processes from those residues of these processes (which are in general constituted of concentrations which are much weaker) and which are one part of the outgoing products extrants? of those processes that otherwise are the object of the present policy; the problems with these two types of products come together uniquely at the level of transport.

The Production of Industrial Wastes in Quebec

In Quebec, industry annually produces millions of metric tons of waste. A recent inventory of chemical wastes estimates the volume of waste at 260,000 metric tons per year. They divide up as follows:

acids	45000	tons/year
alkaline	26000	"
used soils	52000	"
incinerated organic residues	61000	"
recycled solvents	4000	"
cyanides and similar substances	1000	"
refinery waste	7000	"

*This data does not include wastes coming from metallurgy, treatment of surface metals and of textiles, not covered by this inventory.

pg.8

When chemical industrial wastes are classified according to their appearance the division is as follows:

organic:	182,000 metric tons
inorganic:	78,000 "

The Importance of Industrial Wastes

The evolution of the environmental conscience in the general population and in the industrial population particularly, as well as the more rigourous control exercized by bodies dedicated to environmental protection means that the quantity of industrial wastes to be treated increases every year. Measures taken by the Quebec Ministry of Environment requiring industries to store wastes that cannot be eliminated are the reason for this increase of treatable wastes.

The search and discovery of hidden sites of industrial wastes that are potentially harmful can also require the extraction of these wastes and their neutralization, which again increases the quantity to be treated.

Other sites, such as the "Mercier Lagoons" where storage of certain

wastes were accepted for 2 years also pose problems.

Thanks to a study initiated in 1973, it has been possible to measure the extent of contamination of the underground waterbed in the areas affected by the liquid industrial waste ponds of Mericer. The Quebec government has already invested over $2 million to ensure new water distribution services for the residents of Mercier and to eliminate a part of the combustible liquid wastes. Some work has been carried out in order to eliminate the remaining waste and to ensure control of the goundwater.

The air and water purification programs allows some recovery of things that previously had been thrown into the environment and which now must be eliminated in an adequate manner. Look, amongst other things, at the deposits of factories treating residual water. Already it is possible to see that these new measures will carry with them an increase in the quantity of treatable wastes.

p.9 Impacts of Industrial Wastes

Several examples of the poor disposal of chemical industrial wastes in North American have made the headlines recently such as Fort Erie, Ontario and the Love Canal in Niagara.

In Quebec, there is the case of the "Mercier Lagoons" that have contaminatedthe groundwater in the immediate area. Restoration work has been done, but it would also be necessary to avoid the fact that similar cases have occured. It is therefore important that the population be informed and sensitized in order to be more vigilant in pressing every government policy that is designed to diminish potential dangers.

Manners of Elimination

The incinerator in Mercier is at this time the only installation able tocreate chemical industrial wastes in Quebec. Unfortunately, the installation can only treat one part of organic wastes by incineration. It does not have the necessary equipment for treating inorganic wastes (plating(?) residues, acids, etc.) as well as some organic wastes (amongst others, refinery wastes).

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The problem of getting rid of chemical industrial wastes in Quebec gets worse every year, since only one part of the wastes can be eliminated. The absence of establishments for treating polychlorinated piphenyls (PCBs) is therefore noted and the impossibility of transporting these residues to the U.S., since May 1980.

The stocking required by the Ministry of Environment as a provisionary measure, is at this point, the only acceptable temporary solution for Quebec industry.

p.11 Historical Account of Intervention

On the regulatory level (?), there presently exist 2 provincial

Regulations (2) in Quebec: The Regulation Relating to the Management of Liquid Wastes (1975) and the Regulation Relating to the Management of Solid Wastes (1978). These Regulations impose a duty to dispose of, store and treat these wastes in authorized sites.

Because of the lack of appropriate installations, the Regulation Relating to Liquid Wastes has a limited application only. In fact, there is only one centre for the treatment and destruction of chemical organic wastes as well as some factories for recycling solvents and used oils. At the same time, this Regulation allows the establishment of an infrastructure for the transportation and storage of organic wastes which will be able to serve as a base for the controlled circulation of industrial wastes in Quebec.

To present, the Minister of the Environment and, previously, the Environmental Protection Services have acted mostly at the level of production of dangerous wastes, principally to control their circulation and elimination. Their interventions are summarized as follows:

1970-1972 -installation of an incinerator for liquid wastes
1975-1979 -inventories of the processes of manufacture for liquid effluents
1975 -Regulation on the management of liquid wastes
1976-1979 -discussions with representatives from industry on the necessity of joint action on waste disposal
1976-1980 -inventory of waste dumps and locating landfill sites
1978 -Regulation on the management of solid wastes; prohibition of toxics in sanitary landfill sites
1979-1980 -closing of existing dumps; requirement of toxic wastes storage by the Minister of Environment
1979-1980 -planning for treatment centres for industrial wastes
1980 -financial support from the federal treasury (?) of wastes

p.13 THE POLICY FOR THE MANAGEMENT OF INDUSTRIAL WASTES

The policy of the Ministry of Environment in relation to industrial wastes is written in 2 broad objectives in its overall policy on the management of wastes:

1. Prevention

The prevention of deterioration liable to create ominous consequences to man and his environment, by diminishing the quantity of wastes, by prohibiting substances producing non-treatable wastes and by the adequate elimination of non-recyclable wastes.

2. Restoration

The restoration and improvement of detoriated areas by intervention on existing sites to ensure that the population is not endangered.

General Means

Even though all these means, both general and particular, apply

to inactive wastes. Indeed, although the latter can apply can easily be eliminated in the environment (amongst others, by land-filling), they can nevertheless have impacts on an aesthetic level; for this reason, it appears urgent that at the level of prevention especially, the quantity be reduced. The means proposed can apply in a general way to 2 types of wastes by:

-spreading of information on their nature, toxicity, radioactivity, quantities and location;
-an inventory of producers and transporters;
-identification of recycling and elimination processes and the effects of wastes and of those substances liable to become potentially harmful wastes.
-the sensitizing of intervenors to their respective and complementary responsibilities (dans le jossier?) by the media and popularizing this knowledge (see memo).
-information to the population on the level of consumption, in relation to the ecological prive of goods from wastes;
-information to producers, in the area of production, on the possibility of recycling and of elimination and on replacement producers.

Other ways put into effect have as a purpose, the encouragement of research, giving rise to projects in relation to the effects of wastes, of new and modified processes, of equipment and restoration; in encouraging industrial promoters to research solutions to the problems of waste at the levels of production, of (pg.14) operation, of storage, of circulation, of recycling and of elimination encouraging collaboration between universities and industry in research and in the transfer of technology.

Regulation on the circulation, storage and elimination finally completes the number of general ways to putting into effect a policy of managing industrial wastes.

In completing the present Regulation on the Management of Liquid Wastes for the extent of liquid and solid wastes together, there will be a tightening of control allowed on the travel of potentially harmful industrial wastes.

At the level of production, the Minister recommends the prohibition of certain products (can't read due to xeroxing) ...and strongly encourages promoters to choose between those goods and processes, those which produce the least waste, favouring the replacement of certain materials first by other substances.

At the level of manufacturing processes, the Minister wants to urge industry to minimize production of those wastes due to changes (?) in operation, to change or improve techniques, and to selectively ban certain processes.

At the level of wastes, the Minister wants to encourage internal recycling and a physical concentration of wastes externally. As a consequence, he intends to:

-prohibit the deletion of potentially harmful wastes;
-prohibit one mixing of wastes, except when it is required for final treatment of for recycling;
-establish, at a regional level, a record of those wastes that are potentially harmful so that prior to their transport, they can be used in other processes or mixed in order to cut down on their toxicity;
-define safety standards for storage (standardization of equipment);
-permit medium and long term storage only when the technical equipment is not available;
-define transportation standards;
-minimize transportation;
-favour (license?) waste recycling inside the factories producing the waste and, secondly, outside of the industry;
-favour (license?) the market for recycling products;
-stimulate the market for recycling;
-set and have followed those standards for industrial effluents.

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At the level of consumption, the Minister will inform the public of those products which produce potentially harmful wastes and will recommend substitutes.

Specific Ways to Eliminate Non-Treatable Wastes

In the case of non-treatable wastes, the Minister will be prohibiting certain products which produce such waste and will favour the recovery of those prohibited products which remain in circulation and of potentially harmful products no longer in use, by spreading information to the public and to distributers, providing them with a list of these products and indicating how to dispose of them.

Specific Ways to Adequately Dispose of Potentially Harmful Wastes

As for potentially harmful wastes, the Minister intends to:

-favour the establishment of treatment centres for such waste with respect to the following criteria:
    -safety of the operation
    -destruction of waste
    -possibility of recycling a part of the wastes
    -respect for the emission standards for ground, air and water
-require producers to ensure that there is adequate treatment for their wastes
-favour the use of existing elimination centres, providing them with technical and administration help and controlling the setting of tariffs
-installing an integrated system for the recording of and transfer if dangerous wastes
-give maximum security to the circulation of wastes by identifying the transporters and their cargo, limiting the shifting of wastes, controlling the import and export of wastes, setting standards for handling and standardizing circulation equipment

Some plans for action have already begun, as the Minister has formed an emergency team for accidental spells.

Specific Ways to Intervene on Existing Sites

The Minister has 3 specific ways of intervening:
-identification of sites, affected areas and wastes
-evaluation of the effects on an area and watching the area evolve
-restoration of an area to encourage the recovery of lost uses, if required

p.17 SHORT TERM PROGRAM

Intervention in Produced Industrial Wastes

Firstly, one Minister has required that industries store potentially hazardous wastes, and particularly inorganic wastes, since there is an incinerator for liquid organic wastes, until there is an adequate solution in place for destroying the wastes.

At the same time, the nister has considered 2 principal projects of intervention for industrial wastes:
-installing chemical solidification techniques for inorganic wastes and a final safe landfill site, and
-installing a system for incineration with rotating ovens for organic wastes (sludge and solid) that cannot be incinerated at present

At this time, the Minister is revising the 1975 Regulation to be certain that it covers all potentially harmful wastes. He would also like to publicize (?) the Regulation so that there is a greater awareness amongst waste producers of their responsibilities. A more strict control mechanism for following the route of all potentially harmful wastes from the producer to their destruction, including their transportation, is also being studied.

The Minister is revising the control system so that the wastes can be followed from their origin to their elimination, and it will be put into effect by regional directives (?) (fr. directions).

At present, the Minister is proceeding with a systematic inventory of existing sites in order to evaluate which could receive potentially harmful wastes and which are liable to present environmental problems.

We are also bringing out an inventory of wastes starting from the industrial manufacturing process.

Intervention in Production

In the area of intervention at the actual source of dangerous wastes, i.e., the manufacturing processes that use dangerous substances, the Minister will initiate negoitations of understanding, with industry, by target sectors.

This approach is aimed to provide a use of still a greater amount of recycled material, a modification of manufacturing processes to reduce the quantity of wastes produced and the prohibition of certain dangerous substances.

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This approach necessarily implies the putting into effect of a research and development program for industry and the Minister intends to favour research in this area, ensuring that those technologies that exist as they are now being used and that those that are being developed outside Quebec be evaluated and adapted.

The Minister would also like to encourage the placement of necessary equipment in Quebec universities to carry out this research and do this in collaboration with the Council of Political Sciences (?).

He also intends to stimulate collaboration between university and industry in order to develop new processes which will produce less waste and to develop recycling methods. This would allow for a smaller production of wastes or less harmful wastes.

Finally, the Minister is encouraging industry to carry out internal research for their own processes and to apply their findings.

Conclusion

In conclusion, it should not be forgotten that the final aim of the Quebec Minister of Environment is to reduce, from the source, the production of wastes of all kinds. We think that this policy proposal has one of the elements that is essential in reaching that objective, and at the same time, assures coherence with the purification programs already in effect.

p.19 ANNEX

Table 1/Classes of Wastes

acids
alkaline
surface treatment wastes
cyanides
phosphates
chemical wastes from fertilizers
oily water
oily wastes
chlorinate solvents
organic solvents
resin from plastic
aminos
phenols
PBs
pigments, paints, veneers, adhesives
oesticides
glycols
ditergents,cleaners and soaps
pharmaceutical and cosmetic products
organic and agro alimentary wastes
diverse wastes
other organics
other inorganics