Environment Canada Environnement Canada

Environment
UPDATE

July 1981 Volume 2 Number 2

Canadian Environment Week October 11–17, 1981

Canadian Environment Week should not be considered solely an Environment Canada event. It is the responsibility of all Canadians to preserve and enhance the quality of their environment.

The 1981 Campaign will involve as many sectors of the public as possible, in the week set aside every year as a time to reflect on environmental matters.

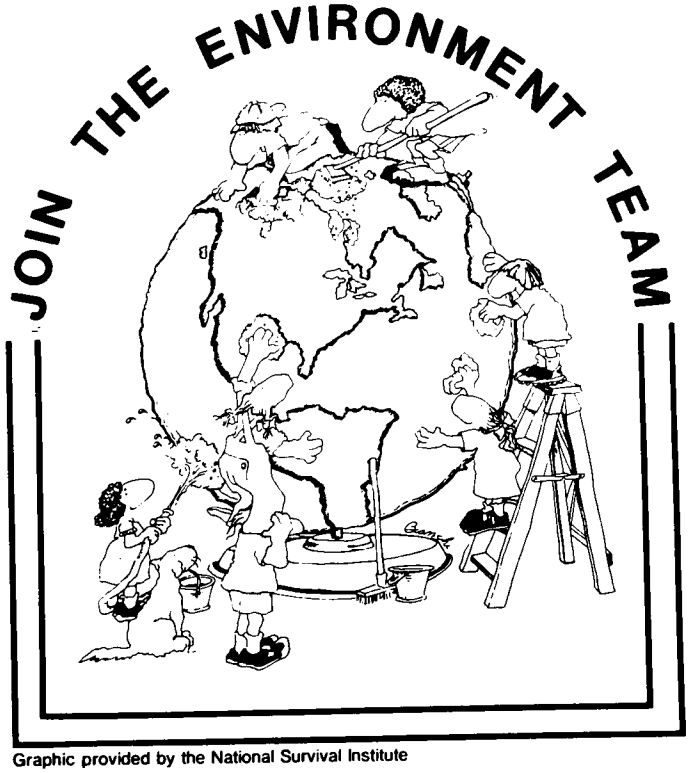
The theme this year is "Join the Environment Team." So join with us to make Canadian Environment Week a week to remember.

Canadians should participate as families and as individuals. They should get involved through their service clubs, environmental groups and other organizations.

John Roberts
Minister

Content

Hazardous Wastes	2,7
Bigger Role for Hydro-Power	3
Pulp and Paper Modernization	4
New Tree Improvement Centre	4
Experimental Oil Spill	5
Chemicals	6,12
Halifax Citadel	6
Booth on Acid Rain	7
Whooping Crane	8
Water-Our Next Resource Clash	10



Graphic provided by the National Survival Institute

Canada

Ministers Plan Joint Attack on Hazardous Wastes

Federal and provincial environment ministers have agreed to cooperate in dealing with the problems of hazardous waste management in western and northern Canada.

Environment Minister John Roberts met with provincial environment ministers from Alberta, Saskatchewan, Manitoba and Ontario in Winnipeg to discuss the hazardous waste management plan recently recommended by a federal-provincial study. The study, sponsored by Environment Canada and the environment departments of the four western provinces, Ontario, the Yukon and the Northwest Territories, recommended that hazardous wastes be managed on a regional rather than strictly provincial basis.

The recommended system calls for one incineration plant to serve the entire region, physical-chemical treatment plants in each of the four western provinces, and a network of collection stations across the region.

The incineration plant would destroy organic wastes such as PCBs and oily sludges, and the physical-chemical treatment plants would treat inorganic wastes such as plating solutions containing heavy metals. Wastes would be gathered at a network of collection stations and transported to the appropriate treatment plant by truck. This system minimizes transportation of wastes and economizes by centralizing the most complex and costly treatments. It was selected as the best of 56 alternatives on the basis of efficiency, risk, cost, and environmental and social impact.

The study did not pinpoint specific sites for any of the treatment plants, but did list candidate areas that are geologically, environmentally, and socially suitable. It recommended that the incinerator be located in southeastern Alberta, and the physical-chemical treatment plants within 100 km of Edmonton, Saskatoon and Winnipeg, and in the lower mainland of British Columbia.

Other recommendations include further site selection procedures with extensive public involvement, operation of the system as a Crown corporation financed by participating governments, and legislation providing for licensing, penalties, a manifest system to track wastes, and mandatory recycling of some wastes.

- 30 -

Further information:
Patricia Logan
Tel.: (403) 420-2540

Information

Requests for further information should be sent to the authors of the articles at:

Information Directorate
Environment Canada
Ottawa, Ontario
K1A 0H3

unless otherwise indicated.

Comments and suggestions should be sent to Henri Mauviel, Environment Update, at the above address, (819) 994-1410.

Bigger Role for Hydro Power

The National Energy Program, with its "off oil" policies, will mean a greater emphasis on electrical power in the years ahead. This was the forecast Roger Simmons, parliamentary secretary to Environment Minister John Roberts, gave a conference dinner in Ottawa. The conference, sponsored by the Canadian Water Resources Association (Ontario Region), dealt with the theme "Environmentally Compatible Hydro Development".

The conference was attended by some 200 persons, including officials of utilities, federal, provincial and municipal governments, scientists, environmentalists and others from across the country.

"Hydroelectricity gives us an opportunity to reduce our reliance on oil," said Mr. Simmons, MP for Burin-St. George, Newfoundland. "Every million kilowatt hours of hydro energy we use saves Canada the equivalent of 700 barrels of oil."

He said Canada could gain both economically and environmentally by putting greater emphasis on small-scale hydro projects as a source of energy. There were thousands of sites across the country with undeveloped hydro potential of between 15 and 60 million kW. Fifteen million kW is more than 20 times the capacity needed by a city the size of Ottawa.

If all the available hydro potential were exploited over the next 20 years, said Mr. Simmons, the employment created, directly and indirectly, would amount to some 140 000 person-years. Jobs in project construction and support services would pay some $2.2 billion in wages and salaries in current dollars.

Other jobs would be created in the manufacture of electrical equipment and machinery, of steel and concrete and other materials - for turbines, pumps, generators, accessory equipment, transmission cable and towers, controls and switching stations. Up to 90 percent of their purchase value can be produced in Canada, and the labor content is high. Thus they could involve an additional 750 000 person-years of work for Canada's secondary industries and their suppliers.

In a radio interview, Mr. Simmons stressed the environmental advantages of developing small-scale hydro. "It has the advantage of getting us off oil.....it has the very distinct and obvious advantage of being a very clean, attractive alternative to some of the messier ones that come to mind."

On the second day of the conference, it was announced that Ontario would encourage private development of small hydro-electric sites.

Norman Sterling, minister without portfolio, speaking on behalf of Ontario Energy Minister Robert Welch, said the province would approve the development sites with an average energy capacity of less than 2 MW (2 million W) -- enough energy to supply 750 homes.

The conference chairman was Harry Rosenberg, chief, socio-economic division, Water Planning and Management Branch, Inland Waters Directorate.

Further information:
Judith Hilliker
Tel.: (819) 997-6555

Pulp and Paper Modernization Helps Reduce Pollution

A federal-provincial incentive grants program will significantly reduce pollution from the pulp and paper industry over the next five to seven years.

Agreements have been reached with several provinces in a program designed to help make the pulp and paper industry more competitive and reduce pollution. Funded by the Department of Regional Economic Expansion, these agreements provide some $235 million in grants to encourage capital expenditures on plant modernization and pollution abatement projects. Each dollar in government funds must be matched by at least $3 from the company.

The program requires maximum Canadian content to create more jobs in Canada and to boost exports of machinery, pollution control equipment and technology. The present tax incentive program, allowing fast depreciation of air and water pollution abatement equipment, has been extended indefinitely.

The initial response from industry has exceeded expectations, with investment running at a little more than four times higher than the total the previous five years. Pollution abatement expenditures are about one-fifth of the new investment - especially significant since these expenditures do not yield any financial return.

A major objective of the program is to reduce spent sulfite liquor discharges from the newsprint-sulfite sector of the industry. Significant gains in in this area will result from modernization and conversion to high-yield pulping processes, which will also achieve better resource use.

Further progress has also been made in reducing odors and particulate emissions from recovery furnaces, digesters and evaporators. Energy has been saved through installing bark and wood residue burning facilities, upgrading steam lines and replacing oil with electricity or natural gas.

Further information:
Paul Hempel
Tel.: (819) 997-6555

New Tree Improvement Centre

Experts from government and industry are working together to produce better trees at a new tree-breeding centre near Debert, Nova Scotia, some 20 km west of Truro.

Operated by the Nova Scotia Department of Lands and Forests, the centre was officially opened May 23. Federal Environment Minister John Roberts took part in the ceremonies along with Nova Scotia Lands and Forests Minister George Henley and Development Minister Roland Thornhill.

The tree-breeding program in Nova Scotia is a cooperative project of the Tree Improvement Working Group. This is made up of representatives of the Maritime Forest Research Centre of the Canadian Forestry Service, the Bowater Mersey Paper Company, Nova Scotia Forest Industries and the Scott Paper Company.

The new $1 250 000 centre occupies 210 ha beside a major provincial seed orchard site. It includes a specially designed greenhouse capable of producing four different growth environments, with an adjoining laboratory, transplant bed area and irrigation pond.

Mr. Roberts said the cooperative approach allows several agencies to undertake a program which could not have been handled by one agency alone.

Further information:
Vivian Williams
Tel.: (819) 997-6555

Experimental Oil Spill Planned

Environmental Protection Service scientists will oversee a discharge of oil into arctic waters this summer as part of an experiment to study the environmental effects of oil spills. It will also help assess the effectiveness of new oil spill cleanup technology.

The Baffin Island Oil Spill (BIOS) Project is a four-year study to determine the effects of oil and dispersed oil on the nearshore arctic marine environment, and to test shoreline cleanup measures never tried before in the arctic.

The study began in summer 1980, when a 30-man camp was set up near Pond Inlet at Cape Hatt, Baffin Island, and baseline data on several small bays were collected. A small quantity of oil was released along several sections of shoreline, to launch a study of the long-term fate of oil on arctic beaches.

This summer about 100 barrels of crude oil will be discharged into a bay with a boom in place to contain the oil. A similar volume of oil mixed with a dispersant, which breaks it up into tiny droplets and mixes it into the water, will be released into a second bay. A third bay will remain uncontaminated as a control.

An intensive sampling and analysis program will continue through 1983. Scientists will study what happens to oil in the water and bottom sediments, and determine its effect on bottom-dwelling organisms such as seaweed and clams.

Scientists will also test several methods of cleaning up oil on the shoreline that have never been used under arctic conditions. The measures include burning the oil in place and mechanically mixing the oil into the sediments.

BIOS is a cooperative international project, funded and managed by the Government of Canada, the Canadian oil industry and the United States and Norwegian governments. The Environmental Protection Service coordinates the project, which also involves the departments of Indian and Northern Affairs and Fisheries and Oceans. Northern residents were consulted throughout the planning of BIOS, and the test site at Cape Hatt was suggested by the Pond Inlet Council.

The experimental oil spills are expected to take place during the latter half of August, depending on weather conditions. Results of this year's work will be reported at the annual BIOS Project workshop in Edmonton in January 1982.

Further information:
Patricia Logan
Tel.: (403) 420-2540
or
Peter Blackall
Tel.: (403) 420-2592

Commercial Use of Chemicals Surveyed

Environment Canada has completed the examination of data from 350 Canadian companies on the commercial use of some 250 chemicals. Purpose of the survey, undertaken last August, was to determine the extent of production and import of these chemicals and to ascertain whether these quantities could pose a threat to human health or the environment. Companies were also asked to report their intended uses and applications.

The chemicals surveyed were chosen from the special list of candidate chemicals established under the Environmental Contaminants Act. The list includes substances which could create problems because of their toxicity or persistence, and about which little is generally known. The chemicals surveyed included aromatic amines and halogenated hydrocarbons.

To date three hundred and eighteen companies have responded to the survey. One hundred and eighteen gave information on names, amounts and uses for about 95 chemicals, and 200 others indicated that they were not involved in importing or producing any of these chemicals.

The responses indicate that these substances are used, for example, as rubber, polymer or petroleum additives, as solvents, dyes or pigments, or in photographic developers.

The collected information will help determine priorities for the further assessment of the chemicals reported. Some of these chemicals may be added to the Environmental Contaminant Act list of priority chemicals. Chemicals on this list are studied in detail with regard to toxicity, environmental persistence, amounts and uses in commerce.

All unclassified information on amounts, uses and properties gathered through the survey is being entered in a data base, Chemicals in Canadian Commerce (CCUBE), and will be made available to the public this fall.

Further information:
Marcel Thérien
Tel.: (819) 997-6555

Halifax Citadel Restoration Under Way

A current restoration program will make the Halifax Citadel an attraction that every visitor to Halifax must see, says Environment Minister John Roberts.

Mr. Roberts officially opened the restored southwest demi-bastion of the Citadel on May 25. He announced the selection of the Ross-shire Buffs, the 78th Highland Regiment of Foot, as the garrison regiment of the Halifax Citadel National Historic Park.

The regiment will have a complement of 85 men equipped with uniforms, weapons, ammunition and band instruments that will cost almost half a million dollars. Restoration of the Halifax Citadel began in 1976, and will be completed in about seven years. "Once a visitor crosses the drawbridge, he or she will immediately experience life as it was when the Citadel was the stronghold of the imperial military presence, in Canada."

Already the most visited National Historic Park in Canada, the Halifax Citadel receives more than a million visitors each year.

Further information:
Jim Shearon
Tel.: (819) 997-0088

Maritimes Grapple with Hazardous Wastes

Industry produces 98 percent of the hazardous wastes generated in the Maritime provinces, according to a federal-provincial study. Conducted jointly by the Environmental Protection Service and the three provinces, the study found that the other 2 percent comes from federal facilities, other public institutions and private households.

Release of the Regional Report on Hazardous Wastes was announced by the Minister of the Environment for Canada and the three Maritime environment ministers. The report says about 65 percent of these wastes are disposed of by unsatisfactory methods, usually by dumping or sewering. So far no suitable waste treatment or disposal facility exists in the Maritimes.

The study found that some 138 900 tonnes of hazardous wastes are produced each year in the region -- 51 percent in New Brunswick, 48 percent in Nova Scotia and 1 percent in Prince Edward Island. They include acids, alkalis, solvents, petrochemical wastes, insecticides and other substances.

About 21 000 tonnes could be recovered and used again; 58 000 tonnes could be treated at source with new techniques. Some 10 100 tonnes of "hard core" wastes require special treatment and disposal.

The report identifies a number of environmental and health hazards resulting from present disposal practices, including contaminated streams, aquifers and domestic wells. Each province is currently reviewing the situation to determine what kind of corrective action to take.

Another federal-provincial program is under way in Newfoundland and Labrador, where a newly completed inventory of hazardous wastes has been referred to the provincial government for study. Meanwhile Environment Canada is continuing to work with all the Atlantic provinces in developing management systems for special wastes. This includes drafting various alternative plans for treatment-storage disposal facilities.

Further information:
J. Rod MacDonald
Environment Canada
Atlantic Region
7th floor, 45 Alderney Drive
Dartmouth, Nova Scotia
B2Y 2N6
Tel.: (902) 426-8374

Booth on Acid Rain at Man and His World

Quebec's acid rain problem is to be the focus of an Environment Canada exhibit at Man and His World this summer. "Man and natural resources" is the theme of this year's exposition, which runs from June 23 to August 30. At its booth in the "Rendez-vous" Pavilion, Environment Canada is distributing buttons and information sheets on acid rain. A slide show has been prepared by the department's Information Directorate.

The "Rendez-vous" Pavilon, formerly the CN Pavilion, is devoted exclusively to environmental themes. Located across from the Quebec and the French pavilions, it is open every day from 10 a.m. to 9 p.m.

Further information:
Clément Dugas
Tel.: (814) 872-6096

Foster Parents Help Save Whoopers

Whooping cranes normally produce two eggs annually, but usually only one chick survives. And that, really, is the key to the Great International Avian Foster Parents Plan (GIAFPP).

In late May of 1975, a Canadian Wildlife Service scientist took one egg from each of the whooping crane nests in Wood Buffalo National Park, the only place where the endangered whoopers nest in the wild. With the cooperation of United States scientists, the eggs were transferred to sandhill crane nests in Gray's Lake National Wildlife Refuge in Idaho.

The idea was that the sandhill cranes, which are not endangered, would hatch and raise the young whoopers as their own, and that the whoopers would travel from Gray's Lake to wintering sites in the southern states and back again with their foster parents. The plan worked, and more eggs are being transferred each year. The object is to build up the Gray's Lake whooper numbers to about 50, a level at which the new flock might become self-sustaining. So far the plan has produced about 20 wild whoopers.

This project means more surviving whooper chicks for the same number of eggs laid. Moreover, prospects for survival of the species are better if there is a new flock inhabiting a different geographical region; for then the chances of all the whoopers being wiped out in a common disaster are greatly diminished. Biologists worry about threats to the main flock that winters on the Texas coast, from oil pollution and hurricanes.

The Gray's Lake whoopers winter in New Mexico with their foster parents.

The CWS is investigating other sandhill crane populations with different migratory paths and destinations. This work has concentrated in the interlake region of Manitoba, where sandhills conveniently breed near airports. This would facilitate rapid transfer of whooping crane eggs to the sandhills' nests.

In 1978, after conventional marking techniques failed to reveal their migration route or their winter destination, more sophisticated research methods were applied.

Since there were no large-scale maps or aerial photographs of all the central Manitoba breeding areas, Landsat (satellite) pictures were used to identify those areas. Scientists then tracked the sandhill crane families with a helicopter; and once the birds were spotted, the helicopter landed and young cranes were captured on foot. Miniature radio transmitters were attached to 16 of these birds.

At this point the investigation became a cooperative effort by the CWS, the U.S. Fish and Wildlife Service, the University of Wisconsin and the Illinois natural History Survey.

A radio-equipped truck and aircraft were used to follow the sandhill cranes' migration path. The cranes' relatively slow flying speed and a radio receiving range of over 160 km made this a simple matter, despite some transmitter failures.

The birds made stopovers along the early part of their route in southern Manitoba and North Dakota, but then flew practically non-stop to the prairies of the Texas Gulf coast between Houston and Corpus Christi. In all they were tracked for some 2 500 km. The process was

repeated in 1979, when the 1978 findings were confirmed.

Today there are perhaps 122 whooping cranes in the world. Seventy-eight nest in Wood Buffalo National Park, an estimated 19 spend the summer in Idaho (but have not yet nested), and 25 are in captivity at the Patuxent Wildlife Center in Maryland, where they were artificially reared.

The number of breeding pairs is expected to increase from the present 19 to perhaps 25 within a few years. Since 1977, dry summers have contributed to loss of breeding and feeding terrain. This has no doubt cost a few cranes, and scientists are concerned about continued dry weather. But cooperation between federal, provincial and territorial governments, developers and the private sector will ensure a future for this magnificent symbol of our wildlife heritage.

Further information:
Wayne Roddick
Tel.: (819) 997-6555.

Calendar

International Symposium on Acid Rain

Environment Canada, together with the Embassy of Sweden, will organize an international symposium on acid rain which will be held in Montreal on October 13 and 14 during Canadian Environment Week.

Scientists from the United States, Norway and Germany, in addition to those from Canada and Sweden, have announced their participation.

The symposium will provide these representatives of various countries with a unique opportunity to discuss the problem thoroughly and to pool the data they have collected to date. Such exchanges and discussions will lead to better cooperation between the countries which are signatory to the Geneva agreement (1979) and should speed a consensus on what measures are needed to solve the problem

Calendar

SVP Acid Rain Campaign

Together with the Société pour vaincre la pollution (SVP), Environment Canada has launched a campaign in Quebec to raise public awareness of the devastation caused by acid rain.

Upon request, until the end of October, SVP will hold meetings, anywhere in Quebec, on the subject of acid rain. Besides hearing briefings and receiving documentation on this topic, participants will be able to exchange opinions and evaluate plans of action.

Services of the SVP acid rain committee are available free of charge by telephoning (514) 844-5477 or 844-8070.

Water - Our Next Resource Clash? It Depends on the Climate

Water is a universally important resource. It plays a crucial role in the management and development of agriculture, energy, transportation, forestry, wildlife, inland fisheries, mining, recreation, tourism and manufacturing. In 1980 Canadians used 26.3 billion gallons of water a day, and preliminary research by Environment Canada indicates this will more than double in the next 20 years to 62.2 billion gallons. About 9 percent, or 2.3 billion gallons a day, was actually consumed -- that is, not returned to the water system from which it was taken; and this is expected to rise to 4 billion gallons a day. Moreover pollution will remove more and more clean water from use unless expensive treatment is carried out.

The availability of Canada's water resources depends upon climate, terrain and soil conditions in each region of the country. Both surface water and groundwater depend upon precipitation for renewal. The drought in the '30s hit the mid-west of North America, and particularly Canada's prairie farming community, without warning -- and without plans and policies in place to mitigate the loss of income and the suffering. The prime federal response to this crisis was the creation in 1935 of the Prairie Farm Rehabilitation Administration (PFRA) to control and coordinate federal efforts to meet the needs of Canada's prairie agricultural community.

The Prairie Provinces Water Board, which oversees the sharing of water within those provinces, was a further major step.

We have learned much since 1930 about ways to reduce the impact of drought, through river basin planning and management, better agricultural practices and relief programs. But the impact has become more widespread throughout our economy, despite technological advances. Power generation capacity is reduced by low water levels and decreased water availability for cooling at thermal stations. Industries, such as pulp and paper, which are heavily water dependent, suffer through production cut-backs due to a lack of water for cooling and for transporting logs. Low water levels lead to deteriorating water quality, thus increasing industrial and municipal water treatment costs, and adversely affect the tourist and recreation industry. Meanwhile, Canada's population has grown by over 25 percent, becoming more concentrated in cities near flowing water. By the year 2000, the proportion of urban dwellers is expected to rise from over 50 percent at present to 90 percent. Thus the use of water by both city dwellers and farmers is increasing faster than the population growth, and Canada is becoming more vulnerable to changes in water supply.

These increased needs for fresh water may bring about serious proposals for major river diversions and changes in flow regime which could significantly affect our climate. Among the most important potential effects in Canada are those in the Mackenzie River basin which could result from diversion of water from the Peace and Athabasca Rivers southward into the Saskatchewan River system to help meet needs in the dry southeastern part of Alberta. Potentially even more important is the possibility of large hydro dams on the Liard River. These could affect the favorable micro-climate in the valley and alter the timing of the breakup

and movement of ice in the lower Mackenzie system, with major consequences for shipping.

After the 1976 western drought, Environment Canada began a long-term investigation to assess the risk of such happenings. It examined various definitions of drought, and sought to establish safety margins by which current and future water requirements can be assured. Water demands are also being studied in a phased program of forecasting future needs. More important, the chances of Canada suffering a water shortage like the one in the '30s or in 1976 will soon be precisely measured. A Canadian Climate Program was established specifically to assess climatic variability and its impacts, to predict climate for at least a season in advance. Support for the program has come from many other federal departments from provincial governments, universities and the private sector.

The Atmospheric Environment Service has taken the lead in collecting, analyzing and monitoring meteorological data on climate. The Canadian Climate Centre is promoting better use of climate data. For example, maps prepared from daily temperature and precipitation reports to monitor the relative soil dryness across Canada showed significantly below normal soil moisture in most of Alberta and southwestern Saskatchewan late last May.

Some communities in this area had as little as 25 percent of the water normally in the soil at that time of year. This pattern, which began with low winter snowfall and an early melt due to mild temperatures in late February, had spread and centred on Canada's agricultural heartland.

Knowing the distribution and volume of water in streams and in the soil is valuable in assessing flood dangers.

The AES programs complement work proceeding in other parts of the department. For example, the Environmental Conservation Service is participating in the study of water demands in the prairie region. It is also funding research in some universities aimed at developing methods and incentives for water conservation.

Before the end of 1981, there will be answers to such questions as how often do water shortages occur? How long do droughts persist? And how many cities and farmers will they affect? Along with other federal agencies, Environment Canada is proposing an enhanced Canadian Climate Program.

Within five years seasonal climatic forecasts will help determine the probability, location and timing of both droughts and floods. By that time, water demand studies should also give a good indication of probable future water demands.

Further information:
William I. Pugsley
Tel: (416) 667-4617

Standardized Test Guidelines for New Chemicals

The Council of the Organization for Economic Cooperation and Development (OECD) has adopted 52 standardized test guidelines for new chemicals.

In a speech to the Canadian Bar Association in Toronto, Environment Minister John Roberts said these guidelines will help provide useful data on the impact of new chemicals before they enter commercial use.

The minister described other objectives of the OECD Chemicals Program in which Canada had played a major role. They include the establishment of good laboratory practices, the exchange of confidential information between governments and the adoption of minimum pre-marketing data on new chemicals.

Through this program, said Mr. Roberts, Canada was encouraging the industrialized world to institute cooperative health and environmental testing for all new industrial chemicals.

"The result will be a chemical passport that will precede the export of these chemicals from one country to another," he said. "This will allow the Government of Canada to ensure that Canadian citizens are protected from these substances."

The minister explained the various operations of the Toxic Chemical Management Centre (TCMC) in his department. The centre is responsible for selecting chemicals for assessment, assessing dangers and recommending control measures.

Mr. Roberts said his department is developing comprehensive new environmental protection legislation on toxic chemicals, to replace existing legislation.

Further information:
Marcel Thérien
Tel.: (819) 997-6555