Environment Canada Environnement Canada

Canadian Environmental Protection Act, 1999

Annual Report

for April 2012 to March 2013

Canada

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1 Introduction

This annual report provides an overview of the activities conducted and results achieved under the *Canadian Environmental Protection Act, 1999* (CEPA 1999) from April 1, 2012, to March 31, 2013. The publication of this report responds to the statutory requirement to provide annual reports to Parliament on the administration and enforcement of the Act.

CEPA 1999 provides authority for the Government of Canada to take action on a wide range of environmental and health risks—from chemicals to air pollution to wastes. For the most part, it functions as an enabling statute, providing a suite of tools for identifying, assessing and addressing the risks.

The general steps followed to address each risk can typically be organized into a cycle: information is collected to understand risks and inform decisions; risks are assessed to determine if action is required; risk management instruments are put in place to reduce or eliminate risks to the environment or human health; these instruments require compliance promotion and enforcement; and information is once again collected to monitor progress and determine if additional action is required. At each stage in the cycle, stakeholders are engaged, the public has opportunity to be involved, the government works closely with provincial and Aboriginal counterparts, and information is reported out to the public.

Figure 1: The CEPA management cycle

The new annual report structure includes information on all stages of the management cycle. Section 2, "Addressing Key Risks," covers: information gathering, research and monitoring; risk assessment; and risk management for toxics, air pollution, greenhouse gases, water quality and waste. Section 3, "Administration, Public Participation and Reporting," covers reporting, stakeholder engagement, public rights and inter-jurisdictional relationships. Section 4 covers compliance promotion and enforcement.

2 Addressing Key Risks

2.1 Toxic Substances Harmful to Human Health or the Environment

Part 5 of CEPA 1999 includes specific provisions for data collection, assessment and management for controlling toxic substances. Part of this included a requirement for the government to sort through, or "categorize," the substances on the Domestic Substances List. The categorization process identified substances that:

- were suspected to be inherently toxic to humans or to the environment, and are persistent (take a very long time to break down) or bioaccumulative (collect in living organisms and end up in the food chain); or
- present the greatest potential for exposure to Canadians.

The Chemicals Management Plan (CMP) is a program to protect Canadians and their environment from exposure to harmful chemicals. It includes a number of activities for which the obligations or authorities are spread throughout CEPA 1999. The Chemical Substances website (www.chemicalsubstances.gc.ca) provides more information on activities related to the CMP.

Under the CMP, the government conducts pre-market assessments of health and environmental effects of all new substances to Canada—approximately 500 per year. The CMP also provides one of the most comprehensive approaches in the world to assessing risks from the tens of thousands of substances that were in use before these new substance requirements were in place. Under CEPA 1999, the government performed a triage exercise on the approximately 23 000 such "existing substances." That categorization process identified approximately 4300 substances for more detailed assessment.

A key goal of the CMP is to assess and manage as appropriate, all 4300 of these existing substances by 2020. Approximately 1100 chemicals were assessed, and where required, risk management was initiated during the first phase of the CMP in 2006–2011. In October 2011, the government renewed its commitment to pursue the CMP for 5 years. Now in its second phase, the CMP involves the continued assessment and management of the potential ecological and health risks associated with approximately 1500 substances by 2016.

This second phase builds on successes and lessons learned from the first phase of the CMP. Key elements of the second phase of the CMP include:

- completing assessments of approximately 500 substances across 9 groupings; these groupings represent substances that have been grouped based on shared similar characteristics (such as structural or functional similarities);
- investing in additional research on key substances like bisphenol A, flame retardants and substances that affect hormone function;
- addressing approximately 1000 additional substances in the 2011–2016 period through other initiatives, including rapid screening of substances and the polymers approach;
- updating the commercial use information of substances through mandatory reporting to inform risk assessment and risk management activities, notably the Domestic Substances List Inventory Update; and
- continuing the assessment and management (where required) of priority substances identified through the first phase of the CMP (e.g., petroleum sector stream substances and the Challenge).

2.1.1 Monitoring, Research, Information Gathering and Risk Assessment Activities

Monitoring

Monitoring and surveillance activities are essential to identify and track chemicals in the environment and human exposure to those chemicals.

In 2012–2013, a broad range of chemical monitoring activities were undertaken in support of the CMP, the Northern Contaminants Program, the Great

Lakes Surveillance Program, the Great Lakes Water Quality Agreement, the Joint Canada–Alberta Oil Sands Monitoring Program, the Great Lakes Herring Gull Contaminants Monitoring Program, as well as the United Nations Environment Programme Stockholm Convention on Persistent Organic Pollutants and the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution.

Environment Canada monitoring activities focused on chemicals of concern and emerging chemicals in air and precipitation, including persistent organic pollutants and CMP priority chemicals. Health Canada monitoring activities focused on human exposure to contaminants.

In addition to data collection and reporting on a range of chemicals, monitoring efforts in 2012–2013 also included upgrades to monitoring technologies and establishing new sampling techniques and methodologies to detect trace contaminants in the environment.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Research conducted under CEPA 1999, in support of chemical risk assessments, focuses on emerging environmental and human contaminants. The research is used to fill data gaps in risk assessments; evaluate the impact of toxic substances and other substances of concern on the environment and human health; determine the extent of ecological and human health exposure to contaminants; and provide specialized sampling and analytical techniques used in future monitoring, and in compliance promotion and enforcement.

Health Canada continues to undertake research and assessments to support the development of regulations, guidelines and air quality objectives with a goal of reducing population exposures to pollutants and improving human health.

Research was carried out under a number of programs, including the CMP, the Northern Contaminants Program, the Strategic Technology Applications of Genomics in the Environment Program and the Great Lakes Action Plan.

During 2012–2013, research was initiated on a number of subjects, including the impacts of climate change on mercury cycling in Arctic aquatic ecosystems, the impacts of phthalates on genetic mutations in amphibians and developing time trends for priority chemicals (i.e., flame retardants and polychlorinated naphthalene).

Ongoing research continued on the exposure and toxicity of CMP priority chemicals such as endocrine-disrupting compounds, trace metals, aromatic azo and benzidine substances, flame retardants and nanomaterials.

A number of research projects were completed in 2012–2013. Many of these reports have been or are in the process of being published in peer-reviewed scientific journals. Research subjects include:

- pharmaceutical and personal care products: bioaccumulation and toxicity; occurrence and fate in wastewater treatment systems and effluents;
- flame retardants: debromination, validation of egg-injection method; occurrence in avian species eggs; in ovo effects; presence in house dust; maternal transfer to eggs in avian species; avian cytotoxicity and mRNA expression; investigating organochlorine pesticides and polybrominated diphenyl ethers and alternative flame retardants to understand global loadings from long-range transport;
- siloxanes: bioaccumulation and toxicity; cyclic volatile methyl siloxanes; validation of a method for estimating chemical persistence in air; determination in water, sediment, soil, biota and biosolid; concentrations in biosolid amended soil, influent, effluent, receiving water and sediment of wastewater treatment plants; detection, occurrence and fate; analysis in waste-to-energy landfill biogases; fathead minnow egg-to-juvenile exposure; and ecotoxicity in soil;
- persistent organic pollutants: impact on gene expression; levels of different persistent organic pollutants in humans; effects of dioxin-like compounds; atmospheric measurements using improved tools and techniques;

- perfluorinated compounds: genetic impact of exposure; characterization; guidance on passive and active air sampling methods; a new model of gas-particle partitioning for ionizable chemicals that depend on atmospheric pH.

Other subjects researched include drugs used in finfish aquaculture; antimicrobial resistance; methoxylated polybrominated diphenoxybenzenes; phytotoxicity of vanadium pentoxide; emerging metabolites of CMP priority pollutants in humans; biomonitoring analytes; volatile organic compounds in residences; trace metals in air; levels of metals in polar bears; rare earth elements; priority organic chemicals; and exotoxicity of xanthenes dyes and non-chlorinated bisphenol (binox).

Information Gathering and Risk Assessment

Environment Canada and Health Canada continued to gather information and assess the potential ecological and health risks from the remaining high-priority substances of the first phase of the CMP: the Challenge and the CMP Petroleum Sector Stream Approach.

The Challenge

Through the Challenge program of the CMP, the government committed to addressing the 200 highest-priority substances. These 200 substances were divided into 12 smaller groups or "batches" that were addressed sequentially. Each batch of substances in the Challenge progressed through various information gathering, screening assessment, risk management, and compliance promotion and enforcement (where appropriate) stages. To date, 42 of these substances have been found to meet one or more of the criteria in section 64 of CEPA 1999. During the 2012–2013 period, risk assessment and risk management work was ongoing to complete the last batch for this initiative.

The Substances Groupings Initiative

One of the current key initiatives under the CMP is the Substances Groupings Initiative. This initiative was launched on October 8, 2011, and included plans for the Government of Canada to assess and manage, where appropriate, the potential health and ecological risks associated with the following nine groups of substances:

- aromatic azo- and benzidine-based substances
- boron-containing substances
- certain internationally classified substances with potential for exposure to individuals in Canada
- certain organic flame retardants
- cobalt-containing substances
- methylenediphenyl diisocyanates and diamines
- phthalates
- selenium-containing substances
- substituted diphenylamines

In June 2012, three Notices were issued under section 71 of CEPA 1999. One Notice applies to 7 substances that are part of the Methylenediphenyl Diisocyanate and Diamine Substance Grouping and 1 substance that is part of the Internationally Classified Substance Grouping. Another Notice applies to a subset of substances that are part of the Cobalt-Containing Substance Grouping. The last Notice applies to 13 substances that are part of the Substituted Diphenylamine Substance Grouping. Information received from these data gathering initiatives will be used to inform the upcoming ecological and human health risk assessment of these substances.

In February 2013, a Notice with respect to triclosan was issued under section 71 of CEPA 1999. Information received from this data gathering activity will be used to inform subsequent risk management of this substance, if applicable.

In March 2013, another Notice was issued under section 71 of CEPA 1999 that applies to 10 substances that are part of the Certain Organic Flame Retardants Substance Grouping. Information received from this data gathering initiative will be used to inform the upcoming ecological and human health risk assessment of these substances.

The Petroleum Sector Stream Approach

The Petroleum Sector Stream Approach includes approximately 160 substances identified as priorities for action through the categorization process and that were set aside to be addressed in a sectoral approach. A large portion of high-priority petroleum

substances are used or manufactured during petroleum refining or bitumen/heavy crude oil upgrading activities. Data collection, risk assessment and, where appropriate, risk management is continuing on the substances that are part of this initiative.

In April 2012, draft screening assessments on three low boiling point naphtha substances, five heavy fuel oils and four petroleum refinery gases were published in the *Canada Gazette* for a 60-day public comment period.

In May 2012, draft screening assessments on two gas oils were published for a 60-day public comment period.

The Domestic Substances List Inventory Update

Building on the Domestic Substances List Inventory Update completed during Phase 1 of the CMP, a second inventory update was issued in December 2012 through a section 71 Notice, requiring information by September 2013 on the use and volume of information on the remaining priority substances.

This section 71 Notice seeks to obtain updated information on the commercial status of approximately 2700 substances that are remaining priorities, to support any subsequent risk assessment and risk management activities, if applicable. This initiative will also inform Rapid Screening, the Polymer Approach, as well as priority setting for the next phase of the CMP.

The Rapid Screening Approach

The rapid screening approach is utilized for substances of lower concern. This approach uses a series of qualitative and quantitative steps to efficiently evaluate the likelihood that a substance may cause harm, given conservative estimates of exposure. At each step in the rapid screening process, any substance that appears to present a potential for harm will be identified as requiring further assessment. For those substances that pass through all steps of the rapid screening without being identified as requiring further assessment, the government will conclude that the substances do not meet any of the criteria as set out under section 64 of CEPA 1999. Rapid screening of the substances part of phase 1 of the Inventory Update was initiated in 2012–2013.

Summary of Screening Assessment Progress

Screening assessments are conducted to determine whether substances meet or are capable of meeting the criteria in section 64[1] of CEPA 1999. The results of the screening assessments are published in draft form on the Chemical Substances website, and the ministers of the Environment and of Health publish a notice in the *Canada Gazette*, Part I. Interested parties can submit written comments on the measure proposed and on the scientific considerations, the basis on which the measure is proposed, during a 60-day public comment period. After taking into consideration comments received, the ministers may, if they deem it appropriate, revise the screening assessment report and the proposed measure.

Table 1 lists the 2012–2013 assessment conclusions and measures for 71 existing substances. This total reflects draft and/or final assessment decisions for 57 substances determined to be priorities prior to the CMP, as well as 14 substances from the petroleum sector stream approach.

Screening assessments include living organisms. Reporting on living organisms is included in Section 2.2 of this report.

More information can be found at www.chemicalsubstances.gc.ca.

1 Under section 64 of CEPA 1999, a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that:

(*a*) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;

(*b*) constitute or may constitute a danger to the environment on which life depends; or

(*c*) constitute or may constitute a danger in Canada to human life or health.

Table 1: Summary of existing substance assessment decisions published from April 2012 to March 2013

(NFA, no further action; SNAc, Significant New Activity)

Substances (and Number of Substances)	Type of Assessment	Meet s. 64 Criteria	Proposed SNAc	Proposed Measure	Draft Notice*	Final Notice*
Tetrabromobisphenol A (TBBPA) and two of its derivatives (3 substances)	Screening	Yes (TBBPA only)		Add to Schedule 1	Nov. 10, 2012	
Long chain perfluoro-carboxylic acids, their salts and precursors (46 substances)	Screening	Yes		Add to Schedule 1	Oct. 30, 2010	Aug. 25, 2012
Long chain perfluoro-octanoic acid, its salts and precursors (8 substances)	Screening	Yes		Add to Schedule 1	Oct. 30, 2010	Aug. 25, 2012
Gas oils (2 substances)	Petroleum Sector Stream 2	No		NFA	May 12, 2012	
Heavy fuel oils (5 substances)	Petroleum Sector Stream 2	No		NFA	Apr. 21, 2012	
Low boiling-point naphthas (3 substances)	Petroleum Sector Stream 2	No		NFA	Apr. 21, 2012	
Petroleum and refinery gases (4 substances)	Petroleum Sector Stream 2	Yes		Add to Schedule 1	Apr. 28, 2012	

* The dates are those on which the draft and final notices were published in the *Canada Gazette*, Part I.

Health Canada continued to conduct risk assessments and develop and implement risk management measures to address risks posed by harmful chemicals in foods, consumer products, cosmetics and drinking water.

Health Canada also continued its review, listing and prioritization for assessment of risk due to presence in the environment of substances in *Food and Drugs Act* regulated products. Resulting from CMP screening assessments and new scientific knowledge, Health Canada continued its *Food and Drugs Act* re-evaluation of food additives and food packaging materials and assessment of food contaminants.

Health Canada continued its activities to re-evaluate previously approved pesticides in accordance with *Pest Control Products Act* timelines and requirements, along with the monitoring of health and environmental incidents associated with pesticides, analyzing trends and sales data, and taking regulatory actions as needed.

New Substances

Substances that are not on the Domestic Substances List are considered to be new to Canada. New substances may not be manufactured in or imported into Canada unless Environment Canada has been notified with certain prescribed information and the period for assessing the information has expired. New substances include living organisms, and reporting on living organisms is included in Section 2.2 of this report.

In 2012–2013, 504 new substance notifications were received pursuant to the *New Substances Notification Regulations (Chemicals and Polymers)* and the *New Substances Notification Regulations (Organisms)*.

Some of the 504 new substances notifications related to nanomaterials and substances that have the potential to be manufactured in the nanoscale.

For new substances in products regulated under the *Food and Drugs Act*, 72 notifications for chemical/polymer substances and 5 notifications for living organisms were received and assessed in 2012–2013.

2.1.2 Risk Management Activities

Along with the results of the screening assessment, the ministers must publish in the *Canada Gazette* their final recommendation to the Governor in Council by choosing one of the following three options: adding a substance to Schedule 1 of CEPA 1999 (the List of Toxic Substances), adding it to

the Priority Substances List for further assessment, or concluding that no further action is necessary for the substance.

Ministers may recommend the addition of a substance to Schedule 1 of CEPA 1999 to the Governor in Council if a screening assessment shows that a substance meets one or more of the criteria in section 64 of CEPA 1999. The Governor in Council may then approve an order specifying its formal addition to Schedule 1. The decision to recommend adding substances to Schedule 1 of CEPA 1999 following a toxic conclusion obliges the ministers to develop risk management instruments.

Table 2 lists the substances or groups of substances that were proposed to be added to Schedule 1 of CEPA 1999 in 2012–2013. Table 3 lists the substances or groups of substances that were added to Schedule 1 in 2012–2013.

Table 2: Proposed orders adding substances to Schedule 1 of CEPA 1999 from April 2012 to March 2013

Substance	Draft Order*
Perfluorooctanoic acid, which has the molecular formula $C_7F_{15}CO_2H$ (PFOA), and its salts	Sept. 29, 2012
Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which n = 7 or 8 and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom (precursors of PFOA)	Sept. 29, 2012
Perfluorocarboxylic acids that have the molecular formula $C_nF_{2n+1}CO_2H$ in which $8 \leq n \leq 20$ (long-chain PFCA) and their salts	Sept. 29, 2012
Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which $8 \leq n \leq 20$ and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom (long-chain PFCA precursors)	Sept. 29, 2012

* The dates are those on which the draft orders were published in the *Canada Gazette*, Part I.

Table 3: Orders adding substances to Schedule 1 of CEPA 1999 from April 2012 to March 2013

Substance	Final Order*
Quinoline, which has the molecular formula C_9H_7N	Nov. 21, 2012
Hexabromocyclododecane, which has the molecular formula $C_{12}H_{18}Br_6$	Nov. 21, 2012
Benzene, 1,2-dimethoxy-4-(2-propenyl)-, which has the molecular formula $C_{11}H_{14}O_2$	Oct. 24, 2012
Vanadium pentoxide, which has the molecular formula V_2O_5	Oct. 24, 2012
Oxirane, 2,2',2'',2'''-[1,2-ethanediylidenetetrakis (4,1-phenyleneoxymethylene)]tetrakis-, which has the molecular formula $C_{38}H_{38}O_8$	Oct. 24, 2012
Mercury and its compounds	Oct. 10, 2012
Bromic acid, potassium salt, which has the molecular formula $KBrO_3$	Oct. 24, 2012
Polychlorinated naphthalenes, which have the molecular formula $C_{10}H_{8-n}Cl_n$ in which "n" is greater than 1	Oct. 10, 2012
Hydrazine, which has the molecular formula N_2H_4	Sept. 20, 2012

* The dates are those on which the final orders were published in the *Canada Gazette*, Part II.

For chemical substances assessed and found to meet the definition of toxic, steps are taken to control their use and prevent, reduce or eliminate their release into the environment. This is known as "risk management." Risk management instruments include regulations, pollution prevention plans, environmental performance agreements, permits, substance lists, guidelines, codes of practice and significant new activity notices/orders. These instruments can address any aspect of the substance's life cycle, from the research and development stage through manufacture, use, storage, transport and ultimate disposal or recycling. In addition to implementing existing risk management instruments during the reporting period, 7 risk management instruments were published to address 18 toxic substances or groups of substances.

Significant New Activity Notices and Orders

Significant New Activity Notices can be issued for a chemical substance so that any major changes in the way it is used are reported to the Government of Canada. This approach ensures that government

experts can evaluate whether a new use poses a new or increased risk to human health or the environment, and determine if risk management should be considered for the new use.

In 2012–2013, Notices of intent to apply the Significant New Activity provisions of CEPA 1999 were published for 9 substances, and final orders were published for 11 substances (Table 4). A person who intends to use, manufacture or import any of these substances for a new activity must provide the prescribed information.

Table 4: Significant New Activity Notices and Orders for existing substances from April 2012 to March 2013

Assessment	Substances or Number of Substances	Notice of Intent*	Final Order*
Batch 1	5 substances	Jan. 22, 2011	July 18, 2012
Batch 3	3 substances	Apr. 2, 2011	Oct. 10, 2012
Batch 4	2 substances	July 30, 2011	Jan. 30, 2013
Batch 5	1 substance	July 30, 2011	Jan. 30, 2013
Batch 8	4 substances	July 28, 2012	Pending
Batch 9	4 substances	Sept. 15, 2012	Pending
Batch 10	1 substance	Mar. 2, 2013	Pending

* The dates are those on which the notices of intent and final orders were published in the *Canada Gazette*, Part I and Part II, respectively. Note that registration of final orders usually occurs before the order is published.

Regulations

On January 2, 2013, Environment Canada published the final *Prohibition of Certain Toxic Substances Regulations, 2012*. The regulations prohibit the manufacture, use, sale, offer for sale or import of certain toxic substances listed in Schedule 1 and 2 of the Regulations, as well as products containing these substances with a limited number of exceptions. These regulations repeal and replace the *Prohibition of Certain Toxic Substances Regulations, 2005*. Four new toxic substances have been added to the list of substances already controlled under the former regulations: benzenamine, N-phenyl-reaction products with styrene and 2,4,4-trimethylpentene (BNST), short-chain chlorinated alkanes (SCCAs), polychlorinated naphthalenes (PCNs) and tributyltins (TBTs). These regulations also modify restrictions on hexachlorobenzene (HCB) and include administrative changes aimed at harmonizing the English- and French-language versions of the former regulations, and simplified reporting requirements.

Table 5 lists all of the proposed and final regulations regarding chemicals published under Part 5 of CEPA 1999 in 2012–2013.

Table 5: Regulations from April 2012 to March 2013

Substances	Proposed Regulations*	Final Regulations*
Prohibition of Certain Toxic Substances Regulations, 2012	July 23, 2011	Jan. 2, 2013
Order Amending Schedule 3 (the Export Control List) – Multiple substances	July 30, 2011	Sept. 12, 2012

* The dates are those on which the proposed regulations and final regulations were published in the *Canada Gazette*, Part I and Part II, respectively. Note that registration of final regulations usually occurs before the regulation is published.

On November 10, 2012, Health Canada published proposed regulations in the *Canada Gazette*, Part I under the *Canada Consumer Product Safety Act*, to prohibit children's polyurethane foam products containing tris (2-chloroethyl) phosphate (TCEP). Under the CMP, TCEP is identified as a substance requiring high-priority assessment due to its potential exposure to Canadians and its possible human carcinogenic effects.

Government Operations and Federal and Aboriginal Lands

Part 9 of CEPA 1999 provides the authority to make regulations, objectives, guidelines and codes of practice that apply to departments, boards and agencies of the Government of Canada; federal works and undertakings; federal land; Aboriginal land; persons on that land and other persons insofar as their activities involve that land; and Crown corporations.

The *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* seek to reduce the risk of contaminating soil and groundwater as a result of spills and leaks of petroleum products and allied petroleum products from storage tank systems. The Regulations include the staged implementation of certain regulatory requirements and saw the obligation for product transfer areas and the removal of high-risk systems come into

force in June 2012. Analysis of compliance data for performance milestones, such as the identification requirements, has indicated a high compliance rate to date. This and other performance data establish a comprehensive inventory of federal storage tank systems and continue to be used to support performance analysis, compliance promotion efforts and enforcement activities to ensure continued compliance with the regulations.

To date, 1182 regulatees have identified approximately 16 000 storage tanks to Environment Canada through the Federal Identification Registry of Storage Tank Systems database for a total volume capacity of 2.5 billion litres of petroleum and allied petroleum products.

In January 2013, a consultation document outlining proposed revisions to the *Federal Halocarbon Regulations, 2003* was published on Environment Canada's ozone website. A notice regarding the consultations was published on the CEPA Registry and sent electronically to all known stakeholders. Four face-to-face consultation meetings were held in Edmonton, Halifax and Gatineau, and two webinars were conducted in March 2013.

Pollution Prevention Planning

The provisions within Part 4 of CEPA 1999 allow the Minister of the Environment to require designated persons to prepare, implement and report on pollution prevention (P2) plans for toxic substances. P2 Planning Notices provide the flexibility for industry to determine the best methods within their processes and activities to meet the risk management objective within the Notice.

In fiscal year 2012–2013, three final Notices were published; five other P2 Planning Notices continued to be active. For further information on P2 planning, consult www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=F7B45BF5-1.

Pollution Prevention Planning Notices published

Bisphenol A in industrial effluents

A final Notice was published in the *Canada Gazette*, Part I on April 14, 2012. The Notice requires industrial facilities that use bisphenol A (BPA) above a given threshold to develop and implement a plan to keep any effluent resulting from that use below a set standard. BPA is imported for use in a number of sectors such as investment casting, epoxy resin, polyvinyl chloride compounding, wire cable coating and can coatings.

Synthetic rubber manufacturing sector – isoprene

A final Notice was published in the *Canada Gazette*, Part I on June 9, 2012, which addresses harmful substances that are released from resin and synthetic rubber manufacturing industries. This was followed by a 60-day comment period.

This sector-based P2 Planning Notice will allow the addition of other substances as may be required in the future, with substance-specific risk management objectives and requirements. The first substance addressed by the Notice is isoprene or 1,3 butadiene, 2-methyl-. The substance is used mainly in the production of rubber for vehicle tires and inner tubes, a wide variety of products including medical equipment, toys, shoe soles, textiles, paints, and pressure-sensitive adhesives. This P2 planning notice will currently have an impact on one facility within the synthetic rubber sector.

Cyclotetrasiloxane, octamethyl- (siloxane D4) in industrial effluents

A final Notice was published in the *Canada Gazette*, Part I on June 2, 2012. The Notice requires that industrial facilities manufacturing or using D4 or a mixture containing D4 above a given threshold develop and implement a plan to keep effluents below a set standard. About 30 facilities, mostly located in Ontario and Quebec, are expected to be subject to this P2 Planning Notice.

Active Pollution Prevention Planning Notices

During 2012–2013, five P2 Planning Notices continued to be active, covering dental amalgam, mercury releases from mercury switches in end-of-life vehicles, nonylphenol and its ethoxylates contained in products, inorganic chloramines and chlorinated wastewater effluent, and polyurethane and other foam sector (except polystyrene) – toluene diisocyanates. More information about Notices and results is available online at www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=BCAA1E50-1.

Dental Amalgam

On May 8, 2010, a P2 Planning Notice under CEPA 1999 was published outlining requirements for the owners and/or operators of certain dental facilities to prepare and implement P2 plans with respect to mercury releases from dental amalgam waste.

In spring 2012, Environment Canada conducted a survey of dental facilities across Canada in order to assess the overall implementation of best management practices for dental amalgam waste and evaluate the effectiveness of the Notice with respect to the risk management objective. Results of the survey indicated that this P2 planning notice has achieved the Canada-wide Standard on Mercury for Dental Amalgam Waste objective of a 95% national reduction of mercury releases to the environment from dental amalgam waste, from the base year (2000).

Inorganic chloramines and chlorinated wastewater effluents

This Notice applies to owners or operators of 85 wastewater systems that in 2004 or 2005 discharged, to surface waters, 5000 cubic metres per day or more of effluent with a total residual chlorine concentration of greater than 0.02 mg/L. The risk management objective is to achieve and maintain a concentration of total residual chlorine that is less than or equal to 0.02 mg/L in the effluent released to surface water, by December 15, 2009.

Environment Canada published a performance report in July 2012, indicating that 80% of wastewater systems met the risk management objective of the Notice. Based on information reported in the Declaration of Implementation submissions, the concentration of total residual chlorine discharged to surface water has been reduced by 85% compared to the 95% anticipated reduction reported in the Declaration of Preparation submissions.

In June 2012, the *Wastewater Systems Effluent Regulations* under the *Fisheries Act* came into force. The Regulations include effluent quality standards for secondary wastewater treatment and also include the 0.02 mg/L standard for total residual chlorine, and are therefore now the primary risk management instrument for inorganic chloramines and chlorinated wastewater effluents.

Environmental Performance Agreements

Environment Canada uses a range of tools to protect the environment, including voluntary, non-regulatory agreements with industry that commit certain sectors or companies to specific challenges or performance levels. An Environmental Performance Agreement is negotiated around the key principles and design criteria outlined in Environment Canada's Policy Framework for Environmental Performance Agreements (www.ec.gc.ca/epe-epa/default.asp?lang=En&n=564C0963-1).

Active Agreements include: the Environmental Performance Agreement on production of hydro-chlorofluorocarbons in Canada with E.I. DuPont Canada Company; the Environmental Performance Agreement with the Vinyl Council of Canada and the Tin Stabilizers Association; the Environmental Performance Agreement respecting perfluorinated carboxylic acids (PFCAs) and their precursors in perfluorinated products sold in Canada; and the Refractory Ceramic Fibre Environmental Performance Agreement, which was renewed for five years (2013–2018). Detailed information about these agreements is available online (www.ec.gc.ca/epe-epa/default.asp?lang=En&n=0D8C879E-1).

A new Environmental Performance Agreement Respecting Bisphenol A in Paper Recycling Mill Effluents was signed in 2012–2013. The Agreement establishes performance objectives for releases of effluent containing BPA from paper recycling mills with the goal of minimizing, to the greatest extent

practical, the risk of environmental impacts to the aquatic environment. The Agreement will be in effect from March 5, 2013, until March 5, 2017, and covers all paper recycling mills in Canada. By signing the Agreement, paper recycling mills voluntarily agree to meet specific environmental performance objectives, conduct sampling and analyses, report the results to Environment Canada, and provide required information for verification purposes. The mills also agree to maintain performance once the performance objectives have been achieved.

Environmental Performance Agreement on production of hydrochlorofluorocarbons in Canada with E.I. DuPont Canada Company

This performance agreement came into effect on January 1, 2010. As a result, DuPont agreed to limit its annual production level of hydrochlorofluorocarbons (HCFCs) in Canada to no more than 122.9 ozone-depleting potential tonnes, which represents 15% of Canada's baseline production level (or an 85% reduction). This is well below the 75% reduction required by the Montreal Protocol on Substances that Deplete the Ozone Layer.

In January 2013, the third annual report under this agreement was received and shows DuPont's production level of HCFCs in Canada conforms to the performance objective of the agreement.

Environmental Performance Agreement with the Vinyl Council of Canada and the Tin Stabilizers Association

Under this 5-year agreement (2008–2013), a best management practices guideline to minimize releases of the organotin-based stabilizers used in polyvinyl chloride processing was implemented in 33 facilities.

A key element of this agreement is a requirement to verify whether the practices set out in the guideline have been implemented by the affected facilities.

A verification team consisting of industry and Environment Canada representatives conducted site visits during the duration of the agreement. Remedial action plans were developed and implemented where required to address any deficiencies identified by the verification team. All facilities have now been visited by the verification team and have either already implemented practices set out in the guideline or have in place an action plan and schedule to address and remedy any deficiencies identified by the team.

Environmental Quality Guidelines

Environmental quality guidelines specify recommendations in quantitative or qualitative terms to support and maintain particular uses of the environment. Table 6 lists the environmental quality guidelines that were published or being developed nationally through the Canadian Council of Ministers of the Environment (CCME) in 2012–2013. During the same period, Environment Canada developed federal environmental quality guidelines for various chemicals identified in the CMP (Table 6). These federal environmental quality guidelines received ministerial approval in February 2013 and are now available on the chemical substances Web portal.

Where federal priorities align with those of the CCME (i.e., those of the various provincial and territorial jurisdictions), the federal environmental quality guidelines will be tabled with the CCME for consideration as national values.

Table 6: Environmental quality guidelines from April 2012 to March 2013

Canadian Council of Ministers of the Environment (federal, provincial and territorial)

Environmental Compartment	Published	In Progress
Water	• Nitrate • Glyphosate	• Cadmium • Manganese • Zinc • Carbamazepin
Soil		• Barium • Glycols • Methanol • Nickel • Zinc • Amines

Chemicals Management Plan (Federal Environmental Quality Guidelines)

Environmental Compartment	Approved	In Progress
Water	• PBDEs • Cobalt • Hydrazine • Alcohol ethoxylates	• Bisphenol A • Chlorinated alkanes • HBCD • PFOS • TBBPA • Triclosan • Vanadium • Chromium (hexavalent) • Iron • Lead • Copper • Naphthenic Acids • Siloxanes D4, D5 • MAPBAP Acetate
Sediment	• PBDEs	• Bisphenol A • Chlorinated alkanes • HBCD • TBBPA
Fish Tissue	• PBDEs	• Chlorinated alkanes • HBCD • PFOS
Wildlife Diet	• PBDEs	• Bisphenol A • Chlorinated alkanes • HBCD • PFOS • TBBPA
Bird Egg	• PBDE	• PFOS
Soil		• HBCD • PFOS • BBPA
Groundwater		• PFOS

Note: Hexabromocyclododecane (HBCD); polybrominated diphenylethers (PBDEs); perfluorooctane sulphonate (PFOS); tetrabromobisphenol-A (TBBPA).

Codes of Practice

Environmental codes of practice specify procedures, practices or quantities of releases relating to facilities and activities during any phase of development and operation involving a substance, and any subsequent monitoring activities. Codes of practice are issued by the Minister of Environment under subsection 54(1) of CEPA 1999.

A proposed Code of Practice for 2-Butanone, Oxime (Butanone Oxime) was published on January 26, 2013. The proposed Code of Practice outlines specific information to be added to the labels of relevant products with an aim to change consumer behaviour to help reduce air concentrations of butanone oxime during and immediately following interior application of consumer alkyd paint and coatings products. The final publication of the Code is expected in early 2014.

In April 2012, Environment Canada published a five-year review of the progress achieved through implementation of the Code of Practice for the Environmental Management of Road Salts and concluded that the Code was a valid and effective risk management tool and that more road organizations are using the right amount of salt, in the right place, at the right time. Many road organizations have voluntarily adopted new approaches to winter maintenance and invested in new technology. Recommendations for future work included establishment of national targets and emphasis on managing salt-vulnerable areas.

Substance-specific Risk Management Results

Mercury

Canada has reduced its domestic sources of anthropogenic (human-induced) mercury releases by 90% since the 1970s. However, transboundary mercury accounts for more than 95% of mercury deposition in Canada. Accelerated global efforts will be critical to meeting Canadian environmental and human health goals. Accordingly, the Government of Canada is committed to taking further actions at home and internationally to minimize and, where feasible, eliminate anthropogenic mercury releases.

The risk management strategy for mercury, published in 2010, provides a comprehensive and consolidated description of the Government of Canada's progress to date in managing the risks associated with mercury. It also outlines objectives, priorities, current and anticipated actions, and monitoring programs in place to address the ongoing risks associated with mercury.

More particularly, it reiterates the Government of Canada's active participation on the intergovernmental negotiating committee for the preparation of a global, legally binding treaty on mercury, which was established by the Governing Council of the United Nations Environment Programme in 2009. Negotiations were launched in 2010 and were concluded at the fifth negotiating session in January 2013, with over 140 governments agreeing to the final treaty text of the new Minamata Convention on Mercury. This convention will be open to countries for their signature at a Diplomatic Conference in Japan in October 2013. The Convention will enter into force once 50 countries have ratified it, likely within 3 to 4 years. More information on the risk management strategy for mercury can be found at www.ec.gc.ca/doc/mercure-mercury/1241/index_e.htm, and information on the Minamata Convention on Mercury can be found at www.unep.org/hazardoussubstances/Mercury/Negotiations/tabid/3320/Default.aspx.

Lead

In February 2013, Health Canada published its Final Human Health State of the Science Report for Lead which can be accessed online at www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhssrl-rpecscepsh/index-eng.php. Everyone is exposed to trace levels of lead through food, drinking water, air, household dust and soil. Levels of lead in Canadians have declined significantly over the past 30 years; however, health effects are occurring at lower levels of exposure than previously thought—levels that are currently present in Canadians. Accordingly, additional measures to further reduce Canadians' exposure to lead are warranted.

A final risk management strategy for lead was also published by Health Canada in February 2013. The strategy provides a comprehensive description of the government's progress to date in managing lead, and outlines current and anticipated management activities. More information on the Risk Management Strategy for Lead can be found at www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/prms_lead-psgr_plomb/index-eng.php.

Risk Management for New Chemicals and Polymers

Following a notification, when the assessment of a new substance (see previous section for explanation of New Substances) identifies a risk to human health or the environment, CEPA 1999 empowers the Government of Canada to intervene prior to or during the earliest stages of its introduction into Canada. In this case, there are three actions that may be taken. The Minister of the Environment may:

a) permit the manufacture or import of the substance subject to specified conditions; or

b) prohibit the manufacture or import of the substance; or

c) request additional information considered necessary for the purpose of assessment. The notifier shall not manufacture or import the substance until supplementary information or test results have been submitted and assessed.

If the Minister suspects that a significant new activity (SNAc) in relation to the substance may result in the substance's becoming "toxic," a SNAc Notice may be published in the *Canada Gazette*, Part I for the substance.

Of 504 notifications received in 2012–2013, the Minister issued 18 Significant New Activity Notices (Table 7), 9 of which concerned nanomaterials or potential nanomaterials, 7 Ministerial Conditions (Table 8), and no prohibitions.

Table 7: Significant New Activity Notices and Orders for new substances from April 2012 to March 2013

Substance	Publication Date*
Tall oil acids, reaction products with dialkyleneamine and acid anhydride, compounds with polyalkylene glycol hydrogen maleate alkyl ethers	June 6, 2012
Phosphonic acid, P-methyl-, diphenyl ester, polymer with 4,4'-(1-methylethylidene)bis[phenol]	July 2, 2012
Ethanedioic acid, manganese(2^{++}) salt (1:1)	July 28, 2012
Metal hydroxy phosphate	Aug 15, 2012
Rutile, tin zinc, potassium-doped	Aug. 25, 2012
Rutile, tin zinc, calcium-doped	Aug. 25, 2012
Rutile, tin zinc, sodium-doped	Aug. 25, 2012
Short tangled multi-wall carbon nanotubes obtained by catalytical chemical vapour deposition	Oct. 6, 2012
Fatty acids, reaction products with alkanolamine and alkyloxide	Nov. 21, 2012
Phosphoric acid, mixed esters with polyethylene glycol and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octanol, ammonium salts	Jan. 2, 2013
Alkanediol, reaction products with phosphorus oxide (P_2O_5), polyfluoro-1-alkanol,-ammonium salts	Jan. 2, 2013

Table 7 (Concluded)

Substance	Publication Date*
Aluminate (AlO_2^{1-}), magnesium (2:1)	Jan. 12, 2013
Vanadate (VO_2^{1-}), magnesium (2:1)	Jan. 12, 2013
2-Propenoic acid, 2-methyl-, alkyl ester, polymer with butyl 2-propenoate, ethenylbenzene, 2-hydroxyethyl 2-propenoate, 2-oxiranylmethyl 2-methyl-2-propenoate and rel-(l R,2R,4R)-1,7,7-trimethylbicylco[2.2.1]hept-2-yl 2-propenoate, bis(1,1-dimethylpropyl)peroxide- and 1,1-dimethylpropyl 2-ethlyhexaneperoxoate-initiated	Jan. 30, 2013
Potassium titanate	Feb. 2, 2013
Cobalt iron manganese oxide, carboxylic acid-modified	Mar. 16, 2013
Magnesium hydroxide sulfate ($Mg_6(OH)_{10}(SO_4)$)	Mar. 27, 2013
Aromatic isocyanate polymer, alkoxy-alkylamine-blocked	Mar. 27, 2013

* The dates are those on which the final notices or orders were published in the *Canada Gazette*.

Table 8: Notices of Ministerial Conditions for new substances from April 2012 to March 2013

Substance	Publication Date*
1,6-Hexanediamine, N1,N6-bis(1,2,2-trimethylpropyl)-	Sep. 15, 2012
Oxirane, methyl-, polymer with oxirane, mono-C11-14-alkyl ethers, branched, sulfates, sodium salts	Oct. 6, 2012
1,3-Benzenedimethanamine,*N*-(2-phenylethyl) derivs.	Dec. 1, 2012
Alkyl oxirane, polymer with alkyl oxirane sulfate alkylethers, alkali salts	Jan. 26, 2013
Alkyl oxirane, polymer with alkyl oxirane sulfate alkylethers, alkali salts	Jan. 26, 2013
Sulfonic acids, branched alkane hydroxy and branched alkene, sodium salts	Feb. 9, 2013
Ethanone, 1-(2-hydroxy-5-nonylphenyl)-, oxime, branched	Feb. 16, 2013

* The dates are those on which the notices were published in the *Canada Gazette*.

Export of Substances

Under Schedule 3 of CEPA 1999, the Export Control List (ECL) includes substances whose export is controlled because their use in Canada is prohibited or restricted, or because Canada has agreed, through an international agreement that requires notification or consent of the country of destination before export, such as the Rotterdam Convention, to control their export. CEPA 1999 requires exporters to submit prior notice of export with respect to substances on the ECL. In 2012–2013, 86 export notices were submitted to the Minister of the Environment.

On September 12, 2012, Environment Canada published a final Order amending the ECL to add, and move from one Part of the ECL to another, new substances and groups of substances that have been added to the Rotterdam and Stockholm Conventions as well as substances recently banned or restricted in Canada.

On September 29, 2012, Environment Canada published the proposed Order Amending Schedule 3 (the Export Control List) of CEPA 1999. The Order proposes the addition of endosulfan, a pesticide, to the Export Control List. This substance was added to the Rotterdam Convention in October 2011.

2.2 Living Organisms

Products of biotechnology that are living organisms are regulated for health and safety purposes by a variety of federal departments and agencies across the government. For example, the Canadian Food Inspection Agency is an important regulator of crop plants and microorganisms used in animal feeds, fertilizers and veterinary biologics. CEPA 1999 sets a standard by which other federal legislation is measured such that living organisms regulated in a CEPA-comparable fashion are exempted from the New Substances provisions in CEPA 1999. Such legislation is listed in Schedule 4 of CEPA 1999. Living organisms used for other purposes, not covered by existing federal legislation, are regulated

under CEPA 1999. This includes genetically modified animals and microorganisms used for various research, environmental, industrial and domestic purposes.

CEPA 1999 establishes an assessment process for living organisms that are new animate products of biotechnology, which mirrors provisions in Part 5 of CEPA 1999 respecting new substances that are chemicals or polymers. In addition, paragraph 74(*b*) requires that all living organisms on the Domestic Substances List (about 68 "existing" microorganisms) undergo a screening assessment to determine whether the living organism is toxic or capable of becoming toxic.

2.2.1 Monitoring, Research and Risk Assessment Activities

Research

Government research on living organisms focuses on determining hazardous characteristics and the pathogenicity of various biotechnology microbes in order to support screening assessments. The research is coordinated jointly with regulators at Health Canada and Environment Canada and focuses principally on microorganisms on the CEPA Domestic Substances List.

During 2012–2013, research was initiated on a number of subjects, including a study of constituents, exposure effects of a mixture of microorganisms used for bioremediation of oil-contaminated soil and water, and detection of all microbial species within a microbial consortium. Research continued under the Canadian Regulatory System for Biotechnology towards the development of toxicity and pathogen screening methods.

In addition, a number of research projects were completed and have been or are in the process of being published in peer-reviewed scientific journals. Research topics included data summary reports on several *Aspergillus* species (potentially problematic fungi) and screening assessments for the bacterium *Pseudomonas aeruginosa* and for *Bacillus cereus*.

Risk Assessment of Existing Animate Products of Biotechnology

Environment Canada and Health Canada jointly perform the screening assessment of microorganisms listed on the Domestic Substances List. In 2012–2013, the final screening assessment report for three strains of *Pseudomonas aeruginosa* was published on June 6, 2012, in the *Canada Gazette*, Part I. A draft screening assessment report was also published on January 12, 2013, on eight strains identified as priority "C," for a 60-day public comment period, implementing the rapid screening approach for lower-priority organisms. Work continues on the remaining screening assessments for several other Domestic Substances List microorganisms of high priority. Health Canada initiated assessment of "In-Commerce List" organisms.

The Technical Expert Group, composed of independent scientific experts from academia, industry, public advocacy groups and other federal government departments, continued providing advice on the process and validating the scientific basis of screening assessments and their conclusions.

Risk Assessment of New Animate Products of Biotechnology

During 2012–2013, 25 notifications were received pursuant to the *New Substances Notification Regulations (Organisms)* for new animate products of biotechnology, and 21 notifications were assessed.

2.2.2 Risk Management Activities

Significant New Activity Notices

In 2012–2013, final orders for SNAcs were published for three existing living organisms (Table 9). A person who intends to use, manufacture or import any of these living organisms for a new activity must provide prescribed information prior to initiating the new activity.

Table 9: Significant New Activity Notices and Orders for existing living organisms from April 2012 to March 2013

Assessment	Substances or Number of Substances	Notice of Intent*	Final Order*
P. aeruginosa	3 substances	July 2, 2011	June 12, 2012

*The dates are those on which the notices of intent and final orders were published in the *Canada Gazette*, Part I and Part II, respectively. Note that registration of final orders usually occurs before the order is published.

In 2012–2013, three new living organisms were subjected to a SNAc Notice. No new living organisms were subjected to Ministerial Conditions or Ministerial Prohibition.

Table 10: Significant New Activity Notices for new living organisms from April 2012 to March 2013

Substance	Final Notice*
Fowlpox virus (TBC-FPV; POXVAC-TC strain)	Nov. 3, 2012*
Fowlpox virus (TBC-FPV: POXVAC-TC strain) with modified PSA, B7.I, ICAM-I, LFA-3	Nov. 3, 2012*
Vaccinia virus (TBC-Wy; NYCBH strain) with modified PSA, B7.I, ICAM-I, LFA-3	Nov. 3, 2012*

* The dates are those on which the final notices were published in the *Canada Gazette*, Part I.

2.3 Air Pollution and Greenhouse Gases

Emissions of air pollutants threaten the health of Canadians, degrade the environment, contribute to smog and have associated socio-economic impacts and consequences. While significant progress has been made to date in reducing emissions, air pollution remains an ongoing issue in Canada. Emissions originate from numerous domestic sources, such as industrial and transportation, as well as transboundary transport of air pollution from other countries.

The Government of Canada is implementing a sector-by-sector regulatory approach to make progress towards its Copenhagen target for GHGs. Regulations are already in place for two of Canada's largest sources of emissions—the transportation sector and coal-fired electricity generation. The government is continuing to implement its sector-by-sector regulatory approach to achieve additional reductions.

The government began actively addressing air pollution in the 1970s and 1980s, and continues to develop, amend, implement and administer regulations under CEPA 1999 to reduce air pollutant emissions from vehicles, engines and fuels, and from consumer and commercial products. In addition, federal air emission controls apply to a limited number of industrial sectors such as secondary lead smelters, vinyl chloride plants, asbestos mines and mills.

In October 2012, federal, provincial and territorial environment ministers agreed to begin implementation of a new national Air Quality Management System. The federal government will implement the base-level industrial emission requirements using regulatory and non-regulatory instruments under CEPA 1999 for major industrial sources to establish nationally consistent performance levels across the country. The government has issued more ambitious Canadian Ambient Air Quality Standards for fine particulate matter and ground-level ozone as objectives under CEPA 1999.

For additional information about emission reporting activities, such as the Canadian Environmental Sustainability Indicators (CESI), the National Pollutant Release Inventory (NPRI) and the National Greenhouse Gas Inventory Report (NIR), visit:

- www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En
- www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=4A577BB9-1
- www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=83A34A7A-1

2.3.1 Monitoring, Research and Risk Assessment Activities

Monitoring

In Canada, atmospheric monitoring is carried out through partnerships and/or collaborations with provincial, territorial and federal governments, municipalities and universities. Due to the fact that atmospheric issues such as intercontinental transport of air pollution and the depletion of the ozone layer are a global concern and in many instances require

global solutions, partnerships and collaboration with international organizations and agencies are also essential.

In 2012–2013, a broad range of monitoring activities was undertaken in support of the Clean Air Regulatory Agenda, which focuses on specific pollutants such as particulate matter, ozone, NO_x and SO_2 as well as others.

Efforts continued in tandem under the National Air Pollution Surveillance program and the Canadian Air and Precipitation Monitoring Network to measure air quality at urban, rural and regionally representative sites in order to understand patterns and trends of specific atmospheric pollutants. The Canadian Greenhouse Gas Monitoring Network includes observations of carbon dioxide and other GHGs from 15 measurement sites across Canada.

In addition to ongoing data collection and reporting on a wide range of environmental issues, monitoring efforts in 2012–2013 also included upgrades to monitoring technologies, data reporting and database infrastructure.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Environment Canada undertakes scientific research that focuses on modelling, measurements and atmospheric chemistry studies related to air pollutants and GHGs as well as emissions research and measurements related to the transportation and fuel sectors. These activities ensure that policy and regulatory actions are informed by sound and relevant science and allow decision-makers to evaluate that the measures taken achieve their intended effects.

Specifically, air quality research efforts help quantify priority air pollutants and determine trends, improve and validate air quality predictions both in the near term and into the future within the global context, as well as enhance understanding of the impacts of air pollutant emission sources on Canadians and the environment.

Environment Canada's GHG research program focuses on monitoring and modelling of GHGs to quantify sources and sinks in a continental and global context, and to model the climate system response to changing atmospheric concentrations of GHGs.

Health Canada conducts research and assesses the health risks of indoor and outdoor air pollutants to better understand the health impacts posed by these pollutants. Research examined the effects of, for example, industrial emissions and the transport sector on a number of health outcomes such as cardiorespiratory disease.

During 2012–2013, a number of research projects were initiated, including exposure to and better characterization of diesel exhaust particulate; the effectiveness of the Air Quality Health Index in small towns and rural areas; exposure to fine particulate matter ($PM_{2.5}$) and nitrogen dioxide (NO_2); community exposure to air emissions from local industry; methods to improve indoor residential air quality; health effects of wildfire and forest fire smoke; and exposure to and improved characterization of ambient $PM_{2.5}$.

Ongoing research continued on health impacts of exposure to air pollutants from a variety of sources; health impacts of long-term exposure to air pollutants; characterization of atmospheric aerosols; GHG sources and sinks; the role of GHGs in the climate system; improving analytical tools for assessing atmospheric aerosols from vehicles; emissions from heavy-duty diesel engines; atmospheric transport and deposition of mercury; understanding and predicting air quality at high resolution in airsheds of particular interest from a human health or environmental perspective (e.g., urban); understanding the potential environmental impact of exhaust emissions from marine engines with the increase in shipping activity in the Arctic; understanding the linkages between air quality and weather; understanding the impact of specific emissions sources on air quality; renewable fuels operation in cold temperature; non-criteria exhaust emissions from new engine technologies; and health impacts of biodiesel fuels.

A broad range of research projects were completed in 2012–2013. Environment Canada scientists published more than 100 research papers related to air pollutants and GHGs in peer-reviewed scientific journals. Research topics included human health impacts of exposure to traffic emissions (heart

disease, asthma, stroke); indoor air quality (residential, daycare centres); modelling of global and regional climate response to GHGs; detection and attribution analyses of climate change; the carbon cycle in the Earth system; development and evaluation of high-resolution air quality forecasting models; engine emissions; hybrid and battery electric vehicle operation; atmospheric mercury (sources, concentrations, snowpack, deposition); exposure to polycyclic aromatic hydrocarbons (PAHs) in air; air filtration and cardiorespiratory health in a First Nations community; $PM_{2.5}$ exposure and characterization; chemical processes in sea-salt chloride depletion; snow scavenging of atmospheric aerosols; lanthanoids in atmospheric aerosols; and air mass transport of flame retardants, combustion by-products and pesticides.

Also during this reporting period, health benefits analyses were completed to support the development of GHG emission regulations for coal-fired electricity generation, light-duty vehicles and marine fuel.

Research activities continue to support the health risk assessments currently underway for a number of air pollutants (carbon monoxide, coarse particulate matter, sulphur dioxide and nitrogen dioxide), industrial sectors and transportation-related air pollutant sources.

Risk Assessment

Health Canada published the Notice for the Finalized Air Health Assessment for Biodiesel in the *Canada Gazette*, Part I on July 14, 2012 (www.gazette.gc.ca/rp-pr/p1/2012/2012-07-14/pdf/g1-14628.pdf#page=10, pp. 10-15).

2.3.2 Risk Management Activities

Air Quality Guidelines

The Residential Indoor Air Quality Guidelines provide summaries of the health risks posed by specific indoor pollutants, based on a review of the best scientific information available. They also summarize the known health effects, detail the indoor sources and, where possible, provide a recommended exposure level below which health effects are unlikely to occur. The Guidelines are recommendations only and are meant to serve as a scientific basis for activities to reduce the risk from indoor air pollutants and also provide information to individuals on how to reduce exposure to indoor pollutants.

In 2012–2013, Health Canada published the following Notices in the *Canada Gazette*, Part I:

- Proposed Residential Indoor Air Quality Guideline for Naphthalene on October 13, 2012 (www.gazette.gc.ca/rp-pr/p1/2012/2012-10-13/pdf/g1-14641.pdf#page=4, pp. 4-6).
- Proposed Residential Indoor Air Quality Guideline for Benzene on March 16, 2013 (www.gazette.gc.ca/rp-pr/p1/2013/2013-03-16/pdf/g1-14711.pdf#page=14, pp. 14-20).
- Finalized Residential Indoor Air Quality Guideline for Fine Particulate Matter [2.5 microns] on June 30, 2012 (www.gazette.gc.ca/rp-pr/p1/2012/2012-06-30/pdf/g1-14626.pdf#page=37, pp. 37-41).

Vehicle, Engine, Equipment and Fuels Emissions

Canada has implemented and will continue to develop a series of regulations to reduce GHG emissions and smog-forming air pollutant emissions from vehicles, engines and fuels. Currently, there are regulations in place to reduce emissions from passenger cars and light-duty trucks, heavy-duty vehicles, motorcycles, recreational vehicles as well as construction and agricultural equipment, and small engines such as lawnmowers and chainsaws.

Greenhouse Gas Emissions Regulations

The *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* were published in the *Canada Gazette*, Part II on October 13, 2010. These regulations introduce GHG emission standards for new cars and light trucks beginning with the 2011 model year. The regulated standards become more stringent over the 2011 to 2016 model-year period and will generate progressively larger emission reductions. Building on those regulations, Environment Canada published in December 2012 in the *Canada Gazette*, Part I proposed amendments to the regulations that would establish more stringent GHG emission standards for passenger automobiles and light trucks of the 2017 and later model years.

The final *Heavy-Duty Vehicle and Engine Greenhouse Gas Emission Regulations* were published in the *Canada Gazette*, Part II on March 13, 2013. These regulations establish mandatory GHG emission standards for new on-road heavy-duty vehicles and engines beginning with the 2014 model year.

Air Pollutant Emissions Regulations

Regulations Amending the On-Road Vehicle and Engine Emission Regulations (On-Board Diagnostic Systems for Heavy Duty Engines and Other Amendments) were published in the *Canada Gazette*, Part II on February 13, 2013. On-board diagnostic systems are computer systems that monitor, through sensors, the malfunction of emission-related components to facilitate proper repair and maintain emission performance. The amendments set requirements which standardize and make it mandatory to monitor emission-related components via an on-board diagnostic system on heavy-duty vehicles. The amendments apply to engines and vehicles of the 2014 and later model years. These amendments also result in a net decrease in regulatory burden for the industry. The amendments also include some administrative changes to the regulations, including changes to the importation declaration requirements for all importers and to the End of Model Year Report for on-road motorcycles.

Renewable Fuels Regulations

The *Renewable Fuels Regulations*, published on September 1, 2010, in the *Canada Gazette*, Part II require fuel producers and importers to have an average renewable content of at least 5% based on the volume of gasoline that they produce or import commencing December 15, 2010.

The *Regulations Amending the Renewable Fuels Regulations*, passed on June 30, 2011, set a date of coming into force of July 1, 2011, for a requirement for 2% renewable fuel content in diesel fuel and heating distillate oil.

The first compliance periods for both the gasoline and the distillate requirement ended on December 31, 2012. On January 1, 2013, Environment Canada began implementation of the Renewable Fuels Electronic Reporting system that will enable the regulated community to submit their regulatory information electronically. The first set of compliance period reports were submitted in February 2013.

On December 31, 2012, the Minister of the Environment announced the government's intention to propose an amendment to the *Renewable Fuels Regulations* that would see a permanent national exemption from the 2% renewable content requirement in home heating oil, as well as a 6-month extension to the exemption from the 2% renewable content requirement for diesel fuel for Canada's Maritime provinces.

These measures are being implemented to mitigate potential cost increases for Canadians that use oil to heat their homes and to provide flexibility for suppliers operating in the Maritime provinces to make adjustments required to comply with the Regulations.

The *Renewable Fuels Regulations*, combined with provincial regulations, were originally expected to lead to cumulative GHG emissions reductions of approximately four megatonnes per year once fully implemented. Removing heating oil from the Regulations will impact these GHG reductions, but the impact is expected to be less than a tenth of a megatonne per year.

Regulations Amending the Sulphur in Diesel Fuel Regulations

The *Regulations Amending the Sulphur in Diesel Fuel Regulations* were published in the *Canada Gazette*, Part II on June 20, 2012. The amendments enable the production, import and sale of diesel fuel with a maximum sulphur content of 1000 mg/kg for use in large vessels, enabling the supply of lower sulphur fuel to ships operating in the joint Canada/U.S. Emission Control Area as adopted by the International Maritime Organization in 2010.

The amendments retain the sulphur limit of 15 mg/kg in diesel fuel produced or imported for use in non-large vessels and locomotives as of June 1, 2012. They also reduce the limit of sulphur content in diesel fuel sold for use in non-large vessels to 15 mg/kg as well as limit the concentration of sulphur in diesel fuel produced, imported or sold for use in Canada for small and large stationary engines to 15 mg/kg and 1000 mg/kg, respectively. These requirements will come into force on June 1, 2014, and are aligned with the U.S.

Vehicle and Engine Compliance Program

Environment Canada administers a program to verify compliance with various regulations. To further realize the benefits of aligned emission standards, Environment Canada works closely with the U.S. Environmental Protection Agency.

Vehicles and engines manufactured in Canada or imported into Canada must comply with emission standards. Despite the best efforts of manufacturers, defects in the design, construction or functioning of a vehicle/engine that affects or could affect compliance with a prescribed standard can occur, given the complexity of vehicle/engine designs, the variety of parts and different component suppliers. Where defects do occur, CEPA 1999 requires companies to take corrective action by issuing a notice of defect.

In 2012–2013, 138 emission tests were performed on various types of vehicles and engines. The Vehicle and Engine Compliance Program reviewed 431 submissions for products unique to the Canadian market for the 2012 and 2013 model years. During this period, 41 notices of defect and other notifications were processed, affecting approximately 150 000 vehicles and engines.

The *Off-Road Compression-Ignition Engine Emission Regulations* and the *Marine Spark-Ignition Engine, Vessel and Recreation Vehicle Emission Regulations* prescribe that import declarations be submitted to Environment Canada rather than to a customs office. This allows Environment Canada to better monitor vehicles and engines being imported into Canada. During this period, over 750 declarations for the aforementioned Regulations were processed.

Technical experts from the program also worked in collaboration with the enforcement officers, providing technical expertise as well as contributing to enforcement training sessions across the country. These training sessions covered Canada's vehicle and engine emission regulations and were designed to assist their work in suspected non-compliance cases. See Section 4 for information on compliance and enforcement activities.

In April 2012, the Department launched its Vehicle and Engine Emissions Reporting Registry. The first release of the new single-window electronic reporting system is designed to enable automobile manufacturers to submit their annual report pursuant to the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*. These reports are used to establish their fleet average GHG emissions performance relative to the standards and their net balance of emission credits/deficits. The system also enables automobile manufacturers to submit fuel consumption information collected by Natural Resources Canada as part of the voluntary fuel consumption guide and labelling program.

Electricity Emissions

Greenhouse Gas Emissions Regulations

On September 12, 2012, the *Reduction of Carbon Dioxide Emissions from Coal-fired Generation Electricity Regulations* were published in the *Canada Gazette*, Part II. The Regulations set a stringent performance standard for new coal-fired electricity generation units and those that have reached the end of their useful life. The performance standard of the Regulations will come into effect on July 1, 2015.

Equivalency Agreements

Under section 10 of CEPA 1999, the Governor in Council has the authority to make an order declaring that a regulation under sections 93, 200, or 209 does not apply in a province or territory. A precondition of this order is agreement by the Minister and the province or territory that there are provincial laws that are equivalent to the subject federal regulation.

On September 14, 2012, a draft equivalency agreement with the Province of Nova Scotia was released for public comment in respect of the federal *Reductions of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations*. Notice of availability of the agreement was published in the *Canada Gazette*, Part I. A final agreement is expected to be released in the coming year.

Pollution Prevention Planning

In 2012–2013, one P2 Planning Notice relating to air pollution continued to be active, covering base metal smelters and refineries, and zinc plants. Information about the Notice and performance results is available online (www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=BCAA1E50-1#X-201211061451252).

Environmental Performance Agreements

In 2012–2013, an Environmental Performance Agreement with Rio Tinto Alcan concerning atmospheric emissions of polycyclic aromatic hydrocarbons was ongoing. Information about the agreement and updates is available online (www.ec.gc.ca/epe-epa/default.asp?lang=En&n=5BE979CD-1#X-201006160806394).

2.4 Water Quality

Water quality is determined by assessing the chemical, physical and biological content of water for particular purposes. It is expressed in terms of the kinds and concentrations of substances dissolved and suspended in the water and what those substances do to inhabitants of the ecosystem.

Water quality is affected in many ways, often caused by nature's own patterns. The water quality of rivers and lakes changes with the seasons and geographic areas, even when there is no pollution present. It is also affected by human development including disposal of human wastes, animal wastes and chemical substances into the environment.

Water quality is primarily the responsibility of provinces and territories in Canada, but the federal government plays a leading role, including, under CEPA 1999, in scientific research, monitoring and leadership on the development of guidelines for water quality.

2.4.1 Monitoring, Research and Risk Assessment Activities

Monitoring

In 2012–2013, monitoring activities focused on the environmental impacts of industrial effluents from activities such as mining and pulp and paper production. Work also continued within the Freshwater Inventory and Surveillance of Mercury Network.

In addition to data collection and reporting on a wide range of environmental issues, monitoring efforts in 2012–2013 also included upgrades to monitoring technologies and to data reporting and database infrastructure.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Both Health Canada and Environment Canada continued their water quality research activities. Health Canada conducts research on drinking water quality in support of the Guidelines for Canadian Drinking Water Quality. Environment Canada's research included analytes in wastewater treatment plant influent and effluent; the environmental fate of azo benzidine compounds and their transformation products; and organophosphorus flame retardants in a variety of environmental compartments.

2.4.2 Risk Management Activities

In addition to the activities listed below, risk management actions that reduce releases of specific toxic chemicals contribute to the overall improvement of water quality. For example, the Environmental Performance Agreement on BPA in Paper Recycling Mill Effluents, the P2 Plan on Bisphenol A and the P2 Plan on Siloxane D4.

Drinking Water Quality Guidelines

Health Canada works in collaboration with the provinces and territories to develop the Guidelines for Canadian Drinking Water Quality and their technical documents. Priorities for developing guidelines are also established in consultation with the provinces and territories and are based on a national perspective.

Health-based guideline values are developed for drinking water contaminants that are found or expected to be found in drinking water supplies across Canada at levels that could lead to adverse health effects.

Guidance documents are also developed under the Guidelines for Canadian Drinking Water Quality to provide operational or management guidance related to specific drinking-water-related issues (such as boil-water advisories) or to make risk assessment information available when a guideline is not deemed necessary (such as controlling corrosion in drinking-water distribution systems).

The Guidelines for Canadian Drinking Water Quality are used by all provinces and territories as a basis to establish their own regulatory requirements to ensure the quality of drinking water in their own jurisdictions.

Table 11 lists the guidelines that were completed or in progress in 2012–2013.

Table 11: Guideline documents for Canadian drinking water quality from April 2012 to March 2013

Finalized – publication pending	In Progress
Guidelines for Canadian Recreational Water Quality • Turbidity • Vinyl chloride • Waterborne bacterial pathogens • Guidance on the Use of the Microbiological Drinking Water Quality Guidelines	• Ammonia • Nitrate/nitrite • 1,2-dichloroethane • Selenium • Tetrachloroethylene • Toluene, ethylbenzene and xylenes • pH • Atrazine • Chromium • Benzo(a)pyrene • Lead • Bromate • Manganese • Microcystins • Uranium • 2,4-dichlorophenoxylacetic acid • Copper • PFOS/PFOA

2.5 Waste

Waste generally refers to any material, non-hazardous or hazardous, that has no further use, and which is managed at recycling, processing or disposal sites.

In Canada, this responsibility for managing and reducing waste is shared among the federal, provincial, territorial and municipal governments. For instance, municipal governments are responsible for collecting and managing waste from homes for recycling, composting and disposal, while provincial and territorial authorities are responsible for the approval, licensing and monitoring of waste management operations.

For its part, Environment Canada exercises responsibilities with respect to international and interprovincial movements of hazardous waste, releases of toxic substances to the air, land and water, disposal at sea, and activities on federal lands.

2.5.1 Monitoring, Research and Risk Assessment Activities

Monitoring

The CMP Monitoring and Surveillance Program collects data on the concentration of chemical substances in environmental compartments at locations across Canada. Environmental compartments include surface water, sediment, air, aquatic biota and wildlife. Wastewater system influent, effluent and biosolids as well as landfill leachate and gas are also monitored at select locations representing a range of input and treatment system types.

The program has collected data on many substances including PBDEs, perfluorinated compounds (including PFOS and PFCAs), siloxanes, triclosan, BPA and metals in landfill leachate and/or landfill gas, to provide measured environmental data for risk assessment and risk management decision making. The collection of data on these substances will establish baseline information and ultimately

allow for the analysis of temporal trends—a key element of measuring the performance of risk management activities.

During the 2012–2013 reporting period, research was undertaken to compile, present and analyze a five-year period of Environment Canada's landfill leachate monitoring data.

Disposal at Sea Site Monitoring Program

As required by CEPA 1999, representative disposal at sea sites are monitored to verify that permit conditions were met, and that scientific assumptions made during the permit review and site selection process were correct and sufficient to protect the marine environment. By disposal site monitoring, Environment Canada is able to verify that the permitting of disposal is sustainable and that permit holders can have continued access to suitable sites. Where monitoring indicates a problem or where the site has reached its capacity over time, management action in the form of closing, moving or altering the site use can occur.

In 2012–2013, monitoring projects were completed at 11 ocean disposal sites nationally (or 12% of actively used sites), and identification and reference sites were sampled in the Bay of Fundy. No management action was required at the sites studied during the 2012–2013 period.

Environment Canada's Quebec Region conducted a hydroacoustic survey of a site in the Magdalen Islands and another at a site in Deception Bay, in northern Quebec. In the Magdalen Islands, video monitoring was conducted to characterize the macro-benthic fauna of a disposal site. In Deception Bay, findings indicate that the sediment input into the bay comes more from shoreline erosion caused by landslides than ocean disposal.

Environment Canada's Atlantic Region focused monitoring efforts on the Bay of Fundy where pre- and post-disposal bathymetric surveys were conducted in an ongoing program to monitor the stability of a disposal site within the bay. At the same site, sediment samples were collected at six potential reference locations as one part of a collaborative effort to develop a cumulative effects monitoring framework. Samples collected were assayed for toxicity using a battery of tests: lethal and sub-lethal. A geophysical survey of a second disposal site in the Bay of Fundy was also completed as part of an ongoing program to develop a post-disposal habitat map for a dredged material disposal site.

In Environment Canada's Pacific Region, monitoring was undertaken at the five disposal sites. High-resolution multibeam bathymetric and backscatter survey, site visualization, surficial sediment sampling, benthic invertebrate sampling, and sediment profile imaging were undertaken at Cape Mudge, Cape Lazo, Hanson Island, Hichey Point and Malaspina Disposal Sites.

Further details can be found in the *Compendium of Monitoring Activities at Ocean Disposal Sites*, which is sent to permit holders and submitted to the International Maritime Organization annually (www.ec.gc.ca/iem-das/default.asp?lang=En&n=FC9BCF50-1).

2.5.2 Risk Management Activities

In addition to the activities listed below, risk management actions included in section 2.1, Toxic Substances Harmful to Human Health or the Environment, that reduce releases of specific toxic chemicals also contribute to the overall improvement of water quality. One example is the *Prohibition of Certain Toxic Substances Regulations, 2012*.

Controlling the Movement of Hazardous Waste and Hazardous Recyclable Material

CEPA 1999 provides authority to make regulations governing the export, import and transit of waste (including both hazardous and non-hazardous waste) and hazardous recyclable materials. It also provides authority to establish criteria for refusing an export, import or transit permit, should the waste or hazardous recyclable material not be managed in a manner that will protect the environment and human health.

Canada implements its international obligations as a party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), the OECD Decision on the Control of Transboundary Movement of Wastes Destined for Recovery Operations, and the Canada–United States Agreement on the Transboundary Movement of Hazardous Waste through the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWHRMR) and the *PCB Waste Export Regulations, 1996*.

In 2012, more than 2300 notices were processed for proposed imports, exports and transits of hazardous wastes and hazardous recyclable materials under the EIHWHRMR. The notices received covered 20 919 individual waste streams, which exhibited a range of hazardous properties such as being explosive, flammable, acutely toxic, corrosive, dangerously reactive and environmentally hazardous. Approximately 35 250 individual transboundary shipments of hazardous waste and hazardous recyclable material were reported in movement documents received by Environment Canada.

More than 99% of imports and 98% of exports for both hazardous waste and hazardous recyclable materials occurred between Canada and the United States. The United States is the only country that received, from Canada, shipments of hazardous wastes destined for disposal. Canada has received shipments of hazardous wastes destined for disposal from two countries: Barbados and the United States. Other regions involved in the movement of hazardous recyclable materials, for both imports and exports, included Brunei, Darussalam, Nigeria, United Arab Emirates, Indonesia, Peru, United Kingdom, Belgium, Germany, Spain, Russian Federation, Mexico and the Republic of Korea.

The quantity of hazardous waste and hazardous recyclable material imported into Canada was 346 700 tonnes (t) in 2012.[2] This represents a decrease of 48 086 t or 12% over the total 2011 import quantity. Shipments destined for recycling totaled 245 071 t and represented about 71% of all imports in 2012. Hazardous recyclable material imported into Canada in greater quantities were glass from cathode ray tubes and other activated glass, waste electrical and electronic assemblies or scrap-containing components, used or spent batteries, and waste liquors from the pickling of metal. Hazardous wastes imported in greater quantities included metals or metal-bearing wastes, waste organic solvents, corrosive waste acidic or basic solutions, wastes containing cyanides.

The quantity of hazardous waste and hazardous recyclable materials exported was 496 095 t in 2012. This represents an increase of 26 401 t or 8% from the 2011 figure. Shipments exported for recycling totalled 403 587 t and represented about 81% of all exports in 2012. Corrosive waste acidic or basic solutions, treated cork and wood wastes, lead-acid batteries, waste oil/water or hydrocarbon/water mixtures or emulsions, and wastes containing organic or inorganic cyanides made up the majority of hazardous recyclable material exported abroad for recycling. Hazardous wastes exported in greater quantities included corrosive waste acidic or basic solutions, metals or metal-bearing wastes, waste oil/water or hydrocarbon/water mixtures or emulsions, wastes from industrial pollution-control devices for the cleaning of industrial off-gases, and wastes containing organic or inorganic cyanides.

Imports of hazardous recyclable materials in 2012 were shipped to five provinces: Quebec, Ontario, New Brunswick, British Columbia and Alberta.

Exports of hazardous recyclable materials in 2012 originated from eight provinces: Quebec, Ontario, New Brunswick, Nova Scotia, British Columbia, Alberta, Manitoba and Saskatchewan. Exports of hazardous wastes for final disposal originated from the same provinces, except Saskatchewan.

Tables 12 and 13 list the quantities imported and exported from 2003 to 2012.

2 Due to timelines associated with data processing, export and import quantities set out in this section of the report represent actual movement values that took place during the 2012 calendar year (from January 1, 2012, to December 31, 2012).

Table 12: Hazardous waste and hazardous recyclable material, imports, 2003–2012 (tonnes)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Recyclables	189 110	200 097	174 983	164 903	237 141	262 337	221 778	217 663	243 491	245 071
Total imports	417 368	416 136	476 416	408 839	497 890	532 727	490 169	364 162	394 786	346 700

Table 13: Hazardous waste and hazardous recyclable material, exports, 2003–2012 (tonnes)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Recyclables	205 356	187 986	226 380	374 024	358 896	365 468	315 631	357 627	374 207	403 587
Total exports	321 294	308 357	327 746	474 538	460 497	482 680	420 865	428 367	460 707	496 095

Please note that data are revised periodically as new information becomes available. Therefore, information presented here may differ from what was previously published in other reports.

Disposal at Sea

The disposal of a substance at sea, from a ship, aircraft, platform or other structure is prohibited without a CEPA Disposal at Sea permit (see CEPA Part 7, Division 3 for full definitions, exemptions and jurisdictions).

A permit for disposal at sea will be approved only if it is the environmentally preferable and practical option. CEPA 1999 provides additional controls on disposal at sea, including:

- a prohibition on the export of a substance for disposal in an area of the sea under the jurisdiction of a foreign state or in its internal waters;
- a list of six substances for which a disposal at sea permit can be obtained (Schedule 5 of the Act);
- an assessment framework for reviewing permit applications based on the precautionary principle, which must be followed (Schedule 6 of the Act); and
- a statutory obligation to monitor selected sites.

For further information, consult www.ec.gc.ca/iem-das.

Through CEPA 1999 and the *Disposal at Sea Regulations* made under the Act, Canada implements its international obligations as a party to the 1996 Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Protocol). In this regard, Canada and other Convention and Protocol parties have been supporting the continuation of a major project on the reduction of barriers to compliance with the treaty. Workshops, guidance and technical assistance are offered to countries to aid their acceding to the London Protocol or to coming into compliance with it. In 2012, Canada participated in a workshop in the Republic of Korea for Asian countries aimed at promoting accession to the Protocol.

Following many years of work by Canada and other Parties, an amendment to the London Protocol has been tabled to further regulate ocean fertilization and to set the framework for regulation in the future of other marine geo-engineering activities that fall within the scope of the Protocol and have the potential to harm the marine environment. Canada is developing a position concerning this amendment. Cooperation with other international bodies, including the Convention on Biological Diversity, that have also called for this global regulation is ongoing.

Canada also participates actively in the development of international guidances relevant to disposal at sea. Current projects include finalizing revised dredged material assessment guidance; developing best practices for disposal related to offshore mining wastes; and developing low-tech assessment guidance for dredged material. Guidance on the assessment of CO_2 streams for sub-seabed geological storage and Action Levels (levels of concern) for fish waste were completed in 2012–2013.

Disposal at Sea Permits

In 2012–2013, 91 permits were issued in Canada for the disposal of 3.97 million tonnes of waste and other matter (tables 14 and 15), compared with 99 permits for the disposal of 4.64 million tonnes

in 2011–2012. Most of the material permitted for disposal was dredged material that was removed from harbours and waterways to keep them safe for navigation. Also permitted was excavated native till (geological matter) that is disposed of at sea in the lower mainland of British Columbia, where on-land disposal options for clean fill are extremely limited. Fish-processing waste is also permitted in remote communities where there is no access to reuse-and-recycling opportunities.

Table 14: Disposal at sea quantities permitted (in tonnes) and permits issued in Canada from April 2012 to March 2013

Material	Quantity permitted	Permits issued
Dredged material	3 218 800*	44
Geological matter	689 000*	5
Fisheries waste	57 799	39
Vessels	734	2
Organic matter	200	1
Total	**3 966 533**	**91**

* Dredged material and geological matter were converted to tonnes using an assumed density of 1.3 tonnes per cubic metre.

Table 15: Disposal at sea quantities permitted (in tonnes) and permits issued by region from April 2012 to March 2013

	Atlantic		Quebec		Prairie and Northern		Pacific and Yukon	
Material	Quantity permitted	Permits issued	Quantity permitted	Permits issued	Quantity permitted	Permits issued	Quantity permitted	Permits issued
Dredged material*	1 188 200	15	81 900	9	26 000	1	922 700	19
Geological matter*	0	0	0	0	0	0	689 000	5
Fish waste	56 649	36	1150	3	0	0	0	0
Vessels	734	2	–	–	–	–	–	–
Organic matter	–	–	–	–	200	1	-	-
Total	**1 245 583**	**53**	**83 050**	**12**	**26 200**	**2**	**2 611 700**	**24**

* Dredged material and geological matter were converted to tonnes using an assumed density of 1.3 tonnes per cubic metre.

2.6 Environmental Emergencies

Part 8 of CEPA 1999 addresses the prevention of, preparedness for, response to and recovery from an uncontrolled, unplanned or accidental release of a substance into the environment that poses potential or actual harm to the environment or to human health. Part 8 provides the authority, among other things, for making regulations, guidelines and codes of practice. Part 8 also establishes a regime that makes the person who owns or controls the substance liable for restoring the damaged environment and for the costs and expenses incurred in responding to an environmental emergency.

The *Environmental Emergency Regulations* (referred to as the E2 Regulations) made under Part 8 of CEPA 1999 require any person responsible, as specified in the E2 regulations, for substances listed in the E2 Regulations to notify the Minister of the Environment and to prepare, document, implement, test and update an environmental emergency plan (E2 plan) for the place where the substance is located, if the total quantity of the substance on location and if the substance is in a storage container, the maximum capacity of the storage container are equal to or greater than the regulated threshold quantity for the substance.

Environment Canada's Environmental Emergencies website (www.ec.gc.ca/ee-ue/default.asp?lang=En&n=8A6C8F31-1) includes implementation guidelines for E2 plans, a common issues section and online notice filing. The website also provides public access to a database containing basic information about registered facilities (e.g., company names and addresses).

As of March 31, 2013, approximately 4350 facilities had filed Notices Regarding the Identification of Substance and Place under the E2 Regulations. Of these facilities, approximately 2700 were required to prepare E2 plans. The seven most commonly

identified substances were propane, anhydrous ammonia, pentane, butane, gasoline, hydrochloric acid and chlorine.

A socio-economic study conducted in early 2013 provided insight into the costs of E2 planning, compliance with the E2 Regulations and the financial impacts of environmental emergencies. Based on about 250 respondents to the study's survey, the average one-time cost for preparing an E2 plan ranges from approximately $5,500 to $14,000. Environment Canada previously estimated that costs associated with E2 plans ranged from $5,000 to $25,000, depending on the size of the facility and whether the E2 plan was new or revised.

In 2012–2013, Environment Canada regional activities associated with the implementation of the E2 Regulations included hosting substance-specific workshops and site visits for the regulated community covering prevention, preparedness and response aspects for propane, liquefied natural gas and ammonia. Other themed workshops addressed E2 plan content and exercise design.

3 Administration, Public Participation and Reporting

3.1 Federal, Provincial, Territorial Cooperation

Part 1 of the CEPA 1999 requires the ministers to establish the National Advisory Committee, composed of one representative for the federal Minister of the Environment and one for the federal Minister of Health, representatives from each province and territory, and not more than six representatives of Aboriginal governments from across Canada.

Part 1 also allows the Minister of the Environment to negotiate an agreement with a provincial or territorial government, or an Aboriginal people, with respect to the administration of the Act. It also allows for equivalency agreements, which suspend the application of federal regulations in a province or territory that has equivalent regulatory provisions.

3.1.1 National Advisory Committee

The National Advisory Committee provides a forum for provincial, territorial and Aboriginal governments to advise the ministers on certain actions being proposed under the Act, enables national cooperative action, and seeks to avoid duplication in regulatory activity among governments. The Committee serves as a single window on consultations and offers to consult related to initiatives under the Act with provincial and territorial governments and representatives of Aboriginal governments.

To carry out its duties in 2012–2013, the CEPA National Advisory Committee (NAC) held two teleconference meetings, and the NAC Secretariat corresponded regularly with committee members regarding various federal initiatives implemented under CEPA 1999. These initiatives included:

- updates on the implementation of Canada's CMP, including various risk assessment and risk management activities of the CMP;
- preparation and implementation of P2 plans in respect of toxic substances;
- *Federal Halocarbon Regulations*;
- *Federal Mobile PCB Treatment and Destruction Regulations*;
- *Perfluorooctane Sulfonate, its Salts and Certain Other Compounds Regulations*;
- *Canadian Ambient Air Quality Standards (CAAQS) for $PM_{2.5}$ and Ozone*;
- updates on the Conferences of the Parties (COPs) to the Stockholm, Basel and Rotterdam Conventions and the Extraordinary Meetings of the three COPs;
- proposed *Volatile Organic Compound (VOC) Concentration Limits for Certain Products Regulations*;
- publication of Codes of Practice and Environmental Performance Agreements for various substances;
- publication of the *Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations*;
- publication of the *Prohibition of Certain Toxic Substances Regulations, 2012*;
- 2012 draft agreement for the Refractory Ceramic Fibre Industry;
- Canada's National Implementation Plan for obligations under the Stockholm Convention on Persistent Organic Pollutants; and
- publication of the 2012–2013 *Canada Gazette* notice for the National Pollutant Release Inventory.

For more information, please consult www.ec.gc.ca/ceparegistry/gene_info/nac.cfm.

3.1.2 Federal-Provincial/ Territorial Agreements

Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem

Since 1971, Canada and Ontario have worked together through the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem (www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1). This agreement guides the efforts of Canada and Ontario in achieving a healthy,

prosperous and sustainable Great Lakes Basin ecosystem for present and future generations, and is the principal mechanism for meeting Canada's obligations under the Canada–United States Great Lakes Water Quality Agreement (www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1). The 2007–2012 Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem comprised 13 goals, 37 results and 189 specific commitments in 4 priority areas:

- designated Areas of Concern[3] in the Great Lakes Basin;
- harmful pollutants;
- lake and basin sustainability; and
- coordination of monitoring, research and information.

Work under the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem continued in 2012–2013 while negotiations to develop a new Canada–Ontario Agreement got underway.

Over 2012–2013, a range of chemical risk management initiatives were delivered under the CMP. These initiatives supported implementation of the Harmful Pollutants Annex Goals under the Canada–Ontario Agreement, such as continuing efforts towards the sound management of chemicals in the Great Lakes through the reduction of releases of chemicals and the enhancement of knowledge to further reduce releases and mitigate risk.

Through the Canada–Ontario Agreement extension process, Canada and Ontario committed to strengthen their combined effectiveness for spill prevention, preparedness, response and recovery. A consultant was retained to conduct a Great Lakes Spills Review to assess the current state of spill management in the Great Lakes Basin. The main result of the Spills Review was the collective identification of best practices and a commitment to strengthen joint spill prevention, preparedness, response and recovery efforts.

Canada–Quebec Administrative Agreement

Administrative agreements concerning the pulp and paper sector have been in place between Quebec and the Government of Canada since 1994. The fifth agreement expired on March 31, 2012. The parties have continued to cooperate through the development of a Memorandum of Understanding for data collection whereby Quebec will continue to provide a single data entry portal for regulatees for the following federal regulations:

- *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* made pursuant to CEPA 1999;
- *Pulp and Paper Mill Defoamer and Wood Chip Regulations* made pursuant to CEPA 1999; and
- *Pulp and Paper Effluent Regulations* made pursuant to the *Fisheries Act*.

During this reporting period, 109 reports produced by pulp and paper facilities in Quebec were examined to verify that the facilities were in compliance with the applicable regulations.

Canada–Saskatchewan Administrative Agreement

The Canada–Saskatchewan Administrative Agreement, in force since September 1994, is a work-sharing arrangement covering certain provincial legislation and seven CEPA 1999 regulations, including two regulations related to the pulp and paper sector, two regulations on ozone-depleting substances and two regulations on PCBs. There were no prosecutions under these regulations in Saskatchewan under this agreement in 2012–2013; however, there were two Environmental Protection Compliance Orders issued by Environment Canada under the *PCB Regulations*.

To view the agreement, consult www.ec.gc.ca/ee-ue/default.asp?lang=En&n=91B094B6-1.

3 An Area of Concern (AOC) is a location that has experienced environmental degradation. Under Annex 2 of the Canada–United States Great Lakes Water Quality Agreement, 42 AOCs were identified and 1 more (Erie, Pennsylvania) was added later. Currently there are 9 AOCs in Canada, 25 AOCs in the United States, and 5 additional AOCs shared by both countries. For more information on AOCs, see www.ec.gc.ca/raps-pas/default.asp?lang=En&n=A290294A-1.

Canada–Alberta Equivalency Agreement

CEPA 1999 provides for equivalency agreements where provincial or territorial environmental legislation has provisions that are equivalent to the CEPA 1999 provisions. The intent is to eliminate the duplication of environmental regulations.

Under the 1994 Agreement on the Equivalency of Federal and Alberta Regulations for the Control of Toxic Substances, the following CEPA 1999 regulations, or parts thereof, do not apply in Alberta:

- *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* (all sections);
- *Pulp and Paper Mill Defoamer and Wood Chip Regulations* (4(1), 6(2), 6(3)(*b*), 7 and 9);
- *Secondary Lead Smelter Release Regulations* (all sections); and
- *Vinyl Chloride Release Regulations, 1992* (all sections).

There are no longer any operating vinyl chloride plants or lead smelters in Alberta, and therefore no compliance issues to report under the *Vinyl Chloride Release Regulations, 1992* or the *Secondary Lead Smelter Release Regulations*.

Alberta Environment indicated that, in 2012–2013, there were no reported violations by the four pulp and paper mills regulated under the pulp and paper regulations.

For more information about the agreement, consult www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=5CB02789-1.

Memorandum of Understanding on Environmental Cooperation in Atlantic Canada

Efforts in 2012–2013 focused on implementing the Water and Environmental Enforcement Annex Work Plans under the Memorandum of Understanding on Environmental Cooperation signed in 2008 between the Minister of the Environment and the ministers of the environment of the four Atlantic provinces.

Through the Environmental Enforcement Annex Work Plan, federal and provincial environmental enforcement officers conducted joint fieldwork and inspections in the three Maritime provinces. In addition, federal-provincial collaboration focused on enhancing collective environmental enforcement capacity through joint training (fish kills, source development, etc.) and development of enforcement officers. Several priorities were also advanced under the Water Annex Work Plan.

Environmental Occurrences Notification Agreements

Federal, provincial and territorial laws require, in most cases, notification of the same environmental emergency or environmental occurrence, such as an oil or chemical spill. To reduce duplication of effort, Environment Canada and Fisheries and Oceans Canada entered into environmental occurrences notification agreements with the governments of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, the Northwest Territories and Yukon.

These notification agreements are supported by the *Release and Environmental Emergency Notification Regulations* under CEPA 1999 and the *Deposit out of the Normal Course of Events Notification Regulations* under the *Fisheries Act*.

The purpose of the notification agreements is to establish a streamlined notification system for persons required to notify federal and provincial/territorial governments of an environmental emergency or environmental occurrence. Under these notification agreements, 24-hour authorities operating for the provinces and territories receive notifications of environmental emergencies or environmental occurrences, on behalf of Environment Canada, and transfer this information to the Department.

In 2012–2013, Environment Canada continued to work with its provincial and territorial counterparts to implement the notification agreements. This work included the establishment of management committees and the development of standard operating procedures for the collection and processing of notifications of environmental occurrences.

To view the notification agreements, consult www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=5200AB4B-1.

3.2 Public Participation

3.2.1 CEPA Environmental Registry

Part 2 of CEPA 1999 provides for the establishment of an environmental registry, whistleblower protection, and the right of an individual to request an investigation and pursue court action.

The CEPA Environmental Registry was launched on Environment Canada's website with the proclamation of CEPA 1999 on March 31, 2000. Since that time, ongoing efforts have been made to increase the Registry's reliability and ease of use. The Registry encompasses thousands of CEPA-related documents and references. It has become a primary source of environmental information for the public and private sectors, both nationally and internationally, and has been used as a source of information in university and college curricula.

From April 2012 to March 2013, over 180 requests for CEPA-related information were received in the Registry mailbox (ceparegistry@ec.gc.ca) or Environment Canada's general mailbox (enviroinfo@ec.gc.ca).

The Registry is located at www.ec.gc.ca/lcpe-cepa.

Public Consultations

During 2012–2013, there were 31 opportunities posted on the Environmental Registry for stakeholders and the public to consult.

Please see www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm?n=FBC634F3-1.

3.2.2 CMP-related Consultations

In addition to public consultations on the various risk assessments and risk management measures outlined throughout Section 2, Environment Canada and Health Canada undertook other CMP-related consultations in 2012–2013, including:

- Groupings Initiative – Aromatic Azo- and Benzidine-Based Substances – Draft Technical Background Document (July 2012) subject to a 60-day public comment period. The document is available online (www.ec.gc.ca/ese-ees/default.asp?lang=En&n=9E759C59-1).
- In May 2012, a new initiative to increase the transparency of the New Substances Program by publishing summaries of environmental and human health risk assessment reports for new substances that are chemicals or polymers together with a pilot phase on three substances was subject to a public comment period.

The CMP Stakeholder Advisory Council met twice in 2012–2013 (June 21 and November 22). The purpose of the Council is to get stakeholder input on the implementation of the CMP, and to foster dialogue on issues pertaining to the CMP between stakeholders and government, and among different stakeholder groups. Issues may include risk assessment, risk management, risk communications, monitoring, research, indicators of success, chemical policy and other cross-cutting integrated activities across the CMP. Some examples of topics for discussion in 2012–2013 include publication of the Canadian Health Measures Survey; gathering information on chemicals in products; effectiveness of early stakeholder engagement for the Substance Grouping Initiative; and enhancing transparency in regulatory development. During this reporting period, a call for nominations for the CMP Science Committee was implemented (www.chemicalsubstanceschimiques.gc.ca/plan/sc-cs/index-eng.php).

Environment Canada published Preliminary Risk Management documents for 60-day comment periods for:

- Certain Petroleum and Refinery Gases and Heavy Fuel Oils (April 2012)
- Tetrabromobisphenol-A (TBBPA) (November 2012)
- Methylium, [4-(dimethylamino)phenyl]bis [4-(ethylamino)-3-methylphenyl]-, acetate (July 2012)

The departments also hosted stakeholder consultation activities on a variety of other topics, including revisions to the Proposed Volatile Organic Compound (VOC) Concentration Limits for Certain Products Regulations (January 21–March 22, 2013).

3.3 Reporting

3.3.1 Canadian Pollution Prevention Information Clearinghouse

Part 4 of CEPA 1999 provides the authority for the establishment of a national pollution prevention information clearinghouse to facilitate the collection, exchange and distribution of information regarding pollution prevention.

The Canadian Pollution Prevention Information Clearinghouse (CPPIC) is a public website that provides Canadians with links to over 2 000 resources containing comprehensive information and tools from Canada and around the world to strengthen their capacity to prevent pollution. In 2012–2013, 180 new records were added to the clearinghouse. Fifty-one percent (51%) of the new records are Canadian and 17% are bilingual, both significant increases over 2011–2012 numbers. Roughly forty percent of new records (42%) are applicable to manufacturing sectors, while nearly a quarter of all new records (24%) are applicable to private households. Overall, CPPIC records were viewed nearly 26 000 times in 2012–2013.

3.3.2 State of the Environment Reporting

Environmental indicators convey the state of Canada's environment in a straightforward and transparent manner. The Canadian Environmental Sustainability Indicators (CESI) are a system of national environmental indicators that inform citizens and Parliamentarians about current environmental status and trends and provide policy makers and researchers with comprehensive, unbiased and authoritative information about key environmental issues. The indicators systematically measure progress towards the goals and targets of the Federal Sustainable Development Strategy.

The indicators are designed to be relevant to the government's policy priorities: useful and easily understood by decision makers and the public and based on solid methodology that allows for comparison over time. CESI also ensures that the national, regional, local and international trends are readily accessible and presented through the use of graphics, explanatory text and interactive maps through which users can drill down for local data.

The high-quality data used to calculate indicators originate from a variety of sources, including surveys, measurement networks and other research initiatives that are expected to be maintained and updated for the foreseeable future.

The indicators are prepared by Environment Canada with the support of other federal departments, including Health Canada, Statistics Canada, Natural Resources Canada, Agriculture and Agri-Food Canada, and Fisheries and Oceans Canada, as well as relevant provincial and territorial counterparts.

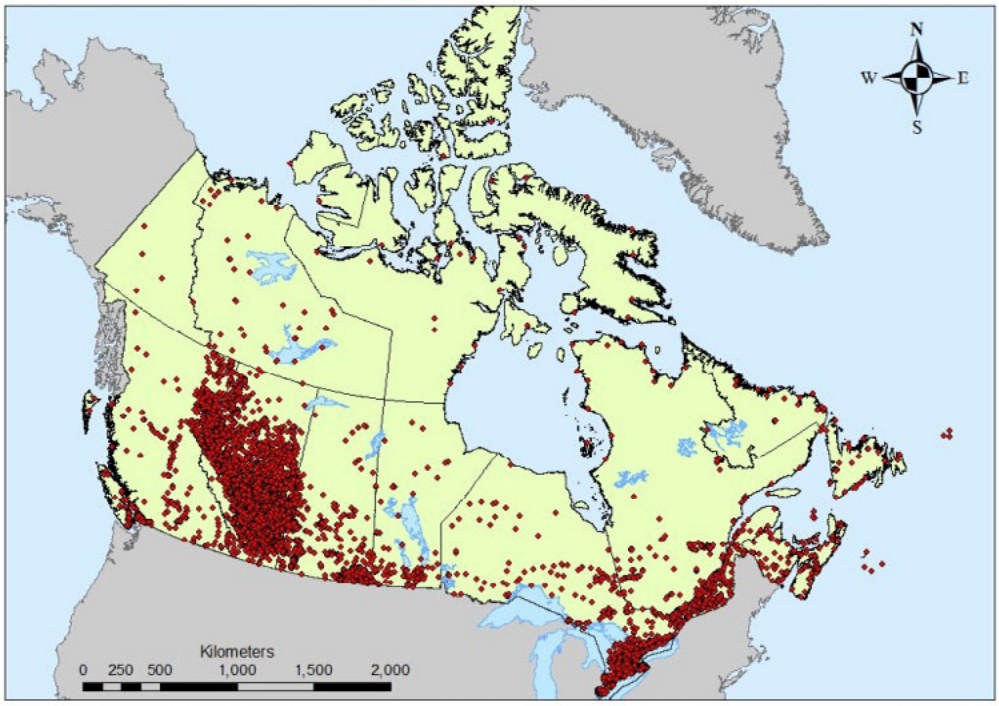
The indicators are published on the CESI website (www.ec.gc.ca/indicateurs-indicators) showing national and regional results, along with the methodology explaining each indicator and links to related socio-economic issues and information. CESI provides results and information for more than 40 environmental indicators, including GHG emissions, air quality, water quality and protected areas.

3.3.3 National Pollutant Release Inventory

The National Pollutant Release Inventory (NPRI) is Canada's legislated, publicly accessible national inventory of pollutant releases (to air, water and land), disposals and transfers for recycling. The NPRI includes information reported by industrial facilities that meet certain criteria. It also includes emission estimates for a number of key air pollutants from other sources such as motor vehicles, residential heating, forest fires and agriculture. Approximately 8000 facilities, located in every province and territory, reported to the NPRI for 2011 (see Figure 2).

The NPRI supports the identification and management of risks to the environment and human health, including the development of policies and regulations on toxic substances and air quality. Public access to the NPRI encourages industry to prevent and reduce pollutant releases and improves public understanding about pollution and environmental performance in Canada. The NPRI facility data is also used to meet annual international obligations as part of the Air Pollutant Emission Summaries that are provided to the United Nations Economic Commission for Europe under the Convention on Long-range Transboundary Air Pollution.

Figure 2: Location of facilities that reported to the NPRI in 2011



In 2011, an air pollutant emissions inventory including smog precursors and selected toxics was developed using NPRI facility-reported data and emissions estimates for sources not required to report (e.g., residential fuel combustion, vehicles). The air pollutant emissions inventory is used to support policy development (e.g., Base Level Industrial Emissions requirements, vehicles regulations), policy effectiveness evaluation and tracking, domestic and international reporting requirements, public information, and Environment Canada's air quality forecasting.

NPRI data that was published in 2012–2013 includes the 2011 NPRI facility-reported data (published in preliminary form in November 2012) and the 2011 national air pollutant emissions data and trends for all sources (published in February 2013).

Environment Canada continued a number of initiatives to improve the quality of NPRI data during 2012–2013. The Department published a number of documents describing the results of these efforts, for example the NPRI Data Quality Management Framework, the Highlights of the NPRI Sector Analysis Study, and a description of the Annual NPRI Quality Control Process.

For further information, consult www.ec.gc.ca/inrp-npri.

3.3.4 Greenhouse Gas Emissions Reporting Program

Environment Canada requires annual reporting of GHG emissions from facilities (mostly large industrial operations) through its Greenhouse Gas Emissions Reporting Program (GHGRP). The GHGRP is part of Environment Canada's ongoing effort to develop, in collaboration with the provinces and territories, a single, domestic, mandatory GHG reporting system, in order to meet the GHG reporting needs of all jurisdictions and to minimize the reporting burden for industry and government.

The main objectives of the GHGRP are to provide Canadians with information on facility-level GHG emissions, support the development of regulations, support provincial and territorial requirements for GHG emissions information, and validate estimates presented in the National GHG Inventory. The data

are reported by facilities to Environment Canada through the Single Window Reporting system (see below).

The 2010 facility-reported data and related overview report were made publicly available in April 2012 as part of a broader departmental release of GHG information products, which also included the latest National GHG Inventory and updated CESI GHG indicators. Environment Canada received 2011 emission information from 539 facilities, which were prepared for public release, set to occur in spring 2013. The facility-reported data is available through data tables, an online query tool and a downloadable file.

Environment Canada also implemented data sharing agreements with several provinces to share facility-level GHG information to support their information needs and policy development.

For further information, consult www.ec.gc.ca/ges-ghg.

3.3.5 Single Window Reporting Initiative

In 2012–2013, Environment Canada, in collaboration with various partners, continued to improve and expand its single window, online system for regulatory reporting of air emissions and pollutant releases. The system reduces burden on industry and supports the shared interest across jurisdictions of tracking and reporting progress on the reduction of GHG emissions and pollutant releases. Environment Canada's NPRI and GHGRP (explained above), as well as the CMP and other initiatives and regulations related to CEPA 1999 provisions, are using the Single Window Reporting System for their environmental data collection efforts. This initiative will continue to grow as additional partners integrate their GHG and pollutants reporting requirements into the Single Window Reporting System. For further information, consult https://ec.ss.ec.gc.ca/.

3.3.6 Use of Monitoring and Surveillance to Measure Performance of Risk Management Activities

In 2012–2013, a substance-specific environmental multimedia fact sheet was published on PBDEs (Polybrominated Diphenyl Ethers in the Canadian Environment). The fact sheet was used to report geographical and temporal analysis of PBDE concentrations in air, water, sediments, fish and bird eggs, and compared the levels to available Federal Environmental Quality Guidelines. The fact sheet also reported the status of concentrations in waste streams such as wastewater and landfill leachate. Certain information was used to report in relation to pollution prevention indicators. For more information, visit www.ec.gc.ca/toxiques-toxics/default.asp?lang=En&n=5046470B-1.

3.3.7 Environmental Offenders Registry and Enforcement Notifications

The Environmental Offenders Registry contains information on convictions of corporations obtained under certain federal environmental laws including CEPA 1999. The registry contains convictions obtained for offences committed since June 18, 2009—when the *Environmental Enforcement Act* received Royal Assent. This tool allows the media and the public to search for corporate convictions using the name for the corporation, its home province, the province where the offence occurred, or the legislation under which the conviction was obtained. Keywords can also be used to search the registry.

The Enforcement Notifications contain information about successful prosecutions across Canada under the Acts and Regulations administrated by Environment Canada or involving Environment Canada enforcement officers (including CEPA 1999).

The Registry and Notifications can be found online at www.ec.gc.ca/alef-ewe/default.asp?lang=En&n=1F014378-1 and www.ec-gc.ca/alef-ewe.default.asp?lang=En&n=8F711F37-1, respectively.

4 Compliance Promotion and Enforcement

Compliance promotion relates to the planned activities that are undertaken to increase awareness, understanding and compliance with the law and its regulations. Through these activities, information is provided to the regulated communities on what is required to comply with the law, the benefits of compliance and the consequences of non-compliance.

CEPA 1999 provides enforcement officers with a wide range of powers to enforce the Act, including the powers of a peace officer. Enforcement officers can carry out inspections to verify compliance with the Act; conduct investigations of suspected violations; enter premises, open containers, examine contents and take samples; conduct tests and measurements; obtain access to information (including data stored on computers); stop and detain conveyances; search, seize and detain items related to the enforcement of the Act; secure inspection warrants to enter and inspect premises that are locked and/or abandoned or where entry has been refused; seek search warrants; and arrest offenders. CEPA 1999 analysts can enter premises when accompanied by an enforcement officer and can exercise certain inspection powers.

A wide range of enforcement measures are available to respond to alleged violations. Many are designed to achieve compliance without resorting to formal court action, including directions, tickets, prohibition orders, recall orders, detention orders for ships, and Environmental Protection Compliance Orders (EPCOs). Measures to compel a return to compliance through court action include injunctions to stop or prevent a violation and prosecutions. In addition, a return to compliance can be achieved through Environmental Protection Alternative Measures (EPAMs), a program for diverting offenders away from the formal court process.

4.1 Designations and Training

The number of active designated persons within Environment Canada with enforcement powers under CEPA 1999 is as follows:

- 198 CEPA enforcement officers;
- 10 emergency officers from the Environmental Emergencies Program designated as CEPA enforcement officers with limited powers; and
- 176 CEPA analysts.

In December 2010, the bulk of the *Environmental Enforcement Act* (EEA) came into force, amending legislation administered by Environment Canada, including CEPA 1999 and introducing the new *Environmental Violations Administrative Monetary Penalties Act.* Since then, the Department has updated and is continuing to update internal and external policies and procedures to meet the EEA requirements and to update and develop training accordingly. In 2012–2013, the accomplishments include:

- the update of Basic Enforcement Training and Limited Powers/Analyst Designation courses;
- the update of the CEPA 1999 online training;
- the development and delivery of online training for all enforcement officers on the *Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999)* and aggravating factors; and
- the development and delivery to managers of the EPCO training in respect to specific provisions under CEPA 1999.

Other accomplishments related to training on CEPA 1999 in 2012–2013 include the development, coordination and/or delivery of training (both online and in-class) for enforcement officers on a number of topics including the Act itself, as well as a number of regulations, including:

- *PCB Regulations*;
- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*;
- *Renewable Fuels Regulations*;

- *Regulations Amending the On-Road Vehicle and Engine Emission Regulations (On-Board Diagnostic Systems for Heavy-Duty Engines and Other Amendments), Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations, and Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*;
- D4 Sampling/Pollution Prevention (P2) Planning;
- Introduction to Pollution Prevention (P2) Planning;
- *Sulphur in Diesel Regulations Amendments*; and
- *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* and the *Solvent Degreasing Regulations*.

4.2 Compliance Promotion

In 2012–2013, consistent with the Government of Canada's Cabinet Directive on Regulatory Management, which encourages departments to adopt a "small business lens," compliance promotion efforts focused on geographically dispersed, small and medium-sized enterprises (less than 500 employees), and First Nations.

Environment Canada delivered compliance promotion activities for new and existing control instruments under CEPA 1999. Multiple approaches were used to reach the regulated communities, including workshops, information sessions, presentations and information package emails/mail-outs. These activities were often carried out in collaboration with provincial and territorial governments as well as non-governmental organizations.

Health Canada also undertook targeted public outreach and compliance promotion activities, particularly in support of information gathering for the substance groupings initiative, which included stakeholder webinars or webexes for CEPA section 71 Notices issued for the Cobalt, Methylenediphenyl Diisocyanate and Diamine (MDI/MDA), Internationally Classified (IC) and Substituted Diphenylamine (SDPA) substance groupings.

Collaboration with First Nations

In 2012–2013, Environment Canada continued to work closely with First Nations. Workshops, information sessions and compliance-promotion materials were delivered to First Nations groups and individuals throughout Canada, to increase awareness of their obligations to comply with instruments under CEPA 1999. Many of the activities were organized and presented in collaboration with Aboriginal Affairs and Northern Development Canada.

Multi-instrument Compliance Promotion

Environment Canada organizes a number of multi-instrument workshops and information booths each year to reach stakeholders who must comply with more than one instrument.

In 2012–2013, multi-instrument compliance-promotion activities covered a broad range of environmental regulations under CEPA 1999, the *Fisheries Act and the Migratory Birds Convention Act, 1994*. In total, 30 multi-instrument workshops, information sessions and information booths were organized by Environment Canada's regional offices in various locations across Canada.

These multi-instrument compliance-promotion activities provide a unique opportunity for stakeholders to meet Environment Canada staff and gather key information regarding Acts and instruments affecting their activities. Regulatees also benefit from the knowledge and experience of the on site compliance promotion officers, the distribution of printed materials on the legislation, and from learning whom to contact in future if they have further inquiries.

Activities on Individual CEPA Instruments

In 2012–2013, compliance promotion activities on individual priority CEPA 1999 risk management instruments were delivered by compliance promotion officers to potential and known regulatees from First Nations, government agencies, federal departments, municipalities, airports, port authorities, companies and industry organizations. Activities included site visits, information booths, presentations, teleconferences, meetings, information sessions and responding to inquiries, as well as emails, faxes, mail and phone calls.

4.3 Enforcement Priorities

Each year, a National Enforcement Plan describing the enforcement activities to be carried out in that fiscal year, including activities addressing non-compliance with CEPA 1999, is developed. To maximize the effectiveness of these activities, priority is given to specific regulations or instruments.

Factors that influence the identification of the priority regulations include the risk to the environment and human health represented by the regulated substance or activity, compliance issues, new and amended regulations, the nature of regulatory provisions, operational complexity and capacity, and domestic and international commitments and obligations. In 2012–2013, the National Enforcement Plan priorities included the following CEPA 1999 instruments:

- *PCB Regulations*;
- *Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations*; and
- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*.

The number of planned inspections carried out under the enforcement plan is supplemented by a large number of unplanned inspections resulting from responses to complaints, intelligence, spills or other information. In addition, a number of regulations are identified for regional enforcement focus. The focus placed on regulations in each region is influenced by a number of factors, including geography, the prevalence of the regulated sectors, and provincial and territorial environmental sensitivities.

4.4 Enforcement Activities

4.4.1 Enforcement Statistics

Enforcement activities undertaken during 2012–2013 are summarized in the four following tables. Table 16 provides the number of on-site and off-site inspections for each regulation from April 1, 2012, to March 31, 2013. Table 17 provides the breakdown of investigations for each regulation on which at least one investigation occurred and/or closed from April 1, 2012, to March 31, 2013. Table 18 provides the total number of enforcement measures resulting from inspections and investigations from April 1, 2012, to March 31, 2013, for each regulation. Table 19 provides the number of prosecutions from April 1, 2012, to March 31, 2013, for each regulation.

Table 16: Summary of inspections, from April 1, 2012, to March 31, 2013

	Inspections*		
	Total	**Off-site**	**On-site**
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**5243**	**2449**	**2794**
2-Butoxyethanol Regulations	2	–	2
Benzene in Gasoline Regulations	265	224	41
CEPA 1999 – Section(s)	84	26	58
CEPA Section 56 Notices – P2 Plans	11	2	9
Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	88	28	60
Concentration of Phosphorus in Certain Cleaning Products Regulations	60	2	58
Contaminated Fuel Regulations	1	–	1
Disposal at Sea Regulations	52	28	24
Environmental Emergency Regulations	124	42	82
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	197	50	147
Federal Halocarbon Regulations, 2003	579	375	204
Fuels Information Regulations, No. 1	245	237	8
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	356	2	354
Gasoline Regulations	10	8	2
Interprovincial Movement of Hazardous Waste Regulations	26	11	15
National Pollutant Release Inventory	24	9	15

Table 16 (Concluded)

	Inspections*		
	Total	**Off-site**	**On-site**
New Substances Notification Regulations (Chemicals and Polymers)	8	1	7
New Substances Notification Regulations (Organisms)	2	1	1
Off-Road Compression-Ignition Engine Emission Regulations	6	–	6
Off-Road Small Spark-Ignition Engine Emission Regulations	11	–	11
On-Road Vehicle and Engine Emission Regulations	13	6	7
Ozone-depleting Substances Regulations, 1998	40	6	34
PCB Regulations	759	170	589
PCB Waste Export Regulations, 1996	1	–	1
Pulp and Paper Mill Defoamer and Wood Chip Regulations	36	35	1
Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations	33	31	2
Release and Environmental Emergency Notification Regulations	6	4	2
Renewable Fuels Regulations	7	3	4
Solvent Degreasing Regulations	3	–	3
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	475	27	448
Sulphur in Diesel Fuel Regulations	289	244	45
Sulphur in Gasoline Regulations	76	34	42
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	1345	838	507
Vinyl Chloride Release Regulations, 1992	6	4	2
Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations	3	1	2

* Inspections: Inspections relates to the number of regulatees inspected for compliance under each of the applicable instruments (file, subject, act, regulation) using the End Date for the reference period.

Note: Only those regulations under which action was undertaken during the time period are listed in this table.

Table 17: Summary of the breakdown of investigations from April 1, 2012, to March 31, 2013

	Investigation breakdown			
	Started FY 2012–2013 and ended FY 2012–2013	**Started FY 2012–2013 and still ongoing at the end of FY 2012–2013**	**Started before FY 2012–2013 but ended in FY 2012–2013**	**Started before FY 2012–2013 and still ongoing at the end of FY 2012–2013**
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**6**	**52**	**35**	**37**
CEPA 1999 – Section(s)	**1**	14	10	12
Disposal at Sea Regulations	1	3	2	1
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	–	1	1	4
Federal Halocarbon Regulations, 2003	–	1	4	–
Fuels Information Regulations, No. 1	–	–	1	–

Table 17 (Concluded)

	Investigation breakdown			
	Started FY 2012–2013 and ended FY 2012–2013	**Started FY 2012–2013 and still ongoing at the end of FY 2012–2013**	**Started before FY 2012–2013 but ended in FY 2012–2013**	**Started before FY 2012–2013 and still ongoing at the end of FY 2012–2013**
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	–	1	–	–
Gasoline Regulations	–	–	1	–
New Substances Notification Regulations (Organisms)	–	–	1	–
Off-Road Compression-Ignition Engine Emission Regulations	1	1	–	1
Off-Road Small Spark-Ignition Engine Emission Regulations	–	3	–	1
On-Road Vehicle and Engine Emission Regulations	–	1	–	1
Ozone-depleting Substances Regulations, 1998	–	1	–	2
PCB Regulations	–	4	3	3
Solvent Degreasing Regulations	–	–	–	1
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	1	8	2	3
Sulphur in Diesel Fuel Regulations	–	–	1	–
Sulphur in Gasoline Regulations	–	–	1	–
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	2	14	8	8

* One investigation may include one or more regulations, therefore it is possible that the data at the regulation level may not add up to the total at the legislative level.

Environmental Protection Compliance Orders

EPCOs are an enforcement measure that may be taken to put an immediate stop to a CEPA violation, prevent a violation from occurring, or require action to be taken to correct a violation, without the use of the court system.

In 2012–2013, 129 regulatees were involved in EPCOs: 47 regulatees subject to the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, 35 regulatees subject to the *PCB Regulations*, 21 regulatees subject to the *Gasoline and Gasoline Blend Dispensing Flow Rate Regulations* and 26 regulatees subject to various other regulations.

Environmental Protection Alternative Measures

EPAMs are an alternative to court prosecution for a violation of CEPA 1999, which divert the accused away from the court process after a charge is laid. If an EPAM agreement is successfully negotiated, it is filed with the court to become a public document. The agreement must also appear in the CEPA Environmental Registry. No EPAMs were issued in 2012–2013.

Further information on EPAMs is available at www.ec.gc.ca/CEPARegistry/enforcement/EPAMs.cfm.

Table 18: Summary of Enforcement Measures from April 1, 2012, to March 31, 2013

	Enforcement measures – from inspections and investigations*								
	Tickets	Written directions	Written warnings	Injunctions	Ministerial orders	No. of subjects involved in EPCOs**	EPCOs***	No. of subjects involved in EPAMs****	EPAMs
CEPA 1999 – *Canadian Environment Protection Act, 1999*	–	5	2882	–	–	129	1190	–	–
Benzene in Gasoline Regulations	–	–	3	–	–	–	–	–	–
CEPA 1999 – Section(s)	–	–	29	–	–	1	2	–	–
CEPA Section – 56 Notices – P2 Plans	–	–	1	–	–	–	–	–	–
Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	–	1	68	–	–	3	4	–	–
Disposal at Sea Regulations	–	–	5	–	–	–	–	–	–
Environmental Emergency Regulations	–	–	200	–	–	1	19	–	–
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	–	–	38	–	–	–	–	–	–
Federal Halocarbon Regulations, 2003	–	–	163	–	–	3	16	–	–
Fuels Information Regulations, No. 1	–	–	-	–	–	2	2	–	–
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	–	–	44	–	–	21	21	–	–
National Pollutant Release Inventory	–	–	15	–	–	–	–	–	–
New Substances Notification Regulations (Organisms)	–	–	2	–	–	–	–	–	–
Off-Road Small Spark-Ignition Engine Emission Regulations	–	–	7	–	–	–	–	–	–
On-Road Vehicle and Engine Emission Regulations	–	–	14	–	–	–	–	–	–
Ozone-depleting Substances Regulations, 1998	–	–	10	–	–	–	–	–	–
PCB Regulations	–	2	308	–	–	35	309	–	–
Release and Environmental Emergency Notification Regulations	–	–	3	–	–	–	–	–	–
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	–	2	1336	–	–	47	767	–	–
Sulphur in Diesel Fuel Regulations	–	–	16	–	–	–	–	–	–
Sulphur in Gasoline Regulations	–	–	2	–	–	–	–	–	–
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	–	–	617	–	–	16	50	–	–
Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations	–	–	1	–	–	–	–	–	–

* Tickets, written warnings, written directions, injunctions, ministerial orders and Environmental Protection Compliance Orders (EPCOs) and Environmental Protection Alternative Measures (EPAMs) are tabulated at the section level of a regulation. For example, if the outcome of an inspection is the issuance of a written warning that relates to three sections of a given regulation, the number of written warnings is three.

** The number of subjects involved in EPCOs is represented by the number of regulatees involved in EPCOs, by the end date, regardless of the number of sections. For example, if one regulatee was involved in an EPCO for three sections of the *PCB Regulations*, the number of subjects involved is one. Therefore it is possible that the data at the regulation level may not add up to the total at the legislation level.

*** There has been a significant increase in the number of EPCOs in 2012–2013 (1190) compared to 2011–2012 (273). The increase in EPCOs is due to an increase of non-compliance in regards to *Storage Tank Systems for Petroleum Products and Applied Petroleum Products Regulations*. These Regulations include a large number of sections in comparison to other regulations. Data on EPCOs are tabulated at the section level of the regulations so an increase in non-compliance for these multi-section regulations causes a significant increase in the number of EPCOs

**** The number of subjects involved in EPAMs is represented by the number of regulatees who signed EPAMs by negotiated date, regardless of the number of regulations involved; therefore, it is possible that the data at the regulation level may not add up to the total at the legislation level.

Table 19: Summary of Prosecutions from April 1, 2012, to March 31, 2013

	Prosecutions			
	Started in FY 2012–2013		Concluded in FY 2012–2013	
	Prosecuted Subjects*	Counts**	Convicted Subjects***	Guilty Counts ****
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**21**	**50**	**12**	**18**
CEPA 1999 – Section(s)	6	9	6	6
Disposal at Sea Regulations	4	4	1	1
Off-Road Compression-Ignition Engine Emission Regulations	1	2	–	–
On-Road Vehicle and Engine Emission Regulations	3	9	–	–
PCB Regulations	1	6	–	–
Sulphur in Diesel Fuel Regulations	1	4	1	4
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	5	16	4	7

* Prosecuted subjects (started in 2012–2013): The number of subjects prosecuted, where the charged date falls within the reporting period (i.e., this is the number of prosecutions launched, not the number of prosecutions concluded in the reporting year). This means if one case resulted in the prosecution of two different subjects, the number reported would be two. The number of prosecuted subjects does not necessariy correspond to the total at the legislative level, because one investigation might be related to more than one instrument.

** Counts (started in 2012–2013): The number of counts (excluding tickets) is tabulated at the section level of the regulation, by the offence date relating to the regulatee's charge. This is the number of counts with which prosecuted subjects (started in 2012–2013) were charged.

*** Convicted subjects (concluded in 2012–2013): The number of subjects convicted, where the convicted date falls within the reporting period.

**** Guilty counts (concluded in 2012–2013): The number of guilty counts (excluding tickets) is tabulated at the section level of the regulation, by the offence date relating to the regulatee's conviction. This is the number of counts for which convicted subjects were found guilty.

4.5 International Enforcement Cooperation

Enforcement-related activities are carried out under various international and domestic agreements and organizations. Under the auspices of the Commission for Environmental Cooperation's Enforcement Working Group (EWG), Environment Canada's Enforcement Branch engages in cooperative activities with its counterparts at the U.S. Environmental Protection Agency and Mexico's Profepa and Semarnat. In 2012–2013, the EWG continued to implement the two-year plan aimed at enhancing operational cooperation between the three countries

by developing a protocol for exchanging sensitive enforcement information between the three countries. This supports the goal of the three countries working together to develop and implement a regional approach to intelligence-led enforcement with a specific focus on preventing the illegal movements of electronic waste, non-compliant imports, ozone-depleting substances and hazardous waste. The EWG is now exchanging intelligence, and work will commence to establish priority targets and develop projects for each region. The expected outcome over the next five years will be enhanced and more effective environmental compliance and enforcement, both domestically and as a region. Also, Environment Canada continues to actively participate in INTERPOL's Pollution Crimes Working Group focused on issues such as capacity building in the area of environmental investigations and stopping the illegal movement of hazardous waste.

Appendix A: Reporting Requirements

This report includes the following mandatory information:

- Section 2 (all subsections) provides examples of the types of research initiatives and their key contributions in the reporting period. Environment Canada and Health Canada scientists published numerous reports, papers, book chapters, articles and manuscripts on subjects related to CEPA 1999. This body of work appeared in books and scientific journals that are available in libraries and from the publishers.
- Section 3.1 describes the activities of the National Advisory Committee. There were no other committees established under paragraph 7(1)(*a*) of CEPA 1999 during the reporting period.
- Section 3.1 also describes the activities under four federal-provincial agreements, including:
    - the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem;
    - the Canada–Quebec Administrative Agreement;
    - the Canada–Saskatchewan Administrative Agreement; and
    - the Canada–Alberta Equivalency Agreement.
- There were no activities under the international air pollution provisions (Division 6 of Part 7) of CEPA 1999 during the reporting period.
- There were no activities under the international water pollution provisions (Division 7 of Part 7) of CEPA 1999 during the reporting period.

Appendix B: Contacts

Further information on CEPA 1999 and related activities can be found online at:

CEPA Environmental Registry website (www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=D44ED61E-1)

Environment Canada's website (www.ec.gc.ca)

Health Canada's website (www.hc-sc.gc.ca)

Environment Canada publications are available from the departmental library or the nearest regional library. Many departmental publications are also available online at www.ec.gc.ca/publications or through Environment Canada's Inquiry Centre:

Inquiry Centre
Environment Canada
10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H
Telephone: 819-997-2800 or 1-800-668-6767
Fax: 819-994-1412
TTY: 819-994-0736 (teletype for the hearing impaired)
Email: enviroinfo@ec.gc.ca

The following media relations contacts are also available to provide information:

Environment Canada
Media Relations
Toll-free within Canada: 1-888-908-8008
Outside Canada: 1-819-934-8008
Email: media@ec.gc.ca

Health Canada
Media Relations
Telephone: 613-957-2983
Fax: 613-952-7747
Email: info@hc-sc.gc.ca
Address Locator 0900C2
Ottawa ON K1A 0K9

For information about the role of the *Canada Gazette* and how to comment on proposed regulations before enactment, consult the *Canada Gazette* website at www.gazette.gc.ca or contact *Canada Gazette* general inquiries:

Email: info.gazette@pwgsc-tpsgc.gc.ca
Telephone: 613-996-1268
Toll-free: 1-866-429-3885
TTY: 1-800-926-9105
Fax: 613-991-3540

www.**ec.gc.ca**

Additional information can be obtained at:

Environment Canada
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