The USA, Canada and Mexico
collaborate to establish PCB inventories

By Dr. Joanne O'Reilly

Early in the development of the North American Commission for Environmental Cooperation's Sound Management of Chemicals (SMOC) programme PCBs were highlighted as a target for action. A PCB Task Force was formed from government representatives and public stakeholders from all three countries to develop the PCB North American Regional Action Plan (NARAP). In February 1997, the NARAP was approved by the Ministers of the Environment of Canada, Mexico and the United States of America. The NARAP recognized that sound environmental management of PCBs required consideration of PCBs throughout their life cycle from manufacture to destruction or disposal, as well as current, updated knowledge of PCB locations, amounts, and handling practices.

In support of these goals, the NARAP addressed six primary strategies, with specific action items identified for each:

- establishing a PCB information base;
- managing the use of PCBs;
- managing the storage of PCB wastes;
- assuring the proper treatment/disposal of PCB wastes;
- managing the transboundary shipment of PCB wastes; and,
- promoting PCB waste reduction and recycling.

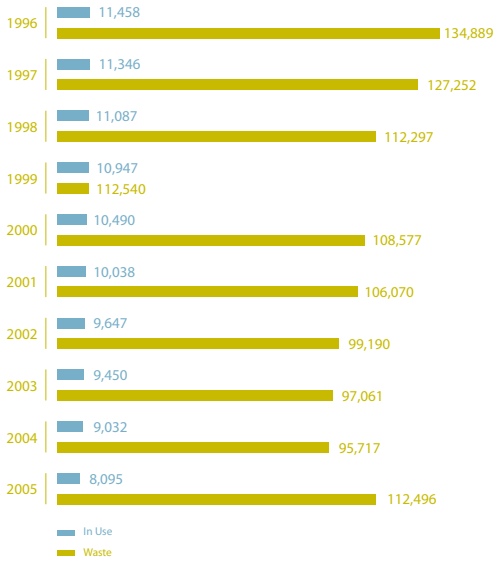
For nine years the three countries worked together to accomplish the actions set out in the NARAP with the overarching goal to minimize exposure of the public and environment to PCBs. In January of 2006, the PCB Task Force developed the *Final Evaluation Report for the NARAP on PCBs* and presented it to Council in June of that year. It stated that the goals of the PCB NARAP had been largely met with the implementation of domestic activities in the three countries, including regulatory control measures, action plans and management policies on persistent, bioaccumulative and toxic substances. Although the NARAP is no longer underway, the three countries continue to maintain ties and recently submitted information to the North American Commission for Environmental Cooperation on domestic implementation of PCB actions and an analysis of domestic PCB inventories through information in a domestic annual report.

Canada

In Canada, PCBs are regulated under the Canadian Environmental Protection Act, 1999. In September 2008, the *Chlorobiphenyls Regulations* and the Storage of PCB Material Regulations have been revoked and replaced by the PCB Regulations. CEPA's new PCB Regulations (2008) continue to prohibit the manufacture, process, sale and import of PCBs for any use, restrict the use of PCBs to specified products already manufactured or imported into Canada in the late 1970s, and set limits on the release of PCBs to the environment. They also set specific deadlines for ending the use of remaining PCBs in concentrations at or above 50 mg/kg. The use of equipment containing PCBs at a concentration of 500 mg/kg or more was phased out December 31st, 2009, as was equipment containing PCBs in a concentration of at least 50 mg/kg but less than 500 mg/kg specifically located at sensitive sites (i.e. prescribed locations) namely drinking water treatment plants, food or feed processing plants, child care facilities, preschools, primary schools, secondary schools, hospitals or senior citizens' care facilities or on the property on which these plants or facilities are located and within 100 m of it. Similar equipment containing PCBs in a concentration of at least 50 mg/kg but less than 500 mg/kg and located at any other place in Canada will be eliminated from use by December 31st, 2025.

The Canadian Council of Ministers of the Environment (CCME) and Environment Canada have prepared annual reports on the National PCB Inventory since 1990. A summary of the information reported from 1996 to 2005 reveals a comparison of voluntary reported PCBs in use and regulatory reported PCBs in storage in Canada during that time period.

Canadian National PCB Inventory 1996-2005



In 2008 the voluntary reporting of PCBs in use increased as expected following the 2006 publication of the proposed PCB Regulations including phase-out of use dates for equipment containing PCBs. From 1990 to 2008 in Canada, the PCB quantities in storage reported in accordance with legislation in place remained about the same. A steady decline of stored quantities did not occur. Waste quantities in storage were mainly composed of askarel liquids with some mineral oils and some other liquid and solid wastes.

Mexico

In Mexico, PCBs are regulated by the General Law for the Prevention and Integral Management of Wastes (LGPGIR) as well as NOM-133-SEMARNAT-2000 (Environmental protection – Polychlorinated biphenyls (PCBs) – Handling specifications). In 2002, Mexico ratified the Stockholm Convention which led to the development of Mexico's performance targets under the POPs Convention as outlined in its National Program for the Environment which states that PCBs must be eliminated by 2012.

According to Mexico's national PCB inventory for 2006, 178 companies reported storing or using equipment containing a total volume of 2,990 tonnes of PCBs. From the total PCBs reported, 1,547 tons (52%) were from public sector companies and 1,443 tons (48%) from private companies.

In 2009, 290 companies reported storing or using equipment containing a total volume of 342.79 tonnes of PCBs, with 929.88 tonnes being sent for decommissioning. These companies also reported having PCBs held in 75 ballasts, 26 capacitors, 9 transformers and 17 drums while sending 371 capacitors and 1314 transformers for decommissioning.

According to the Secretariat of Environment and Natural Resources (SEMARNAT), from 1995 to 2006, 3,625 tonnes of PCBs were treated by authorized companies and 1,537.6 tonnes were exported while from 2003 to 2008, 5,488 tonnes of PCBs were eliminated. As well, in August 2009, SEMARNAT reported 929.88 tonnes of PCBs were being held in storage for decommissioning, 493.60 tonnes were eliminated and 510 tonnes were exported to France.

Mexico, in 2009, began a four-year project supported by the Global Environment Facility and the United Nations Development Programme, called "Environmental Sound Management and Destruction of PCBs in Mexico". This project will work to assess government capacity for PCB destruction and sound management, update the national PCB inventory, define sites for PCB storage, establish a national coordinated system for PCB management between States; and develop risk communication strategies.

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United States

The United States has devised a comprehensive regulatory structure for the control and disposal of PCBs. PCB use is primarily regulated at the federal level, with states retaining some secondary responsibility. The federal Toxic Substances Control Act (TSCA) has a section devoted exclusively to PCBs, and PCB regulations comprise more than seventy pages in the Code of Federal Regulations. Under this regulatory regime, the manufacture, import, export, and use of PCBs are banned, except under limited circumstances. The Environmental Protection Agency (EPA) continues working on regulatory and non-regulatory efforts to control and eliminate PCBs including the phase-out of high-concentration liquid uses of PCBs. EPA is soliciting comments in 2010 on possible regulatory changes to require the phase-out of various PCB uses including all high-concentration liquid PCB uses.

EPA maintains data on PCB waste shipments, wastes treated and disposed, and PCB waste treatment/disposal facilities. Information on the exact amounts of PCBs in use and in storage is currently somewhat limited. For the purpose of information exchange, the United States therefore relies upon estimates of some of these quantities. Disposal data from 1990 through 2007 are currently compiled.

In 1998, EPA required owners of all PCB transformers (500 ppm and above) to register those units with EPA. This information has been compiled, is periodically updated, and is available to the public online www.epa.gov/pcb. This registration requirement does not extend to other PCB equipment such as capacitors.

Although a comparable compilation of North American data does not currently exist, the three countries continue to work together through international fora and individually through domestic programs to track updated knowledge of PCB locations, amounts, and handling practices to fulfill the end goal of reducing the risk of exposure to the public and environment to PCBs.

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The article was written for Environment Canada (EC),
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