



Canada-Ontario Agreement
Respecting the Great Lakes Basin Ecosystem

Federal – Provincial Response to Emerging Substances of Concern in the Great Lakes Basin.

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Canada-Ontario Agreement

- Since 1971, the Canada-Ontario Agreements (COA) Respecting the Great Lakes Basin have guided the Parties in their work to improve the environmental quality of the Basin.
- First signed in anticipation of the Great Lakes Water Quality Agreement
- Five year terms; Last signed in 2002 by eight federal and three provincial agencies



COA Harmful Pollutants Annex

■ Goals:

- Policies and programs for virtual elimination of persistent bioaccumulative toxic substances (e.g., PCBs, mercury, dioxins/furans).
- Reduce other harmful pollutants that have significant environmental impact.
- Enhance knowledge regarding the sources, fate and impact of harmful pollutants for policy and program development purposes.



COA Priority Substances

- Substances for Virtual Elimination:
 - Tier 1 = Binational Toxics Strategy (BTS) Level 1
- Substances for Reductions:
 - Tier 2 = substances with the potential for causing widespread impacts or having already caused local impacts
 - 17 PAHs, tributyl tin, anthracene, cadmium, 1,4-dichlorobenzene, 3,3-dichlorobenzidine, dinitropyrene, hexachlorocyclohexane, 4,4' methylenebis(2-chloroaniline), pentachlorophenol
 - Criteria Air Pollutants
 - (NO_x, SO₂, VOCs, Particulate Matter (2.5 & 10 microns))



Addressing Substances of Emerging Concern

- Expected Result:
 - Enhanced understanding of the ecological and human health risks of priority chemicals through...
 - researching the environmental and human health impacts of substances of **potential** concern; and
 - Researching the sources of these substances and examining options for reducing their release into the environment.



Meeting the Result

- Great Lakes monitoring and research studies by Environment Canada (EC) and/or the Ministry of the Environment (MOE):
 - Brominated flame retardants
 - (e.g., polybrominated diphenyl ether (PBDE))
 - Polychlorinated naphthalenes
 - Fluorinated Compounds
 - (e.g., perfluorooctane sulfonate (PFOS))
 - Chlorinated paraffins
 - Endocrine disruptors
 - Pharmaceuticals
 - Pathogens



Meeting the Result *Cont'd*

- COA Workshop on Canada-Ontario Response to Emerging Substances of Concern in the Great Lakes Basin
 - EC/MOE staff-level partnership
 - March 7-8, 2006 in Toronto, ON
 - >90 participants from federal and Ontario agencies, with a few invited speakers



Speakers - Programs

Speaker	Affiliation	Great Lakes and Toxics
Gail Krantzberg	McMaster University	Historical Context
Ted Smith	US EPA	US Programs
Vic Shantora	Independent consultant	International Programs
Tara Phillips	EC	Federal Programs
Suzanne Easton	EC	PBDEs Case study
Dale Henry	MOE	Provincial Programs
Tim Fletcher	MOE	National Programs (CCME)



Speakers - Science

Speaker	Affiliation	Great Lakes Science
Jim Maguire	EC	Federal research and monitoring programs
Paul Helm	MOE	Provincial research and monitoring programs; Cross cutting issues
Mehran Alaei	EC	PBDEs – case study
Scott Brown	EC	Selected chemicals and Cross cutting issues



Expert Panelists

Speaker	Affiliation
Michael Gilbertson	University of Sterling
John Jackson	Great Lakes United
Allan Jones	Allan Jones & Associates
Gail Krantzberg	McMaster University
Vic Shantora	Independent consultant



COA Workshop Goals

- To **share information** among government program, policy and scientific staff regarding research, assessment and management programs for harmful substances;
- To **identify gaps and challenges** in addressing substances of emerging concern; and
- To **identify priorities and potential programs** that could be developed under the COA to address emerging substances of concern.



Sharing Information

- Presentations on international, federal, national, provincial and US programs regarding toxics and/or Great Lakes issues
- Presentations on federal and provincial research as well as selected science



Identifying Gaps and Challenges

- Expert panel: Perspectives on the control of Great Lakes toxic substances, current challenges as well as recommendations on what should be done differently in the future.



Gaps and Challenges

- Human Health is a major gap in COA
- Profound societal change is required to address products containing emerging substances as well as continued releases
- Pollution prevention definition is too broad – should not apply to diversion activities
- Challenge to assign resources – legacy vs emerging
- Current substance by substance approach may not be efficient for emerging substances
- Impact of climate change not considered



Gaps and Challenges *Cont'd*

- Incentives are required to promote product innovations
- Product design and development should include assessment of potential environmental impacts/effects
- Complexities in the product chain need to be considered (from production to use to disposal)
 - extended producer responsibility required
- Consider the implications of replacement



Gaps and Challenges *Cont'd*

- Need to raise public interest regarding COA and its programs
- Need to improve public consultation and reporting
- Engagement of stakeholders and potential partners required, especially those responsible for implementation (e.g., municipalities)
- Inconsistent and/or insufficient collaboration and communication among agencies delivering COA programs.



Developing Approaches

- Government agencies only
 - Break Out Sessions:
 - Case Study: PBDEs
 - Point of Control
 - Products
 - Releases
 - Legacy Compounds



PBDEs Case Study

- Potential Regulatory Approaches:
 - Regulations developed by federal government under CEPA - Consider banning
 - Look at European initiatives – reductions in commercial mixtures, restrictions in products (e.g., electronics)
 - Require reverse onus on manufacturer/importer
 - Develop regulations for waste stream management and collection programs
 - Require labelling of products containing PBDEs




PBDEs Case Study *Cont'd*

- Potential Program Approaches:
 - Public education to raise awareness of environmental and human health concerns
 - Communications plan to reach stakeholders - stakeholder network
 - Identify key exposure routes inside home
 - Consider recycling opportunities
 - Develop incentives for new products



PBDEs Case Study *Cont'd*

- Potential Research and Monitoring:
 - Toxicity – environmental and health effects
 - Consolidate research within the provincial and federal governments – develop an inventory
 - Develop priority setting criteria
 - Determine linkages between products and health impacts

Target by Point of Control:	Potential Issues:
<p data-bbox="163 305 409 342">Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem</p>  <ul style="list-style-type: none"> <li data-bbox="113 500 871 803">▪ Chemicals <i>in or as</i> Products: control of chemicals in commercial or household products before their release to the environment (“new” or “existing” chemicals) <li data-bbox="113 829 871 1079">▪ Releases: control of chemicals at the point of discharge – industrial direct dischargers, municipal wastewater treatment plants. <li data-bbox="113 1105 871 1356">▪ Receiving Environment: emerging or legacy chemicals yet to be removed / reduced / destroyed in environmental media, biota etc. 	<ul style="list-style-type: none"> <li data-bbox="926 321 1396 354">▪ Analytical methodology <li data-bbox="926 380 1690 412">▪ Environmental and human health effects <li data-bbox="926 438 1354 470">▪ Breakdown products <li data-bbox="926 496 1585 529">▪ Proprietary (unknown) ingredients <li data-bbox="926 555 1354 587">▪ Long range transport <li data-bbox="926 613 1501 646">▪ Lifecycle management issues <li data-bbox="926 672 1795 704">▪ Precautionary principles vs. scientific evidence <li data-bbox="926 730 1711 763">▪ Chemical by chemical vs sector approach <li data-bbox="926 789 1942 912">▪ Challenges to management of a broad classification of chemicals (based on effects or use rather than chem. structure) <li data-bbox="926 938 1281 971">▪ Green chemistry <li data-bbox="926 997 1291 1029">▪ Monitoring needs <li data-bbox="926 1055 1522 1088">▪ Public outreach and education <li data-bbox="926 1114 1228 1146">▪ Stakeholders <li data-bbox="926 1172 1291 1205">▪ Societal Benefits <li data-bbox="926 1230 1396 1263">▪ Economic sustainability <li data-bbox="926 1289 1543 1321">▪ Federal/provincial collaboration



Potential Approaches

■ Chemicals *in or as* Products:

- Assess jurisdictional tools to address emerging substances in Ontario and Canada
- Assess materials flow by sector/chemical to understand chemical concentrations



Potential Approaches *Cont'd*

■ Releases:

- Invest in municipal treatment plants; form linkages to municipalities
- Public education when source of release is domestic (e.g., drugs)
- Survey of discharges
- Analytical method development for detection of substances in complex effluents



Potential Approaches *Cont'd*

■ Receiving Environment:

- Enhanced monitoring and modelling tools for setting targets
- Need to prioritize substances for action (detection vs effects)
- Develop and complete lakewide management plans to include substances of emerging concern



Recommended Priorities

■ Management Approaches:

- Focus on products, life cycle and green chemistry
- Provide incentives for green innovation
- Learn from other jurisdictions
- Review alternatives to substance by substance approach
- Strengthen and renew COA



Recommended Priorities *Cont'd*

■ **Coordination/Collaboration:**

- Link environment to health in program prioritization and development
- Federal/provincial research, monitoring and assessment
- Work with municipalities



Recommended Priorities *Cont'd*

■ **Communication:**

- Educate the public
- Improve reporting under COA
- Engage stakeholders



COA Workshop Products

- Backgrounder document
- Workshop report
- Emerging substances factsheets



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