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# IJC Work Group addressing Chemicals of Emerging Concern

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Great Lakes Binational Toxics Strategy

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# Introduction

- October 2007 - IJC establishes priorities within context of the 2007-2009 Nearshore Framework Priority, including a Priority on Chemicals of Emerging Concern
  - 2 tasks are concurrently undertaken to address the Priority on Chemicals of Emerging concern:
    - A multi Board Work Group is brought together, and,
    - A list is defined to identify chemicals being addressed
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# Workgroup Defined

## Charge:

Assess current scientific and policy information to identify gaps and new approaches that could be applied to existing binational and domestic policy frameworks

## Workplan:

- Review current scientific **literature** with focus on water quality
- Review international and national programs/**policies** for mgmt
- **Assessment and analysis** to address gaps with relevance to Great Lakes

## Co-chairs:

- a) Ted Smith, US EPA
  - b) Gary Klecka, DOW Chemical
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# List of Chemicals of Emerging Concern

- Synthetic Musks
  - Fluorinated Surfactants
  - Brominated Diphenyl Ethers
  - Other Flame Retardants
  - Alkylphenol Ethoxylates
  - Chlorinated Paraffins
  - Pharmaceuticals, Veterinary Drugs and Personal Care Products
  - Current Use Pesticides
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# Definition of Chemicals of Emerging Concern

- The emphasis on research and monitoring has shifted from the analysis of “legacy pollutants” to a wide array of new chemicals being discovered in the environment
  - While it has been known that many substances used by society enter the environment, improvements in instrumentation and analytical methodology have brought increased awareness to the presence and potential risk that these chemicals may pose
  - The term "chemicals of emerging concern" has come to define the emerging awareness of the presence in the environment of many chemicals used by society, along with concern over the risk that these chemicals may pose to the health of humans and ecosystems
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# Literature Analysis

- Literature search conducted to identify recent research regarding ecological exposures to a wide variety of potential contaminants in relevant environmental media with emphasis placed on wastewater treatment plants, as well as rural and urban pollution
  - Reported concentrations were assembled into a Database, statistically analyzed and compared with currently available regulatory standards, guidelines or criteria
  - Findings attached
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# Analytical Findings - Literature

## 8 Findings:

- Shift in focus from industrial point sources to dispersed, non-point releases of chemicals & substances
  - Many CEC's have been detected in environmental media, although many are present at trace levels
  - Detection abilities surpass abilities to understand implications of such findings
  - Limited surveillance for many CEC's
  - Availability of data varies among different classes of compounds
  - Regulatory criteria are not available for many CEC's
  - Significant scientific gaps in our ability to interpret monitoring data
  - Wastewater treatment plants have been identified as an important source of contaminants to surface waters
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# Recommendations - Literature

## 4 Recommendations:

- Enhance binational communication, coordination, and cooperation on the design and implementation of monitoring programs for CEC's to set common objectives
  - Developed appropriate tools in order to adequately assess exposures and impacts of CEC's
  - Enhance ongoing research programs to resolve a number of significant gaps in current state-of-the-science
  - Thorough analysis of the performance of wastewater treatment plants required and recommended for the next biennial cycle
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# Policy Analysis

- Evaluate “gaps” in national, state/provincial, and regional policies and programs that address identification, assessment, prevention, and control of the range of emerging CEC’s with a focus on prevention-oriented programs and policies
  - Report prepared for consideration by those attending expert consultation. Final findings (once expert input considered) are attached.
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# Analytical Findings - Policy

## 8 Findings:

- Industrial chemicals (US & Canada) subject to pre-manufacturing notification, review, and approval by the federal governments
  - International treaties exist for identification, assessment, and management of persistent organic pollutants. \*
  - Voluntary stewardship initiatives on both sides address some of the CEC's in the report.
  - Gaps exist in assessment and management for certain classes of chemicals
  - There are concerns regarding adequacy of some waste management practices
  - Wastewater treatment is essential component to controlling a wide diversity of chemicals
  - Chemical-by-chemical analyses in biota does not by itself constitute a sufficient basis to assess toxicant stress.
  - GLWQA serves an important purpose in bringing together the US and Canada to exercise co-custodial responsibilities
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# Recommendations - Policy

## 11 Recommendations:

- A renewed GLWQA should include underlying principles/processes by which the Parties would establish priorities, rather than a specific list of substances
  - Emphasis should be placed on moving upstream & adopting sustainable solutions to design, production and consumption of CEC's
  - Prenotification programs should be continuously improved & made more robust
  - Premanufacturing notification level of review should be conducted
  - Adoption of enhanced wastewater treatment technologies should be implemented
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# Recommendations – Policy Cont.

- Strict regulations & enforcement should be put into place for waste & nutrient management practices
  - New policies need to be developed to manage CEC's with new and innovative scientifically sound approaches
  - Risk communication regarding CEC's should be carefully designed
  - Consumer education and incentives should be provided to encourage conservation and environmentally sound consumer choices
  - A Canadian Great Lakes National Program Directorate or Office should be established within Environment Canada mirroring U.S. Environmental Protection Agency's Great Lakes National Program Office
  - Further emphasis should be placed on gaining knowledge and understanding of human health effects
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