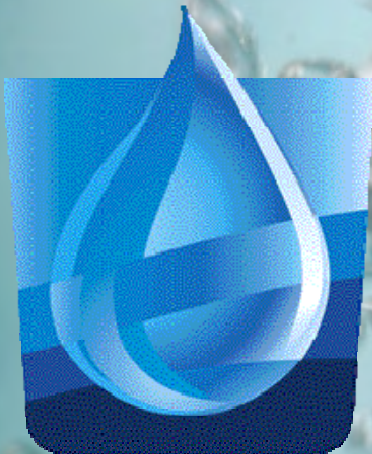


ANNUAL REPORT  
2007-2008



**ODWAC**

**Ontario Drinking Water Advisory Council**



**Ontario**

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**Advisory Council on Drinking Water  
Quality and Testing Standards**

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**Le Conseil consultatif sur les normes  
de qualité et d'analyse de l'eau  
potable**

*"Advising Ontario on Drinking Water Quality"*

[www.odwac.gov.on.ca](http://www.odwac.gov.on.ca)

*The Ontario Drinking Water Advisory Council, known formally as the Advisory Council on Drinking Water Quality and Testing Standards, is an Agency of the Government of Ontario*

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## 1.0 Message from the Chair

On behalf of the Advisory Council on Drinking Water Quality and Testing Standards, I am pleased to present this fourth annual report outlining our activities and achievements from May, 2007 to May, 2008.

The Council's overall mandate is to provide the Minister of the Environment with advice on a variety of matters related to safe drinking water in Ontario. The Council members, who form a group of drinking water professionals with the sincerest desire to protect and improve the safety and quality of this province's drinking water, bring their collective knowledge and experience together to reach conclusions, and formulate concrete solutions.

This past year, the Minister of the Environment requested the Council to provide advice on two matters: the current Ontario Drinking Water Quality Standard for tritium, and timely corrosion control measures that could be taken to reduce lead in Ontario's municipal drinking water supplies.

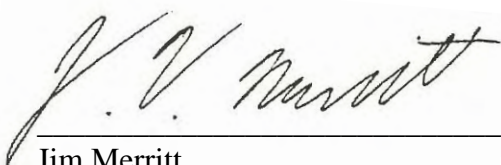
The Council undertook an intensive review of the corrosion control issue, and responded to the Minister within 6 weeks.

With respect to the tritium Standard, the Council has been meeting with individuals, stakeholders and experts, has held a public consultation, and is anticipating the completion of its work later in 2008.

The Council also addressed a number of drinking water issues and standards resulting in advice to the Minister of the Environment. As well, consideration was given to several Canadian Drinking Water Quality Guidelines for inclusion or update as standards in Ontario.

The Council monitored Ontario's overall drinking water framework and has kept abreast of new developments in other jurisdictions, in order to provide the Minister of the Environment with the most current advice possible.

I would like to thank the members for taking time from their busy schedules to contribute to and support the work of the Council. I would also like to thank the staff of the Ministry of the Environment and the Ministry of Health and Long-Term Care for their continued support of the Council's mandate.



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Jim Merritt



## 2.0 Council Background and Mandate

On May 23, 2002, Justice O'Connor, in the *Part Two Report of the Walkerton Inquiry*, made six recommendations regarding an "Advisory Council on Standards". Specifically, Recommendation 25 states that "*In setting drinking water standards for Ontario, the Minister of the Environment should be advised by an Advisory Council on Standards*".

In recommending an Advisory Council on Standards, Justice O'Connor also noted that:

- It is reasonable to seek expertise from an Advisory Council on standards comprised of members of the broader general public; as such expertise may not reside in the Ministry of the Environment.
- The benefits of an Advisory Council on Standards include transparency in process and increased public participation.
- The Advisory Council on Standards should establish its own process.
- Recommendations made to the Minister of the Environment should be made public and should be supported by the Advisory Council on Standards' rationale.
- The Advisory Council on Standards should also advise the Minister of the Environment with respect to management, treatment, testing, materials, and reporting standards.

On May 12, 2004, The Minister of the Environment announced the establishment of the Ontario Drinking Water Advisory Council (Council), known formally as the "Advisory Council on Drinking-Water Quality and Testing Standards" in the *Safe Drinking Water Act, 2002*.

Enabled under Section 4 of the *Safe Drinking Water Act, 2002*, the Council is "*to consider issues relating to standards for drinking-water quality and testing and to make recommendations to the Minister*" of the Environment, which are to be "*taken into consideration in establishing and revising standards under this Act for drinking-water quality and testing.*" (See Appendix B for the relevant sections of the *Safe Drinking Water Act, 2002*)

The Minister of the Environment appointed members from key professional fields representing a cross-section of academia, industry and municipalities, with expertise in the areas of microbiology, toxicology, risk assessment, engineering, utility operations, public health, and others with a record of interest and accomplishment related to drinking water. They are all active in their areas of knowledge and bring their current and direct experience to the Council's deliberations. (See Appendix F for the Council Members' Biographies)

The broad mandate of the Council is to provide advice and make recommendations to the Minister of the Environment on drinking water quality and testing standards, as well as other drinking water matters deemed appropriate. The role of the Council includes, but is not necessarily limited to, the following core activities:

- **Requests from the Minister of the Environment:**  
Providing advice on drinking water policies, practices, procedures, standards, testing methods, and related research, as requested by the Minister of the Environment. *(See Section 4.0)*
- **Standards Review:**  
Reviewing research, scientific, and technical documentation related to drinking water quality and testing standards, including Federal-Provincial-Territorial priorities, in order to provide advice to the Minister of the Environment on standards and their applicability in Ontario. *(See Section 5.0)*
- **Council Initiatives:**  
Providing recommendations on drinking water matters that the Council has become aware of and has identified as being of interest, and which may merit the attention of the Minister of the Environment. *(See Section 6.0)*
- **Stakeholder / General Public Consultations:**  
Publishing information on the Environmental Registry and undertaking additional consultations on standards, regulations, or other drinking water matters, to solicit views from stakeholders or the general public in order to provide advice and recommendations to the Minister of the Environment. *(See Section 7.0)*

### 3.0 Summary of Activities and Accomplishments

Following is a summary of the Council's activities and accomplishments from May, 2007 to May, 2008, as well as progress on items reported in previous annual report years:

#### **Requests from the Minister of the Environment:** *(See Section 4.0)*

##### **Progress on Requests from Previous Years:**

- Small Drinking Water Systems Program
- Ontario Regulation 903 Disinfection Requirement

##### **Current Requests:**

- Tritium Standard *(Also see Section 7.1)*
- Corrosion Control / Lead Reduction

#### **Standards Review:** *(See Section 5.0)*

##### **Progress on Standards Reviews from Previous Years:**

- Arsenic
- Total Trihalomethanes and Bromodichloromethane

##### **Standards Reviews Completed:**

- Chlorite / Chlorate

##### **Standards Currently Under Review:**

- Benzene
- Chloral Hydrate
- Chlorine
- Potassium
- Radiological Characteristics
- Total Haloacetic Acids (HAA<sub>5</sub>)
- Tritium *(Also see Sections 4.2 and 7.1)*

##### **Standards Prioritization:** *(See Section 5.4)*

**Council Initiatives:** *(See Section 6.0)*

**Progress on Initiatives from Previous Years:**

- Ontario Regulation 248 (Drinking-Water Testing Services)
- Clean Water Act (Bill 43)
- Drinking Water Quality Management Standard
- Definitions and Uses of Chlorine-Related Terminologies

**Initiatives Currently Under Review:**

- Alternative Approaches to Disinfection
- Ontario First Nations Drinking Water Quality
- Use of Surrogates as Indicators

**Areas of Ongoing Interest:**

- Dual / Reclaimed Water Systems
- Infrastructure Protection for Municipal Drinking Water
- Ontario's Overall Drinking Water Framework
- Part Two Report of the Walkerton Inquiry Recommendations
- Pharmaceuticals and Personal Care Products
- Promoting Municipal Drinking Water
- Small Systems Treatment Equipment
- Use of Trends

**Stakeholder / General Public Consultations:** *(See Section 7.0)*

- Tritium Standard *(Also see Section 4.2)*

## 4.0 Requests from the Minister of the Environment

The Minister of the Environment can formally request the Council to provide direct advice and make recommendations on drinking water policies, practices, procedures, standards, testing methods, and related research. Some of the following requests were referred to the Council by the Minister in previous annual report years, but there was additional activity and progress made during this reporting period.

### 4.1 Progress on Requests from Previous Years

#### Small Drinking Water Systems Program

On June 30, 2004, the Minister of the Environment asked the Council to provide advice on the Drinking-Water Systems Regulation (Regulation 170) with respect to the appropriateness of requirements for small systems, and particularly private ones, keeping in mind the province's commitment to implement all of the Walkerton recommendations.

After careful review of Regulation 170 as it applied to smaller, private systems, the Council concluded that regulatory amendments alone would not remedy the situation. To this end, on February 8, 2005, the Council delivered a report to the Minister of the Environment, recommending, among many things, that a new regulation be put in place, to empower Public Health Units to administer safe drinking water programs for these smaller systems.

The report, entitled "Report and Advice on Ontario Regulation 170/03 Smaller, Private Systems Review and Recommendations" can be found at:

[http://www.odwac.gov.on.ca/reg\\_170/020805\\_Reg\\_170\\_Final\\_Report.pdf](http://www.odwac.gov.on.ca/reg_170/020805_Reg_170_Final_Report.pdf).

Consistent with the Council's recommendations made in the report, the Ministry of the Environment continues to work towards transferring the appropriate smaller and private systems to public health oversight.

On June 4, 2007, the *Health System Improvements Act, 2007* received Royal Assent. This *Act* includes amendments to the *Health Protection and Promotion Act* (HPPA), the *Safe Drinking Water Act, 2002* (SDWA) and the *Ontario Water Resources Act* (OWRA) necessary to permit the transfer of legislative oversight for the Non-Residential and Seasonal Residential Systems that Do Not Serve Designated Facilities (Ontario Regulation 252/05) from the Ministry of the Environment to the Ministry of Health and Long-Term Care (MOHLTC).

On April 18, 2008, the Ministry of the Environment posted a Regulation Proposal Notice on the Environmental Registry, summarizing the consequential amendments to the SDWA regulations necessary to facilitate the transfer of regulatory authority for Small Drinking Water Systems, as defined in the HPPA, to the Ministry of Health and Long-Term Care.

Also on April 18, 2008, The Ministry of Health and Long-Term Care's posted a Regulation Proposal Notice on the Environmental Registry, summarizing a proposed "transition" regulation and a "permanent" regulation, to which the transferred systems would be subject, as summarized below:

- Following the transfer of responsibility of small drinking water systems to MOHLTC, requirements mirroring those found in O. Reg. 252/05 made under the SDWA for small drinking water systems would apply to these systems under a "transition" regulation under the HPPA. Current requirements pertaining to small drinking water systems would continue under this transitional regulation until the system receives an initial site-specific risk assessment.
- Upon completion of the initial site-specific risk assessment, a binding directive would be issued to the system owner at which point the small drinking water system would become subject to the requirements of the "permanent" regulation under the HPPA and would have to meet the requirements for the system as issued in the directive.

The Council continues to monitor the transfer of these small systems that will take place following proclamation of the relevant sections of the legislation, and development of regulations and implementation tools, including a site-specific risk assessment tool, for use by Ministry of Health and Long-Term Care and public health units.

As well, the Chair of the Council participates in a small systems working group, as organized by the Federal / Provincial / Territorial Committee on Drinking Water. The working group is focused on risk assessment and technology for small systems.

## **Ontario Regulation 903 Disinfection Requirement**

On June 30, 2004, the Minister of the Environment formally asked the Council to provide advice on the disinfection (chlorination) requirement of Ontario Regulation 903 (Wells).

As reported in the 2005-2006 Annual Report, the Council's advice on the disinfection (chlorination) requirement of Ontario Regulation 903, was transmitted to the Minister of the Environment on June 16, 2005.

On March 22, 2007, the Ministry of the Environment posted a Regulation Proposal Notice on the Environmental Registry for public comment. The purpose of this posting was to propose amendments to Ontario Regulation 903 to address stakeholder concerns and to respond to recommendations from the Environmental Commissioner of Ontario and this Council, while considering safety and financial implications for well owners.

On July 25, 2007, Ontario Regulation 903 was updated and the amendments came into effect on December 31, 2007. As well, the Ministry of the Environment is currently developing Best Practices Manuals for the regulated community.

The updated Regulation adopted the Council's recommendations for disinfection with regards to dosage, contact time, pumping out, and verification of free chlorine residuals, and applies to drinking water wells following initial construction, alterations and pump installation.

## **4.2 Current Requests**

### **Tritium Standard**

On February 21, 2007, the Minister of the Environment formally requested that the Council review and provide advice on the current Ontario Drinking Water Quality Standard (ODWQS) for tritium, taking into consideration recommendations made in the 1994 report entitled: "A Standard for Tritium" transmitted to the Minister of the Environment by the Ontario Advisory Committee on Environmental Standards (ACES), which is no longer in existence.

The Minister noted in the request that the issue had been raised by the Medical Officer of Health for the City of Toronto, in relation to a City of Toronto Council Resolution adopted on June 27, 28 and 29, 2006.

On June 21, 2007, the Minister made an additional request for the Council to also take into consideration a report, authored by Dr. Ian Fairlie entitled "Tritium Hazards Report: Pollution and Radiation Risks from Canadian Nuclear Facilities", prepared for Greenpeace Canada.

In undertaking its review, the Council established a working group to assist the Council as a whole. A multi-step approach was developed and is currently being executed:

1. Obtain all pertinent documentation for review
2. Undertake an inter-jurisdictional comparison
3. Meet with key stakeholder groups and individuals
4. Hold a public consultation to hear directly from interested parties (*See Section 7.1*)
5. Develop recommendations for the full Council's consensus

It is intended that the preliminary conclusions reached by the working group are to be presented to the full Council for discussion and subsequent consensus on a proposed Standard and a number of measures related to implementation. The Council is anticipating the completion of its work later in 2008.

## Corrosion Control / Lead Reduction

On April 20, 2007, a new Health Canada Draft Guideline Technical Document entitled “*Corrosion Control in Drinking Water Distribution Systems*”, as approved by the Federal-Provincial-Territorial Committee on Drinking Water (CDW), was made available for public comment on Health Canada's website. The focus of corrosion control is primarily related to lead exposure in community drinking water.

On April 24, 2007, the Minister of the Environment requested that the Council undertake a review of the Health Canada's “*Corrosion Control in Drinking Water Distribution Systems*” Document, with a view towards early implementation of corrosion control in Ontario to reduce lead at consumers’ taps, as well as comments that Ontario could provide to the Federal Government.

The Council’s review approach consisted of:

- Forming a Working Group in order to collect relevant scientific and technical literature and undertake an assessment of the “*Corrosion Control in Drinking Water Distribution Systems*” Document;
- Holding a one-day workshop on May 16, 2007, with four experts in the field of corrosion control and lead in drinking water (Dr. Marc Edwards, Virginia Tech; Ian Douglas, Health Canada / City of Ottawa; France Lemieux, Health Canada; and Dr. Michèle Prévost, École Polytechnique de Montréal ). Ministry of the Environment and Ministry of Health and Long-Term Care officials also attended and participated as advisors;
- Considering the recent information and work underway with respect to lead in drinking water in the City of London, Ontario;
- Presenting the Working Group’s assessment and preliminary findings to the full Council, in order to take advantage of the Members’ direct experience and knowledge to finalize the advice on early implementation of corrosion control in Ontario.

On April 26, 2007, the Ministry of the Environment also posted a Policy Proposal Notice regarding the “*Corrosion Control in Drinking Water Distribution Systems*” Guideline Technical Document on the Environmental Registry for public comment up to July 20, 2007.

On May 31, 2007, the Council transmitted its initial advice the Minister of the Environment on corrosion control measures that could be implemented immediately in Ontario to reduce lead at consumers' taps.

On June 5, 2007, the Minister of the Environment formally requested additional information on the rationale for recommending a 30-minute stagnation period over a 6-hour stagnation period in context of the suggested Community Monitoring Program for lead. The Council responded on July 6, 2007. (*See Appendix A3 for more information*)

On June 7, 2007, the Ministry of the Environment announced its lead action plan to expand water safety protection and reduce the potential for elevated levels of lead in drinking water at the tap. The action plan addressed many of the Council's recommendations, and included:

- amending Ontario Regulation 170/03 (Drinking-Water Systems), making it mandatory for municipalities and non-municipal year round residential systems to: regularly sample for lead at household taps, notify home and facility owners of the results, and take corrective action in systems with elevated lead levels (*these amendments were made and a Regulation Decision Notice was posted on the Environmental Registry in July 2007*);
- establishing a new regulation, Ontario Regulation 243/07 (Schools, Private Schools, and Day Nurseries), requiring schools and daycares built before 1990 to flush plumbing on a daily basis, and requiring all schools, as well as daycares built before 1990, to test drinking water for lead annually;
- assisting low-income families with infants, young children or pregnant women with the cost of filters where they are recommended;
- providing expert advice to municipalities to adjust water chemistry in municipal systems to reduce the uptake of lead;
- encouraging municipalities to conduct public education campaigns, such as inserts in water bill mailings; and
- providing best practices for municipalities to help make lead line replacement more affordable for homeowners.

## 5.0 Standards Review

Part of the Council's mandate is to provide advice to the Minister of the Environment on proposed drinking water standards, objectives, and guidelines and their applicability in Ontario. Recommendation 25 of the *Part Two Report of the Walkerton Inquiry*, states that "In setting drinking water standards for Ontario, the Minister of the Environment should be advised by an Advisory Council on Standards".

In order to provide comprehensive advice, the Council assesses Health Canada's Guideline Technical Documents, comments from the national and Ontario public consultation processes, and information on the occurrence and impact that a particular substance is likely to have on the delivery of safe drinking water in the province.

Based on this assessment, the Council may recommend the endorsement of a Canadian Drinking Water Quality Guideline (CDWQG) as an Ontario Drinking Water Quality Standard (ODWQS) in Ontario Regulation 169/03, or as an Objective, or Guideline, or it may make an alternative recommendation. When appropriate, the Council may also conduct independent consultations with stakeholders and technical experts as deemed necessary to formulate its advice.

It should be noted that the Council's protocol is to recommend that all Ontario Standards, Objectives, and Guidelines be at least as stringent, if not more stringent, than the corresponding CDWQGs. (See Appendix C for the Council's Standards Review Protocol)

Following is an update of the status of the Council's review of standards, from May, 2007 to May, 2008, as well as progress on standards reported in previous annual report years:

### 5.1 Progress on Standards Reviews from Previous Years

#### Arsenic

The Council completed its review of Health Canada's "Arsenic in Drinking Water" Document for Public Comment, which underwent public consultation in Ontario from November 30, 2004 to May 17, 2005. On May 30, 2006, a final revised Canadian Drinking Water Quality Guideline for arsenic was posted on Health Canada's website.

As reported in the 2005-2006 Annual Report, on April 28, 2006, the Council transmitted its advice on arsenic to the Minister of the Environment, recommending that the Ministry of the Environment endorse the revised Canadian Drinking Water Quality Guideline of 10 µg/L and adopt it as an Ontario Drinking Water Quality Standard. (See Appendix A2)

The Ministry of the Environment intends to update the Ontario Drinking Water Quality Standard for arsenic to reflect the revised Guideline in a future amendment to Ontario Regulation 169 (Ontario Drinking-Water Quality Standards).

## Total Trihalomethanes and Bromodichloromethane

As reported in the 2006-2007 Annual Report, on November 30, 2005, the Council transmitted its advice on total trihalomethanes and bromodichloromethane to the Minister of the Environment.

On April 7, 2006, the Ministry of the Environment posted a Regulation Proposal Notice on the Environmental Registry for public comment, in order to seek feedback on the adoption of a more stringent Ontario Drinking Water Quality Standard of 80 µg/L for total trihalomethanes, with a phase-in period.

The Ministry of the Environment intends to amend Ontario Regulation 169 (Ontario Drinking-Water Quality Standards) to include the new Standard for bromodichloromethane of 16 µg/L and the revised Standard for total trihalomethanes.

The Ministry of the Environment also continues to address stakeholder comments and is currently developing guidance documentation to aid small systems in preparing for the new bromodichloromethane Standard and a revised total trihalomethanes Standard.

## **5.2 Standards Reviews Completed**

### Chlorite and Chlorate

On August 23, 2007, the Council transmitted its advice to the Minister of the Environment, recommending that the Ministry of the Environment endorse the new Canadian Drinking Water Quality Guidelines of 1 mg/L for chlorite and 1 mg/L for chlorate in drinking water, and adopt them as Ontario Drinking Water Quality Standards in Ontario Regulation 169 (Ontario Drinking-Water Quality Standards). (*See Appendix A4*)

### **5.3 Standards Currently Under Review**

The following standards are still under review by the Council. The Council will continue to assess these contaminants and will provide formal advice to the Minister of the Environment in an appropriate and timely fashion. The standards include:

- Benzene
- Chloral Hydrate
- Chlorine
- Potassium
- Radiological Characteristics
- Total Haloacetic Acids (HAA<sub>5</sub>)
- Tritium (*See Sections 4.2 and 7.1*)

### **5.4 Standards Prioritization**

Part of the Council's mandate is to provide advice and make recommendations on matters relating to the prioritization of the review and development of standards for drinking water quality in Ontario.

In addition, the *Part Two Report of the Walkerton Inquiry* noted in Recommendation 26, that “*The Advisory Council on Standards should have the authority to recommend that the provincial government adopt standards for contaminants that are not on the current federal-provincial agenda.*”

Specifically, in establishing its own process, the Council has chosen to review, on a yearly basis, the list of priority substances as developed by the Federal-Provincial-Territorial (FPT) Committee on Drinking Water (CDW).

The purpose of this review is to recommend the addition of substances for Ontario to put forward, that may not be on the current National Priority List, and to recommend the bumping-up of existing substances as deemed important for the province. For the May, 2007 to May, 2008 Council year, a review was completed and the Council concurred with the National Priority List.

## **6.0 Council Initiatives**

While the Minister of the Environment can request that the Council provide advice on specific matters related to drinking water, the Council can also choose to engage in drinking water matters, which it has identified as being of interest, and which, in its opinion, may merit the attention of the Minister of the Environment.

The process by which the Council engages in its initiatives is as follows:

- Initiatives are identified through the Council's priority-setting meeting held in June of every year.
- The Council decides whether or not to form a working group to facilitate tasks, based on the complexity of the initiative.
- The Council or working group then decides how to best approach each initiative using any or all of the following means:
  - invite a Ministry of the Environment expert make a presentation to the Council
  - invite an external expert make a presentation to the Council
  - carry out a literature search
  - hold a stakeholder and / or experts workshop and / or symposium
  - facilitate a research project
- The conclusions and suggested recommendations are deliberated by the full Council, and advice is developed and transmitted to the Minister of the Environment, in cases where it is deemed to merit some attention and / or action.

Even though advice may have already been transmitted in some cases, many of these initiatives are of an on-going nature. As such, the Council remains engaged from the perspective of the development and implementation of legislative, regulatory and policy amendments, in order to provide on-going advice to the Minister of the Environment. Following is a brief outline of the initiatives that the Council was engaged in from May, 2007 to May, 2008:

## 6.1 Progress on Initiatives from Previous Years

The Council transmitted the following advice to the Minister of the Environment in previous annual report years. Progress, however, was made during this annual reporting period, and is summarized below:

### Ontario Regulation 248 (Drinking-Water Testing Services)

As reported in the 2006-2007 Annual Report, the Council transmitted its advice on Ontario Regulation 248/03 (Drinking-Water Testing Services) to the Minister of the Environment on January 3, 2006. Although the Council's advice was primarily focused on Recommendations 40 and 41 of the *Part Two Report of the Walkerton Inquiry* Recommendations, it was not limited to these two recommendations. (See Appendix A1)

The Ministry of the Environment continues to evaluate new technologies for microbiology tests on an ongoing basis, to determine their suitability for use.

On April 1, 2008, two new technologies for microbiological testing were added to the Protocol of Accepted Drinking Water Testing Methods list of acceptable test methodologies and posted on the Environmental Registry. These included:

- commercially available microbiological test kits, approved by both the USEPA and AWWA Standard Methods and;
- a new automated water testing system developed to simplify and improve the testing of drinking water.

In addition, methods for *Clostridium* and *Cryptosporidium* were added to the Protocol of Accepted Drinking Water Testing Methods.

The Council met with Ministry of the Environment staff and will continue monitoring the progress of its advice on Ontario Regulation 248/03, in terms of any future amendments or guidance documentation development.

### Clean Water Act (Bill 43)

As reported in the 2006-2007 Annual Report, the Council transmitted its advice on the Clean Water Act (Bill 43) to the Minister of the Environment, on March 31, 2006.

The *Clean Water Act* received Royal Assent on October 19, 2006, and many of the Council's recommendations were addressed in the *Act*.

On July 3, 2007, the *Act* and five regulations (Source Protection Areas and Regions, Source Protection Committees, Terms of Reference, Time Limits, and Miscellaneous) came into effect.

Over this annual report period, the Council reviewed the new Regulations and met with Ministry of the Environment staff to monitor the new and proposed Regulations and guidance documentation, and to provide on-going advice to the Minister of the Environment.

As a postscript, on June 20, 2008, Ontario Regulation 286/07 – Miscellaneous, made under the *Clean Water Act, 2006* was amended to prescribe training requirements for power of property entry, and the application requirements and decision-making authority for the Ontario Drinking Water Stewardship Program, and financial assistance details.

Also on June 20, 2008 the Ministry of the Environment posted, on the Environmental Registry, Regulation Proposal Notices for the proposed Definitions of Words and Expressions Used in the Act Regulation and the Assessment Reports Regulation, as well as a Policy Proposal Notice for Technical rules proposed to be made under the *Clean Water Act, 2006* to establish requirements related to the preparation of an assessment report.

## Drinking Water Quality Management Standard

As reported in the 2006-2007 Annual Report, the Council undertook a review of the draft Drinking Water Quality Management Standard (DWQMS), and transmitted its advice to the Minister of the Environment on March 31, 2006.

On October 30, 2006, the Ministry of the Environment posted a Policy Decision Notice on the Environmental Registry, finalizing the DWQMS, which took into account many of the Council's recommendations.

The Ministry of the Environment undertook a pilot program in five municipalities to implement the DWQMS and undergo audits against the standard by a third party organization, and continues to develop and implement the Licensing Program with water sector consultation.

Ontario Regulation 188/07, the Licensing of Municipal Drinking-Water Systems Regulation, came into force in May 2007, and, on July 31, 2007, Policy Decision Notices for the DWQMS Guidance Document, Director's Directions and Accreditation Protocol were all posted on the Environmental Registry.

The Council met with Ministry of the Environment staff and will continue to monitor the progress of the implementation of the Drinking Water Quality Monitoring Standard in terms of any future amendments or guidance documentation development.

## Definitions and Uses of Chlorine-Related Terminologies

As reported in the 2006-2007 Annual Report, the Council transmitted its advice on the Definitions and Use of Terminology for Chlorine, Chlorination, and Chlorine Residuals to the Minister of the Environment on April 10, 2006.

On June 7, 2006, the Ministry of the Environment posted a Regulation Decision Notice on the Environmental Registry, to proceed with amendments to Ontario Regulation 170/03. In order to harmonize chlorine-related definitions, subsequent amendments were also made at that time to the “*Procedure for Disinfection of Drinking Water in Ontario*”.

As well, on July 27, 2007, the Ministry of the Environment posted a Regulation Decision Notice on the Environmental Registry, finalizing amendments to Ontario Regulation 903 (Wells), including a new definition of “*chlorinated*” being specified to mean “*disinfected with free chlorine residual*”.

## 6.2 Initiatives Currently Under Review

The Council continues to be actively engaged in the following initiatives with a view towards potentially providing advice to the Minister of the Environment in the future:

### Alternative Approaches to Disinfection

The Council continues to research how other international jurisdictions (most notably European) treat and often distribute their drinking water without the use of chlorine, and whether Ontario could consider a process to allow for alternate disinfection approaches, particularly for distributed water.

As part of this review, the Council plans to hold a symposium on September 22, 2008 to hear from experts on approaches to disinfection in other jurisdictions.

### Ontario First Nations Drinking Water Quality

As reported in the 2006-2007 Annual Report, the Council continues to review issues related to Ontario First Nations drinking water quality, with regard to what the province could do to improve the protection of drinking water quality in these communities. The Council will also continue to monitor the progress of any future policy initiatives from the province.

## Use of Surrogates as Indicators

The Council continues to research the use of surrogates as indicators which can indirectly identify the presence of other substances or groups of substances that are more difficult to measure and that may have greater health implications.

Since Canadian Drinking Water Quality Guidelines are developed largely on a substance-specific basis, the synergistic effect of mixtures is not well known, so the Council continues to evaluate the effect of surrogates on the development of guidelines and standards, as well as additional research needs. As part of this review, the Council plans to commission a study of surrogate use in other jurisdictions.

### **6.3 Areas of Ongoing Interest**

The Council continues to be engaged in the following on-going initiatives with a view towards providing advice to the Minister of the Environment, where appropriate, in the future:

#### Dual / Reclaimed Water Systems

As reported in the 2006-2007 Annual Report, the Council continues to explore the use of dual / reclaimed water systems with a view towards water quality safety, and approval issues related to such systems in Ontario.

#### Infrastructure Protection for Municipal Drinking Water

As reported in the 2006-2007 Annual Report, the Council continues to review the initiatives the Ministry of the Environment has been undertaking in the area of critical infrastructure protection for the security of Ontario's municipal water supplies, and possible links to the Drinking Water Quality Management Standard.

#### Ontario's Overall Drinking Water Framework

As reported in the 2006-2007 Annual Report, the *Safe Drinking Water Act, 2002*, and the *Clean Water Act, 2006*, and the associated Regulations, policies, and guidance documentation are the core of Ontario's drinking water framework, which the Council will continue to monitor, with respect to implementation and ongoing improvements.

## Part Two Report of the Walkerton Inquiry Recommendations

The Council is pleased with the progress that the Ministry of the Environment has made on implementing all of the *Part Two Report of the Walkerton Inquiry* recommendations.

Future legislative, regulatory, and policy initiatives will continue to be monitored, in keeping with the Council's mandate to provide advice to the Minister of the Environment on the continuous improvement of drinking water quality in this province.

## Pharmaceuticals and Personal Care Products

As reported in the 2006-2007 Annual Report, the Council continues to consider the issue of Pharmaceuticals and Personal Care Products in terms of the concentrations being found, current and future treatment abilities and technologies, to determine any potential health-related issues for Ontario's drinking water supplies currently, and in the future.

## Promoting Municipal Drinking Water

As reported in the 2006-2007 Annual Report, the Council continued to review the activities and initiatives the Ministry of the Environment and municipalities have been undertaking regarding education and outreach programs for promoting Ontario's municipal drinking water supplies.

## Small Systems Treatment Equipment

As reported in the 2006-2007 Annual Report, the Council continues to remain engaged in this issue since Recommendation #17 of the Council's 2005 "*Report and Advice on Ontario Regulation 170/03 Smaller, Private Systems Review and Recommendations*" states that "*the Ministry of the Environment work with the water treatment equipment industry to develop a system to pre-approve or certify treatment equipment.*" Such pre-approved equipment would assist Public Health Inspectors to identify appropriate treatment options for owners of the smaller systems, currently under Ontario Regulation 252/05, which are to fall under the responsibility of the Ministry of Health and Long-Term Care.

## Use of Trends

As reported in the 2006-2007 Annual Report, the Council continues to explore the use and significance of trends for chemical and microbiological test results for drinking water, which may indicate an emerging problem with a source or treatment process, even before specific limits or standards are exceeded.

## 7.0 Stakeholder / General Public Consultations

Besides the specific recommendations on an Advisory Council on Standards made by Justice O'Connor in the *Part Two Report of the Walkerton Inquiry*, the *Report* also noted that an additional benefit of such a Council would include transparency in process and increased public participation.

As such, part of the mandate of the Council is to undertake additional consultations on standards, regulations, or other drinking water matters, to solicit views from stakeholders or the general public in order to provide advice and recommendations to the Minister of the Environment.

### 7.1 Tritium Standard Public Consultation

On March 26 and 27, 2008, the Council held a two-day public consultation meeting on Ontario's Drinking Water Quality Standard (ODWQS) for tritium. The purpose of the meeting was to obtain input from a broad spectrum of interested community groups and stakeholders. Consultation participants were asked for their feedback on the following three questions, as well as any other feedback they had on the ODWQS for tritium:

- Is the current Ontario Drinking Water Quality Standard for tritium acceptable?
- If not, what is the basis for finding the current Standard unacceptable?
- If you propose a different Standard, what is your rationale?

Information on the consultation has been posted on the Council's website at:

[http://www.odwac.gov.on.ca/standards\\_review/tritium/tritium.htm](http://www.odwac.gov.on.ca/standards_review/tritium/tritium.htm).

A total of 65 individuals and organizations participated in the consultation, either by making a presentation to the Council, submitting written comments, or both. Participants included: 19 individuals; 11 community-based groups; 8 health organizations (6 health non-governmental organizations and 2 professional health associations); 6 environmental non-governmental organizations; 5 industry/consulting organizations; 4 municipalities; 3 non-governmental organizations; 2 universities; 1 federal government representative; and 1 labour organization.

In addition, ODWAC received over 500 e-mails from individual members of the public.

Results from the public consultation will be incorporated with the input received from individuals, and other stakeholders to inform the Council's advice to the Minister of the Environment on the Ontario Drinking Water Quality Standard for tritium. (*Also see Section 4.2*)

## **Appendix A - Advice Letters**

- A1 Advice on O. Reg. 248 (Drinking-Water Testing Services)
- A2 Advice on a Revised Guideline for Arsenic
- A3 Advice on Stagnation Periods for Lead Sampling
- A4 Advice on New Guidelines for Chlorite and Chlorate

## A1 Advice on O. Reg. 248 (Drinking-Water Testing Services)

### Advisory Council on Drinking Water Quality and Testing Standards

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January 3, 2006

The Honourable Laurel Broten  
Minister of the Environment  
135 St. Clair Avenue West, 12th Floor  
Toronto, Ontario M4V 1P5

Dear Ms. Broten:

**Re: The Advisory Council on Drinking Water Quality and Testing Standards' Recommendations on Ontario Regulation 248/03 Drinking-Water Testing Services**

During its investigations and deliberations concerning various issues with which the Council has become engaged, the importance of testing has been a recurrent theme. Testing-related issues such as availability and cost have emerged as concerns in some circumstances.

The matter of testing and laboratories received significant attention in the *Part Two Report of the Walkerton Inquiry*. The report discussed specific issues of quality, availability and cost. Several recommendations specific to testing and laboratories were provided, two of which are pertinent to the following discussion:

**Recommendation 40:** *Where remoteness dictates that samples for bacteriological analysis cannot be delivered to a lab either within regulated times or under guaranteed conditions, the Ministry of the Environment should determine the feasibility of alternative means of providing microbiological testing that meet the requirements of "Standard Methods".*

**Recommendation 41:** *The provincial government should phase in the mandatory accreditation of laboratories for all testing parameters, and all drinking water testing should be performed only by accredited facilities.*

### **Recommendation 40:**

Regarding Recommendation 40, the Ministry of Environment (MOE) considers that it has been implemented and states; "Under the guidance of the *Safe Drinking Water Act*, these incidents will be reviewed on a case-by-case basis."

---

Although the MOE has suggested that Recommendation 40 has already been implemented, it is the Council's view that an opportunity for facilitating testing through the use of simplified test procedures is available.

As an example, defined substrate microbiological tests are available in pre-packaged formats that eliminate many of the potential sources of testing error and also have substantial test quality control embedded at the manufacturing stage. Such tests have been developed specifically to enable their use outside of full-scale laboratories.

The Council has previously considered the potential for use of such tests and in its *Report and Advice on Ontario Regulation 170/03 Smaller, Private Systems Review and Recommendations* (February 2005). Recommendations 14 and 15 from that report state that:

*The Council recommends that the Ministry of Environment consider allowing the use of validated alternative testing methods (that indicate the presence / absence of bacteria), where traditional sampling and testing methods are not practical.*

*The Council recommends that the Ministry of Environment work with the analytical testing industry to ensure the efficacy of alternative testing methods (that indicate the presence / absence of bacteria), and that such companies be accredited and licensed by the Ministry of the Environment.*

While the MOE has indicated that alternative methods would be considered on a case-by-case basis, it is felt that this approach may inhibit, rather than facilitate, the use of such methods. It thus remains the Council's recommendation that the MOE investigate means whereby the use of such methods and products could be better enabled.

In the United States, the Environmental Protection Agency approves analytical methods which may be used for compliance monitoring purposes. A number of defined substrate methods have been approved for such use. Testing for compliance purposes must be performed at certified laboratories. However, the use of these tests for purposes beyond compliance is not restricted to certified labs.

It is envisioned that the development of appropriate guidelines and controls for their use would eliminate the need for case-by-case assessments and promote more testing in a simplified but effective manner. The Council also suggests that the use of such products could serve to simplify and facilitate the implementation of the risk-based public health oversight of small systems, which is currently under development.

*The Council recommends that the Ministry of the Environment develop detailed guidance for the use of alternate microbiological methods rather than considering use of such methods on a case-by-case basis.*

**Recommendation 41:**

Recommendation 41 has been implemented through Ontario Regulation 248/03 (The Drinking-Water Testing Services Regulation). This Regulation requires that testing of drinking water be performed by accredited and licensed laboratories.

Two lists of exceptions are provided for specific prescribed tests. One list prescribes tests that may be performed at a drinking water system by persons certified as operators or water quality analysts. The second prescribes tests that may be conducted using continuous monitoring equipment that forms part of a drinking water system.

Other than for the above prescribed tests, the requirement for laboratory accreditation and licensing applies to all testing, whether or not it is required by regulation, and whether or not the tests are for health-related, aesthetic, or operational parameters.

This approach results in the need to continuously review and amend the prescribed parameter lists in order to enable the use of advances in continuous monitoring technologies as well as meeting system operators' needs. The current prescribed lists are incomplete in terms of reflecting the availability of continuous monitoring equipment as well as tests performed at systems in support of process decision-making. For example, the MOE has set requirements for operators of membrane filtration plants to install particle counting equipment. However, such testing is not currently a prescribed exception in O. Reg. 248/03.

In considering Recommendation 41 within the context of the *Part Two Report of the Walkerton Inquiry* report body, it appears that there may be an inconsistency if the recommendation is interpreted too literally. While the recommendation suggests that only accredited labs should be allowed to perform drinking water testing, the following excerpt from the Report does not appear to support this interpretation:

*“Municipalities should be encouraged to carry out in-house testing to complement or check tests done by outside laboratories. However, to maintain consistent safety standards province-wide, municipalities should not be permitted to substitute such tests for tests done by accredited laboratories according to the minimum regulatory requirements.”*

It would appear from the above excerpt that the actual intent may have been that Recommendation 41 be applied to “required” tests only. This interpretation is supported by the encouragement that Municipalities carry out additional in-house testing.

Given the importance of test-derived information in supporting drinking water systems' operational decisions, it is the Council's opinion that the availability of test data should be encouraged rather than inhibited. The Council is therefore concerned that O. Reg. 248/03 may in fact be inhibitory to testing beyond minimum regulatory requirements and inconsistent with the intent of Recommendation 41.

Accreditation is an onerous process which is generally not feasible for small laboratories, including laboratories operated by drinking water systems. While accreditation does generally result in data quality improvement, such improvement may not, in fact, be important if the initial data was already fit for purpose. An example would be using screening tests where it is the trend rather than the actual value that is of use to the system operator.

When testing beyond compliance requirements is performed by system staff, one can assume that there would be no value in performing tests which have not been assessed as being fit for purpose and, therefore, whether the Regulation appropriately supports drinking water system requirements and public health protection.

It is the Council's opinion that a simple change in approach could alleviate some of the difficulties that the Regulation poses for system operators. It is suggested that a more effective and manageable Regulation would be achieved by prescribing tests that must be performed by accredited labs rather than tests that may be performed at a drinking water system.

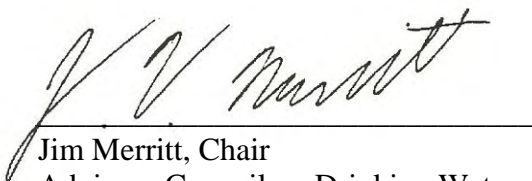
Such an approach would both simplify the maintenance of the Regulation and provide systems with more flexibility in meeting their data requirement needs. Testing for compliance purposes would obviously be a major consideration in requiring the use of accredited labs. Latitude, however, should be provided for systems wishing to test for parameters listed in the Ontario Drinking Water Quality Standards when such testing is additional to actual regulatory requirements. As in the above discussion, proactive guidance by the Ministry in facilitating and supporting additional testing is encouraged.

***The Council recommends that O. Reg. 248/03 should be amended based on the approach of prescribing tests which must be performed by accredited and licensed laboratories rather than the approach of prescribing exceptions.***

It is also important to note that, while the Council endorses testing beyond minimum requirements, all adverse test results should remain subject to formal notification and corrective action requirements.

The Council feels that the recommendations presented here promote continuous improvement in the effective and efficient delivery of quality drinking water to Ontarians, through the use of alternate testing methods and the encouragement of more in-house testing.

Sincerely,



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Jim Merritt, Chair  
Advisory Council on Drinking Water  
Quality and Testing Standards

## A2 Advice on a Revised Guideline for Arsenic

### Advisory Council on Drinking Water Quality and Testing Standards

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April 28, 2006

The Honourable Laurel C. Broten  
Minister of the Environment  
135 St. Clair Avenue West, 12<sup>th</sup> Floor  
Toronto, Ontario M4V 1P5

Dear Ms. Broten:

**Re: Guideline for Canadian Drinking Water Quality for Arsenic and Adoption as an Ontario Drinking Water Quality Standard**

---

Part of the Advisory Council on Drinking Water Quality and Testing Standards' mandate is to provide you with advice on proposed drinking water standards and their applicability in Ontario.

In order to provide comprehensive advice on these standards, the Council reviews Health Canada's Document for Public Comment, Guideline Technical Document, comments from the public consultation process, and information on the occurrence and impact that a particular substance is likely to have on the delivery of safe drinking water in Ontario.

As a result of this review, the Council may recommend endorsement of a Guideline for Canadian Drinking Water Quality as an Ontario Drinking Water Quality Standard, Objective, or Guideline or consider a more stringent standard for Ontario, where appropriate, and may conduct independent consultations with stakeholders and technical experts as deemed necessary to recommend a standard.

Health Canada, through the Federal-Provincial-Territorial process has revised the Guideline for Canadian Drinking Water Quality for arsenic in drinking water. The Maximum Acceptable Concentration of 0.01 mg/L (10 µg/L) has been approved by both the Committee on Drinking Water (CDW), and the Committee on Health and the Environment (CHE).

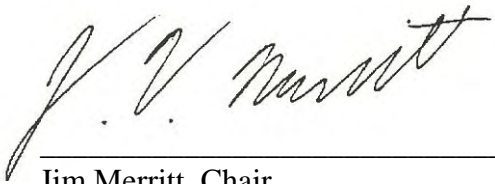
**The Council recommends that the Ministry of the Environment endorse the revised Guideline for Canadian Drinking Water Quality of 0.01 mg/L (10 µg/L) for arsenic in drinking water, as approved by both the CDW and the CHE, and adopt it as an Ontario Drinking Water Quality Standard**

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The Council concluded that Health Canada's documentation and rationale used to establish the revised arsenic guideline represent the best information presently available anywhere in the world, and acknowledges that Health Canada re-assesses drinking water contaminants on a continuous and on-going basis.

The Council feels that by adopting the revised arsenic Guideline, Ontario will be advancing its commitment to maintain up-to-date, science-based drinking water standards that will ensure ongoing protection of water quality in this province.

Sincerely,

A handwritten signature in black ink, appearing to read "J. V. Merritt". The signature is written in a cursive style with a long horizontal stroke at the end.

---

Jim Merritt, Chair  
Advisory Council on Drinking Water  
Quality and Testing Standards

### **A3 Advice on Stagnation Periods for Lead Sampling**

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**Ontario**

Advisory Council on Drinking Water  
Quality and Testing Standards

Le Conseil consultatif sur les normes  
de qualité et d'analyse de l'eau  
potable

July 6, 2007

The Honourable Laurel C. Broten  
Minister of the Environment  
135 St. Clair Avenue West, 12<sup>th</sup> Floor  
Toronto, Ontario M4V 1P5

Dear Ms. Broten:

**Re: Request for Rationale on the 30-minute vs. 6-hour Stagnation Period for the Community Monitoring Program detailed in the Council's "Proposed Drinking Water Corrosion Control and Lead Reduction Strategy" Advice**

---

Thank you for your letter of June 5, 2007, formally requesting the Council to provide you with additional advice on the rationale for proposing a 30-minute stagnation period over a 6-hour stagnation period for the Community Monitoring Program, detailed in the Council's "Proposed Drinking Water Corrosion Control and Lead Reduction Strategy" advice that was provided to you on May 31, 2007.

After careful further consideration, which included reviewing published technical papers and additional consultation with the previously engaged Canadian and U.S. experts on corrosion control, the Council still concludes that the 30-minute stagnation period, as outlined in our earlier advice, remains the most appropriate approach for Ontario. The following points summarize the Council's assessment of the 30-minute vs. 6-hour Stagnation periods:

#### **30-Minute Stagnation Period Approach:**

- As noted in Health Canada's "Corrosion Control in Drinking Water Distribution Systems" Document, a 30-minute stagnation period approach is effective for assessing a community's or an individual's average exposure to lead, while still providing the information needed to assess possible corrective actions, such as corrosion control measures.
-

- Ontario has a health-based standard for lead in drinking water of 10 µg/L. The additional exposure information provided by a 30-minute stagnation period approach is not provided by the USEPA's Lead and Copper Rule (LCR), which is based on an action level of 15 µg/L, and is focused solely on assessing the need for corrosion control measures.
- Health Canada's Document, which proposes a 6-hour stagnation period for the *First Action Level*, serves as an initial screening tool, which leads directly to the *Second Action Level*. This *Second Action Level*, with a proposed 30-minute stagnation period, is directly related to the health-based Guideline. Thus, the results can be used for informed decision-making on taking further corrective action.
- A 30-minute stagnation period is recommended as an acceptable approach for statutory monitoring in Europe. This approach to monitoring has been deemed to be representative of average exposure to lead from drinking water, as it reflects the average inter-use stagnation in a typical home of approximately 30 minutes.<sup>1</sup>
- Sampling conditions using a 30-minute stagnation period approach will be more reproducible as stagnation time can be better controlled and confirmed.
- While Health Canada's "Corrosion Control in Drinking Water Distribution Systems" Document stipulates one 2-Litre sample, the recommendation for two successive 1-Litre samples provides more specific information regarding the source of lead within homes.

#### **6-Hour Stagnation Period Approach:**

- 6-hour stagnation period results are focused on assessing the potential need for corrosion control measures, but will not provide information regarding a community's or an individual's actual average exposure to lead.
- Although the results will be higher using a 6-hour stagnation period, they do not represent actual long-term (chronic) exposure, for which the Ontario Standard was developed, as opposed to short-term (acute) exposure, such as lead poisoning.
- In Ontario, a Certified Operator (CO), a Water Quality Analyst, or a person under the direct supervision of a CO is required to perform on-site testing for the *additional* important operational parameters (e.g. pH, chlorine residual). As the amount of stagnation time increases, so do the resource demands. It should be noted that the USEPA LCR requirement has resulted in utilities relying on volunteer home owners taking samples, which can result in decreased reproducibility of test results.
- There will be reduced consumer acceptance of a 6-hour stagnation period monitoring program, as the stagnation time may interfere with normal household activities, as well as the possibility that stagnation time will not be accurately represented.

- Sampling conditions using a 6-hour stagnation period will be less reproducible since a minimum rather than an absolute stagnation time is stipulated.

Given the complexity of the lead in drinking water issue, the general North American approach has been to rely on the success of corrosion control as the measure of appropriate corrective action being applied. The Council has taken this one step further by recommending a health-based approach that assesses average exposure to lead through drinking water. This innovative approach is the primary reason for the Council's monitoring recommendation differing from the USEPA LCR as well as Health Canada's proposed Guideline.

On behalf of the Council, I trust that this advice provides sufficient information and rationale for recommending a 30-minute stagnation period approach, and I would be pleased to meet with you or your staff to answer any questions.

It should be noted that the advice provided here is of an interim basis, as the Council continues its review of Health Canada's "Corrosion Control in Drinking Water Distribution Systems" Document, with a view towards potentially providing you with further advice at a later date.

Sincerely,



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Jim Merritt, Chair  
Advisory Council on Drinking Water  
Quality and Testing Standards

<sup>1</sup> van den Hoven, T. and Slaats, N. (2006) Lead monitoring (Chapter 3). In: *Analytical Methods for Drinking Water: Advances in Sampling and Analysis*; pp. 63-113, P. Quevaullier and K.C. Thompson (Ed.). Wiley and Sons, Inc.



## **A4 Advice on New Guidelines for Chlorite and Chlorate**

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August 23, 2007

The Honourable Laurel C. Broten  
Minister of the Environment  
135 St. Clair Avenue West, 12<sup>th</sup> Floor  
Toronto, Ontario, M4V 1P5

Dear Ms. Broten:

**Re: Adoption of the Canadian Drinking Water Quality Guidelines for Chlorite and Chlorate as Ontario Drinking Water Quality Standards in O. Reg. 169/03**

---

Part of the Ontario Drinking Water Advisory Council's mandate is to provide you with advice on proposed drinking water standards, objectives, or guidelines and their applicability in Ontario.

In order to provide comprehensive advice, the Council assesses Health Canada's Guideline Technical Documents, comments from the public consultation processes, and information on the occurrence and impact that a particular substance is likely to have on the delivery of safe drinking water in Ontario.

Based on this assessment, the Council may recommend the endorsement of a Canadian Drinking Water Quality Guideline as an Ontario Drinking Water Quality Standard in Ontario Regulation 169/03, or as an Objective, or Guideline, or it may make an alternative recommendation. The Council may also conduct independent consultations with stakeholders and technical experts as deemed necessary to formulate its advice.

Health Canada, through the Federal-Provincial-Territorial process has developed new Canadian Drinking Water Quality Guidelines for Chlorite and Chlorate in drinking water. The Maximum Acceptable Concentration (MAC) for each of Chlorite and Chlorate of 1 mg/L has been approved by both the Committee on Drinking Water (CDW), and the Committee on Health and the Environment (CHE).

---

**The Council recommends the Ministry of the Environment endorse the new Canadian Drinking Water Quality Guidelines of 1 mg/L for Chlorite and 1 mg/L for Chlorate in drinking water, as approved by both the CDW and the CHE, and adopt them as Ontario Drinking Water Quality Standards in O. Reg.169**

Chlorite and Chlorate may be present in drinking water treatment facilities and their distribution systems, when chlorine dioxide is used as a disinfectant. Similarly, Chlorate may also be present in systems that use hypochlorite for chlorination.

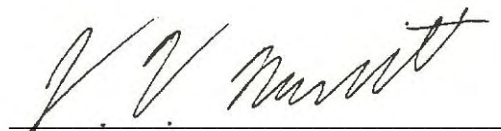
**The Council recommends that systems using chlorine dioxide for disinfection monitor for Chlorite and Chlorate at least quarterly, where highest levels are likely to be detected, or as prescribed through the Certificate of Approval process**

**The Council similarly recommends that systems using hypochlorite for chlorination monitor for Chlorate at least quarterly, where highest levels are likely to be detected, or as prescribed through the Certificate of Approval process**

It was agreed that a Guideline for Chlorine Dioxide was unnecessary since Chlorine Dioxide is rapidly reduced to Chlorite. Therefore, the proposed Guideline for Chlorite is also protective against the health effects from Chlorine Dioxide.

The Council feels that by adopting the proposed new Guidelines for Chlorite and Chlorate, Ontario will be advancing its commitment to maintain up-to-date, science-based standards that will ensure the ongoing protection of drinking water quality in this province.

Sincerely,



---

Jim Merritt, Chair  
Advisory Council on Drinking Water  
Quality and Testing Standards

## Appendix B - Relevant Legislation

- *Safe Drinking Water Act, 2002, Sections 4-5*

### Advisory Council on Drinking-water Quality and Testing Standards

**4. (1)** The Minister shall establish an advisory body known in English as the “Advisory Council on Drinking-water Quality and Testing Standards” and in French as “Conseil consultatif sur les normes de qualité et d’analyse de l’eau potable” to consider issues relating to standards for drinking-water quality and testing and to make recommendations to the Minister. 2002, c. 32, s. 4 (1).

### Appointment of members

**(2)** The members of the Advisory Council shall be appointed by the Minister. 2002, c. 32, s. 4 (2).

### Notice

**(3)** The Advisory Council may publish information in the Registry. 2002, c. 32, s. 4 (3).

### Consideration by Minister

**5.** The Minister shall ensure that all recommendations of the Advisory Council on Drinking-water Quality and Testing Standards are taken into consideration in establishing and revising standards under this Act for drinking-water quality and testing. 2002, c. 32, s. 5.

## Appendix C - Council's Standards Review Protocol

The following summary table and detailed descriptions of the Council's Standards Review Protocol were developed to address and implement Recommendation #25 of the Part Two Report of the Walkerton Inquiry, which states that "*In setting drinking water quality standards for Ontario, the Minister of the Environment should be advised by an Advisory Council on Standards.*" The protocol focuses and guides the Council in providing timely advice to the Minister of the Environment on standards.

### Summary Table

Federal Stage	MOE Stage	Council Stage				
				Issue	Input	Output
National Priority Setting	MOE Input into Priorities	1	a. Convey Substances of Interest to MOE (yearly)	Substances of Interest addressed	Proposed National Priority List	Conveyance of Substances of Interest to Minister of the Environment ( <i>formal</i> )
			b. Review Final National Priority List	Substances of Interest that did NOT make the list to be addressed by MOE	Final National Priority List	Conveyance of Substances of Interest that did NOT make the list to Minister of the Environment ( <i>formal</i> )
Scientific / Technical Review			<i>No Council Involvement</i>			
Guideline Technical Document	Review & Comment	2	a. Assess Guideline Technical Document	Concerns with document addressed	Draft Guideline Technical Document, decision sought, references, presentation	Information for formulation of advice on Ontario's position
National Public Consultation			b. Propose Interim Ontario Standard ( <i>if warranted</i> ) <ul style="list-style-type: none"> <li>i. Undertake Independent Consultation (<i>if warranted</i>)</li> </ul>			

Federal Stage	MOE Stage	Council Stage				
				Issue	Input	Output
Assess comments from National Public Consultation	Assess comments from National Public Consultation	<b>3</b>	Assess Comments from National Public Consultation	Concerns with national public comments addressed	Public comments from National consultation	Information for formulation of advice on Ontario's position
Draft Final Guideline Technical Document	Review & Comment	<b>4</b>	a. Assess Draft Final Guideline Technical Document b. Undertake Independent Consultation (if warranted) c. Determine and convey Position to MOE (informal)	Concerns with document addressed	Draft Final Guideline Technical Document; Presentation by MOE / HC expert	Conveyance of Council's advice to Ministry of the Environment and Minister's Office staff (informal)
	Convey Ontario's Position to CDW, CHE		<i>No Council Involvement</i>			
CDW, CHE Approval of Guideline Technical Document and Canadian Drinking Water Quality Guideline		<b>5</b>	Transmit Advice Letter to Minister (Proposed Ontario Standard, Objective, or Guideline, and operational advice, if necessary)	Concerns with Ontario public comments addressed	Public comments from Ontario consultation	Conveyance of Council's advice to Minister of the Environment (formal)
	Ontario public consultation via EBR Proposal					
	Assess EBR comments					
	Post EBR Decision		<i>No Council Involvement</i>			
	Revise Reg. 169, and / or other guidance documents as necessary		<i>No Council Involvement</i>			

## **Council Engagement Stage 1:**

### **a. Convey Council's Substances of Interest to the MOE**

The question before the Council at this sub-stage is:

*Are there any substances of interest that are not already on the National Priority List?*

Considerations:

- Does the substance have an adverse health effect?
- Is the substance known or likely to occur at levels of concern?
- Would regulating the substance provide a meaningful opportunity for risk reduction?
- Would research of this substance (which could include collecting occurrence data, treatment data, health effects data, and developing analytical methods) constitute a good use of resources and funding?

Notes:

- Must account for emerging and emergency parameters (like NDMA)
- Can suggest re-ranking of parameters
- Minister may call on Council at any time for advice

**Input:** Ministry of the Environment Liaison staff member to supply the Council with the *proposed* National Priority List for review. Council members then identify substances of interest (that are not already on the list) and prepare for their discussion at the June meeting of every year.

**Output:** Council to submit a list of substances of interest to the Minister of the Environment to be considered for inclusion in Ontario's Standards Plan, and input into the Federal-Provincial-Territorial process.

**b. Review Final National Priority List**

The question before the Council at this sub-stage is:

*Are there any substances that the Council recommended for inclusion on the National Priority List, that did not make the List, and, if so, what action should the Council take?*

This sub-stage is directly linked to Recommendation #26 of the Part Two Report of the Walkerton Inquiry, which states that “*The Advisory Council on Standards should have the authority to recommend that the provincial government adopt standards for contaminants that are not on the current federal-provincial agenda.*”

**Input:** Ministry of the Environment Liaison staff member to supply the Council with the *final* National Priority List for review. Council members then review the National Priority List and identify the Council’s substances of interest that did not get included, if any. The Council will then prepare for discussion of these substances to decide what steps should be taken, including whether to advise the Ministry of the Environment to undertake their own standard review.

**Output:** Council to convey advice on next steps for the Substances of Interest (that did not get included in the Final National Priority List) to the Minister for the Ministry of the Environment to undertake its own scientific / technical review in consideration of the preparation of a document for public consultation.

## **Council Engagement Stage 2:**

### **a. Assess Guideline Technical Comment**

The question before the Council at this sub-stage is:

*Does the Council have any concerns with the Guideline Technical Document?*

The Council's role in this stage is to assess the Guideline Technical Document arising from the National Process, relying primarily on the knowledge and experience of its members, and possibly including such aspects as economic impacts, occurrence data, treatment data, and analytical methods, with consideration given to "Nice to Have" versus "Need to Have" information.

In the event that the above-mentioned aspects cannot easily be addressed, it may be determined that additional information or work is required. If so, the following process will be initiated, in consultation with the Ministry of the Environment's Standards Development Branch (SDB), to assist the review of the substance in question:

#### **Process for Requesting Information from the Ministry:**

- Consult with SDB Director and Ministry Liaison staff member to clarify Council's request
- Consult with SDB. If deemed simple, requested information be supplied to Council through Ministry Liaison staff member
- Consult with SDB. If deemed complex, Ministry Liaison staff member to provide ideas on next steps to the Council
- If under \$25,000, Council could initiate and project-manage the research in cooperation with SDB
- If over \$25,000, Council to formally advise Minister of study / research need

**Input:** Guideline Technical Document, decision sought, scientific references, and a presentation by the Ministry (including information on the range of values and possible compromises made at the national level, and known and potential contentious issues), and *if required*, information per the above 5 step process for requesting information from the Minister or Ministry.

**Output:** Council to use information to develop advice for inclusion in the analysis and formulation of Ontario's position.

**b. Propose Interim Ontario Standard (If warranted)**

The question before the Council at this sub-stage is:

*Does Ontario need an interim standard while the National Process is undertaken?*

The Council will assess the Draft Guideline Technical Document to consider whether or not to advise Ontario to adopt an interim standard.

**Input:** Council to receive Draft Guideline Technical Document, and, when required, other documentation for review, decision sought, scientific references, and a presentation by the Ministry (including information on the range of values and possible compromises made at the national level, as well as known and potential contentious issues).

**Output:** Council to convey advice on possible interim standard to the Minister for implementation consideration by the Ministry of the Environment.

**i. Undertake Independent Consultation (If warranted)**

The question before the Council at this sub-stage is:

*Does the Council feel that it needs to undertake its own consultation to gain a better understanding of stakeholder and public concerns?*

The Council could use the following consultation methods to obtain more or different information about a standard: EBR Information Posting, peer review, stakeholder information sessions, or public meetings.

**Input:** Draft Guideline Technical Document

**Output:** Council to use information gleaned from independent consultation process to provide advice to the Ministry of the Environment, for inclusion in Ontario's position.

## **Council Engagement Stage 3:**

### **Assess Comments from National Public Consultation**

The question before the Council at this stage is:

*Does the Council have any concerns with the comments received from the national public consultation?*

The Council's role in this stage is to take into account comments received from the National public consultation process.

**Input:** Council to receive public comments from the national consultation.

**Output:** Council to use comments received for inclusion in the analysis and formulation of Ontario's position, as well as to assess the Draft Final Guidance Technical Document in Stage 4.

## **Council Engagement Stage 4:**

### **a. Assess Draft Final Guideline Technical Document**

The question before the Council at this sub-stage is:

*Does the Council have any concerns with the Draft Final Guideline Technical Document?*

This stage is positioned after public consultation, but before the Canadian Drinking Water Quality Guideline is approved, or any other document goes to the Federal-Provincial-Territorial Committee on Drinking Water (CDW) and the Federal-Provincial-Territorial Committee on Health and the Environment (CHE).

The Council's role in this stage is to assess the Draft Final Guideline Technical Document, taking into account the assessment of the comments received from the National public consultation process in Stage 3.

**Input:** Draft Final Guideline Technical Document; Presentation by Ministry of the Environment and / or Health Canada expert.

**Output:** Assessment to be used in providing advice to the Ministry of the Environment on the acceptability of the Draft Final Guideline Technical Document, in relation to Ontario.

### **b. Undertake Independent Consultation (If warranted)**

The question before the Council at this sub-stage is:

*Does the Council feel that it needs to undertake its own consultation to gain a better understanding of stakeholder and public concerns?*

The Council could use the following consultation methods to obtain more or different information about a standard: EBR Information Posting, peer review, stakeholder information sessions, or public meetings.

**Input:** Draft Final Guideline Technical Document and comments received from the National public consultation process.

**Output:** Council to use information gleaned from independent consultation process to provide advice to the Ministry of the Environment, for inclusion in Ontario's position.

**c. Determine and Convey Position to MOE (*Informal*)**

There are 2 questions before the Council at this sub-stage:

1. *Should the Ontario Standard be set at a level different from the Canadian Drinking Water Quality Guideline?*
2. *How should the Standard be applied in Ontario?*

The Council's role in this stage is to propose an Ontario Drinking Water Quality Standard, Objective or Guideline, including operational advice, if deemed necessary, in order to provide advice on how the standard is to be applied in Ontario, in regards to sampling, compliance, and regulation.

It should be noted that the Council will only propose an Ontario Drinking Water Quality Standard, Objective, or Guideline that is equivalent to or more stringent than a Canadian Drinking Water Quality Guideline.

**Input:** Draft Final Guideline Technical Document, comments received from the National public consultation process, and information gleaned from independent consultation process, if undertaken.

**Output:** Council to provide informal advice to the Ministry of the Environment on the proposed Ontario Drinking Water Quality Standard, Objective, or Guideline, and its application in Ontario, if deemed necessary.

## **Council Engagement Stage 5:**

### **Transmit Advice Letter to Minister (Formal)**

The Council's role in this stage is to formally transmit its advice to the Minister of the Environment, on a proposed Ontario Drinking Water Quality Standard, Objective, or Guideline.

This transmittal can occur anytime after approval has been granted for the Canadian Drinking Water Quality Guideline by both the Committee on Drinking Water (CDW) and the Committee on Health and the Environment (CHE). The Council may also wait until after the Ontario consultation finishes, if it feels that the comments may be pertinent to its advice.

The advice may also outline how the standard is to be applied in Ontario, in regards to sampling, compliance, and regulation, if warranted.

It should be noted that the Council will only propose an Ontario Drinking Water Quality Standard, Objective, or Guideline that is equivalent to or more stringent than a Canadian Drinking Water Quality Guideline.

**Input:** Council to receive notice from Ministry Liaison staff member that both CDW and CHE have approved the final Canadian Drinking Water Quality Guideline. The Environmental Registry Proposal, including the comments received from the public consultation may also be considered.

**Output:** Council to provide formal advice to the Minister of the Environment on the proposed Ontario Drinking Water Quality Standard, Objective, or Guideline, and its application in Ontario, if warranted.

## Appendix D - Terms of Reference

These following Terms of Reference were agreed upon by the Council and finalized by the Council's Chair and the Minister of the Environment, on November 5, 2004.

### 1. Definitions

In these Terms of Reference (TOR):

- a) "the Act" means the *Safe Drinking Water Act, 2002*;
- b) "the Council" means the Advisory Council on Drinking-water Quality and Testing Standards;
- c) "the Ministry" means the Ministry of the Environment;
- d) "the Chair" means the Chair of the Advisory Council on Drinking-water Quality and Testing Standards;
- e) "the Minister" means the Minister of the Environment;
- f) "the Deputy Minister" means the Deputy Minister of the Environment.

### 2. Preamble

The purpose of the TOR is to describe the operational, administrative and reporting relationships between the Minister and the Chair, the Chair and the Deputy Minister, and reflect the powers of the Council as an advisory agency as set out in Schedule C of the 'Agency Establishment and Accountability Directives'.

The TOR should be used in conjunction with the legislation governing the Council and its constituting instrument to determine how the Council should govern itself. This TOR does not affect, modify, limit or interfere with the responsibilities of any of its parties under law. In the event of any conflict between the TOR and any law, the law prevails.

### 3. Duration and Review of Terms of Reference

The TOR will become effective on the date of its signature by the parties and will remain in effect for five years or until a new TOR is agreed to by the parties.

The TOR must be reviewed at the expiry of the term or prior to that at the request of any of the parties involved.

### 4. Legislative Authority

The legislative authority of the Council is set out in Section 4 of the *Safe Drinking Water Act, 2002*.

## **5. Mandate**

The mandate of the Council is to provide advice and make recommendations to the Minister of the Environment on matters related to standards for drinking-water quality and testing. Activities of the Council may include but not be limited to:

- a. Review research and scientific and technical documentation related to drinking-water quality and testing standards;
- b. Publish information in the Environmental Registry established under section 5 of the *Environmental Bill of Rights, 1993* and undertake additional consultation with and solicit views from the general public as necessary and provide feedback;
- c. Forward recommendations and their rationale to the Minister within a specified time frame;
- d. When directed by the Minister, provide advice on policies, practices and procedures to be used in the development of standards; and, priorities for the development of standards, testing methods and related research; and
- e. Make recommendations to the Minister on other matters it has identified as being priorities and which merit the attention of the Minister and/or the Ministry.

## **6. Guiding Principles**

The parties agree that they will adhere to the following principles:

- a. The Minister recognizes that the Council is a statutory entity which exercises powers and performs duties in accordance with its mandate under the Act;
- b. The Minister recognizes that the Council operates at “arms length” from the Government;
- c. The Council acknowledges that it is accountable to the Government in exercising its mandate. Accountability is a fundamental principle to be observed in the management, administration and operations of the Council;
- d. As an agency of the Government, the Council conducts itself according to the management principles of the Government of Ontario;
- e. The Deputy Minister will ensure that the support or services provided to the Council are of the same quality and standard as provided to the Ministry’s own line divisions and branches.
- f. The Council and the Ministry must avoid duplication of services.

## **7. Reporting Relationships**

The parties agree that:

- a. The Council is committed through the Chair to the reporting requirements as outlined in Schedule 2 (attached);
- b. The Chair will keep the Minister advised of issues or events that concerns or may concern the Minister in the exercise of his or her responsibilities;

- c. The Minister and the Chair will consult with each other on relevant public communications strategies and publications and will keep each other informed on the results of stakeholder and other public consultations and discussions;
- d. The Chair will provide reports containing the Council's advice on a specified subject and reports commissioned by the Council to the Minister. The public release of said advice or reports shall be at the discretion of the Minister; statements to the press with respect to such advice or reports are not appropriate until the report is publicly released by the Minister; and
- e. The Minister and the Chair will meet as required to discuss issues relating to the delivery of the Council's mandate.

## 8. Accountability

The accountability of the parties is as follows:

- a. The Minister is accountable to the Legislature for the Council's fulfillment of its mandate, its compliance with Government policies and for reporting to the Legislature on the Council's affairs;
- b. The Chair is accountable to the Minister for the performance of the Council in fulfilling its mandate and for carrying out the roles and responsibilities assigned to the Chair by Management Board of Cabinet Directives and Guidelines, the Council's constituting instrument and the TOR; and
- c. The Deputy Minister is accountable to the Minister for the performance of the Ministry in providing administrative support (including staffing and funding) to the Council and for carrying out the roles and responsibilities assigned to him or her by the Minister, by Management Board of Cabinet Directives and Guidelines, the Council's constituting instrument, and the TOR.

## 9. Roles and Responsibilities

The *Minister* is responsible for:

- a. Monitoring the activities of the Council to ensure that its mandate is being fulfilled and that it is in compliance with Government policies;
  - b. Reviewing, approving and presenting the estimated/recommended annual allocation for the Council as part of the Ministry's Business Plan;
  - c. Consulting with the Chair as appropriate when significant new directions for the Council are contemplated or when initiatives are taken to amend any legislation or regulations which may affect the mandate of the Council;
  - d. Ensuring that proposed changes to the governing legislation/regulation are accompanied by a recommendation on the continued need for the Council's services and the appropriateness of its mandate;
  - e. Recommend appointments and reappointments pursuant to the process for Council appointments established by legislation or by Management Board, after consultation with the Chair as appropriate; and
  - f. Meeting with the Chair of the Council as required.
-

The **Chair** is responsible for:

- a. Directing the affairs of the Council within its mandate as defined by the Act, the Council's constituting instrument and the TOR;
- b. Ensuring that the Council carries out the responsibilities assigned to the Council or its Chair under the Act, the Council's constituting instrument and the TOR;
- c. Providing advice to the Government and seeking policy direction from the Government in specific instances;
- d. Keeping the Minister advised of issues or events that concern or can reasonably be expected to concern him or her in the exercise of ministerial responsibilities;
- e. Ensuring that matters relating to the Council which are of importance to the Ministry are brought to the attention of the Minister and the Deputy Minister in a timely fashion;
- f. Recommending all formal documents related to the fulfillment of the Council's mandate to the Government for approval;
- g. Reviewing the Council's annual budget and bringing it forward to the Minister and the Deputy Minister for approval;
- h. Reviewing the Council's annual report and bringing it forward to the Minister and the Deputy Minister by July 31 of each year;
- i. Ensuring that public funds are used in accordance with management Principles of the Government of Ontario - ensuring that the Council operates within the approved funding in the fulfillment of its mandate;
- j. Attending and/or making presentations before Cabinet or committees of Cabinet or the Legislature on matters concerning the affairs of the Council when requested to do so;
- k. Notifying the Minister of appointment vacancies and making recommendations to the Minister on appointments and reappointments of Council members pursuant to the process for Council appointments established by Management Board of Cabinet;
- l. Ensuring Council compliance with Management Board of Cabinet Directives and Guidelines, and the Ministry's Administrative Policy Manual;
- m. Ensuring that conflict of interest matters are handled in accordance with Management Board Directives; and
- n. Ongoing liaison with the Director of the Ministry's Standards Development Branch to exchange information and ideas related to the administration and operation of the Ministry of the Environment and the Council as they impact upon each other.

The *Deputy Minister* is responsible for:

- a. Advising and assisting the Minister in meeting assigned ministerial responsibility with respect to the Council and ensuring that the Minister is advised of the requirements of Management Board Directive of the administration of agencies;
- b. Undertaking on behalf of the Minister, assessments of whether or not the Council is fulfilling its legislative mandate in concert with approved Government policies; identifying any need for corrective action and recommending ways to resolve any issues that are identified;
- c. Providing a framework for assessing whether the Council is fulfilling its mandate;
- d. Ensuring the ministry is providing the administrative support, financial and other services as set out in the TOR and Schedule 1 (attached) to reflect the same quality and standard as provided to the Ministry's own line divisions and branches;
- e. Meeting with the Chair, as required, to discuss matters of mutual importance to the Council and the Ministry, such as services provided by the Ministry to the Council;
- f. Informing the Council of the policies of the Ministry and the Government that apply to the Council, including financial and administrative, human resources and corporate policies, including policies in respect of French language services, freedom of information, workplace harassment and equal opportunity; and
- g. The Deputy Minister may, in accordance with the *Public Service Act* and applicable Government directives, delegate any of the powers and duties assigned to him or her by law, as they pertain to the Council.

## 10. Finances

- a. The Council is funded out of the Consolidated Revenue Fund pursuant to an appropriation authorized by the Legislature, unless otherwise provided.
- b. Recovered costs and other revenues, if any, are paid, as received, to the Consolidated Revenue Fund and may not be applied to as administrative expenditures for the Council unless otherwise provided by law.
- c. Financial arrangements are subject to amendment by such revenue policy directives as the Management Board of Cabinet may issue. Financial arrangements may also be changed by amendment to the Council's constituting instrument.
- d. The Council prepares estimates for inclusion in the Business Plan of the Ministry for presentation to the Legislature. The Council will deliver these estimates to the Minister and Deputy Minister in sufficient time to be analyzed and approved by the Minister and Deputy Minister. The estimates provided by the Council may, after appropriate consultation with the Chair, be altered as required.
- e. Financial procedures of the Council must be in accordance with Management Board of Cabinet Directives and Guidelines, the Ministry's Administrative Policy Manual and other directives of the Ministry and Government.

- f. Responsibility for the maintenance of documentation and information to support expenditures is assigned to the Chair as outlined in the Accounting Policy of the Ministry.

## **11. Audit Arrangements**

- a. The affairs of the Council shall be subject to audit by both the Management Audit Branch of the Ministry and by the Provincial Auditor. The Ministry and the Council shall arrange mutually agreeable times for audit by the ministry at least once per annum.
- b. The results of any audit by Ministry staff will be shared with the Chair. The Chair will be accorded an opportunity to enter his or her comments into the audit record.
- c. The Chair shall direct to the Minister through the Ministry all correspondence of the Council with the provincial Auditor in response to the findings, conclusions and recommendations of the Provincial Auditor's report. The Chair shall consult with the Director of the Ministry's Management Audit Branch throughout the audit process.
- d. The Chair may request an external audit of the financial transactions or management controls of the Council at the Council's expense.

## **12. Administrative Arrangements and Support**

- a. The Ministry is committed to providing the Council with the full range of financial and administrative support services either directly or through shared service agreements as outlined in Schedule 1 (attached) to this TOR. The services will be provided to the same quality and standard as provided to the Ministry's own line divisions and branches.
  - b. The Council is an advisory agency as designated by the Management Board of Cabinet. The Chair will develop procedures and will operate the Council in accordance with all administrative policies established and specified in Management Board of Cabinet Directives and Guidelines and the Ministry's Administrative Policy Manual.
  - c. The Council may engage persons to provide professional, technical or other assistance to or on behalf of the Council, and may provide payment or remuneration and expenses of such persons in accordance with the Government's and the Ministry's policy.
  - d. If the Council requires consultant or other services, the following shall be adhered to:
    - i. the Council will use the administrative services of the Ministry in developing, tendering and administering contracts;
    - ii. all tendering will be consistent with the procedures contained within the Management Board of Cabinet Directives and Guidelines and the Ministry's Administrative Policy;
    - iii. the Council's signing authority and single/sole authority is in accordance with the Ministry Delegation of Authority Framework;
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- iv. in order to avoid the duplication of services already available from the Ministry, all requests from the Council for either internal or external creative services (i.e. Web page design, desktop publishing, advertising) will be forwarded to the Communications Branch for review and approval by the Director; and
- v. to ensure documents are in accordance with government graphic design guidelines the Council should forward any changes in graphic designs or any new documents to Communications Branch for review and approval by the Director.
- e. Legal Services to the Council are to be provided by the Ministry of the Attorney General.
- f. The Council may request outside legal assistance when it requires expertise unavailable within the Ministry of the Attorney General or when the use of a law officer of the Crown would result in any conflict of interest.
- g. The Ministry of the Attorney General must approve retention of outside legal counsel by the Council. The Council will refer to and comply with the Management Board of Cabinet Directives and Guidelines on legal services and the retention of counsel when obtaining external legal counsel.

### **13. Staffing and Appointments**

- a. The Council is staffed by persons appointed under the *Public Service Act* and eligible for all those rights and benefits accorded under the *Public Service Act*, and relevant collective agreements.
- b. All recommendations for new appointments and reappointments to the Council will be reviewed by the Minister's Office and the Public Appointments Secretariat.
- c. The Council in its dealings with staff appointed under the *Public Service Act* is subject to Management Board of Cabinet Directives and Guidelines.
- d. The Council is also governed by:
  - i. the policies of the Civil Service Commission;
  - ii. the human resources manual of the Ministry;
  - iii. the corporate financial and administrative policies and procedures manual;
  - iv. applicable collective agreement provisions; and
  - v. any other applicable legislation or regulations.

### **14. Conflict of Interest**

- a. All members of the Council appointed by the Minister shall abide by the conflict of interest principle and mandatory requirements set out in the Management Board of Cabinet Directives.

## **SCHEDULE 1: ADMINISTRATIVE SUPPORT**

The Deputy Minister will ensure that the support or services provided to the Council are of the same quality and standard as provided to the Ministry's own line divisions and branches either directly or through shared services agreements:

1. **Financial Administration:** pay and benefits administration, accounts payable and technical advice, purchasing, central mail and printing services, and records and form advisory services.
2. **Human Resources Services:** classification; advice and consultation regarding recruitment procedures and staff relations; job description writing; counselling regarding career planning and staff development; and advice and consultation regarding corporate initiatives such as Occupational Health and Safety, etc. Corporate educational opportunities and career planning services are available and open to Council staff and the Ministry must assist the Chair in ensuring that these are communicated effectively to Council staff.
3. **Information Technology and Telecommunications Services:** advice and consultation.
4. **Internal Audit:** financial compliance, management, human resources and information systems audits; operational reviews and special investigations as required.
5. **Accommodation Planning:** including lease renewals.
6. **Freedom of Information Program:** services as required.
7. **French Language Services:** translation and interpretation services.
8. **Communications:** communications planning, preparation of communications documents i.e. news releases, backgrounders, posting of documents on ministry websites, assistance in the preparation of public documents.

**SCHEDULE 2: REPORTING REQUIREMENTS**

The Chair ensures that the following reports, statements and documents are submitted to the Minister for review and approval:

1. Annual reports are required by July 31 of each year. The Annual report should describe the Council's accomplishments and a list of activities undertaken during the preceding year; and
2. Financial reports as required by Ministry's internal financial reporting requirements; and
3. Other reports that may be required by the Council's governing legislation or regulation(s) or reports as the Minister may require from time to time.

## **Appendix E - Website**

The Council's website, [www.odwac.gov.on.ca](http://www.odwac.gov.on.ca), continued to be an important source of information for the general public, drinking water stakeholders, Ministry of the Environment, and Ministry of Health and Long-Term Care staff.

The Council's website was re-developed and updated to provide information on:

- History and establishment of the Council
- Mandate
- Requests from the Minister of the Environment
- Standards Review
- Proactive Initiatives
- Stakeholder Consultations
- Public Minutes from Council Meetings
- Reports to the Minister of the Environment
- Annual Reports
- Drinking Water-related Announcements
- Links to other Drinking Water-related Websites
- Members' Biographies
- Contact Information

## Appendix F - Council Members' Biographies

**Dr. Robert Andrews** is Professor and Associate Chair of Research in the Department of Civil Engineering at the University of Toronto and Senior NSERC Industrial Research Chair holder in Drinking Water Research. He has obtained extensive experience in water treatment practice with many projects involving drinking water disinfection, microbial inactivation of pathogens, formation and minimization of disinfection by-products, and optimization using innovative methods and application of membrane processes for removal of emerging contaminants.

**Dr. Ronald Brecher** is a founding partner of GlobalTox International Consultants - a Canadian corporation that assesses the impact of toxic chemical exposures on human health. Dr. Brecher is one of about 35 Canadians certified by the American Board of Toxicology. He is an Adjunct Professor, School of Planning, at the University of Waterloo and Associated Graduate Faculty, Department of Biomedical Sciences at the University of Guelph. From 1994-2002, he was a director of the Children's Groundwater Institute. He is a past recipient of the National Science and Engineering Research Council's Industrial Research Fellowship. He is a member of the Science and Policy Advisory Board of the American Council of Science and Health.

**Dr. Mary Jane Conboy** is the Executive Director of Well Wise Resource Centre, a non-profit company dedicated to providing education, training, resources and research on private wells. Prior to this, she worked with well owners through her research and as a hydrogeologist for the Ontario Federation of Agriculture (OFA) and the Green Communities Canada Well Aware program. She is a licensed Geoscientist who co-authored a technical paper for the Walkerton Inquiry, worked with farmers experiencing water problems, represented OFA on provincial committees, led an audit of well projects in Ontario, and sat on an expert panel for water well sustainability in Ontario. She also chairs the Association of Professional Geoscientists of Ontario (APGO) Nutrient Management committee and the APGO working group for the Water Wells regulation, and recently co-authored a consumer's guide for private wells and a children's book on wells and the water cycle.

**Michèle Giddings** is the Manager of the Water Quality and Science Division in the Water Quality and Health Bureau, Healthy Environments & Consumer Safety Branch, Health Canada. She is on Health Canada's Secretariat for the Federal/Provincial/Territorial Committee on Drinking Water. She is currently co-coordinator of the Disinfectants and Disinfection By-products Working Group for the World Health Organization's Guidelines for Drinking Water Quality. Ms. Giddings has developed a number of drinking water guidelines for Health Canada and the World Health Organization.

**Rod Holme** is the former Vice-President of the water and wastewater division of a major international consulting company and is currently an independent consultant on drinking water. He is past President of American Water Works Association and most recently chaired their International Council. He is also Chair of the Joint Committee on Water Regulations for the Ontario Water Works Association and the Ontario Municipal Water Association. He has extensive experience in technical and project management of municipal water supplies.

**Dr. Peter Huck** is a Professor in the Department of Civil and Environmental Engineering, a National Science and Engineering Research Council (NSERC) Chair in Water Treatment and University Research Chair at the University of Waterloo. He has undertaken extensive research in water quality and treatment in areas such as the robustness of water treatment systems, membrane and ultra-violet treatment, the removal pharmaceuticals and endocrine disrupting substances, and the determination of pathogen loadings in watersheds, among other topics.

**Dr. Alexander Hukowich** is the former Medical Officer of Health for the Haliburton, Kawartha, Pine Ridge Health Unit and coroner for Northumberland County, and was nominated for the Council by the Association of Local Public Health Agencies.

**Derrick Kamanga** is a professional engineer with over 25 years of experience in the design, water treatability studies, membrane pilot studies, utility operation, community planning, and project management of water and wastewater treatment systems. His academic qualifications include a Master of Engineering degree, and he has written several papers including "Transportation of Pollutants by storm runoff from Agricultural Lands". Other experiences include the preparation of Engineering Reports for several municipalities in Ontario. He has been a technical advisor to the First Nations for over 10 years, throughout Canada, and is in charge of Peer Review Engineers and prepared the first Terms of Reference for Engineering Reports covering First Nations Wastewater systems. Currently he works with the Ontario First Nations as the Senior Engineer, Water & Wastewater, where he supervises peer review engineers, manages the Aboriginal Water and Wastewater Association of Ontario (AWWAO) and consultants working for First Nations and provides training for the certification of plant operators.

**Dr. Robert Lannigan** is a Professor of Medicine, Microbiology and Immunology at the Schulich School of Medicine and Dentistry, University of Western Ontario. He is also a member of the Ecosystem Health Team at the same facility. His primary activity is as the medical leader of the Clinical Microbiology Laboratory of the London Laboratory Services Group, which is a city-wide diagnostic microbiology service for the London hospitals. He is a member of the American Society of Microbiology, the Canadian Hospital Infection Control Association and the Association of Medical Microbiology and Infectious Diseases, Canada, and is also a member of the Ontario Medical Association.

**Jim Merritt** is a senior consultant focused on environmental consulting, municipal infrastructure and water management. He has assisted clients with managing regulatory issues, operational and organizational planning and strategic assessments of environmental situations. He was the Assistant Deputy Minister of Operations Division with the Ontario Ministry of the Environment where he was responsible for environmental protection and regulatory services, including approvals and environmental assessments. He also led the establishment of the Ontario Clean Water Agency and was the vice-president responsible for water and wastewater plant operations, engineering services, computer systems and information management. While with the Ministry of the Environment he served in various Directorship positions, including Central Region, Policy and Planning Branch, and the Administrative Services Branch, and is currently the Chair of the Advisory Council on Drinking Water Quality and Testing Standards.

**Dr. Ken Roberts** has over 38 years experience in the field of water resources engineering and management. His experience is gained through a number of water-quality-related positions in the Ontario Ministry of the Environment (formerly the Ontario Water Resources Commission) and with XCG Consultants Ltd. He is currently an independent consultant, with experience in water and wastewater engineering, treatment and research, with a focus on drinking water. Dr. Roberts is also an Honorary Member of the American Water Works association.

**John Rudnickas** was the Manager of Water Quality for the City of Toronto. A chemist by training, he has extensive experience in all aspects of quality assurance / quality control in large drinking water systems, and was responsible for the management of the City of Toronto's accredited and licensed laboratory for drinking water testing. He is currently involved with the Walkerton Clean Water Centre in the training of drinking water operators, and is a member of the Ontario Water Works Association and is on the Water Quality Committee of the Canadian Water and Wastewater Association. He is also a member of the American Water Works Association.

**Dr. Lesbia Smith** is an Assistant Professor at the University of Toronto and Clinical Research Associate of the McMaster University Institute of Environment and Health. She holds a Medical degree, and is the former head of the Environmental Health and Toxicology Unit of the Public Health Branch of the Ontario Ministry of Health and Long-Term Care. She has researched drinking water quality and chronic diseases such as non-bladder cancer (by-products of chlorination) and Alzheimer's disease (aluminum). She has participated in the development of several Ontario Drinking Water Quality Standards. Her current work relates to human impacts of industrial emissions through human health risk assessments, including studies of the impacts on health of surface waters affected by a variety of industrial contaminants.

**Robert Walton** is the Director of Public Works for the County of Oxford. He is the former Manager of Water and Wastewater Services. Prior to joining the County of Oxford, Mr. Walton worked as a consulting engineer. Mr. Walton is a member of the Ontario Municipal Water Association and has served on the Drinking Water Committee of the Association of Municipalities of Ontario. He represents the Ontario Municipal Water Association, and is a Professional Engineer.

## **Appendix G - Contact Information**

Mailing Address:

Ontario Drinking Water Advisory Council  
40 St. Clair Avenue West, 3rd Floor  
Toronto, Ontario, Canada  
M4V 1M2

Chair:

Jim Merritt  
416-314-3606  
[jim.merritt@ontario.ca](mailto:jim.merritt@ontario.ca)

Staff:

Scott Barrett, Executive Assistant  
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Iris Biggar, Administrative Assistant

416-212-7779  
[iris.biggar@ontario.ca](mailto:iris.biggar@ontario.ca)

Fax:

416-212-7595

Website:

[www.odwac.gov.on.ca](http://www.odwac.gov.on.ca)







# ODWAC

Ontario Drinking Water Advisory Council

[www.odwac.gov.on.ca](http://www.odwac.gov.on.ca)