


14th Canadian National Conference and 5th Policy Forum on Drinking Water

Detailed Agenda


Day 1: Saturday, October 30, 2010

1:00 – 4:00 pm	Open Meeting of CWWA's Drinking Water Quality Committee - West room
4:30 – 7:00 pm	Conference Registration - Conference Foyer
7:00 pm – 8:30 pm	<p>Conference Opening Reception - Centre room</p> <p style="text-align: center;">~ Sponsored by Walkerton Clean Water Centre (WCWC) ~</p> <div style="text-align: center;">  <p>WCWC Walkerton Clean Water Centre An agency of the Government of Ontario</p> <p>CWAE Centre de Walkerton pour l'assainissement de l'eau Un organisme du gouvernement de l'Ontario</p> </div>

Day 2: Sunday, October 31, 2010


7:30 am	<p>Conference Registration and Delegates' <i>Continental Breakfast</i> - Conference Foyer</p> <p style="text-align: center;">~ Breakfast sponsored by Associated Engineering (Sask.) Ltd. ~</p> <div style="text-align: center;">  <p>Associated Engineering GLOBAL PERSPECTIVE. LOCAL FOCUS.</p> </div>
8:30 am - 10:00 am	<p style="text-align: center;">Location: Centre room</p> <p>OPENING PLENARY Opening Remarks - Program Technical Committee Co-chairs: Stéphanie McFadyen, Health Canada and Sam Ferris, Saskatchewan Environment</p> <p>Welcome to Saskatoon – Mayor Donald J. Atchison, City of Saskatoon Welcome and Provincial Perspective, Honourable Dustin Duncan, Saskatchewan Minister of Environment</p> <p>First Keynote Address: Dr. Peter Huck, NSERC Chair in Water Research - <i>Canada's Drinking Water in 2040 - Where Will We Be?(page 1)</i></p> <p>Second Keynote Address: Chris Rayburn, Water Research Foundation - <i>From research to real-world results: Water Research Foundation perspective (page 2)</i></p>
10:00 - 10:30 am	<p><i>Refreshment Break</i> - Conference Foyer</p> <p style="text-align: center;">~ Sponsored by ENDETEC - Veolia Water Solutions and Technologies and Anthrafilter Media Limited ~</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>

	Session 1: East room	Session 2: South-West room
10:30 - 12:00 am	<p>Session A1: Analytical Methods and Monitoring</p> <p><i>Moderator: Judy MacDonald, Nova Scotia Environment</i></p>	<p>Session A2: Water Systems Management</p> <p><i>Moderator: Dan Conrad, Buffalo Pound Administration Board</i></p>
10:30 - 11:00 am	<p>Laboratory comparison of in vivo phycocyanin probes and their application for cyanobacterial detection in Québec water sources (<i>page 3</i>)</p> <p>Arash Zamyadi, École Polytechnique de Montréal</p>	<p>Occurrence of Waterborne Pathogens at Offshore Drinking Water Intakes in Lake Ontario (<i>page 6</i>)</p> <p>Larry Moore, Walkerton Clean Water Centre</p>
11:00 - 11:30 am	<p>Case studies of the analysis of microbial data: Are random measurement errors associated with data causing us to disregard important results? (<i>page 4</i>)</p> <p>Philip Schmidt, University of Waterloo</p>	<p>Mitigation of nitrate contamination of drinking water sources in agricultural catchments: Stable isotopes studies stress the importance of non-growing season processes (<i>page 6</i>)</p> <p>George Somers, PEI Department of Environment, Energy and Forestry</p>
11:30 am - 12:00 pm	<p>Online identification of contaminants in drinking water distribution systems by using Spectro:lyzer (<i>page 5</i>)</p> <p>Zheng Cui, Technical Officer, NRC Centre for Sustainable Infrastructure Research</p>	<p>Success Factors for Sustainable Small Drinking Water Systems in Canada (<i>page 7</i>)</p> <p>Megan Kot, Dalhousie University</p>
12:00 - 1:00 pm	<p><i>Plated Luncheon - Centre room</i></p> <p>~ Sponsored by Walkerton Clean Water Centre (WCWC) ~</p> <div style="text-align: center;">  <p>WCWC Walkerton Clean Water Centre An agency of the Government of Ontario</p> <p>CWAE Centre de Walkerton pour l'assainissement de l'eau Un organisme du gouvernement de l'Ontario</p> </div>	


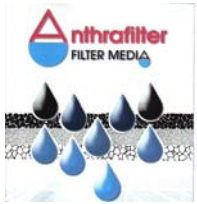
	Session 1: East room	Session 2: South-West room
1:00 - 2:30 pm	<p>Session B1: Health Research</p> <p><i>Moderator: Pierre André Côté, Chair CWWA Drinking Water Quality Committee</i></p>	<p>Session B2: Water Systems Management</p> <p><i>Moderator: Haseen Khan, Newfoundland Department of Environment and Conservation</i></p>
1:00 - 1:30 pm	<p>National Survey of Disinfection By-Products and Selected Emerging Contaminants in Canadian Drinking Water- First Year Results (<i>page 8</i>)</p> <p>Anca-Maria Tugulea, Chemist Chemistry Research Division Environmental Health Science Bureau Safe Environments Program Health Canada</p>	<p>Wetaskiwin WTP, AB Design-Build Upgrade Project – Process Optimization and Residual Management Facility Implementation (<i>page 11</i>)</p> <p>Cristina Fonseca, Stantec Consulting</p>
1:30 - 2:00 pm	<p>Characterization and Exposure levels of Haloacetic acids in Saskatchewan Municipal Distribution Systems (<i>page 9</i>)</p> <p>O.S. Thirunavukkarasu, Municipal Branch, Saskatchewan Ministry of Environment</p>	<p>Two-Step Design of Regional Drinking Water Supply Systems: Modeling Formulation and Case Study (<i>page 12</i>)</p> <p>Qian Tan, Faculty of Engineering and Applied Science, University of Regina</p>
2:00 - 2:30 pm	<p>Risk of intra-uterine growth retardation and exposure to chlorination by-products from drinking water (<i>page 10</i>)</p> <p>Patrick Levallois, Institut national de santé publique du Québec</p>	<p>Providing Drinking Water for a World Class Event (<i>page 12</i>)</p> <p>Bob Jones, Quality Control Division Manager, Operations and Maintenance Department, Metro Vancouver</p>
2:30 - 3:00 pm	<p><i>Refreshment Break - Conference Foyer</i></p> <p>~ Sponsored by EPCOR ~</p> <div style="text-align: center;">  </div>	

	Session 1: East room	Session 2: South-West room
3:00 – 5:00 pm	<p>Session C1: Guidelines Development and Regulatory News</p> <p><i>Moderator: Michèle Giddings, Health Canada</i></p>	<p>Session C2: Emerging Issues and Challenges</p> <p><i>Moderator: Jennifer Jackson, Canadian Water and Wastewater Association</i></p>
3:00 - 3:30 pm	<p>10 Years past Walkerton - Protecting Sources of Drinking Water through the Ontario Clean Water Act, 2006 (<i>page 13</i>)</p> <p>John Stager, Chief Drinking Water Inspector for Ontario</p>	<p>Pharmaceutical & Personal Care Product (PPCP) Testing in the City of Ottawa's Drinking Water Supply: What does it all mean? (<i>page 16</i>)</p> <p>Erin Gorman, Water Quality Technologist, City of Ottawa Drinking Water Quality Section</p>
3:30 - 4:00 pm	<p>Drinking Water Management in Saskatchewan – An Overview (<i>page 13</i>)</p> <p>O.S. Thirunavukkarasu, Municipal Branch, Saskatchewan Ministry of Environment</p>	<p>Potential of Pharmaceuticals and Personal Care Products as Nitrosamine Precursors during Chloramination (<i>page 17</i>)</p> <p>Ruqiao (Emma) Shen, Department of Civil Engineering, University of Toronto</p>
4:00 - 4:30 pm	<p>1 + 1 is more than 2: Capitalizing on the Strengths of Provincial Environment and Health Departments in a Shared Drinking Water Protection and Regulation Paradigm (<i>page 14</i>)</p> <p>Karen White, New Brunswick Department of Environment</p>	<p>Climate Change Effects on Canadian Landscapes: A Demonstrated Need for Changing the Source Water Protection Paradigm (<i>page 17</i>)</p> <p>Monica Emelko, University of Waterloo</p>
4:30 - 5:00 pm	<p>Comparison of trihalomethanes in drinking water between small and large systems according to source water, disinfectants, seasons and treatment approaches (<i>page 15</i>)</p> <p>Alexandre Bonton, Laval University</p>	<p>Climate Change Impact on Water Resources Planning in Saudi Arabia (<i>page 19</i>)</p> <p>Tahir Husain, Faculty of Engineering and Applied Science, Memorial University of Newfoundland</p>

Day 3: Monday, November 1, 2010

7:30 am	<p>Conference Registration and Delegates' <i>Continental Breakfast</i> - Conference Foyer ~ Breakfast sponsored by City of Saskatoon – Water Treatment Plant ~</p> 	
	Session 1: East room	Session 2: South-West room
8:30 - 10:30 am	<p>Session D1: Guidelines Development and Regulatory News(continued) <i>Moderator: Donald Reid, Alberta Environment</i></p>	<p>Session D2: Treatment Technologies and Processes <i>Moderator: France Lemieux, Health Canada</i></p>
8:30 - 9:00 am	<p>Proposed Major Amendments to Quebec Drinking Water Regulations (<i>page 20</i>) Caroline Robert, Ministère du Développement durable, de l'Environnement et des Parcs du Québec</p>	<p>Advanced Oxidation Processes (AOPs): Advanced Corrosion Rates Too? (<i>page 23</i>) Franklyn Smith, Supervisor, Infrastructure Management Water Services, Region of Waterloo</p>
9:00 - 9:30 am	<p>Drinking Water Protection Program Evaluation: what do health officers do anyway? (<i>page 21</i>) J. Ivor Norlin, Source Protection Officer Interior Health Authority</p>	<p>The Application of Artificial Neural Networks for Filtration Optimization (<i>page 24</i>) Kelly Griffiths, Department of Civil Engineering, University of Toronto</p>
9:30 - 10:00 am	<p>Updating Nova Scotia's Drinking Water Treatment Standards (<i>page 22</i>) Judy MacDonald, Nova Scotia Environment</p>	<p>Impact of Corrosion Scales on Chlorine Decay Kinetics and THM Formation in Iron Pipe Distribution System (<i>page 25</i>) Graham Gagnon, Department of Civil and Resource Engineering, Dalhousie University</p>
10:00 - 10:30 am	<p>Ontario's Experience in Drinking Water: 10 Years After Walkerton (<i>page 22</i>) John Stager, Chief Drinking Water Inspector for Ontario</p>	<p>Ammonia Removal from Groundwater Ensures Disinfection Compliance (<i>page 26</i>) Sutha Suthaker, Associated Engineering</p>

10:30 - 11:00 am	<p><i>Refreshment Break - Conference Foyer</i></p> <p>~ Sponsored by Aquatic Life Ltd. ~</p> 	
	Session 1: East room	Session 2: South-West room
11:00 am - 12:30 pm	<p>Session E1: Health Research</p> <p><i>Moderator: George Somers, PEI Ministry of Environment, Energy and Forestry</i></p>	<p>Session E2: Treatment Technologies and Process (continued)</p> <p><i>Moderator: Patricia Brooks, Yukon Health and Social Services</i></p>
11:00 - 11:30 am	<p>When is a “boil advisory” not a “boil” advisory? (<i>page 27</i>)</p> <p>David Hasselback, Health Protection Interior Health</p>	<p>Polymeric Membrane Performance Assessment through Direct Integrity Test: pros and cons for the Canadian applications (<i>page 29</i>)</p> <p>Francis Vaillancourt, Environment Canada</p>
11:30 am - 12:00 pm	<p>Update on Acceptable Levels for Bisphenol A (BPA) in Drinking Water (<i>page 28</i>)</p> <p>Clif McLellan, NSF International, Ann Arbor, MI, USA</p>	<p>Chlorination as a barrier against toxic cyanobacterial breakthrough: validation of laboratory findings in a drinking water treatment plant (<i>page 30</i>)</p> <p>Arash Zamyadi, École Polytechnique de Montréal</p>
12:00 - 12:30 pm	<p>Rapid Microbial Methods That Provide Better Public Health Protection (<i>Page 29</i>)</p> <p>Martin Allen, MJAllen & Associates</p>	<p>Biological Iron Removal at the Kahkewistahaw First Nation (<i>page 31</i>)</p> <p>Cory Wihlidal and John Hughes, Associated Engineering</p>
12:30 - 1:30 pm	<p><i>Buffet Luncheon - Centre room</i></p> <p>~ Sponsored by Saskatchewan Ministry of Environment ~</p>  <p>Saskatchewan Ministry of Environment</p>	

	Session 1: East room	Session 2: South-West room
1:30 - 3:00 pm	<p>Session F1: Health Research (continued)</p> <p><i>Moderator: Caroline Robert, Ministère de l'Environnement et des Parcs du Québec</i></p>	<p>Session F2: Treatment Technologies and Processes (continued)</p> <p><i>Moderator: Karen White, New Brunswick Department of Health</i></p>
1:30 - 2:00 pm	<p>Iodine-containing DBPs in Canadian Drinking Water (<i>page 32</i>)</p> <p>Anca-Maria Tugulea, Chemist Chemistry Research Division Environmental Health Science Bureau Safe Environments Programme Health Canada</p>	<p>DBP Removal: A New Direction for DBP Compliance (<i>page 36</i>)</p> <p>Yuefeng Xie, Professor of Environmental Engineering, Capital College, Pennsylvania State University</p>
2:00 - 2:30 pm	<p>Estimating the exposure to disinfection byproducts (DBPs) in swimming pools: a fugacity-based approach (<i>page 34</i>)</p> <p>Roberta Dyck, University of British Columbia Okanagan</p>	<p>Fouling of Ultrafiltration Ceramic Membranes with Model Solutions (<i>page 36</i>)</p> <p>Leila Munla, University of Waterloo, NSERC Chair in Water Treatment, Department of Civil and Environmental Engineering</p>
2:30 - 3:00 pm	<p>Collecting data for risk assessment: Occurrence of Giardia, Cryptosporidium and human enteric viruses at drinking water treatment plants (<i>page 35</i>)</p> <p>Annie Locas, École Polytechnique de Montréal</p>	<p>Using Zeta Potential to Improve Filtration Performance (<i>page 37</i>)</p> <p>David Pernitsky, Senior Engineer, CH2M HILL</p>
3:00 - 3:30 pm	<p><i>Refreshment Break - Conference Foyer</i></p> <p>~ Sponsored by ENDETEC - Veolia Water Solutions and Technologies and Anthrafilter Media Limited ~</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	

	Session 1: East room	Session 2: South-West room
3:30 - 5:00 pm	<p>Session G1: Distribution Systems and Water Conservation</p> <p><i>Moderator: Sam Ferris, Saskatchewan Ministry of Environment</i></p>	<p>Session G2: Treatment Technologies and Processes (continued) and Miscellaneous</p> <p><i>Moderator: Donald Reid, Alberta Environment</i></p>
3:30 - 4:00 pm	<p>EPCOR's Long-Term Lead Response Program for the City of Edmonton (page 38)</p> <p>Stephen Craik, EPCOR Water Services, Edmonton, Alberta</p>	<p>Ion Exchange and UF Membranes Provide Treatment for La Ronge Regional Water Supply (page 41)</p> <p>Doug Thomson and Wes Hicks, Associated Engineering</p>
4:00 - 4:30 pm	<p>Comparing Sodium Silicates and Phosphate for Controlling Lead Release from Premise Plumbing (page 39)</p> <p>Graham Gagnon, Professor NSERC / Halifax Water Industrial Research Chair Canada Research Chair in Water Quality & Treatment Department of Civil & Resource Engineering</p>	<p>Bench-Scale Evaluation of Combined Magnetic Ion Exchange (MIEX) and Coagulation for Disinfectant By-Product Precursor Removal (page 42)</p> <p>Leigh McDermott, Stantec Consulting Ltd.</p>
4:30 - 5:00 pm	<p>Effects of Water Conservation on Water Treatment Capital Planning in Saskatoon (page 40)</p> <p>David Pernitsky, Senior Engineer CH2M HILL</p>	<p>New Testing, Certification and Verification Programs for Water Treatment, Distribution, and Plumbing Products (page 43)</p> <p>Peter Greiner, NSF International</p>
5:00 - 5:30 pm		<p>Water System Optimization and Energy Savings using Predictive Control (page 43)</p> <p>Hugh Tracy, Delcan Corporation</p>
6:00 – 7:00 pm	<p>POSTER SESSION – Meet the Authors - Conference Foyer</p> <p>Meet and mingle with the poster authors. Wine and cheese will be served during this session.</p> <p><i>Enjoy domestic & international cheese, fresh grapes, warm baguettes and butter.</i></p>	

7:00 pm

Conference Dinner - Centre room



Prize Draw Giveaway! One lucky dinner guest will win a set of golf clubs and bag courtesy of **Associated Engineering (Sask.) Ltd.**



Dinner Entertainment:

Pow Wow dancing has been a part of Plains culture for thousands of years, with dances being passed on through the generations. Everything from the colourful regalia of the dancers to the variety of dance styles has historical meaning behind it. Watching the dancers' graceful motions and feeling the powerful beats of the drum, you will be able to experience this rich tradition and heritage. Tonight, dinner attendees will be entertained by the Northern Plains dancers of the **Wanuskewin International Dance Troupe**, to share their gift of song and dance with all. You will walk away with an appreciation of the diversity of First Nations cultures.


~ Dinner Entertainment sponsored by **NatureZone** ~



Day 4: Tuesday, November 2, 2010

7:30 am	Delegates' <i>Continental Breakfast</i> - Conference Foyer	
8:00 am	Conference Registration - Conference Foyer	
	Session 1: East room	Session 2: South-West room
8:30 - 10:00 am	Session H1: Distribution Systems - Lead <i>Moderator: Bruce Clark, City of Saskatoon</i>	Session H2: Risk Assessment / Risk Management – QMRA <i>Moderator: Stéphanie McFadyen, Health Canada</i>
8:30 - 9:00 am	Lead in Tap Water - Recent Learnings and Challenges (<i>page 44</i>) Jian Fu Deng, The City of Calgary Water Resources/Water Services, Calgary, Alberta	Application of Quantitative Microbial Risk Assessment (QMRA) at Drinking Water Treatment Plants (<i>page 46</i>) Carole Baxter, Department of Civil Engineering, University of Toronto
9:00 - 9:30 am	One Dimensional Transient-Corrosion Modeling for the Distribution Systems Lead Related Water Quality Issues (<i>page 45</i>) Md. Monirul Islam, Project Manager-Strategic Planning, Environment and Sustainable Infrastructure Division Public Works Dept, City of Hamilton	Quantitative Microbial Risk Assessment of Cryptosporidium and Giardia in Halifax Drinking Water (<i>page 47</i>) Graham Gagnon, Department of Civil and Resource Engineering, Dalhousie University
9:30 - 10:00 am	Lead Release Consequences Associated with Coagulant Changeovers in a Low Alkalinity, Low Turbidity Water Source (<i>page 45</i>) Alisha Knowles, Dalhousie University	QMRA: Making Definite Steps Toward Improved Decision-Making Under Ever-Present Uncertainty (<i>page 48</i>) Monica Emelko, University of Waterloo
10:00 - 10:30 am	<i>Refreshment Break - Conference Foyer</i> ~ Sponsored by Anthrafilter Media Limited ~	
		

	Session 1: East room	Session 2: South-West room
10:30 am - 12:00 pm	<p>Session I-1: Distribution Systems <i>Moderator: Boniface Koudjonou, Health Canada</i></p>	<p>Session I-2: Risk Assessment/Risk Management (continued) <i>Moderator: Kara Parisien, Canadian Water and Wastewater Association</i></p>
10:30 - 11:00 am	<p>Effects of disinfectant residual and pipe material on DBP formation in distribution systems (<i>page 49</i>)</p> <p>Hong Zhang, Department of Civil Engineering, University of Toronto</p>	<p>Getting on the Same Page: A Practical Tool for Inter-agency Collaboration in Risk Communication (<i>page 52</i>)</p> <p>Ron Brecher, GlobalTox, a Division of MTE Consultants Inc.</p>
11:00 - 11:30 am	<p>The Distribution System and Premise Plumbing – the Next Frontier (<i>page 50</i>)</p> <p>Susan Springthorpe, Director of Research Centre for Research on Environmental Microbiology</p>	<p>A Framework for Managing Risk and Uncertainty to Assure Safe Drinking Water (<i>page 52</i>)</p> <p>Ted Gillespie, City Manager, City of Wetaskiwin</p>
11:30 am - 12:00 pm	<p>Sustainable Water Quality Management and Freeze Protection in Distribution System Storage (<i>page 51</i>)</p> <p>Onno Koelman, PAX Water Technologies, Inc</p>	<p>Reconciling ‘actual’ risk with ‘perceived’ risk for distributed water quality: a QFD-based approach (<i>page 53</i>)</p> <p>Alex Francisque, Stagiaire postdoctoral Chaire de Recherche en Eau Potable de l’Université Laval, Centre de Recherche en Aménagement et Développement</p>
12:00 - 1:00 pm	<p><i>Buffet Luncheon - Centre room.</i> Poster Author winner announcement.</p> <p>Closing remarks by Judy A. MacDonald, Chair of the Federal-Provincial-Territorial Committee on Drinking Water.</p> <p>~ Luncheon sponsored by City of Saskatoon ~</p> <div style="text-align: center;">  </div>	

	Location: East room
1:00 - 3:30 pm	<p>Brief remarks by: Dr. Madjid Mohseni, Scientific Director, RES'EAU WaterNet</p> <p>POLICY FORUM - <i>How to get from Opportunity to Innovation? – A Case Study in Water Treatment</i></p> <p><i>Session Moderators: Dr. Graham Gagnon, Dalhousie University and Dr. Grahame Farquhar, CWN Senior Advisor</i></p> <p>Discussions and debates abound in Canada about how to move from research or concept to achieving innovation in practice. The challenge is particularly striking in the critical and risk-averse area of drinking water management. This year’s policy and research forum will focus on the challenge of capitalizing on opportunities to realize innovation through consideration of one of the more compelling recent innovation examples in drinking water management –the advent of UV and advanced oxidation technologies.</p> <p>Our panel of experts will provide excellent context for a discussion of how to bridge the idea to innovation gap by examining the emergence and advent of UV technologies for drinking water treatment from research concept, to approval and evolution through continued research and practice. The focus of interactive discussion with the forum attendees will be determining how the various elements involved in this story can be reinforced to pave the way for further innovations that provide socio-economic benefit for Canada.</p> <p>Session Speakers and Panel Participants:</p> <ul style="list-style-type: none"> • Dr. Jennifer Clancy, President. Clancy Environmental, Vermont • Dr. Ron Hofmann, Assistant Professor. Drinking Water Research Group, University of Toronto • Mr. Pat Lang, Retired. Formerly from Alberta Environment, Head of Drinking Water and Wastewater Policy Section • Mr. John Stager, Chief Drinking Water Inspector. Ontario Ministry of the Environment • Les Gammie, Director of Quality Assurance, EPCOR • Dr. Bill Cairns, Chief Scientist, Trojan Technologies <p style="text-align: center;">~ Policy Forum sponsored by Canadian Water Network (CWN) ~</p> <div style="text-align: center;">  <p>CANADIAN WATER NETWORK RÉSEAU CANADIEN DE L'EAU</p> </div>