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Development of Ontario's Risk Assessment and Management Tool for Assessing Small Drinking Water Systems

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Presentation Overview

2

- History
- Key Projects in Small Drinking Water Systems Program
- Development of Risk Assessment and Management Tool
- Demonstration of electronic tool



History

- **May 2000:** Walkerton, Ontario waterborne outbreak
 - 7 deaths
 - More than 2300 ill

- **January 18, 2002:** *Part One: The Events of May 2000 and Related Issues* contained 28 recommendations

- **May 23, 2002:** *Part Two: A Strategy for Safe Drinking Water* contained 93 recommendations
 - the need for a *Safe Drinking Water Act*

History

- **December 2002:** *Safe Drinking Water Act, 2002* enacted

Related regulations made under the *Safe Drinking Water Act, 2002*

- O.Reg. 169/03 - *Ontario Drinking Water Quality Standards*
- O.Reg. 170/03 - *Drinking Water Systems Regulation***
- O.Reg. 171/03 - *Definitions of Words and Expressions Used in the Act*
- O.Reg. 172/03 - *Definition of Deficiency and Municipal Drinking Water System*
- O.Reg. 248/03 - *Drinking Water Testing Services - relating to laboratory licensing*
- O.Reg. 128/04 - *Certification of Drinking-Water System Operators and Water Quality Analysts*
- O.Reg. 242/05 - *Compliance and Enforcement Regulation*
- O.Reg. 252/05 - *Non-Residential and Non-Municipal Seasonal Residential Systems That Do Not Serve Designated Facilities*
- O.Reg. 188/07 - *Licensing Of Municipal Drinking-Water Systems*
- O.Reg. 229/07 - *Service of Documents*
- O.Reg. 243/07 - *Schools, private schools and day nurseries*

History

- **May 2004:** Minister of the Environment established the Advisory Council on Drinking Water Quality and Testing Standards (Advisory Council)
- **June 2004:** Advisory Council was asked to provide advice on O. Reg. 170/03 with respect to the impact of its requirements on small drinking-water systems
- **October, November 2004:** Consultation sessions across province of Ontario
 - **Cost:** prohibitive
 - **Funding:** provincial funding should be provided
 - **Responsibility:** public health inspectors and health units (both part of the Ministry of Health and Long-Term Care) should have the lead role with regard to small systems

History

- **March 22, 2005:** Advisory Council report to Minister of Environment was released to the public
 - “the Council recommends a transfer of responsibility to Public Health Units to administer the safe drinking water programs for all commercial and institutional systems that serve the public”
 - “the Council recommends a risk-based, site-specific approach for 5 of the 8 “Categories of System” under Regulation 170/03”

History

- **May 2005:** Cabinet approval for the transfer of legal oversight of five categories of drinking water systems from the Ministry of the Environment (MOE) to the Ministry of Health and Long-Term Care (MOHLTC).

Large municipal non-residential (e.g., municipally-owned airports and industrial parks, large sports and recreation facilities)

Small municipal non-residential (e.g., small community centres, libraries, sports and recreation facilities)

Non-municipal seasonal residential (e.g., private cottages on communal drinking water systems)

Large non-municipal non-residential (e.g., large motels and resorts)

Small non-municipal non-residential (e.g., motels, restaurants, gas stations, churches, Bed and Breakfasts).

Small Drinking Water Systems Program

I. Business Process and Protocols

- Conceptual Model/Business Modeling
- **Risk Assessment and Management Tool and Inspections**
- Laboratories
- Protocols
- Response
- Transition Planning
- Program Management Development
- IT Design and Integration

II. Knowledge Transfer

- Training Program Development
- Training Planning
- Communications Planning
- Outreach and Education

III. Policy Coordination

- HPPA Regulations Development
- MOU Development
- Program Funding

Development of Risk Assessment Tool

➤ **August 2005:** Purpose

- To design a tool that would assist public health inspectors in the field in assessing the confidence in the public health safety of small drinking water systems

➤ **October 2005:** Components of risk assessment and management tool

- Identify potential risks
- Provide recommendations for managing each risk
- Rank recommendations according to their magnitude of mitigating risk
- Calculate an overall risk category for the small drinking water system
- Provide explanatory section
- Upload audit into central database

Development of Risk Assessment Tool

➤ **November 2005:** Completion of Questionnaire

- Part I: Flow Diagram
- Part II: General Information
- Part III: Source
- Part IV: Treatment
- Part V: Distribution
- Part VI: Risk Category

Development of Risk Assessment Tool

11

➤ March 2006: Methodology for Calculations

- Type of water source
 - secure groundwater system
 - vulnerable groundwater system
 - surface water source
- grade for source and treatment criteria (A,B,C,D)
- grade for distribution criteria (a,b,c,d)
- risk category (high, medium, and low)



Key Milestones in Development of RA Tool

12

➤ Risk Category for Small Drinking Water System

High = Significant level of risk
Medium = Moderate level of risk
Low = Negligible level of risk

		Grade for Source and Treatment Criteria			
		A	B	C	D
Grade for Distribution Criteria	a	High	High	Medium	Low
	b	High	High	Medium	Low
	c	Medium	Medium	Medium	Low
	d	Low	Low	Low	Low



Development of Risk Assessment Tool

- **May 2006:** Completion of Software Application (Prototype)
- **May 24th and 25th:** Training Workshop
- **June 2006:** Field Testing of Software Application at 9 health units in Ontario
- **January 2007:** Validation of Concepts within the Tool
- **Next Steps:** Finalization of the Tool

Demonstration of Electronic Risk Assessment and Management Tool

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