

DRINKING-WATER IN ONTARIO

A REVIEW OF CURRENT REGULATORY REQUIREMENTS AND AREAS OF FUTURE FOCUS

A PRESENTATION MADE TO THE:

ALGOMA DISTRICT MUNICIPAL ASSOCIATION

September 18, 2004

By:

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Consulting Engineer

Kresin Engineering Corporation

- Established in May 2000 by H. Kresin, P.Eng.
- Kresin Engineering and Planning Limited (1978)
- Staff of 11:
 1. 4 Engineers
 2. 2 Civil Engineering Technologists
 3. 2 Civil Engineering Technicians
- Chris Kresin, M.Sc.(Eng.), P.Eng.
 1. Bachelor's degree in Environmental Engineering
 2. Master's degree in Water Resources Engineering
 3. Member of Water Environment Federation
- Michael Kresin, P.Eng.
 1. Bachelor's degree in Civil Engineering
 2. Member of American Water Works Association

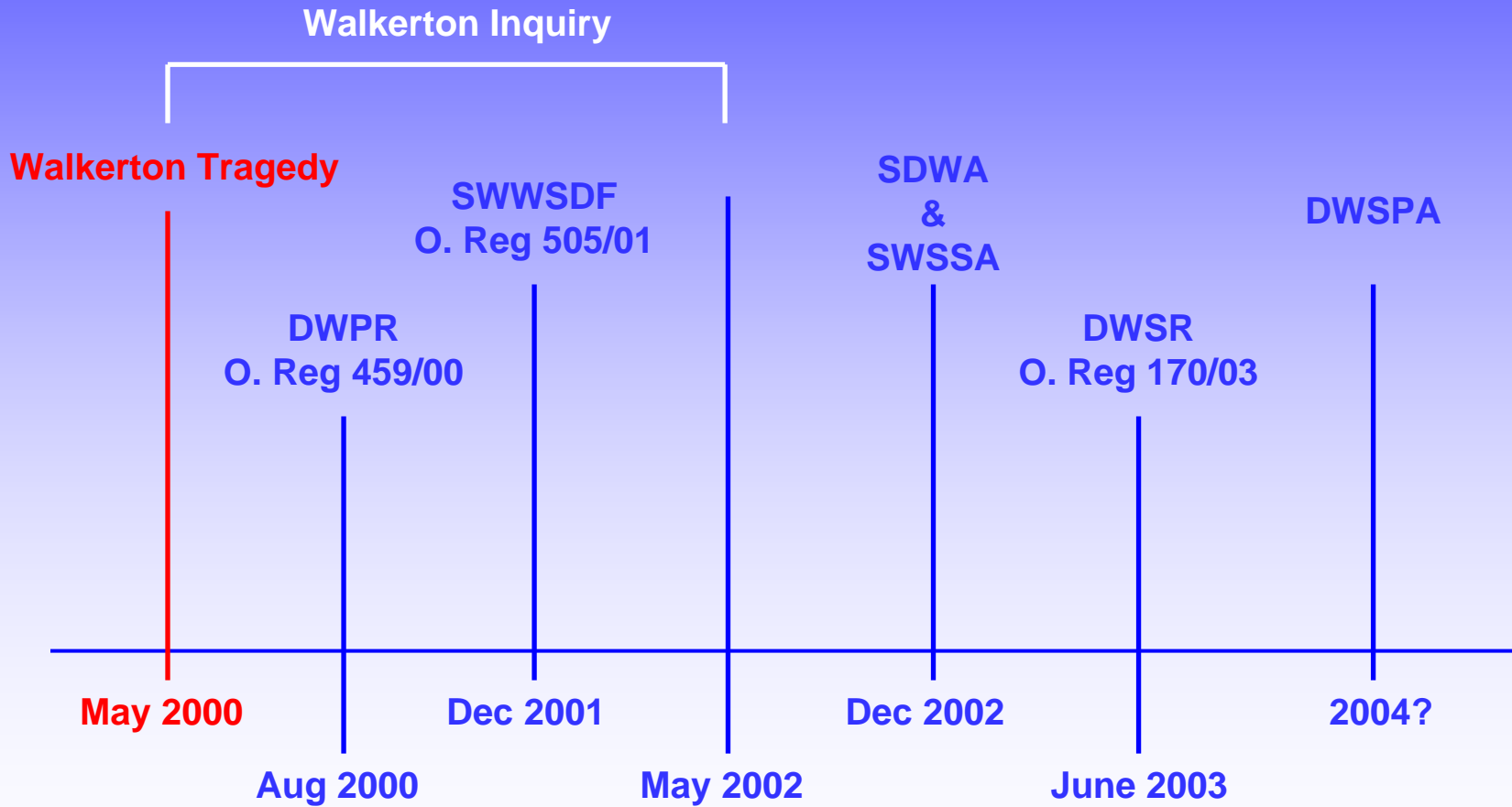
Kresin Engineering Corporation

- Focus on all aspects of municipal engineering
 1. Roads and streets
 2. Water and wastewater treatment
 3. Sanitary and storm sewer pumping/collection
 4. Solid waste management and landfills
 5. Buildings and parks
- Current major projects:
 1. Drinking-water systems
 2. Landfill sites
 3. Municipal infrastructure renewal/upgrading

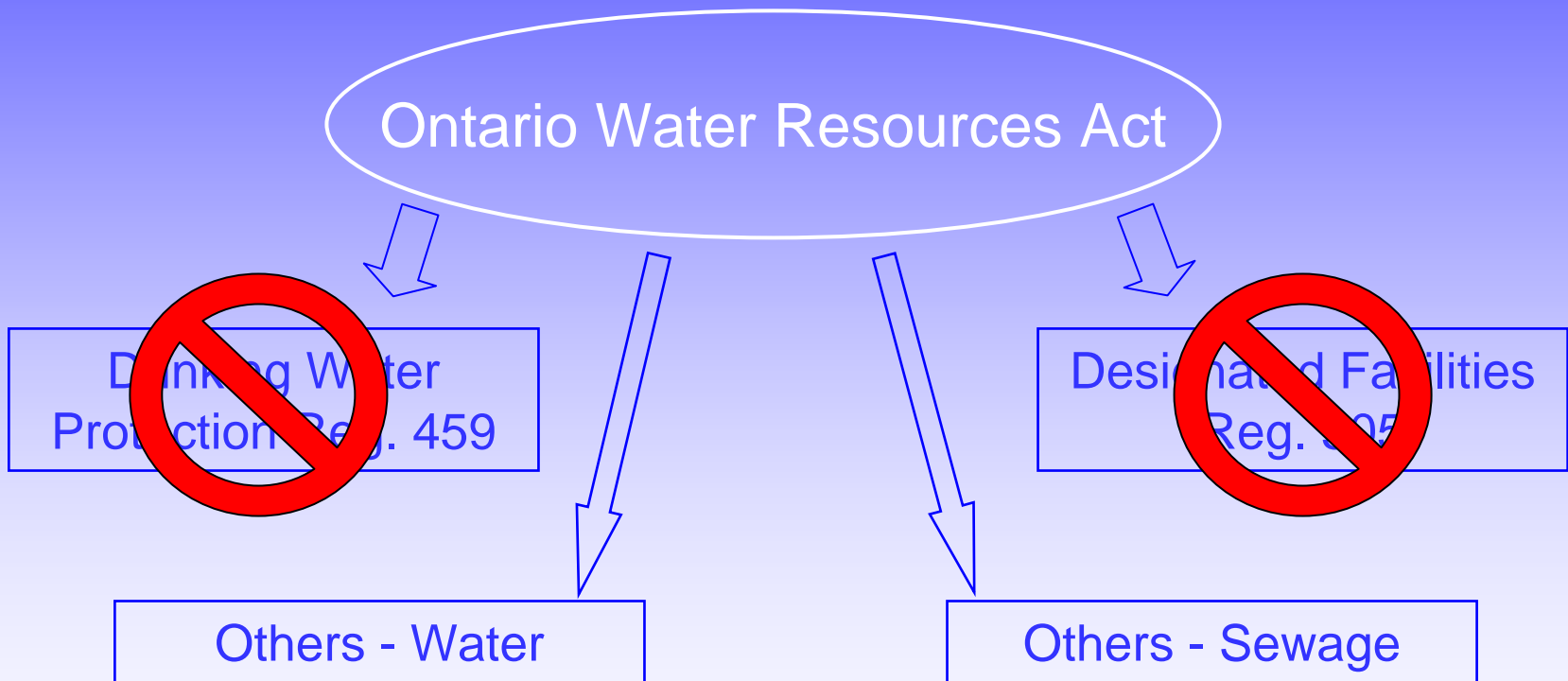
Presentation Outline

- The Last 4+ Years – Regulatory History
- Safe Drinking Water Act (SDWA) and Regulations
 1. Content
 2. Implementation
- Sustainable Water and Sewage Systems Act (SWSSA)
 1. Content
- Drinking Water Source Protection Act (DWSPA)
 1. Content

The Last 4+ Years: Timeline



OWRA and Regulations



OWRA and Regulations



Water Taking and Transfer, Reg. 285/99

Wells, Reg. 903

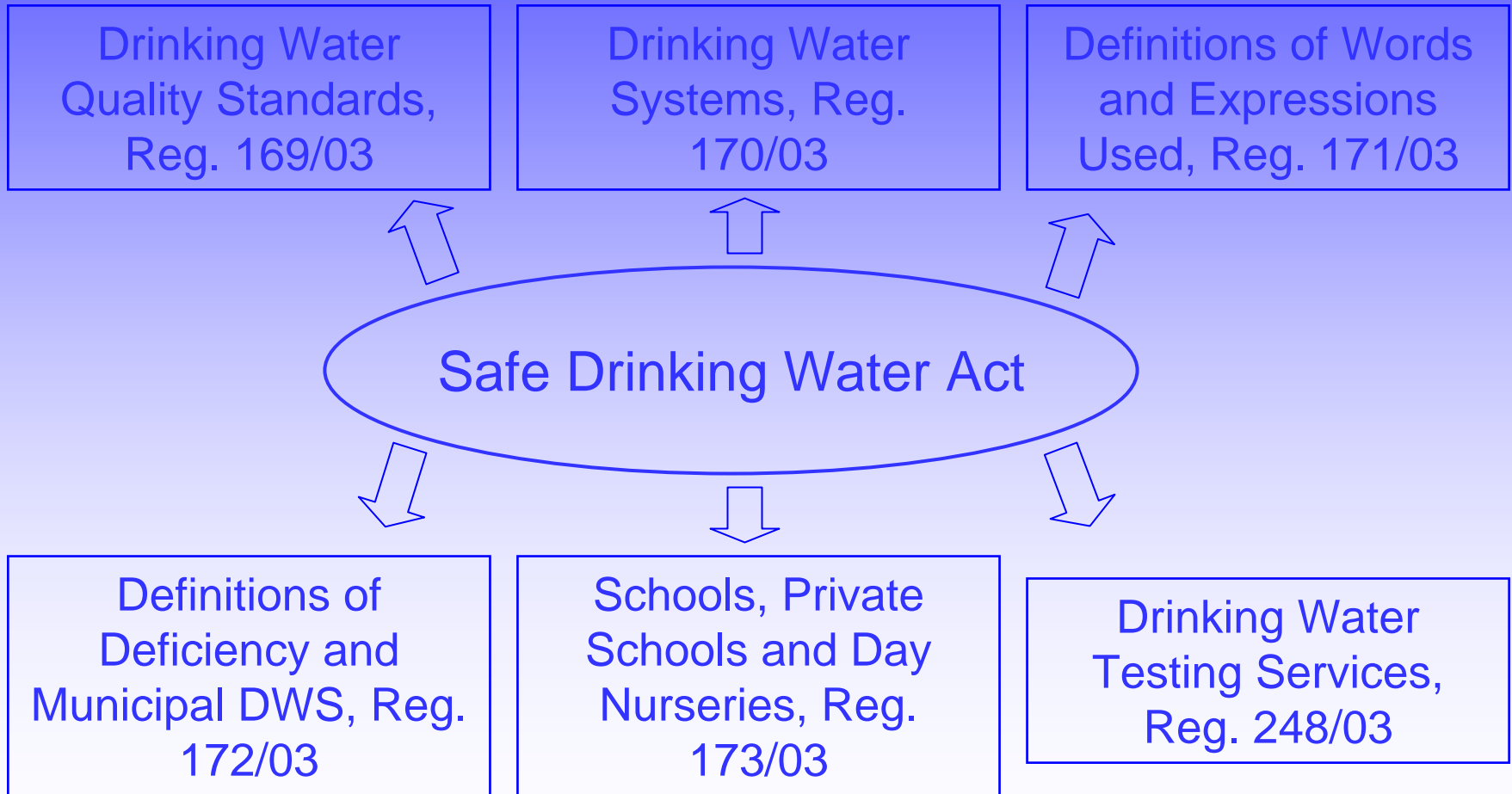
SDWA and Regulations

- Purpose of the Act:
 1. *“To recognize that the people of Ontario are entitled to expect their drinking water to be safe.”*
 2. *“To provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing.”*

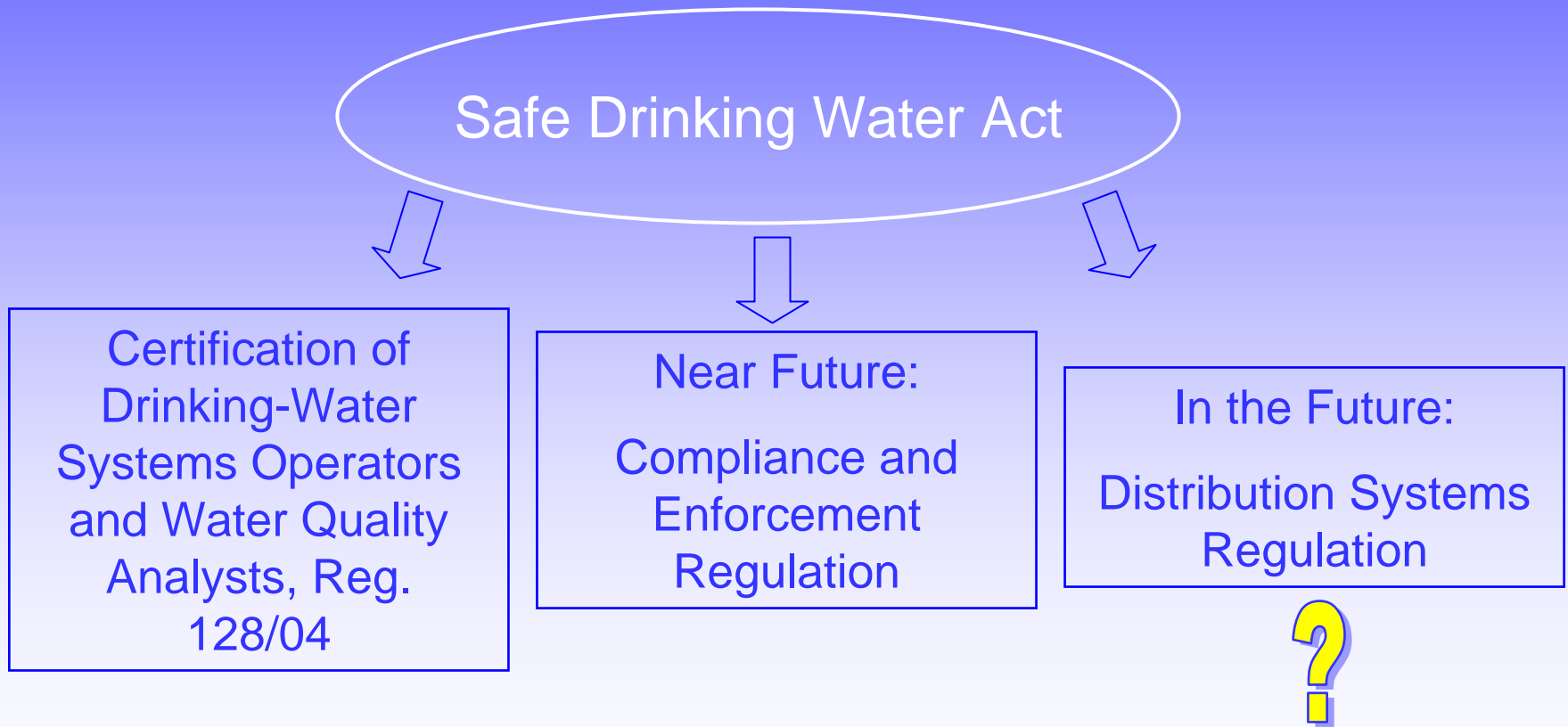
SDWA and Regulations

- Some Major Changes:
 1. Increased water sampling and testing frequency
 2. Accreditation of labs
 3. Public reporting on system operation
 4. Tough penalties for non-compliance
 5. Mandatory certification of operators including periodic recertification
 6. Clear requirements for immediate notification of adverse results
 7. Broad inspection powers to MOE officers

SDWA and Regulations



SDWA and Regulations



SDWA and Regulations

- Drinking-Water Systems Regulation (170/03) defines 8 categories of drinking-water systems and requirements for:
 1. Minimum treatment.
 2. Monitoring.
 3. Maintenance and Operational Checks.
 4. Sampling (parameters and frequency).
 5. Reporting.
 6. Corrective actions.

SDWA and Regulations

- DWS Categories – How are they determined:
 1. Capacity
 2. Risk (i.e. who/what they serve)

- Criteria:
 1. More than 5 connected users
 2. $>2.9\text{L/s}$ or $>250\text{m}^3/\text{d}$
 3. Serving a designated or public facility
 4. Serving residential areas

SDWA and Regulations

- Maintenance and Operational Checks:
 1. Chlorine residual
 2. Turbidity
 3. General systems operation
 4. Based on DWS category

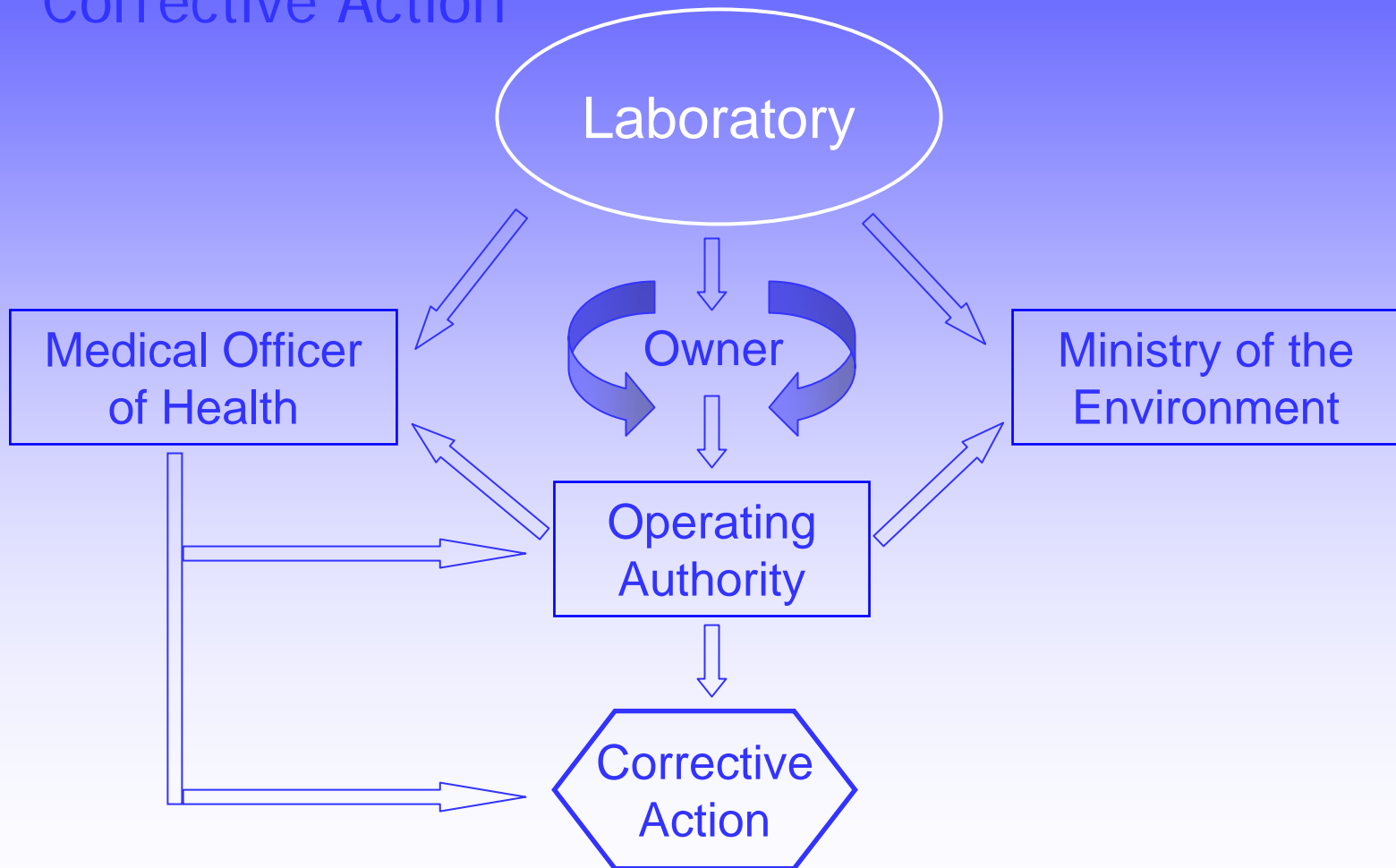
- Sampling:
 1. Microbial parameters in raw, treated and distribution system
 2. Chemical parameters in raw, treated and distribution system
 3. Based on DWS category

SDWA and Regulations

- Reporting
 1. Report to MOE - annually
 2. Report to Owner (Council) – annually
 3. Report to public
 4. Engineer's evaluation – every 5 years
 5. Based on DWS category

SDWA and Regulations

- Corrective Action



SDWA and Regulations

- Criticisms of the DWSR:
 1. Finalized too quickly
 2. Inadequate consultation (5 amendments to date)
 3. Structure:
 1. Not by system category
 2. Negative and confusing wording

SDWA and Regulations

- Example of negative and confusing wording:
 - Subsection 11(18): annual report submission date

*“If section 12 of Ontario Regulation 459/00 and section 15 of Ontario Regulation 505/01 **did not** apply to the owner of a system to which subsection (5) applies, **no** report is required to be given to the Director under subsection (5) until May 31, 2006 and, despite that subsection, the report required to be given to the Director **not** later than May 31, 2006 shall cover the period from June 1, 2005 to March 31, 2006.”*

SDWA and Regulations

- Benefits of the DWSR:
 1. Drinking-water is generally safer
 2. Science based regulation
 3. Systems with less risk to public health are subject to less regulation and delayed implementation

SDWA and Regulations

- Through the DWSR, the MOE attempts to:
 1. Increase public safety.
 2. Match effort to risk.
- Little attempt is made to:
 1. Be clear.
 2. Make our lives easier.

SDWA and Regulations

- Current Municipal Focus under DWSR:
 1. Compliant operation
 2. Completion of outstanding upgrades
 3. Identification and implementation of upgrades to municipal non-residential systems
 1. Community Centres
 2. Libraries
 3. Airports
 4. Town Halls

SDWA and Regulations

- Treatment Deadlines:
 1. Dependant on capacity
 2. Large Systems (>2.9L/s):
 1. Surface water – December 31, 2004
 2. Ground water – December 31, 2005
 3. Small Systems (<2.9L/s):
 1. Surface water – July 1, 2005
 2. Ground water – December 31, 2006

Sustainable Water and Sewage Systems Act

- No regulations made or posted
- Not yet in force
- Report on full cost of services
- Full cost recovery plan
- Reporting on status of implementation

Sustainable Water and Sewage Systems Act

- Criticisms:
 1. May regulate the sources of revenue that a municipality can include in their plan
 2. Associated costs with developing reports and plans
 3. Potential conflicts with sections of the Municipal Act

Drinking Water Source Protection Act

- Posted on EBR June 23, 2004
- Comment period ended August 22, 2004
- Watershed-based source protection
- Key recommendation - Walkerton Inquiry

Drinking Water Source Protection Act

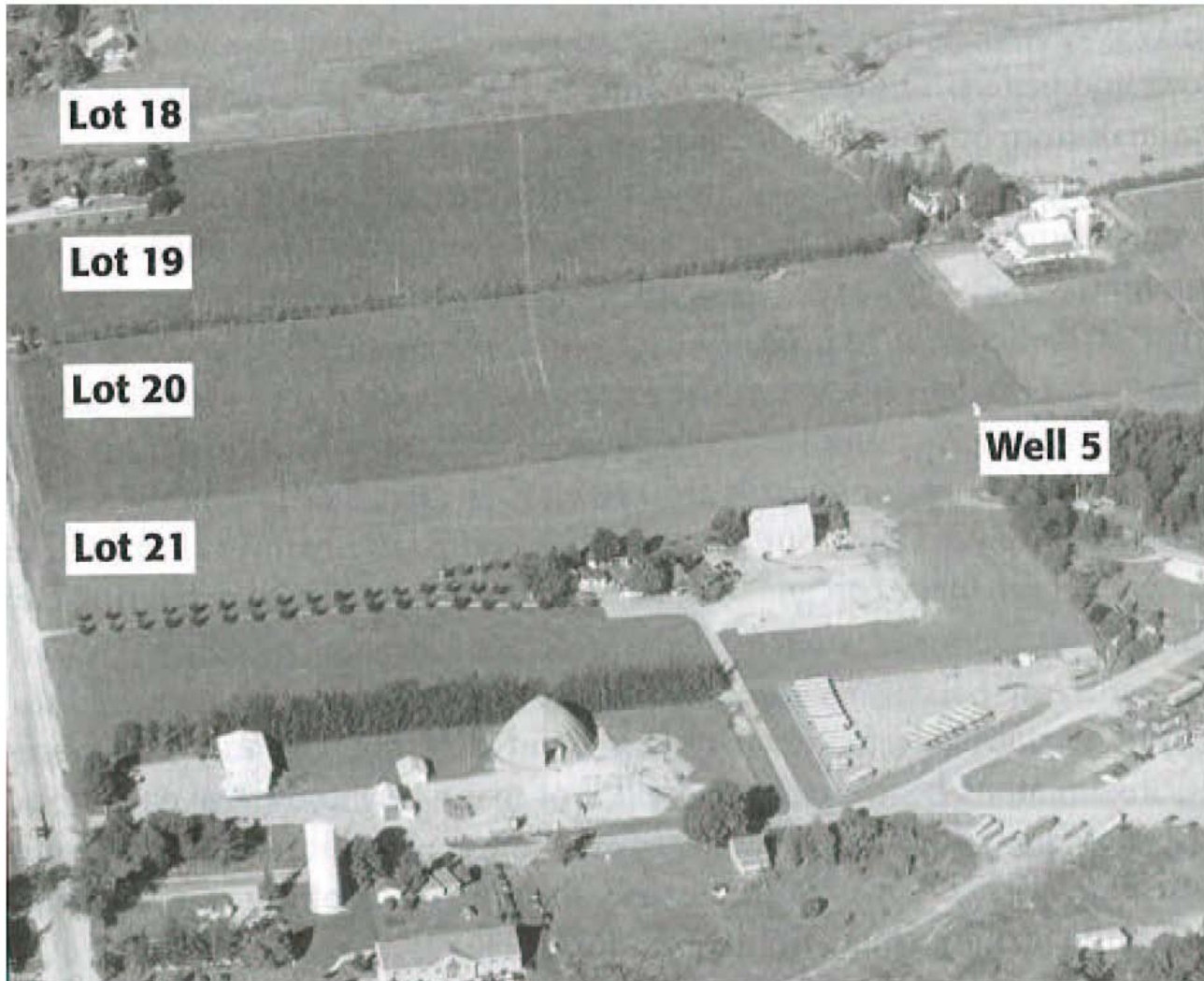
- Considering what we have learned:
 1. Walkerton – contamination can overwhelm
 2. North Battleford – contamination can evade
- How do we prevent these situations?
 1. Multiple barrier protection

Drinking Water Source Protection Act

- **Source Water Protection**
- Barriers established by SDWA and Regs:
 1. Treatment (ODWS, technology, training)
 2. Distribution (chlorine residual testing)
 3. Monitoring (auto monitors and alarms)
 4. Response (corrective action)

Source Protection Areas:





Location of Well 5 Walkerton Report

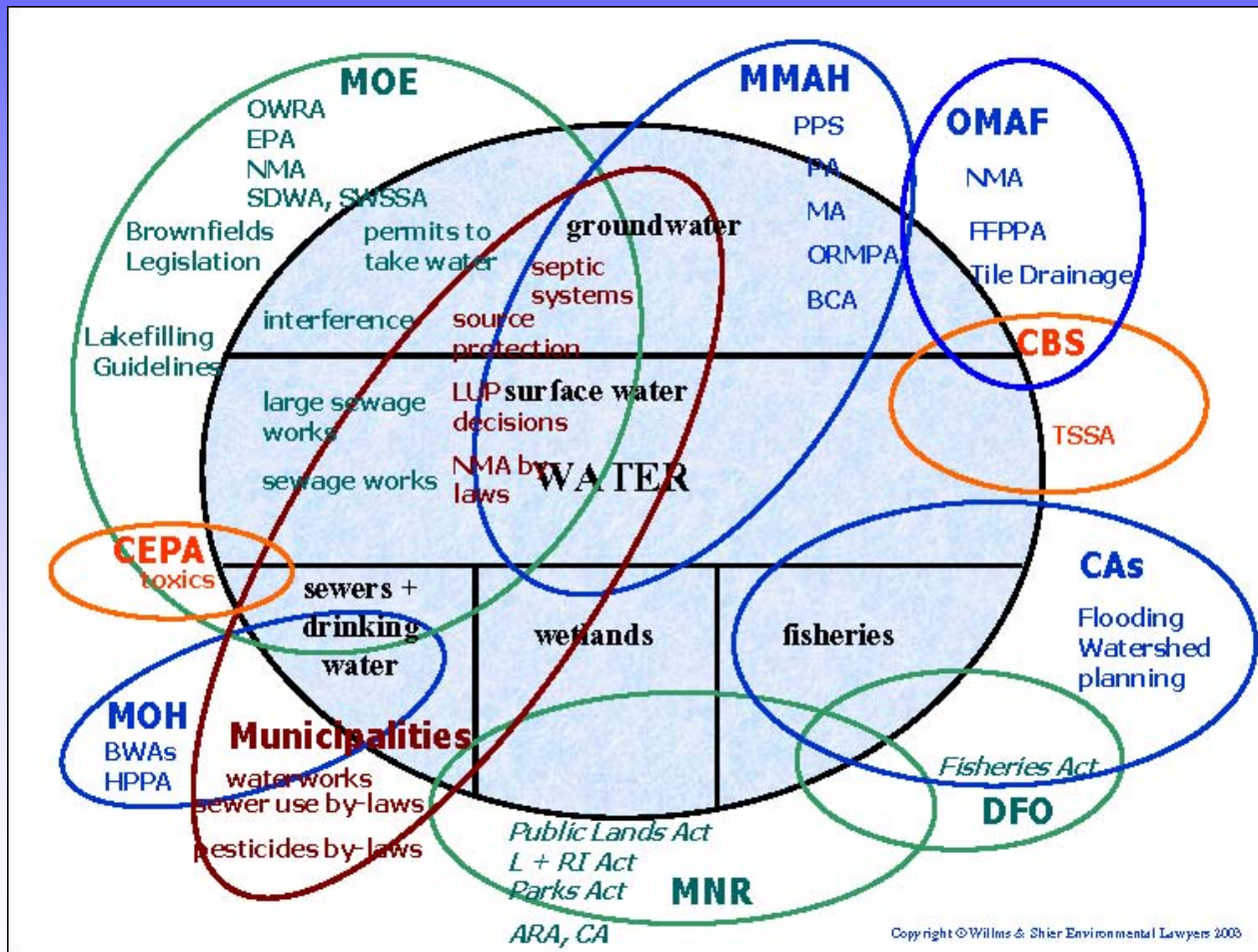
Drinking Water Source Protection Act

- Establishment of “source protection areas” and “source protection regions”
- “source protection boards” and “source protection committees”
 1. Provide scientific, technical and administrative resources
 2. Coordinate the preparation of ToR, assessment reports and source protection plans
 3. Any other prescribed function

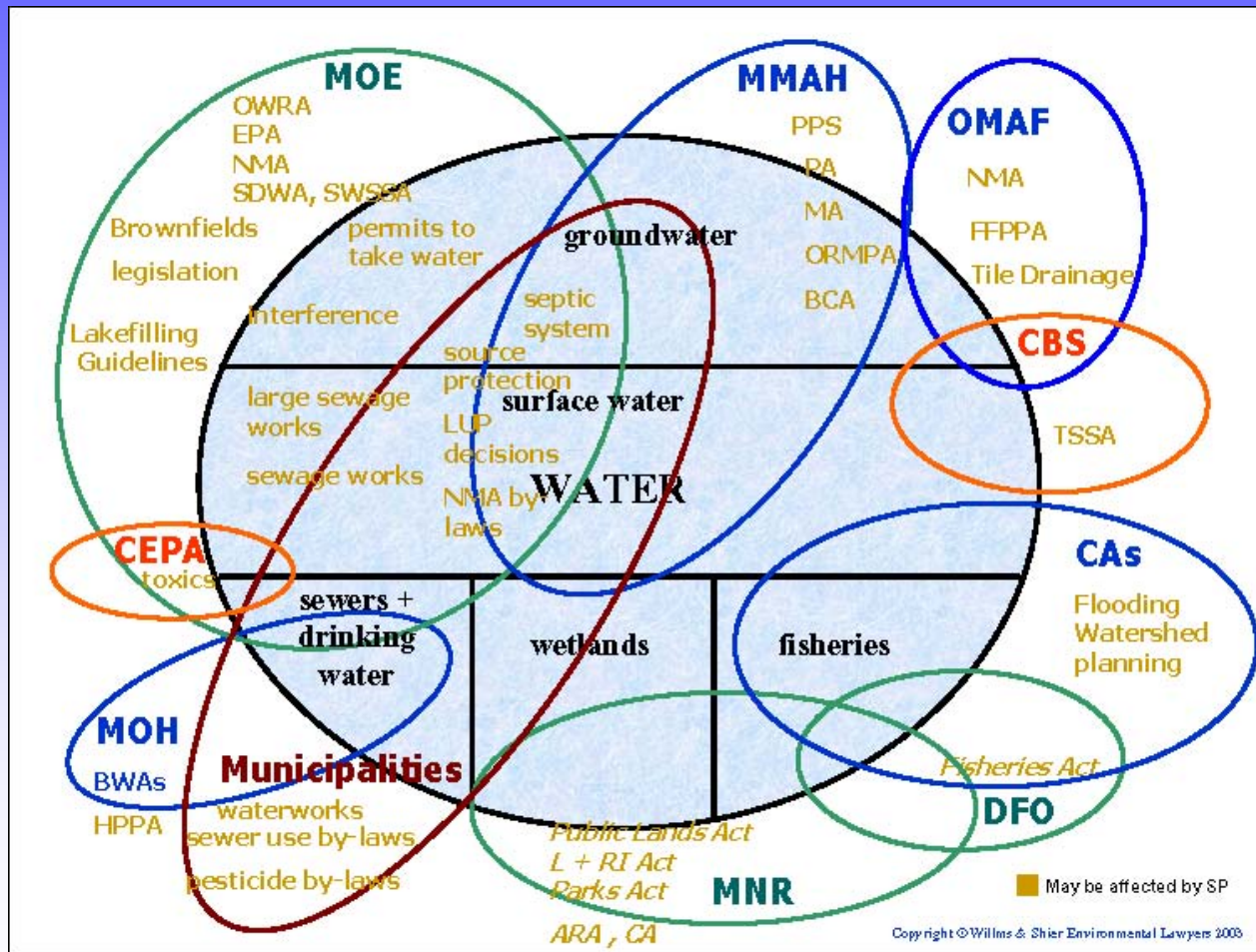
Drinking Water Source Protection Act

- 2 “Big” Issues / concerns:
 - Who will fund development and implementation of SWPPs?
 - How can municipalities influence activities and decisions occurring outside their boundaries?

Water-Related Jurisdictions:



Water-Related Jurisdictions: Affected by DWSPA



What's Next?

- Recommendations of the Walkerton Inquiry:
 1. All addressed to varying degrees
- Look to USEPA and US Federal SDWA
 1. Tougher turbidity rules
 2. Tougher groundwater rules
 3. Tougher DBP rules
- Safe Waste Water Act?

Some Interesting Facts

- Approximately 82% of Ontario's population (about 9 million) obtain drinking-water from municipal systems.
- About 23% of Ontario's population relies on groundwater for drinking-water.
- Of the approximately 627 municipal water works in Ontario, 299 use GW, 225 use SW and 3 use a combination.

References

- Right to the Source on Source Water – Willms and Shier, 2004
- An Evening Public Forum on Source Water Protection – Pollution Probe, 2004
- Ontario's Drinking Water Regulation Content and Implementation – Steve Burns, P.Eng., 2004
- A Conservation Ontario Perspective on Source Protection Planning – Conservation Ontario, 2003
- Region of Peel Web Site
- Green Ontario Web Site
- USEPA Web Site
- Referenced Acts and Regulations

Discussion

