

# Ontario Ministry of the Environment Ensures Safe Drinking Water with Siebel Public Sector



Ontario

The Ontario Ministry of the Environment (MoE) safeguards the quality of drinking water throughout the Province of Ontario. As a result of new legislation in 2002, the MoE needed to implement more stringent inspection processes to comply with the new law. Using Siebel Public Sector and the Clytan Compliance Solution Model, the MoE and integration partner Clytan, Inc. developed an inspection case management solution to improve reporting, tracking, and follow-up procedures. The new application streamlines the inspection process and reduces the margin for error, while providing better data on water quality in the province. As a result, the MoE has been able to conduct effective inspections and track enforcements to achieve its objective of minimizing the number of facilities that do not comply with safe drinking water regulations.

The mission of the Drinking Water Management Division of the Ministry of the Environment (MoE) is to protect drinking water quality for the more than 12 million residents in the Province of Ontario. The province has approximately 750 large municipal residential drinking water systems that provide drinking water to more than 80 percent of the population. The remaining 20 percent obtain their drinking water from small, residential systems that are privately owned, including trailer parks, gas stations, garages, and small restaurants. The Division was established under the Safe Drinking Water Act of 2002 to develop, support, and manage programs to ensure that all regulated drinking water systems within Ontario are taking measures and adhering

to strict regulations to protect the quality of their water.

In 2000, when contaminated drinking water was discovered, a special inquiry was undertaken to review existing water quality testing and compliance and to make recommendations for improvement. A Water Project Office, composed of a team of specialists, was created by the MoE to implement the 100+ recommendations as a result of the inquiry. Early on, it became evident that existing processes for managing drinking water and drinking water facility inspections were not integrated in a way that would allow for the reporting, tracking, and follow-up required by the MoE to ensure compliance. In addition, the Drinking Water

## Ontario Ministry of the Environment

Ensuring safe drinking water for the citizens of Ontario through standardized testing and compliance

### Industry

Public sector

### Geographies

Ontario, Canada

### Business Challenges

- Integrate existing inspection processes while incorporating more than 100 new compliance regulations
- Standardize testing procedures
- Provide reliable reporting and analysis

### Solution

Implemented a sophisticated and streamlined inspection case management application powered by the Clytan Compliance Solution and Siebel Public Sector

### Benefits

- Reduced the margin for error dramatically through standardized testing and compliance procedures
- Cut the number of noncompliance orders given to municipal residential drinking water facilities by 75 percent
- Achieved 99.6 percent rate of water quality tests meeting the new standards within two years
- Realized high level of end user satisfaction with new system

### Solution Components

Siebel Public Sector

Database: Oracle 9i Enterprise Server  
Hardware: Dell Quad-Processor Server; Laptops running Siebel Mobile Web Client

### Siebel Alliance Partner

Clytan, Inc.

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*“We have been able to deliver a program that ensures safe drinking water through standardized testing and compliance while enabling the inspectors to apply their professional expertise in the field when situations are more complex.”*

—Paul Mergler,  
Project Manager for the  
Drinking Water Program  
Management Branch  
of the Drinking Water  
Management Division

Management Division was mandated to inspect the 60 laboratories where drinking water samples are tested.

As a result, the MoE needed an application that would enable the gathering, analysis, integration, and management of data from the beginning of the process with water testing and facility inspections to laboratory inspections and ultimately regulatory compliance. In 2003 the Laboratory and Waterworks Inspection System (LWIS) was born.

“Our primary goal is to ensure safe drinking water, but we also need to demonstrate the efficacy of our programs to our customers, including the general public, the Minister, the Chief Drinking Water Inspector, the field agents, and laboratories,” says Paul Mergler, Project Manager for the Drinking Water Program Management Branch of the Drinking Water Management Division. “To accomplish this we needed a streamlined solution that would allow us to incorporate best practices in the areas of inspection processes, incident management, and audit functionality with tougher legislation and compliance, and we needed to enable our constituents to get the information they need when they need it.”

### **The MoE, Clytan, and Siebel: A Three-Way Partnership**

An internal analysis of how drinking water inspections were conducted led Mr. Mergler’s team to conclude that the business processes involved were similar to those of a sales and service organization. By applying customer relationship management (CRM) best practices to the inspection business processes, they realized that a CRM solution would be the ideal application upon which to build the LWIS.

After an evaluation of CRM solutions from major technology vendors, the MoE selected

Siebel Public Sector. Working with Clytan, Inc., a Siebel integration partner specializing in the development of compliance assurance models for government applications, the LWIS team configured the Siebel application to integrate with the MoE’s legacy applications and provide a solution that met the inspection case management and reporting needs of the MoE.

MoE inspectors carry laptop computers running Siebel’s industry-leading mobile application to inspection sites. This enables immediate access to LWIS information about water treatment facilities as well as standard procedures on critical questions, answers, and follow-up activities for every type of facility and water source combination, all predicated on legislation.

“Phase one of the LWIS was the result of a dynamic, three-way collaboration between Siebel, the MoE, and Clytan,” explains Collin Noronha, Director of Consulting for Clytan, Inc. “From the start, the concept of a CRM-based application was totally new to the MoE environment. Where business sees customers and salespeople, government sees citizens, inspectors, and inspections. In phase one, we applied the specialized Clytan Compliance Solution Model and worked together with the ministry to develop a custom model for inspections that matched existing processes within the MoE and met the new legislative requirements while introducing new business practices. This became the foundation for what would become the more sophisticated protocol that exists today.”

The initial phase of the LWIS application consisted of a set of questions, answers, and activities for different types of routine inspections. This application was deployed to field inspectors for approximately one year to test the inspections process and discover requirements for the second phase,

which expanded the capabilities for handling situational anomalies and drinking water incidents.

### **Automating Legislation and Ensuring Compliance**

Armed with the results of the phase one field test, the team was ready to enhance the LWIS in phase two by developing a sophisticated and intelligent protocol that automated the generation of appropriate questions, answers, and wording based on preset parameters. New procedures for managing and responding to inspection irregularities, drinking water incidents, and the issuing of enforcement orders were also included in the system.

The result is an elegant and streamlined inspection case management application that incorporates the MoE's inspection protocol with Clytan's compliance model used extensively for the LWIS—all powered by Siebel. The system has more than 220 standardized questions each inspector is required to ask during a site inspection. Depending on the type of facility involved, appropriate questions are generated automatically by the system for that specific case. Questions are based on legislative or regulatory requirements and also include categories to capture operational "best practices." Based on the responses provided during the inspection interview, the system dynamically generates a number of additional questions that allow the inspector to probe more deeply into specific areas. The answers are entered into the LWIS via a laptop computer and synchronized into the system when the inspector returns to the office. The system then produces an inspection report based on the observations noted.

"There are different kinds of inspections done to different types of systems with different parameters," says Mr. Noronha.

"You could have a detailed inspection, a stand-alone inspection, a focused inspection, or an ad hoc inspection being conducted with a large municipal water treatment plant and a small nonmunicipal trailer park. Each facility may have a different water source including surface water, underground water, or a combination of both. The beauty of the LWIS application is that, depending on the combinations of parameters, it has the built-in intelligence to guide the inspectors with relevant questions along with their respective suggested wordings for responses, for completing their inspections reports and, where necessary, issuing enforcement orders."

### **Empowering Field Inspectors with Siebel**

Adverse water quality incidents happen when a MoE standard has not been met by a facility. Not usually serious, these incidents could include test results for micro-organisms such as E. coli, trace chemicals such as pesticides and lead, operational tests for turbidity (water cloudiness) and chlorine level, and other observations that may result in unsafe drinking water. As a further enhancement during phase two, all potential water quality incidents were catalogued and integrated into the system. If an incident is discovered, it is tracked within the application and, if necessary, the system may issue orders for the facility to comply with either a regulation or a best practice. The LWIS enables the preparation of those orders, tracks them to ensure compliance, and, if necessary, escalates the issue to the authorities should the order not be addressed by the facility or owner.

In addition to the system-generated questions and answers, the LWIS gives inspectors the ability to make their own observations in the application. Editorial comments can be entered and are in turn

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#### **Customer's Implementation Advice**

- Invest time in documenting business processes before building the application
- Ensure business and IT are both involved up front and participate in key decisions throughout the project
- Empower front-line business users to make decisions and communicate clearly with management

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translated by the application and produced in the report in a readable format.

“The result is an application that reduces the margin for error dramatically,” explains Mr. Mergler. “We have been able to deliver a program that ensures safe drinking water through standardized testing and compliance while enabling the inspectors to apply their professional expertise in the field when situations are more complex.”

After just over two years of operation, the information gathered and analyzed by the LWIS has proven that the program of planned, targeted, and ad hoc inspections is minimizing the number of adverse water quality incidents reported each year.

“There’s a type of 360-degree circle of information coming in from annual inspections, with data being analyzed and reports being generated. Then we conduct focused inspections quickly for those facilities where the potential for risk is high,” adds Mr. Noronha.

**Providing Safe Drinking Water throughout the Province**

The LWIS, which currently supports 100 drinking water inspectors, 13 supervisors, six laboratory inspectors, and administrative staff, has been well received by the users, the Division, and the MoE. Long-time employees have stated that the development and implementation of the LWIS is the best project experience they have had in more than 20 years. This overwhelming approval resulted from involving everyone right from the start to ensure their business needs were understood and that they were able to offer their ideas as to how the application should work. Additionally, there was unanimous praise for the consulting team’s professionalism, communication, and responsiveness throughout the project.

Externally, the benefits of the system were demonstrated to the public in the Chief Drinking Water Inspector of Ontario’s semi-annual report released in May 2005. The results showed that for the two years since the implementation of the LWIS, more than 99.6 percent of the water quality tests met the standards set in the Safe Drinking Water Act of 2002. In the 2003–04 period, 255 orders for a variety of noncompliance issues were given to municipal residential drinking water systems, while in 2004–05 only 65 orders were issued.

Key to the unprecedented success of the project was the partnership among Siebel, Clytan, and the MoE. MoE senior management was involved from the start. They clearly articulated their requirements, made important decisions quickly, and provided ongoing support to the team. Clytan’s expertise and facilitation in the integration of its specialized compliance model with Siebel Public Sector applications ensured that the solution fit the legislative, compliance, and reporting requirements of the MoE while giving the inspection team an easy-to-use, mobile solution that guided them through the often complex inspection process.

“With Siebel Systems and Clytan, our solution for drinking water inspections can now be applied to other ongoing inspection businesses in the MoE like soil, air quality, and waste management,” enthuses Mr. Mergler. “We’ve proven that by leveraging the power, flexibility, and functionality of Siebel’s front-office applications for a nontraditional business activity like compliance, government ministries now have access to innovative solutions that truly serve the interests and needs of their citizens.”