

Hach Water Information Management Solution[™] (WIMS[™]) Columbus Case Study *The Benefit of a Centralized Database*

Challenge:

The City of Columbus Department of Utilities, OH (CDoU) consists of the Department of Power and Water (DoPW) and the Department of Sewerage Drainage (DoSD). The DoPW has three water plants with its own central laboratory; the DoSD has two wastewater plants and its own central laboratory. While the DoPW stored its laboratory data in an in-house developed Access database; the DoSD laboratory's data was stored in a commercial Laboratory Information Management System (LIMS). Operations sampling data was maintained in various formats ranging from spreadsheets, hardcopy notebooks, and databases. As a result, numerous labor hours were dedicated to manually prepare state regulatory compliance reports and data was cumbersome to trend and use for predictive analysis. Magnifying the situation was news received by the DoSD that its LIMS would no longer be supported by its vendor.

Initially, the DoSD laboratory sought to merely replace its existing LIMS in response to the expired support. However, the laboratory management from the DoSD and DoPW recognized that this was an ideal time to obtain a collective LIMS and to establish consistency in database management and support. The project objectives evolved from establishing a central LIMS for both laboratories to improved data usage and operational efficiency for the treatment plants and greater access of environmental data by other entities within the entire CDoU. A challenge that the CDoU faced was to implement a data management solution that satisfied the technical and informational objectives, as well as the stakeholders from the eight entities (laboratories, plants, and IT department).

Solution:

With the assistance of an outside consultant, the CDoU team conducted a comprehensive review and analysis of information flows, laboratory methods, IT standards, reporting needs, operator decision-making, SCADA usage, and regulatory compliance issues via interviews, process/data mapping, and quantitative decision analysis.

The assessment revealed that the CDoU required a LIMS that could be configured to serve the needs of both the DoPW and the DoSD (the DoPW conducts more routine analysis; the DoSD more non-routine analysis), as well as a plant operations and reporting tool that could integrate SCADA and laboratory data to automate the regulatory reporting process.

The team of PerkinElmer and Hach Company was selected to provide the CDoU with the implementation of a commercial off-the-shelf LIMS (LABWORKS), integrated with a commercial data management tool (Hach WIMS[™]).

Benefits:

Integration of the LIMS and WIMS systems provided numerous benefits to the CDoU. Operators now have the ability to quickly enter and retrieve sample results local to their plants, but still maintained within a central laboratory database. The automated regulatory reporting process works seamlessly with the Ohio EPA on-line format and has provided improved reporting and trending benefits for the water and wastewater utility. In addition, the success of the combined systems has enhanced the relationship between the entities and their stakeholders.

The greatest feat of the project was the reduction of regulatory reporting time by almost twelve (12) days through the Hach WIMS interface to the Ohio EPA online report.