

# Exsys Case Study



## Environmental Compliance Planning

*California State Water Resources Control Board and Instant Reference Sources, Inc.*



California's State Water Resources Control Board requires that all funded monitoring projects have acceptable Quality Assurance Project Plans (QAPPs) based on U.S. EPA's format and criteria. To meet this requirement, the California EPA used Exsys Corvid<sup>®</sup> to develop an environmental monitoring knowledge automation system for its Surface Water Ambient Monitoring Program (SWAMP).

The SWAMP Advisor system assists grant applicants through the process of writing an acceptable QAPP. The system is capable of addressing multiple lines of inquiry (or problem statements/objectives). Many monitoring projects have more than one line of inquiry. For example, they may plan to monitor water characteristics such as pH, turbidity, temperature, etc. using real-time field measurements; and also collect water samples for analysis of pesticides, PCBs, metals, or E. coli, etc. for laboratory analyses. Each line of inquiry requires different Measurement Quality Objectives (MQOs) and uses very different sampling and analytical techniques with completely different performance criteria. The SWAMP Advisor "cycles through" applicable elements of a QAPP and analyzes them individually. There is no limit to the number of lines of inquiry that a project may have and still be addressed by the SWAMP Advisor.

The system provides 3 levels of capability: (1) a top/executive level with brief answers, (2) an educational level with in-depth information, and (3) a research level with links to other documents, slide shows, forms, and Internet sites. The system can also use Vocal Explanations. A tab is provided to indicate that an audio explanation is available for the specific segment of the system. The advantage is that sometimes verbal explanations are better and more effective than providing the same information that has to be read. This reduces some explanations that may require lots of text. The user's browser loads the audio file, and then a program such as QuickTime or RealPlayer will play the audio file.

One significant feature in the performance of the SWAMP Advisor is Corvid's ability to write a project-specific QAPP of up to 24 chapters. The draft QAPP sections are sent from California EPA's server to the user's personal computer in a rich text format. This allows easy editing by the user who can then save the final document in MS Word format.

Using Exsys Corvid, the SWAMP Advisor was constructed so that the information can be easily modified or customized to fit other state's requirements and objectives. Thus other states and/or organizations can leverage time and experience from the California system. Rather than "re-inventing the wheel," they can utilize resources wisely to customize similar advisors. The software has been shown to write superior QAPPs that will save organizations the time and expense of making extensive edits and re-evaluating unacceptable QAPPs, while at the same time ensuring that all of EPA's and the organization's criteria are adequately addressed.

The SWAMP Advisor sample system can be run from:

**[http://dwr.mlml.calstate.edu:8080/CorvidRpt/SA2\\_Start.html](http://dwr.mlml.calstate.edu:8080/CorvidRpt/SA2_Start.html)**



© Exsys, Inc. All rights reserved. Product names and trademarks may be trademarks and/or registered trademarks of their respective companies. [www.exsys.com](http://www.exsys.com)