

SWAMP ADVISOR: A COMPUTER-BASED TOOL FOR DEVELOPING QAPPS

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ABSTRACT

A quality assurance project plan, or QAPP, is a document that outlines the procedures that a monitoring project will use to ensure that samples which participants collect and analyze, the data they store and manage, and the reports that they write are of sufficient quality to meet project-specific needs. It is an invaluable planning and operating document that details a project's methods of data collection, storage and analysis. A QAPP thus helps data users and monitoring project leaders ensure that the collected data will meet their needs and that the quality control procedures needed to verify this are built into a project from the beginning.

In addition to all US EPA-funded projects, the California Surface Water Ambient Monitoring Program (SWAMP) and SWAMP-funded projects, as well legislatively-mandated projects in California, are required to develop QAPPs before sample collection begins. Developing a QAPP is a dynamic, interactive process that should ideally involve quality assurance experts and project managers. The SWAMP Advisor is an expert knowledge system designed to encourage and facilitate the development of QAPPs by providing required information and clearly presenting explanations and examples; using it ensures that no important details are omitted.

According to EPA guidance, 24 distinct "elements" (sections) can be included in a QAPP. However, not all may be necessary for all programs. Which elements are included in a QAPP depends on a project's goals, objectives, scope, and data uses. For programs that carry out many and different monitoring projects, however, the information contained in 24 elements may be similar among the various projects it is undertaking. Therefore, some of the information in one of the monitoring project's QAPP could be applicable for similar monitoring project's QAPPs with minor modifications.

The SWAMP Advisor facilitates producing QAPPs by suggesting information that may be useful in them. It also automatically produces a written draft of a QAPP that is easily edited for a final version. In addition, it automatically generates tables with acceptable Measurement Quality Objectives (MQOs) and related QA/QC data that are specific for the analytes being monitored. It thus reduces human errors that could be generated from copying and pasting information from one project's QAPP to another and ensures that the information used is applicable, complete, and technically rigorous. By providing a draft document that is written by the software, it helps users to be more efficient and to produce acceptable and scientifically defensible QAPPs with minimum re-writing.

KEYWORDS

SWAMP Advisor, QAPP, elements