

# Understanding and Implementing SWAMP Comparability: **Quality Assurance**



## **SWAMP Quality Assurance Help Desk**

[swampqa@mlml.calstate.edu](mailto:swampqa@mlml.calstate.edu)

Quality Assurance Research Group  
Moss Landing Marine Laboratories  
Moss Landing, California



# State Board Webinar Schedule

- ✓ SWAMP Comparability: Overview\*
  - June 25, 2009: 11-12 (Valerie Connor)
- SWAMP Comparability: Quality Assurance
  - July 2, 2009: 11-12 (Quality Assurance Help Desk)
- SWAMP Comparability: Data Management
  - July 23, 2009: 11-12 (Data Management Help Desk)

\* Slides will be posted



# Introduction

- SWAMP Comparability
- *The Surface Water Ambient Monitoring Program Quality Assurance Program Plan* (SWAMP QA Plan)
- Measurement Quality Objectives (MQOs)
- Holding Times
- Quality Assurance Project Plan (QAPP) Tools
- Resources



## SWAMP Comparability: FAQ

- How is SWAMP comparability defined?
- Where do I find the two documents that are the basis for SWAMP comparability?
- Are there any tools devoted to SWAMP comparability?



## SWAMP Comparability: Definition

- Adherence to two SWAMP documents:
  - ✓ *Surface Water Ambient Monitoring Program Quality Assurance Program Plan (SWAMP QA Plan)*
  - *The Surface Water Ambient Monitoring Program Database Management Plan\**

\* Webinar: Thursday, July 23rd



## SWAMP Comparability: Tools

- SWAMP Help Desk
  - Specializing in QA and data management
- SWAMP Comparability Fact Sheet
  - Next slides...



# SWAMP Comparability: Help Desk

- Phone: (206) 525-05491
- Email: [swampqa@mlml.calstate.edu](mailto:swampqa@mlml.calstate.edu)
- Services:
  - Directs users to appropriate tools, resources, or contact information
  - Clarifies SWAMP's QA requirements
  - Advises QAPP creation





# SWAMP Comparability: Website Step #1

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/)

The screenshot shows a Windows Internet Explorer browser window displaying the SWAMP website. The address bar shows the URL [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/). The website header includes the California Environmental Protection Agency logo and the text "STATE WATER RESOURCES CONTROL BOARD". A navigation menu contains links: Home, About Us, Public Notices, Board Info, Board Decisions, Water Issues, Publications/Forms, and Press Room. Below this is a green banner with "Programs | Available Documents | Hot Topics |". The main content area features a "SWAMP Surface Water Ambient Monitoring Program" banner. Below the banner is a section titled "SOUND SCIENCE FOR INFORMED WATER QUALITY MANAGEMENT" with a sub-menu: Welcome!, About, Tools, Reports, Contacts, Links. The "Tools" sub-menu is expanded, showing a list of links: Monitoring & Assessment Plans, Data Sources, Comparability (circled in red), Tool Development, Methods, Data Management, Quality Assurance, and Indicator Development. The left sidebar contains a "GOVERNOR SCHWARZENEGGER" section with a "Visit his Website" link, and a "SWAMP Resources" section with links: Home, About, Tools, Reports, and Contacts. The bottom of the browser window shows the Windows taskbar with the Start button, several open applications (Internet Explorer, Microsoft PowerPoint, State Water Resources Control Board), and the system clock showing 10:13 PM.

State Water Resources Control Board - Windows Internet Explorer

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/)

File Edit View Favorites Tools Help

State Water Resources Control Board

CA.GOV CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

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Programs | Available Documents | Hot Topics |

GOVERNOR SCHWARZENEGGER  
Visit his Website

Home → Water Issues → Programs → Swamp

SWAMP  
Surface Water Ambient Monitoring Program

SOUND SCIENCE FOR INFORMED WATER QUALITY MANAGEMENT

Welcome! About Tools Reports Contacts Links

→ Monitoring & Assessment Plans  
→ Data Sources  
→ **Comparability**  
→ Tool Development

→ Methods  
→ Data Management  
→ Quality Assurance  
→ Indicator Development

SWAMP  
Surface Water Ambient Monitoring Program

SWAMP Resources

→ Home  
→ About  
→ Tools  
→ Reports  
→ Contacts

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/tools.shtml](http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml)

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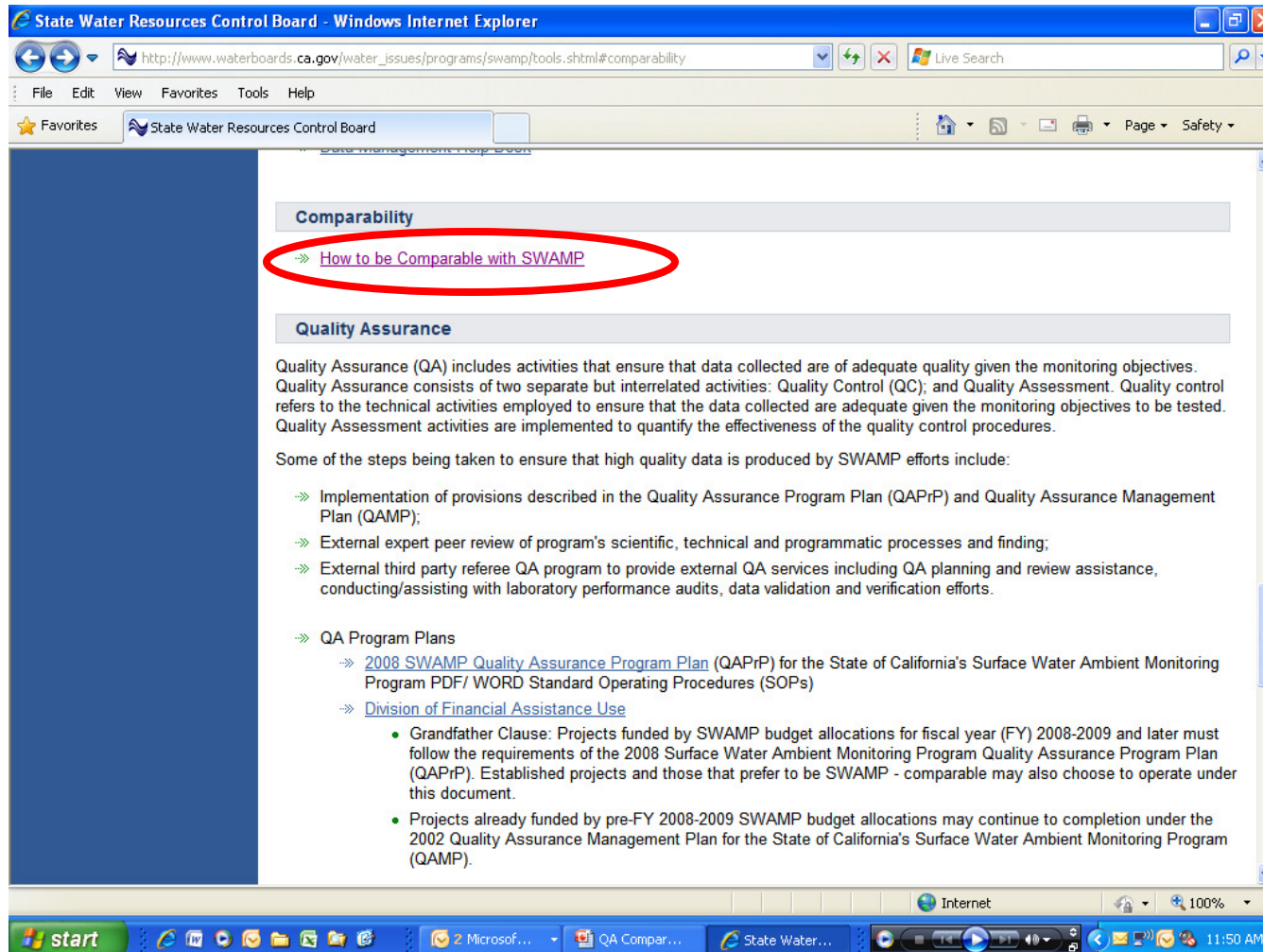
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# SWAMP Comparability: Website Step #2



# SWAMP Comparability: Website Step #3

The screenshot shows a Windows Internet Explorer browser window displaying the SWAMP Comparability website. The address bar shows the URL <http://swamp.mpsl.miml.calstate.edu/swamp-comparability>. The website has a blue header with the SWAMP logo and a welcome message. A navigation bar includes links for Home, Swamp Comparability, Resources & Downloads, Data Checker, Online Data, FAQs, Calendar, Staff, and FTP. The main content area is titled "SWAMP Comparability" and contains a definition of comparability from the EPA, a list of links for Help Desk, Database Comparability, and Quality Assurance Comparability, and a section for Resources and Downloads. A search bar is located on the right side of the page. The Windows taskbar at the bottom shows the start button and several open applications, including Microsoft Office Word, QA Compar..., and MPSL > SWA... The system clock indicates the time is 11:48 AM.

MPSSL > SWAMP Comparability - Windows Internet Explorer

<http://swamp.mpsl.miml.calstate.edu/swamp-comparability>

File Edit View Favorites Tools Help

Favorites MPSSL > SWAMP Comparability

MPSSL > SWAMP Comparability - Windows Internet Explorer

Home | Swamp Comparability | Resources & Downloads | Data Checker | Online Data | FAQs | Calendar | Staff | FTP

Home

**SWAMP Comparability**

Help Desk

Database Comparability

Quality Assurance Comparability

Resources and Downloads

Database Management Systems

Quality Assurance

Standard Operating Procedures

Data Checker

Online Data

Year 1 Lakes Fish Contaminant Study

FAQs

Calendar

FTP

The U.S. Environmental Protection Agency (EPA) defines comparability as "the measure of confidence with which one data set, element, or method can be considered as similar to another". Comparability is an especially important consideration with SWAMP data, which represents a wide variety of objectives, organizations and procedures over many years, both governmental and non-governmental.

The following links are provided to those parties interested in SWAMP-comparability.

[Help Desk](#)

The Help Desk is available to answer questions regarding comparability with both the database and quality assurance (QA) components of SWAMP.

[Database Comparability](#)

Information about SWAMP-comparable data management practices.

[Quality Assurance Comparability](#)

Information about SWAMP-comparable QA practices.

Search

Official SWAMP Website

For comprehensive SWAMP content, visit the SWRCB's [official website](#)

CE DEN

California Environmental Data Exchange Network

[CE DEN](#) Link

FTP

Allows file sharing when conducting State and Regional Board SWAMP business on the [FTP site](#)

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# SWAMP Comparability: Website Step #4

California's Surface Water Ambient Monitoring Program  
**Comparability Fact Sheet**  
Version 3.0: xxx, 2009

This fact sheet is intended to help program participants understand the concept of "SWAMP comparability". More importantly, it provides guidelines and tools for those seeking to become SWAMP-comparable. For convenience, it is divided into three components:

- **Frequently Asked Questions:** to address the most common inquiries from those seeking to be SWAMP-comparable;
- **Comparability Tools:** to identify solutions specifically designed to simplify SWAMP comparability; and
- **Online Resources:** to consolidate and briefly describe web URLs referenced in the above sections.

**Frequently Asked Questions:**

**What does it mean to be SWAMP-comparable?**


It means that data meets the requirements of two key SWAMP documents:

- 1) [The Surface Water Ambient Monitoring Program Data Management Plan](#)
- 2) [The Surface Water Ambient Monitoring Program Quality Assurance Program Plan \(QAPRP\)](#)

\*Projects funded by budget allocations for fiscal year (FY) 2008-2009 and later must follow the requirements of the QAPRP. Projects already funded by pre-FY 2008-2009 budget allocations may continue to completion under the December 22, 2002 [Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program](#) (QAMP). Projects sponsored by the State Water Resources Control Board's (State Board's) Division of Financial Assistance (DFA) are required to use either the QAMP or QAPRP. However, the State Board strongly encourages the use of the 2008 QAPRP for all forthcoming projects.

**Do I have to use specific methods for field sampling?**

Bioassessment sampling and field measurements must be conducted according to the standard operating procedure (SOP): [Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California](#). While there are no other SWAMP-mandated field methods, all projects must meet the holding times specified in QAPRP Appendix B: [Sample Handling](#).

 [www.waterboards.ca.gov/swamp](http://www.waterboards.ca.gov/swamp)

Comparability Fact Sheet - v3.0    Revision Date: 05/05/09    Page 1 of 2

- Frequently Asked Questions
- Comparability Tools
- Online Resources



## SWAMP QA Program Plan: FAQ

- Where do I find the QAPrP?
- What if my project can't meet all the requirements of the QAPrP?
- What if my project involves a parameter that isn't included in the QAPrP?
- How will I know if the QAPrP gets updated?



# SWAMP QA Program Plan: Recommendations vs. Requirements

- Requirements:
  - MQOs (SWAMP QA Plan Appendix A)
  - Holding Times (SWAMP QA Plan Appendix B)
  - Bioassessment/PHAB SOP: *Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California*
- Other Content:
  - Recommendations
  - Guidance
  - Resources





# SWAMP QA Program Plan: Website Step #1

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State Water Resources Control Board - Windows Internet Explorer

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/)

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GOVERNOR SCHWARZENEGGER  
Visit his Website

Home → Water Issues → Programs → Swamp

**SWAMP**  
Surface Water Ambient Monitoring Program

SOUND SCIENCE FOR INFORMED WATER QUALITY MANAGEMENT

Welcome! About Tools Reports Contacts Links

→ Monitoring & Assessment Plans  
→ Data Sources  
→ Comparability  
→ Tool Development

→ Methods  
→ Data Management  
→ Quality Assurance  
→ Indicator Development

SWAMP Resources

→ Home  
→ About  
→ Tools  
→ Reports  
→ Contacts

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/tools.shtml](http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml)

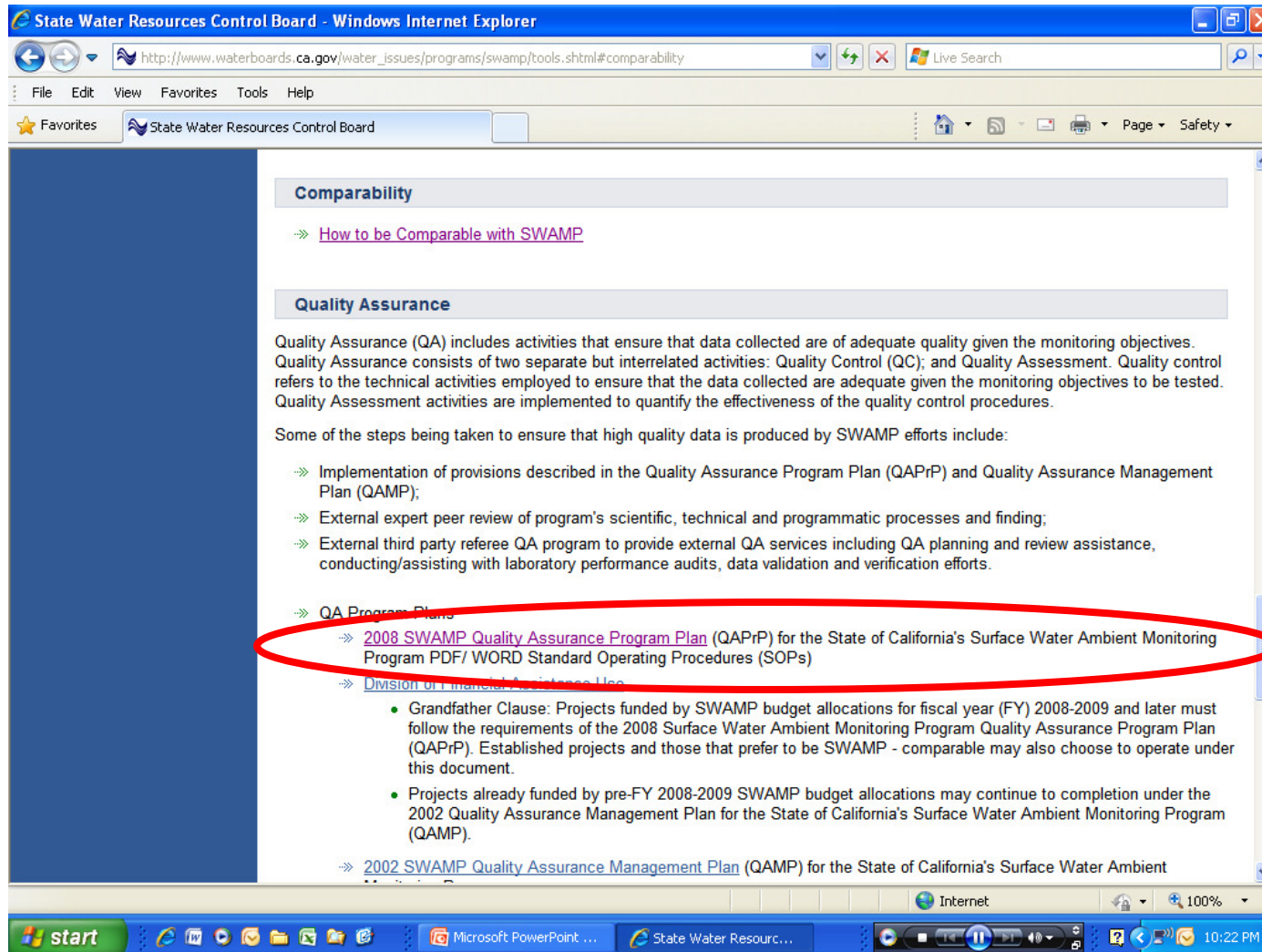
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# SWAMP QA Program Plan: Website Step #2



The screenshot shows a Windows Internet Explorer browser window displaying the State Water Resources Control Board website. The address bar shows the URL: [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/tools.shtml#comparability](http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#comparability). The page content is organized into sections: "Comparability" and "Quality Assurance". Under "Quality Assurance", there is a paragraph explaining the scope of QA activities, followed by a list of steps taken to ensure high quality data. A red oval highlights the link to the "2008 SWAMP Quality Assurance Program Plan (QAPrP) for the State of California's Surface Water Ambient Monitoring Program PDF/ WORD Standard Operating Procedures (SOPs)".

State Water Resources Control Board - Windows Internet Explorer

http://www.waterboards.ca.gov/water\_issues/programs/swamp/tools.shtml#comparability

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State Water Resources Control Board

**Comparability**

→ [How to be Comparable with SWAMP](#)

**Quality Assurance**

Quality Assurance (QA) includes activities that ensure that data collected are of adequate quality given the monitoring objectives. Quality Assurance consists of two separate but interrelated activities: Quality Control (QC); and Quality Assessment. Quality control refers to the technical activities employed to ensure that the data collected are adequate given the monitoring objectives to be tested. Quality Assessment activities are implemented to quantify the effectiveness of the quality control procedures.

Some of the steps being taken to ensure that high quality data is produced by SWAMP efforts include:

- Implementation of provisions described in the Quality Assurance Program Plan (QAPrP) and Quality Assurance Management Plan (QAMP);
- External expert peer review of program's scientific, technical and programmatic processes and finding;
- External third party referee QA program to provide external QA services including QA planning and review assistance, conducting/assisting with laboratory performance audits, data validation and verification efforts.

→ **QA Program Plans**

- [2008 SWAMP Quality Assurance Program Plan \(QAPrP\) for the State of California's Surface Water Ambient Monitoring Program PDF/ WORD Standard Operating Procedures \(SOPs\)](#)
- [Division of Financial Assistance Use](#)
  - Grandfather Clause: Projects funded by SWAMP budget allocations for fiscal year (FY) 2008-2009 and later must follow the requirements of the 2008 Surface Water Ambient Monitoring Program Quality Assurance Program Plan (QAPrP). Established projects and those that prefer to be SWAMP - comparable may also choose to operate under this document.
  - Projects already funded by pre-FY 2008-2009 SWAMP budget allocations may continue to completion under the 2002 Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program (QAMP).
- [2002 SWAMP Quality Assurance Management Plan \(QAMP\) for the State of California's Surface Water Ambient](#)

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## Measurement Quality Objectives: FAQ

- Do I have to use specific methods for field sampling, field analysis, or laboratory analysis?
- What are MQOs?
- Are there SWAMP MQOs for all parameters?
- How were SWAMP MQOs established?



# Measurement Quality Objectives: Methods

- *Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* **REQUIRED**

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- *MPSL-DFG SOP for Conducting Field Measurements and Field Collections of Water and Bed Sediment Samples in the Surface Water Ambient Monitoring Program* **FOR REFERENCE**
- *SWAMP Field Methods Course* **FOR REFERENCE**

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- National Environmental Methods Index (NEMI)
  - [www.nemi.org](http://www.nemi.org)



# Measurement Quality Objectives: Overview

- EPA Definition:
  - The individual performance or acceptance goals for precision, accuracy, representativeness, comparability, completeness, sensitivity
- SWAMP MQOs:
  - Coverage of multiple matrices
  - Field, conventional, and chemical analyses; toxicity testing
- SWAMP MQO Creation:
  - SWAMP QA Management Plan (2002)
  - Established methods
  - Expert focus groups
  - Repeated feedback



## Measurement Quality Objectives: Quality Control Samples

Indicator	Quality Control
Precision	Laboratory Duplicates, Matrix Spike Duplicates, Field Duplicates
Accuracy	Reference Materials, Matrix Spikes, Matrix Spike Duplicates, Continuing Calibration Verification Standards
Representativeness	Data Quality Assessment
Comparability	Proficiency Tests/Intercomparisons
Completeness	Data Verification
Sensitivity	Detection Studies, Instrument Calibration



# Measurement Quality Objectives: SWAMP Examples

Laboratory Quality Control	Frequency of Analysis	Measurement Quality Objective
Calibration Standard	Per analytical method or manufacturer's specifications	Per analytical method or manufacturer's specifications
Continuing Calibration Verification	Per 10 analytical runs	80-120% recovery
Laboratory Blank	Per 20 samples or per analytical batch, whichever is more frequent	<RL for target analyte
Reference Material	Per 20 samples or per analytical batch, whichever is more frequent	80-120% recovery
Matrix Spike	Per 20 samples or per analytical batch, whichever is more frequent	80-120% recovery
Matrix Spike Duplicate	Per 20 samples or per analytical batch, whichever is more frequent (chlorophyll: n/a)	80-120% recovery RPD<25% for duplicates
Laboratory Duplicate	Per 20 samples or per analytical batch, whichever is more frequent (chlorophyll: per method)	RPD<25% (n/a if native concentration of either sample<RL)
Internal Standard	Accompanying every analytical run as method appropriate	Per method
Field Quality Control	Frequency of Analysis	Measurement Quality Objective
Field Duplicate	5% of total project sample count	RPD<25% (n/a if native concentration of either sample<RL)
Field Blank, Travel Blank, Equipment Blank	Per method	<RL for target analyte



# Measurement Quality Objectives: Method Conflicts

Laboratory Quality Control	Frequency of Analysis	Measurement Quality Objective
<b>Calibration Standard</b>	Per analytical method or manufacturer's specifications	Per analytical method or manufacturer's specifications
<b>Continuing Calibration Verification</b>	Per 10 analytical runs	80-120% recovery
<b>Laboratory Blank</b>	Per 20 samples or per analytical batch, whichever is more frequent	<RL for target analyte
<b>Reference Material</b>	Per 20 samples or per analytical batch, whichever is more frequent	80-120% recovery
<b>Matrix Spike</b>	Per 20 samples or per analytical batch, whichever is more frequent	80-120% recovery
<b>Matrix Spike Duplicate</b>	Per 20 samples or per analytical batch, whichever is more frequent (chlorophyll: n/a)	80-120% recovery RPD<25% for duplicates
<b>Laboratory Duplicate</b>	Per 20 samples or per analytical batch, whichever is more frequent (chlorophyll: per method)	RPD<25% (n/a if native concentration of either sample<RL)
<b>Internal Standard</b>	Accompanying every analytical run as method appropriate	Per method
Field Quality Control	Frequency of Analysis	Measurement Quality Objective
<b>Field Duplicate</b>	5% of total project sample count	RPD<25% (n/a if native concentration of either sample<RL)
<b>Field Blank, Travel Blank, Equipment Blank</b>	Per method	<RL for target analyte



# Holding Times

Analyte	Units	Recommended Container	Recommended Sample Volume	Recommended Preservation	Required Holding Time
Sulfate	mg/L	Polyethylene Bottles	300 mL	Cool to 6 °C and store in the dark	28 days
Sodium	mg/L	Polyethylene Bottles Glass or plastic filtering apparatus are recommended to avoid possible contamination.	600 mL	Acidify with (1+1) HNO <sub>3</sub> to pH <2.	6 months
Turbidity	NTU	Polyethylene Bottles	300 mL	Cool to 6 °C and store in the dark	48 hours



# Quality Assurance Project Plan Tools

- SWAMP Advisor
  - [http://swamp.waterboards.ca.gov/swamp/qapp\\_advisor/](http://swamp.waterboards.ca.gov/swamp/qapp_advisor/)
- SWAMP QAPP Template
  - <http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/quality-assurance/quality-assurance-project-plan-guidance/#QAPPTemplate>
- SWAMP QAPP Review Checklist
  - <http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/quality-assurance/quality-assurance-project-plan-guidance/#QAPPChecklist>
- SWAMP Help Desk
  - <http://swamp.mpsl.mlml.calstate.edu/swamp-comparability/help-desk>



# SWAMP QAPP Tools: Website Step #1

<http://swamp.mpsl.mlml.calstate.edu/>

The screenshot shows a Windows Internet Explorer browser window displaying the SWAMP website. The address bar shows the URL <http://swamp.mpsl.mlml.calstate.edu/>. The website has a blue header with the SWAMP logo and a "Welcome ..." message. The main content area is divided into three columns. The left column contains a sidebar with links: "SWAMP Comparability", "Help Desk", "Database Comparability", "Quality Assurance Comparability", "Resources and Downloads", "Database Management Systems", "Quality Assurance" (highlighted with a red circle), "Standard Operating Procedures", "Data Checker", "Online Data", "Year 1 Lakes Fish Contaminant Study", "FAQs", "Calendar", "FTP", and "Staff". The middle column is titled "Home" and contains a welcome message, a paragraph about the Marine Pollution Studies Laboratory (MPSL) Data Management Team (DMT) and Quality Assurance Team (QAT), and sections for "Resources and Downloads" and "Online Data". The right column contains a search box, a "Official SWAMP Website" link, a "CEDEN" link, and an "FTP" link. The bottom of the browser window shows the Windows taskbar with the Start button and several open applications: Microsoft PowerPoint, SWAMP Comparability, and MPSL - Windows Internet Explorer. The system clock shows 10:20 AM.

**SWAMP**  
Surface Water  
Ambient Monitoring  
Program

Welcome ...

... to the Data Management and Quality Assurance information site for  
SWAMP – California's Surface Water Ambient Monitoring Program —  
hosted by the Marine Pollution Studies Laboratory.

[Back to MPSL-MLML](#)

**SWAMP Comparability**  
Help Desk  
Database Comparability  
Quality Assurance Comparability

**Resources and Downloads**  
Database Management Systems  
**Quality Assurance**  
Standard Operating Procedures

**Data Checker**

**Online Data**  
Year 1 Lakes Fish Contaminant Study

**FAQs**

**Calendar**

**FTP**

**Staff**

**Home**

Welcome to the Marine Pollution Studies Laboratory's Surface Water Ambient Monitoring Program (SWAMP) data management and quality assurance (QA) information site. The Marine Pollution Studies Laboratory (MPSL) Data Management Team (DMT) is responsible for managing data from SWAMP-funded State and Regional Board projects, while the Quality Assurance Team (QAT) is responsible for creating and implementing programmatic quality systems.

Data types for these projects include water quality chemistry and toxicity data (sediment and water) as well as tissue, benthic, and bioassessment data. The SWAMP data systems are documented to assist outside groups who want to be SWAMP-comparable. The [SWAMP Comparability](#) information can be used by the groups who are looking to be database- and/or QA-comparable with SWAMP.

[Resources and Downloads](#) provides specific information from our SWAMP database management systems such as field data sheets, laboratory reporting templates and supporting documentation, analyte/matrix/units list, QA information, and Standard Operating Procedures (SOPs).

The [Data Checker](#) provides access to the online SWAMP data checker and submission page that checks laboratory submission files for formatting, lookup list values, and SWAMP business rules.

[Online Data](#) provides links to the California Environmental Data Exchange Network

**Official SWAMP Website**  
For comprehensive SWAMP content, visit the SWRCB's [official website](#)

**CEDEN**  
California Environmental Data Exchange Network  
[CEDEN Link](#)

**FTP**  
Allows file sharing when conducting State and Regional Board SWAMP business on the [FTP site](#)

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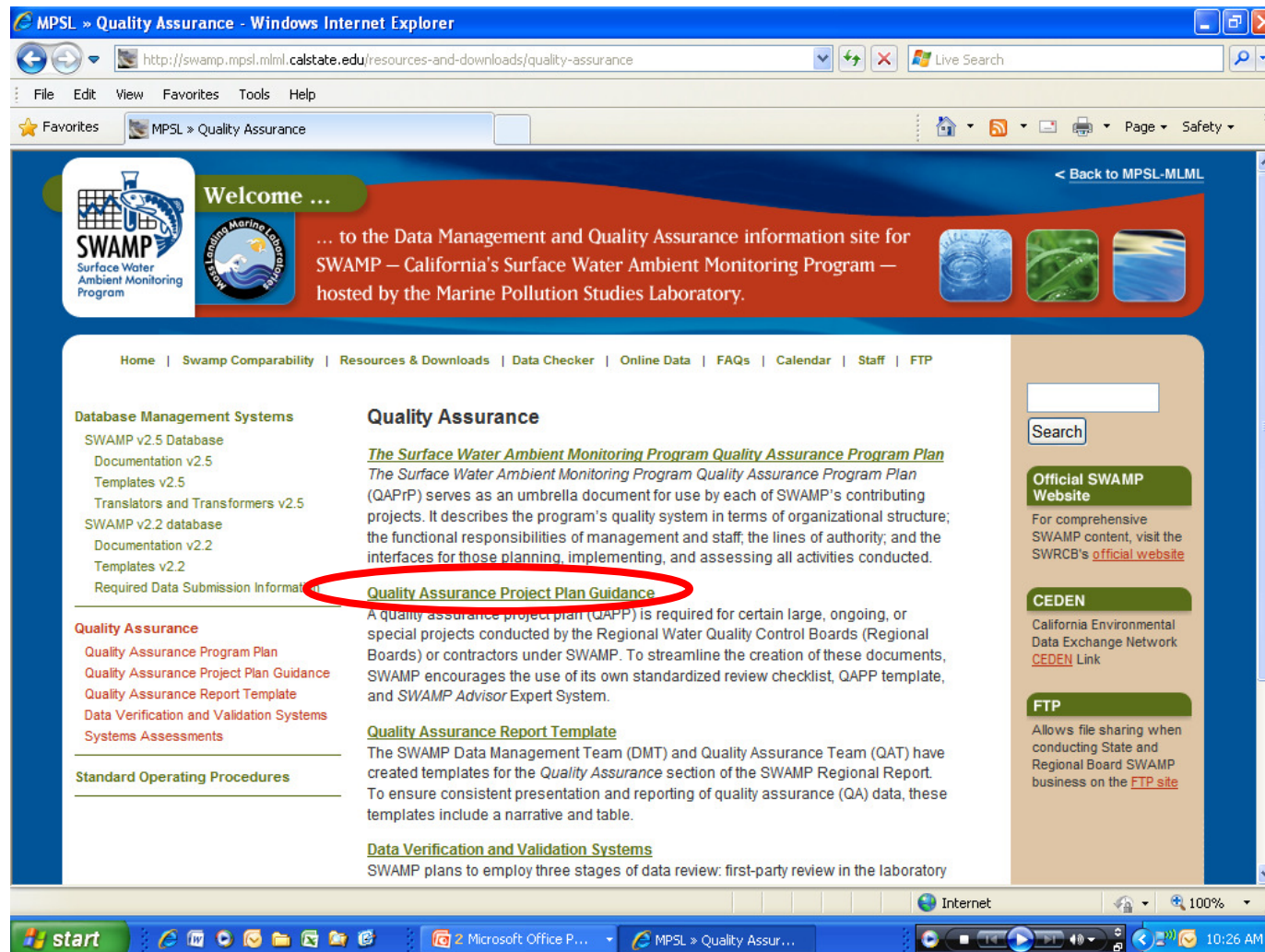
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# SWAMP QAPP Tools: Website Step #2



The screenshot shows a Windows Internet Explorer browser window displaying the SWAMP QAPP website. The address bar shows the URL: <http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/quality-assurance>. The website has a blue header with the SWAMP logo and a welcome message. The main content area is divided into sections for Database Management Systems, Quality Assurance, and Standard Operating Procedures. The 'Quality Assurance' section is highlighted with a red circle around the 'Quality Assurance Project Plan Guidance' link. The 'Database Management Systems' section lists various documents and templates. The 'Standard Operating Procedures' section lists various systems and assessments. The right sidebar contains a search box, a link to the Official SWAMP Website, and links to CEDEN and FTP sites. The Windows taskbar at the bottom shows the Start button, several open applications, and the system clock displaying 10:26 AM.

MPSL » Quality Assurance - Windows Internet Explorer

http://swamp.mpsl.mlml.calstate.edu/resources-and-downloads/quality-assurance

File Edit View Favorites Tools Help

★ Favorites MPSL » Quality Assurance

Page Safety

SWAMP Surface Water Ambient Monitoring Program

Welcome ...

... to the Data Management and Quality Assurance information site for SWAMP – California's Surface Water Ambient Monitoring Program – hosted by the Marine Pollution Studies Laboratory.

Home | Swamp Comparability | Resources & Downloads | Data Checker | Online Data | FAQs | Calendar | Staff | FTP

**Database Management Systems**

- SWAMP v2.5 Database
  - Documentation v2.5
  - Templates v2.5
  - Translators and Transformers v2.5
- SWAMP v2.2 database
  - Documentation v2.2
  - Templates v2.2
- Required Data Submission Information

**Quality Assurance**

- Quality Assurance Program Plan
- Quality Assurance Project Plan Guidance**
- Quality Assurance Report Template
- Data Verification and Validation Systems
- Systems Assessments

**Standard Operating Procedures**

**Quality Assurance**

The Surface Water Ambient Monitoring Program Quality Assurance Program Plan  
The Surface Water Ambient Monitoring Program Quality Assurance Program Plan (QAPrP) serves as an umbrella document for use by each of SWAMP's contributing projects. It describes the program's quality system in terms of organizational structure; the functional responsibilities of management and staff; the lines of authority; and the interfaces for those planning, implementing, and assessing all activities conducted.

**Quality Assurance Project Plan Guidance**

A quality assurance project plan (QAPP) is required for certain large, ongoing, or special projects conducted by the Regional Water Quality Control Boards (Regional Boards) or contractors under SWAMP. To streamline the creation of these documents, SWAMP encourages the use of its own standardized review checklist, QAPP template, and SWAMP Advisor Expert System.

Quality Assurance Report Template

The SWAMP Data Management Team (DMT) and Quality Assurance Team (QAT) have created templates for the Quality Assurance section of the SWAMP Regional Report. To ensure consistent presentation and reporting of quality assurance (QA) data, these templates include a narrative and table.

Data Verification and Validation Systems

SWAMP plans to employ three stages of data review: first-party review in the laboratory

Search

**Official SWAMP Website**

For comprehensive SWAMP content, visit the SWRCB's [official website](#)

**CEDEN**

California Environmental Data Exchange Network  
[CEDEN Link](#)

**FTP**

Allows file sharing when conducting State and Regional Board SWAMP business on the [FTP site](#)

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# SWAMP QAPP Tools: Website Step #3

MPSL » Quality Assurance Project Plan Guidance - Windows Internet Explorer

http://swamp.mpsl.miml.calstate.edu/resources-and-downloads/quality-assurance/quality-assurance-project-pli...

File Edit View Favorites Tools Help

MPSL » Quality Assurance Project Plan Guidance

Back to MPSL-MLML

Welcome ...

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Home | Swamp Comparability | Resources & Downloads | Data Checker | Online Data | FAQs | Calendar | Staff | FTP

**Quality Assurance Project Plan Guidance**

The U.S. Environmental Protection Agency (EPA) defines a quality assurance project plan (QAPP) as "a formal document describing in comprehensive detail the necessary quality assurance (QA), quality control (QC), and other technical activities that must be implemented to ensure that the results of the work performed will satisfy the stated performance criteria". The elements of a QAPP are arranged into four groups:

- Project Management
- Data Generation and Acquisition
- Assessment and Oversight
- Data Validation and Usability

In SWAMP, a QAPP is required for certain large, ongoing, or special projects conducted by the Regional Water Quality Control Boards (Regional Boards) or program contractors. Prior to sample collection or field measurements, the SWAMP Quality Assurance Team (QAT) evaluates each SWAMP-funded QAPP against a program-specific checklist and related EPA guidance. The products of this review include the completed checklist, a related narrative, and a two-hour consultation.

To streamline the QAPP generation process, SWAMP encourages the use of the following resources:

Database Management Systems

- SWAMP v2.5 Database
- Documentation v2.5
- Templates v2.5
- Translators and Transformers v2.5

SWAMP v2.2 database

- Documentation v2.2
- Templates v2.2
- Required Data Submission Information

Quality Assurance

- Quality Assurance Program Plan
- Quality Assurance Project Plan Guidance**
- Quality Assurance Report Template
- Data Verification and Validation Systems
- Systems Assessments

Standard Operating Procedures

Search

Official SWAMP Website

For comprehensive SWAMP content, visit the SWRCB's [official website](#)

CEDEN

California Environmental Data Exchange Network

[CEDEN Link](#)

FTP

Allows file sharing when conducting State and Regional Board SWAMP business on the [FTP site](#)

start

Microsoft Office P... MPSL » Quality Assur...

Internet 100%

10:29 AM

SWAMP Surface Water Ambient Monitoring Program

# SWAMP QAPP Tools: SWAMP Advisor

The screenshot shows the SWAMP Advisor web application running in a Windows Internet Explorer browser. The browser's address bar displays the URL [http://swamp.waterboards.ca.gov/swamp/qapp\\_advisor/](http://swamp.waterboards.ca.gov/swamp/qapp_advisor/). The page header includes the California Environmental Protection Agency (CEPA) logo and the text "CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY STATE WATER RESOURCES CONTROL BOARD". Below this, the "SWAMP ADVISOR" title is prominently displayed, accompanied by the SWAMP logo and a description: "The California Surface Water Ambient Monitoring Program's (SWAMP) expert system for preparing Quality Assurance Project Plans (QAPPs) correctly, consistently, and cost-effectively." The main content area is divided into two sections. The "Main Menu" section, titled "Which Element Group Do You Wish to Work With?", lists four options: "0.0 - Main Menu. Please select 'Group A Elements' from the menu. The other menu selections (except the 'Exit' choice) are currently placeholders for future expansions of the SWAMP Advisor and do not provide any advice yet.", "Group A Elements (1 - 9): Project Management", "Group B Elements (10 - 19): Data Generation & Acquisition", and "Groups C and D Elements (20 - 24): Assessment, Data Validation, and Reconciliation With Your Requirements". The "Starting Menu Choices" section provides additional context, stating that the expert system is designed to help complete any part of the 24 elements required for a QAPP and that the U.S. EPA divides these elements into four main groups. The browser's taskbar at the bottom shows the Windows start button, several open applications including "QA Compara...", "Inbox - Micro...", and "2 Internet E...", and the system clock indicating 5:13 PM.

SWAMP ADVISOR - Windows Internet Explorer

http://swamp.waterboards.ca.gov/swamp/qapp\_advisor/

File Edit View Favorites Tools Help

★ Favorites SWAMP ADVISOR

CA.GOV CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

**SWAMP ADVISOR**

The California Surface Water Ambient Monitoring Program's (SWAMP) expert system for preparing Quality Assurance Project Plans (QAPPs) correctly, consistently, and cost-effectively.

**Main Menu**

Which Element Group Do You Wish to Work With?

0.0 - Main Menu. Please select "Group A Elements" from the menu. The other menu selections (except the "Exit" choice) are currently placeholders for future expansions of the SWAMP Advisor and do not provide any advice yet.

- ☐ Group A Elements (1 - 9): Project Management
- ☐ Group B Elements (10 - 19): Data Generation & Acquisition
- ☐ Groups C and D Elements (20 - 24): Assessment, Data Validation, and Reconciliation With Your Requirements
- ☐ I'm finished and I'd like to exit the SWAMP Advisor

OK

Back

Exsys

**Starting Menu Choices**

This expert system is designed so that you may use it to complete any part of the 24 elements required for a QAPP in order to begin work on a grant or project under the authority of SWAMP.

U.S. EPA divides the 24 elements into four main groups. We have combined the elements in Groups C and D because there are only a few elements in each. From this menu you may select one of the groups or exit the SWAMP Advisor.

SWAMP Surface Water Ambient Monitoring Program

## Implementing Comparability: Initial Steps

- Identify project participants – don't forget QA
- Review SWAMP QAPrP
- Contact HD with questions
- Hold QA kickoff meetings
- Create QAPP (if needed)



## Implementing Comparability: Ongoing Steps

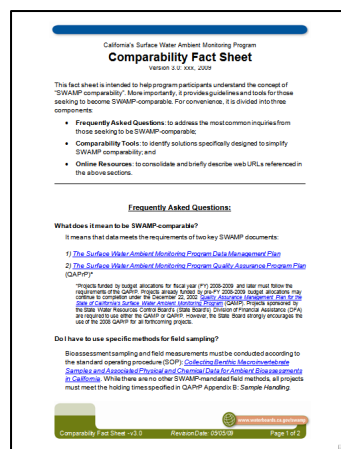
- Conduct laboratory and field assessments to evaluate adherence to SWAMP comparability
- Maintain lines of communication
- Attend SWAMP QA trainings
- Subscribe to Lyris email list
- Call SWAMP Help Desk





# Summary

- Adhere to the SWAMP QA Program Plan. Specifically:
  - MQOs (Appendix A)
  - Holding times (Appendix B)
  - Bioassessment/PHAB SOP
- Utilize the Help Desk and SWAMP Comparability Fact Sheet



- Frequently Asked Questions
- Comparability Tools
- Online Resources



# The Quality Assurance Research Group at The Moss Landing Marine Laboratories



**Email:**

[swampqa@mlml.calstate.edu](mailto:swampqa@mlml.calstate.edu)

**Help Desk:**

(206) 525-0491

