

Section C1. Assessments and Response Actions

The commitment to use approved equipment and approved methods when obtaining environmental samples and when producing field or laboratory measurements must have periodic verification that the equipment and methods are, in fact, being employed and being employed properly. The verification is accomplished by conducting performance and systems audits. The audits will be conducted by the SWAMP QA Program, as funding allows, with assistance from the 3rd party (referee) external QA Officers contracted by DFG to provide such services, and shall be independent of the actual duties of either the project management or laboratory management. These persons will be familiar with the field sampling requirements of the program and/or laboratory QA.

Before any investigation included in the water quality monitoring program begins, it will be verified that proper equipment is available for all field inspectors. This includes sampling equipment, safety equipment, and field measurement equipment (and calibration standards). It will also be verified that all personnel involved in field activities have received sufficient training and are able to properly use the equipment and procedures. The application of procedures and equipment will be verified periodically. This verification is made during periodic field performance audits. SWAMP field personnel will be observed during an actual field investigation to verify that equipment and procedures are properly applied. Details of the QC review are outlined in the SWAMP Recommended Lab/Field QA Evaluation Guidance (**Appendix I**) including review of records, field performance audit samples and corrective actions.

Those laboratories contracted to perform analytical measurements on samples collected during any water quality monitoring investigation are routinely monitored by the SWAMP QA Program, and by respective contract managers for those laboratories. During laboratory systems audits, it should be noted what equipment is available, what personnel are available, and what procedures are followed for data quality verification. Any inadequacy is noted in a response letter to the laboratory management. The laboratory management is then responsible for making any corrections needed and to report these corrective actions to the SWAMP QA Program. Follow-up inspections confirm that deficiencies have been addressed.

All of the performance and system audits described in this plan, including the annual workshop, training sessions and QC reviews are planned to be performed, if contractual and funding limitations allow. The activities included in the QC reviews, training sessions and annual workshop constitute routine performance and system audits.

Performance Evaluation Audits and Responses

Internal and External Performance Audits for SWAMP Analytical Labs

In addition to in-lab training and certification/documentation of lab analytical staff proficiencies, all lab staff will be evaluated on their performance during lab performance audits, both internal and external, conducted by respective Laboratory QA Officers (internal), or their designees, and by SWAMP QA Program staff (external), or their designees. The conducting of such lab performance audits, particularly internal audits, is recommended to be done every two years, depending on funding and QA needs, or more often if necessary. If any deficiencies are noted during this lab QA audit, they will be documented and remedied prior to continued lab operations. This can be accomplished by additional training or by changing the staff composition, but verification of correction of any deficiencies must be documented in writing prior to the resumption of further sample analysis activities. It is the responsibility of the any and all SWAMP entities conducting laboratory analytical activities to develop and implement internal proficiency, training, and QA audit "checklists". Copies must be maintained in a central file by each SWAMP entity of all internal training and QA audit reports completed, as well as documentation of any deficiencies and corrective actions necessary to remedy such deficiencies.

When requested, these records must be accessible to, or copies provided to, the SWAMP QA Program or other designated officials. Further information and topics/issues to be reviewed and discussed during an external lab audit is provided in the SWAMP Recommended Lab/Field QA Evaluation Guidance (**Appendix I**).