

# **Table Rock Lake National Demonstration Project**

Quality Management Plan

July, 2003







**Table Rock Lake National Demonstration Project  
Quality Management Plan**

**DOCUMENT APPROVAL SIGNATURES**

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The undersigned, by their signatures, do hereby agree to abide by the procedures detailed in this document.

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# 1

## MANAGEMENT AND ORGANIZATION

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### 1.1 Mission

The mission of the Table Rock Lake Demonstration Project is to demonstrate the use and management of advanced wastewater treatment systems for single-family homes and clusters. It is the intent of the Demonstration Project that the project is used to develop a management program for the Table Rock region following one or more of the EPA recommended management levels as detailed in the EPA document *Voluntary Guidelines for Management of Onsite and Cluster (Decentralized) Wastewater Treatment Systems*.

### 1.2 Quality Policy

It is the policy of the Demonstration Project that within the constraints of available resources, QA activities shall be conducted to assure all environmental data generated, collected or processed in program activities will be known of documented quality and will achieve prescribed data quality objectives. Furthermore, these data will be adequate and sufficient for their intended use.

To ensure that this QA policy is uniformly applied to the generation and processing of environmental data by activities supported through the demonstration project, the Program Coordinator and Project Manager shall be delegated the authority and responsibility for implementation of the QMP. This authority covers environmental data generation, collection and processing as a result of subcontracts and partnerships with industry, institutions of higher learning, and federal, state and local agencies and offices.

### 1.3 Quality Management Plan

Under EPA policy the demonstration project is required to document its quality assurance program in an approved QMP. The QMP document describes the quality system in terms of the organization structure, functional responsibilities of management and personnel, lines of authority, and required interfaces for those planning, implementing and assessing all activities conducted.

This QMP documents the project's quality management system for planning, implementing and assessing its programs. Established procedures are documented in this QMP to ensure that its programs produce the type and quality of environmental science and technology research, regulatory approaches and management tools, and training and educational materials for the field of decentralized wastewater treatment that are needed and expected by its partner organizations and other end-users, including electric utilities, water and wastewater utilities, municipalities, engineers, contractors, regulators and other public and private entities involved in addressing water resource and public health issues.

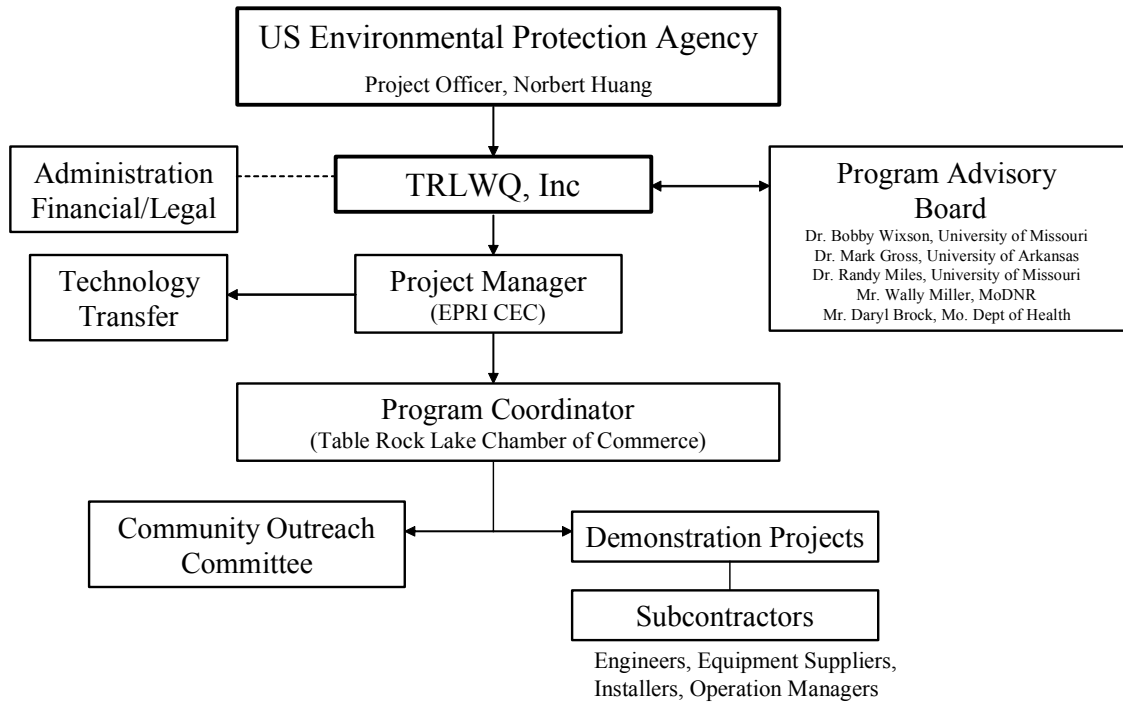
This QMP is developed for all project personnel, as detailed in this chapter. The QMP will reside on the Table Rock Lake Water Quality, Inc. website for easy access for all project personnel and subcontractors (<http://members.inter-linc.net/trlwq>). A hardcopy will also be filed with the Program Coordinator, who is the designated Document Control Officer (see Chapter 5), and the Project Manager. This QMP includes approvals from the Table Rock Lake Water Quality, Inc. (TRLWQ) Board of Trustees (hereafter referred to as the Board). EPA approvals are obtained from the EPA Project Officer (Norbert Huang) and the EPA QA Manager (need a name). This approval is valid for up to five years, pending significant changes to the organization's quality system during the interim.

## **1.4 Organizational Structure**

Table Rock Lake Water Quality, Inc. (the Board) will be the principal decision-making group for this project. This non-profit organization, formed in 1998 for the purpose of improving the water quality in Table Rock Lake, is the recipient of the EPA Cooperative Agreement and responsible for administering the project. The Board will be assisted in all technical decisions on the demonstration project by a five-person Program Advisory Board, comprised of local, state and national experts in the decentralized wastewater field, from the Missouri Departments of Natural Resources and of Health, and from local universities.

Directives of the Board will be executed by a Project Manager, served by the EPRI Community Environmental Center in St. Louis, and a local Program Coordinator. Individual contractors will report to and correspond with the local Program Coordinator. An organization chart is presented below. The responsibilities of each group within the project are detailed in subsequent sections. As suggested by the organizational chart, much of the demonstration project tasks will be completed using subcontractors to TRLWQ, Inc. The Program Coordinator, with assistance by the Project Manager, shall implant the principles of the QMP by directing the implementation of quality principles to all subcontractors.

Table Rock Lake Decentralized Wastewater Demonstration Project  
Organizational Chart



The EPA has award funds under a Cooperative Agreement to the TRLWQ, Inc. (the Board) as part of their on-site national capacity demonstration project. As the recipient of the funds, the Board shall retain ultimate responsibility for all actions in administering this Cooperative Agreement. However, in accomplishing all tasks, the Board will be assisted by a Project Manager from the EPRI Community Environmental Center and a Program Coordinator from the staff of the Table Rock Lake Chamber of Commerce. An independent Program Advisory Board will be established to ensure the technical aspects of this project are being achieved and the goals of the EPA Cooperative Agreement are being met consistent with the Work Plan. All decisions on the funding of specific projects and demonstrations, along with any technical transfer activities, shall be made by the Board after consultation with the Program Coordinator and Project Manager, and Program Advisory Board. Specific duties are listed below.

**1.4.1 The Board of Trustees**

Specifically, the duties of members of the Board include the following:

- Approve the budgeting and planning process, along with any documents produced for dissemination to the public;

- Ensure adherence to and fulfillment of terms and conditions and program objectives of the EPA Cooperative Agreement;
- Appoint the Program Advisory Board;
- Maintain an active line of communication between the Project Manager, Program Coordinator, and Program Advisory Board;
- Identify relevant needs of the project from the Table Rock Lake region for inclusion in the project workplan;
- Maintain responsibility for all contractual and financial arrangements with project administrative staff, researchers and other subcontractors.

#### ***1.4.2 Administrative Assistance (Project Manager and Program Coordinator)***

Given that the project is funded by the federal government, it is important that project activities, as much as possible, be related to other national activities in the decentralized wastewater arena. The administrative structure adopted for this project has been developed to provide this connection. The **Project Manager** will provide the connection to national activities while the **Program Coordinator** will serve as the local contact, giving local perspective to any project activities.

Specific activities of the Project Manager include:

- Provide interpretation of all EPA requirements and procedures for all project activities to the Board, for subsequent action by the Board;
- On the basis of input by the Board, prepare the project workplan and submit it for approval by the EPA Project Officer;
- Prepare the grant application package for approval by the Board and submission to the EPA Project Officer;
- Prepare and manage the Quality Management Plan for approval by the Board and submission to the EPA Project Officer;
- In conjunction with the Program Coordinator, coordinate and oversee the project selection process;
- Assist the Program Coordinator and the Board in identifying potential researchers and subcontractors, along with project cofunders to meet EPA's cofunding requirements;
- Assist in the development and review of project Request for Proposals (RFPs), as developed by the Board and the Program Coordinator;

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- Assist the Board and the Program Coordinator in selection of qualified subcontractors and researchers;
  - Assist the Board and the Program Coordinator in developing suitable workplans and budgets for specific researchers and other subcontractors;
  - Assist the Board in ensuring that all EPA contractual requirements are met by project participants, including researchers and other subcontractors;
  - Provide the Board with consultation on project development to ensure that national needs of the demonstration project are met;
  - Review all reports generated by project researchers and subcontractors;
  - In conjunction with the Program Coordinator, manage project researchers and subcontractors to ensure that they meet the requirements of all approved work plans and budgets;
  - Maintain communication with EPA Project Officer to ensure that project activities satisfy the needs of the EPA.

Specific activities of the Program Coordinator include:

- Provide project management of all subcontractors and other researchers at Table Rock Lake;
- Develop, collect and summarize responses to all RFPs under the guidance of the Project Manager;
- Develop all materials for Board evaluations of proposed projects;
- Serve as local project contact to all participants on-site;
- Maintain communication with the Board and the Project Manager as needed to fulfill the requirements of individual projects;
- Provide the Board with local perspective to all project activities;
- Ensure subcontractors and other researchers satisfy the requirements of all approved workplans, budget requirements, and dictates of the Quality Management Plan;
- Coordinate all arrangements for project meetings with the Board, subcontractors, and the Project Manager, including scheduling, agenda development, and gathering of relevant documentation;

- Ensure all subcontractors are paid in a timely fashion, as dictated in the Quality Management Plan.
- Act as focal point for project communication between Board members, Program Advisory Board members, and the Project Manager.
- Conduct additional project activities as directed by the Program Coordinator and the Board.

### **1.4.3 Program Advisory Board**

The Program Advisory Board (PAB) shall consist of five (5) members selected by the Board for their technical expertise and knowledge of the industry. The PAB will function as an advisory body to the Board and will meet a minimum of twice annually. The Program Coordinator will serve as chair of the PAB and handle communication of activities and assignments between the PAB and Board. PAB actions may be accomplished via e-mail, conference calls, and group meetings. Direct expenses for these members will be covered under this project. Specific duties of the PAB will include;

- Review the Request for Qualifications developed to select a firm to complete the work associated with Task 1.
- Review technology matrix developed under Task 1.
- Review of project proposals and provide project scoring and comments based on criteria provided by the Program Coordinator.
- Seek out and evaluate feasibility of new and innovative technology alternatives for inclusion in this study.
- Review test protocols and test results from individual demonstration sites.
- Provide advice to the Board to ensure that overall goals and objectives of the EPA Cooperative Agreement are being met consistent with the Work Plan.
- Assess the cost-effectiveness of the technology and managerial approaches to decentralized wastewater treatment proposed and used for this project.
- Review the management guidelines developed under this project.

### **1.4.4 Community Outreach Group**

A Community Outreach Group will be appointed to communicate project activities to various community groups. This committee shall be made up of a broad variety of local citizens and

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stakeholders representing the public interest in areas such as home owners, realtors, bankers, septic tank pumpers, resort owners, developers, educators, senior citizen groups, environmental groups, and others. It is envisioned that this committee shall not exceed 20 participants. This committee will meet a minimum of twice per year, with the Program Coordinator serving as the committee chair. Committee members will be expected to communicate project information to other interested parties within the local community and provide feedback from the local community to the project coordinator. Committee members will be appointed by the Board for one year terms.

## **1.5 Technical Reports**

Upon completion or termination of a task, a subcontractor must submit a comprehensive written summary covering all work accomplished and results achieved, and including conclusions and research recommendations if appropriate. For projects involving data collection or analysis, the final report shall also include QA/QC information generated during the report included as an appendix. The target audience for the written report will be established prior to the completion of the subcontract.

The Internet will be extensively used as an information delivery platform for the technical reports. All project final reports will be printed and published on CDs for distribution to interested parties in addition to being made available for downloading on the Table Rock Lake Water Quality, Inc. website. The Community Outreach Group will also assist in disseminating information and will, as part of their development, establish methods to effectively communicate project information to the stakeholders they represent within their community. Possible methods include the development of fact sheets, “town hall” meetings, and mass media advertising.

## **1.6 Communication of Quality Systems**

Communication of the QMP is the responsibility of the Program Coordinator and Project Manager. By their signatures on this document, these individuals acknowledge that they have read and understand the plan. The Program Coordinator and Project Manager will provide a copy of this QMP to each member of the TRLWQ Board of Trustees and at least once per year briefly review its contents so that all members of the Board are familiar with this document’s basic structure and content. The Project Manager will work with all subcontractors to ensure that the relevant QMP elements for that subcontractor’s work are identified and met, and to agree upon a mechanism for transmitting relevant documentation to the Document Control Officer for archival purposes. Many of the quality management elements relevant to each subcontractor will be formally defined during the contract award process.

## **1.7 Resources**

Travel funds are budgeted for the Program Coordinator and Project Manager for at least one on-site visit to each subcontractor’s institution or office. These visits may include on-site QA training, quality system reviews, and quality systems audits as deemed appropriate.

## **1.8 Authority to Stop Work**

The authority to stop work resides with the Board of Trustees. In general, situations with subcontractors which cannot be reconciled by either the Program Coordinator or Project Manager will be referred to the Board for further action. This could result in a stop work order as described in the subcontract agreement issued by Table Rock Lake Water Quality, Inc. to each subcontractor.

# 2

## QUALITY SYSTEM AND DESCRIPTION

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This chapter describes the project's quality management system, including documentation of planning, implementation and assessment operations established to meet the quality of program outputs expected by project personnel, stakeholder organizations, and other potential end-users. The presentation includes when, how and by whom quality control (QC) processes are applied to ensure that all projects sponsored under this Demonstration Project produce data that are credible and reliable.

### 2.1 Reference Documents

This QMP complies with Part A requirements of the National American Standard, ANSI/ASQC E4-1994, *Specifications and Guidelines for Environmental Data Collection and Environmental Technology Programs*, and was prepared in accordance with the Interim Final, November 1999 version of EPA QA/R-2, EPA Requirements for Quality Management Plans. This QMP is also the primary source of information on the program planning, implementation, assessment and continuous improvement for this demonstration project's quality management system.

The quality management system applies to assessment of demonstration testing needs and outreach and coordination opportunities, project planning, proposal solicitations and reviews, subcontractor selections, project management, report approval, and program assessment and improvement. Documents addressing each of these activities are currently under development and will be updated as needed. These documents will cover appropriate routine, standardized, special and critical operations, and will serve as guidance to the Program Coordinator, Project Manager, Board, and prospective subcontractors.

Individual subcontractors will be required to identify and document all operations in their project plans that require quality system procedures. Documentation of the quality system procedures will also be required and must contain sufficient detail and clarity, as ascertained by the Program Coordinator and Project Manager, to ensure that the desired results are achieved.

### 2.2 Quality Management System

A quality management system is defined as a structured and documented management system describing the policies, objectives, principals, organization authority, responsibilities, accountability, and implementation of an organization for ensuring quality in its work processes, products (items), and services. The quality management system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC. In order to meet its stated mission using environmental data, the

demonstration project has established a QA program that assures that the data can be used for its intended purpose.

## **2.3 Quality Management System Implementation**

This section identifies the critical areas requiring quality management and discusses review and evaluation processes used by participants in the demonstration project to ensure quality.

### ***2.3.1 Description***

Quality management procedures are authorized by the policy determined by the Board. Procedures and processes will be documented by the Program Coordinator. Management procedures will be implemented for routine, standardized, special and critical operations. The Board will approve all program planning and management procedures at the beginning of the project.

### ***2.3.2 Management Responsibilities***

Implementation activities are carried out at the level of the subcontractor, Program Coordinator, Project Manager and Board. QAPP requirements are approved and monitored for individual subcontractors by the Program Coordinator and Project Manager. From a process perspective, once a subcontractor has been chosen for a specific project task, discussions take place between the subcontractor, Project Manager and Program Coordinator regarding the existence of useful data, and the need for a task to collect and assess existing data, to collect and evaluate new data or some combination of both. This discussion forms the basis for scoping a project task, determining the anticipated costs, and identifying the expertise needed to assist the Program Coordinator and Project Manager in assessing whether quality specifications of proposals and reports have been satisfied.

Environmental data use, collection and reduction activities are conducted by institutions, organizations, and agencies recommended by the Program Advisory Board or selected through a competitive solicitation process and approved by the Board. In all cases where data will be collected or analyzed, the prospective subcontractor must commit to the development and implementation of an appropriate QAPP specific to the project task.

Oversight level activities involve project planning and assessment activities. Participants at all levels of the demonstration project are involved in these activities.

### ***2.3.3 Management Processes***

This section discusses review and evaluation processes as they are applied to critical areas of the demonstration project to ensure quality of its products.

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### **2.3.3.1 QMP**

The QMP is developed by the Project Manager and Program Coordinator and approved by the Board. The QMP will be reviewed by the Program Coordinator and Project Manager on an annual basis to determine if the information remains relevant to the demonstration project. A briefing of the findings will be provided to the Board. If revisions are required, proposed changes will be drafted by the Project Manager and approved by the Board during a regularly scheduled meeting. Any change will include a change in the QMP revision number and the date. Changes will also be reflected in the Table of Contents. An electronic copy of the revised QMP will be sent to the EPA Project Officer.

### **2.3.3.2 Program Advisory Board**

The members of the Program Advisory Board will assist the Program Coordinator and Project Manager in review of responses to RFQs, provide advice on specific efforts associated with project tasks, and in the review of project reports. The members of the Program Advisory Board have been selected based on their expertise, affiliation with stakeholder organizations, and willingness to serve. Members of the Program Advisory Board are appointed for the life of the demonstration project. If, during the course of the demonstration project, a member becomes unwilling or unable to serve on the board, the Board of Trustees has the responsibility to identify a suitable replacement. Up to one vacancy on the Program Advisory Board can be left vacant at the discretion of the Board.

### **2.3.3.3 Community Involvement Group**

Members of the Community Involvement Group serve as conduits from the demonstration project to the local community at large. Members of the group are appointed by the Board based on willingness to serve on this volunteer group and representation within the community. The goal of the group is to include a wide range of parties interested in the results of the demonstration project, including realtors and developers, pumpers and septage haulers, homeowners, owners of resorts and motels, county officials, and other citizens. Group membership shall range between 10 and 20 total, and may fluctuate depending on recommendations from the Board, Program Advisory Board, Program Coordinator and Project Manager. The Board reserves the right to reject any and all appointees recommended by other project participants.

### **2.3.3.4 Demonstration Program**

This demonstration project's team is committed to generating information and tools for use in implementing and managing decentralized wastewater systems. The Program Coordinator and Project Manager are charged with project administration and management. In turn, the Program Advisory Board and Board of Trustees are charged with monitoring the project's Technology Demonstration Program processes to ensure that quality management principles are utilized.

When program deficiencies are uncovered, or when new Technology Demonstration program objectives are suggested, the Program Coordinator in consultation with the Project Manager will modify or create programs or procedures to address this. Such actions may or may not require new policy or policy modifications.

#### **2.3.3.5 Subcontracted Tasks**

The development and approval of RFQ and RFP work scopes for specific subcontracted project tasks will involve the Program Coordinator, Project Manager, Program Advisory Board and Board of Trustees. Specific subcontracted tasks will be developed based on the tasks identified in the project workplan. Based on an assessment of the intent of the task and anticipated cost, the Program Coordinator and Project Manager will develop the RFQ or RFP, and submit drafts to the Board and Program Advisory Board members for review and comment. Once the comments are collected, the Board will approve the wording of the work scopes prior to its release to the general public.

#### **2.3.3.6 Subcontractor Selection**

The Program Coordinator and Project Manager will develop evaluation sheets based on the evaluation criteria summarized in the RFPs and RFQs. These evaluation sheets will be used by Program Advisory Board members and the Board of Trustees in evaluating subcontractors for specific subcontracted tasks. Evaluation sheets will be customized for each specific subcontracted task.

#### **2.3.3.7 Project QAPPs**

Requirements for QAPPs are specific to each project. A QAPP will be required for all subcontracted tasks involving the generation or use of environmental data. Section 2.4.1.1 addresses how QAPP requirements are applied to projects involving different types of subcontracted tasks. Information regarding QAPP requirements will be provided in the instructions for proposal submission. Proposers must address the measurement and acquisition of data in their project proposals and will be required to generally address planning, implementation and assessment procedures for assuring data quality as well. Such elements will generally be addressed in a QA Narrative as part of the proposal submission. Guidelines for the QA Narrative (e.g. required elements) will be included in the RFP or RFQ. QAPP elements will be finalized prior to the award, with the full QAPP submitted by the subcontractor and approved by the Program Coordinator and the EPA Project Officer prior to any data collection or analysis activity. The QAPP must provide a level of detail consistent with the proposed collection analysis of new environmental data or an analysis of existing data sets. It should also address measurement systems design and implementation, to ensure that appropriate methods for sampling, analysis, data handling, and QC are employed and documented. Proposers must also address the assessment of the QC program effectiveness and QA activities that occur after data collection is completed, to ensure that data conform to specified criteria. The overall content and level of detail in the QAPP will vary depending on the nature of the project (i.e., a literature

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review may require few details, while a data intensive field study which may require significant information).

### **2.3.3.8 Technical Reports**

Technical reports are prepared by subcontractors according to guidelines generated by the Project Manager. The Project Manager and Program Coordinator are responsible for reviewing the document for technical content and completeness. The Project Manager will provide technical editing and prepare the report for submission to the Board. This review includes an assessment of whether the report met the original intent of the subcontracted task. After technical editing and review, the report will be submitted to the EPA Project Officer. Upon receiving approval by the EPA Project Officer, the report will be posted on the demonstration project website (<http://members.inter-linc.net/trlwq>) and otherwise made available to the public.

## **2.4 Quality System Reviews**

The findings of any quality systems assessments and proposed corrective actions will be submitted to the Board of Trustees for comments and approval. Once approved, these findings and corrective actions will be incorporated into the QA Annual Report and Work Plan (QAARWP) for submission to the EPA Project Officer on an annual basis.

The demonstration project quality management system shall be reviewed annually by the Program Coordinator and Project Manager. The review will include this QMP and any subcontracted projects currently underway. The effectiveness of actions taken subsequent to previous reviews, and an examination of corrective actions since the immediate past review will be considered. Amendments to the quality system that increase cost effectiveness will also be considered. Actions required to correct specified deficiencies will be addressed. Any changes shall be submitted to the Board of Trustees for review. The QMP will be revised to incorporate approved changes as appropriate. Results of the review will be documented and archived, as specified in Chapter 5, and included in the subsequent QAARWP submittal.

### **2.4.1 Project QAPP Review**

The QAPP is a formal document describing in comprehensive detail the necessary QA/QC, and other technical activities that must be implemented to ensure that the results of work performed will satisfy the stated performance criteria. Every subcontracted task involving the collection or interpretation of environmental data must have a written and approved QAPP prior to the start of the data collection. QAPPs are not required for projects that do not involve the collection of environmental data. It is the responsibility of the subcontractor to develop and submit a QAPP to the Program Coordinator. Data collection cannot begin until the Program Coordinator has approved the QAPP.

### 2.4.1.1 QAPP Requirements

QAPPs are prepared, reviewed and approved in accordance with EPA QA/R5, *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations*. Copies of this document are available from the EPA Office of Environmental Information Quality website: [www.epa.gov/quality/qa\\_docs.html](http://www.epa.gov/quality/qa_docs.html). Document QA/R5 identifies and defines the elements that must be addressed in all formal QAPPs. The demonstration project will utilize a graded approach to development of QAPPs in order to effectively focus QA, as discussed in *EPA QA/R5*. Subcontracted tasks will be assigned to one of the following five categories based on the type of environmental data collected or analyzed during the project:

- Category I: Applied Research
- Category II: Basic Research
- Category III: Sampling and Analysis
- Category IV: Secondary Data
- Category V: Projects without environmental data

It is anticipated that most subcontracted tasks during this demonstration project will fall into Categories III, IV or V. Projects under Category V, as the name implies, do not involve any environmental data operations, and will not be required to prepare a QAPP. The required QAPP documentation for projects meeting one or more of the definitions represented by Categories I through IV have been defined and summarized in guidance developed by the EPA.

Category I involves the most stringent QA approach and Category III is the least stringent. Category IV addresses the use of secondary data. Requirements for Category IV shall be included when both new and existing data will be used. The definitions of the two most common categories expected in this demonstration project where QAPPs will be required are given below.

- **Category III: Sampling and Analysis.** A sampling and analysis activity or project is typically defined as a study performed to generate data to either monitor parameters on a routine basis or to characterize a particular population for later studies.
- **Category IV: Secondary Data.** A secondary data research project involves the gathering and use of existing environmental data for purposes other than those for which they were originally collected. These secondary data may be obtained from many sources, including literature, industry surveys, compilations from computerized databases and information systems, and computerized or mathematical models of environmental processes. If primary data will also be generated as part of the project, then the associated QAPP should incorporate the QA requirements to address the secondary data.

The Program Coordinator in consultation with the Project Manager shall identify the appropriate subcontracted task category. The Program Coordinator is responsible for determining QA requirements in accordance with the appropriate category for review and approval by the Board. The requirements will be described in the RFP or RFQ and a statement of the task category shall be placed on the QAPP signature and approval page. In

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general, tasks involving data collection or analysis will be required to provide information on project management, measurement and data acquisition, assessment and oversight, and data validation and usability as part of their QAPP. QAPPs will be required to be submitted within 90 days of the award or 30 days prior to the initiation of data collection or analysis.

#### **2.4.1.2 QAPP Review and Approval**

The QAPP must be reviewed by the subcontractor, Program Coordinator, and Project Manager. It is recommended that the document be reviewed by a statistician prior to submittal. The Program Coordinator will review each QAPP for the required elements and the soundness of the QA/QC. The Program Coordinator will review QAPPs within 21 days of submission. The Program Coordinator will employ a QAPP Checksheet Review Form, adapted from the QAPP checksheet developed by the EPA Great Lakes Program Office (Appendix A), to guide the review of individual QAPPs. The Checksheet is a summary of QAPP elements that helps the reviewer to identify whether or not QA requirements have been adequately addressed. QAPP approval is the responsibility of the Project Manager. The Project Manager will determine whether the QAPP is approvable; if not, the Project Manager will identify those elements requiring revision. If the QAPP requires revision it will be sent back to the author accompanied by a copy of the completed QAPP Checksheet Review Form and written comments pertaining to those elements found to be deficient. Revisions, which may be incorporated into the QAPP or provided as an addendum, must be reviewed and approved by the Program Coordinator. A QAPP must include a signature and approval page signed by the preparer, Program Coordinator and Project Manager in order to be considered final. Final approved QAPPs and any review documentation or correspondence are secured in project files maintained by the Program Coordinator. The EPA Project Officer shall also receive a copy of all final approved QAPPs.

#### **2.4.1.3 QAPP Revisions**

As mentioned in the paragraph above, any revisions required to an original QAPP may be included in a second or subsequent revision or addendum. However, sometimes the scope of the project can change which may have the potential to affect the quality of the data. If these changes affect the collection of environmental data, an addendum to the approved QAPP must be submitted that describes the changes and the appropriate QA/QC techniques to meet the task goals. The Program Coordinator, Project Manager, and EPA Project Officer must approve the changes.

#### **2.4.1.4 QAPP Archive**

The Program Coordinator serves as the Document Control Officer and is also responsible for QAPP tracking. QAPPs shall be filed with the Program Coordinator who will label the document manually with a unique document control number (see Chapter 5). All original copies of the QAPPs and any subsequent revisions will be secured by the Project Coordinator and maintained in the QA section of the project file. If possible, a disk copy of QAPPs shall also be acquired.



# 3

## PERSONNEL QUALIFICATIONS & TRAINING

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This chapter addresses the qualifications, expertise and training requirements for the demonstration project participants involved in project planning, implementation and assessment, and includes the Table Rock Lake Water Quality Board of Trustees, Program Coordinator, Project Manager, and subcontractors.

### 3.1 Table Rock Lake Water Quality Board of Trustees

Table Rock Lake Water Quality, Inc. is a 501 (c)(3) corporation committed to improving the water quality of Table Rock Lake. The corporation was formed in December, 1998 by the Table Rock Lake/Kimberling City Area Chamber of Commerce. The Chamber's board of directors recognized that the improvement and preservation of the water quality of Table Rock Lake to be a monumental challenge deserving of a commitment from a one purpose organization.

Each of the trustees of the water quality board concentrated heavily on the overwhelming task of self -education, knowing full well that it would be a continuing long-term process. They focused on various water quality issues; causes of the problem; origination of the source; other organizations and state agencies working on the problem; and how this organization could make a difference. The Board concluded that they would be an action group, with projects that actually stopped pollution sources, and accomplish these projects in a determined, positive, helpful and organized manner. In addition they noted that it will be paramount to have the support and involvement of a broad range of community leaders.

In order to assist the Board members education on issues of water quality, the Board has appointed a technical support committee to provide professional advice on technical matters related to Table Rock Lake water quality. The members of the committee include representatives from the following organizations: Stone County Commissioners, White River Valley Environmental Services, U.S. Army Corps of Engineers, Stone County Health Department, and Missouri Department of Natural Resources. Various technical support committee members regularly attend monthly Board meetings.

In addition, two of the Board members have visited another demonstration project underway in LaPine, Oregon, along with the Project Manager and Program Coordinator. During this visit Board members learned how the administrators of this demonstration project set up their project and dealt with key issues, such as public participation, technology efficacy, and common homeowner concerns. Thus, the Board members are committed to continuously educating

themselves on the issues of water quality in general and advanced wastewater systems in particular.

### **3.2 Administrative Core Staff**

The demonstration project's administrative core staff includes the administrator for Table Rock Lake Water Quality, Inc., who serves as the Program Coordinator, and the EPRI Community Environmental Center (CEC), which provides the Project Manager. These positions were identified in the project workplan, which was included in the application for the EPA Cooperative Agreement. The Program Coordinator has served as the administrator for Table Rock Lake Water Quality, Inc. since 1999 and currently serves on the Board of Directors for the Missouri Smallflows Organization, which is the state chapter for the National On-site Wastewater Recyclers Association (NOWRA). The EPRI CEC currently fills the position of Chair for the Project Steering Committee of the National Decentralized Water Resources Capacity Development Project, an EPA-sponsored national project focusing on research, training and regulatory reform in the decentralized wastewater treatment field. The Project Manager has completed training in EPA Quality System requirements. Any changes in these personnel will be immediately reported to the EPA Project Officer.

### **3.3 Subcontractors**

The demonstration project review process is intended to ensure that only adequately qualified and trained personnel are performing subcontracted work. All proposals must contain resumes for key personnel. The subcontracted terms and conditions state that any changes in key personnel must be provided as soon as possible (but not later than the next progress report) to the Program Coordinator.

If the anticipated task cost is greater than \$ 25,000, subcontractors are selected through a proposal submission and review process. Once a subcontracted task is defined, the names of potential suitably-qualified subcontractors will be solicited by the Program Coordinator and Project Manager. Subcontractor qualifications are evaluated by the Program Coordinator and Project Manager during the proposal review process, and then continue to be evaluated throughout the life of the project. The mechanisms for review include quarterly progress reports submitted by the subcontractor, intermediate deliverables (in some cases), and periodic site visits by the Program Coordinator or Board members. These evaluations, conducted by the Program Coordinator and Project Manager, are placed in the project file.

### **3.4 Training Policy**

The Program Coordinator and Project Manager are expected to have met the educational, work experience, and training requirements for their positions. Such training may consist of classroom lectures, workshops, teleconferences, and on-the-job training. Training in contract administration and project management is highly recommended for both parties. In addition, training in the development of QMPs, preparation and review of QAPPs, and the DQO process for data collection and analyses is recommended for the Program Coordinator (the Project

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Manager has completed this training), along with other personnel assisting with QA implementation. Other training, such as in leadership and teamwork may also be useful for improving management effectiveness

### **3.4.1 Identification of Training Needs**

Training needs are identified each year by the Administrative Core personnel. In consultation with the Program Advisory Board, the Administrative Core personnel will generate recommended training needs for themselves and the Board of Trustees. As membership on the Board of Trustees is a volunteer position, the recommendations developed by the Administrative Core shall be non-binding.

### **3.4.2 Recommended Training**

The Project Manager shall establish a procedure for assuring that contracts and grants are effectively managed. The Project Manager is currently certified by the EPA in QA/QC control. Thus, the Program Manager will train the Program Coordinator in the salient aspects of quality control.

Formal QA/QC training is offered through the following organizations:

- American Society of Quality Control
- Air and Waste Management Association
- EPA Institute
- EPA Regional Offices
- EPA Office of Environmental Information Quality Staff

Some contractors and academic institutions may also provide training for data collection activities that support regulatory efforts by EPA, as well as the states and EPA Regions. A list of available course may be obtained from the EPA Office of Environmental Information Quality Staff.



# 4

## PROCUREMENT OF TECHNICAL SERVICES

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This chapter provides general guidance on the procurement procedures for subcontracted services. The Board of Trustees must ensure that the services it acquires for the demonstration project are procured within EPA regulations, are of known quality, are delivered in a timely fashion, are documented, meet the acceptance criteria, and are within the required specifications as outline in the Cooperative Agreement and detailed in this document.

### 4.1 General

The following sections describe the monitoring and control processes established to ensure that the quality of delivered products is acceptable and appropriate. The processes include the proposal solicitation review and project selection process, contract award process, and project management process. Procedures for Request for Proposal (RFP) development, proposal solicitation and review, project selection, and contracting are detailed in this chapter. This list will be incorporated in the form of Standard Operating Procedures to guide project participants in the procurement of technical services to meet project objectives.

### 4.2 Proposal Solicitation, Review and Project Selection Process

The proposal solicitation process involves the identification of subject matter, approval of the subcontracted task by the Board, development of draft RFPs by the Project Manager, Program Coordinator and Program Advisory Board, and final approval of the completed RFP by the Board.

The Project Manager and Program Coordinator will develop the first draft of any RFP or Request for Qualifications (RFQ), based on the tasks described in the project workplan. The Board is subsequently responsible for making final selections of qualified subcontractors from the submitted proposals and interviews based on criteria defined in the RFP or RFQ. The solicitation package is the first step in the procurement process that helps to ensure that services produce results or products of acceptable quality. The expectations of the product or service must be succinctly stated and communicated to potential subcontractors in the RFP or RFQ. In general, task assignments will be competitively bid when the estimated cost exceeds \$ 25,000.

Two major tools to ensure that adequate service is provided are a well-defined SOW and a QA Project Plan (QAPP) that includes assessments and audits. The Program Coordinator and Project Manager will establish and communicate quality requirements during the solicitation stage. The

“Quality Assurance Review Form for Task Development” provided in Appendix A will be completed for each subcontracted task by the Program Coordinator during the RFP development process. This review form will identify the necessary anticipated QA assessments and documentation. The Program Coordinator will prepare the form to ensure that the QA requirements are appropriate for the intended task.

A standard set of criteria shall be included in the RFP or RFQ, and it will be clear that all responses received in response to the document will be judged against this criteria. A portion of the criteria may include various quality assessments such as on-site audits and the analysis of performance evaluation materials. Respondents will not be required to submit a QAPP until a contract is awarded, but QA considerations will be listed among the criteria by which the respondent will be judged. Typically, 10 percent of the overall proposal rating will be allocated to QA although this number could be adjusted based on the nature of the subcontracted task.

Upon receipt of responses to the RFP or RFQ, the Program Coordinator, Project Manager, and members of the Program Advisory Board will rate each response against a standard predefined set of criteria. The Project Manager will gather the individual ratings, summarize the results, and present these results to the Board of Trustees for their final selection.

### **4.3 Contract Award Process**

Once a project has been selected for funding, the contracting process is initiated. All subcontractors will be contracted with Table Rock Lake Community Service, Inc., the designated 501 (c)(3) that operates Table Rock Lake Water Quality, Inc. The President of the Board of Trustees is responsible for executing the contract and enforcing the provisions. The Program Coordinator is formally designated as the technical representative of the President for all contracting procedures, and has responsibility for ensuring that the service is provided according to provisions of the contract. The Program Coordinator will also serve as the primary point of contact with the EPA Project Officer and EPA Grants Administrator for all contractual issues between the demonstration project and the EPA.

#### **4.3.1 Subcontract Agreements**

The vehicle for procuring research, development and training services is the contractual agreement between the subcontracting institution and Table Rock Lake Water Quality, Inc. It is the responsibility of the Program Coordinator and Project Manager to be knowledgeable of EPA QA requirements and to represent these standards during the development of the project’s SOW to be incorporated into the subcontract agreement. The same terms and conditions listed under the EPA Cooperative Agreement with Table Rock Lake Water Quality, Inc. shall be included in all demonstration project subcontracts. In addition, special conditions may be included in the subcontracts. The Program Coordinator will determine any special conditions based on direction from the Board of Trustees and adherence to necessary QA requirements.

One of the special conditions to all subcontracts relates to the project reporting requirements. QA documentation for all projects where data is collected or analyzed will be required to submit

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a QAPP to the Program Coordinator. The following statement shall be included in all subcontracts where, in the judgment of the Program Coordinator, environmental data will be collected or analyzed: **“The recipient agrees to submit the required QAPP documentation to the Program Coordinator for EPA review and approval within 90 days of this agreement or 30 days prior to the commencement of any environmental data gathering activity. Implementation dates will be adjusted based upon the actual conditions. Costs associated with data collection are not allowable costs until the QAPP is submitted, nor will costs be reimbursed until the QAPP is approved.”**

#### **4.3.2 Quality Specification/Conformance**

In order to define and measure the quality of the subcontracted duties, a Scope of Work (SOW) that defines the minimum acceptable requirements for service must be developed. SOWs shall be developed by the selected subcontractor based on comments and discussions with the Program Coordinator and Project Manager. If selected through a RFP process, these SOWs will largely incorporate by reference the work elements defined in the subcontractor’s proposal. If selected through a RFQ process, SOWs will be developed by the selected subcontractor based on interviews of the Project Manager and Program Coordinator. In both cases, good communication of the project purpose, desired deliverables, QA requirements and rating criteria is essential to a mutual understanding of quality expectations. Methods that will be applied to assess quality will vary depending on the subcontract, but in all cases the Project Manager and Program Coordinator shall provide the assessment and document all results. These results will be relayed to the Board of Trustees and, if necessary, Program Advisory Board for advice and action.

#### **4.4 Project Management**

Once a project subcontract has been awarded, progress is monitored by the Program Coordinator and Project Manager through quarterly progress reports submitted by each subcontractor and periodic site visits by the Program Coordinator, Project Manager, Board members, and Program Advisory Board members when possible. The Board members will submit comments on any quarterly reports to the Program Coordinator who will convey the comment to the task subcontractor. If disputes arise, the Program Coordinator and Project Manager will first attempt to resolve them. If they are unable to attain a satisfactory resolution, the Board of Trustees will be solicited for assistance up to and including, if necessary, termination of the subcontract. Such actions will be used only for the most egregious actions.



# 5

## DOCUMENTS AND RECORDS MANAGEMENT

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Procedures have been established for maintaining and controlling records and documents used for project planning, implementation and management. This chapter describes the demonstration project's requirements for filing, storing and disposing of technical and quality documents and records.

### 5.1 General

Documents relevant to the demonstration project can be divided into two categories: (1) those pertaining to grants and contract administration; and (2) day-to-day activities associated with the actions of specific tasks.

Hard copies of all pertinent documents are maintained by the Document Control Officer, who is the Program Coordinator. It is the responsibility of each subcontractor to provide any formal correspondence pertaining to the task activities to the Program Coordinator. Electronic copies of all critical documents are maintained by both the Program Coordinator and Project Manager. The Project Manager will store these on Washington University School of Engineering's computer network, which is backed up daily.

### 5.2 Types and Purposes of Documents

Records are kept for two major categories of documents: technical and management-oriented documents. Project files and records are organized and maintained systematically relative to the stage of project development (e.g. prioritization of technical objectives; project concept formulations; RFP development; contract execution; project progress and assessment and publication preparation). These records are maintained by the Program Coordinator.

Quality management documents will be reviewed annually to assess for any needed updates.

### 5.3 Technical Documents

Final reports from the subcontractors may often be the demonstration project's end product, so the quality process must begin with project planning. This section describes documentation regarding planning, solicitation, execution and reporting processes for the subcontracted tasks and administrative activities.

### **5.3.1 Task Planning**

Key documents associated with planning activities include minutes from the monthly Board meetings, and any formal correspondence regarding the planning process. In addition, the project workplan, submitted with the grant application, along with any revisions should be included.

### **5.3.2 Task Solicitation and Selection**

The Document Control Officer will archive all documents relevant to this process including (but not limited to): RFPs and RFQs, formal correspondence with prospective bidders, proposal reviews and rankings, comments from any reviewers, such as the PAB members or Board members, and formal actions regarding projects proposed for funding.

### **5.3.3 Projects Under Contract**

All records and documents pertaining to subcontracted projects are maintained by the Document Control Officer at the Table Rock Lake Water Quality, Inc. office in Kimberling City, Missouri. Paper documents will be scanned for archiving electronically whenever feasible. Files are updated with quarterly reports or other correspondence with the subcontractors or Board members. These files include the contract, all contract amendments, the task SOW, task budget, QAPP, if required, all correspondence, quarterly progress reports, and review comments from the Program Advisory Board. Electronic copies of these files will also be stored by the Project Manager.

Financial files, including project budget summaries and all invoices, are maintained in hard copy format by the Program Coordinator. Paper files are maintained for budgetary items as required by good accounting practices.

### **5.3.4 Project Review and Approval**

All subcontracted work products are subjected to review by the Program Coordinator, Project Manager, and Program Advisory Board. Comments and recommendations on these products will be collected by the Program Coordinator and forwarded to the Board members for action. All review comments and recommendations are filed along with other task documents. These files will be maintained by the Document Control Officer.

### **5.3.5 Project Reports**

Final task reports from the subcontracted efforts may be a major vehicle for disseminating information to the demonstration project's stakeholders and the general public. Electronic versions of all reports will be prepared using software currently used by the EPA for document dissemination (e.g. Adobe Acrobat, Microsoft Word). Reports will be available on the Table Rock Lake Water Quality, Inc. website and selected reports will be printed at the discretion of

the Board. The Board shall make electronic copies available to the EPA Project Officer should the EPA decide to post the files on an EPA website.

## **5.4 Quality Management Documents**

Quality management documents are the primary source of policy information, operating procedures and process information to demonstration project participants and subcontractors. These documents will be distributed as appropriate but at a minimum will be given to each subcontractor at the time of the project award. The major documents supporting the project's quality system currently include this QMP and appendices. Other quality documents will be included as additional appendices to the QMP or issues as separate documents as deemed appropriate.

### ***5.4.1 Revisions and Approvals***

Quality management documents are reviewed annually and revised as necessary. In particular, the QMP will be a living document that is revised annually to reflect any changes in policy or implementation of any procedures. Documentation of required changes is recorded by the Program Coordinator. QMP revisions are reviewed and approved by the Board. Revised sections are submitted to the EPA Project Officer and EPA Quality Officer. Major revisions may require formal EPA approval.

### ***5.4.2 Control, Storage and Distribution***

Quality management documents are prepared for use by a limited number of staff and subcontractors. Distribution is limited to those subcontractors who must, in the judgment of the Program Coordinator, submit a QAPP. The demonstration project Administrative Core personnel are responsible for controlling, storing and distributing these records and documents.

### ***5.4.3 Accessibility, Maintenance, Retention and Disposal***

All management documents are maintained by the Program Coordinator and when updated, superseded versions are disposed. All final reports will be made available to the general public after approval has been given by the EPA Project Manager. Administrative documents including but not limited to; meeting notes, memos, financial records, project proposals, contracts, site surveys, and environmental monitoring data, will be maintained by the Program Coordinator and only be made available to the EPA Project Manager, Project Manager, Board of Trustees, and Program Advisory Board. The general public may not access these documents without the written permission of the EPA Project Manager.



# 6

## COMPUTER                      HARDWARE                      AND SOFTWARE

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This chapter describes computer infrastructure and usage by the Program Coordinator, Project Manager, and Board of Trustees.

### 6.1 General

Much of the daily work of the Program Coordinator involves processes designed to manage project services. These services are as varied as developing and managing a stakeholder data base, overseeing subcontracted work, disseminating information and products, managing finances, and providing staffing for administrative operations.

#### ***6.1.1 Hardware/Software for Management Activities***

The Project Manager uses computer resources supplied and supported by the Washington University Engineering Computer Services (ECS). ECS maintains a network of fifteen servers distributed over three domains. One network server is dedicated for users' files. This server consists of a Dell PowerEdge system with six drives in a RAID5 disk array configuration. Users' files are backed up on a fixed schedule using Quantum DLT technology with 35 GB tapes. A differential backup is conducted twice each day for the aforementioned user file server. This backup saves all new or modified files since the previous network-wide backup, which is conducted once per week. Monthly and annual backups are also conducted with the latter archived indefinitely. ECS has two on-site professional staff on call during regular business hours and available after business hours by pager to provide all users with technical support as needed.

On a monthly basis, the Program Coordinator electronically backs up all active files onto CD, and maintains an archival back up of inactive files on CD as well.

All demonstration project documentation is prepared using MS Word, MS Excel, MS PowerPoint, and Adobe Acrobat. This provides maximum flexibility in corresponding with stakeholders including other staff, the Board of Trustees, the Program Advisory Board, the Community Outreach Group, and subcontractors. No specific software package is currently used for collectively tracking the research projects as the overall number of subcontracted tasks is small; the advantages of such a system are currently outweighed by the loss of transparency to others wishing to directly access the information.



# 7

## PROGRAM PLANNING

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A systematic planning process is established to identify program goals, translate goals into specific project concepts, and identify criteria for acceptance of the results and other measures of performance by which results are evaluated.

### 7.1 General

Planning of technical activities occurs at two levels within the demonstration project. The Board is responsible for identifying program goals. They will be assisted in specifying and prioritizing technical objectives by the Program Coordinator and Project Manager. The Program Advisory Board will also assist in developing specific technical objectives through a continuous review of the program objectives and specific activities within each task.

### 7.2 Program Planning

The Board meets monthly to conduct a review of the project, approve project concepts, project subcontractors, and deliverables, and assess the overall project activities and progress. Specific goals for each task are set by the Board based on needs established by the Program Advisory Board, recommendations from the Program Coordinator and Project Manager, input from the Community Involvement Group, and from various stakeholder organizations. In addition, program direction will be influenced by the results of informal surveys of public agencies and private industry representatives involved in training, planning, design, construction, regulation, or management of decentralized wastewater systems.

Program goals and objectives are revisited by the Board at least once each year in the spring. This meeting will involve a review of the status of the various project tasks, followed by discussions of materials provided relative to efforts being undertaken by other agencies and organizations. Project goals and objectives will be evaluated and modifications will be considered in the context of how better to improve the status of decentralized wastewater treatment and management in the Table Rock Lake region. The results of the review and approved modifications to project goals are documented in the Board's meeting minutes.

### 7.3 Project Planning

The Program Coordinator and Project Manger will provide the most significant amount of project planning. Besides attending all Board meetings to present task status, progress and future focus, both of the project team members will correspond on a regular basis with members of the

Program Advisory Board and the technical advisors of the Board (when appropriate) for advice on specific task goals and procedures. The Program Advisory Board will also review project deliverables with a particular emphasis to determine if the previously defined data quality objectives are met.

## **7.4 Allocating Resources**

The Cooperative Agreement with the EPA is used as a vehicle for subcontracting various tasks associated with this demonstration project. The Board is responsible for allocating available funds identified in the Cooperative Agreement budget based on program goals and objectives, the current array of program tasks, and the phasing of currently-funded tasks.

## **7.5 Establishing Data Quality Objectives**

Data quality objectives (DQOs) are qualitative and quantitative statements derived from a process to clarify program task technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. This process assists the user in defining the purpose of each task and sets the framework for the design, implementation and QA of the program task. Once DQOs are defined, a QA program for the specific task can be developed for the project.

During the RFP development process for approved program tasks, DQOs shall be framed by Program Coordinator and Project Manager to the extent that the QA Narrative elements of the RFP can be established. While in some cases the overall objective of a specific project might focus on data collection and analysis (and thus the DQOs must be well defined at the RFP stage), in most cases this demonstration project funds subcontractors to complete tasks where data collection and analysis is not the sole focus of study. In the latter cases, it is usually the proposer's burden to define the DQOs consistent with the overall scope of their proposed work, and to demonstrate through the QA Narrative that a comprehensive quality system can be developed and implemented.

During the RFP development and project procurement process, the Quality Assurance Review Form will be employed to identify QA elements that must be addressed in the QA narrative and subsequent QA documentation. Each project will be evaluated for use of environmental data and the DQOs necessary to complete the project. For those tasks obtaining or utilizing environmental data, including secondary data, the QAPP requirements provided in section 2.4.1 will be applied. The QAPP will document the development, use and assessment of environmental data.

## **7.6 Including Key Personnel in Planning of Subcontracted Tasks**

Key personnel to be included in the planning process for subcontracted tasks include the Program Coordinator and Project Manager, along with the Program Advisory Board (both as a

Board and on an individual basis). It is the responsibility of the selected subcontractor to assemble a team of qualified personnel to address data quality at the subcontracted task level.

## **7.7 Reviewing and Approving Planning Documents for Subcontracted Tasks**

The main planning document with respect to subcontracted tasks is the task-specific QAPP, which will be prepared by the selected subcontractor. The process for reviewing and approving QAPPs is presented in Section 2.4.1.2.

## **7.8 Assessing Performance**

Assessing performance is the final step in managing each task of this demonstration project. Evaluation forms will be developed by the Project Manager in consultation with the Board. These forms are to be completed by the selected subcontractors, Program Coordinator, and Program Advisory Board. The information obtained through this evaluation process shall be used by the Board to assess the technical quality of subcontracted work, and to guide process improvement and program planning.



# 8

## IMPLEMENTATION OF WORK PROCESSES

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A quality system is effective only to the extent that it is followed by all personnel. This chapter describes the processes to ensure that work is performed according to the demonstration project quality system as embodied by this QMP, any related quality documents, and the project-specific QAPPs.

### 8.1 Program Implementation

This QMP was developed as a means of documenting how the demonstration project will plan, implement and assess the effectiveness of QA/QC operations applied to the overall program and specific subcontracted projects. The Program Coordinator, with assistance from the Project Manager, is responsible for implementation of the QMP. The various functions of the demonstration project are monitored by the Program Coordinator, who brings quality-related elements to the attention of other personnel. For example, sections 4.2 and 4.2 of this QMP describe the process for building quality assurance elements into the proposal solicitation process. It is the Project Manager's responsibility to work with the Program Coordinator and the Program Advisory Board to ensure the quality assurance elements are adequately formulated and concisely stated in the RFP. This will likely require training for the Board of Trustees to be conducted by the Program Coordinator and Project Manager at a regularly scheduled Board meeting. For tasks which are routine or repetitive (e.g., proposal review protocols), the Project Manager shall prepare Standard Operating Procedures (SOPs) to ensure the quality planning elements are implemented consistently. Draft SOPs shall be reviewed by the Program Advisory Board and approved by the Board of Trustees. SOPs shall serve as training aids; provide ready reference and documentation of proper procedures, reduce work effort; reduce error occurrences in data; and improve data comparability, credibility and defensibility. To ensure these objectives are met, the EPA document *EPA QA/G-6 Guidance on Standard Operating Procedures for Environmental Data Operations* will be consulted during SOP development.

The quality system is a structured and documented management system describing policies, objectives, principles, organizational authority, responsibilities, accountability and implementation plan of the organization for ensuring quality in its work processes, products (items) and services. It is an evolving system and therefore the demonstration project team shall review all quality-related documentation each year and report on the status and effectiveness of its quality program to the EPA QA Manager through a QA Annual Report and Work Plan (QAARWP). The QAARWP documents the findings of the assessment of the demonstration project's Quality System, documents performance during the immediate past fiscal year, and

provides the work plan for the upcoming year's priorities in relation to the demonstration project's quality system.

## **8.2 Project Implementation**

It is demonstration project policy that all work involving the use or collection of environmental data be supported by a QAPP. The QAPP is a formal document describing in comprehensive detail the necessary QA/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 QAPP provides a project/task-specific blueprint of how QA/QC are applied to a subcontractor to assure the results obtained during that subcontracted project are of the type and quality needed and expected. The demonstration project will require development and use of the QAPP for the implementation of work involving subcontractors. The task subcontractors are responsible for QAPP implementation. The Project Manager is responsible for QAPP approval and ensuring that the QAPP is implemented in compliance with the specific EPA regulations and guidance.

# 9

## ASSESSMENT AND RESPONSE

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The Table Rock Lake Demonstration Project program assessments fall into two broad categories: assessing the planning and programming elements of the overall demonstration project effort; and assessing the performance of individual subcontracted projects. This chapter describes the tools and processes for conducting and responding to assessments.

### 9.1 Demonstration Project Management Assessment

Project personnel perform an assessment of the demonstration project's Quality Management System annually. This annual quality system review includes a review of all quality-related documents (including this QMP) and preparation of a QAARWP to be filed with the EPA Project Officer. The roles and responsibilities of project personnel in conducting these assessments and implementing any changes are discussed in Chapter 2.

At the conclusion of every subcontracted project, the Program Coordinator or Project Manager will conduct a telephone interview with the subcontractor's primary contact to obtain feedback and constructive criticism on the demonstration project's program management, including quality elements, from the subcontractor's perspective. Summaries of such interviews will be periodically compiled and reviewed and corrective action taken as needed by the Program Coordinator and Project Manager.

### 9.2 Subcontracted Project Assessments

Subcontracted projects are monitored using a variety of mechanisms including:

- On-site visits by the Program Coordinator or Project Manager;
- Review by the Program Coordinator and Project Manager of quarterly reports generated by the subcontractors
- Review by the Program Advisory Board of final project reports;
- Review of final project reports from the subcontractors by the project team and one or more outside technical peer reviewers qualified to assess the quality of the work.

A core duty of the Program Coordinator is to establish and maintain an open channel of communication with the subcontractors. Travel is budgeted for the Program Coordinator and

Project Manager for an on-site visit to each subcontractor's office or institution. In most cases, this visit will take place relatively early in the project to strengthen the communication and assess the technical readiness of the subcontractors' operations.

The review of quarterly progress reports submitted by the subcontractors allows the Program Coordinator, Project Manager, Board of Trustees and Program Advisory Board to ascertain whether the project is on track both technically and from a quality perspective. If an issue or problem is identified, the Program Coordinator works with the contractor to resolve such issues or problems. Section 4.4 presents the mechanisms for providing feedback to the subcontractors and resolving any disputes. These reviews are intended to provide constructive feedback and an interactive format for resolving problems, but in some cases stronger measures may be necessary. In such cases, a stop work order can be issued by the Board until such time that technical, quality, or budgetary problems can be resolved. If the problems are insurmountable, the contract can be terminated (according to the terms found in each subcontract).

Final project reports are also subjected to a rigorous assessment as described in section 2.3.3.9. After the project is completed an assessment of the project subcontractor performance is performed by the Program Coordinator and documented in the project file for future reference.

# 10

## QUALITY IMPROVEMENTS

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The intent of this chapter is to develop and foster the concept that quality assurance is the philosophy that, in all work functions associated with this demonstration project, the project team should continually strive for improvement. This chapter describes how the project team will detect and prevent quality problems and describes the process for continuous improvement. This process will be discussed for both the program and project levels.

### 10.1 Program Reviews and Improvement

The Program Coordinator and Project Manager will meet regularly to discuss quality assurance and program issues to look at ways of improving the organizational philosophy regarding quality assurance. By discussing new aspects of quality assurance, the project team has the opportunity to continuously improve the organization and research and development program activities. Specific objectives will be presented and subsequent work plan submissions will document the extent to which such improvements were discussed, evaluated and implemented.

The TRLWQ Board will rely on regular internal program reviews by the Program Coordinator and Project Manager on issues identified by the Board and the Program Advisory Board as key mechanisms to identify areas of concern. At least once every year the Board of Trustees and Program Advisory Board will be provided with specific questions for their input regarding the current philosophy, implementation and effectiveness of the quality system. Any deficiencies identified through these procedures will be address through the development of an action plan, which could include the revision of this document.

This document will be reviewed by the Program Advisory Board in order to determine if the document remains relevant to the demonstration project's mission. This document serves as the assessment mechanism and the blueprint for any actions aimed at improving the demonstration project and at implementing any QMP revisions needed to address changes to the demonstration project's mission.

### 10.2 Projects Review and Improvement

Project reviews can be accomplished using the tools described in Chapter 9. The goal of the project review is to detect and correct conditions that could adversely compromise the ability to use the products for their intended purpose. This goal will be accomplished by establishing objectives for tasks where data is collected or analyzed in the planning phase of the project to translate the user's needs into defined product characteristics that, if met, both user and producer

agree will satisfy the user's needs. This will be documented in the QAPP and will form the basis for determining the success of the project.

It is the duty of each subcontractor to assure the QAPP is developed and its goals met. It is the duty of the Project Manager to review and (ultimately) approve the QAPP prior to the start of the task, and to provide timely notification to the subcontractor, if conditions are detected that could adversely compromise the product's end use, and what corrective actions may be recommended. It is the Program Coordinator's responsibility to resolve potential budget increases that may result. It is the responsibility of the Board of Trustees to take on the role of key user (decision maker) during the planning phase to assure that the measures by which success of the project will be judged are conveyed to the subcontractors. There will be a data quality assessment made at the end of the project, to assure that the measures of success are met.



# A

## POLICIES AND PROCEDURES

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Policy No: 03-1	Travel Policy	*
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Purpose: To reimburse Table Rock Lake Community Services (TRLCS) employees for approved travel expenses while incurred during business related to the work under Cooperative Agreement No, 83093601.

EPA Reference: OMB Circular No. A-122 (Attachment B, item 56)

It is the policy that reimbursement for all travel related expenses shall be in accordance with the following guidelines:

- a. Travel costs are the expenses for transportation, lodging, subsistence, and related items incurred by employees who are in travel status on official business of TRLCS. Travel costs are allowable, subject to these guidelines, when they are directly attributable to specific work under USEPA Cooperative Agreement No, 83093601 or are incurred in the normal course of administration of the organization. The guidelines of OMB Circular No. A-122 shall be adhered to for travel related reimbursement.
- b. Such costs may be charged on an actual basis for all cost except for use of personal vehicles. Use of personal vehicles will be reimbursed on a mileage basis. A Travel Expense Report shall be used to reimburse the following:
  1. **Airfare** -- Employees are encouraged to acquire the lowest airfare tickets to reasonably accommodate for trip time and locations. Reimbursement will be made for actual ticket costs plus airport fees. Ticket receipts are required for reimbursement.
  2. **Lodging** -- Employees may select the place and type of lodging that best meet the needs of the TRLCS and the employee. Reasonable and necessary amounts are allowed for lodging. Reimbursement will be made for actual lodging costs plus applicable taxes. Lodging receipts are required for reimbursement.
  3. **Meals** -- Reasonable and necessary meal expenses incurred during authorized travel are reimbursable via a Travel Expense Report. Receipts are encouraged and will be required for any single meal in excess of \$25.00. The maximum meal allowance reimbursed for one day is \$50.00.
  4. **Registration Fees** -- Registration fees for conferences and seminars for the purpose of attending such venues as to enhance the employees knowledge and understanding of issues relating to this project, or to present information from this project to others, may be approved and payable in advance for registration purposes.
  5. **Automobile Expenses** -- Rental car fees for out of town travel is allowed. Reimbursement will be made for actual rental car fees, gas receipts, and applicable taxes. Rental car receipts are required for reimbursement. Personal car usage for approved business purposes are allowed and reimbursable on a mileage rate basis using the currently approved government rate allowance.
  6. **Entertainment Costs** -- Costs of amusement, diversion, social activities, ceremonials, and costs relating thereto, such as meals, lodging, rentals, transportation, and gratuities are unallowable.

7. **Foreign Travel** – Foreign travel is not allowed.
8. **Miscellaneous Costs**—Cost for such items as, but not limited to, telephone, printing, postage, fax, internet connection, taxis, tolls, and tips are allowable in accordance with OMB Circular No. A-122. Where possible receipts should be presented for reimbursement for these items.

<b>Policy No: 03-2</b>	<b>Procurement Policy</b>	*
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**Purpose:** To approve and execute contracts for goods, equipment and services to be rendered to TR LCS the amount of funds available under USEPA Cooperative Agreement No, 83093601 in order to carry out the project as defined, provided such contracts are made pursuant to the provisions of 40 CFR Part 30.44 and the applicable provisions of the State of Missouri Statutes.

**EPA Reference:** 40 CFR Part 30.44 and OMB Circular No. A-110 (Subpart C, 40-48)

It is the policy to establish procedures for the procurement of supplies and other expendable property, equipment, real property and other services under this USEPA Cooperative Agreement. These procedures are furnished to ensure that such materials and services are obtained in an effective manner and in compliance with the provisions of applicable Federal statutes and executive orders. Section 4 of the TLRWQ Quality Management Plan (QMP) sets forth guidelines to procure goods, equipment and services.

These procedures shall provide for, at a minimum, that the following provisions are adhered to;

1. TR LCS avoid purchasing unnecessary items.
2. Where appropriate, an analysis is made of lease and purchase alternatives to determine which would be the most economical and practical procurement for the Federal Government.
3. Solicitations for goods and services provide for all of the following.
  - a. A clear and accurate description of the technical requirements for the material, product or service to be procured. In competitive procurements, such a description shall not contain features which unduly restrict competition.
  - b. (Requirements which the bidder/offeror must fulfill and all other factors to be used in evaluating bids or proposals.
  - c. A description, whenever practicable, of technical requirements in terms of functions to be performed or performance required, including the range of acceptable characteristics or minimum acceptable standards.
  - d. The specific features of "brand name or equal" descriptions that bidders are required to meet when such items are included in the solicitation.
  - e. The acceptance, to the extent practicable and economically feasible, of products and services dimensioned in the metric system of measurement.
  - f. Preference, to the extent practicable and economically feasible, for products and services that conserve natural resources

Chapter 4 of the QMP provides general guidance on the procurement procedures for subcontracted services. The Board of Trustees must ensure that the services it acquires for the demonstration project are procured within EPA

regulations, are of known quality, are delivered in a timely fashion, are documented, meet the acceptance criteria, and are within the required specifications as outline in the Cooperative Agreement and detailed in this document.

<b>Policy No: 03-3</b>	<b>Code of Conduct Policy</b>	*
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**Purpose:** To maintain written standards of conduct governing the performance of its employees engaged in the award and administration of contracts related to the work under Cooperative Agreement No, 83093601.

**EPA Reference:** OMB Circular No. A-110 (Subpart C) and 40 CFR 30.42

No employee, officer, or agent shall participate in the selection, award, or administration of a contract supported by Federal funds if a real or apparent conflict of interest would be involved. Such a conflict would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in the firm selected for an award. The officers, employees, and agents of the TR LCS shall neither solicit nor accept gratuities, favors, or anything of monetary value from contractors, or parties to subagreements.

**Gratuities:** It shall be a breach of ethical standards for any person to offer, give or agree to give any employee or former employee or for any employee or former employee to solicit, demand, accept or agree to accept from another person, a gratuity of any kind, form or type, in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase order, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity in any controversy or other particular matter, pertaining to any program requirement or a contract or to any solicitation or proposal therefore.

Should a charge be made against a TR LCS employee that expresses a violation of these standards, a written explanation will be presented to that employee by the Board. The employee may appeal this violation to the Board by written and verbal testimony. The Board will render its final decision and determine appropriate disciplinary action.

<b>Policy No: 03-4</b>	<b>Accounting Procedures Policy</b>	*
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**Purpose:** To minimize time elapsing between the draw and expenditure of Federal funds and to ensure that all costs are necessary, reasonable, allocable, and allowable under this project within the terms of the EPA Cooperative Agreement.

**EPA Reference:** 40 CFR Part 30.21 and OMB Circular No. A-122

It is the policy to establish procedures for the request of funds from EPA and the payment of goods and services in a timely manner that ensures that costs are approved in accordance with federal guidelines.

These procedures shall provide for, at a minimum, that the following provisions are adhered to;

1. TR LCS shall review that all costs submitted for payment are necessary, reasonable, allocable and allowable in accordance with the federal cost principles outlined in OMB Circular A-122, "Cost Principles for Non-Profit Organizations" and the Cooperative Agreement.
2. TR LCS shall pay contractors and vendors within three (3) working days after receiving payment for such costs from EPA.

**Cost Review:**

All requests for payments under this cooperative agreement shall be submitted to the Program Coordinator. Payments shall be submitted for services performed and/or goods received in accordance with signed contracts, purchase orders, or other forms of written authorization issued by TR LCS. The Program Coordinator will review each payment request to determine that work has been satisfactorily performed and goods have been received. All payment requests will be reviewed for cost acceptability in accordance with OMB Circular A-122.

**Elapsed Time Between Vendor Payment and Federal Draw:**

The Program Coordinator will request a funding draw from EPA after cost review procedures on request for payments have been completed. Funds will be normally drawn on a monthly basis, but may be more frequent as invoices are submitted. Once the Federal Draw is received in the TR LCS account, the Program Coordinator will prepare checks to be issued to vendors within three (3) days. It is the policy of the TR LCS to use the reimbursement method and to have no EPA funds on hand at any time.



# **B**

## **TEMPLATE FOR QUALITY ASSURANCE PROJECT PLANS**

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### ***EPA Documents Relevant to Preparation of a Quality Assurance Project Plan***

EPA Order 5360.1 CHG 1, **Policy and Program Requirements for the Mandatory Agency-Wide Quality System** requires that guidelines in ANSI/ASQC E4-1994 AMERICAN NATIONAL STANDARD **Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs**, and EPA QA/R-5, **EPA Requirements for Quality Assurance Project Plans** be used in describing a quality management system. The above EPA requirements and guidelines and the QAPP reference, **The Volunteer Monitors Guide to Quality Assurance Project Plans** (EPA 841-B-96-003) are currently posted on the EPA Region 10 homepage at <http://www.epa.gov/r10earth/office/oea/r0qahome.htm>.

### ***Title and Approval Page***

Project Title

Document Control No:

Organization

Address

Town, State

Revision: 1.0

Date:

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