



**Quality Management Plan
for Oklahoma Conservation Commission
Environmental Monitoring and Measurement
Activities**

**FY 2021 §319(h) Project 2, Output 2.4.2.a
EPA Grant # C9-996100-21**

September 15, 2021

**Oklahoma Conservation Commission
Water Quality Division
2800 N. Lincoln Blvd., Suite 200
Oklahoma City, Oklahoma 73105**

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i. Signature Page

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Oklahoma Conservation Commission
Environmental Monitoring and Measurement Activities**

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Oklahoma Conservation Commission (OCC)

Trey Lam – Executive Director

Signature _____ Date: _____

Shanon Phillips – Director, Water Quality Division

Signature _____ Date: _____

Dan Dvoretz – Technical Programs Director / Quality Assurance Officer, Water Quality Division

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Brooks Tramell – Dir. of Monitoring, Assessment & Wetlands Programs, Water Quality Division

Signature _____ Date: _____

Oklahoma Office of the Secretary of Energy and Environment (OSEE)

Lynda Williamson – Environmental Grants Manager

Signature _____ Date: _____

United States Environmental Protection Agency, Region VI (EPA)

Approving Official – USEPA Region VI

Signature _____ Date: _____

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ii. Distribution List of Approved and Duplicate Copies

The following list of persons and their respective agencies receive finalized, USEPA Region VI-approved copies of this Plan:

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1.0 Oklahoma Conservation Commission Management and Organization

1.1 Quality Assurance Policy Statement

The Oklahoma Conservation Commission (OCC) is an agency of the State of Oklahoma whose goal is to provide for the conservation of the renewable natural resources of the state. The OCC provides for:

- control and prevention of soil erosion, floodwater, and sediment damages
- furthering the conservation, development, utilization, and disposal of water and water resources
- preservation and development of natural resources
- conservation and development of water resources and water quality
- prevention of dam and reservoir impairment
- preservation of wildlife and natural beauty
- protection of wetlands
- promotion of recreational development
- protection of the tax base and public land
- protection and promotion of the health, safety, and general welfare of the people of the State of Oklahoma.

Through legislation, the Oklahoma Conservation Commission has jurisdiction over:

- monitoring, evaluation, and assessment of the state's waters to determine the extent of nonpoint source pollution
- the development of conservation plans
- soil conservation and erosion control
- wetland protection
- assessment and conservation plan development and implementation in watersheds of lakes.

This legislation also gives the OCC responsibility to serve as the technical lead agency for §319(h) of the Clean Water Act and to develop a state strategy for wetland conservation. These functions are delegated within the OCC to the Water Quality Division (WQD).

The Oklahoma Conservation Commission works through the 84 Conservation Districts to accomplish the above goals and to operate projects. Working through local districts, OCC has contact with landowners and local leaders through which land use improvement programs are implemented.

All of the goals of OCC require the collection of consistent, accurate, and complete data as part of the completion of water quality and wetland projects. An effective Quality Management Plan provides comprehensive and consistent application of accepted quality control procedures

throughout all projects, thus assuring the reliability of project data. It is the goal of OCC to implement a Quality Management Plan which, in conjunction with each project's Quality Assurance Project Plan, ensures soundness of all data used and provided by the OCC.

To accomplish these quality assurance goals, OCC has committed considerable staff time and resources to the development and implementation of consistent and effective quality assurance plans. These quality assurance plans develop and follow the policy statement for data generation and processing for all projects outlined in this Quality Management Plan. Each of these plans is subjected to an instate review by sister environmental agencies, the Oklahoma Office of the Secretary of Energy and Environment (OSEE), and EPA Region VI with comments and recommendations being incorporated into each QA Project Plan revision as appropriate.

OCC's commitment to quality assurance is based upon specific data quality objectives and requirements. All data used by OCC must be of known quality, scientifically sound, and legally defensible. In order to achieve these goals, quality control activities are established as an integral part of each project. Laboratory procedures must include specified tests for precision and accuracy, which must then be clearly documented and reported to OCC. Internal activities of data reduction and use are constantly reviewed to ensure correct transfer of information. OCC requires a high standard (typically 90%) for completeness of data acquisition. Special consideration is given to representative sampling. Sample stations are selected to best accommodate the goals of the study, both with respect to location and number of stations. Time of sampling, frequency, and sampling conditions (e.g. during low flows) are all essential requirements of each monitoring project. Comparability of data is facilitated through detailed documentation of all data conditions (e.g. analytical methods used, sampling regime, etc.), strict adherence to the monitoring program plan, and accountability of all variables and discrepancies encountered during data acquisition and analysis.

1.2 Oklahoma Conservation Commission Organizational Hierarchy

In order to accomplish complete coordination of quality assurance (QA) activities at OCC, a system of QA program management has been established. The management system of OCC as a whole is diagrammed in Appendix 1. Specific roles and responsibilities of each of the personnel in water quality and wetland programs are described below in Table 1.1.

The QA Officer (QAO) for the Water Quality Division (WQD) reports directly to the Director of Monitoring, Assessment and Wetlands (DMAW) for the division. The QA Officer immediately informs the DMAW of any variations from established QA guidelines and actions taken to address the variation. The Division Assistant Director and Division Director are also informed as needed. The QA Officer is responsible for implementation of QA Project Plans, as directed by the Quality Management Plan, for each project conducted by OCC staff. The QA Officer is responsible for all quality assurance aspects in division programs. This includes quality assurance oversight of sample collection and analysis techniques, sample delivery, sample preservation, chain of custody, data integrity, review of field and laboratory analysis, site selection, planning of sampling events,

and other actions which directly or indirectly affect the quality of program results. All variances from QA Project Plans are reported to the QA Officer who takes appropriate action.

Data and sample collections are accomplished by OCC staff with occasional assistance from conservation district employees and volunteers. Field staff are instructed and routinely audited in QA techniques. The QA Officer is responsible for ensuring the completion of work as described in the QA Project Plans. The QA Officer is also responsible for ensuring that quality control (QC) goals and methods (as described in the QA Project Plans) are met during data analysis.

Water quality samples collected by the OCC are analyzed by the Oklahoma Department of Agriculture Food and Forestry (ODAFF) Laboratory. The Department of Agriculture Laboratory QA Plan is currently on file with the OCC and EPA Region VI. If the ODAFF lab, due to emergency closure or other circumstances, is unable to process water quality samples to meet required holding times or Data Quality Objectives (DQOs), samples may be analyzed by alternate EPA accredited laboratories as needed. Samples for projects contracted to universities may be analyzed at university laboratories. Each contracting laboratory used by OCC has an appointed QA Officer or equivalent staffer who is responsible for all QC functions within the laboratory. Appropriate records are kept of all pertinent laboratory activities and are made available to the OCC QA Officer upon request. Laboratory QA Officers or Laboratory Managers report in writing to the OCC QA Officer regarding any variations of QA guidelines encountered in the analysis of samples.

Table 1.1 Roles and Responsibilities of Water Quality Program Personnel

Water Quality Division Staff Responsibilities	
Trey Lam Executive Director	Responsible for all operations of OCC and its divisions.
Shanon Phillips Water Quality Director	Responsible for all water quality programs. The Director is the final decision making authority within the Water Quality Division.
Ed Crall Director of Finance and Implementation	In addition to specific administrative duties assigned by the Director, this position is responsible for financial management of all Division projects including oversight of the financial aspects of Division Cost-Share programs and documentation of non-federal match.

Water Quality Division Staff Responsibilities	
Greg Kloxin Water Quality Assistant Director	Second in OCC WQD command. In addition to specific duties assigned by the Director, this position is primarily responsible for the design and implementation of the Commission's nonpoint source programs including water quality, biological and habitat monitoring, implementation of best management practices, workplan development, and education programs.
Dan Dvoretz QA/QC Officer, Technical Programs Director	The QA/QC Officer is responsible for all aspects of OCC-WQD QA/QC. QA/QC responsibilities include QMP, QAPP, and QA/QC program development. The Technical Programs Director is responsible for proposal development, monitoring strategies designs, development and maintenance of mapping applications, data analysis, project reporting, educational news feeds and oversight of the technical writing staff and wetlands specialist.
Maryanne Dantzler-Kyer Environmental Projects Coordinator	The Environmental Projects Coordinator administers environmental projects for all water quality grants and associated reporting requirements.
Brooks Tramell Director of Monitoring, Assessment & Wetlands Programs, Monitoring Specialist	The DMAW primarily is responsible for and provides oversight of the Wetlands, Monitoring, and Technical Programs. Works closely with the OCC WQD Assistant Director, technical staff, and wetland program staff in the design and implementation of the Commission's nonpoint source and wetlands programs. Provides oversight and assistance as needed to the monitoring and technical staff as well as a Nutrient Management Planner. Represents OCC at local, state, and federal level monitoring and wetlands activities, and provides technical expertise to Commission program staff.
Jason Ramming Monitoring Coordinator, Monitoring Specialist	Responsible for all field sampling activities in addition to the supervision, coordination, and training of the field investigative personnel. Responsible for collection of field data and samples, landuse and landowner surveys, submission of samples to the lab, equipment maintenance, and various related duties.
Wes Shockley Monitoring Specialist	Responsible for collection of field data and samples, landuse and landowner surveys, submission of samples to the lab, equipment maintenance, and various related duties.

Water Quality Division Staff Responsibilities	
Joseph Dyer Monitoring and Assessment Specialist	Responsible for collection of field data and samples, landuse and landowner surveys, submission of samples to the lab, equipment maintenance, and various related duties. Also functions as a part-time technical writer responsible for conducting data compilation, analysis, and drafting of Division reports and outputs.
Nathan Carter Monitoring Specialist	Responsible for collection of field data and samples, landuse and landowner surveys, submission of samples to the lab, equipment maintenance, and various related duties. Operates the ADCP (Acoustic Doppler Current Profiler). Also performs sample sorting, sub-sampling, bug picking and fish identification.
Megan Knight Monitoring Specialist	Responsible for collection of field data and samples, landuse and landowner surveys, submission of samples to the lab, equipment maintenance, and various related duties.
Courtney May Nutrient Management Planner	Working with NRCS District Conservationists, develops comprehensive nutrient management plants. Provides outreach for conservation planning and Farm Bill Programs.
Amy Seiger Soil Health Program Coordinator	Manages the Soil Health Program providing education with Districts, groups, and individuals.
Blane Stacy Environmental Specialist	Provides program support and delivers soil health education to conservation districts, partners and the public.
Greg Scott Soil Scientist	Provides program support and delivers soil health education to conservation districts, partners and the public.
Jimmy Emmons Soil Health Coordinator for Mentoring	Provides program support and delivers soil health education to conservation districts, partners and the public.
Meg Greski Environmental Specialist	Provides program support and delivers soil health education to conservation districts, partners and the public.

Water Quality Division Staff Responsibilities	
Sarah Gilmer Environmental Specialist	Provides assistance for proposal development, monitoring strategies designs, development and maintenance of mapping applications, and educational news feeds. Completes technical report writing and data analysis for wetlands and stream monitoring programs.
Brad Rogers OCC/USDA WQ Programs Liaison	Serves as a liaison between OCC and NRCS for addressing water quality needs and issues in Oklahoma. Currently the technical project lead for the National Water Quality Initiative Pilot project in the Little Beaver Creek watershed.
Rebecca Bond Blue Thumb Director	Responsible for project operation and oversight; including project activities, tasks, milestones, output planning, sample collection, field analysis, sample delivery, and report progress for quarterly submission.
Kim Shaw Blue Thumb QA Officer	Responsible for Blue Thumb WQ oversight and implementation of volunteer monitoring quality control and quality assurance programs.
Candice Miller Blue Thumb Education Officer	Responsible for Blue Thumb WQ education efforts statewide, acts as Oklahoma's Project WET coordinator and performs field work.
Cheryl Cheadle Blue Thumb Volunteer Coordinator	Responsible for coordination of volunteers and events, mentors volunteers, and helps with field work.
Becky Zawalski Blue Thumb Education Officer	Responsible for Blue Thumb WQ education efforts statewide and performs field work.
Shellie Willoughby GIS Technician	Responsible for maintenance, analysis, and presentation of geographically referenced data using GIS as detailed in various §319 and wetlands workplans.
Karla Spinner Records Management Specialist	Responsible for all data management, supervising data tracking and entry, and maintaining standard operating procedures for all field activities. Also responsible for data receipt, cataloging, and entry into the WQ database.
Monty Ramming Elk City Lake Watershed RCPP Project Coordinator	Responsible for coordination of Elk City Lake RCPP activities, including conservation planning and administration of the cost share program to demonstrate water quality improvements in the watershed.

1.3 Current OCC Projects

Table 1.2 lists the current OCC-WQD projects through FY 2022. Future projects are to be incorporated when awarded.

Table 1.2 Current OCC-WQD Projects

Project Type/Grant	Project Number	Project Description
'18 104(b)(3) CD-01F46801-0	1	Statewide Application of the Restorable Wetlands Identification Protocol and Wetland Program Plan Update
'19 §319(h) C9-996100-20	3	Ambient Cycle 4.4 and Implementation Monitoring Program
'19 §319(h) C9-996100-20	5	Conservation Partnerships Support a. Neosho R.-NRCS, Conservation Districts, KDA, KDHE, KSU b. Elk City - NRCS, Conservation District c. NWQI-1) New Spiro Lake - Town of Spiro 2) Little Beaver Lake d. Wister Lake Watershed-Arkansas Water Resource Center and Poteau Valley Improvement Authority e. OSU – WBP development
'19 104(b)(3) CD-01F66601	Not assigned	Improving Wetland Maps for Floodplains of the Canadian and Arkansas Rivers and Associated Tributaries
'19 Multipurpose Grant CA# AA-01F73101	Not assigned	Using Soil Health to Optimize the Benefits of Poultry Litter in Eastern Oklahoma
'20 §319(h) C9-996100-20	6	NPS Management Program January – December 2020
'20 §319(h) C9-996100-20	7	Ambient Cycle 5.4 and Implementation Monitoring Program
'20 §106 DUNS # 933539215	2	National Aquatic Resource Survey: National Wetlands Conditions Assessment (NWCA) for Oklahoma’s portion of the NWCA
'20 104(b)(3) CD-01F81801	Not Assigned	Development of a Guidebook and Conducting Training for Oklahoma Rapid Assessment Method (OKRAM)
'21 §319(h) C9-996100-21	2	NPS Management Program January – December 2021
'21 §319(h) C9-996100-21	3	Ambient Cycle 1.5 and Implementation Monitoring Program
'21 §319(h) C9-996100-21	4	Blue Thumb Statewide Program January – December 2021

Project Type/Grant	Project Number	Project Description
'21 104(b)(3)	Not assigned	Refining Oklahoma's Restorable Wetlands Database: Attribution of Restoration Locations with Hydromodification and Enhanced Data-Sharing Interface
'21 §319(h) C9-996100-21	6	NPS Management Program January – December 2022
'21 §319(h) C9-996100-21	7	Ambient Cycle 2.5 and Implementation Monitoring Program
'21 §319(h) C9-996100-21	8	Blue Thumb Statewide Program January – December 2022

2.0 Quality System

2.1 Quality System Description

The quality systems of the Conservation Commission are described in this document, the Quality Management Plan (QMP). The QMP provides the foundation for ensuring the quality of projects involving the acquisition of environmental data conducted by OCC.

Quality Management Plans are prepared under the *EPA Requirements for Quality Management Plans*, EPA QA/R - 2 of May 2006. Review and revision of the QMP takes place on an annual basis or when substantial changes in personnel or programs require modification. The QMP is submitted to EPA Region VI for approval each year. When no changes are necessary, a certificate to this effect and new signature pages are submitted instead of the entire plan. The Quality Management Plan is prepared under direction of the Water Quality Division Director by the Water Quality Division Quality Assurance Officer and the Environmental Projects Coordinator. The plan is then reviewed by senior staff prior to distribution. Distribution of approved copies of this plan and future QMPs follows the list established in section ii of this document. Quality Management Plans and related communications are filed by year in the OCC - WQD electronic filing system. All versions of the OCC QMP are appropriately labeled and are archived as a regular feature of OCC electronic backup protocols. The Environmental Projects Coordinator files Quality Assurance documents and maintains project files. All projects involving the acquisition of environmental data conducted by OCC are operated under the guidance of a specific QA Project Plan (QAPP). Specific procedures have been developed by OCC for each measurement activity and each project to assure the quality of data. These procedures are applied consistently throughout the project. Laboratory analyses are performed with appropriate tests for precision and accuracy. Goals for completeness of data acquisition are established at the beginning of each project through the Data Quality Objectives (DQO) process and referenced throughout all data generation activities, especially with respect to field measurements, sample collection, and laboratory

analysis. Sampling sites are selected to ensure that the data are representative of the study's goals. By adhering to a strict quality assurance program with these elements, all data generation and analysis are assured of being valid and defensible.

QAPPs are developed at the outset of each project. QAPPs are rigidly formatted and specific to each project and designed to encompass all phases of the project. They are stand-alone documents that receive careful and independent review and approval by appropriate state and federal agencies prior to the initiation of any project element. Each QA Project Plan is prepared following the *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R - 5 of May 2006.

Each QA Project Plan is prepared in document control format as required by QA/R5. Revisions are noted in the document control header along with the date of each revision. A record is kept of the official distribution of all QA Project Plans once they receive final approval.

There are a number of factors that should be addressed within the QA Project Plan utilizing the above format. These factors encompass all project activities that affect the quality of data. In addition, the QA Project Plan should identify all operations that must be covered by standard operating procedures. To accomplish these goals, the following activities should be reviewed:

- General sampling network design
- Specific sampling site selection
- Sampling and analytical methodology
- Probes, collection devices, storage containers, and sample additives or preservatives
- Special precautions, such as heat, light, reactivity, combustibility, and holding time
- Federal reference, equivalent or alternate test procedures
- Instrument selection, use, calibration and standardization
- Preventive and remedial maintenance
- Replicate sampling
- Blind and spiked samples
- QA procedures such as intra- and inter- laboratory and field activities
- Documentation
- Sample custody
- Transportation
- Safety
- Data handling procedures
- Service contracts
- Determination of precision, accuracy, completeness, representativeness and comparability
- Document control

Standard Operating Procedures

OCC - WQD Standard Operating Procedures (SOPs) are compiled in the master working document

Standard Operating Procedures for Water Quality Monitoring and Measurement Activities. OCC SOPs are updated on an as needed basis, with the acquisition of new equipment or as new procedures are identified through the DQO process. The SOPs are reviewed annually to ensure that the procedures are appropriate and up to date. Copies of this dynamic document are maintained by the Quality Assurance Officer, each of the OCC field personnel, pertinent EPA Region VI personnel, Oklahoma Office of the Secretary of Energy and Environment, and in the OCC library. SOP revisions are distributed to all manual holders. QA Project Plans reference the appropriate SOPs. The OCC QA Officer assists districts with the preparation and implementation of SOPs for their water quality projects.

Another Quality Systems Tool in use at the OCC-WQD is management review of projects on a semi-annual basis. Additional quality assessments used by the OCC-WQD are outlined in Section 9.1.

2.2 Quality System Applicability

The Quality Systems described in the QMP apply to all projects listed in Section 1.3. These projects generally encompass monitoring one or more aspects of the state's aquatic resources. OCC monitoring activities include:

1. Stream physical habitat assessment
2. Biological monitoring - Benthic invertebrates
3. Biological monitoring - Fish
4. Biological monitoring - Algal productivity
5. Water quality monitoring - physical/chemical
6. Stream flow and stream time of travel
7. Wetland physical habitat assessment
8. Soil description
9. Wetland plant inventories
10. Land use
11. Rosgen stream assessments (Levels I-IV)
12. Identification of bacterial strains
13. Best Management Practice tracking using photodocumentation

3.0 Personnel Qualifications and Training

3.1 Water Quality Programs Staff Requirements

One of the fundamental aspects of assuring quality data is proper training and qualifications of all personnel participating in data generation, analysis, assessment, and reporting. The educational

background of all project members must be appropriately suited to the individual's responsibilities. It is beneficial if the academic background is broad enough to encompass more than one area of expertise (e.g. biology and statistics). Professional training and expertise often provide essential techniques and knowledge that are missed in a formal educational background (e.g. field sampling techniques, or use of a particular type of computer system or model). There are no statutory requirements for professional or other certification for the OCC Water Quality Program. The OCC uses the Oklahoma Department of Agriculture, Food, and Forestry Water Quality Laboratory, the Oklahoma Department of Environmental Quality State Environmental Laboratory, and university laboratories, which are certified by the Oklahoma Department of Environmental Quality and have minimum training requirements and certification requirements for their personnel to achieve laboratory certification.

All OCC staff assigned to a project are selected on the basis of appropriate educational background with appropriate technical skills developed through effective training and experience. This requirement applies to all levels of the project including field personnel, data analysts, and QA management staff. Staff qualifications are listed in Table 3.1 (next page). Prior to the initiation of each project, the WQD Director selects the OCC staff members for each project element based upon qualifications and experience. If additional skills are required (training, equipment use, software, etc.), arrangements are made to train the appropriate staff. Throughout this process the WQD-OCC QA Officer makes recommendations to the WQD Director on the most appropriate actions to be taken with respect to quality assurance.

Because OCC does not exercise any authority over personnel decisions of outside agencies or contractors, the quality assurance requirements with respect to personnel qualifications within these resources are served in the selection process. When outside assistance is required, the requirements for qualified personnel are clearly established in the selection process. This includes technicians as well as QA management. The criteria of the project and the agencies' or contractors' scope of work are clearly established at the outset along with confirmation of qualifications of all involved personnel.

Table 3.1 OCC Staff Qualifications

Staff Member	Degrees, certification	Years experience
Shanon Phillips Water Quality Division Director	B.S., M.S.	29
Ed Crall Director of Finance and Implementation	B.S., M.S.	44
Greg Kloxin Water Quality Division assistant Director	B.S., M.S.	26
Amy Seiger Soil Health Program Coordinator	B.S., M.S.	11
Dan Dvoretz QA/QC Officer, Technical Programs Director	B.S., M.S., Ph.D.	10
Karla Spinner Records Management Specialist	B.S., M.S.	10
Maryanne Dantzler-Kyer Environmental Projects Coordinator	A.S., B.S., M.S.	1
Brooks Tramell Director of Monitoring, Assessment & Wetlands Programs	B.S.	26
Jason Ramming Monitoring Coordinator	B.S.	21
Wes Shockley Monitoring Specialist	B.S.	28
Joseph Dyer Monitoring & Assessment Specialist	B.S., M.S., Ph.D.	3
Nathan Carter Monitoring Specialist	B.S.	10
Megan Knight Monitoring & Assessment Specialist	B.S., M.S.	2
Blane Stacy Environmental Specialist	B.S.	10
Courtney May Nutrient Management Planner	A.S., B.S.	5
Meg Greski Environmental Specialist	B.S.	1
Jimmy Emmons Soil Health Coordinator for Mentoring		17

Staff Member	Degrees, certification	Years experience
Rebecca Bond Blue Thumb Director	B.S., Ph.D.	14
Kim Shaw Blue Thumb QA Officer	B.S.	19
Candice Miller Blue Thumb Education Coordinator	B.S., M.S.	9
Becky Zawalski Blue Thumb Education Officer	B.S., M.S.	4
Cheryl Cheadle Blue Thumb Volunteer Coordinator	B.S.	33
Shellie Willoughby GIS Technician	B.S., M.S.	22
Monty Ramming Elk City Lake RCPP Project Coordinator	B.S.	20
Greg Scott Soil Scientist	B.S., M.S.	45
Sarah Gilmer Wetlands Specialist	B.S., M.S.	5
Brad Rogers Environmental Specialist	B.S., M.S., Ph.D.	12

3.2 OCC Training Requirements

Based on the assessed training needs of all personnel, training programs are administered, as necessary, to all personnel who are deficient in skills required for their jobs to develop the level of competence necessary to carry out their assigned functions. Training may include attendance at job-related training courses or seminars, workshops, or professional meetings. Project specific minimum training requirements are established in each QAPP. This means that when developing a QAPP, the DQOs are developed to determine the data required to meet the decision makers' needs. Available resources are also reviewed in this process. Deficiencies in the level of training required are addressed by training existing personnel, hiring qualified personnel, or contracting for services by qualified personnel.

All supervisory personnel are required by the state to take at least 12 hours annually of continuing education certified by the Human Resources Development Services Division of the Oklahoma Office of Personnel Management.

Training for most routine procedures occurs on the job under direction by experienced personnel. An exception to this is where health and safety are involved. For example, all personnel involved in electro-fishing are required to hold current CPR certification. The effectiveness of training is assessed through field and performance audits. Where specific problems in data acquisition have been identified, training activities are commensurate to the problem. For example, if the problem encountered is related to the calibration of a dissolved oxygen meter, the training response is conducted in-house. On the other hand, a factory representative may be required to do the training if the problem encountered is related to the calibration of an automatic sampler. Qualified trainers are identified in the process of planning by OCC senior personnel and the QA officer.

Training materials and course content are generally based on the standard operating procedures and requirements for data acquisition determined in the DQO process. Therefore, training and course content are updated with each new project or with the annual review of the SOP.

To encourage professional development and to bring new methods into the agency, personnel are encouraged to attend professional meetings at the state and national level. This also allows staff members involved with on the job training to be updated with new or better methods. Likewise, personnel are encouraged to attend training available outside the agency from EPA, USFWS, and the Forest Service. Flexible hours within the limits that personnel accomplish their assigned duties are afforded to those wishing to continue their education based on individual merit.

4.0 Procurement of Items and Services

4.1 OCC Guidelines for Purchase of Equipment and Supplies

All equipment and supplies required for OCC Water Quality Division programs acquired with funding through various EPA grants or by state funds are purchased according to the Central Purchasing Act *title 74 85.1 85.44c* of the Oklahoma Statutes and the following guidelines:

The Director of Water Quality selects one primary and alternate division purchasing representatives. As of September 1, 2021, the primary Water Quality Division purchasing representative is Greg Kloxin and the alternate is Shanon Phillips. The alternate purchasing representatives shall serve in the absence of the primary representative. The representative shall serve as the point of contact for the division with the OCC WQD Certified Procurement Officer, Ed Crall. The OCC Certified Procurement Officer for Information Technology and Purchase Orders is Greg Kloxin, with Purchase Orders ultimately executed by the Oklahoma Department of Agriculture, Food and Forestry Procurement Officer.

The Director of Water Quality shall establish signature authority for forms OCC uses in the purchasing process. Primary signature authority is the Director of Water Quality. The Director of Water Quality may approve one additional representative with signature authority.

A request for acquisition form (OCC-CPO-1) shall be used for all purchases. This form shall contain information regarding who is requesting the acquisition, the acquisition description, acquisition price estimate, specification of product or service, whether acquisition is a sole source, and approval signature of director or designee.

The Certified Procurement Officer upon approval of a completed acquisition form shall initiate a request for an invitation to bid, contact a vendor, initiate an order through the state procurement system, or obtain telephone or facsimile bids pursuant to rules of the Oklahoma Management and Enterprise Systems.

Specifications of all analytical equipment, reagents, standards, buffers and containers are determined according to the SOP for the required procedures and to meet the DQOs of a given project. As procured all equipment and supplies must meet the minimum standard required for the acceptance of supplies in the QA Project Plan.

4.2 OCC Guidelines for Contract of Services

All contracts for services with outside agencies, universities, and local conservation districts are written with suitable oversight and quality assurance requirements to meet established project DQOs and grant conditions. All contracts must be approved by a simple majority vote of the five Oklahoma Conservation Commissioners.

Because OCC does not exercise authority over personnel decisions of outside agencies or contractors, the quality assurance requirements with respect to personnel qualifications within these resources are served in the selection process. When outside assistance is required, the requirements for qualified personnel are clearly established in the selection process. This includes technicians as well as QA management. The criteria of the project and the agencies' or contractors' scope of work are clearly established at the outset along with confirmation of qualifications of all involved personnel.

5.0 Documents and Records

5.1 OCC Quality Assurance Document Control System

All OCC Workplans and Project Proposals are prepared according to the format required by the specific grant. All OCC Workplans are prepared and revised by or under the supervision of the Division Director. Workplans prepared by the OCC undergo internal review by senior staff and by staff appropriate to the project. Before a workplan is finalized, it may undergo revisions resulting from inputs from EPA staff and project cooperators. A final workplan includes an introductory project description, project background, project objectives, and tasks with milestones and deliverable outputs to accomplish the project objectives. The workplan broadly defines the commitments and the financial resources for a specific project. Each project workplan submitted is dated and kept on file for a period of at least five years past completion of the project. Project

files are established for all workplans with tentative approval. The initial workplan and all subsequent revisions are filed chronologically in a dedicated electronic file folder. All workplan approval documents and correspondence are also filed in this folder. All versions of OCC workplans are appropriately labeled and archived as a regular feature of the OCC digital media backup protocol. Filing of documents and maintenance of project files is done by the Environmental Projects Coordinator.

All OCC documents are subject to the State Records Management Act *title 67:201* of the Oklahoma Statutes. All OCC records are submitted to the Oklahoma Archives and Record Commission according to a schedule established by the Archives and Records Commission. The Archives and Records Commission decides the final dispensation of OCC Documents, e.g., classification of final reports as permanent records to be microfilmed and archived. The OCC officer in charge of this is the Environmental Projects Coordinator.

Quality Management Plans, including this document, are prepared under the *EPA Requirements for Quality Management Plans*, EPA QA/R - 2 of May 2006. The Quality Management Plan is prepared under the direction of the WQD Director by the WQD Quality Assurance Officer, the Environmental Projects Coordinator and the WQD Technical Writers. Senior staff review this document prior to distribution. Final approved copies of this Plan and future QMPs follow the distribution list established in section ii of this document. Quality Management Plans and related communications are filed by year in the OCC WQD electronic filing system. All versions of OCC QMP are appropriately labeled and are archived as a regular feature of the OCC digital media backup protocol. The Environmental Projects Coordinator files the Quality Assurance documents and maintains project files.

Quality Assurance Project Plans (QAPPs) are prepared as required according to the *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R - 5 of May 2006. All Project Plans developed for FY 97 onward reference this QMP document. QAPPs are distributed according to the distribution list and the appropriate project personnel. A specific distribution list for each project plan is maintained. QAPPs are filed when submitted in the project files chronologically with subsequent revisions, correspondence, and approval. Quality Assurance Project Plans are prepared by or under the direction of the WQD QA Officer. All versions of OCC QAPPs are appropriately labeled and archived as a regular feature of the OCC digital media backup protocol. The Environmental Projects Coordinator files Quality Assurance documents and maintains project files.

OCC-WQD Standard Operating Procedures (SOPs) are compiled in a master working document. OCC SOPs are updated on an as needed basis with the acquisition of new equipment, as new procedures are identified and as required to meet DQOs. SOPs are written and revised by either the WQD QA Officer or the Monitoring Coordinator. The SOPs are reviewed annually to ensure that the procedures are appropriate and up to date. Copies of this dynamic document are maintained by each of the OCC field personnel, EPA Region VI Watershed Monitoring section, Oklahoma Office of the Secretary of Energy and Environment, Oklahoma §319 Project Officer,

and in the OCC library. SOP revisions are distributed to all manual holders. All versions of OCC SOPs are appropriately labeled and archived as a regular feature of the OCC digital media backup protocol.

All field observations, water quality, habitat, and biological data are recorded in a standardized data format on field sheets as specified in the OCC SOP document. All field sheets used in streams are printed on waterproof paper.

Data acquired with each project are in the following formats according to the type of data and intended use:

Table 5.1 Data Formatting and Storage

Data type	Primary reporting format	Computer format	Final reporting format	Final data archive
Water quality field parameters	Field sheets	Access Database	Tables, graphs, etc.	Water Quality Portal, Access Database, OCC office library, hard copy data files
Field parameters QA, calibration	Field sheets	Access Database	QA summary report & tables	Access Database, OCC office library, hard copy data files
Water quality laboratory analysis	Laboratory report sheets, Excel spreadsheets, computer external drives	Access Database	Tables, graphs, etc.	Water Quality Portal, Access Database, OCC office library, hard copy data files
Water quality laboratory analysis - Field blanks, duplicates, and spike samples	Laboratory report sheets, computer external drives	Access Database	QA summary report & tables	Water Quality Portal, Access Database, OCC office library, hard copy data files
Field notes	Field sheets		Final report as appropriate	OCC WQ Library
Habitat assessment	Field sheets	Access Database	Table, graphs	Access Database, OCC office library, hard copy data files

Data type	Primary reporting format	Computer format	Final reporting format	Final data archive
Fish collections	Field Sheets and Laboratory data sheets	Access Database	Table, graphs, tolerance, diversity, IBI, and other indices	Water Quality Portal, Access Database, OCC office library, hard copy data files; Collections: OCC if data out of range or unusual species
Benthic macroinvertebrate collections	Field Sheets and Laboratory data sheets	Access Database	Table, graphs, tolerance, diversity, IBI, and other indices	Water Quality Portal, Access Database, OCC office library, hard copy data files; Collections: OCC until all QA is complete

Detailed instructions for recording data on field sheets and completing chain of custody forms, as well as the actual data sheets, are found in the following OCC SOP document sections:

- Chain of Custody and Sample Labeling;
- Procedure for Completing Field Data Sheets (Sampling Episode Sheets, & Site Collection Sheets);
- Spike, Duplicate, Replicate, and Blank Samples/Measurements for Routine QA;
- Appendix: Data Sheets.

Original laboratory data sheets are assigned a volume and page number upon receipt from the contract laboratory. The laboratory maintains a copy of these records as well to ensure against loss of data. Data results are sent electronically in an Excel spreadsheet in addition to hard copies.

The original data sheets are filed according to volume and page number. The page and volume of each data sheet are entered into an Access database along with the sampling date, chain of custody sheet number, site description, data parameters reported, and the grant or project name.

The Monitoring Coordinator and the OCC-WQD QA Officer review the data for completeness, problems, gross errors, and violation of holding times. Data are flagged as unacceptable according to criteria outlined in corresponding QA Project Plans and the OCC QA Program Plan. QA flags are entered in the database by the Records Management Specialist or designee. Problems with incomplete data and obvious reporting errors are resolved by the Records Management Specialist upon consultation with the Monitoring Coordinator and the Laboratory Officer. The OCC-WQD QA Officer, in concert with the Project Manager, takes action to resolve any problems leading to violations of holding times.

Upon verification of data completeness, the Records Management Specialist supervises the entry or importation of the data to the appropriate database as described in Table 5.1. Flagged data are entered with an appropriate data quality code in the QA field.

All OCC Chain of Custody forms are discretely numbered. Chain of Custody (COC) forms are signed out by field investigators. Signed original copies of the COC are filed consecutively in a three-ring binder as samples are submitted to contract laboratories. As a routine procedure, incoming laboratory data sheets are checked off against the samples listed in the COC. Missing data prompts an inquiry to the laboratory.

Because much of the OCC-WQD program is dependent on the integrity of the documents and data maintained on the computer, a rigorous backup policy is maintained. Each user is encouraged to store files and data in their home directory on a Windows file server. All files on the server are backed up to physical drives on a nightly basis. The backups are stored off-site at the Office of Management and Enterprise Services office. Complete backups are done prior to any repairs, moves, or procedures that may threaten data integrity.

5.2 OCC File Management System

The OCC maintains digital files of all project correspondence, workplans, QAPPs, and reports in dedicated project files. Project files are kept according to the grant and grant year. For office use, each project is assigned a specific project number to facilitate filing. Filing of documents and maintenance of project files is done by the Environmental Projects Coordinator.

6.0 Computer Management System

6.1 Computer Hardware Management

Except for GIS applications and TMDL modeling, the computer hardware required for data management for OCC Water Quality projects does not exceed commonly used personal computers. All OCC grant proposals are developed with budgets to allow for computer hardware upgrades as needed to meet the requirements of all users.

GIS support utilizes a dual core processor equipped computer with Windows operating system. All geospatial database development is documented using FGDC compliant metadata standards where available.

6.2 Software Management

For general purposes, the OCC uses commercially available software in common use. Software is and continues to be selected on the basis of versatility and compatibility. Because of rapidly evolving software, the most up to date and appropriate software for advanced data analysis for

each project is selected when data collection is completed. EPA Region VI Environmental Analysis Section is consulted when selecting specialized software for environmental analysis and modeling. Microsoft Access database software was selected upon consultation with several agencies including EPA Region VI. This commonly used database is reported to be compatible with the EPA STORET system (now the Water Quality Portal). Data is easily exported from Access to spreadsheet programs such as Excel. Data manipulation statistics are generally done on these types of spreadsheets or on statistics software such as Minitab or R software environment. Software packages used in GIS development are ArcInfo and ArcView. GIS hardware requirements and purchases are determined by the OCC and State GIS working groups.

The OCC programs do not require extensive software development outside of working spreadsheets and queries for the databases. Where complex models are used and modified as part of a project, modifications and results are scrutinized by a technical working group. The technical working group review is usually written as a task within such a project. Such models also receive intensive review by EPA Region VI when used as part of a grant commitment or output.

7.0 OCC Project Planning

7.1 Project Workplan Development and Revision Procedures

Project workplans are developed using Total Quality Management Principles with the goal of incorporating input from field personnel and Project Managers with first-hand experience with the environmental problems being addressed. An ad hoc committee of OCC field, technical, and technical writing staff develops project objectives and tasks to meet the objectives. OCC technical writing staff refines committee discussion into a final workplan.

Much of the OCC programs are dictated by requirements of the Clean Water Act, EPA Guidance, and Region VI EPA Guidance. Available funds, cost and schedule restraints, and eligible activities are dictated by specific grant programs. The grant programs for which the OCC is eligible by state law are non-point source and wetlands. The guidance for these programs leaves little room for an exercise to identify the “customer”. However, for the purposes required for this Quality Management Program, the customer is generally identified by the funding source. The OCC interprets this to be the EPA, Congress of the United States, and the general public for whose benefit the OCC projects are directed. The goals or needs of the “customer” are documented in the Clean Water Act as the attainment of fishable and swimmable uses for the waters of the Nation. For practical purposes, when planning projects, the principal decision-makers are identified as representative of the aforementioned. The principal decision-makers for OCC projects are usually senior OCC staff, local Conservation Districts, Conservation Commissioners, the Oklahoma Secretary of Energy and Environment, and EPA Region VI. Where it is practical and appropriate, the OCC identifies a local advisory group as one of a project’s decision makers and “customers”.

The Nonpoint Source Program projects under §319(h) of the Clean Water Act must be part of the State’s Nonpoint Source Management Program. Furthermore, the projects must take into account

various assorted guidance documents available and pertinent during the starting years of projects. Any new guidance supersedes previous guidance as written.

Within the context of the aforementioned constraints on the planning process, the OCC also coordinates the submission of §319(h) projects for other state agencies and universities. To facilitate this coordination, the OCC has established a Nonpoint Source (NPS) Working Group made up of participants in §319(h) projects, Oklahoma environmental agencies, universities, Natural Resources Conservation Service, and sub-state planning units (Councils of Government). Non-federal participants in this group are able to submit projects on a competitive basis for inclusion in the annual §319(h) workplans. This process begins with submission of a proposal to the working group. The proposed project is screened by a subcommittee of the working group and the OCC for eligibility under the grant requirements and guidance. The screened proposals are then fleshed out into workplans for presentation to the NPS Working Group. The working group then reviews and ranks the draft workplans for submission to EPA Region VI through the Oklahoma Office of the Secretary of Energy and Environment.

The Wetlands Program Projects must work towards the implementation of Oklahoma's current Wetland Program Plan (WPP). Wetland Program Plans serve as the state strategy document for wetlands project planning for five to six year periods, and are formatted following USEPA guidance (USEPA 2008). The ultimate goal of the program is to provide landowners, students, local governments, and agency personnel with common sense approaches to wetland issues through education, demonstration/technical assistance, and restoration. The wetland program is based on a cooperative model involving other state agencies and local governments to ensure high quality products, services, and the ability to leverage funding sources.

The Clean Water Act §104(b)(3) under the guidance of US EPA establishes both regional and federal guidelines to which potential grantees must adhere. These guidelines change on a yearly basis. At the state level, proposals are submitted to the Office of the Secretary of Energy and Environment. The proposals are then assembled into a proposal packet and submitted to the EPA Region VI for funding consideration. Funding occurs on a competitive basis between the states within US EPA Region VI.

The planning process for both §319(h) and §104(b)(3) under the Clean Water Act then continues with review of the projects by numerous EPA personnel at EPA Region VI who judge the projects upon their merit, fundability, and scientific soundness. Project content receives additional input from the region through incorporation of comments as part of the approval process.

Guidance for the nonpoint source and wetlands programs requires measures of success to be included in each project workplan. Means by which success can be determined are as numerous as the types of projects developed and the guidance suggests numerous ways to measure success. The OCC follows the specific grant guidance in determining success.

7.2 Establishing Data Quality Objectives

The process of establishing data quality objectives for each project follows the EPA QA/G4 process. The DQO process is documented with the following minimum information included in the QAPP:

- 1) A record of all personnel participating in establishing DQOs
- 2) Identification of data users or "customers"
- 3) All decisions and data required within the scope of the project
- 4) The scope of the project
- 5) A "decision rule" logical statement
- 6) Acceptance limits for all required data
- 7) An environmental sampling design based on the preceding information.

Concurrence of the DQO process participants is recorded on the QAPP signature page.

The OCC is a small organization where most personnel fulfill multiple roles. Often the personnel making decisions based on the environmental data are also the principal personnel collecting the data. Generally, the team establishing DQOs for OCC projects are the senior staff including:

Water Quality Division Director;
Water Quality Division Assistant Director;
QA/QC Officer and Technical Programs Director; and
Director of Monitoring, Assessment & Wetlands Programs.

Input to the DQO process also comes from other OCC staff as needed.

All environmental data gathering activities contracted by outside agencies are established and documented through the same process as described above.

8.0 Implementation of Work Process

8.1 Project Management and Implementation

Upon approval of a project workplan and award of a grant, a project is assigned a Project Coordinator. The Project Coordinator primarily oversees the implementation of the project as defined in the workplan (See Section 7.1 for workplan development), tracks the progress of the project, and assembles the appropriate personnel to complete the tasks as required by the workplan (for example, the Project Coordinator ensures the Monitoring Coordinator is aware, a QAPP is approved, and that sampling begins according to the QAPP). The Project Coordinator also tracks task milestones and output due dates. As required by the workplan, the Project Coordinator

initiates the preparation of a QAPP by the QA Officer. The QAPP outlines specific methods, activities, SOPs, and personnel to accomplish the DQOs. Effective implementation of a project is ensured through the activities outlined in Sections 9.1, 9.2, 10.1, and 10.2 of this document. Because of its comprehensive nature, the QAPP serves as the main project document to direct the environmental monitoring activities. Through the review processes established in Section 9.1, the Quality Assurance Officer tracks the implementation of the monitoring as planned in the QAPP.

Assessment of each project occurs on a monthly basis through the process of drafting progress reports for the monthly meeting of the Conservation Commissioners by the Project Coordinator. The Project Coordinator also provides semi-annual progress reports for filing with the Grants Records and Tracking System (GRTS). In a Total Quality Management type process, each project is reviewed by OCC senior management, the QA Officer, and the Project Coordinator on a semi-annual basis. The semi-annual review assesses the results of all quality assurance activities, problems incurred, and actions taken to resolve quality problems.

REQUIREMENTS OF A PROJECT COORDINATOR

- 1) The Project Coordinator must understand the objectives and tasks of the workplan and provide the leadership to accomplish the tasks of the workplan.
- 2) Technical and administrative problems are frequently identified during workplan execution. The Project Coordinator notifies in writing the technical writing staff of the problems and suggests changes.
- 3) The Project Coordinator may form an ad hoc technical advisory committee to assist in resolving project technical problems.
- 4) The Project Coordinator ensures output commitments and project milestones are up to date. If they are not, the Project Coordinator and technical writing staff revise the dates for subsequent approval by EPA.
- 5) The Project Coordinator coordinates task activities by memorandum with others in the agency (monitoring, QA/QC, data management, and technical writing).
- 6) The Project Coordinator prepares a brief monthly report of activities that have been accomplished prior to announced due dates for incorporation into the division report.
- 7) The Project Coordinator prepares semi-annual reports for incorporation into the GRTS. Semi-annual reports are due to the OSEE GRTS Coordinator mid-January and mid-July. For external projects, the Project Coordinator coordinates and reviews semi-annual reports for submittal to the OSEE GRTS Coordinator.
- 8) The Wetlands Project Coordinators prepare quarterly reports for the §104(b)(3) projects for incorporation into the GRTS. These reports are due to the OSEE GRTS Coordinator mid-April, mid-July, mid-October and mid-January.
- 9) The Project Coordinator gives brief project status reports at division staff meetings.
- 10) The Project Coordinator is responsible for the coordination of and is required to attend any meeting associated with the task.
- 11) The Project Coordinator ensures that all reports or other outputs required by the workplan undergo the OCC WQD internal review process prior to submittal to the Office of the

Secretary of Energy and Environment.

- 12) The Project Coordinator reports in writing any administrative or technical problem that may compromise the quality of data or the integrity of the project to the Quality Assurance Officer.
- 13) The Project Coordinator immediately reports, verbally and in writing, any perceived, actual, or potential problem in safety of the staff or public associated with the project.

8.2 Duties, Responsibilities and Work Assignments

Staff duties have been assigned to promote the most efficient use of resources and ensure the quality of the work performed. Duties and responsibilities of OCC-WQD personnel are summarized in Table 1.1.

The Director of Monitoring, Assessment and Wetland Programs is the Project Coordinator for projects under Section 104(b)(3) Wetland Grant Program under the Clean Water Act.

9.0 Assessment and Responses

9.1 Project Review System

The Project Coordinator tracks task milestones and output due dates. Assessment of each project occurs on a monthly basis through the process of drafting progress reports for the monthly meeting of the Conservation Commissioners by the Project Coordinator. The Project Coordinator also provides a semi-annual progress report for filing with GRTS. In a Total Quality Management-type process each project is reviewed by OCC senior management, the QA Officer, and the Project Coordinator on a semi-annual basis. The semi-annual review assesses the results of all quality assurance activities, problems incurred, and actions taken to resolve quality problems.

9.2 Project Quality Assurance

The OCC strives to maintain constant vigil on the quality of data acquisition, data management, and data reporting. Most of the activities to accomplish this are routine with each project and are appropriate to the stage of the progress of the project. For example, field systems audits are conducted early in a project sampling program to ensure the quality of the data before considerable resources have been expended. Where problems have been identified and remedial actions have been taken, follow up assessments are conducted. Planning of other than routine quality assessments is conducted by the QA Officer in concert with the Division Director, the Assistant Division Director, the DMAW and the Monitoring Coordinator. This team also plans the response to identified problems.

Assessment and response actions for Oklahoma Conservation Commission projects use the following tools to assess project quality:

Table 9.1 Assessment and Response Actions

Assessment:	Response:
<p>Field Systems Audit:</p> <p>Early in the sampling program and once each year, each field specialist's procedure is compared with the written SOP for compliance. Field audits include inspection of all equipment used, methods, and system performance up to prep for sample delivery to the laboratory. Implementation of field assessments is the responsibility of the Quality Assurance Officer.</p>	<p>Any inconsistency/deficiency affecting data quality between the SOP and the procedures observed is reported to the Project Coordinator, the Monitoring Coordinator, the Division Director, and the appropriate field personnel. Response to any inconsistency or deficiency is the responsibility of the QA Officer and may include additional training, purchase of additional equipment, changes in personnel, and revision of the SOP. Depending on the problem, additional assessments may be recommended.</p>
<p>Laboratory Performance Audit:</p> <p>Duplicate and blank samples are delivered to the lab each sampling event or with every ten samples and are tracked in the normal data handling process. Data chronically not meeting the acceptance criteria and contractual obligations of the laboratory results in remedial action.</p>	<p>Unsatisfactory laboratory performance is reported to the Project Officer, QA Officer, and the Laboratory Manager. Irreconcilable problems may result in review of the laboratory contract and possible change in laboratory. The Water Quality Division Director has final authority for all laboratory contracts.</p>
<p>Data Management Review:</p> <p>The data management protocol requires frequent communication between the Records Management Specialist and the QA Officer. The data management system is reviewed in detail semi-annually for backup status and completeness of data.</p>	<p>Data management and resolution of data entry problems are the responsibility of the WQD Records Management Specialist.</p>
<p>Data Reporting, and Interpretation Review:</p>	

Assessment:	Response:
<p>Each report, prior to release, undergoes an internal review process of the Technical Writers, Project Coordinator, and Division Director. As appropriate, draft reports are submitted for peer review by qualified individuals in at least one Oklahoma environmental agency prior to submittal to the OSEE and EPA Region VI.</p>	<p>Comments and differences in data interpretation are resolved by the technical writing staff.</p>

Through the previously described data management process, data is reviewed several times. Data validation is an integral part of this process. The mechanism of this process is described in Section 5.1.

The entirety of the WQD’s QA Program is reviewed and updated annually.

10.0 Quality Improvement System

10.1 Quality Improvement Management

Responsibility for quality improvement of all quality impaired activities within the OCC projects is borne by all personnel of each division. It is the responsibility of each staff member to report any perceived, actual, or potential problem in safety, data acquisition, data processing, or reporting. Corrective actions for problems identified by the staff or through the processes described in section 9.2 are planned and implemented by the Quality Assurance Officer under consultation with senior OCC management, the Project Coordinator, members of the DQO group, and affected personnel. All quality assurance problems and corrective actions are documented, and appropriate corrective actions are taken (Table 9.1). Significant problems affecting the ability of the OCC to carry out the tasks of a project are reported immediately to the Office of the Secretary of Energy and Environment and the appropriate EPA Project Officer.

10.2 Corrective Action Program

Each problem encountered in a project is unique, as is each solution to correct the problem. Each corrective action is determined by the personnel described in section 10.1. Corrective action may be as simple as the purchase of new reagents or a new probe or a change in the SOP. More serious problems may require reassessment of the DQOs and the analytical methods. Problems with personnel are corrected by additional training, reassignment of duties, or in more extreme cases, letters of reprimand and dismissal. All actions requiring reassignment of duties, letters of reprimand and dismissal are the responsibility of the Division Director. In a continuing process, identified problems are reassessed after remedial action to determine if additional response is

required. Corrective action for all problems resulting from contracted services is the responsibility of the Division Director.

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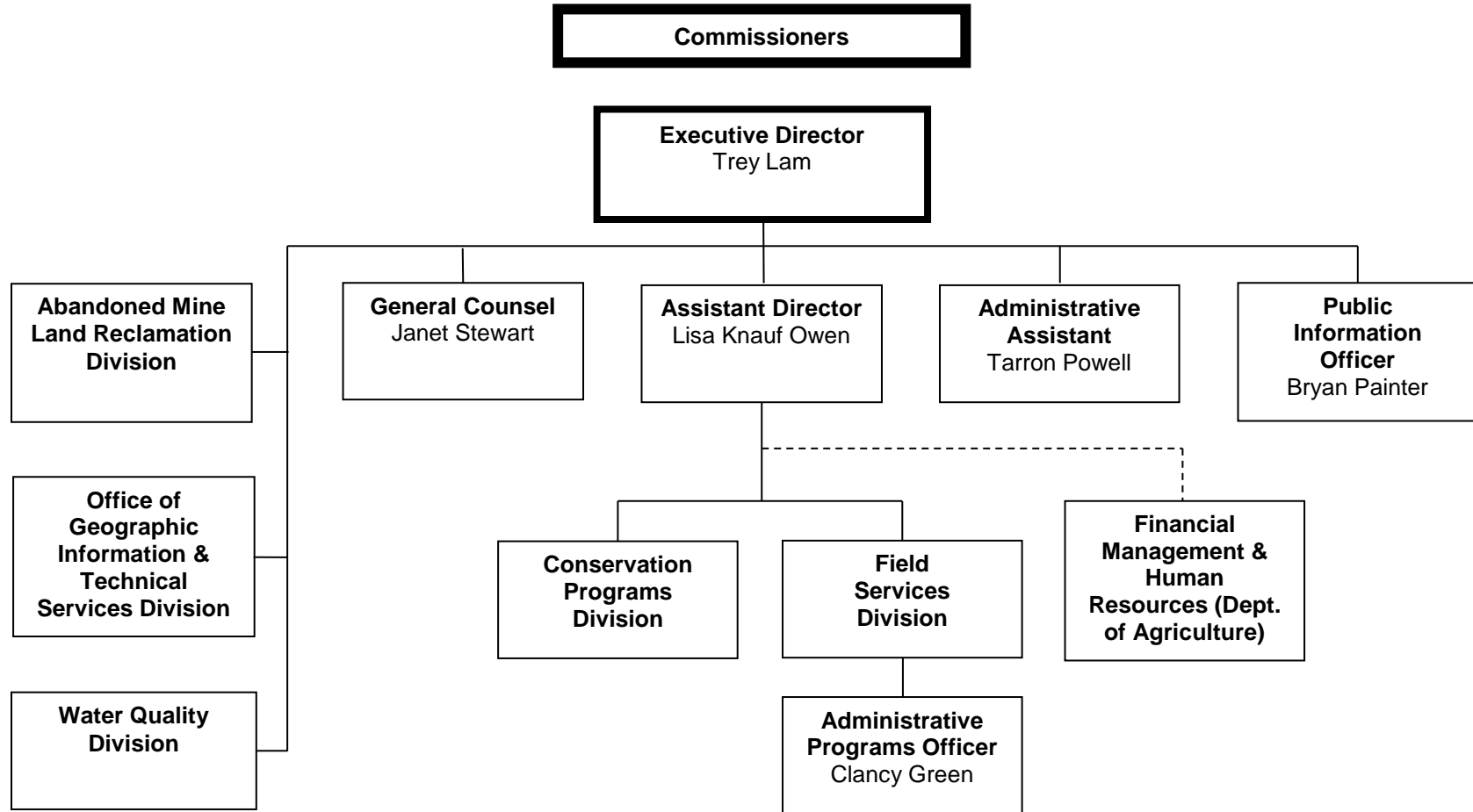
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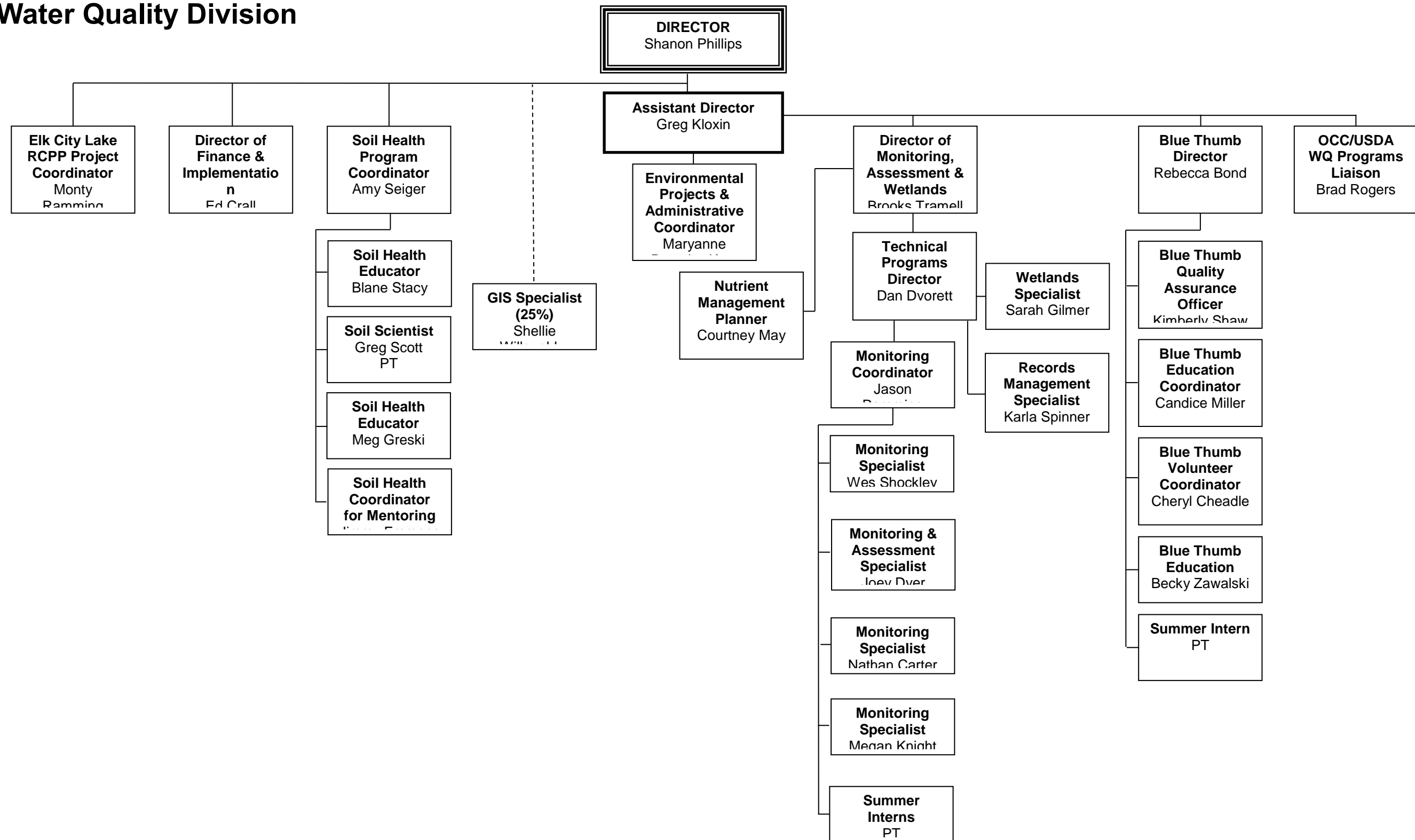
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Appendix 1. OCC Organizational Chart

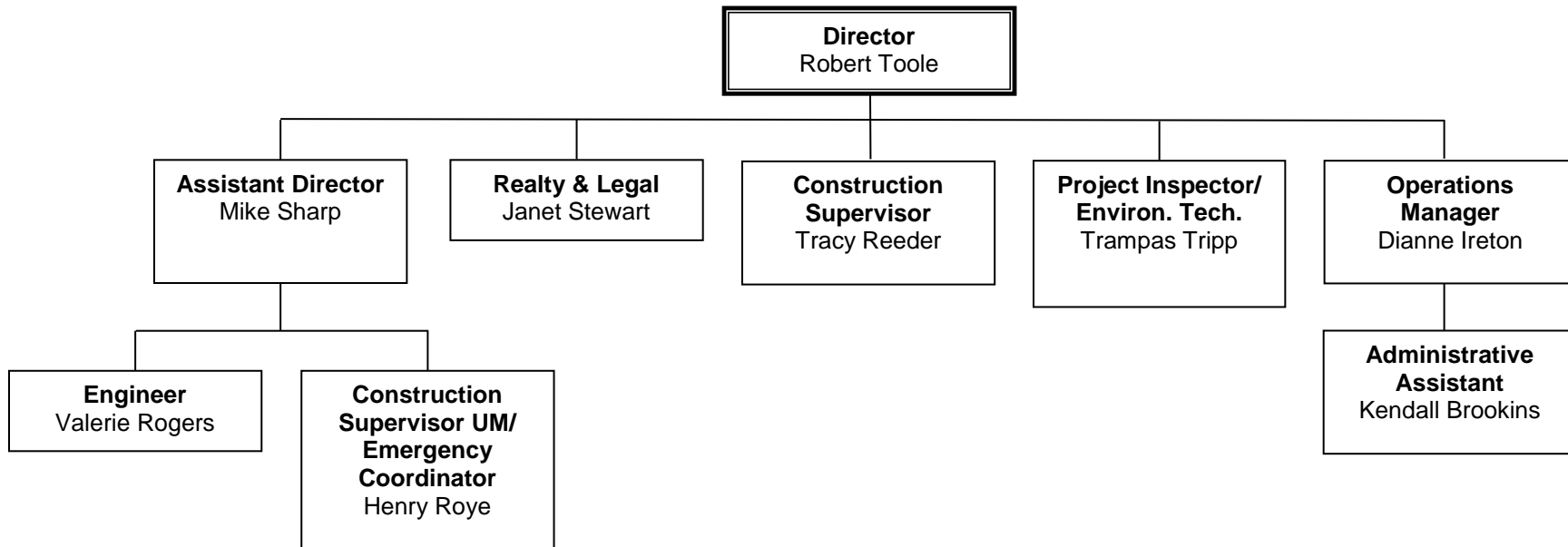
Oklahoma Conservation Commission



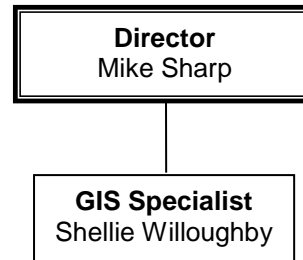
Water Quality Division



Oklahoma Abandoned Mine Land Program



Office of Geographic Information & Technical Services



Conservation Programs

