



Quality Assurance Plan

For

**Division of Water Resource Management
Central District Ground Water Program**

**Florida Department of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400**

March 2011

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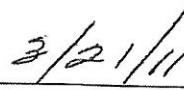
1.0 Signature Page

Plan Coverage: This Quality Assurance Plan summarizes the Ground Water Program quality systems that are used within the Central District of the Department. The plan covers quality assurance policies, roles and responsibilities for environmental data collection activities, evaluation and use of environmental data produced by laboratories and regulated facilities.

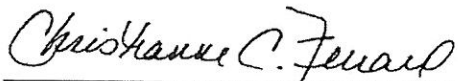
The undersigned have read and understood this Quality Plan, are charged with managing and improving the quality system, and are responsible for ensuring that all staff properly executes the procedures discussed in the plan.



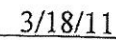
Elsa Potts, Bureau Chief



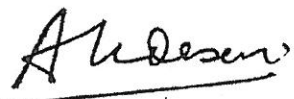
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Christianne C. Ferraro, P.E.
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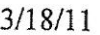


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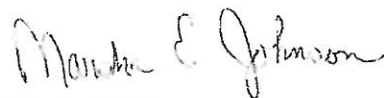


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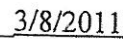
Central District Ground Water Program Manager



Date



Marsha Johnson, Central District Ground Water
QA/QC Officer



Date

2.0 Introduction

The DEP Quality Assurance (QA) Program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving are of sufficient quality to support the program decisions. The effectiveness of Ground Water's QA Program is dependent upon the actions of all DEP staff, from "front line" employees to management, meaning QA is a function distributed throughout our organization. One aspect of the Ground Water Program is to ensure that all Ground Water QA activities are carried out according to the commitments made to the Environmental Protection Agency as enumerated in the DEP Quality Management Plan (QMP) (Draft Revision 9/2/08).

The DEP Secretary is committed to implementation of the quality assurance requirements in the QMP and as authorized at 403.0623 F.S. and Chapter 62-160 F.A.C. (the DEP QA Rule). It is the Secretary's intent to carry out these obligations and requirements as detailed in the Department's QA Directive (Draft Revision January 2008).

Ground Water's QA Plan explains both the process and criteria by which the quality assurance system is managed. The plan is utilized as an instrument of internal communication between Tallahassee and the districts to inform our staff of current and future quality assurance activities. It discusses how specific QA duties are assigned to Tallahassee and district staff. The Ground Water Program will revise their Quality Assurance Plan as needed to ensure the consistent application of procedures and criteria for the generation and use of our data. The Quality Assurance Plan will also be used as a training document for new staff and as a reference for experienced personnel. The Plan and its revisions also serve as an archival record of our formal quality system. Where appropriate, we cite existing internal and external documents, including training manuals, guidance documents, SOPs, Rules, etc.

The elements of Ground Water Quality Assurance Plan are consistent with the Department's Quality Management Plan, Quality Assurance Directive and Quality Assurance Rule (62-160 F.A.C.) and Department Standard Operating Procedures (SOP's). Ground Water's Quality Assurance Plan addresses all activities associated with sampling, field testing, lab analysis and data review and interpretation of any type, including those activities associated with database management. Ground Water's Plan also discusses how data decisions are made based on data quality assessments.

In order to execute the components of the DEP QA Directive, the Ground Water Program has developed a quality assurance system. This document describes the steps taken to ensure the scientific and legal defensibility of environmental data generated or used. It details the process of planning, training, execution, assessment and corrective actions we

undertake to ensure that environmental data meets our established quality assurance criteria.

3.0 Policy Statement

It is the Ground Water Program policy to be strongly committed to sound science and QA practices which will produce environmental data of appropriate quality to be used for permitting, compliance, and enforcement decision-making purposes.

Therefore, it is the Ground Water Program policy to;

- Use scientifically valid and legally defensible data for decisions affecting permitting, compliance, and enforcement projects that relate to compliance with ground and surface water quality criteria.
- Maintain, update and implement the QA Plan as outlined in this document.
- Manage our Quality Statement to be consistent with the provisions of the Department's Quality Assurance Management Plan.
- Ensure that each individual is properly trained to execute his or her assigned tasks and job functions.
- Implement procedures to evaluate the quality of district output such as water quality data, reports used to make permitting, compliance, and enforcement decisions and any other associated documents used to make sound environmental decisions.
- Implement procedures to assure that the Department has reasonable assurances that QA objectives and criteria specified in this manual will be met.
- Periodically audit the performance and record-keeping practices of the Ground Water Program data collection, reporting and management activities.
- Perform a yearly systematic assessment of district QA activities, documenting corrective actions with the findings submitted to the district Quality Assurance Officer and the Standards and Assessment Section.

The managers and staff of the Ground Water Program will assure that there are sufficient QA activities conducted by the program to provide reasonable confidence that all environmental data generated are scientifically valid, representative, and legally defensible. Data quality is the responsibility of all managers and staff who are directly or indirectly involved in its collection and interpretation. Senior managers are responsible for assuring that adequate resources are available to implement the Ground Water Program QA Plan.

All employees of the DEP are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand and sign an

‘Ethics Statement’ attesting to their commitment to honesty and integrity in the performance of their duties. In addition, all employees are required to attend an annual ethics training class. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the Florida Department of Environmental Protection.

4.0 Organization and Responsibilities

The Ground Water Program’s responsibilities reside in Tallahassee and six district offices within the Division of Water Resource Management.

4.1 Tallahassee Data Management Organization and Function

Tallahassee’s data management responsibilities are to receive, document, and enter all the Federal NPDES (surface water discharge) Discharge Monitoring Reports (DMRs) into EPA’s Permit Compliance System (PCS) for the domestic and industrial wastewater programs. Ground water monitoring data that is associated with NPDES facilities is entered into the Division’s Wastewater Facility Regulation (WAFR) Database. Tallahassee also enters Non-NPDES (land application) DMRs for the Central District office and Non-NPDES DMRs and ground water monitoring data for the Northwest District office. The Northeast, Southwest, South, and Southeast District Offices receive, document, and enter into WAFR the remainder of the states Non-NPDES (land application) and Ground Water Monitoring Reports for domestic and industrial wastewater facilities. The Central District Office enters the Ground Water Monitoring Report data for the domestic and industrial wastewater facilities of the Central District.

4.2 Tallahassee Data Entry Responsibilities

DMRs and Ground Water Monitoring Reports must be received in Tallahassee by the 28th day following the end of the reporting month. They are stamped as received, entered into the DMR Log, and reviewed to determine if any of the following information is incorrect (NPDES Only) before continuing on with data entry: incorrect permit number, monitoring period, monitoring location codes, dates, duplicate reports and parameters that do not match the reports. If a report needs minor corrections, the Data Entry Operator (DEO) will try to correct the problem prior to data entry.

Reports that are flagged as having missing data, parameters codes, or data in the wrong columns are handled by the Data Control Specialist (DCS). Reports determined by the DCS to have missing parameter codes are forward on to the PCS State Coordinator for review and correction.

4.3 District Data Management Organization and Function

There are six district offices around the state, four of which are responsible for receiving, documenting, entering, and reviewing DMR data for Non-NPDES

domestic and industrial wastewater facilities and any ground water monitoring data associated with them. They are the Northeast, Southwest, South, and Southeast District Offices. The Central District Ground Water Section receives Ground Water Monitoring Reports from facilities for data entry.

4.4 District Data Entry Responsibilities

The district offices that receive reports directly from the facilities enter the data into the WAFR data management system. All data interpretation and validation is done manually by district staff at the time of permit renewal or during routine inspections to determine if there are format problems or violations. District Staff identify format problems and will work with facilities to correct and re-submit the reports for data entry. If numeric violations are identified, enforcement may or may not be initiated depending on the frequency and severity of the violations.

4.4.1 District Ground Water Program Data Review Process

Any and all data received in the district offices from their own sampling efforts, DMRs, Ground Water Monitoring Reports or permit renewal applications, needs to be reviewed for data quality prior to making permit and/or compliance and enforcement decisions. District review of the data determines its reliability and usability for determining compliance with permits, enforcement orders and/or rules. Quality Assurance Officers will periodically coordinate and participate in evaluation and interpretation of program data and provide oversight to staff to ensure that their QA objectives meet Department requirements.

4.4.2 Ground Water Managers' Data Responsibilities

Managers and supervisors are responsible for ensuring that data collection activities within their programs are conducted in accordance with the Department policies and comply with the directions established by the districts QA Officers and the Standards and Assessment Section (SAS). Key responsibilities of managers are to:

- Establish planning policies to ensure that appropriate QA procedures are reflected in program and operating plans.
- Encourage the development and review of Data Quality Objectives (DQO's) for data collection activities with the assistance of the QA Officer.
- Support and reinforce local quality assurance system implementation and assessment.
- Take corrective action on deficiencies identified by the QA Officer during local assessments and overviews.

- Ensure that all staff receives appropriate QA training by the district's QA Officer and/or SAS staff.
- Ensure that all staff follows established QA responsibilities and evaluate each staff member's effectiveness during annual performance evaluations.

4.4.3 District QA Officer Responsibilities to the Ground Water Program

Please refer to Section 5.2 for the Central District Ground Water Program QA Officer responsibilities.

5.0 District Sample Collection and Data Interpretation Activities

District staff must be proficient in sample collection and handling techniques and in data interpretation. It is the responsibility of the District QA Officer to ensure that these requirements are met and guidelines are in place to evaluate how well staff are complying with and meeting these objectives.

Each district has developed their own DQOs in order to meet individual program and technical needs as established for the programs they support. These requirements are as follows:

5.1 Central District Laboratory QA Requirements

The Central District Laboratory QA requirements for sample collection, sample analysis, conducting field test methods, and data interpretation are as follows:

- Sampling in the Central District in support of the Ground Water Program includes but is not limited to ground water sampling where the data submitted needs to be verified. Sample collection is performed in accordance with the FS Series SOPs found in DEP-SOP-001/01 in the Quality Assurance Rule.
- Samples collected are subcontracted to a Department approved, NELAC certified, local, contract laboratory or sent to the Department laboratory located in Tallahassee.
- Field test methods are conducted according to the FT series SOPs found in DEP-SOP-011/01 in the Quality Assurance Rule. This includes equipment specifications, calibration, calibration verification, and use. Calibration and verification documentation is done in accordance with the FD Series SOPs found in DEP-SOP-001/01.
- Laboratory reports received will be reviewed for appropriate analytical methods and accurate reporting.

5.2 Central District Ground Water Program QA Officer Responsibilities

In the Central District every Department program has a QA Officer. The Ground Water Programs QA Officer's responsibilities are as follows:

- Attend meetings scheduled by the Standards and Assessment Section to address QA issues affecting the Ground Water Program and relay the information to the appropriate staff.
- Respond to Ground Water Program quality assurance issues, problems, and requests for guidance and/or technical direction in an effective and timely manner.

5.3 District Ground Water Technical Support Responsibilities

The Central District Ground Water Program provides support functions and technical assistance for the Domestic and Industrial Wastewater Compliance and Enforcement Section, the Domestic Wastewater Permitting Section and the Industrial Wastewater Permitting Section.

5.3.1 Specific Responsibilities

The following are Specific Responsibilities of the Ground Water Program:

- Provide Technical Assistance to Owners, Managers, Operators of Wastewater Facilities and Sample Collection Consultants on collection of ground water samples and preservation of ground water samples in transit to laboratories.
- Provide Technical Assistance to Owners, Managers and Operators of Wastewater Facilities and Consultants about data that is not in compliance.
- Review on a fiscal year basis all ground water monitoring data received since the previous ground water review for each facility.
- Report any deficiencies of the ground water data or missing data to the appropriate Wastewater Program Supervisors and Managers.
- Report any data quality problems to Wastewater Program Supervisors and the Wastewater Compliance and Enforcement QA Manager for inclusion in a PAI Inspections of laboratories.
- Conduct QA performance audits of sampling data when requested or required due to questions about data submitted.
- Review on a random basis data provided from permitting, compliance and enforcement activities.
- Review on a random basis ground water data entered in the WAFR system for errors and duplicates.
- Document all program QA activities including training, audits and corrective actions. This information must be provided to the DEP Standards and Assessment Section on a periodic basis.

5.3.2 Review of Ground Water Data

Data review and interpretation are completed by Ground Water Program personnel. Data is reviewed annually upon receipt of a request for a review for each domestic or industrial wastewater facility from the Domestic and Industrial Wastewater Compliance and Enforcement Section inspectors. This data is reviewed by the Ground Water Program for compliance with the ground water standards and guidance concentration limits. Laboratory methods used and method detection limits used are reviewed. If laboratory reports are submitted with the ground water monitoring reports the holding times and Quality Control data are reviewed. If field sampling logs are submitted these are reviewed. Each fiscal year a written review is completed to provide a record that the review for each facility has been completed. A copy of this review is forwarded to the Domestic and Industrial Wastewater Compliance and Enforcement Section with any deficiencies for inclusion in the inspection report and letter to each facility. The review is placed in the Ground Water Program file for each facility. A system for storing files electronically has begun.

5.3.3 Data Entry

The Ground Water Program receives ground water monitoring reports (Part D of the DMR included with each permit) from non-NPDES and NPDES facilities. The Ground Water Program employs personnel to enter the ground water data from the Ground Water Monitoring Reports in the WAFR Data System. The Central District Office has requested that Ground Water Monitoring Reports submitted to Tallahassee be sent to the Central District Office for data entry. The exception to this may be the Ground Water Monitoring Reports from NPDES facilities.

After data entry the date of receipt is entered in a spread sheet for tracking of receipt in a timely manner and for tracking the reports on file. The reports are then filed by County and Facility Name in file cabinets in the Ground Water Program area.

5.3.4 Field Audits

The Wastewater Program relies on the submission of valid data which begins with proper sample collection, sample handling and data reporting. Field Audits are conducted by staff of the Ground Water Program to assure representative ground water samples are being collected and to keep collection errors to a minimum. Field Audits during ground water sampling events are conducted on approximately 1 percent of the total number of wastewater facilities that have permits that contain ground water monitoring plans. The locations for these audits are selected based on types of problems with data submitted. Sometimes the location of an audit is based on a request from a wastewater facility. During field audits the sampling activities are compared with the Department's Standard Operating Procedures.

Field decontamination procedures are observed or discussed and type of cleaning agents are reviewed. Types of field equipment are inspected for approved types in the Standard Operating Procedures. The following sections of the Standard

Operating Procedures are used:

FC1000, Field Decontamination

FD1000, Field Documentation

FS1000, General Sampling

FS2000, General Water Sampling

FS2200, Ground Water Sampling

FT1000, General Field Testing

FT1100, Field pH

FT1400, Field Temperature

FT1500, Field Dissolved Oxygen

FT1600, Field Turbidity

FT1200, Field Specific Conductance

And other appropriate sections as necessary.

Field records such as calibration logs of field meters, types and expiration dates on standards used for calibration, field sampling logs, sample preservation methods and chain of custody forms are reviewed.

Each monitoring well is inspected for defects or damage and for an appropriate level of security.

At the conclusion of the field audit sampling personnel are communicated the items that were correctly accomplished and areas where improvement is needed. During the audit, field notes are made in field note books. Copies are placed in Ground Water Program files for each facility audited.

5.3.5 Data Storage

After data entry the Ground Water Monitoring Reports are stored in file cabinets in the Ground Water Program area for a period of 5 years. After 5 years the appropriate reports are removed from the file cabinets. A summary of the names of the facilities and the reporting period for each of the reports is compiled and a request for destruction is submitted to Tallahassee for disposal of the reports. The reports are placed in the recycling dumpsters after permission is received from Tallahassee for disposal.

6.0 Data Quality Components

It is the Ground Water Program objective to review and evaluate the completeness, correctness, and conformance of facility self-monitoring and internally generated data against specific Data Quality Objectives (DQOs). By incorporating these concepts,

program staff can routinely produce a work product that is scientifically defensible and adheres to the Department's rules, policies, and procedures.

6.1 Data Quality Objectives

The DQOs of the Ground Water Program are to have staff evaluate data using criteria established by the program, the District QA Officer, and the Department for consistent review and interpretation of data and to implement corrective action as necessary to remedy deficiencies identified during the review and evaluation process. The following Data Quality Objectives (DQOs) are designed to ensure that submitted data meets or exceeds the threshold for scientific defensibility and adherence to Department rules and policies for the Ground Water Program:

- Department approved Standard Operating Procedures (SOPs) are followed by all permitted facilities and Department staff conducting field sampling and laboratory analysis.
- Laboratory analysis is performed by facilities certified by the Department of Health and accredited under the National Environmental Laboratory Accreditation Conference (NELAC).
- Non-NPDES monitoring data is manually evaluated and verified against the programs DQOs.
- Corrective actions are taken as necessary to ensure data meets DQOs and established Department criteria.
- Data is stored in an electronic format that is easily retrieved for review and verification.

6.2 Data Collection, Verification, and Validation

Data processing includes collection, verification, and validation. Precautions shall be taken each time data is recorded, calculated, verified, and transcribed to prevent the introduction of errors and the loss of information. Within the Ground Water Program, data collection is almost exclusively performed by the regulated entity and less so by the Department.

Data is manually verified and must go through a series of validation steps to ensure that the data was generated correctly.

- Transcription of the data is correct and complete.
- Methods used by the laboratory to meet the analytical requirements of the program.
- Spike and duplicate samples are routinely run to verify repeatability.
- Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) are checked to ensure that they are sufficiently low enough to determine compliance with established permit limitations.
- Holding times are met by the laboratory.

- The Laboratory is certified by the Dept. of Health and NELAC.
- Blank requirements are routinely followed.
- All other established criteria and standards are met.

6.3 Corrective Action

Procedures are in place to insure that immediate and effective corrective action is taken when a laboratory's data quality falls outside established data quality objectives, data acceptance criteria, or quality assurance requirements. This also applies to internal data generated by the district technical support staff.

The corrective action process keeps management informed when corrective action is necessary for either externally or internally generated data. The corrective action process relates to the overall QA management scheme in terms of who is responsible for taking corrective actions and who follows-up to verify that corrective action has been taken and has produced the desired results. This is accomplished through the routine inspection process or enforcement process, if necessary, for externally generated data, and through coordination with the QAO for internally generated data. If the corrective action process initiated by the district is not sufficient enough to warrant the expected outcome, the SAS may be summoned to assist in reaching an amicable solution.

7.0 **Training**

All staff is properly trained to perform their duties as well as new staff that are hired. Supervisors and QAOs will periodically assess and verify that staff performance conforms to the policies and procedures established by the Ground Water Program and the Department.

7.1 QA Training Activities and Procedures

- Train staff in specific QA functions as outlined by the program and QA Officer.
- Review annual ethics policy course with QA Coordinator
- Maintain, update, and provide specific training materials to staff on routine program requirements and QA activities.
- Provide routine refresher courses to staff on updated QA information and procedures.
- Evaluate annually the effectiveness of the QA Officer's training for program staff.

7.2 Internal Audits

Annual Audits by the SAS section and the QA Officer will provide valuable and objective feedback concerning the effectiveness of the Ground Water Program's quality assurance system, and may identify areas that need improvement. However, successful implementation of the Ground Water QA Program relies heavily on the submission of valid data which begins with proper sampling, handling, and data analysis and interpretation.

8.0 Report Compilation

The SAS section will be provided with information regarding the Ground Water Program's ongoing QA efforts. The results will be compiled and will be provided to the Secretary and EPA in an annual report.