

Quality Manual

for

State of Florida
Department of Environmental Protection
Watershed Monitoring Section

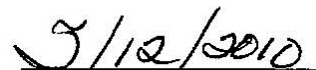
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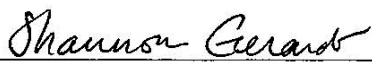
Prepared by
FDEP Watershed Monitoring Section
May 2010



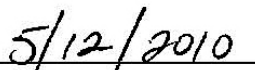
Gail Sloane, Environmental Administrator



(Date)



Shannon Gerardi, QA Officer



(Date)

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3.0 Statement of Policy

This Quality Manual for the Florida Department of Environmental Protection's (FDEP) Watershed Monitoring Section (WMS) in Tallahassee, Florida, states the procedures that will be used to ensure that data generated by WMS is of verifiable quality and meets the scientific objectives of the FDEP required by federal and state law, including: sections 104, 106, 305(b), 303(d), 314 and 604 of the Clean Water Act, as amended; 40 CFR Part 31,35, and 131 (EPA); Florida Statute Chapter 403 Environmental Control; Florida Administrative Code Rules 62-160, 62-302, 62-520, and 62-522. The WMS is committed to following good quality assurance (QA) and quality control (QC) management practices to produce all data.

4.0 Ethics Statement

All employees of the FDEP WMS are held to high professional ethical standards in the performance of their duties. All employees are required to read and understand an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the FDEP.

5.0 Organization and Responsibilities

The WMS encompasses two networks. The Status Monitoring Network (Status Network) is a probability-based network designed to randomly sample and characterize Florida's fresh water resources and to determine how these conditions change over time at both a basin level and statewide over the long term. The Trend Monitoring Network (Temporal Variability Network) is a fixed-station-monitoring network designed to detect both short-term variability and long-term trends. Section 11.1 on pages 6-9 provides further details regarding the structure and intent of both networks.

The WMS data is collected and generated by in-house FDEP sampling personnel, district office FDEP sampling personnel (Tampa, Port St. Lucie and Ft. Myers), two contracted Water Management Districts (Northwest Water Management District and St. John's Water Management District) and one contracted county (Alachua County). Each entity participates in data collection for one or both WMS networks. All WMS FDEP sampling personnel (in-house and district offices) are included participants of this Quality Manual, while each contracted agency is held responsible for producing and managing individual Quality Manuals which address all internal QA/QC activities not bound to them by their WMS contracts. Furthermore, all sections of this Quality Manual will apply directly to FDEP WMS personnel and will not include non-FDEP (contracted) personnel.

The WMS is part of the Bureau of Assessment and Restoration Support in the Division of Environmental Assessment and Restoration.

The WMS is headed by the Environmental Administrator, who is responsible for both the technical and administrative direction of the Section and is committed to the QA program described in this plan.

The Quality Assurance Officer is responsible for the production and timely revision of the Quality Manual and Section Sampling Manual, scheduling all analyses, and for ensuring that regular audits are conducted to demonstrate that the objectives of the Quality Manual and Sampling Manual are being met.

Each sampling entity (FDEP personnel and contracted personnel) is headed by a Project Manager, who manages required contracts (as applicable), oversees direct human resource matters, handles numerous data review issues and assists the QA Officer with training and audits. Refer to Section 11.2, pages 1-67 for full project manager duties.

Data management and review is conducted by the Data Manager and staff, who are responsible for collection and processing of fresh water quality monitoring data for both the Status and Trend Networks. They also assist with data management for the Springs Initiative and other special projects. Refer to Section 11.3, pages 1-16 and Section 11.4, pages 1-41 for full data management duties.

The data analysis staff compiles the sampling results for federal and state reporting requirements and public distribution.

An organizational chart describing the relationships of all FDEP WMS staff is provided in Section 11.5.

The FDEP Central Laboratory (Chemistry and Biology Sections) have been selected to perform all analyses for both the Status and Trend Networks until further notice. Refer to the Quality Manuals submitted by these sections for details on QA/QC, organization and responsibilities that are internal to the Central Laboratory.

5.1 Responsibilities of Key Personnel

FDEP WMS firmly believes that all personnel within the Section are vital to the overall quality of data being produced. Therefore, all FDEP WMS employees listed below are “Key Personnel” with a brief description of respective responsibilities. Roles and responsibilities of all personnel are consistent with FA 3200 and 3300 of the FDEP SOPs.

a. Gail Sloane, Environmental Administrator

Supervises the ongoing development and implementation of the statewide Status and Trends monitoring networks. Responsible for developing and directing ground and surface water monitoring programs, providing

technical assistance to other monitoring programs in the Bureau or Division, and providing assistance with the development of water quality standards. Responsibilities also include oversight of in-house staff and contractual relationships with Water Management and FDEP district offices, federal, state, and local government agencies and private firms to implement and maintain network operations. Oversees the establishment of specific tasks to analyze data, develop long-term water quality trend information, and ensures that the data is made available to federal, state and to the public. Ensures data is reported to meet requirements in the federal Clean Water Act, state requirements and to the public to assist in making land and water related planning decisions. Assists with technical issues pertaining to the Network. Acts as Agency liaison for Florida Water Resources Monitoring Council. Serves as the financial administrator for a section utilizing differing funding sources, including federal grants (604, and 106), state trust funds (Water Quality Assurance Trust Fund for Ambient Monitoring, and USGS Cooperative) all relating to water quality monitoring programs. Works with division and bureau budget personnel regularly to track section budget throughout the fiscal year, authorizes all section expenditures, ensures that funds are spent appropriately and plans future budget needs and activities in a timely manner. Included in these responsibilities are: Coordinating administrative aspects of the Water Quality Trust Fund Ambient Monitoring Network, Supervising staff responsible for developing contracts related to the Network, as well as staff with oversight of field personnel.

b. Shannon Gerardi, Environmental Specialist III (QA Officer)

Provides quality assurance for state-wide surface and ground water Status and Trends monitoring networks. Coordinates sampler training workshop and revises program sampling manual. Revises and maintains section Quality Manual. Conducts on-site audits of sampling agencies and field technicians. Schedules laboratory analysis of samples. Reviews results of quality assurance procedures (quarterly reports, field reference samples, equipment blanks and field blanks). Provides QA oversight for special projects, as needed.

c. Stephanie Sunderman, OPS Environmental Consultant

Provides administrative and technical support to the Florida Water Resources Monitoring Council (Council). Incumbent will participate in all meetings of the Council, and will be responsible for posting required public notices and taking and posting meeting minutes. This position is responsible for coordinating with appropriate DEP contacts for migrating the Council web presence to the Division of Environmental Assessment and Restoration and posting updates on FDEP internet web sites. This position is further responsible for tracking Council action items, preparing summary reports and preparing and participating in briefings as requested.

Position has responsibility to assist coordination with monitoring entities throughout the state, including routine communication with all parties in compliance with sunshine law requirements. Position is expected to coordinate specifically with NGOS, including volunteer monitoring programs as well as state/local/regional/national government agencies. Responsibilities will also include assistance with GOMA and other coastal monitoring initiatives. Incumbent will participate in Watershed Monitoring Section activities, including assistance with preparation of reports required for section/Bureau and Division initiatives, and to meet federal requirements. Responsibilities will include but not be limited to GIS analysis, graphics preparation, technical writing and editing of reports, reviewing monitoring plans, data entry and QA of data and results. This position is responsible for coordination of all activities associated with a grant to the Florida Fish and Wildlife Conservation Commission FWRI (FWRI) for EPA's National Coastal Waters Survey. Responsibilities will include oversight of grant with the FWCC for sampling and analysis of data. Incumbent will ensure data produced from the FWRI laboratory is forwarded to FDEP for inclusion in the STORET database. Other duties are assigned as necessary.

d. Tom Biernacki, Environmental Manager

Supervises staff working on all aspects of network field sampling operations within the Suwannee and groundwater operations in St. Johns regions of the State, including: site reconnaissance, sample collection, data uploading and review, sample results notification to landowners and other designated data users, logistical support, and other related duties as required. Oversees the editing of data generated by the Monitoring Subsection, and assists in updating the subsection's databases. Assist in coordinating sampling, ensures sampled stations are consistent with Program needs and act as a contact to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Tom oversees the development and implementation of GPS standards for the Division of Environmental Assessment and Restoration (DEAR). In addition to Status and Trend program responsibilities, Tom coordinates and assists with TMDL sampling as required, and as staff are available. Tom's section also participates with special projects investigations with other groups within the agency.

e. Alicia Wilson, Environmental Supervisor II

Coordinates all aspects of network sampling operations within South Florida (Ft Myers and Port St. Lucie), including data review, sample results notification to landowners and other designated data users, and other related duties as required. Edits data generated by the Monitoring Section, and assists in updating the section's databases. Supervises and maintains communication with FDEP employees, assists in the operation and maintenance of the networks, assists in coordinating sampling,

ensures sampled stations are consistent with Program needs and acts as a contact for FDEP staff to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Coordinates supervision and oversight associated with 6 monitoring staff co-located in Ft. Myers and Port St. Lucie, Florida. Acts as liaison for springs related issues, projects, and education.

f. Tom Seal, Environmental Specialist III

Coordinates all aspects of network sampling operations within the northwest and northeast regions of Florida with three government agencies: Northwest Florida Water Management District, St. Johns River Water Management District, and the United States Geological Survey (USGS). Tasks include contract management, financial management of invoices, data analysis and review, sample results notification to landowners, and other related duties. Additional tasks include interpreting sediment data produced by the Status Network sampling teams, working with these teams to collect sediment samples for the Department's Me-Hg TMDL project, and managing a contract with the USGS to gauge river discharge at 26 sites in north Florida.

g. Kate Muldoon, Environmental Supervisor II

Coordinates all aspects of network sampling operations within Southwest Florida (Tampa) and Alachua County Environmental Protection Division, including data analysis and review, sampling results notification to landowners and other designated data users, and other related duties as required. Tasks include contract management, financial management of invoices, editing data generated by the Monitoring Section, and assisting with updates of the section's databases. Coordinates supervision and oversight associated with 4 monitoring staff co-located in Tampa at the SWFWMD. Supervises and maintains communication with FDEP employees, assists in the operation and maintenance of the networks, assists in coordinating sampling, ensures sampled stations are consistent with Program needs, and acts as a contact for FDEP staff to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Provides managerial oversight for special studies in the southwest area, such as the FGS Arsenic Study. Acts as the representative for agency participation in the Florida Water Resources Monitoring Council.

h. Jay Silvanima, Environmental Manager

Development of the WMS data management plan including water quality, biological, chemical, sediment and physical data from the Status and Trend Monitoring Networks. Ensures the maintenance of an Oracle database and interactive applications which incorporate field generated data and allow the review and distribution of field and analytical data. Ensures all data collected by the WMS are loaded into the database.

Currently there are nearly 2 million rows of water quality results in the database collected from 1981 to present. Coordinates the data analysis and reporting of WMS data for the annual statewide Status report, the biennial US EPA 305(b) Report, the triennial Status zone reports, and other periodic reports as necessary. Ensures the smooth and timely flow of data from WMS field sampling and laboratory sources to the Florida STORET database. Ensures that sites collected for the Springs and WMS monitoring networks are geo-referenced in accordance with the Department's and Division's Locational Data Standards. Supervises five OPS employees: Lisa Williams, Kunle Olumide, Shel McGuire, Chris Sedlacek, and Justin Berke.

i. Lisa Williams, OPS Environmental Consultant

Responsible for the maintenance of an Oracle database used as the repository for biological, water quality and sediment data collected by the Watershed Monitoring Section, and the Springs Initiative, and the applications which access this database. Loads all data collected by the WMS into the database. Ensures the above data meet the standards established by the Impaired Waters Rule, Chapter 62-303, F.A.C, where applicable. Fulfills data requests to other Federal, State, and Local government agencies and the general public.

j. Kunle Olumide, OPS Environmental Consultant

Evaluates WMS needs and works with staff to develop appropriate statistical applications. Responsible for the statistical analysis, and visual display of the watershed monitoring and springs initiative data in support of chapter 305(b) of the Clean Water Act, and for the analysis of these data for the Division of Environmental Assessment and Restoration (DEAR). Prepares reports and graphics in support of these analyses. Prepares and delivers presentations of water quality data; assists section in the analysis of information technologies to collect, analyze, and evaluate environmental data.

k. Shel McGuire, OPS Environmental Consultant

Serves as technical writer and primary editor for all reports generated by the WMS. Reviews and compiles data on excluded sites in sampling program for incorporation into probabilistic sampling network calculations. Assists in preparing and analyzing data for 305b report; Comprehensive State Monitoring Strategy (106 report to EPA); Annual Statewide Assessment report and other publications. Organizes biennial meeting of all WMS staff statewide.

l. Chris Sedlacek, OPS Environmental Consultant

Serves as primary environmental scientist for the WMS. Responsible for the statistical analyses of the Status Monitoring and Trend Monitoring Networks, and for the random site selection for the Status Monitoring

Network, both in support of chapter 305(b) of the Clean Water Act. Prepares reports and graphics in support of these analyses. Assists section in the analysis of information technologies to collect, analyze, and evaluate environmental data.

m. Justin Berke, OPS Environmental Consultant

Serves as the coordinator for Geographic Information Systems (GIS) support to the WMS. Responsible for GIS data analysis, and reporting, including the preparation of each of the Status Monitoring Network's water resources coverages for random site selection via Chris Sedlacek with guidance from Dr. Tony Olsen, US EPA, Corvallis Oregon. Prepares maps for the WMS.

n. Janelle Madden, OPS Environmental Specialist II

Reviews and edits data generated by the Watershed Monitoring Subsection Field sampling operations group. Reviews and releases provisional data. Generates and mails result notification owners letters and data reports. Updates the Oracle Generalized Water Information System (OGWIS) database including communicating with the Suwannee River Water Management District to add District well site information to the database. Assimilates data for and write quarterly quality assurance reports for field sampling operations group.

o. Pam Novak, OPS Environmental Specialist II

Responsible for assisting in performance of sampling site reconnaissance for Status Network sampling locations for all resources. This duty includes office reconnaissance using GIS software, making phone calls, visiting water management district offices and FDEP district offices, reviewing in-house documentation, traveling to county courthouse to gain owner's addresses, mailing out sampling permission letters, and any other related tasks. Includes performing field reconnaissance of future sites by traveling to sites and documenting the location using cameras, GPS, and sketch maps. Also includes duties of backup sampler.

p. Keith Davie, OPS Environmental Specialist III

Instruct Departmental and contractor field staff using differentially corrected Global Positioning System hardware, field computers, field sampling equipment, and related software. Provide technical support for using and trouble-shooting differentially corrected Global Positioning System hardware field computers, field sampling equipment, and related software. Create GIS files of sampled stations. Review and approve all purchases of recreation-grade and resource grade GPS equipment. Create a data dictionary or modify an existing one to comply with LDS. This position will continue to take the lead in annual revisions of the GPS Standard. The GPS Coordinator ensures that every effort is made to use the Department's GPS equipment to its fullest capability. Perform

maintenance or facilitate maintenance on sampling equipment and facilities. This also includes cleaning and maintaining laboratory and storage facilities, vehicles, and equipment. Maintain equipment logbooks, organize work areas, maintain vehicle inventories, and perform other related tasks as need.

q. Lori Balinsky, OPS Environmental Specialist I

Reconnaissance Coordinator for Suwannee and St. Johns projects samplers. Reconnaissance of future sample sites including: mailing permission letters, making phone calls, visiting sites, visiting water management district offices and FDEP district offices and courthouses, and reviewing in-house documentation. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures.

r. Peter Folland, OPS Environmental Specialist III

Responsible as lead sampler in collecting Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

s. Chris Green, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

t. Mike Eckles, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment.

Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

u. Paul Blair, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

v. Brett Ursin, OPS Environmental Specialist III

Responsible as lead sampler in collecting water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs crew leader tasks that include providing support in training new employees, responsibility for sample documentation, and leading crew during sampling trips. In addition, the lead sampler sets goals, develops schedules, and assigns tasks as needed to sampling team members. Also provides crew leadership for special projects sampling, such as the methyl mercury sediments study and the Arsenic study. Communicates effectively with the program manager regarding any issues or questions that may arise.

w. Chris Pratt, OPS Environmental Specialist II

Shares crew leadership for special projects sampling, such as the methyl mercury sediments study and the Arsenic study. Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

x. Rose Taylor, OPS Environmental Specialist II (shared position with DEP Southwest District Restoration section)

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project. Participates in special projects sampling, such as the methyl mercury sediments study and the Arsenic study.

y. David Byers, OPS Environmental Specialist II

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project. Participates in special projects sampling, such as the methyl mercury sediments study and the Arsenic study.

z. Sara Mechtensimer, OPS Environmental Specialist III

Responsible as lead sampler in collecting water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs crew leader tasks that include providing support in training new employees, responsibility for sample documentation, and leading crew during sampling trips. In addition, the lead sampler sets goals, develops schedules, and assigns tasks as needed to sampling team members. Communicates effectively with the program manager regarding any issues or questions that may arise.

aa. Tyler Huffman, OPS Environmental Specialist II

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment.

Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

bb. Vacant, OPS Environmental Specialist I

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

cc. Dawn Miller, OPS Environmental Specialist III

Collects surface and groundwater water samples for the state's Status and TV Networks following strict protocols and QA procedures. Responsible for sample documentation, quarterly and annual reports, reviewing provisional data and maintaining equipment inventories. Provides site reconnaissance in the office and the field through research and stakeholder interactions. Prepares documentation for annual sampling audits.

dd. Abner Gamboa, OPS Environmental Specialist II

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

ee. Bill Karlavige, OPS Environmental Specialist III

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with

ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

ff. Vacant, OPS Administrative Clerk

Responsible for ensuring the daily task of physical operations are completed and supports the Statewide Watershed Monitoring Program. Ensures laboratory areas are clean and organized. Cleans office space, trucks, boats, and other types of equipment and facilities. Delivers sample coolers from lab to storage room. Delivers filled sample coolers from Greyhound package express to the Central FDEP lab. Assists Section and Division Office with offices moves, deliveries, and in coordinating sampling operations including, sample collection, data analysis and review, sample results notification to landowners and other designated data users, and other related duties as required.

gg. Dana Jones, Administrative Assistant I

This position provides administrative duties that are primarily financial in nature in support of the Environmental Administrator (EA) of the Watershed Monitoring Section (WMS). Serves as section representative responsible for preparing and tracking section budget spreadsheet; adhering to Bureau Chief's office procedures for managing the spreadsheet, and responding to section administrator's requests for budget reports and periodic updates. Conducts section spreadsheet reconciliations with SAMAS/FLAIR reports. Responsible for preparing and processing purchase requisitions (includes all MFMP and P-card) and processing purchasing card transactions for the section in a timely manner and in accordance with established agency procedures. Works to solve problems associated with vendor invoices and payments. Responsible for processing all section travel authorizations, vouchers and travel check distributions. Responsible for tracking contract balances and assists contract managers in getting contracts invoiced before state and federal year-end deadlines. Assists section administrator in managing official grant files and tracking expenditures, including OPS salaries. Listed as section's timekeeper, ensuring timesheets are submitted as required.

5.2 Job Descriptions

The WMS consists of several employees (all who are listed above in Section 5.1); please refer to this list in Section 5.1 above for each job description.

5.3 Approved Signatories

Approved signatories within the FDEP WMS are stated as:

Shannon Gerardi, QA Officer
Gail Sloane, Environmental Administrator
Daryll Joyner, Bureau Chief
Jerry Brooks, Division Director

5.4 Employee Training

All WMS employees are required to review the Sampling Manual (and/or provide technical assistance in editing and updating the Sampling Manual) on an approximate annual basis. All employees directly related to sample collection are required to attend at least one Sampling Training Workshop every five years (or as needed, before then). These workshops are conducted at least once a year, and training is based on specific FDEP Standard Operating Procedures (SOP) as applied to the Status and Trend Network sampling programs.

Furthermore, all samplers performing Habitat Assessments (HA) and Stream Condition Index (SCI) sampling are required to have specific training and demonstrate competency due to the expert judgment exercised during field sampling. Individuals conducting a HA must train with qualified FDEP staff (via workshops and/or participating in field sampling) and remain in “pass” status for field performance tests. Training should be conducted using the Habitat Assessment Training Checklist (FT3000 found in FA1000). Habitat Assessment testing will be conducted at select streams/rivers located throughout the state, and sites will change every two years or as needed. All field samplers are required to participate in at least one testing event every two years. At all times, a minimum of one sampler from each sampling team must be in pass status in order to perform a Habitat Assessment. WMS field samplers conducting SCI sampling must train with qualified FDEP staff (via workshops and/or participating in field sampling) and pass a field performance test (audit) to demonstrate competence. Training should be conducted using the SCI Training Checklist (FS7420 found in FA1000). SCI audits are administered by the Standards and Assessment Section. At all times, a minimum of one sampler from each sampling team must have successfully completed and passed a SCI audit in order to collect a SCI sample. Furthermore, after passing the initial performance audit, annual “check-up” audits will be attempted by the WMS QA Officer throughout the year to ensure that proper techniques are followed.

FDEP WMS sampling personnel are also required to obtain training on Global Positioning System (GPS), Class I Watercraft and Trailering Operation, and safety training.

A list of all sampling personnel and their respective training is maintained internally within the Section, and their training is consistent with FA 2100. Furthermore, training

records are maintained on each employee who is trained in skills commensurate with their responsibilities.

6.0 Documentation

Sample documentation is of critical importance to the objectives of the Status and Trend Monitoring Networks. Data gathered on these projects is entered into an existing statewide water quality database, and must be properly linked to historical data. The database is also a source of public information and is used for a variety of purposes. The data must be accurate to avoid incorrect evaluations and decisions on the State's water resources. All FDEP WMS documentation requirements are based on the FDEP SOPs.

6.1 Generation, Retainment and Storage of Records

Record keeping practices are consistent with 62-160.240(1) and 62-160.340(1), F.A.C. and FD 1000 of the FDEP SOPs. All records shall be retained for at least 5 years after the completion of the project.

Sample documentation begins in the FDEP Central Chemistry and Biology Laboratories. A label is placed on each container with the request (RQ) number, the major analyte group, a notation if filtration is required, and the preservation method. See Section 11.1, page 120, Figure 28.

FDEP WMS provides the sampling agencies with station identification labels (see Section 11.1, page 96, Figure 5) that are bar coded to uniquely identify a sample station. The field technicians place these labels vertically on the sample containers and also on the custody sheet. This links the station to the containers and to the custody sheet.

All field documentation is recorded on appropriate field sheets which are supplied by FDEP WMS. Samplers are required to ensure that the most current versions are used by observing the date printed on the forms.

All paper documentation records must be recorded in waterproof ink (except the Habitat Assessment sketch map, which may be drawn in pencil). Erasing or obliteration of records is not permitted. Corrections are made by marking a single line through the error so that it is still legible, and the initials of the individual performing the correction are included. All documentation records are required to be legible.

All documentation requirements regarding initial activities performed by the Central Laboratory (container preparation, supplying sampling kits, RQ information, etc.) are generated, retained and stored internally by appropriate lab personnel.

All documentation regarding sampling procedures (Sampling Manual) are generated, retained and stored electronically (and by hard-copy) by the FDEP WMS QA Officer.

All documentation requirements produced by field sampling personnel are retained and stored by the respective Project Manager.

All documentation regarding data management and review is generated, retained and stored by the Data Manager and the appropriate database software programs (see Section 11.3, pages 1-16 and Section 11.4, pages 1-41).

6.2 Documentation Control and Maintenance

All documentation generated by WMS is controlled and maintained in essentially two manners. All documentation includes a revision date or version number to indicate date(s) of use and to ensure the most current version of the documentation form is being used or referenced. Ensuring the use of current procedures is consistent with FA 3210, 3240 and 3250 of the FDEP Field SOPs and 62-160.210 F.A.C. Furthermore, all documentation contains documentation control blocks such as page numbers and section headings used to identify completeness. Electronic documents maintained by the FDEP WMS QA Officer that are posted for internal or public viewing are lock-protected to prevent editing by anyone other than the QA Officer.

6.3 Types of Documentation/Reports Generated

WMS generates several types of documentation and reports that are listed below. Reports to management are consistent with the procedures outlined in FA 3250 of the FDEP Field SOPs.

Documentation:

- Sampling Manual, including paperwork as described below:
 - field sheets (ground water, surface water, biology)
 - custody sheets
 - labels
 - micro land use forms
 - permission forms
 - log books (calibration, standards and buffers, equipment maintenance and equipment cleaning)
 - inventory sheets
 - FRS reporting forms
 - field audit forms
- Quality Manual
- Data Management SOPs
- Project Manager procedures Manual
- Data dictionaries for field data and GPS location collection based on programmatic standards

Reports:

- Quality Assurance Reports

- Data analysis summary reports from annual ground and surface water monitoring
- Integrated report to EPA for satisfaction of Section 305(b) Clean Water Act requirements
- Report on the Integrated Florida Monitoring Strategy to satisfy section 106 reporting requirements to EPA
- Quality Assurance Project Plan in support of Florida Department of Environmental Protection monitoring activities conducted under sections 104(b)(3), 303(d), 305(b), and 604 of the Clean water Act as amended

6.4 Sample Identification and Data Integrity

Procedures involving accurate sample identification begin with proper sample nomenclature. Refer to Section 11.3, page 3 for details on how samples are named (based on sampling agency, project codes and collection timeframe).

Once samples are properly named, accurate sample identification continues with the scheduling of samples in the Laboratory Information Management System (LIMS).

Refer to Section 11.1, page 10 and the FDEP Central Laboratory Chemistry Section Quality Manual for specific details regarding scheduling.

The sample identification process continues with additional documentation procedures involving the field sheets and custody sheets by including site labels on each form. See Section 11.1, page 96, Figure 5 for details. Sample custody is consistent with and follows FD 5000 and FD 7000 of the FDEP SOPs.

Furthermore, accurate sample identification and data integrity remains intact throughout the data review and data analysis process. See Section 11.3, pages 1-16 and Section 11.4, pages 1-41 for details.

6.5 Confidentiality

All records and documents generated by FDEP WMS (except those associated with private property land owners who do not wish to have their personal information disclosed) are public records and may be subject to disclosure according to the guidelines and exceptions published in Chapter 119 of Florida Statutes. The procedures used for release of all data/documentation are detailed in Section 11.3, page 12-13.

7.0 Capabilities

The WMS has proven it is capable of staffing and administration of two statistically sound monitoring networks (Status and Trend). Within these networks, staff is capable of planning, scheduling and collecting high-quality samples for Florida's water resources, and managing all

aspects of the associated data review and reporting. The FDEP Central Laboratory in Tallahassee is responsible for all lab analyses performed on the submitted samples.

7.1 Sampling Capabilities

The WMS collects all samples based on procedures outlined in the FDEP SOPs applicable to ground water (FDEP-SOP-001/01 FS 1000, FS 2000, and FS 2200), surface water (FDEP-SOP-001/01 FS 1000, FS 2000, and FS 2100), sediment (FDEP-SOP-001/01 FS 1000 and FS 4000), and biological communities (FDEP-SOP-001/01 FS 7120, FS 7130, FS 7320 and FT 3000). Sampling for these matrixes includes all applicable FDEP SOP field testing procedures (FDEP-SOP-001/01 FT 1000, FT 1100, FT 1200, FT 1400, FT 1500, FT 1600, and FT 1700). Furthermore, all containers, volumes, preservation, holding times and preservation procedures are consistent with FS 2000, FS 1006, Table FS 1000-2 and Tables FS 1000-4 through FS 1000-9 of the FDEP Field SOPs. Currently, WMS is not utilizing any non-standard field procedures. If conditions warrant, any non-standard field procedures will be approved per FA 2100 and FA 2200 of the FDEP SOPs.

7.2 Sampling Procedures

Specific sampling procedures employed by WMS for ground water are detailed in Section 11.1, pages 20-31.

Specific sampling procedures employed by WMS for surface water are detailed in Section 11.1, pages 32-38.

Specific sampling procedures employed by WMS for sediment collection are detailed in Section 11.1, pages 39-43.

Specific sampling procedures employed by WMS for biological communities are detailed in Section 11.1, pages 44-61.

7.3 Test Methods

Table A. lists analytical test methods used for field data and laboratory analyses. All methods, unless otherwise stated are based on EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, revised March 1983. SM= Standard Methods for the Examination of Water and Wastewater.

Table A. - Analytical Test Methods

INDICATORS	ANALYSIS METHOD
pH	Method 150.1
Temperature	Method 170.1
Specific Conductance	Method 120.1
Dissolved Oxygen	Method 360.1
Turbidity	SOP FT 1600
Secchi Depth	Welch (1948); EPA 620/R-97/001
Total Depth	Steel tape/electronic measuring device
Sample Depth	Steel tape and chalk/electronic measuring device
Micro Land Use	WMS Sampling Manual (05/10), section 4
Depth to Water	Steel tape and/or chalk
Chlorophyll-a (suite)	SM 10200 H (modified)
Rapid Periphyton Survey	SOP FS 7130
Biological Community (SCI)	SM 10500 C (modified)
Habitat Assessment	SOP FT 3000
Lake Vegetation Index	SOP FS 7220
Total Coliform	SM 9222B
Fecal Coliform	SM 9222D
Enterococci	EPA 1600
Total Organic Carbon	SM 5310 B
Nitrate + Nitrite	Method 353.2
Ammonia	Method 350.1
Total Kjeldahl Nitrogen	Method 351.2
Total Phosphorous	Method 365.1/365.4
Orthophosphate	Method 365.1
Chloride	Method 300
Sulfate	Method 300
Fluoride	SM 4500 F-C
Calcium	Method 200.7/200.8
Magnesium	Method 200.7/200.8
Sodium	Method 200.7/200.8
Potassium	Method 200.7/200.8
Metals: Aluminum, Arsenic, Calcium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Zinc	Method 200.7/200.8
Alkalinity	SM 2320 B
Turbidity (Lab)	Method 180.1
Specific Conductance (Lab)	Method 120.1
Color	SM 2120 B
Total Suspended Solids	SM 2540 D
Total Dissolved Solids	SM 2540 C

Table A. Continued

INDICATORS	ANALYSIS METHOD
Sediment Total Organic Carbon	In house (based on 415.1)
Sediment Total Phosphorus	Method 365.4
Sediment Total Kjeldahl Nitrogen	Method 351.2
Sediment Metals: Aluminum, Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Nickel, Silver, Zinc	Method 6010B/6020
Sediment Mercury	SOP Hg-008-3 (based on EPA 7471)
Sediment Methyl Mercury	SOP Hg-003-2 (based on EPA 1630)
Sediment Sulfate	Method 300 (modified)

7.4 Equipment

All WMS sampling equipment is consistent with FS 1001 and Tables FS 1000-1 through FS 1000-3 of the FDEP Field SOPs.

For ground water sample collection, any combination (or all) of the equipment/instruments listed below may be used:

- pumps (peristaltic, submersible, centrifugal)
- power converters
- gas or electric generators
- tubing
- water level tape/potentiometer (or chalk tape)
- YSI multiprobe (or similar) and all associated standards and buffers
- portable turbidimeter
- GPS equipment (Trimble, data logger)
- measuring tape
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For surface water sample collection, any combination (or all) of the equipment listed below may be used:

- Van Dorn sampler (or similar)
- secchi disk
- measuring tape
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For sediment sample collection, any combination (or all) of the equipment listed below may be used:

- stainless steel corer
- stainless steel petite ponar
- stainless steel Ekman dredge

- scoops or spoons
- secchi disk
- measuring tape
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For stream condition index sample collection and habitat assessment performance, any combination (or all) of the equipment listed below may be used:

- D-frame dipnet with No. 30 mesh
- collection brush
- 100 meter measuring tape
- flagging tape (or similar)
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, preservatives, camera, etc.)

For rapid periphyton survey (RPS), any combination (or all) of the equipment listed below may be used:

- ruler
- 100 meter measuring tape
- flagging tape (or similar)
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, preservatives, camera, etc.)

For additional details regarding supplies used for sample collection for the above mentioned matrixes, see Section 11.1, pages 20-31 and page 118, Figure 26 for ground water; see Section 11.1, pages 32-38 and page 119, Figure 27 for surface water; see Section 11.1, pages 39-43 for sediments; and see Section 11.1, pages 44-61 for SCI, HA, and RPS.

7.5 Sample Handling

All activities regarding WMS sample custody, shipment and submittal to the FDEP Central Laboratory is detailed in Section 11.1, pages 69-73. Sample handling is consistent with and follows FD 5000 and FD 7000 of the FDEP SOPs.

8.0 Equipment and Instruments

All equipment (and associated standards/buffers) used by WMS for calibration procedures are based on procedures outlined in the FDEP SOPs (FDEP-SOP-001/01 FT 1000, FT 1100, FT 1200, FT 1400, FT 1500, FT 1600, and FT 1720) and meet all FDEP SOP specifications for accuracy, reproducibility and design.

8.1 Calibration and Standards

Specific calibration procedures used by WMS for pH, specific conductance, dissolved oxygen, temperature, and turbidity are detailed in Section 11.1, pages 14-19.

All standards and buffers used in calibration procedures are documented in a log book. An example of a completed page from the log book is included in Section 11.1, page 113, Figure 22.

All calibration procedures are documented as described in Section 11.1, pages 114-115, Figure 23. Furthermore, all records are maintained per FT 1000, the FT Series and FD 1000 of the FDEP SOPs. Per FT 1000 and FD 1000, calibration standards and the calibration procedure are traceable to each instrument.

8.2 Equipment Maintenance and Documentation

All instruments and equipment used for sample collection and calibration procedures are maintained and cleaned on an as-needed basis, and all associated documentation regarding maintenance and cleaning is recorded in log books. Furthermore, all decontamination/cleaning and preservation derived wastes are disposed of in accordance with FS 1011 of the FDEP SOPs.

All equipment cleaning is based on FDEP SOPs (FDEP-SOP-001/01 FC 1000). Specific procedures are detailed in Section 11.1, pages 80-84, and page 91, Table 5. Furthermore, an example of a completed page from the cleaning log book is included in Section 11.1, page 117, Figure 25.

All instrument and equipment maintenance is based on recommendations made in FS 1007, Table FS 1000-12, and the individual FT series of the FDEP SOPs, and manufacturer recommendations. An example of a completed page from the equipment maintenance log book is included in Section 11.1, page 116, Figure 24.

9.0 Review and Assessment

WMS reviews and assesses the quality of the data being generated by employing quality control measures for both field and laboratory parameters.

9.1 Quality Control Measures

WMS uses several quality control measures to ensure high-quality data is being collected and analyzed for. Quality control samples assess the accuracy and precision of sampling and analytical techniques. The quality control procedures are consistent with FQ 1000 (blanks and other QC samples) and FT 1000 (calibration requirements and acceptance) of the FDEP SOPs.

9.1.1 Field Quality Control

Sampling personnel collect and submit three types of blanks to the FDEP Central Laboratory based on the type of equipment used to collect the actual water chemistry samples. All blanks are collected at a 20% frequency based on the number of samples collected for a specific project over a specific period of time. All blanks are collected using analyte-free (de-ionized) water and are collected in the same manner as actual samples.

Pre-cleaned equipment blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Field-cleaned equipment blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Field blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Duplicates and split samples are not included in the WMS quality control measures.

However, an additional quality control measure WMS uses to ensure field meters (YSI multiprobes or similar) remain in calibration mode throughout a sampling day is Field Reference Samples/Standards (FRS). These blind water samples are prepared by the FDEP Central Laboratory and supplied to sampling personnel for measurements of pH and specific conductance. FRS samples are collected and analyzed at a 10% frequency based on the number of samples collected per quarter, regardless of project. See Section 11.1, page 76 for further details.

9.1.2 Laboratory Quality Control

The FDEP Central Laboratory uses multiple internal quality control measures for evaluating the quality of the data being generated and are outlined in detail in the FDEP Central Laboratory Quality Manuals (Bureau, Chemistry and Biology).

9.1.3 Quality Control Criteria

The results for each quality control measure are assessed using specific acceptance criteria.

For all blank samples submitted to the lab, results must meet the following specifications. The WMS qualifies data which are detected at values less than or equal to those found in the associated blanks. During the data loading process, an Oracle procedure determines if there are any blank detections for the project. If there are blank detections, the highest detected value per analyte is stored. These stored values are then compared with each individual sample value for the analyte. Sample values detected at or less than the value stored for the blank detection are qualified with a 'V' and a comment is inserted for the result stating 'ANALYTE DETECTED IN BLANK AT SIMILAR CONCENTRATIONS'. Additionally the lab may assign a 'V' to data which are found to be associated with lab blank detections. The definition of the 'V' data qualifier is "Indicates that the analyte was detected in both the sample and any of the associated blanks, at similar concentrations". Furthermore, the WMS QA officer reviews the blank results to determine if significant or reoccurring detections are taking place. The WMS QA officer submits a monthly blank detection report to each sampling entity listing any detection greater than the MDL (minimum detection limit). Any significant or reoccurring detection requires the sampling personnel to investigate possible contamination sources and initiate corrective actions accordingly.

All calibration and calibration verification results must meet the acceptance criteria stated in Section 11.1, page 14. The accuracy of field test measurements is reflected in the acceptance criteria for continuing calibrations as specified in the FT series of the FDEP SOPs.

FRS results must meet the acceptance criteria stated in Section 11.1, page 76.

9.2 Raw Data

These policies and procedures are used to review and assess raw data, laboratory data and project data. All data management is consistent with FD 1200 of the FDEP SOPs.

9.2.1 Data Reduction

Values for conductivity, dissolved oxygen, pH, temperature, secchi depth, depth to water, and sample depth are transferred directly from the sampling instrument

to the sampler's field log sheet. These values are then entered directly into a computer file by the sampling agency data manager or lead sampler. This raw data is reviewed by the lead sampler, the sampling agency's data manager and the program manager for each entity. For calibration criteria and information, see Section 11.1, pages 14-19. Refer to the FDEP Central Laboratory Chemistry Section Quality Manual for specific details regarding formulas for calculating final sample results.

9.2.2 Data Verification

Raw field data are reviewed by the sampling agency data manager, lead sampler and the program manager. Field logs and previously collected field data are reviewed for obvious problems or errors.

Each sampling agency data manager, lead sampler and the program manager is responsible for determining that the results of each analytical determination have all associated QC measurements and that the acceptance criteria are met and documented according to protocol. The sampling agency data manager, lead sampler and the program manager is responsible for checking calculations, completing sample preparation, calibration, analysis and instrument logs, and completing all internal custody documentation. Each supervisor is responsible for reviewing this work for completion and correctness prior to authorizing the individual results for release.

The data verification procedures consist of all the QC validations and calculations checks discussed in the FDEP Central Laboratory Chemistry Section Quality Manual. In addition, soundness of all data is evaluated by the nature of the sample, the inter-relationship among the parameters and the historical values, etc. Any discrepancy or inconsistency will initiate a recheck of data or reanalysis of the sample(s). If no reason can be found to invalidate these data, they will be entered into the OGWIS database.

9.2.3 Data Validation

Once the reconnaissance, field, and lab data are received by WMS, the data are loaded into the WMS Oracle database (OGWIS). The data are then considered provisional and must be reviewed by the data generators prior to release to the general public. The provisional data are exported out of the Oracle database and a documentation file is created to enable efficient data review. These files are returned to the data generators for their review. The files include the documentation file, and various exports of the results file. The FDEP Project Manager reviews the station data for all projects in the provisional status for accuracy.

The documentation file contains information on the completeness or lack thereof of the project data, and on the quality of these data. Problems with the project

data may be listed in the comments section of the documentation file. All of the sample and blank data are exported to review the data for accuracy.

Specific data correction requests are submitted to the FDEP Project Manager on the form provided in the Data Management Standard Operating Procedures (DM SOP), see Section 11.3, page 16. Once the requested corrections are made by FDEP staff, the data generators are notified and asked to look over the corrections one final time. Additionally, any problems identified with the data are documented in the project comments dialog box by the FDEP Project Manager at this time. If no errors are found the data are 'released'.

9.3 Corrective Actions

Network personnel responsible for assessing each quality control measure and initiating corrective action if needed are the designated quality assurance officers for the WMS, the FDEP, the Central Chemistry and Biology Laboratories, and the sampling agency. Specific QC measures that initiate corrective action and the types of action that will be taken are listed in Table B., listed below. Corrective action procedures are consistent with FA 3200 of the FDEP SOPs.

Notification of network personnel of problems and corrective action can be on several levels. Generally, oral communication among QA officers initiates corrective action. In the event a problem fails to be remedied, written communication among the QA officers will serve as official notice of the need for corrective action. Official memoranda between project managers, who are also the contract managers, may occur in the event that corrective action is not being implemented.

Reviews and audits of sampling operations by FDEP personnel are welcomed. Corrective action recommended by FDEP personnel, depending on its nature, may be implemented immediately or at the beginning of a new contract year.

Please refer to the FDEP Central Chemistry Laboratory Quality Manual and the Biology Section Quality Manual for laboratory guidelines concerning corrective action.

QA/QC MEASURE	CRITERIA FOR CONCERN	CORRECTIVE ACTION
Field Blank	Any value > Method Detection Limit	Analyte-free water source and storage Equipment storage Equipment construction Sample custody
Equipment Blank	Any value > Method Detection Limit	Cleaning procedure Analyte-free water source and storage Equipment storage Equipment construction Sample custody
Field Audit	Deviations from WMS QA Manual	See section 9.3 above
Performance (laboratory)	Results exceed targets for accuracy in Lab QA Manual	Lab notification

9.4 Deviations

Significant deviations from standard policies or practices of the WMS are reported to the data generators, data managers and Project Managers and documented with the review reports. Any samples that are prepared or analyzed beyond accepted holding times have a comment and a lab qualifier associated with that sample. Similarly, the failures of any quality control checks are commented with the data. All other significant observations that do not conform to accepted practices or policies are documented and reported along with analytical results. Those documents may be as letters, interoffice memorandum, appendices to reports or as comments in the WMS database.

9.5 Audits

The WMS conducts both internal and external audits that have been designed to evaluate field sampling protocols, laboratory data quality and all associated documentation.

External audits are performed by the WMS QA Officer for each sampling entity, including in-house FDEP WMS staff, FDEP district staff (Tampa, Port St. Lucie and Ft. Myers), and contracted agencies (NFWFMD, SJRWMD and Alachua County).

On an annual basis, external audits will be scheduled as stated: at least one audit for the Status and/or Trend ground water networks and at least one audit for the Status and/or Trend surface water networks. Project Managers may choose to perform more audits at their own discretion each year, which will also be considered external audits.

On an annual basis, the FDEP WMS QA Officer will perform a quality system audit to ensure compliance with all quality assurance plans and standard operating procedures (not a field audit). This audit will be performed in an unbiased fashion originating with data selected from a randomly selected date or dates (meaning only one or a few sampling entities may be selected). All records (including laboratory data records) from the selected date(s) will be reviewed for compliance from moment of collection

(including all associated documentation records such as calibration logs, cleaning logs, etc.) to data reporting.

Internal audits are performed by internal staff for each respective sampling entity. Those agencies under contract with WMS are entitled to create individual internal audit schedules and may perform them at their own desired frequencies. Internal audits are not performed on staff that is not contracted (WMS in-house staff, Tampa staff, Port St. Lucie staff and Ft. Myers staff). Instead, the audits are conducted as external audits by the respective Project Manager and/or WMS QA Officer at the same frequency as other external audits.

All audits (internal and external) are concluded with an audit report that summarizes the overall performance. Deficiencies are noted, and corrective actions are established for each deficiency. In response, sampling personnel are required to submit a plan of corrective action report addressing each deficiency and how they intend to prevent future occurrences. All audit reports are distributed as stated: the original is given to the Project Manager or Contract Manager (for those agencies under contract); copies are provided to each sampling personnel, and the WMS QA Officer. Additional copies are provided as requested by interested parties (internal QA Officers, team leaders, etc.).

Refer to Section 11.1, pages 122-127 for the WMS Audit Form that is used for both internal and external audits. All audits are conducted according to the requirements of FA 4200 and 4300 of the FDEP SOPs.

10.0 Consumer Relations

10.1 Review of Proposed Work

Review of work products includes internal agency review for reports written to satisfy requirements not limited to but including Sections 305(b), 106, and section 604 of the Clean Water Act. Further review of reports is provided by regional program administrators at EPA region 4 in Atlanta, Georgia.

Other reports, posters and presentations generated for public distribution are reviewed by immediate supervisors, internal program staff, and Administrators with responsibility for section, bureau and Division programs as specified in section 5.3.

10.2 Complaints

The WMS is committed to resolving complaints and implementing suggestions for improvement. All informal complaints, suggestions or requests for information are directed to the appropriate supervisor for resolution. If immediate resolution cannot be attained, the matter is passed to the section administrator who may investigate and direct the resolution. Formal written complaints are logged with the section and, after the

investigation and resolution, are responded to in writing. Copies of responses are kept for reference.

11.0 Appendix

Items listed in this appendix have been provided for reference.

11.1 Status and Trend Monitoring Networks Sampling Manual (WMS Sampling Manual)

11.2 Project Manager Manual

11.3 Data Management Standard Operating Procedures

11.4 Oracle Generalized Water Information System (OGWIS) Users Manual

11.5 Organization Chart

11.1 Status and Trend Monitoring Networks Sampling Manual (WMS Sampling Manual)

11.2 Project Manager Manual

11.3 Data Management Standard Operating Procedures

11.4 Oracle Generalized Water Information System (OGWIS) Users Manual

11.5 Organization Chart