



Quality Assurance Plan

Division of Waste Management

**2600 Blair Stone Road
Tallahassee, FL 32399**

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Plan Approval

This plan documents the quality system used by the Florida Department of Environmental Protection's (DEP) Division of Waste Management (DWM) and the Waste Management Program Areas managed by the District Offices. Throughout this document, Waste Management Program is used as a collective name for the DWM and the DEP Waste Management Program Areas. The plan covers quality assurance policies, roles, and responsibilities for environmental data collection, evaluation, and use of environmental data produced by laboratories, regulated entities, project managers, data generators, or partnerships between any of these groups.

Approval of the Quality Plan for the Division of Waste Management

Tim Bahr, P.G.
Director, Division of Waste Management

1. Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) for data collection, generation, interpretation, reporting, evaluation, and archiving that is of sufficient quality to support the Division of Waste Management (DWM) and District Office decisions. The effectiveness of the QA program is dependent upon the actions of all DEP staff, from “front line” employees to management, meaning QA is a function distributed throughout the entire organization. The DEP Secretary is committed to implementation of the quality assurance requirements in the Department’s Quality Management Plan (QMP) (Revision 2018) and as authorized in Section 403.0623, Florida Statutes (F.S.) and Chapter 62-160, Florida Administrative Code (F.A.C.), also known as 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 (November 2016).

The Waste Management Program’s QA Plan explains both the process and criteria by which the quality system is managed. The plan is utilized as an instrument of internal communication to inform Waste Management Program staff in Tallahassee and the District Offices of current and future quality assurance activities. It discusses how specific QA duties are assigned to responsible staff. The QA Plan will be revised as needed to ensure the consistent application of procedures and criteria for the generation or use of our environmental data. The QA Plan will also be used as a training document for new staff and as a reference for experienced personnel. The QA Plan and its revisions also serve as an archival record of our formal quality system.

The QA Plan is consistent with the DEP Quality Management Plan, Quality Assurance Directive, and Quality Assurance Rule, Chapter 62-160, F.A.C. The plan addresses sampling, field testing, laboratory analyses, and data review, including those activities associated with database construction and management. This document also discusses how decisions about data use are made based on data quality objectives.

To execute the components of the DEP QA Directive, the Waste Management Program has developed a quality system. The QA plan describes the steps to be taken to ensure the scientific and legal defensibility of environmental data that is generated or used. The plan details the process of planning, training, execution, assessment, and corrective action undertaken to ensure that environmental data meet the established quality criteria.

1.1. Essential Definitions

- 1.1.1. ADaPT (Automated Data Processing Tool) – A quality control software application based in Microsoft Access used by the DWM for processing electronic data deliverables (EDDs).
- 1.1.2. Sample Collection –The process of collecting environmental samples for analysis. Field and laboratory Standard Operating Procedures (SOPs) shall address the steps which must be used to collect representative samples.
- 1.1.3. Data Quality Indicator (DQI) – A specified numerical or qualitative criterion used to evaluate data for conformance with Data Quality Objectives. Examples of DQIs include specific method numbers to be used for laboratory analyses, specified spike recovery and duplicate precision numerical targets, specified method detection limits (MDL) and practical quantitation limits (PQL), numerical targets for reported non-detect and estimated sample concentrations.
- 1.1.4. Data Quality Objective (DQO) – A systematic planning system designed to produce qualitative and quantitative statements that clarify project objectives, define the appropriate type of environmental data, delineate the decision rules, and specify tolerable levels of decision error.
- 1.1.5. Data Validation – An analyte and sample specific process that extends the evaluation of data points beyond procedural compliance to determine the analytical quality of a specific data set. Criteria for data validation shall be specified in the applicable Data Quality Indicators (DQIs).
- 1.1.6. Department of Health (Environmental Laboratory Certification Program) – The state agency responsible for certifying environmental laboratories per the Department of Health Certification Rule, Chapter 64E-1, F.A.C.
- 1.1.7. Environmental Data – Information collected directly from measurements, generated from models, or compiled from other sources such as databases or literature, which are used for decision making purposes.
- 1.1.8. The National Environmental Laboratory Accreditation Program (NELAP) – The Program used to ensure that the National Environmental Laboratory Accreditation Conference (NELAC) standards for the accreditation of environmental laboratories are followed.
- 1.1.9. Quality Assurance (QA) – An integrated system of activities including planning, implementation, and assessment designed to generate environmental data of known and documented quality.

- 1.1.10. Quality Control (QC) - The overall system of technical activities that measures the performance of a process or item against defined standards.
- 1.1.11. Quality System – A structured and documented management system describing the process of planning, review, training, and assessment designed to collect, generate, evaluate, interpret, and report data of sufficient quality to support Department decisions.

2. Waste Management Program Policies

The Waste Management Program is committed to sound science and QA practices that will produce environmental data of appropriate quality to be used for decision making. It is the policy of the Waste Program that decisions which are made to protect human health and safeguard the environment will be based on data of sufficient known quality to support the level of decision required. The policy also includes a commitment by management that the quality system supporting the generation of data of known quality and effective environmental technology will be implemented as described in this plan. The policy is achieved by utilizing adequate and acceptable planning, implementation, and assessment procedures for the generation of environmental data.

It is the Waste Management Program's policy to:

- Use scientifically valid and legally defensible data for its decisions affecting protection of public health and the environment.
- Have and implement the Quality System described in this document.
- Adaptively manage its Quality System to be consistent with provisions of the DEP Quality Management Plan.
- Provide staff with proper training to execute their assigned functions.
- Implement procedures to evaluate the quality of the data used and to implement corrective actions when data do not meet its DQOs.
- Periodically audit the performance and record-keeping practices of data generators for which it has responsibility.
- Implement quality assurance procedures for the management of its data repositories.
- Perform a yearly systematic assessment of its quality assurance activities, including any corrective actions, with the findings submitted to the Department's Aquatic Ecology and Quality Assurance Section.

The Waste Management Program managers and staff will conduct sufficient QA activities to provide reasonable confidence that all environmental data generated and used are scientifically valid, of adequate statistical quantity, of known precision and bias, of acceptable completeness, representative, comparable, usable, and where appropriate, legally defensible. Environmental data quality is the responsibility of all Division and District staff who are directly or indirectly involved in the generation of data. Senior managers are responsible for assuring that adequate resources are available to implement the quality assurance system.

DEP employees are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand, and sign an “Acknowledgment of Key Directives Form” that acknowledges Directive # 202 (Code of Ethics). In addition, all employees are required to attend an annual DEP Code of Ethics class. Improper, unethical, or illegal actions will be dealt with per the published DEP Administrative Directives.

3. Waste Management Program Organization and Responsibilities

The Division of Waste Management (DWM) works closely with the Department's District Offices to implement state and federal laws relating to waste management. The Division oversees the development of program policy, rulemaking, and grants management. Additionally, the Division regulates and registers aboveground and underground pollutant storage systems. It also oversees and contracts for the assessment and cleanup of sites contaminated with petroleum products, dry cleaning solvents, or other hazardous wastes.

The DEP District Offices are the regulatory arm of the agency that ensures statewide compliance with Department rules. District staff are available to answer environmental questions and assist the public and local governments.

There are four main programs within the Division of Waste Management: Permitting and Compliance Assistance Program (PCAP), Waste Cleanup Program (WCP), Petroleum Restoration Program (PRP), and District and Business Support Program (DBSP).

3.1. Permitting & Compliance Assistance Program (PCAP)

The PCAP's function is to implement state and federal laws relating to recycling, pollution prevention, solid and hazardous waste management, and storage tank compliance. The PCAP works closely with the District Waste Management Programs to implement permitting, compliance, and enforcement activities in order to protect the environment from the improper handling and disposal of solid and hazardous wastes. The PCAP includes regulatory programs for solid and hazardous waste management facilities, above ground and underground storage tank facilities, and non-regulatory activities such as financial and technical assistance for recycling and waste reduction. There are four sections within the PCAP – Hazardous Waste Program & Permitting, Solid Waste Program & Permitting, Compliance Assistance, and Waste Reduction & Registration.

3.1.1. Hazardous Waste Program & Permitting

This section is responsible for coordinating the statewide Hazardous Waste (HW) management program which includes interaction with Environmental Protection Agency (EPA), DEP District Offices, Local Programs, and other Department programs pertaining to hazardous waste compliance, enforcement and permitting. The core responsibilities are the implementation of the federally delegated Resource Conservation and Recovery Act (RCRA) program, which issues permits for hazardous waste treatment, storage, and disposal facilities, and oversees corrective action activities when applicable. The RCRA program also oversees facilities that process the used oil for resale.

3.1.2. Solid Waste Program & Permitting

This section is responsible for coordinating the statewide Solid Waste (SW) management program which includes interaction with EPA, District Offices, Local Programs, and other Department programs pertaining to solid waste compliance, enforcement, and permitting. The core responsibilities are reviewing, processing, and issuing construction and operating permits for activities at certain solid waste processing and disposal facilities. The section also reviews groundwater monitoring results for solid waste facilities in coordination with District and Local Program offices, statewide requests for beneficial use of solid waste, and requests for variances and waivers.

3.1.3. Compliance Assistance

This section is responsible for coordinating and supporting statewide compliance assurance programs for waste and storage tanks. Solid waste, hazardous waste, and storage tank compliance inspections are performed by District Office staff. Storage tank inspections are conducted mostly through Local Programs under contracts or agreements. Additionally, storage tank inspectors from District and Local Programs review Storage Tank Closure Assessment Reports to determine whether closure assessments were performed according to tank closure guidelines, whether the samples for laboratory analyses were collected at appropriate locations, and whether the analytical results show that a discharge to the environment did or did not occur. Section staff provide inspection level of service and track all district waste program compliance and enforcement activities. Staff conduct case reviews and enforcement peer reviews to ensure program consistency. Technical assistance and training are provided to the DEP District Offices and the regulated community.

3.1.4 Waste Reduction & Registration

This section is responsible for coordinating and processing all waste program registrations and coordinating statewide waste tire abatement efforts.

3.2. Petroleum Restoration Program (PRP)

The PRP oversees the assessment and environmental rehabilitation of facilities that are contaminated with petroleum or petroleum products as defined in Section 376.301, Florida Statutes (F.S.), pursuant to Chapter 62-780, Florida Administrative Code (F.A.C.). This includes sites where petroleum product discharges are eligible for State funding assistance and sites where one or more discharges are ineligible, but the responsible party has entered into a Site Rehabilitation Funding Allocation Agreement with the DEP. The PRP comprises four sections: Petroleum Restoration Program Sections 1 and 2, Non-ATC Contracts Section, and ATC Contracts Section. In addition to four (4) internal sections, the PRP also contracts with two (2) environmental companies and twelve (12) counties to assist in oversight of the cleanup of petroleum contaminated sites.

3.2.1. Petroleum Restoration Program Section 1

This section is responsible for managing state-funded investigation and cleanup of petroleum contaminated sites. Site managers in this section coordinate with Agency Term Contractors (ATCs) to prepare work plans, obtain site access, and collect data, as well as review reports summarizing site activities submitted by the ATCs. This section is also responsible for the administration of the Advanced Cleanup Program and the Performance Based Cleanup Program. The program QA officer is also housed in this section.

3.2.2. Petroleum Restoration Program Section 2

This section is responsible for managing state-funded investigation and cleanup of petroleum contaminated sites. Site managers in this section coordinate with ATCs to prepare work plans, obtain site access, and collect data, as well as review reports summarizing site activities submitted by the ATCs. This section also manages the forensics contract and administers the Petroleum Cleanup Participation Program (PCPP) contracts.

3.2.3. Non-ATC Contracts Section

This section manages contracts for administrative services and other support contracts involved in the petroleum cleanup process. Contracts managed by this section include the 12 local program contracts for site management, the administrative service contract, and two contracts with environmental companies to perform site management responsibilities similar to PRP Sections 1 and 2. The county liaisons are also housed in this section.

3.2.4. ATC Contracts Section

This section is responsible for the management of the Agency Term Contracts. Staff review and issue contracts to ATCs for assessment and remediation projects at state-funded petroleum contaminated facilities. Site managers in Section 1 and 2, and the

Non-ATC Contracts section (including local programs and the contracted environmental companies) prepare purchase orders for required environmental assessment and remediation work. The ATC Contracts Section enters the purchase orders into MyFloridaMarketPlace for review and approval. Purchase orders are reviewed by the Site Manager, their Supervisor, ATC Contracts Section Contract Managers, upper management depending on the total purchase order cost, and Finance and Accounting personnel.

3.3. Waste Cleanup Program

3.3.1. Program Administrator's Office

The Program Administrator's Office is responsible for all activities relating to the cleanup of sites contaminated by pollutants and hazardous substances and for conducting investigations of ground water contamination. The Program Administrator's Office contains the Voluntary Cleanup Tax Credit Program. Sections within the Waste Cleanup Program (and their contractors) are responsible for reviewing, managing, and/or collecting environmental data at sites in accordance with, at a minimum, Chapters 62-780 and 62-160, F.A.C.

3.3.2. Waste Site Cleanup

The Waste Site Cleanup (WSC) section is responsible for managing state-lead investigation and cleanup of hazardous waste sites where there are no viable responsible parties, the site poses an imminent hazard, and the site does not qualify for Superfund or is a low priority for EPA. The section is also responsible for implementing the Drycleaning Solvent Cleanup Program and coordinating with the EPA during cleanup of federal Superfund NPL sites.

The section oversees contractors that are responsible for preparing work plans, information collection, site access, site assessment, reports, remedial action plans, and site remediation. Contractors are required to complete their work in accordance with Chapters 62-780 and 62-160, F.A.C (and the incorporated DEP Standard Operating Procedures).

3.3.3. Site Investigations

Site Investigations (formerly, Site Investigation Section, SIS) personnel consist of scientists, licensed monitor well drillers, and technicians. This section investigates known or suspected cases of groundwater and soil contamination statewide. The section provides scientific and technical assistance to support recommendations used in district enforcement actions. In addition, the section conducts site screening services, well replacement, phase-one environmental assessments, and environmental sampling support for other Department programs. The section oversees contractors working on the investigation and cleanup of state-owned lands and provides bi-annual Standard

Operating Procedure (SOP) training for state employees and contractors at the TREEO Center.

Sites assessed by the Site Investigation include dry-cleaning facilities, municipal wellfields, landfills, orphan plumes, abandoned sites, state-owned lands, printing establishments, electronic manufacturing operations, automotive service stations, military installations, and numerous other types of businesses. The section assists in the development of the DEP SOPs, ground water sampling methodologies and procedures, and in sample equipment testing and selection. The Site Investigation provides technical support and assistance to various law enforcement agencies to assist in the investigation of environmental crimes.

3.3.4. Federal Programs

This section oversees assessment and cleanup of Department of Defense (DoD) and other current and former federal facilities. Current sites include military bases, Kennedy Space Center, former Department of Energy (DOE) plants, and several formerly used defense sites (FUDs). The section is also responsible for providing oversight during the Base Realignment and Closure (BRAC) process which requires closing military bases to work together with the state and EPA prior to transferring property for reuse.

3.3.5. Brownfields & CERCLA Site Screening

The Brownfields staff manages the state Brownfields Redevelopment Program and the EPA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 128(a) Cooperative Agreement (CA) funding.

The Superfund Site Screening staff maintains a cooperative agreement with the EPA to perform Superfund Preliminary Assessments and Site Investigations at sites throughout Florida. This activity is authorized under CERCLA established in 1980 (“Superfund”) and is detailed in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR § 300.

3.4 District and Business Support Program

The program provides guidance and technical support to the District Compliance Assistance and Waste Cleanup programs and all the Division’s cleanup programs. The office also provides toxicological support and assistance with evaluating innovative technologies.

3.5 Waste Management Program Areas Managed by the District Offices

The District Waste Management Program areas implement state and federal laws relating to solid and hazardous waste management by issuing permits, conducting compliance inspections, and initiating enforcement actions as needed while encouraging recycling and

pollution prevention. The Districts also inspect aboveground and underground pollutant storage systems and oversee responsible party funded cleanups of contaminated sites pursuant to enforcement actions or voluntary cleanups. There are six District Offices. Each District Office has areas of responsibility that correspond with the Division's program areas. These include the Compliance Assistance associated with Solid Waste, Hazardous Waste, Storage Tanks, and Waste Cleanup program areas.

The Solid Waste program areas are charged with the responsibility to process permit applications and regulate permitted solid waste management facilities as well as respond to complaints concerning the improper management of solid waste. District staff determines whether water quality (surface and ground) and leachate were monitored correctly. This involves reviewing technical reports concerning sampling procedures, analytical results, and recommendations about future actions.

The Hazardous Waste program areas provide compliance assistance to the public and the regulated community and enforce the laws regulating the handling of various types of regulated waste (e.g., hazardous waste, used oil, mercury containing devices). District staff may perform field sampling of waste, soil, or water (surface or ground). Staff must interpret the analytical results to determine whether a compliance issue must be resolved. Staff will also review technical reports concerning sampling procedures, analytical results, and determine whether appropriate actions were taken based on the results (e.g., waste determinations).

The Storage Tank program areas oversee compliance assurance related to underground and aboveground storage tanks, including enforcement for non-compliant facilities that have been referred by contracted counties. The sections also oversee the cleanup for sites not eligible for state-funded cleanup in counties without cleanup contracts. The process includes the review of field and laboratory procedures to evaluate the validity of the data that will be used to make decisions about whether site assessment and cleanup completion has been achieved.

The Waste Cleanup program areas oversee cleanup activities associated with contamination of soils, groundwater, and surface waters. In some Districts, they also serve as the technical resource to assist other program staff reviews of Solid Waste permits and sites submitting contamination assessment reports, site assessment reports, remedial action documents as well as interim remedial and remedial action plans.

3.6 Quality Assurance Areas of Responsibility

Implementation of the Quality Assurance Plan requires active participation throughout all levels of the Division and District Offices. The Division Director has delegated to the program administrators, managers, and staff the following responsibilities enumerated below as they conform to the Department's QA Directive (Revision 2016).

3.6.1 Program and Section Administrators

Program and section administrators are responsible for ensuring that QA activities within their program areas are conducted in accordance with Department policy. Key responsibilities of administrators are:

- Ensure that a Quality System that conforms to the DEP Quality Assurance Management Plan is fully operational in their program.
- Designate Quality Assurance Officers and provide general oversight.
- Evaluate proposed Data Quality Objectives and Data Quality Indicators to ensure they meet program needs.
- Evaluate the effectiveness of staff's data quality activities and review audit results.
- Evaluate corrective action policies and procedures to be implemented when data do not meet program Data Quality Objectives.
- Review annual Quality Assurance Report to the Secretary and discuss findings with the QA Officer.

3.6.2 Quality Assurance Coordinator and Officers

The Division's Quality Assurance Coordinator (QAC) generally oversees the implementation of the QA Plan and serves as the Division contact with the Aquatic Ecology and Quality Assurance Section. The QAC is Elena Compton.

Each program coordinates with and provides information to the Division QAC. The QA Officers are identified as follows:

Name	Program	Phone
Chad Fetrow, PC	Solid Waste	850/245-8785
Amber Igoe, CHMM	Hazardous Waste	850/245-8783
Christopher Baylis, P.G. PRP Head QA Officer Samuel J. Hankinson, P.G. PRP Assistant QA Officer	Petroleum Restoration Program	850/245-8866 850/245-8910
Breck Dalton, P.G.	Waste Cleanup	850/245-8892
Karlee Fowler, ES III	Site Investigation Section	850/245-8944
Elena Compton, P.E. (QAC)	District & Business Support	850/245-8911
Alison Hankins, ES I	Brownfields & CERCLA Site Screening	850/245-8990
Nadine Brooks, ES III	Federal Programs	850/245-8889

Amanda Dorsett, EA	Compliance Assistance	850/245-8931
Lucy Blair, EC Gary Maier, PA	South District	239-344-5618 239-344-5664
Stephen DAcquisto, GA II	Southwest District	813-470-5944
Alannah Irwin, EM	Southeast District	561-681-6626
Lu Burson, EA	Central District	407-897-2912
Brandy Smith, EM	Northwest District	850-595-0695
Joni Petry, EC	Northeast District	904-256-1606
Herndon Sims, ES IV	Northeast District	904-256-1612

Key responsibilities of the QA Officers are:

- Conduct quality evaluation of program data and provide oversight of staff QA functions.
- Perform audits of internal and external data generators (lab and field) when there are concerns about the quality of the data.
- Implement corrective actions for data non-conformance incidents.
- Assist program managers in developing the Quality System and coordinating associated training needs.
- Document applicable QA activities, including training, audits and corrective actions and provide this information annually to the Aquatic Ecology and Quality Assurance Section for the annual Quality Assurance Report to the Secretary.

3.6.3 Program Staff

Program staff will support the Waste Management Program's QA Officers by providing technical assistance in their area of expertise. Key responsibilities of the program staff are:

- Data collection, data usability evaluation, data interpretation, and the generation of DEP work products in a manner that ensures scientific defensibility and adherence to DEP rules and policies.
- Evaluate program data using program Data Quality Objectives and Data Quality Indicators.
- Implement corrective actions as directed by the QA Officers.
- Provide feedback to the QA Officers for improving the program quality system.

4 Data Quality System Components

Generally, data are reviewed by evaluating the completeness, correctness, conformance and compliance of specific data sets against the Waste Management established Data Quality Objectives (DQOs), and by incorporating the concepts and criteria found in DEP's ["Process for Assessing Data Usability", DEP-EA-001/07.](#)

4.1 Data Quality Objectives

The DQO process is the Waste Management Program's systematic planning process which uses a stepwise system of developing the technical, programmatic, and quality assurance requirements specific to a particular project. Staff evaluate program data using program DQOs and implement corrective actions as necessary to remedy deficiencies. The following program DQOs are designed to ensure that submitted data meet or exceed the threshold for scientific defensibility and adherence to DEP rules and policies for our program:

- Department SOPs and approved variances are followed for applicable field sampling and laboratory analyses.
- Laboratory analyses are performed by facilities certified by the Department of Health and accredited under NELAP ([NELAP-Certified Organizations](#)).
- Data are processed, verified, and validated using the ADaPT software or other appropriate methods.
- Corrective action is taken as necessary to ensure data meets quality criteria.
- Data are archived in an electronic depository (e.g., OCULUS™).
- Data are generated using appropriate methods to meet the needs of the program.

4.2 Critical Documents

The Waste Management Program relies on critical documents to define the project-specific QA requirements. These project-specific documents maybe identified by different terms (e.g., Groundwater Monitoring Plan, Sampling and Analysis Plan, General Study Plan). Also, permits and program specific SOPs/guidance memos may stipulate QA criteria for a particular project or site. The critical document will contain the necessary elements to meet the threshold of compliance with the data review procedures described in this Quality Plan. The content of the critical documents is overseen by the data user or project manager.

In other cases, Departmental rules or standard operating procedures lay out the framework and requirements for meeting the threshold of compliance. For example, on May 14, 2007, the PRP issued the memorandum "[Quality Assurance and Related Issues](#)" and on May 21, 2010, "[Quality Assurance – Basic Dilution Principles](#)", reminding laboratories and contractors of the Chapter 62-160, F.A.C., reporting requirements.

One aspect of the QA Plan is to ensure that activities are carried out according to commitments made to the EPA as enumerated in the Department's QMP.

Programs which are funded by the EPA must also comply with EPA's Region 4 November 2007 Science and Ecosystem Support Division Field Branches Quality System and Technical Procedures document. Additionally, the CERCLA Site Screening Subsection will adhere to the June 8, 2017, "[*Superfund Site Assessment Program Quality Assurance Plan*](#)".

4.3 Data Processing

Data processing includes collection, validation, and archiving. Data collection is performed either by contractors of the regulated entity, contractors of the DEP, or by the DEP staff. The audit procedures described in Section 6 of this QA Plan are used to prevent data collection errors. Data validation and archiving are the responsibility of the site managers, technical staff, and contractors. Site managers, technical staff, and contractors review sampling logs, calibration logs and field notes for conformance with field sampling SOPs, referenced in Chapter 62-160, F.A.C. Laboratory reports are also reviewed in an effort to determine data usability, especially components of the lab reports not amenable to automated data processing (e.g. project narratives, resolution of data qualifiers, sample receipt log notes, sample IDs, etc.). Analytical summary tables and figures are reviewed for completeness and accuracy. Site managers and technical staff are also responsible for processing electronic deliverables.

4.3.1 Automated Data Processing

Many of the data processing steps have been automated using a software tool called the Automated Data Processing Tool (ADaPT). ADaPT is designed to perform quality assurance checks on the correctness and completeness of the data based on a broad range of relevant quality assurance criteria such as method numbers used for laboratory analyses, spike recovery and duplicate precision numerical targets, detection limits, laboratory quality control holding times, laboratory certification and blank contamination rules. ADaPT is also used to check for compliance with numerous other user selectable criteria and standards. Detailed information on the use of ADaPT is available in "[*ADaPT DWM User's Guide*](#)". The ADaPT user process is shown schematically in Figure 1.

The ADaPT software has the capability to create customized project libraries set up by the user (i.e., laboratory, project manager, data generator, governing entity, or partnership between any of these groups) to validate the data using their own specific requirements. The program areas have created a master library based on Rule 62-777, 62-520, 62-550, 62-302 and 62-160, F.A.C., requirements. The ADaPT libraries stipulate analytical methods, target analytes and quality control and data review requirements for any project.

4.3.2 Data Transfer and Reduction

Precautions are taken each time the data are reduced, recorded, calculated, or transcribed to prevent the introduction of errors and the loss of information. Data transfer and reduction steps are kept to a minimum and are conducted using automated and consistent processes. These automated procedures ensure the correctness of data transfer and reduction processes to include all processes that change either the form of expression or quantity of data items. A typical workflow scheme used to minimize transfer and reduction errors involves the following steps:

The Division and appropriate District Office receives the EDDs submittal in a format conforming to the Cross-Media Electronic Reporting Regulation (CROMERR) standards. The Department also accepts ADaPT EDDs and groundwater monitoring reports through the DEP Business Portal (for SW, HW and PRP). This process uploads data into each program's respective data repository and also automatically inserts all ADaPT files and related groundwater monitoring reports into Oculus.

- For HW, PRP, and SW programs all ADaPT data received are tracked on the eDocument Log. For each sampling event, the workflow steps are tracked including email correspondence.
- The technical staff reviews the data submittal including any field sampling sheets or logs for compliance with the SOPS and any potential problems in the sample collection protocol.
- The technical staff processes the EDDs using ADaPT.
- If required, technical staff notifies the Lab, Permittee, Consultant or Contractor for explanations, corrections, or changes.
- Finally, the data is uploaded directly from ADaPT to the appropriate Oracle databases. A check is made to ensure that no information is lost in the transfer.

4.3.3 Data Archiving

The Waste Management Program stores data processed through ADaPT in a repository chosen by each section. The ADaPT software is designed to upload processed data to several Oracle databases. A final data set is also stored with the project file in the Florida DEP's consolidated electronic document management system (OCULUS™). The documents are indexed in accordance with a standard indexing taxonomy. Procedures for inserting documents to OCULUS™ are described in the OCULUS™ Online help available at

<https://depdms.dep.state.fl.us/Oculus/webhelp/oculus.htm>

The standard indexing is located at

http://depdms.dep.state.fl.us/Oculus/jsp/login/OculusTaxonomy_1_01.xlsx.

The PCAP, PRP, and specific Waste Cleanup programs (e.g., SIS and WSC) use ADaPT to upload the quality checked data to repositories. To ensure the data upload process is accurate and maintains the quality of the data for the HW, PRP, and SW programs, the REDD (repository for EDDs) database runs auditing checks upon upload. The Department also has security checks and requires password access before a file can be uploaded by file transfer protocol to REDD used by Hazardous Waste, Solid Waste, and Petroleum restoration programs. For the Solid Waste and Hazardous Waste programs data uploaded to REDD is subsequently uploaded to WACS (Water Assurance Compliance System) used by the Hazardous Waste and Solid Waste programs. Web reports for REDD (PRP) and WACS (HW and SW) are used to review data. Each upload to REDD and WACS generates an email to the FDEP staff and contractors that includes links to these reports and to the ADaPT EDDs (HW, PRP, SW) and Monitoring Reports (HW, SW) in OCULUS.

4.3.4 Documentation

Since accurate documentation is an important factor for determining the success of QA activities, record-keeping procedures are followed to ensure appropriate documentation is kept. The ADaPT electronic deliverable files, error logs, compliance checking reports, and other groundwater monitoring report related documents for each facility are maintained in OCULUS™. The responsible technical staff inserts the data submittal into OCULUS™ upon receipt. Copies of correspondence for corrective actions and responses are also archived in OCULUS™.

4.4 Corrective Action

Procedures are implemented to assure that effective corrective action is taken when data quality falls outside established DQOs, data acceptance criteria, or quality assurance requirements. Problems are listed in deliverable review letters or other appropriate correspondence and delivered to the responsible party. Depending on the severity of the problem, data may be rejected. When requested, the QAC or the appropriate QA Officer provides feedback and suggestions for corrective actions. The corrective action process keeps management informed when corrective actions are necessary. The Corrective Action Plan relates to the overall QA management scheme in terms of who is responsible for taking corrective actions when corrective actions are required and who follows-up to verify that corrective actions have been taken and that they have produced the desired results. A typical workflow scheme used by the Waste Management Program to identify the need for and implement corrective action involves the following steps:

- The Division and/ or District Office technical staff evaluate whether environmental data were collected properly by verifying that samples were collected in accordance with the appropriate SOP, samples were free from tampering or adulteration, and samples have a verifiable chain of custody. Corrective action may involve the re-collection of samples or re-analysis of an existing sample.

- The designated Division staff will review EDDs submittals for certification, process them through ADaPT, and ensure no critical errors exist and non-critical errors are documented and explained.
- If any non-critical errors exist that need additional explanation, the technical staff, QAC, or appropriate QA Officer communicate either directly with the laboratory or party responsible for the data and copy the other stakeholders. If needed, follow-up correspondence will be issued.
- After the EDD submittal is finalized and the data archived, the final data file is inserted into OCULUS™. The designated Division staff processes the finalized EDD through ADaPT using the appropriate regulatory criteria to generate the regulatory comparison report and, if out of compliance, proceed with the appropriate corrective actions.

5 Training

All Division and District Office staff must be properly trained to perform their duties. Supervisors are responsible for assessing whether staff performance conforms to the established Waste Management Program policies and procedures. The training procedures include the following:

- Training for specific QA functions.
- Annual the DEP's ethics policy course.
- Specific training materials for routine functions and designated QA activities.
- Refresher trainings or delivery of updated information.
- Evaluation of effectiveness of training.

6. Audits

Audits provide objective feedback concerning the effectiveness of the Waste Management Program's quality system and may identify areas in need of improvement. In addition, successful implementation of the QA Program relies on valid data which begins with proper sampling and ends with proper laboratory analysis. Therefore, the Waste Management Program performs the following audit activities concerning sampling and analysis of environment data:

6.1 Permitting & Compliance Assistance Program

6.1.1 Hazardous Waste Groundwater Sampling Audits

Every three years, Hazardous Waste Program and Permitting conducts groundwater sampling audits at hazardous waste program permitted facilities. These audits are very resource-intensive because they require advanced planning for the sampling scheme and laboratory analysis. An audit may be conducted in conjunction with other inspections performed by the District personnel.

Solid and Hazardous Waste under Compliance Assistance oversees audits conducted by District personnel and Hazardous Waste Program and Permitting.

6.1.2 Hazardous Waste Groundwater Monitoring Evaluations

During the comprehensive groundwater monitoring evaluation (CME), compliance officials evaluate the adequacy of the design and operation of a permitted hazardous waste facility's groundwater monitoring system. This evaluation should be completed by a hydrogeologist or an engineer with appropriate experience.

The CME includes an audit of the following:

- The owner and operator's characterization of the hydrogeology underlying the hazardous waste management units.
- Monitoring well placement, depth, and spacing.
- Well design and construction.
- Compliance with Department SOPs.
- Compliance with permit and compliance activities.

CMEs at compliance or assessment monitoring facilities include a detailed examination of the assessment monitoring plan and implementation of the plan.

6.1.3 Hazardous Waste Operation and Maintenance Inspections

The operation and maintenance inspection (OMI) are periodically conducted to evaluate whether a groundwater monitoring system at a permitted hazardous waste facility is continuing to function as designed. The OMI focuses on the condition of the wells and their associated sampling devices.

6.1.4 Hazardous Waste Water Quality and Monitoring Report Review

The DEP Project Managers review the water quality data for compliance. The groundwater monitoring review will evaluate the same criteria as the CME (See Section 6.1.2). If any abnormalities are flagged during the monitoring report review, the

responsible party is required to submit additional information. If the additional information does not resolve the issue, a field audit may be needed.

6.2 Petroleum Restoration Program

6.2.1 Sampling Inspection

The PRP conducts an inspection program that is carried out by site managers in Tallahassee, contracted local programs, counties not covered by the contracted local programs, and by full-time inspectors of the contracted environmental companies. Inspectors contact site managers from the field if they observe improper field procedures and complete written inspection reports that are sent electronically to the site managers and uploaded to Oculus shortly thereafter. Site managers review the inspection report and, if necessary, inform contractors if work was not completed in compliance with SOPs and provide corrective action recommendations to ensure data is of acceptable quality.

6.2.2 Operation and Maintenance Inspection (OMI) and Evaluation

The operation and maintenance inspections occur periodically to determine whether a treatment system is continuing to function as designed. In the counties covered by local programs, inspections are performed by local program inspectors. In the counties not covered by local programs, the inspections are performed almost exclusively by full-time inspectors of the two contracted companies. During the inspection, the inspector documents critical aspects of the treatment system including the condition of parts and system runtimes on the “Petroleum Cleanup O&M Inspection Form”. Inspection reports are submitted electronically to and reviewed by the site managers and Remedial Action Specialists.

6.2.3 Data Validation and Archiving

The PRP performs annual performance evaluations of all site managers that includes metrics for document turnaround times. Through this process the PRP confirms that all documents have been reviewed by the site manager.

6.3 Waste Cleanup Program

The WCP takes a holistic approach to evaluating the various aspects of its programs. WCP staff do not generally conduct formal audits, but staff often participate in development of DQOs and conduct reviews of critical documents prior to field work. Staff periodically observe contractors in the field to monitor adherence to Department Rules, SOPs, and other guidance. Staff also provide critical and detailed review of project deliverables, including field data/notes and

laboratory reports. Generally, findings are communicated to appropriate parties through formal written comments letters, memoranda, or emails.

In some cases, formal field audits are conducted by EPA's Science and Ecosystem Support Division (SESD). If deficiencies are identified, the contractor is notified, and corrections may be accomplished while the audit is being performed. The Department may also provide the appropriate party a written evaluation of the findings.

6.4 Waste Management Program Areas Managed by the District Offices

If the data quality falls outside established DQOs data acceptance criteria or quality assurance requirements, the District will require additional sampling and analysis before deciding whether site assessment and cleanup completion has been achieved. When necessary, site managers will perform field audits to ensure the sampling is done correctly and in appropriate locations.

7. Contract Management

The PCAP does not normally manage any contracts or grants that require environmental monitoring. If environmental monitoring is required by a contract or grant, the water quality data will be processed through ADaPT by a contractor prior to submittal to DEP.

The PRP has contracts with several environmental companies that are selected through a review process. Additionally, there are contracts with two consulting companies and 12 county programs as mentioned above. These companies are assigned to perform state-administered cleanups and to perform verification sampling for discharges rehabilitated under Performance-Based Cleanup Agreements. Other special projects may be assigned where preapproval contractors are not applicable.

The WCP maintains contracts with multiple environmental firms for services ranging from assessment to remediation in compliance with Chapter 62-780 F.A.C. Contractors are competitively selected based on statements of qualifications. Purchase orders are prepared under negotiated contracts that outline the rates for standard pay items used in environmental assessment and remediation activities. The contracts specify all rules, standard operating procedures, and other documentation that is required for performing contracted work, including adherence to all QA requirements as outlined in Chapter 62-160, F.A.C.

8. Report Compilation

To provide the Secretary with information regarding ongoing QA efforts within the Department's Waste Program, the QAC coordinates with the QA Officers to describe and

compile the results of all appropriate QA activities and relay them to the Aquatic Ecology and Quality Assurance Section an annual report.