



2011 Annual Quality Assurance Report

Division of Waste Management

January 2012

Executive Summary

The Division of Waste Management (DWM) consists of three bureaus: the Bureau of Petroleum Storage Systems, the Bureau of Solid and Hazardous Waste, and the Bureau of Waste Cleanup. The DWM is strongly committed to the sound science and Quality Assurance (QA) practices that will produce environmental data of appropriate quality to be used for decision making. It is the policy of the DWM that all 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 QA system supporting the generation of data will be implemented as described in the DWM Quality Assurance Plan. The policy is achieved by ensuring that adequate and acceptable planning, implementation, and assessment procedures are utilized through all phases of projects/studies/tasks which require the generation of environmental data.

Bureau of Petroleum Storage Systems

Executive Summary

The Bureau of Petroleum Storage Systems (BPSS) implements the petroleum cleanup program pursuant to Chapter 62-770, Florida Administrative Code (F.A.C.) and storage tank regulation pursuant to Chapters 62-761 and 62-762, F.A.C. The petroleum cleanup program is administered in Tallahassee by four sections (PCS1 through PCS4). In addition, the BPSS has contracts with WRScompass (PCS5) and Ecology and Environment (PCS6), and with 14 local programs that oversee 20 counties. The six Tallahassee teams work primarily on State-funded sites, although they provide technical assistance to the district offices for facilities with discharges not eligible for State funding and also to the Bureau of Emergency Response. The local programs oversee facilities with State-funded and non State-funded discharges.

The BPSS issued six guidance memoranda on QA issues, addressed problems with two laboratories, and provided clarifications as needed via e-mail on minor issues. In addition, BPSS staff participated in QA training provided by the Standards and Assessment Section of the Bureau of Assessment and Restoration Support (BARS), and also provided in-house training for the Tallahassee teams and local programs.

1. Training

- Many BPSS staff attended QA Training provided by the Standards and Assessment Section on May 18 and 19, 2011.
- The six Tallahassee teams and local programs received QA training on November 2, 2011, provided with assistance from Dr. Kerry Tate of the Bureau of Laboratories.

2. Guidance memoranda

- Guidance for Completing the Groundwater Sampling Log (Form FD 9000-24) for Chapter 62-770, F.A.C.

- SPLP Procedures for Petroleum-Contaminated Sites. [with assistance from staff from BARS and from the Bureau of Laboratories]
- Quality Assurance – Basic Dilution Principles. [with assistance from staff from the Bureau of Laboratories]
- Clarification of Analytical Requirements of the Generic Permit for Discharges from Petroleum Contaminated Sites. [with assistance from staff from the Division of Water Resource Management]
- Priority Pollutant Volatile and Extractable Organics.
- Obsolete Analytical Methods for Inorganics.

3. Laboratory issues

- Resolved problems with a laboratory that was reporting unusually low Method Detection Limits (MDLs) and Practical Quantitation Limits (PQLs) in aqueous samples for Polycyclic Aromatic Hydrocarbons by EPA Method 8270, which resulted in detection of numerous contaminants at concentrations between the MDL and the PQL and in the laboratory blanks. After some discussions, the laboratory acknowledged that they were using mathematical instead of empirical MDLs and PQLs, and agreed to use empirical values in the future.
- With assistance from Dr. Kerry Tate (Bureau of Laboratories), resolved problems with a laboratory that was reporting MDLs in aqueous samples for BTEX/MTBE by EPA Method 8021 that were very close to the PQLs. After obtaining the raw data it was determined that the laboratory had used unacceptable spike concentrations and therefore the problem was with the PQLs, not with the MDLs. However, since the PQL for Benzene cannot exceed the Groundwater Cleanup Target Level of 1 µg/L, the laboratory determined better MDLs on an interim basis using lower spike concentrations to revise the previous reports for Benzene, and finally re-calculated the MDLs and PQLs using spikes with BTEX/MTBE concentrations close to 1 µg/L.

Bureau of Solid and Hazardous Waste

Executive Summary

The Bureau of Solid and Hazardous Waste (BSHW) function is to implement state and federal laws relating to recycling, pollution prevention, and solid and hazardous waste management. The BSHW works closely with the District Waste Management Programs to implement permitting, compliance, and enforcement activities in order to promote recycling and protect the environment from the improper handling and disposal of solid and hazardous waste. The BSHW includes regulatory programs for solid and hazardous waste management facilities and non-regulatory activities such as financial and technical assistance for recycling and waste reduction.

A primary QA improvement undertaken by the BSHW has been the adoption and use of the ADaPT (Automated Data Processing Tool) software in the evaluation, processing, and storing of environmental data. ADaPT is a Microsoft Access application used to evaluate analytical chemistry data from soil and water samples. It checks for the completeness of data using method specific Quality Control (QC) elements specified in the DWM library, and then further evaluates the data. For example, it evaluates all QC data reporting, all QC that exceeds specific QC limits, and compares all lab quality control accuracy and precision information reported in the Electronic Data Deliverable (EDD) against the criteria established in the DWM library. Further, it evaluates holding times and looks for contamination in the samples collected for field equipment blanks. If QC problems (outliers) exist, and the laboratory has not assigned or has incorrectly assigned the appropriate qualifiers, then ADaPT will add the necessary qualifiers to the associated sample results. ADaPT also generates a regulatory comparison report to assist DEP staff in compliance determinations, and allows for the electronic upload of the results to our Water Assurance Compliance (WACS) database. Additional validation of water quality data is performed through field audits by Bureau staff, where water quality sampling events are monitored and evaluated for compliance with established DEP Standard Operating Procedures (SOP's).

1. Training

- The BSHW provided three ADaPT training sessions for District and Tallahassee solid waste users in March and June 2009 in Tallahassee, Tampa, and West Palm Beach. Based on these efforts and other considerations, the decision was made to centralize the processing and uploading of ADaPT data in the Bureau office.
- Several BSHW staff attended QA Training provided by the Standards and Assessment Section on May 18 and 19, 2011.

2. Coordination Activities & Audits

Validation of QA activities for the BSHW is primarily achieved through field audits and the use of the ADaPT software. Through the use of ADaPT and the adoption of several QC practices within the program, the BSHW effectively performs a validation for specific QA/QC criteria contained in the applicable library for each water quality report submitted. Below is a summary of the BSHW QA coordination activities over the past several years:

- Beginning in 2009, the BSHW began contacting laboratories to identify potential impacts on their operations and modifications to their Laboratory Information Management System (LIMS) required in order to implement ADaPT. Soon afterwards, the District offices began modifying solid waste permits to include language requiring submittal of water quality data in an ADaPT compatible format.
- As an additional QC component, all water quality monitoring data was required to be sent to the Bureau office in Tallahassee (in addition to the respective district office), so that the review, processing, and storage of this data would be centralized.
- A workflow process was created to track these water quality data submittals through an online document log, to ensure accuracy and completeness of the data by processing it through ADaPT, to efficiently upload the data to our WACS database, and to notify District staff of the water quality results through the regulatory comparison report. District staff can also access various additional reports that check the completeness of water quality data reported and stored.
- In the past, water quality monitoring reports were reviewed and processed by District and BSHW staff, the results manually entered into a database, and then those results were checked for their regulatory status. Currently, ADaPT is used to compile a regulatory comparison report, so that BSHW regulators and managers can make timely decisions with confidence. In addition, the electronic upload of the data to WACS avoids errors that can occur with manual data entry. As an example of increased efficiency, from 1992 to 2009, approximately 2.8 million records had been uploaded to the WACS database prior to the use of ADaPT. In just a two year span since 2009, over 1.4 million records have been electronically uploaded into WACS using ADaPT, which is approximately one half of all data entered into the database in almost 20 years.
- The Hazardous Waste Regulation Section performs field audits of hazardous waste facilities conducting ground and surface water sampling once every three years. An average of eleven audits are conducted each year.

3. Issues

- Due to high staff turnover and evolving technology, continuing QA training is essential to maintain a high level of efficiency and data evaluation.
- For the Solid Waste Section, additional review of landfill gas monitoring field sampling practices could provide opportunities to promote more consistency in field sampling procedures and the associated QA/QC criteria.

4. Corrective Actions

Several modifications have been made to ADaPT and our QA/QC workflow to address specific inadequacies identified during the data evaluation and storage process. Updates to ADaPT include modifications to the QC sample completeness check, the metal method spike completeness check, the organic method spike completeness check, and the surrogate completeness check performed during evaluation of an EDD.

Bureau of Waste Cleanup

Executive Summary

The Bureau of Waste Cleanup (BWC) is responsible for all activities relating to the cleanup of sites contaminated by hazardous substances or other pollutants and for conducting investigations of soil and groundwater contamination. The Bureau also provides scientific and engineering assistance and reviews for the Department's nonpetroleum cleanup programs, with special emphasis on the use of risk-based corrective action principles to the greatest extent possible to achieve the level of public health and environmental protection required by law at the lowest possible cost. The Bureau administers the Voluntary Cleanup Tax Credit and the Department's role in the Florida Brownfields Redevelopment Program, both of which provide substantial incentives to private parties for the voluntary cleanup of contaminated sites.

The BWC has performed and participated in a number of activities aimed at improving the overall quality of deliverables generated and received. The BWC has incorporated the use of the ADaPT software as a requirement for all data deliverables, performed Incremental Sampling Methodology (ISM) and Institutional Controls Procedure Guidance (ICPG) training, and participated in QA training provided by the Standards and Assessment Section and Contract Management training provided by the Department of Financial Services. BWC also performed multiple field audits and completed eighteen Institutional Control and Engineering Control Audit reports. Additional QA activities that were completed are detailed below.

1. Training

BWC staff participated in and provided several QA training events during the last year.

- As part of the Bureau's migration towards utilization of ADaPT, BWC hosted a training webinar for waste cleanup staff. The webinar was conducted by Laboratory Data Consultants and was attended by staff in Tallahassee and each of the District offices.
- An ADaPT User Guide was developed and has been provided to all BWC and district waste cleanup staff as a training tool.
- The BWC's waste cleanup attorney provided a webinar on the ICPG to staff in Tallahassee and the district offices to ensure the proper procedures were being followed to implement institutional and engineering controls.
- BWC staff provided a training class on ISM, including a discussion of when ISM is appropriate for use, procedures for conducting ISM and a demonstration of appropriate sample collection techniques.
- BWC staff participated in QA and SOP training provided by the Standards and Assessment Section.
- BWC staff also participated in mandatory Contract Management training. Topics discussed included verification of receipt of deliverables and other required documentation.

2. Audits

The BWC takes a holistic approach to evaluating the various QA aspects of its programs. Project managers and Department contractors (when appropriate) are responsible for ensuring that all activities are performed following appropriate protocols. A summary of audit activities completed is provided below:

- BWC has incorporated the use of ADaPT into all data deliverables. ADaPT performs an automated review of routine data quality accuracy and precision checks which not only expedites the data review process, but ensures that the data meets all applicable quality control parameters.
- BWC staff often participates in development of Data Quality Objectives and conduct reviews of critical documents prior to field work to eliminate potential errors.
- BWC staff periodically observes contractors in the field to identify deficiencies. 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 contractor a written evaluation of the findings.
- BWC is also responsible for implementing the Institutional Controls and Engineering Controls Audit Program (ICECAP). All sites entered in the Institutional Controls Registry that have been closed with either an institutional or engineering control are reviewed after 5 years to ensure that controls have been appropriately maintained.
- BWC routinely reviews contract and purchase order deliverables to demonstrate adherence to specified requirements.

3. Issues

BWC has not identified any significant QA issues.

4. Corrective Actions

No corrective actions have been identified as necessary at this time, however in the event that concerns arise they will be addressed in an appropriate manner.