

**STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES
QUALITY MANUAL**

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF EMERGENCY RESPONSE
3917 COMMONWEALTH BLVD., MS 659
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April 12, 2017

FOREWORD

The Florida Department of Environmental Protection's Quality Assurance (QA) Directive (DEP 972) establishes internal policy to implement and assess the department's quality system for scientific data used by the department. This manual was prepared by the Office of Emergency Response (OER) in accordance with the requirements.

STANDARD OPERATING PROCEDURES QUALITY MANUAL

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

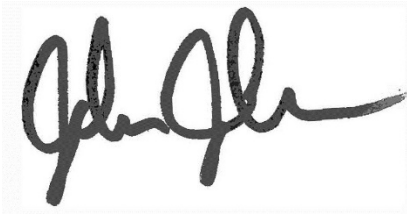
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Signature

4/12/2017

John S. Johnson

Date Signed

Director, Office of Emergency Response



Signature

4/12/2017

Austin Hofmeister

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Quality Assurance Officer

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3.0 OER STATEMENT OF POLICY REGARDING GENERATION OF DATA THROUGH SOUND QA/QC MANAGEMENT PRACTICES

It is a matter of policy that representatives of the FDEP and OER are committed to the generation of accurate and reliable data through the use of sound management practices, appropriate field operations and thorough review of data and the subsequent reporting process. It is through the use of the Quality Assurance and Quality Control Practices that legally defensible data may be obtained. The FDEP – OER remains a dynamic extension of the Department of Environmental Protection through adoption of these Standard Operating Procedures (SOPs), a constant review process, the commitment of Department management for the securing of appropriate resources for field applications, and the continual classroom and practical training of employees. FDEP – OER is committed to following the published SOPs to ensure consistent and reliable sample data.

4.0 OER COMPLIANCE TO ORGANIZATIONAL ETHICS AND TRAINING POLICY

FDEP Directive 202 and OER Emergency Response Plan (ERP) Annex C address what is expected of each employee with regards to ethics and training. All Office of Emergency Response (OER) employees responsible for sampling activities as specified in DEP-SOP-001/01 (General Sampling) are employees of the State of Florida. As such, each employee has sworn an oath to support the Constitution of the United States of America and the State of Florida. Poor performance, unethical behavior or any activity that might misrepresent the quality of the organization's work will be handled with appropriate disciplinary action as deemed necessary by OER management.

Adequate components of accountability are incorporated into the OER Emergency Response Plan (ERP) that outline departmental policies and directives in an effort to ensure that employees are adequately trained and prepared prior to providing sampling services to the department. DEP Directive 202 specifically states that all employees will receive training with regards to the agency's code of ethics. As new regulations are promulgated, district managers and their associated QA officers are trained to the most recent level of sampling protocols, methodologies, and procedures. QA officers are then responsible for assuring the efficacy of sampling events of all personnel responsible for the collection of field samples.

5.1 OER ORGANIZATIONAL CHART

Attachment 1 illustrates the current OER organizational structure. This chart reflects the chain of command and function of each OER employee as it relates to the quality system. Each district office has administrative support from the Tallahassee Headquarters. Each district has the capacity to assign a District Forensic Sampling Specialist who functions as a quality assurance officer and, if necessary, can forward audit reviews and information to upper management in support of obtaining FDEP – OER quality assurance objectives.

5.2 OER JOB DESCRIPTIONS

A complete record of all District OER employees and their job descriptions is maintained at each District office. These job descriptions include detailed descriptions of duties including field sampling and data review activities.

5.3 APPROVED SIGNATORIES

By assigned duties and as outlined in the OER Organizational Chart, signatories are authorized by appointment, training or experience to sign QA / QC required documents on behalf of the OER. The flow of authority reflects the departmental commitment to providing sound environmental data as outlined in DEP-SOP-001/01 (General Sampling). Specifically, headquarters command staff, district managers, designated forensic sampling specialists, and qualified emergency response specialists may sign properly reviewed reports.

5.4 EMPLOYEE CREDENTIALS AND TRAINING

The FDEP – OER Emergency Response Plan, Annex C, outlines the specific hiring credentials for all OER employees charged with sampling duties. Specifically, it is the policy of Office of Emergency Response to fill vacant positions with the best qualified individuals. OER shall comply with DEP Directive 404 when recruiting and selecting employees. In general, OER should hire applicants that meet the following criteria:

- Possess good moral character.

- Be in good mental and physical condition to perform the duties required for the position.
- Be able to wear various levels of PPE up to, and including, Level A.
- Be able to obtain a fitness for duty statement from the DEP's medical monitoring provider.
- Possess a valid Florida driver's license.
- Possess a college degree in one of the sciences, or have experience directly related to the knowledge, skills, and abilities required for that position.

The OER is committed to providing the appropriate training, education, supervision and field experience necessary to ensure that the quality objectives are met as outlined in DEP-SOP-001/01 (General Sampling), Section FA 1000. The FDEP – OER Emergency Response Plan, Annex O also discusses the safety requirements set forth for those employees required to take part in sampling activities.

6.0 DOCUMENTATION

This section of the quality manual provides the procedural outline for the generation of documents by the FDEP – OER. This outline allows for the creation of legally defensible, accurate and methodical records necessary for documentation of sample collection, sample handling and field-testing activities.

The generation and management of records shall be conducted in accordance with DEP – SOP-001/01 Revised March 1, 2014, FS 1000. Additionally, records generated by OER will follow departmental procedures for the generation, retention and storage of records as outlined in OER ERP Annex I (Sampling SOP), Section III Subparts 1 – 4. These SOPs provide a detailed listing of the information required for documentation of all sampling procedures and field-testing. OER personnel are to refer to the associated sampling or field-testing SOP for any requirements for the chronological or sequential documentation of data.

The project file review process and the QA audit and review procedures are set forth to monitor and verify accurate data entry and record keeping for all documentation tasks outlined in this SOP.

6.1 PROCEDURES FOR THE GENERATION, RETENTION AND STORAGE OF RECORDS

6.1.1 Generation of Records

Record generation is completed in accordance with applicable sections of DEP – SOP - 001/01 and OER – ERP. In general, records are generated for all field activities and summarized in final incident reports or other work product.

6.1.2 Retention of Records

OER records are retained per the FDEP QA Rule, 62-160.220 & .340, F.A.C which states that all documentation must be kept for a minimum of 5 years after the date of project completion or permit cycle unless otherwise specified. Record retention is completed in accordance with applicable sections of DEP – SOP - 001/01 and OER – ERP.

6.1.3. Storage of Records

OER record storage is completed in compliance with the requirements of DEP – SOP-001/01 FD1000. Records are stored securely for a minimum of 5 years. Criminal cases are clearly designated and labeled separately. Criminal cases are secured and kept separate from non-criminal cases. Additionally, FDEP – OER records are communicated to the Tallahassee District office for appropriate archiving of state documents.

6.2 Procedures for Controlling and Maintaining Documentation

Control and maintenance of OER records are completed in compliance with the requirements of DEP – SOP-001/01 FD1000 – Documentation Procedures. Documents are secured in FDEP’s Oculus System and additionally reviewed at OER headquarters. Criminal files and other documents exempt from public disclosure are uniquely identified and kept secured until such a time as they may be returned to public record.

6.3 Types of Documents and Reports Generated by OER

The primary documents / reports generated by OER District Offices for sampling events include sample plans, incident reports, and analytical summaries. Support documents / reports for these activities include:

- Records of equipment cleaning.
- Records of reagents / chemicals with expiration dates.

- Log of equipment maintenance and repair.
- Log of instrument calibration.
- Chain of custody.
- Field Notebook.

6.4 Procedures to Ensure Accurate Sample Identification and Data Integrity

OER ensures accurate identification of samples by following DEP – SOP – 001/01 (General Sampling). Specifically, sample identification and nomenclature is specified in the sample plan. All sample containers are labeled with a unique identifier in the field. These unique identifiers are also recorded on chain of custody forms and in the field notebook. Each case is assigned a unique case number and all records associated with that case reference the case number.

6.5 Procedures to ensure Client Confidentiality

When necessary OER assigns only numeric case number references to projects requiring client confidentiality.

Confidential criminal investigation cases are managed in accordance with Florida Statute 73.0155.

7.0 OER SAMPLING CAPABILITIES

7.1 OER Capabilities

The FDEP Office of Emergency Response (OER) responds to a variety of emergency incidents, including spills, abandoned containers or materials, and illegal dumping. Releases may occur to or impact any environmental matrix (The component or substrate i.e. surface water, drinking water that contains the sample of interest.). OER sampling events generally involve high-level contaminants such as a toxic industrial compound or hazardous waste that has impacted a medium. The primary goal is to collect samples for field screening and confirmatory identification, to secure proof of contamination, or to conduct closure analyses for initial source removal operations. Media (Soil, water, air, plants, animals, or any other parts of the environment that can contain contaminants,) may also be sampled for waste characterization and disposal. Most OER sampling activities will involve criminal or civil enforcement actions and as such evidentiary level field sampling protocols are employed. FDEP – OER has adopted the

DEP SOPs for Field Activities “DEP-SOP-001/01” May 1, 2014. It is imperative that any sample collection event or field screening of materials does not contaminate or degrade evidentiary laboratory sample collection activities. The OER ERP details the various field screening techniques.

7.2 Specific Sampling Procedures Used By OER

OER may be called upon to sample a wide variety of media and matrices. OER is committed to following the specific sampling procedures set forth in DEP – SOP – 001/01, “Standard Operating Procedures for Field Activities.” As stated in DEP – SOP – 001/01, FS 2100.2.5 (Surface Water Sampling), OER may deviate from the SOPs to the extent necessary to protect human health, public safety, and the environment. In some instances, OER may be required to follow specific procedures as identified by program area or other guidance. Most frequently, OER follows the procedures identified in:

- OER Emergency Response Plan (ERP)
- F.S. 62-780.500 Emergency Response Action.
- SOP PCS-004 Soil Assessment and Sampling Methods for Florida Bureau of Petroleum Storage System Sites New and Effective October 1, 2002.

7.3 Field and Laboratory Test Methods

All field testing equipment is operated in accordance with DEP – SOP – 001/01 (General Sampling), FT 1000 (Field Testing), program guidance and operating manuals. OER operates some mobile lab equipment for the purpose of field screening and contaminant identification. However, the mobile lab is not NELAC certified.

7.4 Field and Laboratory Instruments and Equipment

OER has significant field testing capabilities to assist in identifying contaminants prior to laboratory analysis. These include:

- Combustible Gas Indicator or CGI
- pH Meter
- Photoionization Detector or PID
- Radiation Detector
- HazCat Kit (Field portable wet chemistry for ID of unknowns)
- Colorimetric tubes (Draeger)

- Toxic Gas Sensors
- X-ray Fluorescence
- Infrared Spectroscopy
- Raman Spectroscopy
- Mercury Vapor Detector

Each OER district office maintains an instrument and equipment inventory. All personnel that are expected to utilize field sampling equipment are responsible for the appropriate maintenance, record keeping and corrective action necessary to keep all field equipment and instruments operable and in supply to perform specific job duties.

7.5 OER Sample Management, Handling, Transportation, and Submittal to the Laboratory

All samples are handled with the utmost care to ensure evidentiary integrity. DEP-SOP-001/01 FD 5000 (Documentation) highlights proper collection, preservation and transport of samples. Specifically, it is necessary to label **all** containers with a unique field identifier that distinguishes each sample container from all others. It is also necessary to link the unique field identifier to the sample source and/or sampling point and to record the unique field identifier in the field notebook. All sampling team personnel should be recorded as well as the date and time of sample collection. It is important that all samples be given a specific description with regards to sample location. The matrix sampled should also be noted.

When submitting samples to the lab, it is necessary to include all information already noted as well as the sampler responsible for sample transmittal, required analyses, preservation protocol and identification of common carrier if used. If the transmittal forms are shipped in the transport containers it is important to place them in waterproof enclosures. If using a common carrier for shipping, all transport containers should be secured with strapping tape. All shipping bills should be kept with the file.

If the samples are evidentiary in nature, then it is **vital** to maintain a chain of custody form. DEP-SOP-001/01 Field speaks specifically about legal or evidentiary documentation. The procedure for sample collection is the same, however, it is also important to establish and maintain the integrity of the samples by handling and transferring them in a manner that eliminates possible tampering. All time periods must be accounted for once the samples are collected, including physical possession and storage, until the final analytical result.

The chain of custody form accounts for all time periods associated with the physical samples. This form must include signatures of all individuals who physically handle the samples and their activity with the sample (e.g. “received by”). It is also important that all samples be sealed with tamper-indicating seals or evidence tape to maintain that the chain of custody has not been broken.

8.0 EQUIPMENT AND INSTRUMENTS

8.1.1 Procedures Used for the Calibration of Instruments

All OER equipment utilized for field screening or real-time analytical results is maintained per the manufacturer’s specifications. Each field instrument should be calibrated at least once per month or on the factory recommended calibration schedule per the instrument’s instructions. A calibration log should be kept documenting calibration. These calibrations may include yearly manufacture calibration as well as field / office calibration prior to field usage. Equipment calibration procedures are outlined in OER ERP Annex I, Section V and Section VIII as well as DEP-SOP-001/01 FT 1000 (Field Testing General).

8.1.2 Source, Preparation and Documentation of Standards

OER uses standards from various sources, including district laboratories, the DEP central laboratory, and instrument manufacturers. OER ensures that these standards meet acceptable quality levels and have not expired. DEP-SOP-001/01 FD 1000 (Documentation) and FT 1000 (Field Testing General) address these issues.

8.1.3 Procedures Used to Generate, Assess and Document Calibrations

All equipment is calibrated on a routine schedule and prior to critical use. These calibrations are recorded on a calibration log. Guidelines for the calibration of equipment are found in DEP-SOP-001/01 FD1000 (Documentation) and FT1000 (Field Testing General). Equipment calibration procedures are outlined in OER ERP Annex I, Section V and Section VIII. Verification of calibration is based upon manufacturer specifications per instrument.

8.2 Routine Procedures Used to Maintain Analytical Instruments and Sampling Equipment and the Associated Documentation

All analytical instruments and sampling equipment are maintained by the district they are assigned to, on a regular basis. Routine tests of functionality and calibration ensure that the equipment is working properly. Batteries are checked on a regular basis. The equipment is also inspected and cleaned at regular intervals. Annual inventory of all equipment maintains the supply necessary to respond to an emergency situation. Logs are kept of all maintenance, calibrations and inventories of all instruments and equipment. All of the equipment is assigned to a District who ensures that it is maintained in accordance with applicable SOPs and manufacturer's instructions.

9.0 Reviews and Assessment

9.1 Quality Control Measures Used

Field quality control measures monitor the sampling event to ensure that the collected samples are representative of the sample source and that field-collected data have stated limits of precision and accuracy. OER is committed to complying with required field quality control procedures.

9.1.1 Types and Frequency of Field Generated Quality Controls

At a minimum, OER complies with the mandatory field quality controls stated in FQ 1000.1230 (Quality Control). Blanks (excluding trip blanks) are collected at a minimum of 5% of each reported test result/matrix combination for the life of a project. OER defines a project as a specific case or incident. Thus at least one blank will be collected for each case or incident where field samples are collected.

Background samples are collected to verify the completion of cleanup activities. Background samples are also useful in showing the matrix in an "unpolluted" state for verification that pollution has occurred. A background sample would be collected to show that the background matrix is as clean as or cleaner than the subject area.

9.1.2 Types and Frequency of any Ongoing Quality Control Program to Ensure the Accuracy of Laboratory Data

OER uses the FDEP Laboratory for the vast majority of our laboratory analytical needs. Periodically, OER may use private laboratories. In these events, OER will ensure that these labs are NELAC (National Environmental Laboratory Accreditation Conference) certified and are capable of providing the required analyses. DEP-SOP-001/01 FM 2140 and 2150 (Field Mobilization), help to ensure the accuracy of lab data.

9.1.3 Criteria against Which Each Quality Control Measure will be Assessed

Field quality control measures are assessed to determine field conditions, equipment cleanliness, and storage/transport conditions. The results of the quality control measures are taken into consideration during data validation. Laboratory quality control reports are also taken into consideration during data validation.

9.2 Procedures Used to Review and Assess Raw Data, Laboratory Data and Project Data

OER personnel review and assess all data and quality control reports to ensure accuracy and quality.

9.2.1 Data Reduction: How Raw Data are Reviewed and Assessed

OER receives and reviews laboratory reports from the respective laboratory. The reports are reviewed for accuracy. The OER staff responsible for the sampling event then reduces the analytical results to a summary relevant to the case. This summary is then forwarded on to the respective agent and/or prosecutor as necessary.

9.2.2 Data Verification: How Data are Assessed with Respect to Calculations

OER ensures that any laboratory generating data for use in enforcement cases is NELAC certified for the analyses requested. Laboratory data is reviewed, verified and certified by the laboratory. OER reviews the data and QA/QC report to ensure that the data appears accurate.

9.2.3 Data Validation: How Project Data are Reviewed and Assessed

OER reviews reported data, data qualifiers, comments and QA/QC reports. Ultimately, the data is compared to the applicable regulatory limits for the specific case. The DEP Quality Assurance Rule 62-160.670 specifically discusses data validation.

9.3 Criteria for Determining When Corrective Action Must be Initiated for each QC Measure and the Procedures Used to Implement Corrective Action

If OER finds that critical data is outside of QA/QC limits or that data qualifier codes make the data unusable, OER may institute corrective actions. These actions may include (but are not limited to):

- Resampling the source
- Requesting that the lab re-analyze the samples

9.4 Procedures to be used in the Case of Deviations from the Documented Policies and Procedures

OER personnel shall refer to F.A.C. 62-160.220 which discusses the policy and procedure for deviation from the given standard operating procedures. As stated in DEP – SOP – 001/01 FA 2100.2.1.5 (Surface Water Sampling), OER may deviate from the SOPs to the extent necessary to protect human health, public safety, and the environment. In the event of a deviation, OER will make every effort to ensure data quality and evidentiary integrity. All deviations will be recorded in the field documentation.

9.5 Types of Performance, Systems and Management Audits to be Performed

The FDEP forensics program, reviews the sampling procedures and analytical data required for all casework. Audits are performed annually or on an as-needed basis. The Environmental Forensics Sampling Quality Assurance Officer is responsible for initiating and completing internal audits.

10.0 Consumer Relations

OER works with members of the public, industries, and local, state, and federal agencies. OER strives to maintain good consumer relationships.

10.1 Policies and Procedures Regarding Review of Proposed Work to Ensure Adequate Personnel and Equipment

OER uses a Field Sampling Plan to ensure that there are adequate personnel and equipment available for each sampling event. The OER Request for Technical Assistance also allows for adequate personnel to be available for each event.

10.2 Policies and Procedures for Dealing with Complaints

OER staff complies with all requirements for formal and informal hearings in the event of a complaint. Complaints are directed via chain of command in accordance with OER policies and procedures. The Forensic Coordinating Committee has been established and meets quarterly. This committee discusses any and all complaints within the quarter to ensure corrective action has occurred if necessary.