

**Region 4**  
**U.S. Environmental Protection Agency**  
**Science and Ecosystem Support Division**  
**Athens, Georgia**

**OPERATING PROCEDURE**


**Title: Competency and Proficiency Testing**

**Effective Date:** February 4, 2011

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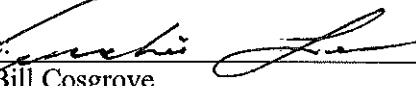
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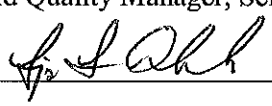
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## Revision History

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This table shows changes to this controlled document over time. The most recent version is presented in the top row of the table. Previous versions of the document are maintained by the SESD Document Control Coordinator.

History	Effective Date
<p>SESDPROC-006-R2, <i>Competency and Proficiency Testing</i>, replaces SESDPROC-006-R1</p> <p>This revision reflects the following changes:</p> <p>Changed Approvals from Antonio Quinones to Archie Lee and Laura Ackerman to Liza Montalvo.</p> <p><b>Revision History:</b> Changed Field Quality Manager to Document Control Coordinator.</p> <p><b>Section 1.2:</b> Added that investigators must demonstrate knowledge to operate equipment.</p> <p><b>Section 1.3:</b> Omitted references to the H: drive. Changed Field Quality Manager to Document Control Coordinator.</p> <p><b>Section 1.5:</b> Added OJT Form.</p> <p><b>Section 2.1:</b> Removed first sentence of first paragraph. Added requirements for supervisors to submit qualification of designated SME to FQM. Deleted sentence about SMEs considered proficient for the duration of their tenure.</p> <p><b>Section 2.2:</b> Included more detailed information and additional requirements for competency evaluations.</p> <p><b>Section 2.3:</b> Added that proficiency tests will be conducted each calendar year for one field measurement procedure.</p> <p><b>Section 2.3.1:</b> Added verification of the instrument. Replaced performance evaluation sample with sample of known value, where feasible.</p> <p><b>Section 2.5:</b> Added OJT records to the list of records.</p>	<p>February 4, 2011</p>
<p>SESDPROC-006-R1, <i>Competency and Proficiency Testing</i>, replaces SESDPROC-006-R0</p> <p>This revision reflects the following changes:</p> <p><b>General</b> Corrected any typographical, grammatical, and/or editorial errors.</p>	<p>November 1, 2007</p>

<p>Updated referenced procedures to reflect most recent version.</p> <p>Changed the period that an inspector is deemed proficient from three to four years.</p> <p><b>Title Page</b>  Changed title for Antonio Quinones from Environmental Investigation Branch to Enforcement and Investigations Branch. Changed Bill Cosgrove’s title from Acting Chief to Chief.</p> <p><b>Section 1.1</b>  Removed last sentence.</p> <p><b>Section 1.2</b>  Clarified the scope of this procedure.</p> <p><b>Section 1.3</b>  Updated information to reflect that procedure is located on the H: drive on the LAN.</p> <p><b>Section 1.4.1</b>  Replaced “...instrument, system, or material” at the end of the last sentence with “measurement equipment.”</p> <p><b>Section 1.5</b>  Alphabetized. Corrected title for the competency and proficiency testing form. Added reference for the operating procedure for corrective action.</p> <p><b>Section 2.1</b>  Moved the first sentence from Section 1.2.</p> <p><b>Section 2.2</b>  Moved the last sentence from Section 2.3</p> <p><b>Section 2.3</b>  Moved the first paragraph from Section 1.2 and re-arranged to add sub-sections.</p> <p><b>Section 2.4</b>  Added the first sentence to include the records retention requirement on the FQS-I guidance for proficiency testing.</p>	
<p>SESDPROC-006-R0, Competency and Proficiency Testing, Original Issue</p>	<p>February 5, 2007</p>

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# **1 General Information**

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## **1.1 Purpose**

The purpose of this procedure is to ensure that all field investigators are properly trained and are qualified prior to independently conducting field investigations. Field investigators must also maintain technical competence, as verified through performance testing. These factors are essential elements of the SESD quality system.

## **1.2 Scope/Application**

This procedure describes SESD's competency evaluation and proficiency testing program. Competency evaluation and proficiency testing are used to determine the field investigator's capabilities on field measurement and sampling. Field investigators must demonstrate the required skills and knowledge to independently perform field measurement or sampling procedures and to operate particular types of equipment.

The SESD Field Quality Manager is responsible for designing a tracking program that ensures current field investigators are qualified to independently perform environmental data collection activities. Personnel must demonstrate competency and proficiency for measurement and sampling procedures prior to independently conducting them during field investigations. New field investigators must have satisfactorily completed the SESD training program as specified in the SESD Operating Procedure for Training (SESDPROC-007) before being qualified to work independently.

## **1.3 Documentation/Verification**

This procedure was prepared by persons deemed technically competent by SESD management, based on their knowledge, skills and abilities and has been tested in practice and reviewed in print by a subject matter expert. The official copy of this procedure resides on the SESD Local Area Network (LAN). The Document Control Coordinator is responsible for ensuring the most recent version of the procedure is placed on the LAN and for maintaining records of review conducted prior to its issuance.

## **1.4 Definitions**

### ***1.4.1 Calibration***

The set of operations which establishes, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system or values represented by a material and the corresponding known values. The results of a calibration permit the estimation of errors associated with the measurement equipment.

#### **1.4.2 Competency Evaluation**

Initial evaluation of a field investigator to determine if they have demonstrated the necessary skills and knowledge to independently perform field measurements or sampling. Upon demonstration of competency for a measurement or sampling procedure, a field investigator is deemed proficient in that procedure for a period of four years.

#### **1.4.3 Procedure**

A procedure is a set of instructions for performing an activity. The activity may be sampling, making an observation, conducting a measurement or sampling.

#### **1.4.4 Proficiency Testing**

A systematic approach in which field measurements are demonstrated to be accurate by the analysis of materials of known composition. For sampling activities, proficiency is evaluated by direct observation by a qualified operator to ensure that procedures are conducted as defined in a procedure by a field investigator.

#### **1.4.5 Subject Matter Expert**

A field investigator who, as determined by management, exhibits a high level of expertise in a measurement or sampling procedure.

### **1.5 References**

Competency Evaluation and Proficiency Testing Review Form, SESDFORM-001, Most Recent Version

SESD On-the-Job Training (OJT) Form, SESDFORM-002, Most Recent Version

SESD Operating Procedure for Corrective Action, SESDPROC-009, Most Recent Version

SESD Operating Procedure for Training, SESDPROC-007, Most Recent Version

## **2 Methodology**

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### **2.1 General**

The competency evaluation and proficiency testing program is used for qualifying SESD field investigators to perform environmental data collection work. Competency evaluations and proficiency tests will be conducted to ensure the reliability of SESD environmental data. Any team conducting a field measurement and/or sampling procedure must have, at a minimum, one member present that is currently proficient for that procedure.

Field branch training courses and on-the-job training are designed to equip field investigators with the required skills and knowledge to independently perform measurements or sampling as specified in documented procedures. It is the responsibility of each manager to determine the areas of competency/proficiency for each employee. Competency evaluation and proficiency testing for environmental measurement or sampling procedures can be performed during actual field investigations or in simulated situations. These evaluations and tests are documented using the SESD Competency Evaluation and Proficiency Testing Review Form (SESDFORM-001).

Subject matter experts (SMEs) will be designated by management for each measurement or sampling activity. The SMEs immediate supervisor will submit an explanation of the individual's education, training and experience to the Field Quality Manager that attests that the individual has the knowledge and skills to independently perform a designated activity in accordance with an applicable operating procedure. Multiple SMEs may be appointed, if appropriate. SMEs responsibilities include: developing competency and proficiency testing criteria in their area(s) of expertise, maintaining their expertise, and conducting competency and proficiency testing. The Field Quality Manager will work with the SMEs to ensure that the criteria developed for each competency evaluation and proficiency test are consistent.

### **2.2 Competency Evaluation**

Upon implementation of the Field Branches Quality System (FBQS) in February 2007, all SESD field investigators conducting environmental data collection were deemed competent by their supervisors for specific sampling and measurement procedures based on the individual's education, training, past work experience, and/or job performance at SESD.

Currently, any field investigator (e.g., current and new employees) conducting environmental data collection who wants to qualify for new responsibilities will need to complete a competency evaluation. The individual's immediate supervisor will submit a written explanation via e-mail of the individual's training (accompanied by hard copies of applicable on-the-job training records) and experience to the Field Quality Manager that attests that the individual has the knowledge and acquired skills to independently perform

an activity in accordance with an applicable operating procedure, and is ready to complete a competency evaluation. Knowledge includes awareness of pertinent literature and appropriate methods/procedures. The required on-the-job (OJT) training necessary to complete a competency evaluation is determined by the supervisor on a case-by-case basis. OJT records are documented using SESD On-the-Job Training (OJT) Form, SESDFORM-002. The supervisor will retain OJT records until the individual is ready for the competency evaluation at which time the OJT records will be provided to the FQM. The supervisor will also inform the appropriate SME that the field investigator is ready for a competency evaluation. Competency evaluations will be conducted by the designated SME of the applicable operating procedure.

### ***2.2.1 Competency Evaluation Requirements***

1. Pass a written test with a score of 80 percent or higher.

2. For Field Measurements:

Using the SESD operating procedure associated with a field measurement or instrument and using the instrument's Operations Manual (as required) as a reference, the field investigator will:

- Perform the required calibration or verification and ensure that the instrument/equipment is operating correctly.
- Make adjustments, as required.
- Perform a measurement using a sample of known value, where feasible, and successfully obtain acceptable results.
- Complete the required documentation including calibration and measurement results.

3. For Field Sampling:

Using the SESD operating procedure associated with a particular sampling method the field investigator will:

- Select the proper tools to perform the sampling activity.
- Use the selected tools and perform the sampling in the required manner.
- Complete the required sampling documentation.

In order to maintain a qualified status, personnel are expected to participate in and successfully complete an applicable proficiency evaluation at least every four years. The field investigator must re-establish competency prior to conducting independent field sampling or measurements if more than four years have elapsed since their last demonstration of proficiency.

## 2.3 Proficiency Testing

The proficiency testing (PT) program is used to re-qualify SESD field investigators to independently perform environmental data collection work. The primary focus is to verify the current capabilities and skills of qualified individuals, and to identify areas where additional training or more stringent quality control may be of benefit to SESD.

All field investigators who have established competency for a specific field measurement or sampling procedure must demonstrate proficiency for each of the procedures at least every four years. Proficiency testing can be conducted by the SME or any field investigator currently proficient in that area.

Each calendar year, at least one field investigator will participate in an externally administered proficiency test for one field measurement procedure.

### 2.3.1 *PT Requirements for Field Measurements*

Using the SESD operating procedure associated with a field measurement or instrument and using the instrument's Operations Manual (as required) as a reference, the field investigator will:

- Perform the required calibration or verification and ensure that the instrument/equipment is operating correctly.
- Make adjustments, as required.
- Perform a measurement using a sample of known value, where feasible, and successfully obtain acceptable results.
- Complete the required documentation including calibration and measurement results.

### 2.3.2 *PT Requirements for Field Sampling*

Using the SESD operating procedure associated with a particular sampling method the field investigator will:

- Select the proper tools to perform the sampling activity.
- Use the selected tools and perform the sampling in the required manner.
- Complete the required sampling documentation.

## 2.4 Performance Review

Performance in the SESD proficiency testing program will be reviewed by the Field Quality Manager and the Branch Chiefs of the participating field branches, EIB and EAB. If a field investigator does not successfully complete a proficiency test, a corrective action will be initiated and documented in accordance with SESD Operating Procedure for Corrective Action (SESDPROC-009). The field investigator will not be able to

independently perform work that involves that measurement or sampling procedure until a proficiency test has been satisfactorily completed.

## **2.5 Evaluation and Testing Documentation**

Competency evaluation and proficiency testing records/documents generated will be maintained by the SESD Field Quality Manager for a minimum of five years. These records may include, when applicable:

- Competency Evaluation and Proficiency Testing Review Form (SESDFORM-001)
- The results of the measurement taken, where feasible
- Documentation of performance review
- Records of any corrective action undertaken, where necessary
- On-the-job Training Records, SESD On-the-Job Training (OJT) Form (SESDFORM-002)