

<p>CECW-EG/ CECW-EH/ CEMP-EC</p> <p>Engineer Regulation 1110-1-261</p>	<p>Department of the Army U.S. Army Corps of Engineers Washington, DC 20314-1000</p>	<p>ER 1110-1-261</p> <p>28 April 1999 (original) 15 June 1999 (errata #1)</p>
	<p>Engineering and Design</p> <p>QUALITY ASSURANCE OF LABORATORY TESTING PROCEDURES</p>	
	<p>Distribution Restriction Statement Approved for public release; distribution is unlimited.</p>	

Errata Sheet

No. 1

ENGINEERING AND DESIGN

Quality Assurance of Laboratory Testing Procedures

ER 1110-1-261

28 April 1999

Page 2, Paragraph 6.c (2), First sentence, the word "accredited" should be "inspected".

CECW-EG
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DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

ER 1110-1-261

Regulation
No. 1110-1-261

28 Apr 1999

Engineering and Design
QUALITY ASSURANCE OF LABORATORY TESTING PROCEDURES

1. Purpose

This regulation prescribes responsibilities and procedures for materials and water quality testing performed by and for U.S. Army Corps of Engineers district offices. Guidance on similar responsibilities and procedures for Hazardous, Toxic, Radioactive Waste (HTRW) materials is provided in Engineer Regulation (ER) 1110-1-263.

2. Applicability

This regulation is applicable to all CONUS USACE Commands having responsibilities for the planning, design, construction, and operation of Civil Works, Military, and Support-for-Others programs. MSC's having responsibilities for OCONUS operations will develop guidance for their own use.

3. References

References are listed in Appendix A.

4. Distribution Statement

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5. Definitions

a. Validation. A process to verify that the laboratory is qualified to perform required tests for a project. Validation of a laboratory may consist of either inspection or audit as defined below.

b. Inspection. On-site examination of a laboratory in accordance with the requirements of paragraph 7 of this regulation.

c. Audit. Examination of inspection report and other documentation to verify the qualification of a laboratory.

6. Policy

a. Validation responsibilities. The district Commander is responsible for assuring that project and contracted commercial laboratories performing materials testing and chemical analysis of water and sediment have the required capability. The MSC is responsible for assuring the conformance of this regulation in accordance with its QA responsibility..

(1) Material testing laboratories. ER 1110-1-8100 assigns the inspection and validation of laboratories performing materials testing (aggregate, bituminous materials, concrete, rock, soil, and other construction materials) for the districts to the MTC. Each district is required to have its project laboratories and any other laboratories utilized by the district, Architect/Engineer (A/E), or construction contractor, validated by the MTC. The district should establish a quality assurance program to verify the accuracy of contracted laboratory test results. Assistance in outlining this program is available from the MTC.

(2) Water quality investigation. Laboratories performing water quality, wastewater, sludge, or sediment testing will require approval from the Corps. The Chemistry Quality Assurance Branch (CQAB) in WES will develop the approval process for each district depending upon the project and regulatory requirements.

b. Validation schedule.

(1) For all contracted laboratories and project Quality Assurance (QA) laboratories testing aggregate, concrete, bituminous materials, soils, rock, and other construction materials, an initial validation shall be performed prior to performance of testing and at least every two (2) years thereafter.

(2) Laboratories performing water quality, wastewater, sludge, and sediment testing shall be approved at an interval not to exceed eighteen (18) months.

(3) All laboratories shall be revalidated at any time at the discretion of the district when conditions are judged to differ substantially from the conditions when last validated.

c. Validation procedures. Validation of all material testing laboratories shall be performed by the MTC. Validation may be accomplished by one of the following processes:

(1) Inspection. Inspection shall be performed by the MTC in accordance with American Society for Testing and Materials (ASTM) E329.

(2) Audit. A laboratory may be validated by auditing if it has been accredited by the Concrete and Cement Reference Laboratory (CCRL) or AASHTO Materials Reference Laboratory (AMRL) within the past two years in accordance with ASTM E329. Audit shall be performed by the MTC. Inspection by MTC may be required after auditing if one or more of the critical testing procedures required in the project specification were not included in the CCRL or AMRL

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inspection report or if there is any concern that the laboratory may not be able to provide required services.

d. Laboratory Location. The validation of a laboratory is site-specific and can not be transferred or carried over to a facility at different location.

e. Validation report. After validation of a laboratory, the MTC and CQAB will report their findings to the district requesting the validation and maintain copies of the validation report for four (4) years after the validation or as otherwise deemed necessary.

7. Standards of Acceptability

a. Aggregate, concrete, bituminous materials, soil, and rock. Laboratories for testing aggregate, concrete, bituminous materials, soil, and rock shall be validated for compliance with ASTM E 329, Engineer Manual (EM) 1110-2-1906, or project specifications, as applicable.

b. Water, sediment, and other samples. Laboratories engaged in analysis of water, sediment, and other samples for chemical analysis shall be inspected to assure that they have the capability to perform analyses and quality control procedures described in references in Appendix A as appropriate. The use of analytical methods for procedures not addressed in these references will be evaluated by the CQAB for conformance with project or program requirements.

c. Steel and other construction materials. Laboratories testing steel and other construction materials shall be validated for capabilities to perform tests required by project requirements and for compliance with ASTM E329.

FOR THE COMMANDER:



ALBERT J. GENETTI, JR.
Major General, USA
Chief of Staff

Appendix A

References

40 CFR Part 136

Guidelines Establishing Test Procedures for the Analysis of Pollutants.

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Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities

ER 1110-1-8100

Laboratory Investigations and Testing

EM 1110-2-1906

Laboratory Soils Testing

American Public Health Association

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American Society for Testing and Materials

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Britton, L. J., and Greeson, P. E., ed. 1989. AMethods for the Collection and Analysis of Aquatic Biological and Microbiological Samples,@USGS-TWRI Book 5, Chapter A4, U.S. Geological Survey, Denver, CO.¹

¹ Publication available from U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, CO 80225.

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Fishman, M. J., and Friedman, L. C., ed. 1989. **Methods for Determination of Inorganic Substances in Water and Fluvial Sediments**,@USGS-TWRI Book 5, Chapter A1, U.S. Geological Survey, Denver, CO.¹

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U.S. Environmental Protection Agency 1979

U.S. Environmental Protection Agency. 1979. **Handbook for Analytical Quality Control in Water and Wastewater Laboratories**,@Publication EPA 600/4-79-019, Environmental Monitoring and Support Laboratory, Environmental Research Center, Cincinnati, OH.

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U.S. Environmental Protection Agency

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Wershaw et al. 1987

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