CEERD-GS-E 1 October 2002

MEMORANDUM FOR RECORD

SUBJECT: Quality Assurance Laboratory Inspection and Validation

1. In accordance with Engineer Regulation (ER) 1110-1-8100, "Engineering and Design; Laboratory Investigations and Testing," and ER 1110-1-261, "Engineering and Design; Quality Assurance of Laboratory Testing Procedures," the Engineer Research and Development Center Materials Testing Center (MTC) has responsibility for inspections and validations of contractor quality control (QC) laboratories, project quality assurance (QA) laboratories, and contracted commercial materials testing laboratories in determining the capabilities of the laboratory to perform certain materials tests and evaluations.

2. As directed by CERD, the MTC initiated a unified Corps of Engineers - (CE) wide laboratory inspection program in October 1997 to inspect and validate materials testing laboratories conducting tests of aggregate, bituminous, concrete, rock, soils, and other construction materials. The inspection program involves a biennial inspection of each testing facility and report retention for four (4) years. These comprehensive inspections involve a full 2 to 3-man-day on-site inspection including a review of the QA/QC program, verification of testing equipment, and observation of testing procedures.

3. Review of the QA/QC program is an audit that involves a compliance review of the laboratory QA/QC system and the quality manual; the internal and external calibration and verification techniques, procedures, and records; the technical training and records; the test records and report forms; the internal and external proficiency sample programs; and the procedures for correcting errors, technical complaints, and deficiencies from internal and external audits and inspections.

4. Verification of testing equipment is a check of laboratory and field-testing equipment. The check of sieves, molds, compression devices, scales, and other test equipment is conducted for compliance with respective ASTM and Corps of Engineers requirements.

5. Test methods and procedures conducted in the laboratory and at a project site are observed and reviewed for compliance with respective ASTM requirements.

6. At the conclusion of the inspection, MTC inspectors shall conduct an exit meeting with laboratory management and District representatives (if available) to review all findings and deficiencies. The MTC shall report their findings through a final report to the requesting CE District and respective CE Division office. A copy of the inspection report shall be provided to the commercial laboratory. Reports of private laboratory inspections shall also be submitted to the associated CE District and CE Division offices with the original being sent to the private laboratory.

7. An audit of a laboratory's QA/QC program may be conducted in lieu of the on-site laboratory inspection as authorized in ER 1110-1-261. The audit is conducted off-site at the inspector's office. The prerequisites for an audit are current laboratory inspections of the laboratory by the AASHTO Material Reference Laboratory (AMRL) and the Cement and Concrete Reference Laboratory (CCRL) of the U.S. Department of Commerce. All test procedures required by District representatives must be included in the inspections conducted by AMRL and CCRL; otherwise, an on-site inspection will be required.

8. A report of corrective action from the laboratory is required 30 days after receipt of the inspection and audit reports. If corrective actions taken for all deficiencies noted in the reports are determined to be satisfactory, the laboratory shall be sent a validation letter detailing all material test procedures and methods the laboratory is validated to perform. The laboratory shall be added to the list of CE-validated laboratories. The validation shall be valid for a period beginning the date of the inspection and lasting for two years from that date.

9. Laboratory inspections and audits are initiated by completing an Inspection Request Form and questionnaire that are available directly from the MTC or from the MTC website (http://www.wes.army.mil/SL/MTC/inspection.htm). The form and questionnaire provide inspectors valuable pre-inspection information concerning the laboratories' quality program and the primary areas for inspection, and gives inspectors the opportunity to provide an accurate cost estimate for an inspection.

10. The MTC is committed to minimizing the cost of these inspections. Multiple inspections in local regions will minimize travel expenses significantly. Each District is requested to submit a funding request document (i.e., Military Interdepartmental Purchase Request, MIPR). Private QA/QC laboratories must submit a check made payable to the "***Treasury of the United States of America***," prior to the scheduling of the inspection.

11. Laboratories engaged in testing aggregates, bituminous materials, and concrete shall be inspected for compliance with American Society for Testing and Materials (ASTM) E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction," or project specifications, as applicable. Laboratories engaged in testing rock and soils shall be inspected for compliance with ASTM D 3740, "Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction," and applicable tests in Engineer Manual (EM) 1110-2-1906, "Engineering and Design; Laboratory Soils Testing," or tests required by project requirements.