

**QUALITY ASSURANCE
INSPECTION AGENCY
AUDIT PROGRAM GUIDE**

EXHIBITS

Developed by

WACEL

**7508 Wisconsin Avenue, 4th Floor
Bethesda, Maryland 20814
301-652-7925**

Second Edition

**Issued
September 2016**

EXHIBIT 1: Minimum Requirements to be a WACEL Inspection Agency

An inspection agency that seeks WACEL membership must demonstrate and provide at a minimum evidence of the following per ASTM E329:

1. A Quality Assurance System for observation and testing services
2. Evidence of Equipment Calibration Traceable to NIST
3. Technician Certification for every Technician who has been employed for more than 120 days in accord with the WACEL Bylaws.
4. The Inspection Agency relies upon an accredited laboratory for all testing services.

EXHIBIT 2: Application Form

Audit No. _____

APPLICATION FOR INSPECTION AGENCY AUDIT

1. Firm Seeking to be Audited _____

2. Address _____

_____ ZIP _____

3. Authorized Representative _____

4. Work Phone _____ Ext _____ Fax No.: _____

If information about the inspection agency that differs from information conveyed in responses to items 1-4, complete items 5-9. Otherwise skip to item 10.

5. Inspection Agency Name _____

6. Physical Address _____

_____ ZIP _____

7. Authorized Representative _____

8. Rep's Work Phone: _____ Ext _____ email: _____

9. If the individual identified in item 4 is not the same as the one in item 8, should the Materials Review and Facilities Inspection Report be sent to the person identified in item 4, item 8 or both? (Circle one) 4 8 Both

10. How many persons employed at the applicant laboratory participate in:

a. soil observation testing _____

b. concrete observation and testing _____

c. other special inspection observation and testing services _____

11. Indicate the observation and testing services you provide (check all that apply):

_____ soils _____ concrete _____ reinforcing steel
_____ aggregate _____ masonry _____ structural steel _____ fireproofing
_____ fire stopping _____ Other _____

12. Approximately when would you like the Facilities Inspection to occur? _____
13. Are you aware that Inspection Agency Audit team members and novices serve on a voluntary basis and may be unable to comply with your preferred schedule? (Circle one) Yes No
14. Are you aware that other organizations offer similar services and that these may be applied to if WACEL cannot handle your request promptly? (Circle one) Yes No
15. The fees associated with accreditation (which must accompany this application by check payable to WACEL) are based on the number of persons required to serve on the LAT. In most instances fees are:

WACEL Members \$1,000
Nonmembers \$5,000

The total amount due at this time, and provided herewith, is \$ _____.

16. I understand that the scope of the audit involves the following:
- an examination of materials identified in Exhibit 3;
 - a review of facilities during a Materials Review and Facilities Inspection (Exhibit 5);
 - a possible reinspection to verify that deficiencies, if any, have been addressed to the satisfaction of the Inspection Agency Audit Team within 90 dates of the date of the MRFI Report;
 - an annual audit to assure that the inspection agency continues to meet the requirements of the WACEL Inspection Agency Audit Program and
 - the need to complete and return within 30 days of the first and second anniversary date of the accreditation a completed Certificate of Continued

Compliance (Exhibit 4) signed by the Professional Engineer in charge of the agency (Circle one to signify your understanding of the scope of the program)

Yes No

17. Do you understand that additional costs are associated with the Program? (These include the cost of Inspection Agency Audit Team participants' transportation to and from various meetings and the applicant laboratory, and their cost of meals for the Materials Review, Pre-Inspection and luncheon meetings, feasibly among others.)

Yes No

Do you understand that the applicant laboratory also is responsible for similar expenses of whatever Novice Members and/or Outside Observers may be assigned?

Do you understand that nonmembers are required to pay an additional fee and additional expenses if reinspection is required for any reason? (Circle one in response to all three questions) Yes No

18. Are you aware that WACEL may refuse to confirm the applicant inspection agency has complied with the requirements of the Audit program and this failure could result in loss of WACEL membership. If this occurs, you agree to pay all charges associated with the Audit program? (Circle one) Yes No

19. Have you read and become fully familiar with the WACEL document which describes the Quality Assurance Laboratory Audit Program? (Circle one) Yes No

20. Do you have authority to act on behalf of the firm herewith seeking an Audit? (Circle one) Yes No

21. Please read the following statement and add your initials where indicated only if you understand it and agree to bind to it the firm you represent:

I understand that this accreditation procedure is being entered into at the request of the firm I represent. I understand, also, that WACEL could feasibly face some liability

exposure either from the firm I represent or from third parties who may, among many other things, claim the firm I represent was negligent and that WACEL's Audit program participation was accorded in a negligent manner. As to liability exposure as a result a of claim or action brought against WACEL by the firm I represent, the firm I represent herewith agrees to take no action whatsoever against WACEL or any of its agents, voluntary or paid, for implementation of procedures associated with the accreditation process. It is understood that WACEL, for reasons it considers valid, may refuse to confirm that the applicant Inspection Agency met the requirements of the Audit Program. Even though I or another representative of that Inspection Agency may disagree with WACEL's judgment or interpretation of facts, it is agreed WACEL's determination is final. It is understood, further, that WACEL will do its best to maintain confidentiality, but that it cannot and does not offer a guarantee that confidentiality will be maintained. And as to claims which may arise from any aspect of this Audit procedure, when such claims are brought against WACEL by any entity or person other than the firm I represent, this firm hereby declares that it shall hold harmless, indemnify and defend WACEL and/or any of its agents from and against any and all such claims, as well as any losses or damages WACEL and/or its agents may suffer as a result of such claims, demands, costs or judgments.

Initials of Authorized Representative _____

22. By signature affixed below, I certify that I have read and understood WACEL's Quality Assurance Inspection Agency Audit Program Guide, as well as this Audit application form, and that, by authority vested in me by the firm I represent, herewith bind my firm to all terms and conditions of the Program as made clear in the Program Guide and to all terms and conditions made clear in this application form.

Signature _____

Date _____

RETURN THIS FORM WITH YOUR CHECK AND MATERIALS IN EXHIBIT 3 TO:

WACEL

7508 Wisconsin Avenue, 4th Floor

Bethesda, MD 20814

EXHIBIT 3: Materials for Review Listing

Inspection Agency Audit No. (#)

Materials List

The following list of materials must be provided with Exhibit 2, Application for Inspection Agency Audit, Please be certain to indicate on each copy of each document furnished exactly what the document is, unless a title or some other inherent identification in or on the document makes its identification self-evident. The documents listed are referenced in the Materials Review and Facilities Inspection Worksheet (Exhibit 5), with the Worksheet reference shown in parentheses. If you have additional materials that you believe are relevant, or which you would like the Inspection Agency Audit Team to review and comment upon, include them with other materials furnished, but be sure to describe them in a covering letter or note and explain your reasons for providing them.

ALL MANDATORY DOCUMENTS MUST BE FURNISHED WITH THE APPLICATION FOR ACCREDITATION.

1. *Photocopy of registration certificate of professional engineer in full-time responsible charge of the inspection agency in jurisdiction of office location (1.4.4). _____
- *2. General information concerning the inspection agency covered by the application, such as primary function, relationship to larger corporate entity and, if applicable, physical location of the laboratories involved _____
- *3. Written QA program (2.1.1). _____
4. Copies of QA compliance reports or other written evidence (if such exists)

- of QA procedures evaluations (2.1.4). _____
- 5. Written calibration program (2.2.1). _____
- 6. Most recent record of calibration results (2.2.3). _____
- *7. Other calibration reports submitted by outside agencies (2.2.7). _____
- 8. Statement of procedures which vary from those promulgated by recognized
standard-setting organizations (2.3.3). _____
- 9. Guidelines relative to developing and reviewing reports (2.4.1). _____
- 10. Guidelines relative to report format, standard clauses, etc. (2.4.2). _____
- *11. Two recent soils observation reports (2.4.5). _____
- *12. Two recent concrete observation reports (2.4.5). _____
- *13. Organizational chart and/or other material which identifies reporting
relationships and assigns responsibilities (2.5.2). _____
- 14. General personnel policies and procedures manual (2.5.1). _____
- *15. Job description for each category of employee (2.5.3). _____
- *16. Resume of P.E. in full-time charge of inspection and three others
filling other jobs within the facility (2.5.4). _____
- 17. Description of training and continuing education programs (2.5.5). _____
- *18. Name and address of accredited laboratory (laboratories) that perform testing on
applicant's behalf. _____

*Failure to have this material precludes accreditation.

EXHIBIT 4: Certification of Continued Compliance

Audit No. _____ Date _____

Date of Audit _____

Laboratory _____

Address _____

_____ ZIP _____

Representative _____

CERTIFICATION OF CONTINUED COMPLIANCE

This form must be completed and returned to WACEL by no later than _____.

I have read and am familiar with WACEL's Inspection Agency Audit Program Guide specifically relative to those factors that affect quality control and the ability of this inspection agency to provide accurate, reliable test data. Furthermore, I have read and am familiar with the Materials Review and Facilities Inspection Report issued subsequent to inspection of this facility by WACEL, and any subsequent reinspection. Based on my review and understanding of these materials, and based on my knowledge of developments which have occurred in this facility over the past year, I hereby certify that no major events calling for a reinspection have transpired; that the high level of quality control is being maintained, and that this inspection agency is complies with the Inspection Agency Audit Program requirements. In addition, I recognize that the inspection agency's current audit expires on (date of expiration), and that application for a new audit n should be made no later than three months prior to that date. Signed by the registered professional engineer with full-time supervision of the inspection agency:

Printed Name of Signatory: _____

THIS SIGNED FORM MUST BE RETURNED BY NO LATER THAN

RETURN TO

WACEL

7508 Wisconsin Avenue, 4th Floor

Bethesda, MD 20814

mike@wacel.org

EXHIBIT 5: Materials Review and Facilities Inspection Worksheets

WACEL

INSPECTION AGENCY AUDIT PROGRAM

TEAM MATERIALS REVIEW AND

FACILITIES INSPECTION WORKSHEET

Instructions: Each Inspection Agency Audit Team (IAAT) participant shall be furnished with a copy of this form. Each shall complete those elements of the form that pertain to areas of concern assigned by the WACEL Director of Technical Services or Team Captain.

Particularly for Materials Review, most of which should be performed prior to Facilities Inspection, more than one IAAT participant may be assigned to review a given item. The lines to the right of each item of inquiry are provided for response to the question and for commentary. In Section 2.0, a simple "yes" or "no" seldom is the appropriate response; IAAT participants should indicate how well a given concern is handled by the applicant, methods of response verification (when appropriate), and such other information that will help the IAAT reach conclusions. In cases where the space provided is insufficient to record comments, such comments should be made on a separate sheet of paper that clearly identifies the item of concern in question. Each IAAT participant is encouraged to record comments and observations in full, including those relating to observations about matters deemed important even though assigned to some other member of the IAAT or not identified on the worksheet.

Please note that this is a generic worksheet. All questions may not be applicable to an inspection agency that does not operate a laboratory. Nonetheless, at a minimum, inspection agencies must provide evidence of a written quality assurance program, calibration records for each piece of field equipment that it uses traceable to NIST, records of technician certification

and records that all outside testing it performed by a laboratory whose accreditation is recognized by the WACEL Laboratory Accreditation Committee.

1.0 GENERAL INFORMATION

1.1 AUDIT NO. _____

1.2 INSPECTION AGENCY AUDIT TEAM COMPOSITION

1.2.1 IAAT Captain _____

1.2.2 IAAT Member(s) _____

1.2.3 IAAT Novice Member(s) _____

1.2.4 Outside Observer(s) _____

1.3 PERSON COMPLETING THIS WORKSHEET _____

1.4 APPLICANT AGENCY

1.4.1 Name _____

1.4.2 Address _____

_____ ZIP _____

1.4.3 Telephone _____ - _____ FAX _____

1.4.4 Professional engineer in full-time responsible charge

Name _____

State in which registered _____

Registration certificate no. _____

Copy of certificate provided? ____ Yes ____ No

(If "no," method of verification): _____

Verified by: _____

1.4.5 Facility manager (if not P.E. in responsible charge) _____

1.5 SERVICES PROVIDED ____ SOILS ____ CONCRETE ____ AGGREGATE

____ STRUCTURAL STEEL ____ FIREPROOFING ____ FIRE STOPPING

___ MASONRY ___ REINFORCING STEEL

___ OTHER _____

1.6 DATE OF APPLICATION _____

1.7 DATE OF MATERIALS REVIEW MEETING _____

1.8 DATE OF FACILITIES INSPECTION _____

2.0 GENERAL QUALITY ASSURANCE CONSIDERATIONS

2.1 QUALITY ASSURANCE POLICY

2.1.1 Is the applicant's written QA program adequate and reflective of services provided? _____

2.1.2 Are QA procedures implemented by principals of the applicant laboratory? _____

2.1.3 Is there evidence that QA procedures are being followed? _____

2.1.4 Have specific procedures been developed for reviewing personnel compliance with QA activities? _____

How often? _____

By whom? _____

2.1.5 Other comments and observations _____

2.2 CALIBRATION PROGRAM

2.2.1 Does the applicant have an adequate written calibration program? _____

2.2.2 Are calibration standards maintained for in-house use adequately? _____

2.2.3 Are calibration results documented? _____

If so, are they kept on file? _____

- 2.2.4 Who is assigned to maintain the calibration program? _____
- 2.2.5 Who is assigned to correct deficiencies? _____
- 2.2.6 Have other outside agencies been retained to perform calibration? _____
 - ③ If so, identify which equipment was calibrated and by whom? _____
- 2.2.7 Is nonfunctional equipment segregated from use? _____
- 2.2.8 Other comments and observations _____

2.3 TEST PROCEDURES

- 2.3.1 Does the applicant maintain on file copies of current standards that relate to the tests performed? _____
- 2.3.2 Does the inspection agency abide by standards developed by appropriate standards organizations? _____
- 2.3.3 Have procedures which differ from recognized standards been committed to writing? _____
 - o Are causes for deviation explained? _____
 - o Are deviations reasonable? _____
 - o Are clients notified when procedures differing from standards are used? _____
- 2.3.4 If it is necessary to change the agency's accepted practice during a test, is the proposed change discussed and reviewed before being implemented? _____
 - o Is the change documented? _____
- 2.3.5 Other comments and observations _____
- 2.3.6 Does the Agency rely on accredited laboratories to conduct

testing _____

2.4 REPORTS

2.4.1 Does the applicant have written guidelines identifying responsibilities for developing and reviewing reports? _____

2.4.2 Does the applicant have written guidelines as to the format of reports, standard clauses, etc.? _____

2.4.3 Who has responsibility for developing report formats? _____

2.4.4 Who has responsibility for reviewing reports? _____

2.4.5 Impressions gained from review of at least two typical reports issued within the past three months)

o Soils reports (if applicable) _____

o Concrete reports (if applicable) _____

2.4.6 Other comments and observations _____

2.5 PERSONNEL POLICIES

2.5.1 Does the applicant have a general personnel policies and procedures manual? _____

2.5.2 Does the applicant have an organizational chart and/or other material which identifies reporting relationships and assigns responsibilities? _____

2.5.3 Does the applicant have written job descriptions for each

- category of employee and resumes of the P.E. in charge of the agency and other key staff members? _____
- 2.5.4 Does applicant review technician testing proficiency as a part of the periodic performance review? _____
- 2.5.5 Have training and continuing education programs been formulated for field and office personnel? _____
- o Are these described in writing? _____
 - o Are selected employees familiar with them? _____
 - o Is every technician assigned to a project certified in the technical discipline required for the performance of the specified field services within 120 days of hire? _____
- 2.5.6 Does the applicant maintain documentation of training and continuing education? _____
- 2.5.7 Does the applicant conduct formal competency reviews of their certified technicians annually? _____
- 2.5.8 Does the training program include certification by outside agencies? _____
- 2.5.9 Is work performance evaluated? _____
- How often? _____
- By whom? _____
- 2.5.10 Are selected employees aware of reporting relationships and responsibilities, general policies and procedures, importance of quality of performance? _____
- 2.5.11 Do selected employees believe they have received the training necessary to perform their work well? _____
- 2.5.12 Do employees believe the applicant encourages them to advance their technical education and training? _____
- 2.5.13

Other comments and observations _____

3.0 FIELD TESTING EQUIPMENT

3.0.1	Condition of slump cones/rods	C143-5.1/5.2	_____
3.0.2.1	Evidence of smooth/nonabsorptive surface use	C143	_____
3.0.3	Condition of air meters _____	C-138/C-231	_____
3.0.S.1	Calibration of air meters _____	C-138/C-231	_____
3.0.4	Condition of unit weight buckets _____	C-29	_____
3.0.4.1	Evidence of unit weight bucket _____ calibration	C-29	_____
	Plexiglas, Glass, or Metal Plate available in the correct size?		_____
3.0.5	Condition of Concrete Beam Molds	C-31	_____
3.0.6	Other _____		_____
	_____		_____
	_____		_____
	_____		_____

3.1 ADDITIONAL REMARKS

<u>4.0 SOIL AND AGGREGATE TESTING EQUIPMENT</u>	<u>APPLICABLE ASTM REQUIREMENT</u>	<u>STATUS</u>
---	--	---------------

- | | | |
|---|---------|-------|
| 4.1 THERMOMETERS | Various | |
| 4.1.1 Adequate number and ranges _____ | | _____ |
| 4.1.2 Checked for accuracy or traceable to NIST | | _____ |
| 4.1.3 Other _____ | | _____ |
| _____ | | |
| _____ | | |
| _____ | | |

4.2 IN-PLACE DENSITY EQUIPMENT

- | | | |
|--|------------|-------|
| 4.2.1 Sand cone method _____ | ASTM D1556 | _____ |
| o Sand _____ | | _____ |
| o Evidence of calibration _____ | | _____ |
| o Jar, funnel and plate _____ | | _____ |
| o Proper orifice and cone dimensions _____ | | _____ |
| o Evidence of calibration _____ | | _____ |
| o Miscellaneous equipment _____ | | _____ |
| o Complete set (balances, drying equipment, spoons, chisels,
pans, brush, etc.) _____ | | _____ |
| 4.2.2 Nuclear method | ASTM D2922 | |
| o NRC and/or state license on hand _____ | | _____ |
| o NRC and/or state regulations on hand _____ | | _____ |
| o Procedures manual available for
operators _____ | | _____ |
| 4.2.2 Nuclear method (continued) | ASTM D2922 | |

- o Documentation of training _____
- o Notice to employees identifying emergency contact _____
- o Film badge records _____
- o Shipping, transfer and survey records _____
- o Transport containers properly labelled _____
- o Sign-in/sign-out records _____
- o Evidence of bill of lading use _____
- o Field book with copy of license, charts and daily standard counts _____
- o Leak test records on hand _____
- o Calibration within 18 months (required by ASTM D2922A1.1) _____
- o Standardization blocks (serial no. matches gauge) _____
- o Condition and workability of equipment e.g., scraper plate flat? _____
- o Evidence of standardization checks _____
- o Evidence of field moisture calibration _____
- o Other _____

4.2.3 Other _____

	APPLICABLE ASTM <u>REQUIREMENT</u>	<u>STATUS</u>
4.3 SCALES AND BALANCES	D4753	
4.3.1 All scales (field)		_____
4.3.2 Scales		
o Condition _____		_____
o Tared _____		_____
o Calibrated _____		_____
o Other _____		_____
4.3.3 Recent calibration traceable to NIST		_____
4.3.4 Scales used for purpose intended to proper accuracy range		_____
o Concrete weight (sufficient capacity accurate to 3.0%) C138		_____
o Sensitivity _____		_____
o Range _____		_____
o Aggregate weight (at least 100# capacity accurate to 0.1%) _____		_____
4.3.5 Sand cone _____	D1556	_____
o 20 kg readable to \pm 5 grams _____		_____
o 1000g readable to \pm 0.1 gram _____		_____
4.3.6 Moisture Content	D2216	
sample < 200 g GP1* readable to 0.01g		_____
sample > 200 g GP2 readable to 0.1g		_____
4.3.7 Other _____		_____

EXHIBIT 6: MFRI Report Format and Sample Wording

(Date)

Audit Review No (#)

REPORT OF MATERIALS REVIEW AND FACILITIES INSPECTION

Performed in conjunction with an Audit of (name of inspection agency, address)

This report has been prepared by the Inspection Agency Audit Team (IAAT) Captain (name) on behalf of (name) (IAAT Member), (name) (IAAT Novice Member) and (name) (Outside Observer).

BACKGROUND

At the request of IAAT, (name of agency) submitted a number of written materials relevant to inspection agency's quality control. A list of materials submitted is appended hereto. These materials were distributed for review to the entire IAAT which met on (date of Materials Review Meeting) to discuss them. Selected pages from these documents which have been commented upon by the reviewers are appended hereto. The balance of materials have been destroyed.

On (date), the IAAT inspected the facilities of (name of laboratory), relying in part on WACEL-developed worksheets. The original worksheets used at that time, indicating the judgments of those who employed them, are attached to this report.

FINDINGS

Findings can be segregated into two distinct categories: strengths and deficiencies.

Strengths

Strengths are defined as those activities or materials which are subject to judgmental evaluation and demonstrate excellence or which require no improvement. In the opinion of the IAAT, the following activities and materials demonstrated excellence:

- 1.
- 2.
- 3.
- 4.
- 5.

The following, reported in general terms, are good and require no immediate improvement.

- 1.
- 2.
- 3.
- 4.
- 5.

Tolerable Weaknesses

A tolerable weakness comprises material or activity which in its current form is marginally acceptable. The nature of the weakness is not so serious as to degrade quality to an unacceptable level, but improvement is strongly encouraged. The items involved, and generally stated suggestions for improvement, are as follows:

- 1.

Comment

- 2.

Comment

3.

Comment

4.

Comment

5.

Comment

Deficiencies

A deficiencies occurs when material or activity in its current form is not acceptable. A given deficiency may comprise one or several distinct items or it may comprise a number of tolerable weaknesses which, taken together, create a deficiency.

In the opinion of the IAAT, tolerable weaknesses listed as items 3, 4, and 5 above are interrelated. While any one on its own is tolerable, as indicated, the interaction between the three is such that it creates a deficiency. Accordingly, improvement of tolerable weakness 3, 4, and 5 is listed as deficiency item no. 1, below, followed by other specific deficiencies.

1.

Comment

2.

Comment

3.

Comment

4.

Comment

5.

Comment

CONCLUSION

Given the deficiencies cited, the IAAT cannot accredit (name of agency).

RECOMMENDATION

Deficiencies nos. 1, 2 and 3 all relate to written materials that affect _____. It is not necessary to reinspect the facility in order to evaluate whether or not improvements made are sufficient. Accordingly, it is suggested that these improvements be made and that, when complete (name of inspection agency) forward to (name of DTS). Assuming the revised materials are found acceptable, the IAAT can recommend that the Inspection Agency met the requirements of the Inspection Agency Audit Program.

Deficiencies nos. 4 and 5 both relate to improvement of _____. Member)

Reinspection is required before WACEL can confirm the Inspection Agency met the requirements of the Audit Program. Reinspection will be performed by (DTS). As soon as the Inspection Agency is ready for reinspection, contact DTS>

NOTE: IMPROVEMENTS MUST BE MADE WITHIN NINETY DAYS FROM THE DATE OF THIS REPORT. We strongly suggest they be made well before that date. Failure to make the changes within three months, or failure to DTS of changes within three months, results in automatic and irrevocable termination of this audit program.

COMMENT

DTS) will be pleased to communicate with a responsible representative of (name of laboratory) relative to findings, conclusions, and recommendations.

COPIES

Copies of this document and its attachments have been furnished to (other IAAT participants) Who have been advised to read this document for checking purposes. If they do not concur with the findings, they are required to document their differences in writing to DTS within one week of receiving the report. If they agree with the findings, they are to maintain their copies until such time as the Audit process has been completed, and then they shall destroy their copies and other materials related to this Accreditation Review.

Respectfully submitted,

WACEL, Inc.

(Name), DTS

Inspection Agency Accreditation Team No. (#)

Enclosure: Selected materials pages
Checklists

pc: (Name of LAT Member)
(Name of LAT Novice Member)
(Name of Outside Observer)
(Name of WACEL PA)