

NCDOT Emulsion QC/QA Program Revision 6:

- Section I: Added note that participation in the IA program is not required for AASHTO accredited laboratories unless otherwise noted by NCDOT.
- Section IIB: Changed sending a request by mail to the state materials engineer to send the request by email.
- Section IIC: Added information about source approval samples.
- Section IID: Added requirement stating that the lab needed to be on-site.
- Section IIF: Added that the NCDOT needs to be notified for shipment of unapproved product as well as failing product.
- Section III: Removed references to specific NCDOT job title responsibilities.
- Section III: Replaced annual sampling certifications with sampling certifications done every five years.
- Section IIIA: Removed the requirement for a sample log and lab results form at the lab or terminal.
- Section IIIA: Removed requirements on the QC sample size.
- Section IIIA: Removed retain requirements for all samples, only necessary when mandated in the producer's QC Plan.
- Section IIIA: Replaced reference to daily QC sampling with statement that the sampling frequency is based on the terminal's QC Plan.
- Section IIIA: Removed the year on the AASHTO specifications listed and updated it to 'most recent.'
- Section IIIA: Removed requirement to keep two retain samples for each QC sample.
- Section IIIB: Removed requirements for subject lines on emails containing monthly reports.
- Section IIIB: Added the requirement to send compatibility test results.
- Section IIIC: Removed redundant information covered in Section IID.
- Section IIIC: Removed references to specific NCDOT personnel roles.
- Section IIIC1: Removed mention of listing tests done at off-site third-party labs, because this is not allowed.
- Section IV: Explanation of sample IDs was simplified.
- Section IVA: Removed specific BOL requirements, other than batch ID.
- Section IVA: Added that the NCDOT may request the BOLs be submitted.
- Section V: QA Sampling frequency changed to one sample per 100,000 gallons a terminal shipped.
- Section V A: Removed requirement to take two retains for each QA.
- Section V A: Updated size of QA samples taken to be one-gallon from 1/2 -gallon.
- Section V A 1: Removed requirements for sampling frequency when there are problems on a project and added statement about the option for additional testing upon request.
- Section V A 2: Removed requirement of specific amount of sampling increase in the case of failures.
- Section V A 3: Removed the requirement for split sample testing prior to shipment being resumed on a QA failure.
- Section V A 3: Removed requirement of specific amount of sampling increase in the case of failures.

- Section VI A 2: Removed discussion of retesting retains as part of the investigation process.
- Section VII A: Removed Ductility, solubility, and storage stability because the NCDOT does not run those tests and the lab is not accredited in them.
- Section VII B: Removed requirement of taking IA samples for AASHTO accredited labs.
- Section VII B: Updated sample size for IA samples to be one gallon.
- Section VII B: Removed sampler's technician ID number and the statement "By providing this data under my signature, I attest to the accuracy and validity of the data contained on this form and certify that no deliberate misrepresentation of data, in any manner, has occurred." As being required on sample label.
- Section VII B: Removed the requirement for a sample log and lab results form at the lab or terminal.
- Section VI A: Removed reproducibility limits.
- Section VII: Removed Section VII. Product Identification Requirements because it was redundant.
- Appendix H: Removed HiCAMS card example and sample log.
- Appendix H: Added statement that the attachment is not needed if the information is already found on the BOL.
- Appendix I: Added link for most up to date FHWA poster.
- Appendix K: Added link to NCDOT emulsion specifications.
- Appendix L: Added link to NCDOT approved suppliers and products listing.
- Appendix AB and Appendix AC: Removed certification request forms.
- Appendix AE and AF: Removed forms for noncompliance notification during a lab assessment.
- Appendix AD: Removed old link to QA FHWA webpage.

Revision 5:

1. **02/02/2017: Throughout the document, many website links have been updated.**
2. **02/02/2017: Throughout the document, references to the AMRL lab has been modified to read,**
“AASHTO re-source”
3. **02/02/2017: Throughout the document, revise the title Chemical Testing Engineer to read,**
“Asphalt Engineer”
4. **02/02/2017: In Section I. (A.), Definitions and Terminology, the website link has been removed from the first paragraph.**
5. **02/02/2017: In Section II. (D.), Approved Laboratory, the website link for Table 1A: Verification and Checklists has been removed.**
6. **02/02/2017: In Section II. (E.), Certified Technician, the revisions are as follows:;**

In the third paragraph, after the statement, “Upon successful completion of both phases, the technician is then certified at either Level 1 or Level 2.”, add the following:

“If there is only one Technician assigned to the laboratory then that Technician shall be certified as a Level 2. Upon certification the Level 1 or 2 shall be deemed competent. ”
7. **02/02/2017: Throughout the document, revise “...modified AASHTO T-40...” to read:**
“...AASHTO R-66, Sampling Asphalt Materials, except that samples may be taken from a single valve near the bottom of the tank.” Or “AASHTO R-66”.
8. **02/02/2017: In Section III. (C.)(1), Initial Producer Laboratory Certification, revise as follows:;**

In paragraph one; remove references to Mr. Kelly Croft and Mr. Tony D. Collins.” Remove, “...submit an Asphalt Emulsion Laboratory certification request form...” and replace with, *“...contact the Asphalt Engineer.”*
9. **02/02/2017: In Section III. (C.)(1), Initial Producer Laboratory Certification, revise as follows:;**

In paragraph four; revise the statements, “If all items are in compliance, the IAT will advise the QC Manager that their lab is pending approval and will forward the proper documents within 14 days.”, to read as:

“If all items are in compliance, the IAT will advise the QC Manager that their lab is pending approval. Within 7 working days the IAT will notify the QC manager if the laboratory has been approved or not.”
10. **02/02/2017: In Section III. (C.) (1.), Initial Producer Laboratory Certification, revise as follows:**

In paragraph five and six , revise the statements, “For non-compliance issues, the QC Manager will sign off on a statement of non-compliance. See Appendix AE. This will acknowledge that their lab will not be certified until the area in question is brought into compliance. The QC Manager will notify the Chemical Testing Engineer or his/her designee at 919-329-4090 for permission to ship. This evaluation will be on a case by case basis. When the non-compliance issue has been corrected, the QC Manager will then contact the IAT to reschedule another visit. Non-compliance issues shall be corrected within 30 days for any issue.

Upon reinspection, if all components of the lab comply with the initial certification requirements, then the IAT will inform the QC Manager that their lab has been certified and will receive the proper documents within 14 days. Laboratory certifications are to be clearly posted in the laboratory and will be valid for a period of 60 months with assessments being performed at least once annually. The annual assessment process is below in Section III(C)(2) Laboratory Annual Assessment.” to read as:

“In the event the laboratory has not been approved the IAT will provide detailed information regarding the non-compliance issues. Non-compliance issues shall be corrected within 30 days for any issue. The Producer’s lab will not be certified until the area in question is brought into compliance. The QC Manager will notify the IAT to reschedule a time and date for a reinspection.

Upon reinspection, if all components of the lab comply with the initial certification requirements, then the IAT will inform the QC Manager that their lab has been certified and will receive the proper documents within 7 days. Laboratory certifications are to be clearly posted in the laboratory and will be valid for a period of 60 months with assessments being performed at least once annually. The annual assessment process is below in Section III(C)(2) Laboratory Annual Assessment.

Provided that all non-compliance issues have been corrected the QC manager will then contact the Asphalt Engineer or his/her designee at 919-329-4000 for permission to ship.”.

11. 02/02/2017: In Section III. (C.) (2), Laboratory Annual Assessment, revise as follows:

Change the title, “ Laboratory Annual Assessment.”, to read, “*Laboratory Re-Assessment.* “

Any references to annual assessment are changed to read, “*reassessment*”.

12. 02/02/2017: In Section III. (C.) (2), Laboratory Annual Assessment, revise as follows:

In the first paragraph, revise the statement, “Annual assessments shall be conducted in the same manner as the initial certification.” to read:

“Laboratory re-assessments shall be conducted in the event a producer’s laboratory performs poorly on IA comparative testing.”

13. 02/02/2017: In Section III. (C.) (2), Laboratory Annual Assessment, revise as follows:

In the second paragraph, revise the statements, “The IAT shall contact the Producer’s lab personnel, preferably the Level 2 or QC Administrator by email or phone to request laboratory assessments at least once annually.” to read:

“The IAT shall contact the Producer’s lab personnel, preferably the Level 2 or QC Administrator by email or phone to request a laboratory reassessment.”

14. **02/02/2017: In Section III. (D.) Producer Technician Initial Certification and Annual Assessments, revise as follows:** Change the title, “Producer Technician Initial Certification and Annual Assessments.”, to read,

“Producer Technician Initial Certification.”

Any references to annual assessment are changed to read, “reassessment”.

15. **02/02/2017: In Section III. (D.) Producer Technician Initial Certification and Annual Assessment, revise as follows:**

In the second paragraph, revise the statements, “Technicians are initially certified and then assessed at least once each year until certification expiration at 60 months” to read:

“Technicians are initially certified and then possibly reassessed until certification expiration at 60 months.”

16. **02/02/2017: In Section III. (D.)(1.) Initial Producer Technician, revise as follows:**

Remove the title, “1. Initial Producer Technician.”

17. **02/02/2017: In Section III. (D.)(1.) Initial Producer Technician and Annual Assessment, Table 2, , the website link for Table 2: Assessed Testing Procedure Checklist has been removed.**

18. **02/02/2017: In Section III. (D.)(2.) Technician Assessments, revise as follows:**

Remove the title and section 2.

19. **02/02/2017: In Section IV. Sample Identification and Record Keeping for All Producer Material, revise as follows:**

In the fourth paragraph, revise the statements, “For retained samples, the batch number prefix shall contain an “R”. For example, QC- becomes QR-. ” to read:

“For retained samples, the batch number prefix shall contain an “R”. For example, QC- becomes QR-. The word, retain, should be entered into the remarks/comment field to ensure there is no confusion.”

20. **02/02/2017: In Section IV.(B.) Retention and Reporting of Data, revise as follows:**

In the bulletined items, remove kcroft@ncdot.gov and replace with AsphaltQCQA@ncdot.gov.

For any other document references to kcroft@ncdot.gov, change to read as, “AsphaltQCQA@ncdot.gov”.

21. **02/02/2017: In Section VI.(A), Table 3 Asphalt Emulsion Reproducibility Limits-(QC and QA only) the website link in the Note for Table 3: Asphalt Emulsion Reproducibility Limits-(QC and QA only) has been removed.**
22. **02/02/2017: In Section VII.(A), Table 4 Asphalt Emulsion Reproducibility Limits-(IA only) the website link in the Note for Table 4: Asphalt Emulsion Reproducibility Limits-(IA only) has been removed.**
23. **02/02/2017: Throughout the document, references to the NCDOT MTU Chemical Laboratory or NCDOT Materials & Tests Unit Chemical Laboratory has been modified to read,**

“NCDOT Materials & Test Unit Asphalt Laboratory”, “NCDOT MTU Asphalt Laboratory,” or “NCDOT MTU Laboratory.”

Revision 4:

1. **10/27/14, Page 15, In Section III, Producer’s QC, in the second paragraph, revise the following statement, “QC Sampler certifications will be valid for a period of 36 months and shall be clearly posted in the laboratory.”, to read,**

“QC Sampler certifications will be valid for a period of 60 months and shall be clearly posted in the laboratory. ”

06/15/2012, Page 7, “I. General Description, the revisions are as follows:

- In the second paragraph, revise the statement, “The Producers are required to submit Quality Control (QC) plans to the Chemical Testing Engineer for review, submit QC reports (See report requirements in Appendix G) and Excel spreadsheets (Appendix L) capturing ...”, to read,” The Producers are required to submit Quality Control (QC) plans to the Chemical Testing Engineer for review, submit signed QC reports when testing is completed(See report requirements in Appendix G), and submit Excel spreadsheets (Appendix L) capturing ... “.

06/15/2012, Page 13, “II. (E.) Certified Technician, the revisions are as follows:

- Add the following statement after the third paragraph which is the first paragraph below the bulletined list, “After terminal approval, in the event a new QC Technician is hired by the Producer, the IAT shall be notified immediately and then will issue an NCDOT provisional Level 1 certification valid for a period of 45 days. The provisional certification is issued to allow the Producer to train the new QC technician for 30 days and then at the 30 day mark notify the IAT to schedule an initial certification within the next 15 days. An extension of the provisional certification beyond 45 days may be granted if approved by IAT. If the new QC technician performed tests, all reports issued must have the Level 1 provisional certification number in the lower tier of the report along with the Level 2 signature and certification number. Provisional testing certifications will not be issued for Level 2 nor sampling technicians.”

06/15/2012, Page 23, “IV. (B.) Retention and Reporting of Data, the revisions are as follows:

- In the second bullet, revise the statement, “Quality Control COA’s or COC’s and/or QC test reports shall include the items in Appendix G , especially the NCDOT Batch number identification, and shall be emailed at

least monthly to kcroft@ncdot.gov or faxed to the NCDOT at 919-733-8742 with a cover sheet to the attention of Mr. K. L. Croft.”, to read,” Quality Control COA’s or COC’s and/or QC test reports shall include the items in Appendix G , including the NCDOT Batch number identification, and shall be emailed at the time of testing completion to kcroft@ncdot.gov or faxed to the NCDOT at 919-733-8742 with a cover sheet to the attention of Mr. K. L. Croft.”

06/15/2012, Page 23, “IV. (B) Retention and Reporting of Data, the revisions are as follows:

- In the third bullet, third sentence, revise the statement, “For inactive months, indicate “no product” in the test comment field.”, to read, “For inactive months, indicate “NO PRODUCT PRODUCED OR SHIPPED DURING THIS PERIOD” in the test comment field.”

11/10/2011, Page 24, “V. (A.)(1.) Verification Sampling by NCDOT Construction and Maintenance Personnel”, the revisions are as follows:

- In the second paragraph revise the statement,” QA Project personnel shall take verification samples from Producer’s asphalt emulsion tankers arriving on a project at a minimum rate of one sample per five deliveries or 30,000 gallons.”, to read, “Upon experiencing problems with application of product on the project, QA Project personnel shall take verification samples from Producer’s asphalt emulsion tankers arriving on a project at a minimum rate of one sample per five deliveries or 30,000 gallons until the investigation is completed.”

05/19/2009, Page 40, “Appendix G: QC and QA Verification Test Report Forms”, the revisions are as follows:

- In “B. Name and address of the testing laboratory and NCDOT Certified Lab Number.”, remove “Certified Lab Number.”, and replace with “Laboratory Certification Number.” Thus, “B.” now reads as:
“B. Name and address of the testing laboratory and NCDOT Laboratory Certification Number.”
- In “G. Date the sample was taken.”, add the following verbiage, “and time”. Thus, “G.” now reads as:
“G. Date and time the sample was taken.”
- In “I. Sampled by and NCDOT Certified Technician Number.”, remove “Certified Technician Number.”, add “name”, and “for sampling only”. Thus, “I.” now reads as:
“I. Sampled By name and NCDOT Technician Certification Number for sampling only.”
- In “L. Date of receipt of the test sample.”, add the following verbiage, “in laboratory”. Thus, “L.” now reads as:
“L. Date of receipt of the test sample in laboratory.”
- In “Q. Name of the person(s) accepting technical responsibility for the test report.”, add the following verbiage, “and NCDOT Technician Certification Number for testing.”. Thus, “Q.” now reads as:
“Q. Name of the person(s) accepting technical responsibility for the test report and NCDOT Technician Certification Number for testing.”

- In “R. Technician’s name.”, add the following verbiage, “and NCDOT Technician Certification Number for testing.”. Thus, “R. “ now reads as:
“R. Technician’s name and NCDOT Technician Certification Number for testing.”
- In “S. Signature of P & Q.”, remove “P & Q” and replace with “Q and R”. Thus, “S.” now reads as:
“S. Signature of Q and R.”

05/19/2009, Page 46, “Appendix K: Federal Highway Administration Poster”, the revisions are as follows:

- Under the “State Highway Department” description, remove “Bill Rosser, PE” and replace with
“Terry R. Gibson, PE”
- Under the “Federal Highway Administration” description, remove the phone number “919-856-4346”
and replace with “919-747-7000”.
- Revised the poster to agree with the website link to the poster.
- Added the following under the Appendix K description:
“Referenced website link: <http://www.fhwa.dot.gov/programadmin/contracts/fhwa1022.cfm>

This poster is also available at the website

<http://www.ncdot.org/doh/operations/materials/chemical/others.html> “

- Removed the verbiage at the bottom of the poster, “This page last modified on October 1, 2003” as
this refers to FHWA website modifications, not poster modifications.