NC DEQ/DWR WASTEWATER/GROUNDWATER LABORATORY CERTIFICATION

LABORATORY NAME:		CERT #:	
PRIMARY ANALYST:		DATE:	
NAME OF PERSON COMPLETING CHECKLIST (PRINT):			
SIGNATURE OF PERSON COMPLETING CHECKLIST:			

Parameter: **Vector Attraction Reduction**
Method: **Option 5: Aerobic Processes at Greater Than 40°C [503.33(b)(5)]**

Equipment:

	Temperature measuring device				

PLEASE COMPLETE CHECKLIST IN INDELIBLE INK
Please mark Y, N or NA in the column labeled LAB to indicate the common lab practice and in the column labeled SOP to indicate whether it is addressed in the SOP.

	GENERAL	LAB	SOP	EXPLANATION
1	Is the SOP reviewed at least every 2 years? What is the most recent review/revision date of the SOP? [Non-field: 15A NCAC 2H .0805 (a) (7)] [Field: 15A NCAC 2H .0805 (g) (4)] **Date:**			Quality assurance, quality control, and Standard Operating Procedure documentation shall indicate the effective date of the document and be reviewed every two years and updated if changes in procedures are made. Verify proper method reference. During review notate deviations from the approved method and SOP.
2	Are all review/revision dates and procedural edits tracked and documented? [Non-field: 15A NCAC 2H .0805 (a) (7)] [Field: 15A NCAC 2H .0805 (g) (4)]			Each laboratory shall have a formal process to track and document review dates and any revisions made in all quality assurance, quality control and SOP documents.
3	Has the laboratory developed and implemented a documented training program? [Non-field: 15A NCAC 2H .0805 (a) (7) (P)] [Field: 15A NCAC 2H .0805 (g) (5)]			Each laboratory shall develop and implement a documented training program that includes documentation that: (i) [or (A)] that staff have the education, training, experience, or demonstrated skills needed to generate quality control results within method-specified limits and that meet the requirements of these Rules; (ii) [or (B)] that staff have read the laboratory quality assurance manual or applicable Standard Operating Procedures; (iii) [or (C)] that staff have obtained acceptable results on Proficiency Testing samples pursuant to Rule .0803(1) of this Section or other demonstrations of proficiency (e.g., side-by-side comparison with a trained analyst, acceptable results on a single-blind performance evaluation sample, an initial demonstration of capability study prescribed by the reference method).
4	Is there North Carolina data available for review?			
5	Are ALL analytical records, including **original observations** maintained for 5 years? [Non-field: 15A NCAC 2H .0805 (a) (7) (E)] [Field:15A NCAC 2H .0805 (g) (1)]			
6	Are all manual data and log entries written in indelible ink? [Non-field:15A NCAC 2H .0805 (a) (7) (E)] [Field:15A NCAC 2H .0805 (g) (1)]			
7	Are error corrections performed properly? [Non-field:15A NCAC 2H .0805 (a) (7) (E)] [Field:15A NCAC 2H .0805 (g) (1)]			All documentation errors shall be corrected by drawing a single line through the error so that the original entry remains legible. Entries shall not be obliterated by erasures or markings. Wite-Out®, correction tape, or similar products designed to obliterate documentation shall not to be used; instead, the correction shall be written adjacent to the error. The correction shall be initialed by the responsible individual and the date of change documented.

8	Are the following items documented with each analysis? [Non-field:15A NCAC 2H .0805 (a) (7) (F)] [Field:15A NCAC 2H .0805 (g) (2)]			
	The method or SOP reference			
	Laboratory identification			
	Instrument identification			
	Sample collector			
	Signature or initials of the analyst			
	Sample identification			
	Proper units of measure			
	Final value to be reported			
	Facility name or permit number [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
	Parameter analyzed [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
	PRESERVATION and STORAGE	**LAB**	**SOP**	**EXPLANATION**
9	Are the samples analyzed *in situ*? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
10	Are date and time of sample analysis documented? [Non-field:15A NCAC 2H .0805 (a) (7) (F) (vii) and (viii)] [Field:15A NCAC 2H .0805 (g) (2) (G) and (H)]			
	PROCEDURE – Thermometer Calibration	**LAB**	**SOP**	**EXPLANATION**
11	Does the compliance temperature-measuring device have a valid NIST certificate? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			"Valid" is considered as having a stated accuracy of ± 0.5°C and being within its expiration date
12	If the compliance temperature-measuring device does not have a valid NIST certificate, is the device checked initially before use and every 12 months thereafter against a Reference Temperature-Measuring Device? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			Date of verification: _____ This may be performed by a contract laboratory. Maintain comparison data and accuracy documentation of Reference Temperature-Measuring Device information listed below for 5 years.
13	Does the Reference Temperature-Measuring Device used for comparison have a stated accuracy of at least ± 0.5 °C and is it within its expiration date? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			NIST traceable reference temperature-measuring device Serial #: _____ Stated accuracy: _____ Expiration date: _____
14	Is the compliance temperature-measuring device checked at two temperatures that bracket the range of compliance samples? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			Temperatures: Compliance device Reference device _____ _____ _____ _____
15	Do the readings from both devices agree within 0.5°C? [Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
	PROCEDURE – Sample Analysis	**LAB**	**SOP**	**EXPLANATION**
16	What is the sewage sludge type (e.g., composted, from aerobic digestion, etc.)? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C] **Sludge type:**			This Option must be used for composted sewage sludge. This option may also be applied to sewage sludge from other aerobic processes such as aerobic digestion as long as temperature requirements can be met and the sewage sludge is maintained in an aerobic state for the treatment period; however, Options 3 and 4 are likely to be easier to meet for these types of sewage sludges.

17	Is the sewage sludge aerobically treated for at least 14 days? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
18	Is the temperature measured at permit specified locations each of those 14 days? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
19	Is the location documented? [Field: 15A NCAC 2H .0805 (g) (1) [Non-field: 15A NCAC 2H .0805 (a) (7) (E)]			
20	Is the temperature measured within 0.3 M (1 foot) of the surface of the unfinished compost? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			It has been found that points within 0.3 m (1 foot) of the surface of aerated static piles may be unable to reach these temperatures, and for this reason, it is recommended that a 0.3 m (1 foot) or greater layer of insulating material be placed over all surfaces of the pile. Finished compost is often used for insulation. It must be noted that because the insulation will most likely be mixed into the composted material during post-processing or curing, compost used as an insulation material must be a Class A material so as not to reintroduce pathogens into the composting sewage sludge. Regardless of whether an insulating layer is used, temperature measurements must be performed within 0.3 m (1 foot) of the surface of the unfinished compost.
21	Is the depth of measurement documented? [Field: 15A NCAC 2H .0805 (g) (1)] [Non-field: 15A NCAC 2H .0805 (a) (7) (E)]			
22	Are sample temperatures during each measurement documented? [Field: 15A NCAC 2H .0805 (g) (2) (P)] [Non-field: 15A NCAC 2H .0805 (a) (7) (F) (xvi)] [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
23	Are all temperature values greater than 40 °C (104 °F)? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
24	Is the average temperature calculated for the 14 days? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
25	Is the average temperature for the 14 days documented? [Field: 15A NCAC 2H .0805 (g) (2) (N)] [Non-field: 15A NCAC 2H .0805 (a) (7) (F) (xiv)] [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
26	Is the average temperature for the 14 days greater than 45 °C (113 °F)? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			
27	If composting is used to comply with Class A pathogen requirements, is the pathogen reduction time-temperature regime met with or before the VAR time-temperature regime? [NC WW/GW LCB Approved Procedure for the Analysis of VAR Option 5: Aerobic Processes at Greater Than 40 °C]			

Additional Comments:

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Inspector: _____ Date: _____