

Flagging BOD Quality Control Failures (NC WW/GW LC Policy 06/02/2011)

It is the intent of the State of North Carolina that all data generated for any permitted location under NPDES requirements is to be reported. "Every person subject to this section shall file certified monitoring reports setting forth the results of tests and measurements conducted pursuant to NPDES permit monitoring requirements." Ref: 15A NCAC 2B .0506 (a) (1). Additionally, "the results of all tests of the characteristics of the effluent, including but not limited to NPDES Permit Monitoring Requirements, shall be reported on monthly report forms." Ref: 15A NCAC 2B .0506 (b) (3) (J).

This means all data are reported and none are rejected by the laboratory or permittee. If all quality control (QC) requirements are not met, it is required that the data are flagged and the qualifications appear on the back of the Discharge Monitoring Report (DMR). Any rejection of data will be issued by the agency which receives the data.

North Carolina Wastewater/Groundwater Laboratory Certification Policy for flagging quality control failures is based upon the Quality Control requirements of the method as outlined in Standard Methods, 21st Edition, 5210 B. (7) (b) which states: "Identify results in the test reports when any of the following quality control parameters are not met:"

Anytime any of the following quality control failures occur, the data must be flagged.

1. No sample dilutions deplete at least 2.0 mg/L DO and have a residual of at least 1.0 mg/L DO (unless 100% sample is analyzed).
2. The dilution water blank is greater than 0.20 mg/L.
3. The Glucose - Glutamic Acid (GGA) check falls outside the acceptance limits [i.e., 198 mg/L \pm 30.5 mg/L (167.5 – 228.5 mg/L) or 164 \pm 30.7 mg/L (133.3 – 194.7 mg/L) for CBOD]. When multiple GGA standards are analyzed, the average of those results must be within the acceptable limits.
4. Duplicates vary more than 30% between low and high values.
5. No seed control dilutions deplete at least 2.0 mg/L DO and have a residual of at least 1.0 mg/L DO.

The qualifying statement on the laboratory report form and/or the Discharge Monitoring Report (DMR) must state:

1. All QC requirements were not met, and
2. What the QC failure involved. For example, "blank was >0.20 mg/L", "GGA was less than 167.5 mg/L", "duplicates exceeded 30% difference due to low BOD concentration", etc.

It is recommended that the laboratory supervisor include a statement indicating whether the data is considered "valid", "questionable", or "invalid". This is a subjective decision based upon the severity of the QC failure and its impact on the value reported.

Data must always be reported. Accompanying documentation may be attached to justify any data believed to be invalid.