Data Validator Qualification Requirements

1. Introduction

This document establishes the requirements for data validators assigning qualifications to analytical results submitted to the Minnesota Pollution Control Agency (MPCA). Data qualifiers communicate information about data quality, including uncertainty, bias, and limitations; however, it does not by itself determine whether data are of sufficient quality to support project or program objectives. The intended audience for this document is data validators. This document clarifies the type, meaning, and intended purpose of validator qualifications submitted to MPCA.

These requirements apply to all data validators submitting validated data to MPCA's EarthSoft Environmental Quality Information System (EQuIS™) database. The requirements support the MPCA Quality Management Plan and are intended to ensure that validated data are consistently qualified, sufficient for their intended use, and managed in accordance with best practices. Questions regarding this document can be directed to qa.questions.mpca@state.mn.us.

2. Authority Hierarchy

Acceptance criteria are established in the Quality Assurance Project Plan (QAPP) or Quality Assurance Program Plan (QAPrP) define the acceptable level of uncertainty for supporting project-specific data quality objectives. The acceptance criteria are used to evaluate whether data are of sufficient quality for their intended use. Analytical data must be evaluated against the acceptance criteria specified in the applicable QAPP or QAPrP.

Project-specific acceptance criteria from a QAPP or QAPrP may not be available in some cases. In these situations, MPCA has established general acceptance criteria in the MPCA Laboratory Quality Control and Data Policy to promote consistent data review. Data validators must apply acceptance criteria following the hierarchy below. Acceptance criteria from lower-tiered sources may only be applied when higher-tier criteria are not available.

1. Quality Assurance Project Plan / Quality Assurance Program Plan
2. MPCA Laboratory Quality Control and Data Policy
3. Applicable consultant data validation standard operating procedure or published data validation guidance (e.g., EPA National Functional Guidelines)
4. Published method
5. Laboratory control limits

3. Requirements and Roles for Applying Data Qualifications

3.1 MPCA

Establishes requirements for data qualification, including the use and framework of qualifiers, and maintains oversight of data qualification procedures. MPCA will communicate any updates to this document.

3.2 Data Validators

Data validation is an assessment of analytical data generated by a laboratory against established acceptance criteria by a person who is independent of the activity that is being validated. The data validator should not belong to the same organizational unit responsible for producing the data. Data validators must use the acceptance criteria hierarchy described in Section 2. Data validation may be performed using manual procedures, electronic validation tools, or a combination of both. Data validation must be conducted by qualified personnel independent of sample collection, analysis, and data generation activities.

Validator qualifiers are assigned to analytical results in the validator qualifier field in the Lab_MN electronic data deliverable (EDD). Validator qualifiers communicate data quality, including uncertainty, bias, and identified limitations. Validator qualifiers provide important context, but do not independently determine data usability, and may be applied regardless of whether laboratory qualifiers are present.

3.2.1 Validator Qualifiers

The validator qualifier field in the Lab_MN EDD is limited to the following:

- E (estimated)
- E- (estimated with low bias)
- E+ (estimated with high bias)
- R (rejected)
- E6 (tentatively identified compound)

Data validators populate these E, E-, E+, R, and E6 valid values in the validator qualifier field in the Lab_MN EDD.

Due to reference table qualifier constraints, data validators must assign the E qualifier to the nondetect results. In this situation, the E qualifier indicates a quality control requirement was not met, and the quantitation limit is approximate and may be inaccurate or imprecise.