*** Technical Fact Sheet ***
Method Detection Limits, Reporting Limits, and DLR's

The analytical report that you receive from EnviroMatrix Analytical, Inc. (EMA) contains a lot of information in addition to the analytical results for your sample. Often, understanding and interpreting this information can be difficult. This technical fact sheet attempts to clarify the following terms and what they represent: Detection limits for the purposes of reporting, instrument detection limit, method detection limit, practical quantitation limit, and the reporting limit.

Detection limits for the purposes of reporting (DLRs): DLRs are established limits for contaminants monitored by public water systems under the California Safe Drinking Water Act. DLRs are the lowest concentration of a regulated chemical that needs to be reported by a laboratory for regulatory compliance purposes.

Instrument detection limits (IDLs): The IDL is the minimum concentration of a compound or analyte which can be identified with 99% confidence that the analyte concentration is greater than zero by a specific analytical instrument. It is determines the minimum concentration the instrument can detect exclusive of method preparation or sample matrix.

Method detection limits (MDLs): The MDL is the minimum concentration of a compound or analyte which can be measured using a specific method, including sample preparation steps. MDLs are statistically derived as the 99% confidence interval for detection of an analyte for a given method and matrix.

Practical quantitation limits (PQLs) and Reporting limits (RLs): The reporting limit is defined as the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The reporting limit is usually determined by multiplying the MDL by some factor which is decided upon by the laboratory. The reporting limit is supposed to represent the level where reliable quantitative information is routinely reported. The reporting limit takes into account the sample size, matrix effects, and any dilutions made during the analysis of that particular sample. Because of varying properties between samples, the reporting limit can vary from sample to sample. The reporting limit is always greater than or equal to the experimentally determined MDL. Reporting limits must be lower than the regulatory maximum contamination limits, which may not always be possible for complex sample matrices.

For the purpose of this technical fact sheet, the PQL and the RL are synonymous. EMA arbitrarily uses "reporting limit" because it is more commonly used in the industry. However, EMA can use PQL upon a client's request.

It is important that you speak with your EMA Project Manager if your project data quality objectives require a reporting limit other than EMA standard reporting limits. Please feel free to call us with any specific project needs.

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