

APPENDIX K

GLOSSARY

The following sources were used to provide definitions for the terms contained in this section.

- *Guide on Environmental Data Verification and Data Validation*. US EPA. (EPA/240/R-02/004). 2002.
- *The Massachusetts Volunteer Monitor's Guidebook to Quality Assurance Project Plans*. MA DEP. (DWM-CN61.0). 2001.
- *Oxford Pocket Dictionary and Thesaurus*. Oxford University Press. 2002.
- *Environmental Regulations and Technology: Control of Pathogens and Vector Attraction in Sewage Sludge*. US EPA, Office of Research and Development, EPA/625/R-92/013. Revised July 2003.

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Accuracy

A data quality indicator – the extent of agreement between an observed value (sampling result) and the accepted (or true) value of the parameter being measured.

Analyte

A discrete chemical component of a sample to be identified and/or measured through analysis.

Auger

A sampling device, resembling a drill, used for coring into soil-like material.

Average

A measure of central tendency. The average is obtained by adding all the numerical values of a given set of observations and dividing by the total number of observations.

Biosolids

The nutrient-rich organic materials resulting from the treatment of municipal sewage in a wastewater treatment facility. When properly treated and processed, these residuals can be recycled and applied as a fertilizer or soil conditioner to improve and maintain productive soils and stimulate plant growth.

Chain-of-Custody

A process used for routine sample control for regulatory and non-regulatory monitoring; also used as a general term to include sample labels, field logging, field sheets, custody seals, lab receipt and assignment, disposal, and all other aspects of sample handling from collection to ultimate analysis. Chain-of-custody also refers to the document or paper trail showing the proper handling of evidence and its integrity.

Coliwasa

Combined Liquid Waste Sampler. A sampling device used to collect a core sample of free-flowing liquid sludge from lagoons, tanks, pits, and similar containments.

Composite Sample

A composite sample can be either A) a collection of individual samples obtained at regular intervals of time or flow; or B) grab samples collected from various locations within a single mass of material, such as a lagoon or stockpile. Once mixed, the collected material is analyzed to determine the average conditions during the sampling period.

Data Validation

An analyte and sample specific process that extends to evaluation of data beyond method, contractual, and procedural compliance (see data verification) to determine the analytical quality of a specific data set.

Data Verification

The process of evaluating the completeness, correctness, and conformance/compliance of a specific data set against method, procedural, or contractual obligations.

Detection Limit

The lowest concentration or measurement of a target analyte that a given method can reliably ascertain as greater than zero.

Duplicate Sample

Two samples taken generally at the same time from (and representative of) the same sampling point that are carried through all assessment and analytical procedures in an identical manner. Used to measure the precision of field sampling and lab analytical methods.

Equipment Blank

A QA/QC sample used to check specifically for carry-over contamination from the reuse of sampling equipment.

Grab Sample

A single finite sample collected at a specific location and time.

Holding Time

The elapsed time from the date and time of sample collection until the sample is analyzed.

Homogenous

A uniform mixture having similar quality or characteristics throughout.

Indicator Organisms

Organisms that have been found to respond to treatment processes and environmental conditions in a manner similar to pathogenic organisms.

Malodor

A bad odor, a stench.

Mean

Another term for the average of a set of data; calculated in the same manner as the average.

NELAP

National Environmental Laboratory Accreditation Program

Pathogen

An organism or substance capable of causing disease. Pathogenic organisms include bacteria, viruses, protozoa, and helminths.

Pathogen Reduction

Treatment processes utilized to reduce sewage sludge pathogen concentrations in order to protect public health. Pathogen reduction is accomplished through

treatment of sewage sludge or through a combination of treatment and restrictions on the land application site that prevent exposure to the pathogens and allow time for environmental conditions to reduce the pathogens to below detectable levels.

PCB

Polychlorinated Biphenyl

Precision

A data quality indicator that measures the level of agreement or variability among a set of repeated measurements, obtained under similar conditions. Precision is usually expressed as a standard deviation in absolute or relative terms.

Preservation

Methods used to retard degradation of chemical analytes or physical properties within samples by inhibiting decomposition by biological action and chemical reactions, and reducing sorption effects. Methods include chemical, acid, or base addition; protection from light; cooling; etc.

Preservative

Generally, a chemical added to a sample to prevent decomposition or chemical reaction.

Putrescible

Subject to rotting, decomposition, or decay.

QA/QC

Quality Assurance/Quality Control

Quality Assurance

An integrated management system designed to ensure that a product or service meets defined standards of quality with a stated level of confidence.

Quality Control

The overall system of technical activities designed to measure quality and limit error in a product or service.

Replicate Sample

Two samples taken at different times from the same sampling point that are carried through all assessment and analytical procedures in an identical manner.

Sample

A portion of material collected for chemical analyses or measurement. As a general laboratory practice, a sample is identified by a unique sample number. If a single sample is submitted for a variety of chemical analyses, the number may apply to multiple sample containers.

Sampling Plan

The complete written documentation of an organization's sampling program.

Sampling Point

The specific location within the treatment process where material to be sampled is collected.

Sampling Program

All applicable elements, events, materials, and personnel associated with the collection of samples.

Sludge Judge

A sampling device, similar to a coliwasa, used to collect a core sample of free-flowing liquid sludge.

Standard Deviation

A measure of the range of variation among repeated measurements, used in the determination of precision.

TCLP

Toxicity Characteristic Leaching Procedure

Thief Sampler

Consisting of two slotted concentric tubes, a thief sampler is used to sample granulated or powdered sludges. The sampler is pushed into the material to be sampled, the inner tube is rotated to close the sampler, and a sample is withdrawn within the sampler.

Trier

Consisting of a stainless steel or brass tube that is cut in half (lengthwise) and having a sharpened tip to penetrate the material to be sampled, a trier is used to sample sticky (mud-like) sludge.

Trip Blank

Created by filling a clean sample bottle with deionized water in the field during sampling activities. The sample is handled in the same way as other samples taken from the field. Field blanks are submitted to the lab along with all other samples and are used to detect any contaminants that may be introduced during sample collection, fixing, storage, analysis, and transport.

Turn-Around Time

For an environmental laboratory, the elapsed time between sample receipt and the reporting of analytical results in the form of a data package.

Vectors

Insects, birds, rodents, and domestic animals that are attracted to sewage sludge as a food source and may transport sewage sludge, and pathogens from sewage sludge, to humans.

Vector Attraction Reduction

The technological or management options for treating sewage sludge to the point at which vectors are no longer attracted to sewage sludge or the placement of a barrier between the sewage sludge and the vector.