

## **Glossary of Technical Terms**

---

**Administrative Consent Order (ACO)** – An enforcement document that compels a responsible party to initiate cleanup efforts.

**Background Samples** – Samples that are collected and used to compare site conditions to the surrounding environment. Background samples are collected and handled in the same manner as all other samples.

**Biased Sample** – Samples which are collected at locations based on historical information; behavior of contaminants or; knowledge about the physical system's matrix (the physical system's effect on fate of transport).

**Blind Samples** – A quality assurance sample in which the laboratory performing the analysis is unaware of the sample's true location this sample is collected a duplicate.

**Calibration** – Process of adjusting an instrument's read out so that it corresponds to actual concentrations. It involves checking the instrument with a known concentration of a surrogate to insure that the instrument provides a proper response.

**Caliper** – A mechanical device that is used to measure the diameter of a borehole.

**Cleanup Standard** – The combination of numeric and narrative standards established pursuant to this chapter for a contaminant or group of contaminants.

**Colorimetric Tube** – Device used to estimate the concentration of a specific gas in air. A known volume of contaminant is pulled through the tube and reacts with the indicator chemical producing a colored stain whose length is proportional to the contaminant's concentration.

**Combustible Gas Indicator (CGI)** – Instrument used to determine the potential for combustion or explosion in an unknown atmosphere.

**Composite Sample** – A non-discrete sample composed of more than one specific aliquot collected at various sampling points or times.

**Contamination Reduction Zone** – Transition zone between contaminated area (exclusion zone) and clean area. The zone is where all personnel decontamination of hazardous waste is conducted.

**Department** – The New Jersey Department of Environmental Protection.

**Dielectric Constant** – The relationship between two charges, that is their distance of separation in relation to the force of attraction.

**Diffusion Sampler** – Type of sampling device which functions by the passive movement of contaminant molecules through a concentration gradient created within a stagnant layer of air between the contaminated atmosphere and the indicator material.

**Distilled Water** – Prepared by thermal distillation using a still of all-borosilicate glass, fused quartz, tin or titanium with the distillate meeting the following characteristics of Type I (Type II) water:

- Resistivity (megohm-cm @ 25°C) greater than 10 (greater than 1)
- Conductivity (umho/cm @ 25°C) less than 0.1 (equal to 1)
- Total oxidizable organic carbon (mg/L) less than 0.05 (less than 0.2)
- Total solids (mg/L) less than or equal to 0.1 (equal to 1)
- SiO<sub>2</sub> (mg/L) less than 0.05 (less than 0.1)

## Field Sampling Procedures Manual

Glossary – Page 2 of 8

**Deionized Water** – Prepared by passing feedwater through a mixed-bed ion exchanger, consisting of strong anion and strong cation resins mixed together. The resultant water shall have the same characteristics as those for distilled water noted above.

**Electrical Resistivity** – Geophysical sensing technique used to determine the structure and physical properties of subsurface geologic materials which can be used to detect anomalies which may indicate the presence of hazardous materials (e.g. drums, containers).

**Electromagnetics** – Geophysical method which induces and detects electrical current flow within geologic strata.

**Environmental Samples** – Samples of naturally occurring matrices such as soil, sediment, ground water, surface water and air.

**Exclusion Zone** – Designated zone of a hazardous waste site where contamination is known to or may occur and can only be entered with appropriate personnel protection.

**Field Blank** – A QA/QC sample used to indicate potential contamination from ambient air and sampling instruments.

**Flame Ionization Detector (FID)** – An air monitoring instrument that utilizes the principle of hydrogen flame ionization for detection and measurement of organic vapors.

**Flowmeter** – Measures the vertical movement of fluid in a borehole.

**Gas Chromatography** – Analytical technique for separating compounds of a sample and qualitatively and quantitatively identifying them.

**Geostatistics** – Statistical methodology that incorporates contaminant relationships between sample locations to derive conclusions about concentrations at locations lying between those points.

**Grab Sample** – A discrete aliquot that is representative of one specific sample site location at a specific point in time.

**Ground Water** – The portion of the water beneath the land surface that is within the zone of saturation (below the seasonally high water table) where all pore spaces of the geologic formation are filled with water.

**Handling Time** – All trip blanks, field blanks, and environmental sample containers must be received in the field within one day of preparation in the lab. They may be held on site for a maximum of two calendar days. They must then be shipped back to the lab at the end of the second calendar day. All samples and blanks must be maintained at 4°C while on site and during shipment.

**Henry's Law Constant** – Expressed as a ratio between the partial pressure of the vapor and the concentration in the liquid.

**Holding Time** – The analytical time clock for all samples and blanks measured between the time of sample collection and analytical extraction. Typically determined by matrix and specific analytical method requirements.

**Homogenization** – Process whereby a sample is mixed in a stainless steel bowl or in-situ until a consistent physical appearance is achieved. This is performed for all parameters except volatiles.

**Koc** – A coefficient that relates the partitioning of the organic compound between the adsorbed phase and the soil solution relative to the organic carbon fraction.

**Kriging** – A geostatistical technique, which interpolates concentration values for locations between sampling points.

**Laboratory Decontaminated** – The decontamination of sampling equipment and bottles in a controlled setting.

**Lower Explosive Limit (LEL)** – Minimum concentration of a combustible gas measured as a percentage of the total constituents present in the atmosphere that will combust when ignited.

**Magnetometer** – Instrument which is used to measure magnetic field strength in units of gamma.

**Matrix Spike** – A laboratory Q/A sample comprised of the same matrix of the samples being analyzed. The sample is injected with a known concentration of a specific analyte.

**Method Blank** – A laboratory Q/A blank comprised of demonstrated analyte free water that is analyzed simultaneously with the environmental sample.

**Method Detection Limit** – The minimum concentration of a contaminant that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Passive Dosimeter** – Device which utilizes the processes of diffusion and permeation to move a contaminant through a collection medium.

**Performance Evaluation Sample (PE)** – Pre-measured, pre-determined samples of known concentration that are submitted by the NJDEP as a QA/QC check on laboratory performance.

**Photo Ionization Detector (PID)** – An air monitoring instrument that utilizes the principle of photoionization for the detection and measurement of organic and inorganic vapors.

**Pollutant** – Any substance defined as such pursuant to the Water Pollution Control Act, N.J.S.A 58:10A-1 et seq.

**ppb** – Parts per billion, micrograms per liter (ug/L), or micrograms per kilogram (ug/Kg).

**ppm** – Parts per million, milligrams per liter (mg/L), or milligrams per kilogram (mg/Kg).

**Piezometer** – A cased boring used to determine the level of ground water.

**Retention Time** – Period of time from the injection of the sample into the gas chromatography system until the point of maximum detector response for each substance.

**Sample Network** – Statistical method used to describe the frequency and location of samples to be collected.

**Semivariogram** – Tool that shows the relationships between observations at sampling points based on the distance from each sample to the other samples.

**Soil** – The unconsolidated mineral and organic matter on the surface of the earth that has been subjected to and influenced by geologic and other environmental factors.

**Soil Gas** – Subsurface gas that may be generated by biological, chemical and physical decomposition of spilled, stored or illegally disposed waste.

**Soil Texture** – A measure of the percentages of various particles size groups in a volume of soil, typically sand, silt and clay.

## **Field Sampling Procedures Manual**

Glossary – Page 4 of 8

**Sorbent Samples** – Consist of air samples, which are collected utilizing special adsorbents such as activated carbon and silica gel.

**Subsurface Soil** – The soil more than two feet below grade and extending downward to the top of the seasonally high water table.

**Support Zone** – Uncontaminated area where administrative functions needed to keep site operations running smoothly are conducted.

**Surface Soil** – The top two feet of soil below grade.

**Trip Blank** – A QA/QC sample whose purpose is to place a mechanism of control on sample bottle preparation, blank water quality and sample handling.

**Upper Explosive Limit (UEL)** – Maximum concentration of a gas in percent that will combust in the atmosphere.

**Vapor Pressure** – The pressure of a confined liquid such that the vapor collects above it.

**Volatilization** – Process whereby certain compounds evaporate rapidly and easily into air at ordinary temperatures.

**Volumetric Water Content** – The ratio of the volume of water in a porous volume to the total volume.

**Waste Samples** – Samples that are comprised of process waste or other man made materials.

**Water Solubility** – The extent to which a compound dissolves in water.

**Water Table** – The seasonally high level in the saturated zone at which the hydraulic pressure is equal to atmospheric pressure.

**Well Purging** – Process in which the standing water in a well column is evacuated.

**Weir** – A device built to back up water.

## **Acronyms**

**ACO** – Administrative Consent Order

**AOC** – Area of Concern

**ARARS** – Applicable or Relevant and Appropriate Requirements

**ASTM** – American Society for Testing and Materials

**BA** – Biological Assessment

**BEERA** – Bureau of Environmental Evaluation and Risk Assessment.

**BEMSA** – Bureau of Environmental Measurements and Site Assessment

**BGWDC** – Bureau of Ground Water Discharge Control

**BHWE** – Bureau of Hazardous Waste Engineering

**BN/AE + 20** – Base Neutrals/Acid Extractables + 20

**BOD** – Biological Oxygen Demand

**BTEX** – Benzene, Toluene, Ethyl Benzene, Xylenes (also BTX)

**CC** – Calibration Compound

**CERCLA** – Comprehensive Environmental Response, Compensation, Liability Act

**CFR** – Code of Federal Regulations  
**CGA** – Combustible Gas Analyzer  
**CI** – Curie (Radiation Unit)  
**CIR** – Color Infrared  
**CLP** – Contract Laboratory Program  
**CM** – 1. Case Manager  
2. Corrective Measures  
**COC** – Chain of Custody  
**COD** – Chemical Oxygen Demand  
**COLWASA** – Composite Liquid Waste Sampler  
**CPC** – Chemical Protective Clothing  
**CRDL** – Contract Required Detection Limit  
**CWA** – Clean Water Act  
**DL** – Detection Limit  
**DNAPL** – Dense Non-Aqueous Phase Liquid  
**DOW** – Depth of Well  
**DO** – Dissolved Oxygen  
**DQO** – Data Quality Objectives  
**DRI** – Direct Reading Instruments  
**DRMR** – Division of Remediation Management and Response  
**DRS** – Division of Remediation Support  
**DSWHW** – Division of Solid Waste and Hazardous Waste  
**DTW** – Depth to Water  
**ECD** – Electron Capture Detector  
**ECRA** – Environmental Cleanup Responsibility Act  
**EIS** – Environmental Impact Statement  
**EM** – Electromagnetic (usually refers to geophysics)  
**EMS** – Environmental Measurements Section  
**EPA** – Environmental Protection Agency  
**EP** – Extraction Procedure  
**ESLI** – End of Service Life  
**FID** – Flame Ionization Detector  
**FPXRF** – Field Portable X-Ray Fluorescence (s)  
**FS** – Feasibility Study  
**FSP-QAPP** – Field Sampling Plan – Quality Assurance Project Plan  
**FSPM** – Field Sampling Procedures Manual  
**GAC** – Granular Activated Carbon  
**GC/MS** – Gas Chromatograph/Mass Spectrometer  
**GFAA** – Graphite Furnace Atomic Absorption Spectroscopy  
**GIS** – Geographic Information System  
**GPC** – Gel Permeation Chromatography  
**GPR** – Ground Penetrating Radar

## **Field Sampling Procedures Manual**

Glossary – Page 6 of 8

**HASP** – Health and Safety Plan  
**HI** – Hazard Index (for noncarcinogens)  
**HOA** – Halogenated Organic Compounds  
**HPLC** – High Pressure Liquid Chromatography  
**HSL** – Hazardous Substance List  
**HSO** – Health & Safety Officer  
**HSWA** – Hazardous and Solid Waste Amendments (to SARA)  
**HRS** – Hazard Ranking System  
**HWS** – Hazardous Waste Sites  
**ICP** – Inductively Coupled Plasma Atomic Emission Spec.  
**ID** – Infrared Detector  
**IDL** – Instrument Detection Limit  
**IDLH** – Immediate Dangers to Life and Health  
**IFB** – Invitation for Bids  
**IRIS** – Integrated Risk Information System  
**IRM** – Interim or Initial Remedial Measure  
**LC50** – Median Lethal Concentration in a Bioassay  
**LD50** – Dose Causing 50% Mortality in Bioassay  
**LDR** – Land Disposal Restrictions  
**LEL** – Lower Explosive Limit  
**MCL** – Maximum Contaminant Level (for drinking water)  
**MDL** – Method Detection Limit  
**MOA** – Memorandum of Agreement  
**MOU** – Memorandum of Understanding  
**MSDS** – Material Safety Data Sheet  
**MSHA** – Mine Safety and Health Administration  
**MSP** – Medical Surveillance Plan  
**MTBE** – Methyl Tertiary Butyl Ether  
**NAPL** – Non-Aqueous Phase Liquid  
**NBS** – National Bureau of Standards  
**NIOSH** – National Institute of Occupational Safety  
**NJAC** – New Jersey Administrative Code  
**NJDEP** – New Jersey Department of Environmental Protection  
**NJPDES** – New Jersey Pollutant Discharge Elimination System  
**NPDES** – National Pollutant Discharge Elimination System  
**NPL** – National Priorities List  
**O & M** – Operation and Maintenance  
**ORD** – Office of Research and Development (EPA – Cinn, Ohio).  
To order EPA Publications call (513) 569-7562  
**ORME** – Other Regulated Materials  
**OSC** – On-Scene Coordinator  
**OSHA** – Occupations Safety and Health Administrative

**OSWER** – Office of Solid Waste and Emergency Response  
**OVA** – Organic Vapor Analyzer  
**PA/SI** – Preliminary Assessment/Site Inspection  
**PAH** – Polycyclic (Polynuclear) Aromatic Hydrocarbon  
**PCBs** – Polychlorinated Biphenyls  
**PCI** – Picocurie (equiv. 10-12 Curie Radiation)  
**PE** – Performance Evaluation sample  
**PEL** – Permissible Exposure Limit  
**PF** – Protection Factor  
**PHC** – Petroleum Hydrocarbons (see TPH)  
**PID** – Photoionization Detector  
**PP + 40** – Priority Pollutant List + 40 Tentatively Ident. Compounds  
**PPB** – Parts Per Billion  
**PPE** – Personal Protective Clothing and Equipment  
**PPL** – Priority Pollutant List (see PP + 40)  
**PPM** – Parts Per Million  
**PSI** – Pounds Per Square Inch  
**PTFE** – Polyetrafluoroethylene (e.g. Teflon)  
**PVC** – Polyvinyl Chloride  
**QA/QC** – Quality Assurance/Quality Control  
**QAPP** – Quality Assurance Project Plan (also QAPjP)  
**QAPMP** – Quality Assurance Management Plan  
**RCRA** – Resource Conservation Recovery Act  
**RD** – Remedial Design  
**REL** – Recommended Exposure Limit  
**RFA** – RCRA Facility Assessment  
**RFI** – RCRA Facility Investigation  
**RFP** – Request for Proposals  
**RI/FS** – Remedial Investigation/Feasibility Study  
**ROD** – Record of Decision  
**RP** – Responsible Party  
**RSD** – Relative Standard Deviation  
**RTK** – Right to Know  
**SAP** – Sampling and Analysis Plan  
**SAS** – Special Analytical Services  
**SAR** – Supplied Air Respirator  
**SARA** – Superfund Amendments and Reauthorization Act  
**SCBA** – Self Contained Breathing Apparatus  
**SCS** – Soil Conservation Service  
**SDWA** – Safe Drinking Water Act  
**SOP** – Standard Operating Procedure  
**SOW** – Scope of Work or Statement of Work

## **Field Sampling Procedures Manual**

Glossary – Page 8 of 8

**SP** – Self Potential Devices

**STEL** – Short Term Exposure Limit

**SVE** – Soil Vacuum (Vapor) Extractions

**SVOC** – Semivolatile Organic Compounds (same as BN/AE)

**SWDA** – Solid Waste Disposal Act

**SWMU** – Solid Waste Management Unit (RCRA)

**TAL** – Target Analyte List (Inorganics)

**TBA** – Tertiary (Tert) Butyl Alcohol

**TBC** – To be Considered (Refers to ARARs)

**TC** – 1. Technical Coordinator  
2. Toxicity Characteristic

**TCDD** – Tetrachlorodibenzo-p-dioxin, usually 2,3,7,8-TCDD

**TCDF** – Tetrachlorodibenzo furan

**TCE** – Trichloroethylene, syn. – Trichloroethene

**TCL** – Target Compound List (TCL + 30)

**TCLP** – Toxicity Characteristic Leaching Procedure

**TEGD** – Technical Enforcement Guidance Document (EPA, 1986)

**TIC** – 1. Tentatively Identified Compound from Mass Spec. Library Search, Syn. – Non-Target Compounds  
2. Total Ion Chromatogram

**TIP** – Total Ionization Present

**TLV** – Threshold Limit Value

**TOC** – Total Organic Carbon

**TOSCA** – Toxic Substance Control Act

**TOX** – Total Organic Halogen Analysis

**TPH** – Total Petroleum Hydrocarbons (see PHC)

**TWA** – Time Weighted Average

**UEL** – Upper Explosive Limit

**UGST** – Underground Storage Tank (also UST)

**USACE** – U.S. Army Corps of Engineers (also COE)

**USATHAMA** – U.S. Army Toxic and Hazardous Materials Agency

**USEPA** – United States Environmental Protection Agency

**USGS** – Underground Storage Tank (also UST)

**VO** – Volatile Organics (VOC, VOA, VO + 10)

**VOA + 10** – Volatile Organics + 10

**VOC** – Volatile Organic Compounds

**VOST** – Volatile Organic Sampling Train (Air Sampling)

**VSP** – Vertical Seismic Profiling

**WP** – Work Plan

**XRF** – X-Ray Fluorescence, Syn. (**FPXRF**) – Field Portable XRF