Glossary of Terms

This glossary includes a collection of the terms used in this manual and an explanation of each term. To the extent that **definitions and explanations provided** in this glossary differ from those in EPA regulations or other official documents, they are intended for use in understanding this manual only.

- **401(a) Certification**—A requirement of Section 401(a) of the Clean Water Act that all federally issued permits be certified by the State in which the discharge occurs. The State certifies that the proposed permit will comply with State water quality standards and other State requirements.
- Acute—A stimulus severe enough to rapidly induce an effect; in aquatic
 toxicity tests, an effect observed in 96 hours or less is typically considered
 acute. When referring to aquatic toxicology or human health, an acute
 effect is not always measured in terms of lethality.
- Anti-backsliding—A provision in the Federal Regulations [CWA §303(d)(4);
 CWA §402(c); CFR §122.44(l)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.
- Antidegradation—Policies which ensure protection of water quality for a
 particular water body where the water quality exceeds levels necessary to
 protect fish and wildlife propagation and recreation on and in the water.
 This also includes special protection of waters designated as outstanding
 natural resource waters. Antidegradation plans are adopted by each State
 to minimize adverse effects on water.
- Authorized Program or Authorized State—A State, Territorial, Tribal, or interstate NPDES program which has been approved or authorized by EPA under 40 CFR Part 123.
- Average Monthly Discharge Limitations—The highest allowable average
 of daily discharges over a calendar month, calculated as the sum of all daily
 discharges measured during that month divided by the number of days on
 which monitoring was performed (except in the case of fecal coliform).
- Average Weekly Discharge Limitation—The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

- Best Available Technology Economically Achievable (BAT)—
 Technology-based standard established by the Clean Water Act (CWA) as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.
- Best Conventional Pollutant Control Technology (BCT)—Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, oil and grease. The BCT is established in light of a two-part "cost reasonableness" test which compares the cost for an industry to reduce its pollutant discharge with the cost to a POTW for similar levels of reduction of a pollutant loading. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find limits which are reasonable under both tests before establishing them as BCT.
- Best Management Practice (BMP)—Permit condition used in place of or in conjunction with effluent limitations to prevent or control the discharge of pollutants. May include schedule of activities, prohibition of practices, maintenance procedure, or other management practice. BMPs may include, but are not limited to, treatment requirements, operating procedures, or practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage.
- Best Practicable Control Technology Currently Available (BPT)—The
 first level of technology-based standards established by the CWA to control
 pollutants discharged to waters of the U.S. BPT effluent limitations
 guidelines are generally based on the average of the best existing
 performance by plants within an industrial category or subcategory.
- Best Professional Judgment (BPJ)—The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.
- Bioassay—A test used to evaluate the relative potency of a chemical or a
 mixture of chemicals by comparing its effect on a living organism with the
 effect of a standard preparation on the same type of organism.
- Biochemical Oxygen Demand (BOD)—A measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

- **Bypass**—The intentional diversion of wastestreams from any portion of a treatment (or pretreatment) facility.
- Categorical Industrial User (CIU)—An industrial user subject to National categorical pretreatment standards.
- Categorical Pretreatment Standards—Limitations on pollutant discharges to publicly owned treatment works promulgated by EPA in accordance with Section 307 of the Clean Water Act that apply to specified process wastewaters of particular industrial categories [40 CFR §403.6 and Parts 405-471].
- Chemical Oxygen Demand (COD)—A measure of the oxygen-consuming capacity of inorganic and organic matter present in wastewater. COD is expressed as the amount of oxygen consumed in mg/l. Results do not necessarily correlate to the biochemical oxygen demand (BOD) because the chemical oxidant may react with substances that bacteria do not stabilize.
- Chronic—A stimulus that lingers or continues for a relatively long period of time, often one-tenth of the life span or more. Chronic should be considered a relative term depending on the life span of an organism. The measurement of a chronic effect can be reduced growth, reduced reproduction, etc., in addition to lethality.
- Clean Water Act (CWA)—The Clean Water Act is an act passed by the U.S. Congress to control water pollution. It was formerly referred to as the Federal Water Pollution Control Act of 1972 or Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500), 33 U.S.C. 1251 et. seq., as amended by: Public Law 96-483; Public Law 97-117; Public Laws 95-217, 97-117, 97-440, and 100-04.
- Code of Federal Regulations (CFR)—A codification of the final rules published daily in the *Federal Register*. Title 40 of the CFR contains the environmental regulations.
- Combined Sewer Overflow (CSO)—A discharge of untreated wastewater from a combined sewer system at a point prior to the headworks of a publicly owned treatment works. CSOs generally occur during wet weather (rainfall or snowmelt). During periods of wet weather, these systems become overloaded, bypass treatment works, and discharge directly to receiving waters.

- Combined Sewer System (CSS)—A wastewater collection system which conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and storm water through a single pipe to a publicly owned treatment works for treatment prior to discharge to surface waters.
- Compliance Schedule—A schedule of remedial measures included in a permit or an enforcement order, including a sequence of interim requirements (for example, actions, operations, or milestone events) that lead to compliance with the CWA and regulations.
- Composite Sample—Sample composed of two or more discrete samples.
 The aggregate sample will reflect the average water quality covering the compositing or sample period.
- Conventional Pollutants—Pollutants typical of municipal sewage, and for which municipal secondary treatment plants are typically designed; defined by Federal Regulation [40 CFR §401.16] as BOD, TSS, fecal coliform bacteria, oil and grease, and pH.
- Criteria—The numeric values and the narrative standards that represent contaminant concentrations that are not to be exceeded in the receiving environmental media (surface water, ground water, sediment) to protect beneficial uses.
- Daily Discharge—The discharge of a pollutant measured during any 24-hour period that reasonably represents a calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged during the day. For pollutants with limitations expressed in other units of measurement (e.g., concentration) the daily discharge is calculated as the average measurement of the pollutant throughout the day (40 CFR §122.2).
- Daily Maximum Limit—The maximum allowable discharge of pollutant during a calendar day. Where daily maximum limitations are expressed in units of mass, the daily discharge is the total mass discharged over the course of the day. Where daily maximum limitations are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.
- Development Document—A report prepared during the development of an effluent limitation guideline by EPA that provides the data and methodology used to develop limitations guidelines and categorical pretreatment standards for an industrial category.

- Director—The Regional Administrator or State Director, as the context requires, or an authorized representative. When there is no approved State program, and there is an EPA administered program, Director means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director.
- Discharge Monitoring Report (DMR)—The form used (including any subsequent additions, revisions, or modifications) to report self-monitoring results by NPDES permittees. DMRs must be used by approved States as well as by EPA.
- Draft Permit—A document prepared under 40 CFR §124.6 indicating the Director's tentative decision to issue, deny, modify, revoke and reissue, terminate, or reissue a permit. A notice of intent to terminate a permit, and a notice of intent to deny a permit application, as discussed in 40 CFR §124.5, are considered draft permits. A denial of a request for modification, revocation and reissuance, or termination, as discussed in 40 CFR §124.5, is not a draft permit.
- **Effluent Limitation**—Any restriction imposed by the Director on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the United States, the waters of the contiguous zone, or the ocean.
- Effluent Limitations Guidelines (ELG)—A regulation published by the Administrator under Section 304(b) of CWA that establishes national technology-based effluent requirements for a specific industrial category.
- Fact Sheet— A document that must be prepared for all draft individual permits for NPDES major dischargers, NPDES general permits, NPDES permits that contain variances, NPDES permits that contain sewage sludge land application plans and several other classes of permittees. The document summarizes the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit and tells how the public may comment (40 CFR §124.8 and §124.56). Where a fact sheet is not required, a statement of basis must be prepared (40 CFR §124.7).
- Fundamentally Different Factors (FDF)—Those components of a petitioner's facility that are determined to be so unlike those components considered by EPA during the effluent limitation guideline and pretreatment standards rulemaking that the facility is worthy of a variance from the effluent limitations guidelines or categorical pretreatment standards.
- General Permit—An NPDES permit issued under 40 CFR §122.28 that authorizes a category of discharges under the CWA within a geographical

- area. A general permit is not specifically tailored for an individual discharger.
- Grab Sample—A sample which is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.
- Hazardous Substance—Any substance, other than oil, which, when
 discharged in any quantities into waters of the U.S., presents an imminent
 and substantial danger to the public health or welfare, including but not
 limited to fish, shellfish, wildlife, shorelines and beaches (Section 311 of the
 CWA); identified by EPA as the pollutants listed under 40 CFR Part 116.
- **Indirect Discharge**—The introduction of pollutants into a municipal sewage treatment system from any nondomestic source (i.e., any industrial or commercial facility) regulated under Section 307(b), (c), or (d) of the CWA.
- Instantaneous Maximum Limit—The maximum allowable concentration of a pollutant determined from the analysis of <u>any</u> discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.
- Local Limits—Conditional discharge limits imposed by municipalities upon industrial or commercial facilities that discharge to the municipal sewage treatment system.
- Major Facility—Any NPDES facility or activity classified as such by the Regional Administrator, or in the case of approved State programs, the Regional Administrator in conjunction with the State Director. Major municipal dischargers include all facilities with design flows of greater than one million gallons per day and facilities with EPA/State approved industrial pretreatment programs. Major industrial facilities are determined based on specific ratings criteria developed by EPA/State.
- Mass-Based Standard—A discharge limit that is measured in a mass unit such as pounds per day.
- Method Detection Limit (MDL)-Defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.
- Million Gallons per Day (mgd)—A unit of flow commonly used for wastewater discharges. One mgd is equivalent to 1.547 cubic feet per second.

- Mixing Zone—An area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.
- Municipal Separate Storm Sewer System (MS4)—A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, town or other public body, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a publicly owned treatment works.
 Commonly referred to as an "MS4" [40 CFR §122.26(b)(8)].
- National Pollutant Discharge Elimination System (NPDES)—The
 national program for issuing, modifying, revoking and reissuing, terminating,
 monitoring and enforcing permits, and imposing and enforcing pretreatment
 requirements, under Sections 307, 318, 402, and 405 of CWA.
- National Pretreatment Standard or Pretreatment Standard—Any
 regulation promulgated by the EPA in accordance with Sections 307(b) and
 (c) of the CWA that applies to a specific category of industrial users and
 provides limitations on the introduction of pollutants into publicly owned
 treatment works. This term includes the prohibited discharge standards
 under 40 CFR §403.5, including local limits [40 CFR §403.3(j)].
- **New Discharger**—Any building, structure, facility, or installation:
 - a. From which there is or may be a discharge of pollutants;
 - b. That did not commence the discharge of pollutants at that particular site prior to August 13, 1979;
 - c. Which is not a new source; and
 - d. Which has never received a finally effective NPDES permit for discharges at that site.
- New Source—Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:
 - a. After promulgation of standards of performance under Section 306 of the CWA which are applicable to such source; or

- b. After proposal of standards of performance in accordance with Section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 of the CWA within 120 days of their proposal.
- Except as otherwise provided in an applicable new source performance standard, a source is a new source if it meets the definition in 40 CFR §122.2; and
 - i. It is constructed at a site at which no other source is located; or
 - ii. It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
 - iii. Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.
- New Source Performance Standards (NSPS)—Technology-based standards for facilities that qualify as new sources under 40 CFR §122.2 and 40 CFR §122.29. Standards consider that the new source facility has an opportunity to design operations to more effectively control pollutant discharges.
- Nonconventional Pollutants—All pollutants that are not included in the list
 of conventional or toxic pollutants in 40 CFR Part 401. Includes pollutants
 such as chemical oxygen demand (COD), total organic carbon (TOC),
 nitrogen, and phosphorus.
- pH—A measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration in mg/l. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.
- Point Source—Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fixture, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.

- Pollutant—Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.
- Pollutant, Conservative—Pollutants that do not readily degrade in the environment, and which are mitigated primarily by natural stream dilution after entering receiving bodies of waters. Included are pollutants such as metals.
- Pollutant, Non-Conservative—Pollutants that are mitigated by natural biodegradation or other environmental decay or removal processes in the receiving stream after in-stream mixing and dilution have occurred.
- Practical Quantification Limit (PQL)—The lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
- **Pretreatment**—The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a publicly owned treatment works [40 CFR §403.3(q)].
- Primary Industry Categories—Any industry category listed in the Natural Resources Defense Council (NRDC) settlement agreement [(NRDC et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D.D.C. 1979)] for which EPA has or will develop effluent guidelines; also listed in Appendix A of 40 CFR Part 122.
- **Primary Treatment**—The practice of removing some portion of the suspended solids and organic matter in a wastewater through sedimentation. Common usage of this term also includes preliminary treatment to remove wastewater constituents that may cause maintenance or operational problems in the system (i.e., grit removal, screening for rags and debris, oil and grease removal, etc.).
- Priority Pollutants—Those pollutants considered to be of principal importance for control under the CWA based on the NRDC consent decree settlement [(NRDC et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D.D.C. 1979)]; a list of these pollutants is provided as Appendix A to 40 CFR Part 423.

- Process Wastewater—Any water which, during manufacturing or processing, comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
- Production-Based Standard—A discharge standard expressed in terms of pollutant mass allowed in a discharge per unit of product manufactured.
- Proposed Permit—A State NPDES permit prepared after the close of the public comment period (and when applicable, any public hearing and administrative appeals) which is sent to EPA for review before final issuance by the State.
- Publicly Owned Treatment Works (POTW)—A treatment works, as
 defined by Section 212 of the CWA, that is owned by the State or
 municipality. This definition includes any devices and systems used in the
 storage, treatment, recycling, and reclamation of municipal sewage or
 industrial wastes of a liquid nature. It also includes sewers, pipes, and
 other conveyances only if they convey wastewater to a POTW treatment
 plant [40 CFR §403.3].
- Sanitary Sewer—A pipe or conduit (sewer) intended to carry wastewater or water-borne wastes from homes, businesses, and industries to the POTW.
- Sanitary Sewer Overflows (SSO)—Untreated or partially treated sewage overflows from a sanitary sewer collection system.
- **Secondary Industry Category**—Any industry category which is not a primary industry category.
- Secondary Treatment—Technology-based requirements for direct discharging municipal sewage treatment facilities. Standard is based on a combination of physical and biological processes typical for the treatment of pollutants in municipal sewage. Standards are expressed as a minimum level of effluent quality in terms of: BOD₅, suspended solids (SS), and pH (except as provided for special considerations and treatment equivalent to secondary treatment).
- Self-Monitoring—Sampling and analyses performed by a facility to determine compliance with a permit or other regulatory requirements.
- Spill Prevention Control and Countermeasure Plan (SPCC)—A plan prepared by a facility to minimize the likelihood of a spill and to expedite control and cleanup activities should a spill occur.

- Significant Industrial User (SIU)—An indirect discharger that is the focus
 of control efforts under the national pretreatment program; includes all
 indirect dischargers subject to national categorical pretreatment standards,
 and all other indirect dischargers that contribute 25,000 gpd or more of
 process wastewater, or which make up five percent or more of the hydraulic
 or organic loading to the municipal treatment plant, subject to certain
 exceptions [40 CFR §403.3(t)].
- Standard Industrial Classification (SIC) Code—A code number system used to identify various types of industries. The code numbers are published by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. A particular industry may have more than one SIC code if it conducts several types of commercial or manufacturing activities onsite.
- Statement of Basis—A document prepared for every draft NPDES permit for which a fact sheet is not required. A statement of basis briefly describes how permit conditions were derived and the reasons the conditions are necessary for the permit [40 CFR §124.7].
- STORET—EPA's computerized <u>STO</u>rage and <u>RET</u>rieval water quality data base that includes physical, chemical, and biological data measured in waterbodies throughout the United States.
- Storm Water—Storm water runoff, snow melt runoff, and surface runoff and drainage [40 CFR §122.26(b)(13)].
- **Technology-Based Effluent Limit**—A permit limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration.
- **Tiered Permit Limits**—Permit limits that only apply to the discharge when a certain threshold (e.g., production level), specific circumstance (e.g., batch discharge), or timeframe (e.g., after 6 months) triggers their use.
- Tiered Testing—Any of a series of tests that are conducted as a result of a previous test's findings.
- Total Maximum Daily Load (TMDL)—The amount of pollutant, or property
 of a pollutant, from point, nonpoint, and natural background sources, that
 may be discharged to a water quality-limited receiving water. Any pollutant
 loading above the TMDL results in violation of applicable water quality
 standards.
- Total Organic Carbon (TOC)—Measures the amount of organic carbon in water.

- Total Suspended Solids (TSS)—A measure of the filterable solids present in a sample, as determined by the method specified in 40 CFR Part 136.
- Toxic Pollutant—Pollutants or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring. Toxic pollutants also include those pollutants listed by the Administrator under CWA Section 307(a)(1) or any pollutant listed under Section 405(d) which relates to sludge management.
- Toxicity Reduction Evaluation (TRE)—A site-specific study conducted in a stepwise process designed to identify the causative agent(s) of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.
- Toxicity Test—A procedure to determine the toxicity of a chemical or an
 effluent using living organisms. A toxicity test measures the degree of
 effect on exposed test organisms of a specific chemical or effluent.
- Treatability Manual—Five-set library of EPA guidance manuals that contain information related to the treatability of many pollutants. This manual can be used in developing NPDES permit limitations for facilities and/or pollutants which, at the time of permit issuance, are not subject to industry-specific effluent guidelines. The five volumes that comprise this series include: Vol. I Treatability Data (EPA-600/8-80-042a); Vol. II Industrial Descriptions (EPA-600/8-80-042b); Vol. III Technologies (EPA-600/8-80-042c); Vol. IV Cost Estimating (EPA-600/8-80-042d); Vol. V Summary (EPA-600/8-80-042e).
- **TSD**—Abbreviation for the *Technical Support Document Water Quality-based Toxics Control* (EPA-505/2-90-001), EPA Office of Water Enforcement and Permits, 1991. It contains procedures for water quality-based limitation development.
- TWTDS—Abbreviation for Treatment Works Treating Domestic Sewage.
 Includes all POTWs and other facilities that treat domestic wastewater, and facilities that do not treat domestic wastewater, but that treat or dispose of sewage sludge.
- Upset—An exceptional incident in which there is unintentional and temporary noncompliance with the permit limit because of factors beyond

the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- Variance—Any mechanism or provision under Sections 301 or 316 of the CWA or under 40 CFR Part 125, or in the applicable "effluent limitations guidelines" which allows modification to or waiver of the generally applicable effluent limitations requirements or time deadlines of the CWA. This includes provisions which allow the establishment of alternative limitations based on fundamentally different factors.
- Wastesload Allocation (WLA)—The proportion of a receiving water's total maximum daily load that is allocated to one of its existing or future point sources of pollution.
- Water Quality-Based Effluent Limit (WQBEL)—A value determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, and wildlife) for a specific point source to a specific receiving water for a given pollutant.
- Water Quality Criteria—Comprised of numeric and narrative criteria.
 Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal.
- Water Quality Standard (WQS)—A law or regulation that consists of the beneficial use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement.
- Waters of the United States—All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Waters of the United States include but are not limited to all interstate waters and intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, play lakes, or natural ponds. [See 40 CFR §122.2 for the complete definition.]
- Whole Effluent Toxicity (WET)—The total toxic effect of an effluent measured directly with a toxicity test.