# *Definitions of Environmental Terms*

The definitions of environmental terms used in this appendix are reprinted from a list compiled by the Environmental Protection Agency. Occasionally new terms are added to this list by the EPA. The current list can be found on the Internet at http://www.epa.gov/OCEPAterms/

**A-Scale Sound Level:** A measurement of sound approximating the sensitivity of the human ear, used to note the intensity or annoyance level of sounds.

**Abandoned Well:** A well whose use has been permanently discontinued or which is in a state of such disrepair that it cannot be used for its intended purpose.

**Abatement:** Reducing the degree or intensity of, or eliminating, pollution.

**Absorbed Dose:** The amount of a chemical that enters the body of an exposed organism.

**Absorption:** The uptake of water or dissolved chemicals by a cell or an organism (as tree roots absorb dissolved nutrients in soil.)

**Accident Site:** The location of an unexpected occurrence, failure or loss, either at a plant or along a transportation route, resulting in a release of hazardous materials.

**Acclimatization:** The physiological and behavioral adjustments of an organism to changes in its environment.

**Acid Deposition:** A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds and other substances are transformed by chemical processes in the atmosphere, often far from the original sources, and then deposited on earth in either wet or dry form. The wet forms, popularly called "acid rain," can fall as rain, snow, or fog. The dry forms are acidic gases or particulates.

**Acid Mine Drainage:** of water from areas that have been mined for coal of other mineral ores. The water has a low pH because of its contact with sulfur-bearing material and is harmful to aquatic organisms.

**Acid Neutralizing Capacity:** Measure of ability of water or soil to resist changes in pH.

**Acid Rain:** (See: acid deposition)

**Acidic:** The condition of water or soil that contains a sufficient amount of acid substances to lower the pH below 7.0

**Action Levels:** 1. Regulatory levels recommended by EPA for enforcement by FDA and USDA when pesticide residues occur in food or feed commodities for reasons other than the direct application of the pesticide. As opposed to "tolerances" which are established for residues occurring as a direct result of proper usage, action levels are set for inadvertent residues resulting from previous legal use or accidental contamination. 2. In the Superfund program, the existence of a contaminant concentration in the environment high enough to warrant action or trigger a response under SARA and the National Oil and Hazardous Substances Contingency Plan. The term is also used in other regulatory programs. (See: tolerances.)

**Activated Carbon:** A highly adsorbent form of carbon used to remove odors and toxic substances from liquid or gaseous emissions. In waste treatment it is used to remove dissolved organic matter from waste water. It is also used in motor vehicle evaporative control systems.

**Activated Sludge:** Product that results when primary effluent is mixed with bacteria-laden sludge and then agitated and aerated to promote biological treatment, speeding the breakdown of organic matter in raw sewage undergoing secondary waste treatment.

**Activator:** A chemical added to a pesticide to increase its activity.

**Active Ingredient:** In any pesticide product, the component that kills, or otherwise controls, target pests. Pesticides are regulated primarily on the basis of active ingredients.

# Definitions of Environmental Terms

**Activity Plans:** Written procedures in a school's asbestos-management plan that detail the steps a Local Education Agency (LEA) will follow in performing the initial and additional cleaning, operation and maintenance program tasks; periodic surveillance; and reinspections required by the Asbestos Hazard Emergency Response Act (AHERA).

**Acute Exposure:** A single exposure to a toxic substance which results in severe biological harm or death. Acute exposures are usually characterized as lasting no longer than a day, as compared to longer, continuing exposure over a period of time.

**Acute Toxicity:** The ability of a substance to cause poisonous effects resulting in severe biological harm or death soon after a single exposure or dose. Also, any severe poisonous effect resulting from a single short-term exposure to a toxic substance. (See: chronic toxicity, toxicity.)

**Adaptation:** Changes in an organism's structure or habits that help it adjust to its surroundings.

**Add-on Control Device:** An air pollution control device such as carbon absorber or incinerator that reduces the pollution in an exhaust gas. The control device usually does not affect the process being controlled and thus is "add-on" technology, as opposed to a scheme to control pollution through altering the basic process itself.

**Adequately Wet:** Asbestos containing material that is sufficiently mixed or penetrated with liquid to prevent the release of particulates.

**Administrative Order On Consent:** A legal agreement signed by EPA and an individual, business, or other entity through which the violator agrees to pay for correction of violations, take the required corrective or cleanup actions, or refrain from an activity. It describes the actions to be taken, may be subject to a comment period, applies to civil actions, and can be enforced in court.

**Administrative Order:** A legal document signed by EPA directing an individual, business, or other entity to take corrective action or refrain from an activity. It describes the violations and actions to be taken, and can be enforced in court. Such orders may be issued, for example, as a result of an administrative complaint whereby the respondent is ordered to pay a penalty for violations of a statute.

**Administrative Procedures Act:** A law that spells out procedures and requirements related to the promulgation of regulations. Administrative Record: All documents which EPA considered or relied on in selecting the response action at a Superfund site, culminating in the record of decision for remedial action or, an action memorandum for removal actions.

**Adsorption:** An advanced method of treating waste in which activated carbon removes organic matter from wastewater.

**Adulterants:** Chemical impurities or substances that by law do not belong in a food, or pesticide.

**Adulterated:** 1. Any pesticide whose strength or purity falls below the quality stated on its label. 2. A food, feed, or product that contains illegal pesticide residues.

**Advanced Treatment:** A level of wastewater treatment more stringent than secondary treatment; requires an 85-percent reduction in conventional pollutant concentration or a significant reduction in nonconventional pollutants.

**Advanced Wastewater Treatment:** Any treatment of sewage that goes beyond the secondary or biological water treatment stage and includes the removal of nutrients such as phosphorus and nitrogen and a high percentage of suspended solids. (See primary, secondary treatment.)

**Advisory:** A non-regulatory document that communicates risk information to those who may have to make risk management decisions.

**Aerated Lagoon:** A holding and/or treatment pond that speeds up the natural process of biological decomposition of organic waste by stimulating the growth and activity of bacteria that degrade organic waste.

# *Definitions of Environmental Terms*

**Aeration:** A process which promotes biological degradation of organic matter in water. The process may be passive (as when waste is exposed to air), or active (as when a mixing or bubbling device introduces the air).

**Aeration Tank:** A chamber used to inject air into water.

**Aerobic Treatment:** Process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth. (Such processes include extended aeration, trickling filtration, and rotating biological contactors.)

**Aerobic:** Life or processes that require, or are not destroyed by, the presence of oxygen. (See: anaerobic.)

**Aerosol:** A suspension of liquid or solid particles in a gas.

**Affected Public:** The people who live and/or work near a hazardous waste site.

**Afterburner:** In incinerator technology, a burner located so that the combustion gases are made to pass through its flame in order to remove smoke and odors. It may be attached to or be separated from the incinerator proper.

**Age Tank:** A tank used to store a chemical solution of known concentration for feed to a chemical feeder. Also called a day tank.

**Agent Orange:** A toxic herbicide and defoliant used in the Vietnam conflict, containing 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and 2-4 dichlorophenoxyacetic acid (2,4-D) with trace amounts of dioxin.

**Agricultural Pollution:** Farming wastes, including runoff and leaching of pesticides and fertilizers; erosion and dust from plowing; improper disposal of animal manure and carcasses; crop residues, and debris.

**Agro-ecosystem:** Land used for crops, pasture, and livestock; the adjacent uncultivated land that supports other vegetation and wildlife; and the associated atmosphere, the underlying soils, groundwater, and drainage networks.

**AHERA Designated Person (ADP):** A person designated by a Local Education Agency to ensure that the AHERA requirements for asbestos management and abatement are properly implemented.

**Air Binding:** Situation where air enters the filter media and harms both the filtration and backwash processes.

**Air Changes Per Hour (ACH):** The movement of a volume of air in a given period of time; if a house has one air change per hour, it means that all of the air in the house will be replaced in a one-hour period.

**Air Contaminant:** Any particulate matter, gas, or combination thereof, other than water vapor. (See: air pollutant.)

**Air Curtain:** A method of containing oil spills. Air bubbling through a perforated pipe causes an upward water flow that slows the spread of oil. It can also be used to stop fish from entering polluted water.

**Air Gap:** Open vertical gap or empty space that separates drinking water supply to be protected from another water system in a treatment plant or other location. The open gap protects the drinking water from contamination by backflow or backsiphonage.

**Air Mass:** A large volume of air with certain meteorological or polluted characteristics-e,g, a heat inversion or smogginess-while in one location. The characteristics can change as the air mass moves away.

**Air Monitoring:** (See: monitoring)

**Air Padding:** Pumping dry air into a container to assist with the withdrawal of liquid or to force a liquified gas such as chlorine out of the container.

**Air Plenum:** Any space used to convey air in a building, furnace, or structure. The space above a suspended ceiling is often used as an air plenum.

# Definitions of Environmental Terms

**Air Pollutant:** Any substance in air that could, in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combination thereof. Generally, they fall into two main groups: (1) those emitted directly from identifiable sources and (2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog, and dust, which are of natural origin, about 100 contaminants have been identified and fall into the following categories: solids, sulfur compounds, volatile organic chemicals, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors.

**Air Pollution Episode:** A period of abnormally high concentration of air pollutants, often due to low winds and temperature inversion, that can cause illness and death. (See: episode, pollution.)

**Air Pollution Control Device:** Mechanism or equipment that cleans emissions generated by an incinerator by removing pollutants that would otherwise be released to the atmosphere.

**Air Pollution:** The presence of contaminant or pollutant substances in the air that do not disperse properly and interfere with human health or welfare, or produce other harmful environmental effects.

**Air Quality Control Region:** Federally designated area that is required to meet and maintain federal ambient air quality standards. May include nearby locations in the same state or nearby states that share common air pollution problems.

**Air Quality Criteria:** The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

**Air Quality Standards:** The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

**Air Stripping:** A treatment system that removes volatile organic compounds (VOCs) from contaminated ground water or surface water by forcing an airstream through the water and causing the compounds to evaporate.

**Air Toxics:** Any air pollutant for which a national ambient air quality standard (NAAQS) does not exist (i.e., excluding ozone, carbon monoxide, PM- 10, sulfur dioxide, nitrogen oxide) that may reasonably be anticipated to cause cancer, developmental effects, reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans.

**Airborne Particulates:** Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and time of year. Airborne particulates include: windblown dust, emissions from industrial processes, smoke from the burning of wood and coal, and motor vehicle or non-road engine exhausts. Exhaust of motor vehicles.

**Airborne Release:** Release of any chemical into the air.

**Alachlor:** A herbicide, marketed under the trade name Lasso, used mainly to control weeds in corn and soybean fields.

**Alar:** Trade name for daminozide, a pesticide that makes apples redder, firmer, and less likely to drop off trees before growers are ready to pick them. It is also used to a lesser extent on peanuts, tart cherries, concord grapes, and other fruits.

**Aldicarb:** An insecticide sold under the trade name Temik. It is made from ethyl isocyanate.

**Algae:** Simple rootless plants that grow in sunlit waters in proportion to the amount of available nutrients. They can affect water quality adversely by lowering the dissolved oxygen in the water. They are food for fish and small aquatic animals.

**Algal Blooms:** Sudden spurts of algal growth, which can affect water quality adversely and indicate potentially hazardous changes in local water chemistry.

**Algicide:** Substance or chemical used specifically to kill or control algae.

**Alkaline:** The condition of water or soil which contains a sufficient amount of alkali substance to raise the pH above 7.0.

**Alkalinity:** The capacity of water to neutralize acids.

**Alluvial:** Relating to mud and/or sand deposited by flowing water.

**Alternate Method:** Any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but that has been demonstrated in specific cases-to EPA's satisfaction-to produce results adequate for compliance monitoring.

**Alternative Fuels:** Substitutes for traditional liquid, oil-derived motor vehicle fuels like gasoline and diesel. Includes methanol, ethanol, compressed natural gas, and others.

**Alternative Remedial Contract Strategy Contractors:** Government contractors who provide project management and technical services to support remedial response activities at National Priorities List sites.

**Alternative Technology:** Approach that aims to use resources efficiently or to substitute resources in order to do minimum damage to the environment. This approach permits a large degree of personal user control over the technology.

**Ambient Air:** Any unconfined portion of the atmosphere: open air, surrounding air.

**Ambient Air Quality Standards:** (See: Criteria Pollutants and National Ambient Air Quality Standards.)

**Ambient Temperature:** Temperature of the surrounding air or other medium.

**Amperometric Titration:** A way of measuring concentrations of certain substances in water using an electric current that flows during a chemical reaction.

**Anaerobic:** A life or process that occurs in, or is not destroyed by, the absence of oxygen.

**Anaerobic Decomposition:** Reduction of the net energy level and change in chemical composition of organic matter caused by microorganisms in an oxygenfree environment.

**Animal Studies:** Investigations using animals as surrogates for humans with the expectation that the results are pertinent to humans.

**Antagonism:** Interference or inhibition of the effect of one chemical by the action of another.

**Antarctic "Ozone Hole":** Refers to the seasonal depletion of ozone in a large area over Antarctica.

**Anti-Degradation Clause:** Part of federal air quality and water quality requirements prohibiting deterioration where pollution levels are above the legal limit.

**Applicable or Appropriate Requirements (ARARs):** Any state or federal statute that pertains to protection of human life and the environment in addressing specific conditions or use of a particular cleanup technology at a Superfund site,

**Aqueous:** Something made up of, similar to, or containing water; watery.

**Aquifer:** An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

**Architectural Coatings:** Coverings such as paint and roof tar that are used on exteriors of buildings.

**Area of Review:** In the UIC program, the area surrounding an injection well that is reviewed during the permitting process to determine if flow between aquifers will be induced by the injection operation.

**Area Source:** Any small source of non-natural air pollution that is released over a relatively small area but which cannot be classified as a point source. Such sources may include vehicles and other small engines, small businesses and household activities.

**Aromatic:** A type of hydrocarbon, such as benzene or toluene, added to gasoline in order to increase octane. Some aromatics are toxic.

# Definitions of Environmental Terms

**Arsenicals:** Pesticides containing arsenic.

**Artesian (Aquifer or well):** Water held under pressure in porous rock or soil confined by impermeable geologic formations.

**Asbestos:** A mineral fiber that can pollute air or water and cause cancer or asbestosis when inhaled. EPA has banned or severely restricted its use in manufacturing and construction.

**Asbestos Abatement:** Procedures to control fiber release from asbestos-containing materials in a building or to remove them entirely, including removal, encapsulation, repair, enclosure, encasement, and operations and maintenance programs.

**Asbestos-Containing Waste Materials (ACWM):** Mill tailings or any waste that contains commercial asbestos and is generated by a source covered by the Clean Air Act Asbestos NESHAPS.

**Asbestosis:** A disease associated with inhalation of asbestos fibers. The disease makes breathing progressively more difficult and can be fatal.

**Asbestos Program Manager:** A building owner or designated representative who supervises all aspects of the facility asbestos management and control program.

**Ash:** The mineral content of a product remaining after complete combustion.

**Assay:** A test for a particular chemical or effect.

**Assessment:** In the asbestos-in-schools program, the evaluation of the physical condition and potential for damage of all friable asbestos containing materials and thermal insulation systems.

**Assimilation:** The ability of a body of water to purify itself of pollutants.

**Assimilative Capacity:** The capacity of a natural body of water to receive wastewaters or toxic materials without deleterious effects and without damage to aquatic life or humans who consume the water.

**Association of Boards of Certification:** An international organization representing boards which certify the operators of waterworks and waste water facilities.

**Attainment Area:** An area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

**Attenuation:** The process by which a compound is reduced in concentration over time, through absorption, adsorption, degradation, dilution, and/or transformation.

**Attractant:** A chemical or agent that lures insects or other pests by stimulating their sense of smell.

**Attrition:** Wearing or grinding down of a substance by friction. Dust from such processes contributes to air pollution.

**Availability Session:** Informal meeting at a public location where interested citizens can talk with EPA and state officials on a one-to-one basis.

**Available Chlorine:** A measure of the amount of chlorine available in chlorinated lime, hypochlorite compounds, and other materials used as a source of chlorine when compared with that of liquid or gaseous chlorine.

**Back Pressure:** A pressure than can cause water to backflow into the water supply when a user's water system is at a higher pressure than the public system.

**Backflow/Back Siphonage:** A reverse flow condition created by a difference in water pressures that causes water to flow back into the distribution pipes of a drinking water supply from any source other than an intended one.

**Background Level:** In air pollution control, the concentration of air pollutants in a definite area during a fixed period of time prior to the starting up or on the stoppage of a source of emission under control. In toxic substances monitoring, the average presence in the environment, originally referring to naturally occurring phenomena.

**Backwashing:** Reversing the flow of water back through the filter media to remove the entrapped solids.

**Bacteria:** (Singular: bacterium) Microscopic living organisms that can aid in pollution control by metabolizing organic matter in sewage, oil spills or other pollutants. However, bacteria in soil, water or air can also cause human, animal and plant health problems.

**Baffle:** A flat board or plate, deflector, guide or similar device constructed or placed in flowing water or slurry systems to cause more uniform flow velocities, to absorb energy, and to divert, guide, or agitate liquids.

**Baffle Chamber:** In incinerator design, a chamber designed to promote the settling of fly ash and coarse particulate matter by changing the direction and/or reducing the velocity of the gases produced by the combustion of the refuse or sludge.

**Baghouse Filter:** Large fabric bag, usually made of glass fibers, used to eliminate intermediate and large (greater than 20 microns in diameter) particles. This device operates like the bag of an electric vacuum cleaner, passing the air and smaller particles while entrapping the larger ones.

**Bailer:** A long pipe with a valve at the lower end, used to remove slurry from the bottom or side of a well as it is being drilled.

**Baling:** Compacting solid waste into blocks to reduce volume and simplify handling.

**Ballistic Separator:** A machine that sorts organic from inorganic matter for composting.

**Band Application:** The spreading of chemicals over, or next to, each row of plants in a field.

**Banking:** A system for recording qualified air emission reductions for later use in bubble, offset, or netting transactions. (See: emissions trading.)

**Bar Screen:** In wastewater treatment, a device used to remove large solids.

**Barrier Coating(s):** A layer of a material that obstructs or prevents passage of something through a surface that is to be protected, e.g. grout, caulk, or various sealing compounds; sometimes used with polyurethane membranes to prevent corrosion or oxidation of metal surfaces, chemical impacts on various materials, or, for example, to prevent radon infiltration through walls, cracks, or joints in a house.

**Basal Application:** In pesticides, the application of a chemical on plant stems or tree trunks just above the soil line.

**Bed Load:** Sediment particles resting on or near the channel bottom that are pushed or rolled along by the flow of water.

**BEN:** EPA's computer model for analyzing a violator's economic gain from not complying with the law.

**Bench-scale Tests:** Laboratory testing of potential cleanup technologies (See: treatability studies.)

**Beryllium:** An airborne metal hazardous to human health when inhaled. It is discharged by machine shops, ceramic and propellant plants, and foundries.

**Best Available Control Measures (BACM):** A term used to refer to the most effective measures (according to EPA guidance) for controlling small or dispersed particulates from sources such as roadway dust, soot and ash from woodstoves and open burning of rush, timber, grasslands, or trash.

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## *Definitions of Environmental Terms*

**Best Available Control Technology (BACT):** For any specific source, the necessary technology that would produce the greatest reduction of each pollutant regulated byu the Clean Air Act, taking into account energy, environmental, economic and other costs.

**Best Demonstrated Available Technology (BDAT):** As identified by EPA, the most effective commercially available means of treating specific types of hazardous waste. The BDATs may change with advances in treatment technologies.

**Best Management Practice (BMP):** Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from nonpoint sources.

**Bimetal:** Beverage containers with steel bodies and aluminum tops; handled differently from pure aluminum in recycling.

**Bioaccumulants:** Substances that increase in concentration in living organisms as they take in contaminated air, water, or food because the substances are very slowly metabolized or excreted. (See: biological magnification.)

**Bioassay:** Study of living organisms to measure the effect of a substance, factor, or condition by comparing before-and-after exposure or other data.

**Biochemical Oxygen Demand (BOD):** A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. The greater the BOD, the greater the degree of pollution.

**Bioconcentration:** The accumulation of a chemical in tissues of an organism (such as a fish) to levels greater than in the surrounding medium in which the organism lives.

**Biodegradable:** Capable of decomposing rapidly under natural conditions.

**Biodiversity:** Refers to the variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the biochemical structures that are the molecular basis of heredity. Thus, the term encompasses different ecosystem, species, and genes.

**Biological Control:** In pest control, the use of animals and organisms that eat or otherwise kill or out-compete pests.

**Biological Magnification:** Refers to the process whereby certain substances such as pesticides or heavy metals move up the food chain, work their way into rivers or lakes, and are eaten by aquatic organisms such as fish, which in turn are eaten by large birds, animals or humans. The substances become concentrated in tissues or internal organs as they move up the chain. (See: bioaccumulative.)

**Biological Oxidation:** Decomposition of complex organic materials by microorganisms. Occurs in self-purification of water bodies and in activated sludge wastewater treatment.

**Biological Oxygen Demand (BOD):** An indirect measure of the concentration of biologically degradable material present in organic wastes. It usually reflects the amount of oxygen consumed in five days by biological processes breaking down organic waste.

**Biological Treatment:** A treatment technology that uses bacteria to consume organic waste.

**Biologicals:** Vaccines, cultures and other preparations made from living organisms and their products, intended for use in diagnosing, immunizing, or treating humans or animals, or in related research.

**Biomass:** All of the living material in a given area; often refers to vegetation.

**Biome:** Entire community of living organisms in a single major ecological area. (See: biotic community.)

**Biomonitoring:** 1. The use of living organisms to test the suitability of effluents for discharge into receiving waters and to test the quality of such waters downstream from the discharge. 2. Analysis of blood, urine, tissues, etc., to measure chemical exposure in humans.

**Bioremediation:** Use of living organisms to clean up oil spills or remove other pollutants from soil, water, or wastewater; use of organisms such as non-harmful insects to remove agricultural pests or counteract diseases of trees, plants, and garden soil.

**Biosphere:** The portion of Earth and its atmosphere that can support life.

**Biostabilizer:** A machine that converts solid waste into compost by grinding and aeration.

**Biota:** The animal and plant life of a given region.

**Biotechnology:** Techniques that use living organisms or parts of organisms to produce a variety of products (from medicines to industrial enzymes) to improve plants or animals or to develop microorganisms to remove toxics from bodies of water, or act as pesticides.

**Biotic Community:** A naturally occurring assemblage of plants and animals that live in the same environment and are mutually sustaining and interdependent. (See: biome.)

**Biotransformation:** Conversion of a substance into other compounds by organisms; includes biodegradation.

**Blackwater:** Water that contains animal, human, or food waste.

**Blood Products:** Any product derived from human blood, including but not limited to blood plasma, platelets, red or white corpuscles, and derived licensed products such as interferon.

**Bloom:** A proliferation of algae and/or higher aquatic plants in a body of water; often related to pollution, especially when pollutants accelerate growth.

**BOD5:** The amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter.

**Bog:** A type of wetland that accumulates appreciable peat deposits. Bogs depend primarily on precipitation for their water source, and are usually acidic and rich in plant residue with a conspicuous mat of living green moss.

**Boom:** 1. A floating device used to contain oil on a body of water. 2. A piece of equipment used to apply pesticides from a tractor or truck. (See: sonic boom.)

**Botanical Pesticide:** A pesticide whose active ingredient is a plant-produced chemical such as nicotine or strychnine. Also called a plant-derived pesticide.

**Bottle Bill:** Proposed or enacted legislation which requires a returnable deposit on beer or soda containers and provides for retail store or other redemption. Such legislation is designed to discourage use of throwaway containers.

**Bottom Ash:** The non-airborne combustion residue from burning pulverized coal in a boiler; the material which falls to the bottom of the boiler and is removed mechanically; a concentration of the non-combustible materials, which may include toxics.

**Bottom Land Hardwoods:** Forested freshwater wetlands adjacent to rivers in the southeastern United States, especially valuable for wildlife breeding, nesting and habitat.

**Brackish:** Mixed fresh and salt water.

**Breakpoint Chlorination:** Addition of chlorine to water until the chlorine demand has been satisfied.

**Breakthrough:** A crack or break in a filter bed that allows the passage of floc or particulate matter through a filter; will cause an increase in filter effluent turbidity.

**Brine Mud:** Waste material, often associated with well-drilling or mining, composed of mineral salts or other inorganic compounds.

**Broadcast Application:** The spreading of pesticides over an entire area.

**Bubble:** A system under which existing emissions sources can propose alternate means to comply with a set of emissions limitations; under the bubble concept, sources can control more than required at one emission point where control costs are relatively low in return for a comparable relaxation of controls at a second emission point where costs are higher.

**Bubble Policy:** (See: emissions trading.)

**Buffer:** A solution or liquid whose chemical makeup neutralizes acids or bases without a great change in pH.

**Buffer Strips:** Strips of grass or other erosion-resisting vegetation between or below cultivated strips or fields.

**Building Cooling Load:** The hourly amount of heat that must be removed from a building to maintain indoor comfort (measured in British Thermal Units BTUs).

**Bulk Sample:** A small portion (usually thumbnail size) of a suspect asbestoscontaining building material collected by an asbestos inspector for laboratory analysis to determine asbestos content.

**Bulky Waste:** Large items of waste materials, such as appliances, furniture, large auto parts, trees, stumps.

**Burial Ground (Graveyard):** A disposal site for radioactive waste materials that uses earth or water as a shield.

**By-product:** Material, other than the principal product, generated as a consequence of an industrial process.

**Cadmium (Cd):** A heavy metal element that accumulates in the environment.

**Cancellation:** Refers to Section 6 (b) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) which authorizes cancellation of a pesticide registration if unreasonable adverse effects to the environment and public health develop when a product is used according to widespread and commonly recognized practice, or if its labeling or other material required to be submitted does not comply with FIFRA provisions.

**Cap:** A layer of clay, or other impermeable material installed over the top of a closed landfill to prevent entry of rainwater and minimize leachate.

**Capacity Assurance Plan:** A statewide plan which supports a state's ability to manage the hazardous waste generated within its boundaries over a twenty year period.

**Capillary Action:** Movement of water through very small spaces due to molecular forces called capillary forces.

**Capillary Fringe:** The porous material just above the water table which may hold water by capillarity (a property of surface tension that draws water upwards) in the smaller void spaces.

**Capture Efficiency:** The fraction of organic vapors generated by a process that are directed to an abatement or recovery device.

**Carbon Absorber:** An add-on control device that uses activated carbon to absorb volatile organic compounds from a gas stream. (The VOCs are later recovered from the carbon.)

**Carbon Adsorption:** A treatment system that removes contaminants from ground water or surface water by forcing it through tanks containing activated carbon treated to attract the contaminants. contaminants.

**Carbon Monoxide (CO):** A colorless, odorless, poisonous gas produced by incomplete fossil fuel combustion. Carboxyhemoglobin: Hemoglobin in which the iron is bound to carbon monoxide (CO) instead of oxygen.

**Carcinogen:** Any substance that can cause or aggravate cancer.

**Carrier:** The inert liquid or solid material added to an active ingredient in a pesticide.

**Carrying Capacity:** 1. In recreation management, the amount of use a recreation area can sustain without loss of quality. 2. In wildlife management, the maximum number of animals an area can support during a given period.

**CAS Registration Number:** A number assigned by the Chemical Abstracts Service to identify a chemical.

**Cask:** A thick-walled container (usually lead) used to transport radioactive material. Also called a coffin.

**Catalyst:** A substance that changes the speed or yield of a chemical reaction without being consumed or chemically changed by the chemical reaction.

**Catalytic Converter:** An air pollution abatement device that removes pollutants from motor vehicle exhaust, either by oxidizing them into carbon dioxide and water or reducing them to nitrogen and oxygen.

**Catalytic Incinerator:** A control device that oxidizes volatile organic compounds (VOCs) by using a catalyst to promote the combustion process. Catalytic incinerators require lower temperatures than conventional thermal incinerators, thus saving fuel and other costs.

**Categorical Exclusion:** A class of actions which either individually or cumulatively would not have a significant effect on the human environment and therefore would not require preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act (NEPA).

**Categorical Pretreatment Standard:** A technology-based effluent limitation for an industrial facility discharging into a municipal sewer system. Analogous in stringency to Best Availability Technology (BAT) for direct dischargers.

**Cathodic Protection:** A technique to prevent corrosion of a metal surface by making it the cathode of an electrochemical cell.

**Cavitation:** The formation and collapse of gas pockets or bubbles on the blade of an impeller or the gate of a valve; collapse of these pockets or bubbles drives water with such force that it can cause pitting of the gate or valve surface.

**Cells:** 1. In solid waste disposal, holes where waste is dumped, compacted, and covered with layers of dirt on a daily basis. 2. The smallest structural part of living matter capable of functioning as an independent unit.

**Cementitious:** Densely packed and nonfibrous friable materials.

**Central Collection Point:** Location were a generator of regulated medical waste consolidates wastes originally generated at various locations in his facility. The wastes are gathered together for treatment on-site or for transportation elsewhere for treatment and/or disposal. This term could also apply to community hazardous waste collections, industrial and other waste management systems.

**Centrifugal Collector:** A mechanical system using centrifugal force to remove aerosols from a gas stream or to de-water sludge.

**Channelization:** Straightening and deepening streams so water will move faster, a marsh-drainage tactic that can interfere with waste assimilation capacity, disturb fish and wildlife habitats, and aggravate flooding.

**Characteristic:** Any one of the four categories used in defining hazardous waste: ignitability, corrosivity, reactivity, and toxicity.

**Chemical Oxygen Demand (COD):** A measure of the oxygen required to oxidize all compounds, both organic and inorganic, in water.

**Chemical Treatment:** Any one of a variety of technologies that use chemicals or a variety of chemical processes to treat waste.

**Chemnet:** Mutual aid network of chemical shippers and contractors that assigns a contracted emergency response company to provide technical support if a representative of the firm whose chemicals are involved in an incident is not readily available.

**Chemosterilant:** A chemical that controls pests by preventing reproduction.

**Chemterc:** The industry-sponsored Chemical Transportation Emergency Center; provides information and/or emergency assistance to emergency responders.

**Chilling Effect:** The lowering of the Earth's temperature because of increased particles in the air blocking the sun's rays. (See: greenhouse effect.)

**Chisel Plowing:** Preparing croplands by using a special implement that avoids complete inversion of the soil as in with conventional plowing. Chisel plowing can leave a protective cover or crop residues on the soil surface to help prevent erosion and improve filtration.

**Chlorinated Hydrocarbons:** These include a class of persistent, broad-spectrum insecticides that linger in the environment and accumulate in the food chain. Among them are DDT, aldrin, dieldrin, heptachlor, chlordane, lindane, endrin, mirex, hexachloride, and toxaphene. Other examples include TCE, used as an industrial solvent.

**Chlorinated Solvent:** An organic solvent containing chlorine atoms, e.g., methylene chloride and 1,1,1-trichloromethane, used in aerosol spray containers and in highway paint.

**Chlorination:** The application of chlorine to drinking water, sewage, or industrial waste to disinfect or to oxidize undesirable compounds.

**Chlorinator:** A device that adds chlorine, in gas or liquid form, to water or sewage to kill infectious bacteria.

**Chlorine-Contact Chamber:** That part of a water treatment plant where effluent is disinfected by chlorine.

**Chlorofluorocarbons (CFCs):** A family of inert, nontoxic, and easily liquified chemicals used in refrigeration, air conditioning, packaging, insulation, or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere they drift into the upper atmosphere where their chlorine components destroy ozone.

**Chlorophenoxy:** A class of herbicides that may be found in domestic water supplies and cause adverse health effects.

**Chlorosis:** Discoloration of normally green plant parts caused by disease, lack of nutrients, or various air pollutants.

**Cholinesterase:** An enzyme found in animals that regulates nerve impulses. Cholinesterase inhibition is associated with a variety of acute symptoms such as nausea, vomiting, blurred vision, stomach cramps, and rapid heart rate.

**Chromium:** (See: heavy metals.)

**Chronic Effect:** An adverse effect on a human or animal in which symptoms recur frequently or develop slowly over a long period of time.

**Chronic Toxicity:** The capacity of a substance to cause long-term poisonous human health effects. (See: acute toxicity.)

**Circle of Influence:** The circular outer edge of a depression produced in the water table by the pumping of water from a well. (See: Cone of influence, Cone of Depression)

**Cistern:** Small tank or storage facility used to store water for a home or farm; often use to store rain water.

**Clarification:** Clearing action that occurs during wastewater treatment when solids settle out. This is often aided by centrifugal action and chemically induced coagulation in wastewater.

**Clarifier:** A tank in which solids settle to the bottom and are subsequently removed as sludge.

**Class I Area:** Under the Clean Air Act, a Class I area is one in which visibility is protected more stringently than under the national ambient air quality standards; includes national parks, wilderness area, monuments and other areas of special national and cultural significance.

**Clay Soil:** Soil material containing more than 40 percent clay, less than 45 percent sand, and less than 40 percent silt.

**Clean Coal Technology:** Any technology not in widespread use prior to the Clean Air Act amendments of 1990. This Act will achieve significant reductions in pollutants associated with the burning of coal.

**Clean Fuels:** Blends or substitutes for gasoline fuels, including compressed natural gas, methanol, ethanol, liquified petroleum gas, and others.

**Cleanup:** Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term "cleanup" is sometimes used interchangeably with the terms remedial action, removal action, response action, or corrective action.

**Clear Cut:** Harvesting all the trees in one area at one time, a practice that can encourage fast rainfall or snowmelt runoff, erosion, sedimentation of streams and lakes, flooding, and destroys vital habitat.

**Clear Well:** A reservoir for storing filtered water of sufficient quantity to prevent the need to vary the filtration rate with variations in demand. Also used to provide chlorine contact time for disinfection.

**Cloning:** In biotechnology, obtaining a group of genetically identical cells from a single cell; making identical copies of a gene.

**Closed-Loop Recycling:** Reclaiming or reusing wastewater for non-potable purposes in an enclosed process.

**Closure:** The procedure a landfill operator must follow when a landfill reaches its legal capacity for solid waste: ceasing acceptance of solid waste and placing a cap on the landfill site.

**Coagulation:** Clumping of particles in wastewater to settle out impurities, often induced by chemicals such as lime, alum, and iron salts.

**Coal Cleaning Technology:** Precombustion process by which coal is physically or chemically treated to remove some of its sulfur so as to reduce sulfur dioxide emissions.

**Coal Gasification:** Conversion of coal to a gaseous product by one of several available technologies.

**Coastal Zone:** Lands and waters adjacent to the coast that exert an influence on the uses of the sea and its ecology, or whose uses and ecology are affected by the sea.

**Coefficient of Haze (COH):** A measurement of visibility interference in the atmosphere.

**Co-fire:** Burning of two fuels in the same combustion unit, e.g., coal and natural gas, or oil and coal.

**Coke Oven:** An industrial process which converts coal into coke, one of the basic materials used in blast furnaces for the conversion of iron ore into iron.

**Cold Temperature CO:** A standard for automobile carbon monoxide (CO) emissions to be met at a low temperature (i.e. 20 degrees Fahrenheit). Conventional automobile catalytic convertors are less efficient upon start-up at low temperatures.

**Coliform Index:** A rating of the purity of water based on a count of fecal bacteria.

**Coliform Organism:** Microorganisms found in the intestinal tract of humans and animals. Their presence in water indicates fecal pollution and potentially adverse contamination by pathogens.

**Collector Sewers:** Pipes used to collect and carry wastewater from individual sources to an interceptor sewer that will carry it to a treatment facility.

**Colloids:** Very small, finely divided solids (that do not dissolve) that remain dispersed in a liquid for a long time due to their small size and electrical charge.

**Combined Sewer Overflows:** Discharge of a mixture of storm water and domestic waste when the flow capacity of a sewer system is exceeded during rainstorms.

**Combined Sewers:** A sewer system that carries both sewage and storm-water runoff. Normally, its entire flow goes to a waste treatment plant, but during a heavy storm, the volume of water may be so great as to cause overflows of untreated mixtures of storm water and sewage into receiving waters. Storm-water runoff may also carry toxic chemicals from industrial areas or streets into the sewer system.

**Combustion:** 1. Burning, or rapid oxidation, accompanied by release of energy in the form of heat and light. A basic cause of air pollution. 2. Refers to controlled burning of waste, in which heat chemically alters organic compounds, converting into stable inorganics such as carbon dioxide and water.

**Combustion Chamber:** The actual compartment where waste is burned in an incinerator.

**Combustion Product:** Substance produced during the burning or oxidation of a material.

**Command Post:** Facility located at a safe distance upwind from an accident site, where the on-scene coordinator, responders, and technical representatives make response decisions, deploy manpower and equipment, maintain liaison with news media, and handle communications.

**Comment Period:** Time provided for the public to review and comment on a proposed EPA action or rulemaking after publication in the Federal Register.

**Commercial Waste Management Facility:** A treatment, storage, disposal, or transfer facility which accepts waste from a variety of sources, as compared to a private facility which normally manages a limited waste stream generated by its own operations.

**Commercial Waste:** All solid waste emanating from business establishments such as stores, markets, office buildings, restaurants, shopping centers, and theaters.

**Commingled Recyclables:** Mixed recyclables that are collected together.

**Comminuter:** A machine that shreds or pulverizes solids to make waste treatment easier.

**Comminution:** Mechanical shredding or pulverizing of waste. Used in both solid waste management and wastewater treatment.

**Community:** In ecology, a group of interacting populations in time and space. Sometimes, a particular subgrouping may be specified, such as the fish community in a lake or the soil arthropod community in a forest.

**Community Relations:** The EPA effort to establish two-way communication with the public to create understanding of EPA programs and related actions, to assure public input into decision-making processes related to affected communities, and to make certain that the Agency is aware of and responsive to public concerns. Specific community relations activities are required in relation to Superfund remedial actions.

**Community Water System:** A public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

**Compaction:** Reduction of the bulk of solid waste by rolling and tamping.

**Complete Treatment:** A method of treating water that consists of the addition of coagulant chemicals, flash mixing, coagulation-flocculation, sedimentation, and filtration. Also called conventional filtration.

**Compliance Coal:** Any coal that emits less than 1.2 pounds of sulfur dioxide per million Btu when burned. Also known as low sulfur coal.

**Compliance Coating:** A coating whose volatile organic compound content does not exceed that allowed by regulation.

**Compliance Cycle:** The nine-year calendar year cycle, beginning January 1, 1993, during which public water systems must monitor. Each cycle consists of three three-year compliance periods.

**Compliance Monitoring:** Collection and evaluation of data, including selfmonitoring reports, and verification to show whether pollutant concentrations and loads contained in permitted discharges are in compliance with the limits and conditions specified in the permit.

**Compliance Schedule:** A negotiated agreement between a pollution source and a government agency that specifies dates and procedures by which a source will reduce emissions and, thereby, comply with a regulation.

**Composite Sample:** A series of water samples taken over a given period of time and weighted by flow rate.

**Compost:** The relatively stable humus material that is produced from a composting process in which bacteria in soil mixed with garbage and degradable trash break down the mixture into organic fertilizer.

**Composting:** The controlled biological decomposition of organic material in the presence of air to form a humus-like material. Controlled methods of composting include mechanical mixing and aerating, ventilating the materials by dropping them through a vertical series of aerated chambers, or placing the compost in piles out in the open air and mixing it or turning it periodically.

**Compressed Natural Gas (CNG):** An alternative fuel for motor vehicles; considered one of cleanest because of low hydrocarbon emissions and its vapors are relatively non-ozone producing. However, it does emit a significant quantity of nitrogen oxides.

**Conditional Registration:** Under special circumstances, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) permits registration of pesticide products that is "conditional" upon the submission of additional data. These special circumstances include a finding by the EPA Administrator that a new product or use of an existing pesticide will not significantly increase the risk of unreasonable adverse effects. A product containing a new (previously unregistered) active ingredient may be conditionally registered only if the Administrator finds that such conditional registration is in the public interest, that a reasonable time for conducting the additional studies has not elapsed, and the use of the pesticide for the period of conditional registration will not present an unreasonable risk.

**Conditionally Exempt Generators (CE):** Persons or enterprises which produce less than 220 pounds of hazardous waste per month. Exempt from most regulation, they are required merely to determine whether their waste is hazardous, notify appropriate state or local agencies, and ship it by permitted facility for proper disposal. (See :an authorized transporter to a small quantity generator.)

Conductance: A rapid method of estimating the dissolved-solids content of a water supply by determining the capacity of a water sample to carry an electrical current.

**Conductivity** is a measure of the ability of a solution to carry an electrical current.

**Cone of Depression:** A depression in the water table that develops around a pumped well.

**Cone of Influence:** The depression, roughly conical in shape, produced in the water table by the pumping of water from a well.

**Confined Aquifer:** An aquifer in which ground water is confined under pressure which is significantly greater than atmospheric pressure.

**Confluent Growth:** A continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

**Consent Decree:** A legal document, approved by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) through which PRPs will conduct all or part of a cleanup action at a Superfund site; cease or correct actions or processes that are polluting the environment; or otherwise comply with EPA initiated regulatory enforcement actions to resolve the contamination at the Superfund site involved. The consent decree describes the actions PRPs will take and may be subject to a public comment period.

**Conservation:** Preserving and renewing, when possible, human and natural resources. The use, protection, and improvement of natural resources according to principles that will assure their highest economic or social benefits.

**Construction and Demolition Waste:** Waste building materials, dredging materials, tree stumps, and rubble resulting from construction, remodeling, repair, and demolition of homes, commercial buildings and other structures and pavements. May contain lead, asbestos, or other hazardous substances.

**Construction Ban:** If, under the Clean Air Act, EPA disapproves an area's planning requirements for correcting nonattainment, the Agency can ban the construction or modification of any major stationery source of the pollutant for which the area is in non-attainment.

**Consumptive Use:** Water removed from available supplies without return to a water resource system (uses such as manufacturing, agriculture, and food preparation).

**Contact Pesticide:** A chemical that kills pests when it touches them, instead of by ingestion. Also, soil that contains the minute skeletons of certain algae that scratch and dehydrate waxy-coated insects.

**Contaminant:** Any physical, chemical, biological, or radiological substance or matter that has an adverse affect on air, water, or soil.

**Contamination:** Introduction into water, air and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use. Also applies to surfaces of objects and buildings, and various household and agricultural use products.

**Contingency Plan:** A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous waste, or radioactive materials that threaten human health or the environment. (See: National Oil and Hazardous Substances Contingency Plan.)

**Continuous Discharge:** A routine release to the environment that occurs without interruption, except for infrequent shutdowns for maintenance, process changes, etc.

**Continuous Sample**: A flow of water from a particular place in a plant to the location where samples are collected for testing; may be used to obtain grab or composite samples.

**Contour Plowing:** Soil tilling method that follows the shape of the land to discourage erosion.

**Contour Strip Farming:** A kind of contour farming in which row crops are planted in strips, between alternating strips of close-growing, erosionresistant forage crops.

**Contract Labs:** Laboratories under contract to EPA, which analyze samples taken from waste, soil, air, and water or carry out research projects.

**Control Technique Guidelines (CTG):** EPA documents issued to assist state and local pollution control authorities to achieve and maintain air quality standards for certain sources through reasonably available control technologies. CTGs can be quite specific, e.g., one was written to control organic emissions from solvent metal cleaning, known as degreasing.

**Controlled Reaction:** A chemical reaction under temperature and pressure conditions maintained within safe limits to produce a desired product or process.

**Conventional Filtration (Treatment):** (See: Complete Treatment)

**Conventional Pollutants:** Statutorily listed pollutants understood well by scientists. These may be in the form of organic waste, sediment, acid, bacteria, viruses, nutrients, oil and grease, or heat.

**Conventional Systems:** Systems that have been traditionally used to collect municipal wastewater in gravity sewers and convey it to a central primary or secondary treatment plant prior to discharge to surface waters.

**Conventional Tilling:** Tillage operations considered standard for a specific location and crop and that tend to bury the crop residues; usually considered as a base for determining the cost effectiveness of control practices.

**Conveyance Loss:** Water loss in pipes, channels, conduits, ditches by leakage or evaporation.

**Cooling Electricity Use:** Amount of electricity used to meet the building cooling load. (See: building cooling load.)

**Cooling Tower:** A structure that helps remove heat from water used as a coolant; e.g., in electric power generating plants.

**Cooperative Agreement:** An assistance agreement whereby EPA transfers money, property, services or anything of value to a state for the accomplishment of CERCLA-authorized activities or tasks.

**Core:** The uranium-containing heart of a nuclear reactor, where energy is released.

**Core Program Cooperative Agreement:** An assistance agreement whereby EPA supports states or tribal governments with funds to help defray the cost of nonitem - specific administrative and training activities.

**Corrosion:** The dissolution and wearing away of metal caused by a chemical reaction such as between water and the pipes, chemicals touching a metal surface, or contact between two metals. Corrosive: A chemical agent that reacts with the surface of a material causing it to deteriorate or wear away.

**Cost/benefit Analysis:** A quantitative evaluation of the costs which would be incurred versus the overall benefits to society of a proposed action such as the establishment of an acceptable dose of a toxic chemical.

**Cost-Effective Alternative:** An alternative control or corrective method identified after analysis as being the best available in terms of reliability, performance, and cost. Although costs are one important consideration, regulatory and compliance analysis does not require EPA to choose the least expensive alternative. For example, when selecting or approving a method for cleaning up a Superfund site the Agency balances costs with the long-term effectiveness of the methods proposed and the potential danger posed by the site.

**Cost Recovery:** A legal process by which potentially responsible parties who contributed to contamination at a Superfund site can be required to reimburse the Trust Fund for money spent during any cleanup actions by the federal government.

**Cost Sharing:** A publicly financed program through which society, as a beneficiary of environmental protection, shares part of the cost of pollution control with those who must actually install the controls. In Superfund, the government may pay part of the cost of a cleanup action with those responsible for the pollution paying the major share.

**Cover Crop:** A crop that provides temporary protection for delicate seedlings and/or provides a cover canopy for seasonal soil protection and improvement between normal crop production periods,

**Cover Material:** Soil used to cover compacted solid waste in a sanitary landfill.

**Cradle-to-Grave or Manifest System:** A procedure in which hazardous materials are identified and followed as they are produced, treated, transported, and disposed of by a series of permanent, linkable, descriptive documents (e.g., manifests). Commonly referred to as the cradle-to-grave system.

**Criteria Pollutants:** The 1970 amendments to the Clean Air Act required EPA to set National Ambient Air Quality Standards for certain pollutants known to be hazardous to human health. EPA has identified and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide. The term, "criteria pollutants" derives from the requirement that EPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised.

**Criteria:** Descriptive factors taken into account by EPA in setting standards for various pollutants. These factors are used to determine limits on allowable concentration levels, and to limit the number of violations per year. When issued by EPA, the criteria provide guidance to the states on how to establish their standards.

**Crop Consumptive Use:** The amount of water transpired during plant growth plus what evaporated from the soil surface and foliage in the crop area.

**Crop Rotation:** Planting a succession of different crops on the same land area as opposed to planting the same crop time after time.

**Cross-Connection:** Any actual ore potential connection between a drinking water system and an unapproved water supply or other source of contamination.

**Cubic Feet Per Minute (CFM):** A measure of the volume of a substance flowing through air within a fixed period of time. With regard to indoor air, refers to the amount of air, in cubic feet, that is exchanged with indoor air in a minute's time, i.e., the air exchange rate.

**Cullet:** Crushed glass.

**Cultural Eutrophication:** Increasing rate at which water bodies "die" by pollution from human activities.

**Cultures and Stocks:** Infectious agents and associated biologicals including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; waste from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures. (See: regulated medical waste.)

**Cumulative exposure:** The summation of exposures of an organism to a chemical over a period of time.

**Cumulative Working Level Months (CWLM):** The sum of lifetime exposure to radon working levels expressed in total working level months.

**Curb Stop:** A water service shutoff valve located in a water service pipe near the curb and between the water main and the building.

**Curbside Collection:** Method of collecting recyclable materials at homes, community districts or businesses.

**Cutie-Pie:** An instrument used to measure radiation levels.

**Cyclone Collector:** A device that uses centrifugal force to pull large particles from polluted air.

**Data Call-In:** A part of the Office of Pesticide Programs (OPP) process of developing key required test data, especially on the long-term, chronic effects of existing pesticides, in advance of scheduled Registration Standard reviews. Data Call-In from manufacturers is an adjunct of the Registration Standards program intended to expedite re-registration.

**Day Tank:** (See: Age tank.)

**DDT:** The first chlorinated hydrocarboninsecticide chemical name: Dichloro-Diphenyl -Trichloroethane). It has a half-life of 15 years and can collect in fatty tissues of certain animals. EPA banned registration and interstate sale of DDT for virtually all but emergency uses in the United States in 1972 because of its persistence in the environment and accumulation in the food chain.

**Dead End:** The end of a water main which is not connected to other parts of the distribution system.

**Decant:** To draw off the upper layer of liquid after the heavier material (a solid or another liquid) has settled.

**Decay Products:** Degraded radioactive materials, often referred to as “daughters” or “progeny”; radon decay products of most concern from a public health standpoint are polonium-214 and polonium-218.

**Dechlorination:** Removal of chlorine from a substance by chemically replacing it with hydrogen or hydroxide ions in order to detoxify a substances.

**Decomposition:** The breakdown of matter by bacteria and fungi, changing the chemical makeup and physical appearance of materials.

**Decontamination:** Removal of harmful substances such as noxious chemicals, harmful bacteria or other organisms, or radioactive material from exposed individuals, rooms and furnishings in buildings, or the exterior environment.

**Deep-Well Injection:** Deposition of raw or treated, filtered hazardous waste by pumping it into deep wells, where it is contained in the pores of permeable subsurface rock.

**Deflocculating Agent:** A material added to a suspension to prevent settling.

**Defluoridation:** The removal of excess fluoride in drinking water to prevent the staining of teeth.

**Defoliant:** An herbicide that removes leaves from trees and growing plants.

**Degasification:** A water treatment that removes dissolved gases from he water.

**Delegated State:** A state (or other governmental entity such as a tribal government) that has received authority to administer an environmental regulatory program in lieu of a federal counterpart. As used in connection with NPDES, UIC, and PWS programs, the term does not connote any transfer of federal authority to a state.

**Delist:** Use of the petition process to have a facility’s toxic designation rescinded.

**Demand-side Waste Management:** Prices whereby consumers use purchasing decisions to communicate to product manufacturers that they prefer environmentally sound products packaged with the least amount of waste, made from recycled or recyclable materials, and containing no hazardous substances.

**Demineralization:** A treatment process that removes dissolved minerals from water.

**Denitrification:** The anaerobic biological reduction of nitrate to nitrogen gas.

**Density:** A measure of how heavy a solid, liquid, or gas is for its size.

**Depletion Curve:** In hydraulics, a graphical representation of water depletion from storage-stream channels, surface soil, and groundwater. A depletion curve can be drawn for base flow, direct runoff, or total flow.

**Depressurization:** A condition that occurs when the air pressure inside a structure is lower that the air pressure outside. Depressurization can occur when household appliances such as fireplaces or furnaces, that consume or exhaust house air, are not supplied with enough makeup air. Radon may be drawn into a house more rapidly under depressurized conditions.

**Dermal Exposure:** Contact between a chemical and the skin.

**Dermal Toxicity:** The ability of a pesticide or toxic chemical to poison people or animals by contact with the skin. (See: contact pesticide.)

**DES:** A synthetic estrogen, diethylstilbestrol is used as a growth stimulant in food animals. Residues in meat are thought to be carcinogenic.

**Desalination:** [Desalinization] (1) Removing salts from ocean or brackish water by using various technologies. (2) Removal of salts from soil by artificial means, usually leaching.

**Desiccant:** A chemical agent that absorbs moisture; some desiccants are capable of drying out plants or insects, causing death.

**Design Capacity:** The average daily flow that a treatment plant or other facility is designed to accommodate.

**Design Value:** The monitored reading used by EPA to determine an area's air quality status, e.g., for ozone, the fourth highest reading measured over the most recent three years is the design value, for carbon monoxide, the second highest non-overlapping 8-hour concentration for one year is the design value.

**Designated Pollutant:** An air pollutant which is neither a criteria nor hazardous pollutant, as described in the Clean Air Act, but for which new source performance standards exist. The Clean Air Act does require states to control these pollutants, which include acid mist, total reduced sulfur (TRS), and fluorides.

**Designated Uses:** Those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, irrigation, etc.

**Designer Bugs:** Popular term for microbes developed through biotechnology that can degrade specific toxic chemicals at their source in toxic waste dumps or in ground water.

**Destination Facility:** The facility to which regulated medical waste is shipped for treatment and destruction, incineration, and/or disposal.

**Destratification:** Vertical mixing within a lake or reservoir to totally or partially eliminate separate layers of temperature, plant, or animal life.

**Destroyed Medical Waste:** Regulated medical waste that has been ruined, torn apart, or mutilated through thermal treatment, melting, shredding, grinding, tearing, or breaking, so that it is no longer generally recognized as medical waste, but has not yet been treated (excludes compacted regulated medical waste.)

**Destruction and Removal Efficiency (DRE):** A percentage that represents the number of molecules of a compound removed or destroyed in an incinerator relative to the number of molecules entered the system (e.g., a DRE of 99.99 percent means that 9,999 molecules are destroyed for every 10,000 that enter; 99.99 percent is known as "four nines." For some pollutants, the RCRA removal requirement may be a stringent as "six nines.")

**Destruction Facility:** A facility that destroys regulated medical waste by mashing or mutilating it.

**Detention Time:** 1. The theoretical calculated time required for a small amount of water to pass through a tank at a given rate of flow. 2. The actual time that a small amount of water is in a settling basin, flocculating basin, or rapid-mix chamber. 3. In storage reservoirs, the length of time water will be held before being used.

**Desulfurization:** Removal of sulfur from fossil fuels to reduce pollution.

**Detectable Leak Rate:** The smallest leak (from a storage tank), expressed in terms of gallons-or liters-per-hour, that a test can reliably discern with a certain probability of detection or false alarm.

**Detection Criterion:** A predetermined rule to ascertain whether a tank is leaking or not. Most volumetric tests use a threshold value as the detection criterion. (See: volumetric tank tests.)

**Detergent:** Synthetic washing agent that helps to remove dirt and oil. Some contain compounds which kill useful bacteria and encourage algae growth when they are in wastewater that reaches receiving waters.

**Development Effects:** Adverse effects such as altered growth, structural abnormality, functional deficiency, or death observed in a developing organism.

**Dewater:** 1. Remove or separate a portion of the water in a sludge or slurry to dry the sludge so it can be handled and disposed. 2. Remove or drain the water from a tank or trench.

**Diatomaceous Earth (Diatomite):** A chalk-like material (fossilized diatoms) used to filter out solid waste in wastewater treatment plants, also used as an active ingredient in some powdered pesticides.

**Diazinon:** An insecticide. In 1986, EPA banned its use on open areas such as sod farms and golf courses because it posed a danger to migratory birds. The ban did not apply to agricultural, home lawn or commercial establishment uses.

**Dibenzofurans:** A group of highly toxic organic compounds.

**Dicofol:** A pesticide used on citrus fruits.

**Diffused Air:** A type of aeration that forces oxygen into sewage by pumping air through perforated pipes inside a holding tank.

**Diffusion:** The movement of suspended or dissolved particles from a more concentrated to a less concentrated area. The process tends to distribute the particles more uniformly.

**Digester:** In wastewater treatment, a closed tank; in solid-waste conversion, a unit in which bacterial action is induced and accelerated in order to break down organic matter and establish the proper carbon to nitrogen ratio.

**Digestion:** The biochemical decomposition of organic matter, resulting in partial gasification, liquefaction, and mineralization of pollutants.

**Dike:** A low wall that can act as a barrier to prevent a spill from spreading.

**Diluent:** Any liquid or solid material used to dilute or carry an active ingredient.

**Dilution Ratio:** The relationship between the volume of water in a stream and the volume of incoming water. It affects the ability of the stream to assimilate waste.

**Dimitic:** Lakes and reservoirs that freeze over and normally go through two stratification and two mixing cycles a year.

**Dinocap:** A fungicide used primarily by apple growers to control summer diseases. EPA proposed restrictions on its use in 1986 when laboratory tests found it caused birth defects in rabbits.

**Dinoseb:** A herbicide that is also used as a fungicide and insecticide. It was banned by EPA in 1986 because it posed the risk of birth defects and sterility.

**Dioxin:** Any of a family of compounds known chemically as dibenzo-p-dioxins. Concern about them arises from their potential toxicity and contaminants in commercial products. Tests on laboratory animals indicate that it is one of the more toxic man-made compounds.

**Direct Discharger:** A municipal or industrial facility which introduces pollution through a defined conveyance or system such as outlet pipes; a point source.

**Direct Filtration:** A method of treating water which consists of the addition of coagulant chemicals, flash mixing, coagulation, minimal flocculation, and filtration. Sedimentation is not used.

**Direct Runoff:** Water that flows over the ground surface or through the ground directly into streams, rivers, and lakes.

**Discharge:** Flow of surface water in a stream or canal or the outflow of ground water from a flowing artesian well, ditch, or spring. Can also apply to discharge of liquid effluent from a facility or of chemical emissions into the air through designated venting mechanisms.

**Disinfectant:** A chemical or physical process that kills pathogenic organisms in water. Chlorine is often used to disinfect sewage treatment effluent, water supplies, wells, and swimming pools.

**Disinfectant Time:** The time it takes water to move from the point of disinfectant application (or the previous point of residual disinfectant measurement) to a point before or at the point where the residual disinfectant is measured. In pipelines, the time is calculated by dividing the internal volume of the pipe by the maximum hourly flow rate; within mixing basins and storage reservoirs it is determined by tracer studies of an equivalent demonstration.

**Disinfection By-Product:** A compound formed by the reaction of a disinfectant such as chlorine with organic material in the water supply.

**Dispersant:** A chemical agent used to break up concentrations of organic material such as spilled oil.

**Disposables:** Consumer products, other items, and packaging used once or a few times and discarded.

**Disposal:** Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming, deep-well injection, ocean dumping, or incineration.

**Dissolved Oxygen (DO):** The oxygen freely available in water, vital to fish and other aquatic life and for the prevention of odors. DO levels are considered a most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatment are generally designed to ensure adequate DO in waste-receiving waters.

**Dissolved Solids:** Disintegrated organic and inorganic material in water. Excessive amounts make water unfit to drink or use in industrial processes.

**Distillation:** The act of purifying liquids through boiling, so that the steam condenses to a pure liquid and the pollutants remain in a concentrated residue.

**Diversion:** 1. Use of part of a stream flow as a water supply. 2. A channel with a supporting ridge on the lower side constructed across a slope to divert water at a non-erosive velocity to sites where it can be used or disposed of.

**Diversion Rate:** The percentage of waste materials diverted from traditional disposal such as landfilling or incineration to be recycled, composted, or re-used.

**DNA Hybridization:** Use of a segment of DNA, called a DNA probe, to identify its complementary DNA; used to detect specific genes.

**Dosage/Dose:** The actual quantity of a chemical administered to an organism or to which it is exposed.

**Dose Equivalent:** The product of the absorbed does from ionizing radiation and such factors as account for biological differences due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements.

**Dose Response:** How a biological organism's response to a toxic substance quantitatively shifts as its overall exposure to the substance changes (e.g., a small dose of carbon monoxide may cause drowsiness; a large dose can be fatal.)

**Dose-Response Assessment:** Estimating the potency of a chemical.

**Dose-Response Relationship:** The quantitative relationship between the amount of exposure to a substance and the extent of toxic injury or disease produced.

**DOT Reportable Quantity:** The quantity of a substance specified in U.S. Department of Transportation regulation that triggers labelling, packaging and other requirements related to shipping such substances.

**Downgradient:** The direction that groundwater flows; similar to "downstream" for surface water.

**Draft:** 1. The act of drawing or removing water from a tank or reservoir. 2. The water which is drawn or removed.

**Draft Permit:** A preliminary permit drafted and published by EPA; subject to public review and comment before final action on the application.

**Drainage:** Improving the productivity of some agricultural land by removing excess water from the soil by such means as ditches or subsurface drainage tiles.

**Drainage Basin:** The area of land that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel.

**Drainage Well:** A well drilled to carry excess water off agricultural fields. Because they act as a funnel from the surface to the ground water below, drainage wells can contribute to ground water contamination.

**Drawdown:** 1. The drop in the water table or level of water in the ground when water is being pumped from a well. 2. The amount of water used from a tank or reservoir. 3. The drop in the water level of a tank or reservoir.

**Dredging:** Removal of mud from the bottom of water bodies. This can disturb the ecosystem and causes silting that kills aquatic life. Dredging of contaminated muds can expose biota to heavy metals and other toxics. Dredging activities may be subject to regulation under Section 404 of the Clean Water Act.

**Drinking Water Equivalent Level:** Protective level of exposure related to potentially non-carcinogenic effects of chemicals that are also known to cause cancer.

**Drop-off:** Recyclable materials collection method in which individuals bring them to a designated collection site.

**Dump:** A site used to dispose of solid waste without environmental controls.

**Dustfall Jar:** An open container used to collect large particles from the air for measurement and analysis.

**Dystrophic Lakes:** Acidic, shallow bodies of water that contain much humus and/or other organic matter; contain many plants but few fish.

# E

# Definitions of Environmental Terms

**Ecological Impact:** The effect that a man-made or natural activity has on living organisms and their non-living (abiotic) environment.

**Ecology:** The relationship of living things to one another and their environment, or the study of such relationships.

**Ecological Indicator:** A characteristic of the environment that, when measured, quantifies magnitude of stress, habitat characteristics, degree of exposure to a stressor, or ecological response to exposure. The term is a collective term for response, exposure. The term is a collective term for response, exposure, habitat, and stressor indicators.

**Ecological Risk Assessment:** The application of a formal framework, analytical process, or model to estimate the effects of human actions(s) on a natural resource and to interpret the significance of those effects in light of the uncertainties identified in each component of the assessment process. Such analysis includes initial hazard identification, exposure and doseresponse assessments, and risk characterization.

**Economic Poisons:** Chemicals used to control pests and to defoliate cash crops such as cotton.

**Ecosphere:** The “bio-bubble” that contains life on earth, in surface waters, and in the air. (See: Biosphere.)

**Ecosystem:** The interacting system of a biological community and its non-living environmental surroundings.

**Ecosystem Structure:** Attributes related to instantaneous physical state of an ecosystem; examples include species population density, species richness or evenness, and standing crop biomass.

**Ecotone:** A habitat created by the juxtaposition of distinctly different habitats; an edge habitat; or an ecological zone or boundary where two or more ecosystems meet.

**Effluent:** Wastewater-treated or untreated-that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

**Effluent Guidelines:** Technical EPA documents which set effluent limitations for given industries and pollutants.

**Effluent Limitation:** Restrictions established by a State or EPA on quantities, rates, and concentrations in wastewater discharges.

**Effluent Standard:** (See Effluent Limitation.)

**Ejector:** A device used to disperse a chemical solution into water being treated.

**Electrodialysis:** A process that uses electrical current applied to permeable membranes to remove minerals from water. Often used to desalinize salty or brackish water.

**Electrostatic Precipitator (ESP):** A device that removes particles from a gas stream (smoke) after combustion occurs. The ESP imparts an electrical charge to the particles, causing them to adhere to metal plates inside the precipitator. Rapping on the plates causes the particles to fall into a hopper for disposal.

**Eligible Costs:** The construction costs for waste-water treatment works upon which EPA grants are based.

**EMAP Data:** Environmental monitoring data collected under the auspices of the Environmental Monitoring and Assessment Program. All EMAP data share the common attribute of being of known quality, having been collected in the context of explicit data quality objectives (DQOs) and a consistent quality assurance program.

**Emergency (Chemical):** A situation created by an accidental release or spill of hazardous chemicals that poses a threat to the safety of workers, residents, the environment, or property.

**Emergency Episode:** (See: air pollution episode.)

**Emergency Response Values:** Concentrations of chemicals, published by various groups, defining acceptable levels for short-term exposures in emergencies.

**Emission:** Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys; and from motor vehicle, locomotive, or aircraft exhausts.

**Emission Cap:** A limit designed to prevent projected growth in emissions from existing and future stationary sources from eroding any mandated reduction. Generally, such provisions require any emission growth from facilities under the restrictions be offset by equivalent reductions at other facilities under the same cap. (See: Emissions Trading.)

**Emission Factor:** The relationship between the amount of pollution produced and the amount of raw material processed. For example, an emission factor for a blast furnace making iron would be the number of pounds of particulates per ton of raw materials.

**Emission Inventory:** A listing, by source, of the amount of air pollutants discharged into the atmosphere of a community; used to establish emission standards.

**Emission Standard:** The maximum amount of air polluting discharge legally allowed from a single source, mobile or stationary.

**Emissions Trading:** The creation of surplus emission reductions at certain stacks, vents, or similar emissions sources and the use of this surplus to meet or redefine pollution requirements applicable to other emission sources. This allows one source to increase emissions when another sources reduces them, maintaining an overall constant emission level. Facilities that reduce emissions substantially may “bank” their “credits” or sell them to other industries.

**Encapsulation:** The treatment of asbestos-containing material with a liquid that covers the surface with a protective coating or embeds fibers in an adhesive matrix to prevent their release into the air.

**Enclosure:** Putting an airtight, impermeable, permanent barrier around asbestos -containing materials to prevent the release of asbestos fibers into the air.

**Endangered Species:** Animals, birds, fish, plants, or other living organisms threatened with extinction by man-made or natural changes in their environment. Requirements for declaring a species endangered are contained in the Endangered Species Act.

**Endangerment Assessment:** A study to determine the nature and extent of contamination at a site on the National Priorities List and the risks posed to public health or the environment. EPA or the state conduct the study when a legal action is to be taken to direct potentially responsible parties to clean up a site or pay for it. An endangerment assessment supplements a remedial investigation.

**Endrin:** a pesticide toxic to freshwater and marine aquatic life that produces adverse health effects in domestic water supplies.

**Energy Recovery:** Obtaining energy from waste through a variety of processes (e.g., combustion.)

**Enforceable Requirements:** Conditions or limitations in permits issued under the Clean Water Act ,Section 402 or 404 that, if violated, could result in the issuance of a compliance order or initiation of a civil or criminal action under federal or applicable state laws. If a permit has not been issued, the term includes any requirement which, in the Regional Administrator’ s judgement, would be included in the permit when issued. Where no permit applies, the term includes any requirement which the RA determines is necessary for the best practical waste treatment technology to meet applicable criteria.

**Enforcement:** EPA, state, or local legal actions to obtain compliance with environmental laws, rules, regulations, or agreements and/or obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the requirements of different environmental laws and related implementing regulations. Under CERCLA, for example, EPA will seek to require potentially responsible parties to clean up a Superfund site, or pay for the cleanup, whereas under the Clean Air Act the agency may invoke sanctions against cities failing to meet ambient air quality standards that could prevent certain types of construction or federal funding. In other situations, if investigations by EPA and state agencies uncover willful violations, criminal trials and penalties are sought.

**Enforcement Decision Document (EDD):** A document that provides an explanation to the public of EPA’s selection of the cleanup alternative at enforcement sites on the National Priorities List. Similar to a Record of Decision.

**Enhanced Inspection and Maintenance (I&M):** An improved automobile inspection and maintenance program-aimed at reducing automobile emissions-that contains, at a minimum, more vehicle types and model years, tighter inspection, and better management practices. It may also include annual computerized or centralized inspections, under-the-hood inspection-for signs of tampering with pollution control equipment, and increased repair waiver cost.

**Enrichment:** The addition of nutrients (e.g., nitrogen, phosphorus, carbon compounds) from sewage effluent or agricultural runoff to surface water, greatly increases the growth potential for algae and other aquatic plants.

**Entrain:** To trap bubbles in water either mechanically through turbulence or chemically through a reaction.

**Environment:** The sum of all external conditions affecting the life, development and survival of an organism.

**Environmental Assessment:** An environmental analysis prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require a more detailed environmental impact statement.

**Environmental Audit:** An independent assessment of the current status of a party's compliance with applicable environmental requirements or of a party's environmental compliance policies, practices, and controls.

**Environmental Equity:** Equal protection from environmental hazards of individuals, groups or communities regardless of race, ethnicity, or economic status.

**Environmental Exposure:** Human exposure to pollutants originating from facility emissions. Threshold levels are not necessarily surpassed, but low level chronic pollutant exposure is one of the most common forms of environmental exposure. (See: Threshold Level.)

**Environmental Impact Statement:** A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and cites alternative actions.

**Environmental Indicator:** A measurement, statistic or value that provides a proximate gauge or evidence of the effects of environmental management programs or of the state or condition of the environment.

**Environmental Justice:** The fair treatment of all races, cultures, incomes, and educational levels with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no population of people should be forced to shoulder a disproportionate share of the negative environmental impacts of pollution or environmental hazards due to a lack of political or economic strength.levels

**Environmental Response Team:** EPA experts located in Edison, N.J., and Cincinnati, OH, who can provide around-the-clock technical assistance to EPA regional offices and states during all types of hazardous waste site emergencies and spills of hazardous substances.

**Epidemiology:** Study of the distribution of disease, or other health-related states and events in human populations, as related to age, sex, occupation, ethnic, and economic status in order to identify and alleviate health problems and promote better health.

**Epilimnion:** The upper layer of water in a thermally stratified lake or reservoir. This layer consists of the warmest water.

**Episode (Pollution):** An air pollution incident in a given area caused by a concentration of atmospheric pollutants under meteorological conditions that may result in a significant increase in illnesses or deaths. May also describe water pollution events or hazardous material spills.

**Equilibrium:** In relation to radiation, the state at which the radioactivity of consecutive elements within a radioactive series is neither increasing nor decreasing.

**Equivalent Method:** Any method of sampling and analyzing for air pollution which has been demonstrated to the EPA Administrator's satisfaction to be, under specific conditions, an acceptable alternative to normally used reference methods.

**Erosion:** The wearing away of land surface by wind or water, intensified by land-clearing practices related to farming, residential or industrial development, road building, or logging.

**Estuary:** Regions of interaction between rivers and near-shore ocean waters, where tidal action and river flow mix fresh and salt water. Such areas include bays, mouths of rivers, salt marshes, and lagoons. These brackish water ecosystems shelter and feed marine life, birds, and wildlife. (See: wetlands.)

**Ethanol:** An alternative automotive fuel derived from grain and corn; usually blended with gasoline to form gasohol.

**Ethylene Dibromide (EDB):** A chemical used as an agricultural fumigant and in certain industrial processes. Extremely toxic and found to be a carcinogen in laboratory animals, EDB has been banned for most agricultural uses in the United States.

**Eutrophic Lakes:** Shallow, murky bodies of water with concentrations of plant nutrients causing excessive production of algae. (See: dystrophic lakes.)

**Eutrophication:** The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication the water body is choked by abundant plant life due to higher levels of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

**Evaporation Ponds:** Areas where sewage sludge is dumped and dried.

**Evapotranspiration:** The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

**Exceedance:** Violation of the pollutant levels permitted by environmental protection standards.

**Exclusion:** In the asbestos program, one of several situations that permit a Local Education Agency (LEA) to delete one or more of the items required by the Asbestos Hazard Emergency Response Act (AHERA), e.g., records of previous asbestos sample collection and analysis may be used by the accredited inspector in lieu of AHERA bulk sampling.

**Exclusionary Ordinance:** Zoning that excludes classes of persons or businesses from a particular neighborhood or area.

**Exempt Solvent:** Specific organic compounds not subject to requirements of regulation because are deemed by EPA to be of negligible photochemical reactivity.

**Exempted Aquifer:** Underground bodies of water defined in the Underground Injection Control program as aquifers that are potential sources of drinking water though not being used as such, and thus exempted from regulations barring underground injection activities.

**Exemption:** A state with primacy may relieve a public water system from a requirement respecting an MCL, treatment technique, or both by granting an exemption if the system cannot comply due to compelling economic or other factors; the system was in operation on the effective date of the requirement or MCL; and the exemption will not create an unreasonable public health risk. (See: Variance.)

**Exotic Species:** A species that is not indigenous to a region.

**Experimental Use Permit:** Obtained by manufacturers for testing new pesticides or uses of thereof whenever they conduct experimental field studies to support registration on 10 acres or more on land or one acre or more of water.

**Explosive Limits:** The amounts of vapor in the air that form explosive mixtures; limits are expressed as lower and upper limits and give the range of vapor concentrations in air that will explode if an ignition source is present.

**Exposure:** The amount of radiation or pollutant present in a given environment that represents a potential health threat to living organisms.

**Exposure Assessment:** Identifying the pathways by which toxicants may reach individuals, estimating how much of a chemical an individual is likely to be exposed to, and estimating the number likely to be exposed.

**Exposure Indicator:** A characteristic of the environment measured to provide evidence of the occurrence or magnitude of a response indicator's exposure to a chemical or biological stress.

**Exposure Level:** The amount (concentration) of a chemical at the absorptive surfaces of an organism.

**Extraction Procedure (E P Toxic):** Determining toxicity by a procedure which simulates leaching; if a certain concentration of a toxic substance can be leached from a waste, that waste is considered hazardous, i.e., "E P Toxic."

**Extremely Hazardous Substances:** Any of 406 chemicals identified by EPA as toxic, and listed under SARA Title III. The list is subject to periodic revision.

**Fabric Filter:** A cloth device that catches dust particles from industrial emissions.

**Facilities Plans:** Plans and studies related to the construction of treatment works necessary to comply with the Clean Water Act or RCRA. A facilities plan investigates needs and provides information on the cost effectiveness of alternatives, a recommended plan, an environmental assessment of the recommendations, and descriptions of the treatment works, costs, and a completion schedule.

**Facility Emergency Coordinator:** Representative of a facility covered by environmental law (e.g, a chemical plant) who participates in the emergency reporting process with the Local Emergency Planning Committee (LEPC).

**Facultative Bacteria:** Bacteria that can live under aerobic or anaerobic conditions.

**Feasibility Study:** 1. Analysis of the practicability of a proposal; e.g., a description and analysis of potential cleanup alternatives for a site such as one on the National Priorities List. The feasibility study usually recommends selection of a cost-effective alternative. It usually starts as soon as the remedial investigation is underway; together, they are commonly referred to as the "RI/FS". 2. A small-scale investigation of a problem to ascertain whether a proposed research approach is likely to provide useful data.

**Fecal Coliform Bacteria:** Bacteria found in the intestinal tracts of mammals. Their presence in water or sludge is an indicator of pollution and possible contamination by pathogens.

**Federal Implementation Plan:** Under current law, a federally implemented plan to achieve attainment of air quality standards, used when a state is unable to develop an adequate plan.

**Federal Motor Vehicle Control Program:** All federal actions aimed at controlling pollution from motor vehicles by such efforts as establishing and enforcing tailpipe and evaporative emission standards for new vehicles, testing methods development, and guidance to states operating inspection and maintenance programs.

**Feedlot:** A confined area for the controlled feeding of animals. Tends to concentrate large amounts of animal waste that cannot be absorbed by the soil and, hence, may be carried to nearby streams or lakes by rainfall runoff.

**Fen:** A type of wetland that accumulates peat deposits. Fens are less acidic than bogs, deriving most of their water from groundwater rich in calcium and magnesium. (See: wetlands.)

**FIFRA Pesticide Ingredient:** An ingredient of a pesticide that must be registered with EPA under the Federal Insecticide, fungicide, and Rodenticide Act. Products making pesticide claims mst register under FIFRA and may be subject to labeling and use requirements.

**Filling:** Depositing dirt, mud or other materials into aquatic areas to create more dry land, usually for agricultural or commercial development purposes, often with ruinous ecological consequences.

**Filter Strip:** Strip or area of vegetation used for removing sediment, organic matter, and other pollutants from runoff and waste water.

**Filtration:** A treatment process, under the control of qualified operators, for removing solid (particulate) matter from water by means of porous media such as sand or a man-made filter; often used to remove particles that containing pathogens.

**Financial Assurance for Closure:** Documentation or proof that an owner or operator of a facility such as a landfill or other waste repository is capable of paying the projected costs of closing the facility and monitoring it afterwards as provided in RCRA regulations.

**Finding of No Significant Impact:** A document prepared by a federal agency showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. An FNSI is based on the results of an environmental assessment.

**Finished Water:** Water that has passed through a water treatment plant; all the treatment processes are completed or "finished". The water is ready to be delivered to consumers.

**First Draw:** The water that comes out when a tap is first opened, likely to have the highest level of lead contamination from plumbing materials.

**Fix, sample:** A sample is "fixed" in the field by adding chemicals that prevent water quality indicators of interest in the sample from changing before laboratory measurements are made.

**Flare:** A control device that burns hazardous materials to prevent their release into the environment; may operate continuously or intermittently, usually on top a stack.

**Floc:** A clump of solids formed in sewage by biological or chemical action.

**Flocculation:** Process by which clumps of solids in water or sewage aggregate through biological or chemical action so they can be separated from water or sewage.

**Floodplain:** The flat or nearly flat land along a river or stream or in a tidal area that is covered by water during a flood.

**Floor Sweep:** Capture of heavier-than-air gases that collect at floor level.

**Flow Rate:** The rate, expressed in gallons-or liters-per-hour, at which a fluid escapes from a hole or fissure in a tank. Such measurements are also made of liquid waste, effluent, and surface water movement.

**Flowmeter:** A gauge indicating the velocity of wastewater moving through a treatment plant or of any liquid moving through various industrial processes.

**Flue Gas:** The air coming out of a chimney after combustion in the burner it is venting. It can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, particles and many chemical pollutants.

**Flue Gas Desulfurization:** A technology that employs a sorbent, usually lime or limestone, to remove sulfur dioxide from the gases produced by burning fossil fuels. Flue gas desulfurization is current state-of-the art technology for major SO2 emitters, like power plants.

**Fluidized:** A mass of solid particles that is made to flow like a liquid by injection of water or gas is said to have been fluidized. In water treatment, a bed of filter media is fluidized by backwashing water through the filter.,

**Fluidized Bed Incinerator:** An incinerator that uses a bed of hot sand or other granular material to transfer heat directly to waste. Used mainly for destroying municipal sludge.

**Fluoridation:** The addition of a chemical to increase the concentration of fluoride ions drinking water to reduce the incidence of tooth decay in children.

**Flume:** A natural or man-made channel that diverts water.

**Fluorides:** Gaseous, solid, or dissolved compounds containing fluorine that result from industrial processes. Excessive amounts in food can lead to fluorosis.

**Fluorocarbons (FCs):** Any of a number of organic compounds analogous to hydrocarbons in which one or more hydrogen atoms are replaced by fluorine. Once used in the United States as a propellant for domestic aerosols, they are now found mainly in coolants and some industrial processes. FCs containing chlorine are called chlorofluorocarbons (CFCs). They are believed to be modifying the ozone layer in the stratosphere, thereby allowing more harmful solar radiation to reach the Earth's surface.

**Flush:** 1. To open a cold-water tap to clear out all the water which may have been sitting for a long time in the pipes. In new homes, to flush a system means to send large volumes of water gushing through the unused pipes to remove loose particles of solder and flux. 2. To force large amounts of water through liquid to clean out piping or tubing, storage or process tanks.

**Flux:** A flowing or flow.

**Fly Ash:** Non-combustible residual particles expelled by flue gas.

**Fogging:** Applying a pesticide by rapidly heating the liquid chemical so that it forms very fine droplets that resemble smoke or fog. Used to destroy mosquitoes, black flies, and similar pests.

**Food Chain:** A sequence of organisms, each of which uses the next, lower member of the sequence as a food source.

**Formaldehyde:** A colorless, pungent, and irritating gas, CH20, used chiefly as a disinfectant and preservative and in synthesizing other compounds like resins.

**Formulation:** The substances comprising all active and inert ingredients in a pesticide.

**Fossil Fuel:** Fuel derived from ancient organic remains, e.g., peat, coal, crude oil, and natural gas.

**Freeboard:** 1. Vertical distance from the normal water surface to the top of the confining wall. 2. the vertical distance from the sand surface to the underside of a trough in a sand filter.

**Fresh Water:** Water that generally contains less than 1,000 milligrams-perliter of dissolved solids,

**Friable Asbestos:** Any material containing more than one percent asbestos, and that can be crumbled or reduced to powder by hand pressure. (May include previously non-friable material which becomes broken or damaged by mechanical force.)

**Friable:** Capable of being crumbled, pulverized, or reduced to powder by hand pressure.

**Fuel Economy Standard:** The Corporate Average Fuel Economy Standard (CAFE) effective in 1978. It enhanced the national fuel conservation effort imposing a miles-per-gallon floor for motor vehicles.

**Fuel Efficiency:** The proportion of the energy released on combustion of a fuel that is converted into useful energy.

**Fuel Switching:** 1. A precombustion process whereby a low-sulfur coal is used in place of a higher sulfur coal in a power plant to reduce sulfur dioxide emissions. 2. Illegally using leaded gasoline in a car designed to use only unleaded.

**Fugitive Emissions:** Emissions not caught by a capture system.

**Fume:** Tiny particles trapped in vapor in a gas stream.

**Fumigant:** A pesticide vaporized to kill pests. Used in buildings and greenhouses.

**Functional Equivalent:** Term used to describe EPA's decision-making process and its relationship to the environmental review conducted under the National Environmental Policy Act (NEPA). A review is considered functionally equivalent when it addresses the substantive components of a NEPA review.

**Fungi:** (Singular: Fungus) Molds, mildews, yeasts, mushrooms, and puffballs, a group organisms lacking in chlorophyll (i.e., are not photosynthetic) and which are usually non-mobile, filamentous, and multicellular. Some grow in soil, others attach themselves to decaying trees and other plants whence they obtain nutrients. Some are pathogens, others stabilize sewage and digest composted waste.

**Fungicide:** Pesticides which are used to control, deter, or destroy fungi.

**Fungistat:** A chemical that keeps fungi from growing.

**Furrow Irrigation:** Irrigation method in which water travels through the field by means of small channels between each row or groups of rows.

**Future Liability:** Refers to potentially responsible parties' obligations to pay for additional response activities beyond those specified in the Record of Decision or Consent Decree.

**Game Fish:** Species like trout, salmon, or bass, caught for sport. Many of them show more sensitivity to environmental change than "rough" fish.

**Garbage:** Animal and vegetable waste resulting from the handling, storage, sale, preparation, cooking, and serving of foods.

**Gas Chromatograph/Mass Spectrometer:** Highly sophisticated instrument that identifies the molecular composition and concentrations of various chemicals in water and soil samples.

**Gasification:** Conversion of solid material such as coal into a gas for use as a fuel.

**Gasohol:** Mixture of gasoline and ethanol derived from fermented agricultural products containing at least nine percent ethanol. Gasohol emissions contain less carbon monoxide than those from gasoline.

**Gasoline Volatility:** The property of gasoline whereby it evaporates into a vapor. Gasoline vapor is a volatile organic compound.

**General Permit:** A permit applicable to a class or category of dischargers.

**General Reporting Facility:** A facility having one or more hazardous chemicals above the 10,000 pound threshold for planning quantities. Such facilities must file MSDS and emergency inventory information with the SERC and LEPC and local fire departments.

**Generator:** 1. A facility or mobile source that emits pollutants into the air or releases hazardous waste into water or soil. 2. Any person, by site, whose act or process produces regulated medical waste or whose act first causes such waste to become subject to regulation. In a case where more than one person (e.g., doctors with separate medical practices) is located in the same building, each business entity is a separate generator.

**Genetic Engineering:** A process of inserting new genetic information into existing cells in order to modify any organism for the purpose of changing one of its characteristics.

**Geographic Information System (GIS):** A computer system designed for storing, manipulating, analyzing, and displaying data in a geographic context.

**Geological Log:** A detailed description of all underground features(depth, thickness, type of formations) discovered during the drilling of a well.

**Geophysical Log:** A record of the structure and composition of the earth encountered when drilling a well or similar type of test hold or boring.

**Germicide:** Any compound that kills disease-causing microorganisms.

**Giardia Lamblia:** Protozoan in the feces of man and animals that can cause severe gastrointestinal diseases when it contaminates drinking water.

**Glovebag:** A polyethylene or polyvinyl chloride bag-like enclosure affixed around an asbestos-containing source (most often thermal system insulation) permitting the material to be removed while minimizing release of airborne fibers in the surrounding atmosphere.

**Gooseneck:** A portion of a service connection between the distribution system water main and a meter. Sometimes called a pigtail.

**Grab Sample:** A single sample collected at a particular time and place that represents the composition of the water only at that time and place.

**Grain Loading:** The rate at which particles are emitted from a pollution source. Measurement is made by the number of grains per cubic foot of gas emitted.

**Granular Activated Carbon Treatment:** A filtering system often used in small water systems and individual homes to remove organics. GAC can be highly effective in removing elevated levels of radon from water.

**Grassed Waterway:** Natural or constructed watercourse or outlet that is shaped or graded and established in suitable vegetation for the disposal of runoff water without erosion.

**Gray Water:** Domestic wastewater composed of wash water from kitchen, bathroom, and laundry sinks, tubs, and washers.

**Greenhouse Effect:** The warming of the Earth's atmosphere attributed to a build-up of carbon dioxide or other gases; some scientists think that this build-up allows the sun's rays to heat the Earth, while infra-red radiation makes the atmosphere opaque to a counterbalancing loss of heat.

**Grinder Pump:** A mechanical device that shreds solids and raises sewage to a higher elevation through pressure sewers.

**Ground Cover:** Plants grown to keep soil from eroding.

**Ground Water:** The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because ground water is a major source of drinking water, there is growing concern over contamination from leaching agricultural or industrial pollutants or leaking underground storage tanks.

**Ground-Water Discharge:** Ground water entering near coastal waters which has been contaminated by landfill leachate, deep well injection of hazardous wastes, septic tanks, etc.

**Ground Water Under the Direct Influence (UDI) if Surface Water:** Any water beneath the surface if the ground with: 1. significant occurrence of inserts or other microorganisms, algae, or large-diameter pathogens; 2. significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the state.

**Gross Alpha/Beta Particle Activity:** The total radioactivity due to alpha or beta particle emission as inferred from measurements on a dry sample.

**Gully Erosion:** Severe erosion in which trenches are cut to a depth greater than 30 centimeters (a foot). Generally, ditches deep enough to cross with farm equipment are considered gullies.

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