Appendix A:
Acronyms and Glossary

This glossary provides definitions for a limited set of terms. Most of these terms are included because they have a particular usage or meaning either within EPA or in the context of this report. A few others are included to ensure understanding of intended meaning because they are key terms within this report. This glossary does not include other scientific terms for which standard definitions are readily available.

Acronyms

AAPCC American Association of Poison Control Centers
ADHD attention-deficit/hyperactivity disorder
ANC acid neutralizing capacity
AQI Air Quality Index
AQS Air Quality System
ARMS Agricultural Resources Management Survey
AWQC-AL ambient water-quality criterion for the protection of aquatic life
BBS Breeding Bird Survey
C-CAP Coastal Change Analysis Program
CDC Centers for Disease Control and Prevention
CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
CFC chlorofluorocarbon
CH_4 methane
CO carbon monoxide
CO_2 carbon dioxide
CWS community water system
DDE dichlorodiphenyldichloroethane
DDT dichlorodiphenyltrichloroethane
DO dissolved oxygen
ECI Ecological Connectivity Indicator
EECl effective equivalent troposphere chlorine
EESC effective equivalent stratospheric chlorine
EMAP Environmental Monitoring and Assessment Program
EPA Environmental Protection Agency
ERS Economic Research Service
ETS environmental tobacco smoke
FIA Forest Inventory and Analysis
FY fiscal year
GHG greenhouse gas
GI gastrointestinal
GIS geographic information system
GOME Global Ozone Monitoring Experiment
GWP global warming potential
HAP hazardous air pollutant
HCB hexachlorobenzene
HCFC halogenated fluorocarbon
HFC hydrofluorocarbon
HUC hydrologic unit code
IBI Index of Biological Integrity
ICD International Classification of Diseases
IMPROVE Interagency Monitoring of Protected Visual Environments
K potassium
LBW low birthweight
LOD level of detection
LTM Long-Term Monitoring
LUMCON Louisiana Universities Marine Consortium
MCL Maximum Contaminant Level

Units of Measure

km kilometer
µeq/L microequivalents per liter
µg/dL micrograms per deciliter
µg/L micrograms per liter
$\mu g/m^3$ micrograms per cubic meter
µm micron
mm/yr millimeters per year
MT million tons
MtC/yr metric tons of carbon per year
ng/g nanograms per gram
ng/mL nanograms per milliliter
pg/g picograms per gram
ppb parts per billion
ppm parts per million
ppt parts per trillion

MDL	method detection limit
MMT	methylcyclopentadienyl manganese tricarbonyl
MRLC	Multi-Resolution Land Characteristics
MSA	metropolitan statistical area
N	nitrogen
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Air and Space Administration
NASS	National Agricultural Statistics Service
NATA	National-Scale Air Toxics Assessment
NAWQA	National Water-Quality Assessment
NCA	National Coastal Assessment
NCDC	National Climatic Data Center
NCHS	National Center for Health Statistics
NCI	National Cancer Institute
NEDS	National Emissions Data System
NEI	National Emissions Inventory
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
NIS	non-indigenous species
NIWA	National Institute of Water and Atmospheric Research
NLCD	National Land Cover Database *or* National Land Cover Dataset
NNDSS	National Notifiable Diseases Surveillance System
NOAA	National Oceanic and Atmospheric Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPL	National Priorities List
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRI	National Resources Inventory
NVSS	National Vital Statistics System
O_3	ozone
ODS	ozone-depleting substance
O/E	observed/expected
OMB	Office of Management and Budget
OP	organophosphate
OSWER	Office of Solid Waste and Emergency Response
P	phosphorus
PAH	polycyclic aromatic hydrocarbon
PAN	peroxyacetyl nitrate
PBDE	polybrominated diphenyl ether
PBT	persistent, bioaccumulative, and toxic
PCB	polychlorinated biphenyl
PCC	Poison Control Center
PDP	Pesticide Data Program
PFC	perfluorinated carbon
PM	particulate matter
$PM_{2.5}$	particles with aerodynamic diameters less than or equal to 2.5 microns
PM_{10}	particles with aerodynamic diameters less than or equal to 10 microns
RBS	Relative Bed Stability
RCRA	Resource Conservation and Recovery Act
RfC	reference concentration
ROE	Report on the Environment
SAB	Science Advisory Board
SAV	submerged aquatic vegetation
SBUV	Solar Backscatter Ultraviolet
SEER	Surveillance, Epidemiology, and End Results
SEF	Southeastern Ecological Framework
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SST	sea surface temperature
TCDD	2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEQ	toxic equivalency quotient
TESS	Toxic Exposure Surveillance System
TIME	Temporally Integrated Monitoring of Ecosystems
TOMS	Total Ozone Mapping Spectrometer
TRI	Toxics Release Inventory
TSDF	treatment, storage, and disposal facility
TSP	total suspended particulates
TT	Treatment Technique
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UV	ultraviolet
VOC	volatile organic compound
WBDO	waterborne disease outbreak
WISCARS	Web-Based Injury Statistics Query and Reporting System
WSA	Wadeable Streams Assessment

YPLL years of potential life lost

Glossary

A

advisory: A nonregulatory document that communicates risk information to those who may have to make risk management decisions. For example, a fish consumption advisory may recommend that people limit or avoid eating certain species of fish caught from certain lakes, rivers, or coastal waters. In some cases, advisories may include recommendations for specific groups (such as infants, children, the elderly, or women who are pregnant or may become pregnant).

agricultural and animal waste: Waste generated by the production and harvest of crops or trees or the rearing of animals. Animal waste is a subset of agricultural waste and includes waste (e.g., feed waste, bedding and litter, and feedlot and paddock runoff) from livestock, dairy, and other animal-related agricultural and farming practices.

air pollutant: Any substance in air that could, in high enough concentration, harm humans, animals, vegetation, or material. Air pollutants can include almost any natural or artificial composition of matter capable of being airborne—solid particles, liquid droplets, gases, or a combination thereof. Air pollutants are often grouped in categories for ease in classification; some of the categories are sulfur compounds, volatile organic compounds, particulate matter, nitrogen compounds, and radioactive compounds.

Air Quality Index (AQI): An index for reporting daily air quality that characterizes air pollution levels and associated health effects that might be of concern. EPA calculates the AQI for five criteria pollutants. AQI values range from 0 to 500; the higher the AQI value, the greater the level of air pollution and the greater the health concern. AQI values below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is considered to be unhealthy—at first for certain sensitive groups of people, then for everyone as AQI values get higher. Refer to EPA's AIRNOW Web site (http://www.epa.gov/airnow) for more information on the AQI and how it is calculated.

Air Quality System (AQS): EPA's electronic repository of ambient air monitoring data collected by EPA, state, local, and tribal air pollution control agencies from thousands of monitoring stations. The AQS contains monitoring data, descriptive information about monitoring stations, and data quality assurance and quality control information.

air toxics: Air pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. Examples of toxic air pollutants include benzene (found in gasoline), perchloroethylene (emitted from some dry cleaning facilities), and methylene chloride (used as a solvent by a number of industries). Air toxics are also known as hazardous air pollutants.

anthropogenic: Originating from humans; not naturally occurring.

area source: A source of air pollution that is released over an area that cannot be classified as a point source. Area sources can include vehicles and other small engines, small businesses and household activities, or biogenic sources such as a forest that releases hydrocarbons.

B

baseline: A reference condition against which changes or trends are judged—usually a set of conditions that exist at a particular point in time.

benchmark: A concentration or other accepted measure against which environmental conditions are compared.

bioaccumulative compound: A compound that tends to accumulate in tissues and build up in food webs. Some bioaccumulative compounds can potentially have adverse effects on ecosystems or human health.

biogenic source: An air emissions source created by some sort of biological activity. Examples include emissions resulting from microbial activity in soils and emissions from trees and other vegetation. Emissions from biogenic sources are a subset of emissions from natural sources (see *natural source*).

biological balance: The interrelationships among organisms, including the structure of food webs and the ability of ecological systems to maintain themselves over time. Balance is a dynamic characteristic, rather than a fixed state.

biological diversity: The variety and variability among living organisms and the ecological complexes in which they occur. Though it most often refers to the numbers of species, the term can apply to levels of organization ranging from genes to ecosystems.

biomarker: A molecular or cellular indicator (or "marker") of an event or condition (exposure, effect, susceptibility) in a biological system or sample. It is the product of an interaction between a contaminant and some target molecule or cell.

biomarker of effect: A measure of disease progression, representing a measurable alteration at the molecular, cellular, or some other structural level in the body that can be recognized as a potential or established adverse health effect. Such a biomarker can indicate a biological response or health effect related to a chemical or other stressor; however, it is not always possible to link a biomarker with exposure to a single substance.

biomarker of exposure: The level of a contaminant or its metabolite collected from the body or from substances produced or excreted within biological systems. In humans, this measurement can reflect the amount of the contaminant that is stored in the body, and is sometimes referred to as the body burden. It indicates the level of exposure.

biomarker of susceptibility: A measurement of individual factors that can affect response to environmental agents. Examples include enzymes whose presence or absence may reflect a particular genetic condition.

biomonitoring: The measurement of human tissues or excreta from biological systems for direct or indirect evidence of exposure to chemical, biological, or radiological substances.

biotic environment: The biological component of an ecosystem, including plants and animals.

C

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

climate change: A term sometimes used to refer to all forms of climatic inconsistency; because the Earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, "climate change" has been used synonymously with "global warming." Scientists, however, tend to use "climate change" in the wider sense to also include natural changes in climate.

coastal waters: Waters at the interface between terrestrial environments and the open ocean. Many unique habitats lie in coastal waters—for example, estuaries, coastal wetlands, seagrass meadows, coral reefs, mangrove and kelp forests, and upwelling areas.

community: In ecology, an assemblage of populations of different species within a specified location in space and time. Sometimes, a particular subgrouping may be specified, such as the fish community in a lake or the soil arthropod community in a forest.

community water system: A water system that supplies drinking water to 25 or more of the same people year-round in their residences.

condition: The state of a resource, generally reflecting a combination of physical, chemical, and biological characteristics such as temperature, water clarity, chemical composition, or the status of biological communities. ROE questions address the condition of fresh surface waters, ground water, wetlands, coastal waters, recreational waters, and consumable fish and shellfish. (Also see *ecological condition*.)

construction and demolition debris: Waste materials generated during the construction, renovation, and demolition of buildings, roads, and bridges. Construction and demolition debris often contains bulky, heavy materials such as concrete, wood (from buildings), asphalt (from roads and roofing shingles), gypsum (from drywall), metals, bricks, glass, plastics, building components (doors, windows, plumbing fixtures), and trees, stumps, earth, and rock from clearing sites.

contaminant: Any physical, chemical, biological, or radiological substance or matter that has an adverse effect on air, water, or soil.

contaminated land: Land that has been polluted with hazardous materials and requires cleanup or remediation. Contaminated lands include sites contaminated as a result of improper handling or disposal of toxic and hazardous wastes, sites where improper handling or accidents released toxic or hazardous materials that are not wastes, and sites where toxics may have been deposited by wind or flooding.

criteria pollutants: A group of six widespread and common air pollutants that EPA regulates on the basis of standards set to protect public health or the environment (see *National Ambient Air Quality Standards*). The six criteria pollutants are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

D

deleted NPL site: A site that has been deleted from the Superfund National Priorities List because its cleanup goals have been met and there is no further need for federal action. (See *Superfund* and *National Priorities List*.)

drinking water quality: Refers to whether contaminants are present in water that people drink—including water from the tap, private wells, hauled water, untreated surface water sources, and bottled water—at levels that could affect human health.

drinking water standards: Regulations that EPA sets to control the level of contaminants in the nation's drinking water. Enforceable standards include Maximum Contaminant Levels (MCLs) and Treatment Techniques (TTs) (see separate entries for each). Drinking water standards apply to all public water systems (see *public water system*).

E

ecological condition: A term referring to the state of the physical, chemical, and biological characteristics of the environment, and the processes and interactions that connect them.

ecological connectivity: A term referring to the connected system of open space throughout an ecosystem and adjacent ecosystems. Includes the presence of ecotones, the transitional regions between ecosystems.

ecological processes: The metabolic functions of ecosystems—energy flow, elemental cycling, and the production, consumption, and decomposition of organic matter.

ecological system: A hierarchically nested area that includes all living organisms (people, plants, animals, and microorganisms), their physical surroundings (such as soil, water, and air), and the natural cycles that sustain them.

ecoregion: An area within which the ecosystems—and the type, quality, and quantity of environmental resources—are generally similar. An ecoregion can serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. Several different classification schemes have been developed, at various resolutions. For more information about EPA's ecoregion designations for North America, visit http://www.epa.gov/wed/pages/ecoregions/ecoregions.htm.

ecosystem: The interacting system of a particular biological community and its non-living environmental surroundings, or a class of such systems (e.g., forests or wetlands).

emission factor: The relationship between the amount of pollution produced by a particular source and the amount of raw material processed. For example, an emission factor for a blast furnace making iron might be pounds of particulates emitted per ton of raw materials processed.

emission inventory: A listing, by source and pollutant, of the amount of air pollutants discharged into the atmosphere. Emission inventories can be based on emissions estimates, emissions measurements, or both.

endpoint: A biological or ecological characteristic that is the basis for evaluation or measurement.

end state: Any one of a number of ecosystem characteristics observed at a point in time. The term is commonly used to represent the results of ecological processes.

EPA Region: One of ten EPA geographic divisions, each responsible for executing the Agency's programs within a specific group of states and territories. A map of the EPA Regions is provided in Chapter 1, Exhibit 1-2.

ephemeral waters: Water bodies (e.g., streams or wetlands) that contain water for brief periods, usually in direct response to a precipitation event. Ephemeral waters generally flow for a shorter time period than intermittent waters, although in some cases the terms are used interchangeably (see *intermittent waters*).

exposure: For humans, the amount of a chemical, physical, or biological contaminant at the outer boundary of the body available for exchange or intake via inhalation, ingestion, or skin or eye contact.

extent: The amount and distribution of a resource, which may be measured in terms of spatial area, volume, depth, or flow (e.g., for water resources). ROE questions address the extent of fresh surface waters, ground water, wetlands, and coastal waters.

extraction and mining waste: Soil and rock generated during the process of gaining access to the ore or mineral body, as well as water that infiltrates the mine during the extraction process. This category also includes certain wastes associated with the beneficiation of ores and minerals, including wastes from the following activities: crushing, grinding, washing, dissolution, crystallization, filtration, sorting, sizing, drying, sintering, pelletizing, briquetting, calcining to remove water and/or carbon dioxide, roasting in preparation for leaching (except where the roasting/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing), gravity concentration, magnetic separation, electrostatic separation, floatation, ion exchange, solvent extraction, electrowinning, precipitation, amalgamation, and heap, dump, vat, tank, and in situ leaching.

F

final NPL site: A site that has been formally added to the Superfund National Priorities List. (See *Superfund* and *National Priorities List*.)

finished water: Water that has been treated and is ready to be delivered to customers.

fossil fuel combustion waste: Waste from the combustion of oil, natural gas, or petroleum coke; the combustion of coal at electric utilities and independent power-producing facilities, non-utilities, and facilities with fluidized bed combustion technology; or the combustion of mixtures of coal and other fuels (i.e., coburning of coal with other fuels) where coal is at least 50 percent of the total fuel.

G

global climate change: See *climate change.*

greenhouse gas: Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), halogenated fluorocarbons (HCFCs), ozone (O_3), perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs).

H

hazardous air pollutants: See *air toxics.*

hazardous waste: Waste with properties that make it dangerous or potentially harmful to human health or the environment. The universe of hazardous wastes is large and diverse. Hazardous wastes can be liquids, solids, contained gases, or sludges. They can be the byproducts of manufacturing processes or simply discarded commercial products, like cleaning fluids or pesticides. Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA) Subtitle C (see *RCRA hazardous waste* for the regulatory definition). States can identify additional wastes as hazardous beyond those identified by EPA.

health-based standards: Standards based on contaminant concentrations in environmental media or exposure doses that are likely to be without an appreciable risk of adverse health effects in humans. (Some health-based standards allow for consideration of technological and cost limitations.)

hypoxia: The occurrence of low dissolved oxygen concentrations in water. Hypoxia is generally defined with respect to saturation; because saturation levels vary with temperature and salinity, the concentration that defines hypoxia may vary seasonally and geographically. In practice,

scientists often use a threshold of 2 parts per million, the generally accepted minimum required for most marine life to survive and reproduce.

I

impervious surface: A hard surface area that either prevents or retards the entry of water into the soil mantle or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

index: A single number, derived from two or more environmental variables, that is intended to simplify complex information. For example, the Index of Biological Integrity combines several metrics of benthic community condition into a single index score.

index period: In EPA's aquatic resource monitoring, a term used to describe the portion of the year when data are collected. The index period is often selected based on ecological considerations.

indicator: A numerical value derived from actual measurements of a stressor, state or ambient condition, exposure, or human health or ecological condition over a specified geographic domain, whose trends over time represent or draw attention to underlying trends in the condition of the environment.

industrial non-hazardous waste: Waste generated from processes associated with the production of goods and products, such as electric power generation and manufacturing of materials such as pulp and paper, iron and steel, glass, and concrete. This waste usually is not classified as municipal solid waste by the federal government, but some states may classify it as such if it enters the municipal solid waste stream.

industrial source: A term used in this report to describe air emissions sources of industrial origin. The report breaks industrial sources down into contributions from selected industries, as appropriate.

intermittent waters: Water bodies (e.g., streams or wetlands) that contain water for part of each year, due to precipitation events and some ground water contributions. Intermittent streams and wetlands typically contain water for weeks or months, while "ephemeral" streams and wetlands contain water for briefer periods—but in some cases these terms are used interchangeably (see *ephemeral waters*).

invasive species: A non-indigenous plant or animal species that can harm the environment, human health, or the economy.

L

land treatment unit: A site where physical, chemical, and biological processes occurring in the topsoil layers (e.g., naturally occurring soil microbes and sunlight) are used to treat and contain waste. Hazardous waste is applied directly to the soil surface or incorporated into the upper layers of the soil, where its constituents are degraded, transformed, or immobilized. Liner systems or leachate collection and removal systems are not required for land treatment units. Closure consists primarily of placing a vegetative cover over the unit and certifying that hazardous constituent levels in the treatment zone do not exceed background levels.

landfill: A disposal site for solid wastes spread in layers, compacted to the smallest practical volume, and covered by material (e.g., soil). Landfills are designed to isolate waste from the surrounding environment (e.g., ground water, rain, air). Landfills are subject to requirements that include installing and maintaining a final cover, operating leachate collection and removal systems, maintaining and monitoring the leak detection system, ground water monitoring, preventing storm water run-on and -off, and installing and protecting surveyed benchmarks.

M

Maximum Contaminant Level (MCL): The highest level of a contaminant that EPA allows in drinking water. MCLs are enforceable standards that ensure that drinking water does not pose either a short-term or long-term health risk. EPA sets MCLs at levels that are economically and technologically feasible. Some states set MCLs that are more strict than EPA's.

medical waste: Any solid waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, excluding hazardous waste identified or listed under 40 CFR Part 261 or any household waste as defined in 40 CFR Sub-Section 261.4(b)(1).

metal mining sector: Metal mining facilities that fall within Standard Industrial Classification Code 10 and must report to the Toxics Release Inventory in accordance with Section 313 of the Emergency Planning and Community Right to Know Act.

mobile source: A term used to describe a wide variety of vehicles, engines, and equipment that generate air pollution and that move, or can be moved, from place to place. "On-road" sources are vehicles used on roads to transport passengers or freight. "Nonroad" sources include vehicles, engines, and equipment used for construction, agriculture, transportation, recreation, and many other purposes.

municipal solid waste: Waste from homes, institutions, and commercial sources consisting of everyday items such as product packaging, grass clippings, furniture, clothing, bottles and cans, food scraps, newspapers, appliances, consumer electronics, and batteries. (Excluded from this category are municipal wastewater treatment sludges, industrial process wastes, automobile bodies, combustion ash, and construction and demolition debris.)

N

National Ambient Air Quality Standards (NAAQS): Standards established by EPA that apply to outdoor air

throughout the country. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. EPA has set NAAQS for the six *criteria pollutants*.

National Indicator: An ROE indicator for which nationally consistent data are available, and which helps to answer an ROE question at a national scale. Some National Indicators also present data broken down by EPA Region. (See *ROE indicator*.)

National Priorities List (NPL): EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. (See *Superfund*.)

natural source: A term used in this report to describe any air emissions source of natural origin. Examples include volcanoes, wild fires, wind-blown dust, and releases due to biological processes (see *biogenic source*).

non-indigenous species: A species that has been introduced by human action, either intentionally or by accident, into an area outside its natural geographical range; also called an alien, exotic, introduced, or non-native species. Certain non-indigenous species are considered "invasive." (See *invasive species*.)

non-production-related waste: Waste that is not production-related; for example, waste associated with catastrophic events and cleanup actions. Toxic chemicals in non-production-related waste must be reported to the Toxics Release Inventory (see *Toxics Release Inventory*).

non-transient non-community water system: A type of public water system that supplies water to 25 or more of the same people at least 6 months per year in places other than their residences. Some examples are schools, factories, office buildings, and hospitals that have their own water systems. (See *public water system*.)

nonpoint source: A diffuse source of pollution, having no single point of origin. This term is commonly used to describe water pollution caused by rainfall or snowmelt moving over and through the ground and carrying natural and human-made contaminants into lakes, rivers, streams, wetlands, estuaries, other coastal waters, and ground water. Atmospheric deposition and hydrologic modification are also sources of nonpoint water pollution.

non-public water system: A water system that does not provide water for human consumption through at least 15 service connections, or regularly serve at least 25 individuals, for at least 60 days per year.

nutrient: Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus but is also applied to other essential and trace elements.

O

oil and gas production waste: Gas and oil drilling muds, oil production brines, and other waste associated with exploration for, or development and production of, crude oil or natural gas.

onsite treatment: See *treatment*.

ozone-depleting substance: Any compound that contributes to stratospheric ozone depletion (see *ozone depletion*).

ozone depletion: Destruction of the stratospheric ozone layer, which shields the Earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine- and/or bromine-containing compounds (chlorofluorocarbons or halons). These compounds break down when they reach the stratosphere and then catalytically destroy ozone molecules.

P

point source: A fixed location or facility that discharges pollution—for example, a factory smokestack, a ship, an ore pit, a ditch, or a pipe discharging treated industrial wastewater or treated sewage into a waterway.

pollutant: Any substance introduced into the environment that may adversely affect the usefulness of a resource or the health of humans, animals, or ecosystems. For most environmental media, this term is commonly understood to refer to substances introduced by human activities. In the case of air, the convention is to include substances emitted from natural sources as well (see *air pollutant*).

population: In ecology, a group of interbreeding organisms occupying a particular space. In other contexts, including human health, this term generally refers to the number of humans living in a designated area.

precursor: In photochemistry, any compound antecedent to a pollutant. For example, volatile organic compounds (VOCs) and nitrogen oxides react in sunlight to form ozone or other photochemical oxidants. As such, VOCs and nitrogen oxides are precursors.

primary pollutant: Any pollutant that is emitted into the atmosphere directly from its source and that retains the same chemical form. An example of a primary pollutant is dust that blows into the air from a landfill.

Priority Chemicals: A set of chemicals, found in the nation's products and wastes, that EPA targets for voluntary reduction (or recovery and recycling if they cannot be eliminated or reduced at the source). The list of Priority Chemicals is available at http://www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm.

production-related waste: The sum of a facility's production-related onsite waste releases, onsite waste management (recycling, treatment, and combustion for energy recovery), and offsite transfers for disposal, treatment,

recycling, or energy recovery. Toxic chemicals in production-related waste must be reported to the Toxics Release Inventory (see *Toxics Release Inventory*).

public water system: A system that provides water for human consumption through at least 15 service connections, or regularly serves at least 25 individuals, for at least 60 days per year. Public water systems are divided into three categories (see *community water system, non-transient non-community water system,* and *transient non-community water system*). Examples of public water systems include municipal water companies, homeowner associations, schools, businesses, campgrounds, and shopping malls.

R

radioactive waste: Waste containing substances that emit ionizing radiation. Radioactive waste is classified by regulation according to its source and/or content. The types of waste that are typically considered "radioactive waste" include high-level waste, low-level waste, mixed low-level waste, transuranic waste (i.e., elements heavier than uranium), and certain wastes from the extraction and processing of uranium or thorium ore. Spent nuclear fuel, which is produced as a result of the controlled nuclear fission process in nuclear reactors, is considered a nuclear material rather than radioactive waste.

RCRA Cleanup Baseline: A priority subset of the universe of facilities that are subject to cleanup under the Resource Conservation and Recovery Act (RCRA) due to past or current treatment, storage, or disposal of hazardous wastes, and that have historical releases of contamination.

RCRA hazardous waste: A national regulatory designation for certain wastes under the Resource Conservation and Recovery Act (RCRA). Some wastes are given this designation because they are specifically listed on one of four RCRA hazardous waste lists (see http://www.epa.gov/epaoswer/osw/hazwaste.htm). Other wastes receive this designation because they exhibit at least one of four characteristics—ignitability, corrosivity, reactivity, or toxicity.

Regional Indicator: An ROE indicator that helps to answer an ROE question on a smaller-than-national geographic scale. A Regional Indicator may cover a topic for which nationally consistent data are unavailable, or it may present an issue that is of particular concern within a certain geographic area. (See *ROE indicator.*)

risk factor: A characteristic (e.g., race, sex, age, obesity) or variable (e.g., smoking, occupational exposure level) associated with increased probability of an adverse effect.

ROE indicator: An indicator that meets the ROE criteria (see Box 1-1, p. 1-8) and has been peer-reviewed. (See *indicator.*)

S

secondary pollutant: Any pollutant that is formed by atmospheric reactions of precursor or primary emissions. An example of a secondary pollutant is ground-level ozone, which forms from chemical reactions involving airborne nitrogen oxides, airborne volatile organic compounds, and sunlight.

sewage sludge: A semi-solid residue from any of a number of air or water treatment processes. When treated and processed, sewage sludge becomes a nutrient-rich organic material called biosolids.

stratosphere: The layer of the atmosphere that starts about 6 to 9 miles above the Earth's surface at mid-latitudes and lies atop the troposphere. The stratosphere contains small amounts of gaseous ozone, which filters out about 99 percent of the incoming ultraviolet radiation.

stressor: A physical, chemical, or biological entity that can induce adverse effects on ecosystems or human health.

Superfund: A program, operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act, that funds and carries out EPA solid waste emergency and long-term removal and remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority, and conducting and/or supervising cleanup and other remedial actions. (See *National Priorities List.*)

T

toxic chemical: A chemical that can produce injury if inhaled, swallowed, or absorbed through the skin.

Toxics Release Inventory (TRI): A database containing detailed information on nearly 650 chemicals and chemical categories that over 23,000 industrial and other facilities manage through disposal or other releases, recycling, combustion for energy recovery, or treatment.

Toxics Release Inventory (TRI) chemicals: The chemicals and chemical categories that appear on the current TRI toxic chemical list. As of December 2007, the TRI toxic chemical list contains 581 individually listed chemicals and 30 chemical categories (including three delimited categories containing 58 chemicals). The list of TRI chemicals is available at http://www.epa.gov/tri/chemical/index.htm.

Toxics Release Inventory (TRI) facilities: The facilities that are required by Section 313 of the Emergency Planning and Community Right to Know Act to report to the TRI. In the 2005 reporting year, approximately 23,500 facilities reported to the TRI.

transient non-community water system: A type of public water system that provides water in a place—such as a gas station or campground—where people do not remain for long periods of time. These systems do not have to test or treat their water for contaminants that pose long-term health risks, because fewer than 25 people drink the water over a long period. They still must test their water for microbes and several chemicals. (See *public water system.*)

treatment: Any process that changes the physical, chemical, or biological character of a waste to make it less of an environmental threat. Treatment can neutralize the waste, recover energy or material resources from it, render it less hazardous, or make it safer to transport, store, or dispose of.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

troposphere: The layer of the atmosphere closest to the Earth's surface. The troposphere extends from the surface up to about 6 to 9 miles.

U

underground injection: The technology of placing fluids underground in porous formations of rocks, through wells or other conveyance systems. The fluids may be water, wastewater, or water mixed with chemicals. Regulations for disposing of waste this way vary depending on type of waste. RCRA hazardous waste is placed in highly regulated (Class 1) wells.

urbanization: The concentration of development in relatively small areas (cities and suburbs). The U.S. Census Bureau defines "urban" as referring to areas with more than 1.5 people per acre.

W

wadeable stream: A stream, creek, or small river that is shallow enough to be sampled using methods that involve wading into the water. Wadeable streams typically include waters classified as first through fourth order in the Strahler Stream Order classification system.

wetland: An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.