

# Annex K: GLOSSARY

<b>Adsorbable Organic Halogens (AOX)</b>	Adsorbable Organic Halogens is a measurement often used in waste water testing to indicate the overall level of the halogens, fluorine, chlorine, bromine and iodine. This "sum parameter" comes from a standard analytical procedure, which gives no information on the source or nature of halogens present nor on their toxicity. It has the advantage of being simple to measure; alternative methods of measuring levels of individual compounds are complex and require costly equipment.
<b>Airborne Particulates</b>	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 the exhaust of motor vehicles
<b>Air Contaminant</b>	Any particulate matter, gas, or combination thereof, other than water vapour or natural air. (See: air pollutant.)
<b>Air Dry (AD)</b>	Refers to the weight of dry pulp/paper in equilibrium with the atmosphere. Though the amount of moisture in dry pulp/paper will depend on the atmospheric condition of humidity and temperature but as a convention 10% moisture is assumed in air dry pulp/paper.
<b>Air Pollutant</b>	Any substance in air which could, if in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combinations of these forms. 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 photo-activation
<b>Air Pollution</b>	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
<b>Algae</b>	Simple rootless plants that grow in sunlit waters in relative proportion to the amounts of nutrients available. They can affect water quality adversely by lowering the dissolved oxygen in the water. They are food for fish and small aquatic animals
<b>Algal Blooms</b>	Sudden spurts of algal growth, which can affect water quality adversely and indicate potentially adverse changes in local water chemistry
<b>Ambient Air</b>	Any unconfined portion of the atmosphere: open air, surrounding air
<b>Anadromous</b>	Fish that spend their adult life in the sea but swim upriver to fresh-water spawning grounds to reproduce
<b>Anaerobic</b>	A process that occurs in, or is not destroyed by, the absence of oxygen
<b>Aquifer</b>	An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs
<b>Area Source</b>	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 fuel combustion engines.
<b>A-Scale Sound Level</b>	A measurement of sound approximating the sensitivity of the human ear, used to note the intensity or annoyance of sound

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<b>Attenuation</b>	The process by which a compound is reduced in concentration over time, through adsorption, degradation, dilution, and/or transformation
<b>Autotrophic</b>	An organism that produces food from inorganic substances
<b>Background Level</b>	The concentration of substances in a definite area during a fixed period of time prior to the starting up or on the stoppage of a source of discharge/emission under control
<b>Best Available Technique (BAT)</b>	Techniques that an institution determines, after examination for efficacy under field conditions and not solely under laboratory conditions, to be the best available (taking cost into consideration). BAT is a requirement under the EU Directive on Integrated Pollution Prevention and Control.
<b>Benthic (Benthos)</b>	A form of aquatic plant or animal life that is found on or near the bottom of a stream, lake or ocean
<b>Biochemical Oxygen Demand</b>	(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. BOD <sub>5</sub> - the amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter
<b>Biological Oxidation</b>	The way bacteria and micro-organisms feed on and decompose complex organic materials. Used in self-purification of water bodies and in activated sludge wastewater treatment
<b>Biological Treatment</b>	A treatment technology that uses bacteria to consume waste. This treatment breaks down organic materials
<b>Black Liquor</b>	The liquor that exits the digester with the cooked chips at the end of the Kraft cook is called "black" liquor.
<b>Brightness</b>	The reflectance or brilliance of the paper when measured under a specially calibrated blue light. Not necessarily related to color or whiteness. Brightness is expressed in %.
<b>Carrying Capacity</b>	In recreation management, the amount of use a recreation area can sustain without deterioration of its quality In wildlife management, the maximum number of animals that an area can support during a given period of the year
<b>Cellulose</b>	It is a high molecular weight, stereoregular, and linear polymer of repeating beta-D-glucopyranose units. Simply speaking it is the chief structural element and major constituents of the cell wall of trees and plants.
<b>Chemical Oxygen Demand</b>	(COD) A measure of the oxygen required to oxidise all compounds in water, both organic and inorganic
<b>Coefficient of Haze</b>	(CoH) A measurement of visibility interference in the atmosphere
<b>Coliform Organism</b>	Micro-organisms found in the intestinal tract of humans and animals. Their presence in water indicates faecal pollution and potentially dangerous bacterial contamination by disease-causing micro-organisms.
<b>Confined Aquifer</b>	An aquifer in which ground water is confined under pressure which is significantly greater than atmospheric pressure
<b>Conservation</b>	Avoiding waste of, and renewing when possible, human and natural resources. The protection, improvement, and use of natural resources according to principles that will assure their highest economic or social benefits
<b>Conservative constituents</b>	Materials that do not degrade in the environment, such as Biochemical Oxygen Demand (BOD) and dissolved oxygen (OD).

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<b>Contaminant</b>	Any physical, chemical, biological, or radiological substance or matter that has an adverse affect on air, water, or soil
<b>Contingency Plan</b>	A document setting out an organised, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous wastes, or radioactive materials which threaten human health or the environment
<b>Cooking</b>	Reacting fibrous raw material with chemical under pressure and temperature to soften and or remove lignin to separate fibers.
<b>Cooking Liquor</b>	Liquor made up of selected chemicals and used for cooking pulp. e.g. cooking liquor in kraft pulping mainly consist of NaOH and Na <sub>2</sub> S.
<b>Decibel</b>	(dB) A unit of sound measurement. In general, sound doubles in loudness for every 10dB
<b>Delignification</b>	The removal of lignin, the material that binds wood fibers together, during the chemical pulping process
<b>Detergent</b>	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
<b>Digester</b>	The reaction vessel in which wood chips or other plant materials are cooked with chemical to separate fiber by dissolving lignin
<b>Dispersant</b>	A chemical agent used to break up concentrations of organic material such as spilled oil
<b>Disposal</b>	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
<b>Dissolved Oxygen</b>	(DO) The oxygen freely available in water. Dissolved oxygen is vital to fish and other aquatic life and for the prevention of odours. Traditionally, the level of dissolved oxygen has been accepted as the single most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatments are generally designed to protect DO in waste-receiving waters.
<b>Dissolved Solids</b>	Disintegrated organic and inorganic material contained in water. Excessive amounts make water unfit to drink or use in industrial processes
<b>Dredging</b>	Removal of mud from the bottom of water bodies using a scooping machine. This disturbs the ecosystem and causes silting that can smother and/or kill aquatic life. Dredging of contaminated muds can expose aquatic life to heavy metals and other toxics
<b>Dregs</b>	The solids which settle down in the clarifiers in the Causticizing process
<b>Dump</b>	A site used to dispose of solid wastes without environmental controls
<b>Elemental Chlorine Free (ECF)</b>	ECF papers are made exclusively with pulp that uses chlorine dioxide rather than elemental chlorine gas as a bleaching agent. This virtually eliminates the discharge of detectable dioxins in the effluent of pulp manufacturing facilities
<b>Ecological Impact</b>	The effect that a man-made or natural activity has on living organisms and their non-living (abiotic) environment
<b>Ecology</b>	The relationship of living things to one another and their environment, or the study of such relationships
<b>Ecosystem</b>	The interacting system of a biological community and its non-living environmental surroundings

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<b>Effluent</b>	Wastewater—treated or untreated—that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters
<b>Emission</b>	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
<b>Endangered Species</b>	Animals, birds, fish, plants, or other living organisms threatened with extinction by man-made or natural changes in their environment
<b>Enrichment</b>	The addition of nutrients (e.g., nitrogen, phosphorus, carbon compounds) from sewage effluent or agricultural runoff to surface water. This process greatly increases the growth potential for algae and aquatic plants
<b>Environment</b>	The sum of all external conditions affecting the life, development and survival of an organism
<b>Environmental Audit</b>	An independent assessment of the current status of a party's compliance with applicable environmental requirements An independent evaluation of a party's environmental compliance policies, practices, and controls
<b>Environmental Impact Statement</b>	A document required 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 lists alternative actions
<b>Eutrophication</b>	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 as the result of increased amounts of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process
<b>Evaporation Ponds</b>	Areas where sewage sludge is dumped and allowed to dry out
<b>Feasibility Study</b>	Analysis of the practicability of a proposal; e.g., a description and analysis of the potential development alternatives for a site or alternatives for a site. The feasibility study usually recommends selection of a cost-effective alternative.
<b>Fugitive Emissions</b>	Emissions not caught by a capture system
<b>Green Liquor</b>	The liquor that results when the inorganic smelt from the recovery furnace is dissolved in water is called "green" liquor.
<b>Ground Water</b>	The supply of fresh water found beneath the Earth's surface, usually in aquifers, which is often used for supplying wells and springs. Because ground water is a major source of drinking water there is growing concern over areas where leaching agricultural or industrial pollutants or substances from leaking underground storage tanks are contaminating ground water
<b>Habitat</b>	The place where a population (e.g., human, animal, plant, micro-organism) lives and its surroundings, both living and non-living
<b>Hydrogeology</b>	The geology of ground water, with particular emphasis on the chemistry and movement of water
<b>Hydrology</b>	The science dealing with the properties, distribution, and circulation of water
<b>Kraft Pulp</b>	Chemical wood pulp produced by digesting wood by the sulfate process (q.v.). Originally a strong, unbleached coniferous pulp for packaging papers, kraft pulp has now spread into the realms of bleached pulps from both coniferous and deciduous woods for printing papers
<b>Landfills</b>	Land disposal sites for solid wastes at which the waste is spread in layers, compacted to the smallest practical volume, and cover material applied

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<b>Mitigation</b>	Measures taken to reduce adverse impacts on the environment
<b>Monitoring</b>	Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things
<b>Non-Point Source</b>	Pollution sources which are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet. The pollutants are generally carried off the land by stormwater runoff. The commonly used categories for non-point sources are: agriculture, forestry, urban, mining, construction, dams and channels, land disposal, and saltwater intrusion
<b>Opacity</b>	The amount of light obscured by particulate pollution in the air; clear window glass has a zero opacity; a brick wall has 100 percent opacity. Opacity is used as an indicator of changes in performance of particulate matter pollution control systems
<b>Oxidation Pond</b>	A man-made lake or body of water in which waste is consumed by bacteria. It is used most frequently with other waste-treatment processes. An oxidation pond is basically the same as a sewage lagoon
<b>Particulates</b>	Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog, found in air or emissions
<b>pH</b>	A measure of the acidity or alkalinity of a liquid or solid material
<b>Physical and Chemical Treatment</b>	Processes generally used in large-scale waste-water treatment facilities. Physical processes may involve air-stripping or filtration. Chemical treatment includes coagulation, chlorination, or ozone addition. The term can also refer to treatment processes, treatment of toxic materials in surface waters and ground waters, oil spills, and some methods of dealing with hazardous materials on or in the ground
<b>Point Source</b>	A stationery location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, e.g., a pipe, ditch, ship, ore pit, factory smokestack
<b>Pollutant</b>	Generally, any substance introduced into the environment that adversely affects the usefulness of a resource
<b>Pollution</b>	Generally, the presence of matter or energy whose nature, location or quantity produces undesired environmental effects
<b>Potable Water</b>	Water that is safe for drinking and cooking
<b>ppm/ppb</b>	Parts per million/ parts per billion, a way of expressing tiny concentrations of pollutants in air, water, soil, human tissue, food, or other products
<b>Receiving Waters</b>	A river, lake, ocean, stream or other watercourse into which wastewater or treated effluent is discharged
<b>Recovery Boiler</b>	Boiler used to burn black liquor from chemical pulping for recovery of inorganic chemicals as well as for energy production
<b>Residual</b>	Amount of a pollutant remaining in the environment after a natural or technological process has taken place, e.g., the sludge remaining after initial wastewater treatment, or particulates remaining in air after the air passes through a scrubbing or process
<b>Ringlemann Chart</b>	A series of shaded illustrations used to measure the opacity of air pollution emissions. The chart ranges from light grey through black and is used to set and enforce emissions standards

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<b>Riparian Habitat</b>	Areas adjacent to rivers and streams that have a high density, diversity, and productivity of plant and animal species relative to nearby uplands
<b>Risk Assessment</b>	The qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific pollutants
<b>Risk Management</b>	The process of evaluating alternative regulatory and non-regulatory responses to risk and selecting among them. The selection process necessarily requires the consideration of legal, economic and social factors
<b>River Basin</b>	The land area drained by a river and its tributaries
<b>Run-off</b>	That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface-water. It can carry pollutants from the air and land into the receiving waters
<b>Solid Waste</b>	Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex, and sometimes hazardous, substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues
<b>Surface Water</b>	All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors which are directly influenced by surface water
<b>Suspended Solids</b>	Small particles of solid pollutants that float on the surface of, or are suspended in sewage or other liquids
<b>TRS Total Reduced Sulfur</b>	Common term used in the pulp and paper industry for the sulfur emitted from a Kraft process. TRS is the sum of H <sub>2</sub> S, methyl mercaptan, ethyl mercaptan and dimethyl disulfide.
<b>Total Suspended Solids (TSS)</b>	A measure of the suspended solids in wastewater, effluent, or water bodies, determined by using tests for total suspended non-filterable solids
<b>Turbidity</b>	Haziness in air caused by the presence of particles and pollutants A similar cloudy condition in water due to suspended silt or organic matter
<b>Volatile Organic Compound</b>	(VOC) Any organic compound which participates in atmospheric photochemical reactions
<b>White Liquor</b>	White liquor is the aqueous solution of sodium hydroxide & sodium sulfide used as the cooking liquor in Kraft pulping.
<b>Whiteness</b>	Whiteness of pulp and paper is generally indicated by its brightness, which is the reflectance of a wavelength of blue light. So-called white papers have a definite hue. Most are made with a blue white tint.
<b>Zooplankton</b>	Tiny aquatic animals eaten by fish

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