

Appendix E

# **GLOSSARY**

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The following is a glossary of terms and abbreviations used in this report.

**Area of concern** - a geographic location where water, sediment, or fish quality are degraded and the Great Lakes Agreement water quality objectives or jurisdictional criteria, standards, or guidelines are exceeded.

**BAT** - best available treatment economically achievable

**BCF** - bioconcentration factor, the ratio of the concentration of a particular substance in a plant or animal to its concentration in water (usually represents the degree of accumulation of a substance in a plant or animal).

**BCT** - best conventional waste treatment technology.

**BEJ** - best engineering judgement

**BHC** - benzene hexachloride or hexachlorocyclohexane. These are three isomers: alpha, beta, and gamma. Gamma-BHC is the insecticide lindane.

**Bioaccumulation** - the process of concentration of substances in living organisms.

**Bioassay** - use of a living organism to determine the biological effect(s) of a substance, condition, or factor.

**Biomagnify** - to increase in concentration in the food chain.

- Biomass** - the amount of living matter present in a habitat in a specific amount of water.
- BOD** - biological oxygen demand
- COD** - Chemical Oxygen Demand; a measure by chemical means of the quantity of oxidizable material present in a water sample.
- Consent Decree** - a judgement by a court which puts into effect a legally enforceable remedy.
- Contaminant** - a substance foreign to a natural system and present at unnatural concentrations.
- Control order/requirement and direction order** - enforceable orders in Ontario.
- Conventional pollutant** - a term which includes nutrients, substances which consume oxygen upon decomposition, materials which produce an oily sludge deposit, and bacteria. Conventional pollutants include phosphorous, nitrogen, chemical oxygen demand, biochemical oxygen demand, oil and grease, volatile solids, and total and fecal coliform.
- Criteria** - numerical limits of pollutants established to protect specific water uses.
- CSO** - combined sewer overflow.

**Cutoff levels** - levels of toxic substances selected arbitrarily by the Niagara River Toxics Committee in order to designate significant point source discharges of the following categories of chemicals: total cyanides, 4AAP phenols, and volatile, acid, base/neutral EPA priority pollutants (cutoff level: 0.227 kg/d (0.5 lbs/d). Mercury, pesticides/PCBs (cutoff level: 0.045 kg/d (0.1 lbs/d).

EPA priority pollutant metals (cutoff level: 0.454 kg/d (1.0 lbs/d)

**CWS** - Canadian Wildlife Service, Ontario Region, Environment Canada

**DEC** - New York State Department of Environmental Conservation.

**DCB** - Dichlorobenzene

**DDD** - A natural breakdown product of DDT.

**DDE** - Dichlorodiphenyldichloroethylene. A natural breakdown product of DDT.

**DDT** - 1,1,1-trichloro-2, 2-bis(p-chlorophenyl)ethane. A pesticide.

**Dioxin** - a group of 75 chemicals of the chlorinated dibenzodioxin family, including 2,3,7,8-tetrachlorodibenzo-para-dioxin (2,3,7,8-TCDD).

**DQS** - Niagara River Toxics Committee Data Quality Subcommittee.

**Effluent** - water discharged from a pipe or treatment plant.

**EPA** - United States Environmental Protection Agency.

- EPA-ERL - EPA, Environmental Research Laboratory, Duluth, Minnesota
- Group I Chemicals - those chemicals which require immediate action, as determined in Chapter VI, "Chemicals in the Niagara River: Categories of Concern."
- Great Lakes Basin Ecosystem - the interacting components of air, land, water and living organisms, including man, within the drainage basin of the St. Lawrence River at or upstream from the point at which this river becomes the international boundary between Canada and the United States (from Article 1 of the 1978 Agreement).
- Guidelines - suggested criteria for programs or effluent limitations.
- HCB - hexachlorobenzene
- IJC - International Joint Commission - established by the Boundary Waters Treaty of 1909 with 3 United States and 3 Canadian members.
- IWD/OR - Inland Waters Directorate, Ontario Region, Environment Canada.
- LC50 (or LC50) - median lethal concentrations, a standard measure of toxicity. LC50 indicates the concentration of a substance that will kill 50 percent of a group of experimental animals.
- LD50 - the dose of a substance that will kill 50 percent of animals when administered orally.
- Leachate - water that percolates or drains through material in a landfill or hazardous waste site which has the potential to contaminate groundwater or surface water.

- Loadings** - total mass of pollutant to a water body over a specified time, e.g. tonnes per year of phosphorous.
- LOG  $k_{ow}$**  - the logarithm of the partition coefficient. The partition coefficient is the ratio of the concentration of the particular chemical in an organic solvent (octanol) to its concentration in water, and represents the tendency for the chemical to concentrate and potentially bioaccumulate in an organism.
- MA7CD10** - minimum average flow for seven consecutive days that is statistically expected to occur once every 10 years.
- MGD** - millions of U.S. gallons per day.
- MIGD** - millions of imperial gallons per day.
- Mirex** - dodecachloropentacyclodecane. Used as an insecticide and a fire retardant.
- MNR** - Ontario Ministry of Natural Resources-Ontario Ministry of the Environment.
- MOE** - Ontario Ministry of the Environment.
- Non-point source** - a source of pollutants from a wide geographic area, such as landfills, runoff of water from land, or atmospheric deposition and precipitation.
- NOTL** - Niagara-on-the-Lake.
- NPDES** - National Pollutant Discharge Elimination System; a permit system limiting municipal and industrial discharges, administered by EPA and the states.

- NRTC - Niagara River Toxics Committee.
- NWRI - National Water Research Institute, Environment Canada.
- NYS DEC - New York State Department of Environmental Conservation.
- NYS DOH - New York State Department of Health.
- Objectives - (See Water Quality Objectives).
- PAHs - polynuclear aromatic hydrocarbons.
- PBB - polybrominated biphenyl; used previously as a fire retardant.
- PCBs - polychlorinated biphenyls; a family of chemically inert compounds, having the properties of low flammability and volatility and high dielectric constant. Past applications include use as hydraulic fluids, heat exchange and dielectric fluids; plasticizers for plastics; coating extenders for pesticides; and as an ingredient of caulking compounds, adhesives, paints, printing inks, and carbonless copying paper.
- Persistent toxic substances - any toxic substance with a half-life in water of greater than eight weeks.
- pH - a measure of acidity or alkalinity of water on a scale from 0 to 14; 7 is neutral; low numbers indicate acidic conditions, high numbers alkaline.
- Phenolics - any of a number of compounds with the basic structure of phenol but with substitutions made onto this structure. Phenolics are produced during the coking of coal, the

distillation of wood, the operation of gas works and oil refineries, from human and animal wastes, and the microbiological decomposition of organic matter.

- Point Source - a source of pollutants from a municipal treatment plant or an industrial facility, often by way of a pipe.
- POTW - publicly owned treatment works.
- Primary treatment - mechanical removal of floating or settleable solids from wastewater.
- Secondary treatment - primary treatment plus bacterial action to remove organic parts of the waste.
- Significant discharge - for the purpose of this report, a point source discharge which equals or exceeds the cutoff level for a least one of the individual parameters in the cutoff categories (see definition of cutoff levels).
- Sludge - solids removed from sewage.
- SPDES - State Pollutant Discharge Elimination System - A state-administered permit limiting municipal and industrial discharges.
- STORET - Storage and Retrieval System - a computerized system operated by the U.S. government for the storage and retrieval of environmental data.
- STP - sewage treatment plant.
- Suspended sediments - particulate matter suspended in water.



- TCB - Trichlorobenzene.
- TCDF - Tetrachlorodibenzofurans.
- TCDD - Tetrachlorodibenzo-p-dioxins.
- Total DDT - Sum of DDT isomers and metabolites.
- USACOE or U.S. COE - U.S. Army Corps of Engineers.
- USEPA II - U.S. Environmental Protection Agency Region II, New York, N.Y.
- USEPA V - U.S. Environmental Protection Agency Region V, Great Lakes National Programs Office, Chicago, Illinois.
- USFWS - U.S. Fish and Wildlife Service, Columbia, Missouri.
- Water quality objectives - under the Great Lakes Water Quality Agreement, goals set by the Governments of the United States and Canada for protection of the uses of the Great Lakes.
- Water quality standard - a criterion or objective for a specific water use that is incorporated into enforceable regulations.
- WPCP - water pollution control plant.
- WTP - water treatment plant (for drinking water).
- WWTP - waste water treatment plant.

MEASUREMENT UNITS

metre - m      1 m = 3.281 feet  
 gram - g      1000 g = 1 kg = 2.205 pounds  
 tonne - t      1 t = 2,205 pounds  
 litre - L      1 L = 0.2642 gallons (U.S.) = 0.2200 gallons (Canadian)

kilogram, $10^3$ grams	kg	
milligram, $10^{-3}$ grams	mg	
microgram, $10^{-6}$ grams	ug	
nanogram, $10^{-9}$ grams	ng	
millilitre, $10^{-3}$ litres	mL	
cubic metres per day	$m^3/d$	
tonnes per year	t/yr	
milligram per litre	mg/L	part per million
microgram per litre	ug/L	part per billion
nanogram per litre	ng/L	part per trillion
microgram per gram	ug/g	part per million
milligram per kilogram	mg/kg	part per million
microgram per kilogram	ug/kg	part per billion
nanogram per kilogram	ng/kg	part per trillion
kilograms per day	kg/d	
pounds per day	lbs/d	
cubic meters per second	cms	
cubic feet per second	cfs	