

Groundwater and PFAS: State of Knowledge and Practice

Abbreviations, Acronyms, Initialisms, and Symbols Section 2

One of eight sections prepared by National Ground Water Association volunteers. Each section was prepared to stand independently, or to be integrated with the other seven sections.

Abbreviations, Acronyms, Initialisms, and Symbols

Section 2

<p>“Long-chain”</p>	<p>Perfluoroalkyl carboxylic acids (PFCAs) with eight carbons and greater (with seven or more perfluorinated carbons); perfluoroalkyl sulfonates (PFSAs) with six carbons and greater (with six or more perfluorinated carbons)</p>	<p>BOD</p>	<p>Biochemical oxygen demand</p>
<p>“Short-chain”</p>	<p>Perfluoroalkyl carboxylic acids (PFCAs) with eight carbons and greater (with six or fewer perfluorinated carbons); perfluoroalkyl sulfonates (PFSAs) with five carbons and fewer (with five or less perfluorinated carbons)</p>	<p>Bunded</p>	<p>A type of secondary containment around storage “where potentially polluting substances are handled, processed, or stored for the purposes of containing any unintended escape of material from that area until such time as remedial action can be taken”</p>
<p>°C</p>	<p>Degrees Celsius</p>	<p>C-F</p>	<p>Carbon-fluorine covalent bond</p>
<p>AFFF</p>	<p>Aqueous film-forming foam</p>	<p>C6</p>	<p>Carbon chain consisting of six carbons</p>
<p>AR-AFFF</p>	<p>Alcohol-resistant aqueous film-forming foam</p>	<p>C8</p>	<p>Carbon chain consisting of eight carbons</p>
<p>ASTM</p>	<p>American Society for Testing and Materials</p>	<p>Ca²⁺</p>	<p>Calcium ion</p>
<p>atm</p>	<p>Atmosphere</p>	<p>CAA</p>	<p>Clean Air Act</p>
<p>ATSDR</p>	<p>Agency for Toxic Substances and Disease Registry (United States)</p>	<p>CARs</p>	<p>Canadian Aviation Regulations</p>
<p>BCF</p>	<p>Bioconcentration factors</p>	<p>CAS</p>	<p>Chemical Abstracts Service</p>
<p>Disclaimer: This publication is a collaborative effort to try to set forth best suggested practices on this topic but science is always evolving, and individual situations and local conditions may vary, so members and others utilizing this publication are free to adopt differing standards and approaches as they see fit based on an independent analysis of such factors. This publication is provided for informational purposes only, so members and others utilizing this publication are encouraged, as appropriate, to conduct an independent analysis of these issues. The NGWA does not purport to have conducted a definitive analysis on the topic described in this publication, and it assumes no duty, liability or responsibility for the contents or use of the publication.</p>		<p>CEPA</p>	<p>Canadian Environmental Protection Act</p>
		<p>CERCLA</p>	<p>Comprehensive Environmental Response, Compensation, and Liability Act</p>
		<p>CFR</p>	<p>Code of Federal Regulations</p>
		<p>CIC</p>	<p>Combustion ion chromatography</p>
		<p>Class B fire</p>	<p>Fire whose fuel is flammable or combustible liquid or gas (gasoline, diesel fuel, petroleum oil, paint, propane, butane)</p>
		<p>CoC</p>	<p>Contaminant of concern</p>
		<p>COD</p>	<p>Chemical oxygen demand</p>

CoPC	Contaminant of potential concern	Groundwater	
CSM	Conceptual site model	quality standards	Can be either numeric or narrative. Numeric groundwater standards prescribe maximum allowable contaminant levels that result from human operations or activities, but do not typically apply to naturally occurring contaminants at naturally occurring levels. A narrative standard is descriptive of conditions necessary to support a designated groundwater use or may generally prohibit the discharge of particular types of contaminants. Numeric and narrative standards may be used separately or conjointly. Groundwater quality standards are enforceable standards.
DND	Department of National Defence (Canada)		
DoD	Department of Defense (United States)		
DOE	Department of Energy (United States)		
DWGV	Drinking Water Guideline Value (Canada)		
EC50	Half maximal effective concentration is the concentration of a substance that gives half-maximal response. Used as a measure of the substance's potency.		
EFSA	European Food Safety Authority		
enHealth	Environmental Health Standing Committee (Australia)	Health advisory	Provides information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. Health advisories are non-enforceable and nonregulatory and provide technical information to public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination.
ERL	Environmental risk limit		
EQSD	Environmental Quality Standards (Europe)		
EU	European Union		
Exposure pathway	Pathway through which receptor(s) would be exposed to CoC(s)		
FAA	Federal Aviation Administration		
FCSAP	Federal Contaminated Sites Action Plan (Canada)		
FFFP	Film forming fluoroprotein	HDPE	High-density polyethylene
FFTA	Firefighting Training Area	Hydrophilic	A compound that is polar and attracted to water
Fluorotelomer	Fluorocarbon-based oligomers, or telomers, synthesized by telomerization	Hydrophobic	A compound that is non-polar and is not attracted to water
FP	Fluoroprotein foam	IMAC	Interim maximum allowable concentration
		kg	Kilogram
		Koc	Octanol-carbon partition coefficient
		Kow	Octanol-water partition coefficient
		L	Liter
		LC/MS/MS	Liquid chromatography tandem mass spectrometry

LC50	Lethal concentration at 50 percent. The lethal concentration required to kill 50 percent of the population (longer-term exposure).	OEHHA	Office of Environmental Health Hazard Assessment (California)
LD50	Lethal dose at 50 percent. The amount of an ingested substance that kills 50 percent of a test sample (short-term exposure).	OF	Organic fluorine
LNAPL	Light non-aqueous phase liquid	Oleophobic	A compound that is repelled from oil
m ³	Cubic meter	PASF	Perfluoroalkane sulfonyl fluoride
MCL	Maximum contaminant level. The highest level of a contaminant that is allowed in drinking water that enters the service network. MCLs are enforceable standards.	Perfluorinated	The replacement of all hydrogens by fluorine in the aliphatic chain structure
MCLG	Maximum contaminant level goal. Represents the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are nonenforceable public health goals.	PF	Protein foam
mg	Milligram	PFAS	Perfluoroalkyl and polyfluoroalkyl substance(s)
MIL-SPEC	United States Military Specification MIL-F-24385 (Fire Extinguishing Agent, Aqueous Film-Forming Foam (AFFF), Liquid Concentrate, for Freshwater and Seawater)	PFBA	Perfluorobutanoic acid
mL	Milliliter	PFBS	Perfluorobutane sulfonate
mm	Millimeter	PFCA	Perfluoroalkyl carboxylic acid (e.g., PFOA)
MN PCA	Minnesota Pollution Control Agency	PFCs	Perfluorinated compounds
MOE	Ministry of Environment (provincial, Canada)	PFHxA	Perfluorohexanoic acid
MPC	Maximum permissible concentration	PFHxS	Perfluorohexane sulfonic acid
NCSAB	North Carolina Science Advisory Board	PFOA	Perfluorooctanoic acid
NJDEP	New Jersey Department of Environmental Protection	PFOS	Perfluorooctanesulfonic acid
OECD	Organisation for Economic Co-operation and Development	pH	Measure of the acidity or basicity of an aqueous solution
		PHC	Petroleum hydrocarbons
		PIGE	Particle induced gamma-ray emission
		PMR	Pacific Market Research
		Polyfluorinated	The replacement of most hydrogens by fluorine in the aliphatic chain structure
		POP	Persistent organic pollutant
		PTFE	Polytetrafluoroethylene
		PVDF	Polyvinylidene difluoride
		QA/QC	Quality assurance/quality control
		RD	Reference document
		Receptor	A human or ecological receptor that would be exposed to the CoC
		RFP	Request for proposal
		RIVM	National Institute for Public Health and the Environment (Netherlands)

RM	Risk management	Surfactant	A substance that tends to reduce the surface tension of a liquid in which it is dissolved
SDS	Safety Data Sheets		
SDWA	Safe Drinking Water Act	TC	Transport Canada
SMCL	Secondary maximum contaminant level. Under EPA's National Secondary Drinking Water Regulations, EPA established SMCLs that set nonmandatory water quality standards. They are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL.	TDS	Technical Data Sheets
		TGD	Technical Guidance Document
		TOP assay	Total oxidizable precursor assay
		TRB	Transportation Research Board
		TRV	Toxicological reference value
		TSCA	Toxic Substances Control Act
		UCMR3	Third Unregulated Contaminant Monitoring Rule
		µg	Microgram
SNUR	Significant New Use Rule	UK	United Kingdom
Source	A chemical found at such concentration to be of potential concern (CoC) to human health or the environment	UL	Underwriters Laboratories Inc.
		UN	United Nations
		UNEP	United Nations Environment Programme
SPSS	Statistical Package for the Social Sciences	USA	United States of America
		USEPA	United States Environmental Protection Agency