

CONTAMINANT TABLE

Category	Sub-Category	Pollutant	About	DNAPL or LNAPL?*	Sources
Volatile Organic Compounds (VOCs)**	Halogenated	Carbon Tetrachloride	A grain fumigant used to make refrigerants and propellants for aerosol cans as well as a solvent and dry cleaning agent.	DNAPL	Disposal in landfills; Accidental releases from production uses; Grain storage facility
		Chloroform	A chemical that was used as an extraction solvent and is now mainly used to make propellant and refrigerant.	DNAPL	Pulp and paper mills; Municipal and industrial waste water; Large processing facilities; Septic systems
		Perchloroethylene (PCE)	A solvent often used for dry cleaning and metal degreasing.	DNAPL	Dry cleaners; Textile operations; Metal degreasing activities
		Trichloroethylene (TCE)	An industrial solvent commonly used for metal degreasing, refrigerant manufacturing, and cleaning kerosene-fueled rocket engines.	DNAPL	Industrial degreasing operations; Automotive industry; Metal machining industry; Chemical waste sites; Leaky storage tanks and pipelines; Landfills
		Fluorotrichloromethane (Freon 11)	Prior to 1996 this compound was widely used as a refrigerant. Freon-11 was banned in 1996 for its ozone depletion potential.	DNAPL	Illegal drug labs; Landfills; Industrial solvent spills
		Acetone	A common solvent used for cleaning, nail polish remover, and paint thinner.		Production wastewater; Landfills
		Methanol	A naturally occurring substance often used as a gasoline additive, paint stripper, propellant for aerosol cans, and cleaners.		Release from tank truck or rail cars; Underground methanol storage tank
		Benzene, Toluene, Ethylbenzene, and Xylene (BTEX)	A group of naturally-occurring chemicals that are typically found in petroleum products. They have a strong odor and are highly flammable.	LNAPL	Leaks from underground storage tanks; Fuel spills; Landfills; Pipeline leaks
		Methyl Tert-Butyl Ether (MTBE)	A manufactured chemical compound used as a fuel additive and solvent. It has an offensive taste and color.		Leaks from underground or aboveground storage tanks; Fuels spills; Pipeline leaks; Landfills
		Semivolatile Organic Compounds (SVOCs)	Halogenated	Pentachlorophenol (PCP)	A white solid that is used as a wood preservative and was used as a herbicide in the past. Herbicide use of PCP was banned in 1987.
Polychlorinated Biphenyls (PCBs)	PCBs were banned in 1979, but before then they were used as coolants and lubricants. They can still be found in some products today such as fluorescent lighting and electrical devices that use PCB capacitors.			DNAPL	Landfill; Discharge of waste chemicals
Nonhalogenated	Polycyclic Aromatic Hydrocarbons (PAHs)		A group of over 100 combinations of hydrocarbons that can be found naturally in the environment but can also be manmade. PAHs are used for research purposes as well as to make dyes, plastics, pesticides, and medicines.		Buried construction waste or ash; Onsite petroleum release; Coal-tar based sealcoats
	Pesticides		All chemicals that are used to kill or control pests.		Agriculture; Silviculture (Forest Management)

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Petroleum Byproducts		Creosote	A wood preservative used for commercial purposes only. It is obtained from high temperature distillation of coal tar.	DNAPL	Runoff from railroad ties and utility poles.	
		Coal Tar	A by-product of carbonized coal. It is a brown or black liquid of extremely high viscosity.	DNAPL	Underground storage tanks; Coal tar facilities	
		Crude Oil	A liquid petroleum that is highly viscous and has a higher density than light crude oil.	LNAPL/ DNAPL	Underground storage tanks; Pipeline leaks; Spills at industrial facilities; Oil spills	
		Diesel	A heavy distillate that is used as fuel.	LNAPL	Underground storage tanks; Pipeline leaks; Spills at industrial facilities; Fuel spills	
		Gasoline	A refined petroleum that is used as fuel in internal combustion engines.	LNAPL	Underground storage tanks; Pipeline leaks; Spills at industrial facilities; Fuel spills	
		Benzene, Toluene, Ethylbenzene, and Xylene (BTEX)	A group of naturally-occurring chemicals that are typically found in petroleum products. They have a strong odor and are highly flammable.	LNAPL	Leaks from underground storage tanks; Fuel spills; Landfills; Pipeline leaks	
		Methyl Tert-Butyl Ether (MTBE)	A manufactured chemical compound used as a fuel additive and solvent. It has an offensive taste and odor.		Leaks from underground/aboveground tanks; Fuel spills; Pipeline leaks; Landfills	
	Inorganics		Cadmium	A metal used for metal plating and coating operations, solar batteries and pigments.		Corrosion of galvanized pipes, Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints; Landfills
			Lead	A metal used in roofing, plumbing, storage batteries, etc. It used to be used in paints.		Pipes and other types of plumbing; Landfills; Car batteries; Natural deposits
		Nickel	A metal that is used for making stainless steel, coinage, rechargeable batteries, guitar strings, etc.		Natural deposits; Industrial facilities; Landfills	
		Copper	A metal used to make electrical wiring and household plumbing materials. Copper compounds can be used as pesticide.		Natural deposits; Mining; Farming; Manufacturing operations; Municipal or industrial wastewater; Corrosion of pipes	
		Chromium	A metal often used as a surface coating. It has also been used for making dyes, wood preservatives, synthetic rubies, leather tanning, etc.		Manufacturing operations; Municipal or industrial wastewater; Improper disposal	
		Iron	A metal used in making steel. The cheapest available metal and the most widely used metal.		Natural deposits; Landfills	
		Aluminum	The second most used metal behind iron. Used in the manufacturing of transportation vehicles, packaging materials, a wide variety of household items, etc.		Natural deposits; Coagulants in water treatment facilities; Landfills	

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Inorganics	Radionuclides	Radium	A highly radioactive metal with a half-life of 1601 years. It decays into radon gas.		Natural deposits
		Radon	A radioactive gas that is the result of decaying Radium.		From natural deposits of radium
		Uranium	A weakly radioactive metal that is used to produce nuclear energy.		Natural deposits; Mining/milling waste
	Other inorganics	Arsenic	A poisonous element that is used to strengthen alloys of copper and lead. It has also been used in the production of pesticides.		Natural deposits; Mining
		Nitrate	(NO ₃) Essential plant nutrient that in excess can accelerate eutrophication in aquatic plant growth and cause hypoxia (low levels of dissolved oxygen) to human and other warm-blooded animals.		Human/animal waste; Feedlots; Industrial waste from food processing; Septic tanks; Fertilizer and agriculture
		Chlorides (Salts)	A group of salts that are very soluble in water. They are found naturally in seawater, but it only takes a small amount of chlorides to contaminate freshwater.		Natural deposits; Road salts; Fertilizer; Water-softener; Human/animal waste
Explosives		2, 4, 6-trinitro-toluene (TNT)	An explosive compound commonly used for military and industrial applications. TNT-production ended in the mid-1980s.		Active and former U.S. Military installations; Army ammunition plants
		Hexahydro- 1, 3, 5 -triazine (RDX)	A highly explosive, synthetic product that has been used in the manufacture of explosives.		Active and former U.S. Military installations; Army ammunition plants
Pathogens		E. Coli	A type of coliform bacteria that live in water that may cause symptoms such as vomiting and diarrhea.		Bodily waste; Animal waste; Naturally in soil

*DNAPL stands for Dense Non-Aqueous Liquids and LNAPL stands for Light Non-Aqueous Phase Liquids.

**The various colors (Red, Blue, Green) represent the tournaments at which the pollutant or pollutant category may be used in competition. Red categories may be used at regional, state, and national tournaments. Blue pollutants may be used at state and national tournaments. Green pollutants may be used at national tournaments only.

Contaminant Pool

Regional (Red)	State (Blue and Red)	National (Green, Blue, and Red)
VOCs--category only SVOCs--category only Petroleum Byproducts -- category only Inorganics --category only Explosives--category only Pathogens --category only	All of the categories from Regional plus the following: Nitrate Arsenic Chlorides (Salts) DNAPL LNAPL Pesticides Gasoline Diesel MTBE	All of the categories and pollutants from Regional and State plus the following: Carbon Tetrachloride Chloroform Freon 11 Acetone Methanol PCP PCE PCBs TCE Creosote Coal Tar Extra Heavy Crude Oil Radium Radon Uranium TNT RDX E. Coli