Point Sources of Water Pollution Reference List

Background Information

Definition from Clean Water Act section 502(14): The term "point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

NPDES: National Pollution Discharge Elimination Systems
The Environmental Protection Agency (EPA) regulates point sources of water pollution with permits issued under **NPDES** through state regulatory agencies. For the State of Missouri that is the **Missouri Department of Natural Resources.** See the reference table of point sources of water pollution discharged from outfalls that are regulated through the NPDES.These sources are required by law to have a permit in order to install and maintain processes that either eliminate or contain these water pollutants and are monitored accordingly.

Point Source	Water Source Pollutants
Municipal Wastewater Treatment Plants (WWTP)	Disease Pathogens, Bacteria, Viruses, Nutrients, Phosphorus, Toxic Pipe Metals, Pharmaceuticals, Household Hazardous Wastes, Personal Care Products, Microplastics (POP – persistent organic pollutions concentrate up the food chain)

Point Source	Water Source Pollutants of AFOs (Animal Feedlot Operations)
Animal Feeding Operations	Nitrogen, Phosphorus, Organic Matter, Sediments, Pathogens, Hormones, Antibiotics (Animals stabled or confined, fed for 45 days or more in 12-month period)

Point Source	Water Source Pollutants – vary by type of manufacturing
Cooling Water Intake Structures: *Electric Generating Plants, Pulp & Paper Mills, Manufacturing of Chemicals, Aluminum, Iron, Steel, Food Processing*	Large volumes of water are pulled into various factory system for its cooling: Organisms are killed and injured by heat, physical stress, chemicals and intake screens. Others die and get stress from release of heated water (less oxygen) back into waterways.

Point Source	Water Source Pollutants
Industrial and Commercial Wastewater	50 different categories based on types of water pollutants (large assortment) Included in some but not all industrial waste water: PFAS – harmful forever chemicals produced in consumer products that resist heat, oils, stains, grease, and water See water pollutants listed under mining and cooling water intake structures

Point Source	Water Source Pollutants
Mining: Hardrock, Mineral Ores, and Fossil Fuels (Coal, Oil, and Gas) *Quarries, Gravel, and Sand Operations*	• Ore mining generates wastewater from ground water that operators use for cooling, dust control, and ore milling. • Shale gas extraction (fracking) wastewater contain high concentrations of salts and metals used in the drilling. • Coal ash is produced by burning coal in electric production; it can contain mercury, cadmium, and arsenic. • Rock quarries, sand, and gravel operations need permits for stormwater and waste water.

Point Source	Water Source Pollutants
Stormwater Discharges (A permit may be required for large areas)	**Construction Site Run off (1 acre or more):** Sediment, sanitary waste, phosphorus, nitrogen, pesticides, oil, grease construction chemicals and debris. **Industry Site Run Off (5 acres or more):** Based on 10 different categories to avoid pollutant runoff. **Municipal Wastewater Systems:** Many collect stormwater

Point Source	Water Source Pollutants (Responsibility of states and local authorities)
Transportation: Roads	Runoff pollutants: heavy metals from tires, brakes, engine wear, and hydrocarbons from lubricates

Other Types of NPDES not in the table:

- Aquatic Animal Production Facility – Fish Farms and Hatcheries
- Some Biological and Chemical Pesticide Operators (vary by state and location)
- Commercial Vessels (ships discharging into waterways)
- PFAS (per- and polyfluoroalkyl substances) have been used to produce assorted consumer products since the 1940s. They are resistant to heat, oils, stains, grease, and water. As a result, they persist in our environment and are referred to as “forever chemicals.” These chemicals concentrate up the food chain harming animals and humans causing kidney damage, liver damage, and disrupt the immune and endocrine systems. All producers of PFAS are required to have NPDES permits.

For more information search on line:
National Pollutant Discharge Elimination System (NPDES) | US EPA

EPA Administrator Regan Announces Comprehensive National Strategy to Confront PFAS Pollution | US EPA