

Environmental Risk Overview



Wastewater Treatment Plant

Wastewater treatment plants face various environmental exposures from their operations and the waste they process which can include sewage, industrial wastewater and storm water runoff. These wastewaters can contain various contaminants that could be hazardous to human health and natural resources. Problems encountered during treatment could generate effluent or sludge that carries these contaminants into receiving soils and water systems. Additional exposures can result from the transporting, disposal or application of contaminated sludge. Aboveground and Underground tanks are used for processing and storage of wastes and chemicals. Containment breaches or leaks could result in a release of wastes and hazardous chemicals and lead to clean-up and third-party liability.

Environmental Exposures May Include

- Wastewater can contain various contaminants such as pathogens, biohazards, chemicals, pharmaceuticals, soil particles and other sediment, heavy metals, animal waste, pesticides, oil and grease. If the plant encounters problems in the treatment process, the generated effluent may contain contaminants that then enter the receiving surface water, groundwater or soils. Problems that can upset the treatment process could include a treatment process breakdown, inadequate treatment, untreatable contaminants and excess volume from combined sewer overflows resulting in a treatment bypass. A release of contaminated effluent can result in environmental cleanup, natural resource damage and harm to human health by contaminating drinking water or water used for recreational purposes such as swimming, boating or fishing.
- Wastewater may also contain high levels of the nutrients nitrogen and phosphorus. Different treatment processes are required to remove nitrogen and phosphorus. A release of effluent containing high concentration of these nutrients can be harmful to the environment and human health. They can cause the overgrowth of algae or lead to growth of toxic blue-green algae which can harm aquatic life. Some algal species produce toxins that contaminate drinking water supplies.
- Concrete tanks used to process wastewater can develop cracks. If cracks are not immediately repaired, contents can emanate from the process tank and contaminate underlying soils and groundwater. This could result in on-site contamination, lead to third-party property damage from contaminants migrating off-site and contaminate groundwater that may be a drinking water supply source.
- Underground and aboveground storage tanks are used to store process materials and wastes onsite. Underground storage tanks may leak over time, and the contents have the potential to contaminate the underlying soils and groundwater. Aboveground tanks have the potential to present problems such as leaks from tank bottoms, ruptures causing a catastrophic release of tank contents and spills during the loading or unloading process.
- Sludge generated as a by-product of the treatment process can pose potential environmental and public health risks. Sludge may contain high levels of pathogens and nutrient pollutants, as well as chemical and heavy metals dependent on the composition of the wastewater it was produced from and the treatment process used. A release or leaching from on-site storage or during processing of sludge, such as dewatering, digestion, composting and incineration, can result in soil, water and air pollution.
- Processed sludge suitable for disposal or land application can still retain contaminants like phosphorus, which is used as a fertilizer, or heavy metals and chemicals. A release of sludge during transport or loading and unloading can result in environmental clean-up, third-party liability and natural resource damage. Treatment facilities can also be responsible for the proper use or disposal of the sludge they produce. Wastes brought to landfills can expose facilities to disposal liability. Sludge used in land application could create a products exposure, and if the facility performs the land application, they can carry an off-site service exposure including improper application or over-application of nutrient pollutants.
- Hazardous chemicals may be used, stored and disposed of as part of the treatment and disinfection process. This can include chlorine, ammonia, sulfuric acid, hydrochloric acid and sodium hypochlorite. Containment breaches, spills or improper handling and disposal can lead to environmental liability. Chlorine gas is highly poisonous and could kill people in the vicinity of a release. During storage, chemicals should be properly segregated as incompatible materials can create hazards.
- Odors produced can be a nuisance and irritant to neighboring properties and result in claims for third-party bodily injury or diminution of property value. The use of chemicals such as ammonia and chlorine, and gases produced during treatment, such as hydrogen sulfide, can cause eye, nose, and throat irritation, headache, nausea, cough, chest tightness, nasal congestion and stress, and could aggravate existing medical conditions such as asthma.

Environmental Pollution Liability Can Provide Coverage For

- Integrated GL/Site Pollution, options to include XS, Auto and WC may be available
- Monoline Site Pollution Liability
- Third-party claims for bodily injury, property damage
- First-party and third-party cleanup
- Defense of third-party claims
- Emergency response costs
- Natural resource damage
- First and third-party transportation pollution liability
- Loading and unloading
- Crisis/reputation management
- Civil fines and penalties
- Off-site services pollution liability
- Business interruption expenses
- Non-owned disposal sites
- Products pollution liability



Claims Scenarios & Examples

- A complaint was filed against a city as the operator of the wastewater treatment plant for violating the state's water pollution control laws and not properly complying with its National Pollutant Discharge Elimination System permit and state wastewater discharge permit requirements. The violations included improper storage of dewatered sludge and improperly storing liquid sludge in a biosolids lagoon at the facility. Because of the improper storage of these contents, there was a higher chance of the pollutants discharging into a nearby protected river. The city was given a \$25,000 administrative penalty and ordered to remove and dispose of the biosolid lagoon contents along with performing groundwater monitoring to confirm the lagoon was not leaking.
- A process tank at a wastewater treatment plant malfunctioned, releasing untreated wastewater into a nearby stream. This release killed numerous fish and damaged several aquatic plants. The operator of the wastewater treatment plant was fined by the local regulatory authority for the unauthorized discharge, and several local residents along with an environmental group filed suits for loss of enjoyment of the creek.
- A city's sewage treatment plant was sued by water quality advocates, who claimed that water discharging from the plant was harming a river's aquatic balance. Tests were conducted that revealed nutrient levels that were causing unnatural algae and aquatic weed growth, damaging underwater insects and causing a sudsy and strong smelling plume to be on the river. The suit sought civil penalties of more than \$52,000 per day for the violations along with ordering the removal of more nitrogen and phosphorus from the treated water before being discharged.
- The operator of a small wastewater treatment plant received a bulk shipment of chlorine bleach used in the treatment process at the facility. During delivery, the valve connecting the hose to the tank was not secure, and a significant amount of chlorine bleach was released before the vendor or operator realized what happened. The liquid chlorine ran into a small culvert on a neighboring property. By the time the vendor closed the valve, the spill had contaminated the culvert and surrounding soil, and the resulting fumes caused an adjacent manufacturing operation to be evacuated. There was a significant cost to neutralize the chlorine and remediate the spill, and the company was fined as well.
- A city was sued by an environmental group for releasing over 30 million gallons of wastewater into a river tributary. The group claimed that unintended wastewater discharges of human and industrial waste combining with storm water runoff occurred more than 100 times over several years. The largest of the wastewater plant overflows were due to heavy rainfall and were recorded to be 20.4 millions gallons on one occurrence and 10.5 million on another. The environmental group also claimed that the overflows were not reported within the time period as the law required. Although the city was permitted to release a certain amount of treated wastewater, overflows were prohibited.
- A wastewater treatment plant experienced a failed valve, which caused a release of 4,000 gallons of cleaning solution. The solution had levels of sodium hypochlorite three times higher than that of bleach. Protective barriers had to be erected inside the building to contain the spill, and a contractor had to be hired to perform the cleanup and properly dispose of the cleaning solution.

Final Consideration

Your business can be faced with the cost to defend itself against allegations or legal action from pollution related events, regardless if you are fault or not. Having the proper insurance coverage in place will help fund the expenses incurred to investigate or defend against a claim or suit and provide you with environmental claims handling expertise.

This environmental risk overview is intended to provide the reader with a broad range of potential risks they may encounter and may not reflect all of the risks associated with their business.

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