# Holding Data Centers Accountable: *A Guide to Federal Environmental Permitting*

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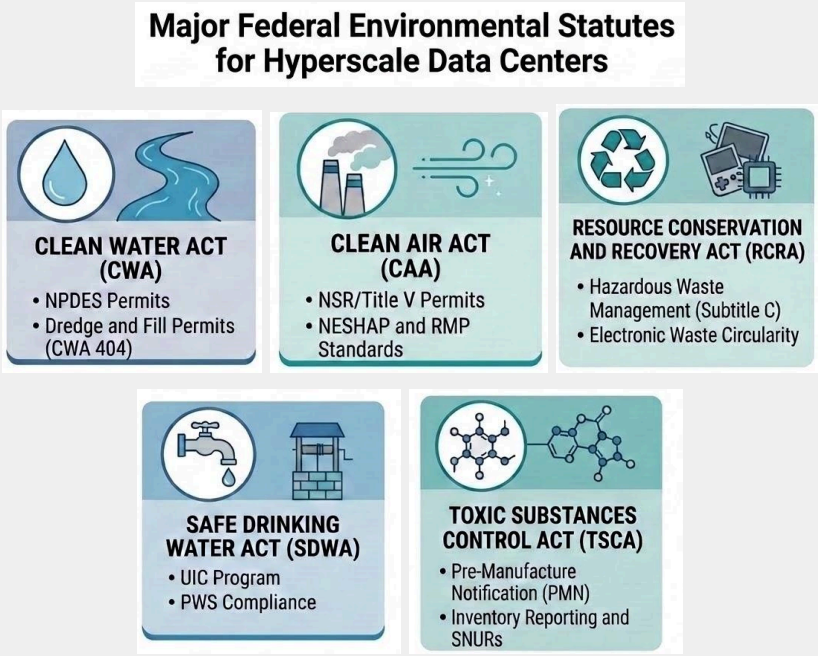
# Introduction

This document is a resource developed by the Environmental Protection Network (EPN)—a nonprofit 501c3 organization that harnesses the expertise of over 800 former United States Environmental Protection Agency (EPA) career staff and political appointees from across the country to serve as a trusted resource, answering calls for objective analysis, scientific rigor, and a vision for a transformed 21st century EPA. This document is designed to help our volunteers and technical assistance staff—and the communities, under-resourced agencies, and non-profits they support—navigate the complex federal environmental permitting and compliance/enforcement landscape for data centers. Our goal is to provide objective, science-based insight into these

requirements, empowering readers to identify opportunities for meaningful public input and oversight in data center development processes.

Major environmental statutes covered in this document that provide human health protections include the Clean Water Act (CWA), Clean Air Act (CAA), Resource Conservation and Recovery Act (RCRA), Safe Drinking Water Act (SDWA), and Toxic Substances Control Act (TSCA). Statutes allow for state or Tribal governments to have delegated authority from the EPA, and they can further delegate actions to local authorities. Below is a list of what we know are likely requirements, regardless of which level of government (local, Tribal, state, or federal) would implement it. For many of the requirements, we are watching for novel uses of the law to circumvent the usual application of legal safeguards in an attempt to fast-track artificial intelligence (AI) advancement in the U.S.




**Click on any of the statute tiles above to jump to its section.**

# Clean Water Act (CWA)

## General Overview

- The Clean Water Act provides the overarching structure for protecting jurisdictional "Waters of the U.S." from pollution. There are several potentially applicable subsections that could apply listed below, along with who manages the permitting process. Each offers an opportunity for public and stakeholder involvement.

- **Who issues the permit:** Each subsection of the CWA has a slightly different set of permitting entities. Therefore, under each subsection you will see more information about the permit issuer.

## Subsections

1. **Water Quality Certification (CWA 401)**

- **Who issues the permit:** States usually are the certifying entity. However, in some cases a Tribal government may have "treatment as a state," or the EPA may fill a gap in authority.
- **What it is**: CWA 401 grants the authority to review and approve, condition, or deny proposed federal projects, actions, and activities directly affecting waters of the U.S. States and Tribes with a water quality standards program may establish water quality standards specific to waters under their jurisdiction that are equivalent to or more stringent than federal standards.
- **When it is required:** Permits are required before issuance of any CWA 402 wastewater discharge permit or CWA 404 dredge-and-fill permit to certify that the proposed project will meet applicable state or Tribal water quality standards, effluent limits, and other CWA requirements. For 404 permits, this would include construction and subsequent operations. A 401 certification may also be required if there are permits issued by other federal agencies resulting in impacts on the regulated surface waters (for example, a Federal Energy Regulatory Commission (FERC) energy connection permit).
- This is useful in the case of water quantity management in addition to water quality. States can condition or deny a Section 401 certification if the data center's water withdrawals would reduce stream flows so severely that ambient water quality standards fail.
    - In the landmark U.S. Supreme Court case Public Utility District (PUD) No. 1 of *Jefferson County v. Washington Department of Ecology* (1994), the Court ruled that states can use Section 401 to enforce minimum streamflow requirements if necessary to maintain water quality standards (e.g., protecting fish habitats).
    - ***Potential Threat*:** Updates to EPA's water quality regulations may complicate states'/Tribes' ability to set standards if they are more stringent than the federal program under CWA 401. See EPN's comments on the EPA's latest rulemaking.

**How concerned community members can intervene under Section 401:**

- **Engage in the State CWA Section 401 Water Quality Certification Process:** Concerned citizens can engage in the state CWA Section 401 certification process when states attach regional conditions or require individual reviews, which often include public notice and comment opportunities. See section on Section 404 permits for an example.

## 2. National Pollutant Discharge Elimination System (NPDES)

- The NPDES program limits and tracks the pollution from factories, cities, and construction sites. There are three main components of this program: direct discharge, indirect discharge through Publicly Owned Treatment Works (POTWs), and stormwater management. Each is further described below.
- **Who issues the permit:** States are authorized to run these programs except in Massachusetts, New Hampshire, New Mexico, Indian country and the Pacific Islands (Guam, Saipan, etc.) where the EPA manages it. A detailed breakdown can be found on EPA's website here.

### a. NPDES Wastewater Discharge Permit (CWA 402)

- **What it is:** This section includes discharges of domestic sewage, any wastewater from cooling tower blowdown or other types of industrial byproducts that would fit in the "non-domestic wastewater streams" definition under the CWA. Cooling water intake blowdown refers to the deliberate, periodic, or continuous discharge of a portion of recirculating cooling water from an industrial cooling system (such as a cooling tower) to remove accumulated dissolved solids, minerals, and contaminants. Permits should include requirements under section CWA 316(b) for Cooling Water Intake Structures Certification to protect fish, shellfish and wildlife dependent on the water body at issue from contaminants.
- **When it is required:** When a "point source," (e.g., a pipe, bulldozer, or other conveyance [i.e., conduit, channel or pathway] serving a data center) is discharging any pollutant, including processed wastewater, or if a hyperscale data center withdraws large volumes of water for cooling from rivers, lakes, or other waters of the U.S., CWA 316(b) may require use of best technology available (BTA) to minimize aquatic impacts. The data center must use a cooling water intake structure with a total design intake flow of greater than 2 million gallons per day.
    - Many water bodies in the U.S. are covered by the Total Maximum Daily Load (TMDL) regulations which set the maximum amount of pollutants that can be discharged from NPDES point sources into a water body. It is important to see if there is a TMDL set for the water body that will be used for a discharge. The easiest way to check your local area is through the EPA public databases:
        - **How's My Waterway:** You can use the EPA How's My Waterway Tool. Simply enter your **zip code, city, or neighborhood** to see a map of local waterways. It will clearly display if a waterbody is impaired, what pollutants were found, and if a TMDL cleanup plan is in place.
        - **Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS) Database:** For a more

comprehensive look at state-by-state data, the EPA ATTAINS System allows you to track the exact status of **Section 303(d) impaired waters** and access official TMDL reports.

**b. NPDES Construction Storm Water Permit (CWA 402(p))**

- **What it is:** Developers must prepare a stormwater pollution prevention plan (SWPPP), implement erosion and sediment controls, and obtain a NPDES construction general permit (CGP) or a state-authorized equivalent.
- **When it is required:** When projects involve land disturbance greater than one acre, which is often the case with hyperscale data centers.

**c. NPDES Post-Construction Stormwater Permit (CWA 402)**

- **What it is:** Post-construction requirements ensure long-term, permanent measures are built and maintained for the life of an industrial property. The NPDES program includes a Multi-Sector General Permit (MSGP) to regulate industrial stormwater discharges from operational commercial and industrial facilities. While construction permits focus on temporary earth-disturbing activities, the MSGP applies to ongoing, active industrial operations where outdoor activities, raw materials, or waste products could contaminate rain and snowmelt runoff. The EPA (and delegated state environmental protection agencies) breaks down industrial activities into 29 distinct sectors (designated Sectors A through AD) based on Standard Industrial Classification (SIC) codes and North American Industry Classification System (NAICS) codes. Each sector carries specific requirements tailored to the unique pollutants associated with that industry and can be found in an EPA fact sheet here.
- When a site triggers post-construction stormwater rules (typically projects disturbing 1 acre or more of land, though local thresholds can be smaller, such as 5,000 sq. ft. of new impervious surface), developers must meet two main performance goals:
    - **A. Water Quality Control (Pollutant Treatment):** To prevent the "first flush" of stormwater—usually the first 0.5 to 1.0 inch of rainfall—which carries the highest concentration of pollutants (oil, grease, fertilizers, sediment, heavy metals).
    - **B. Water Quantity / Hydromodification Control:** Such that post-development runoff rates and volumes do not exceed pre-development baseline levels.
- **When is it required:** Although data centers are not currently considered "industrial sites" for purposes of the MSGP or under the SIC codes, the facility may require permits and controls anyway. Particularly if there are large outdoor backup diesel generators, fuels storage tanks, chemical storage for cooling systems, or other areas where rainwater can pick up pollutants that can runoff into surface waters, they may be required to have an Industrial Stormwater General Permit and an SWPPP for

operations from the state. **Check with the appropriate permitting authority, such as a state environmental agency or local municipal agency, to determine how to best apply these provisions.**

**How concerned community members can intervene under Section 402:**

- **Monitor Water Health and Alert Authorities about CWA Section 402 (NPDES) Impairments:** Citizens can monitor local water health by using public EPA databases like How's My Waterway and the ATTAINS Database to check if local waterbodies are impaired or subject to TMDL cleanup plans, and check with permitting authorities regarding industrial stormwater permits.

### 3. Dredge-and-Fill Permit (CWA 404)

- **Who issues the permits:** U.S. Army Corps of Engineers (USACE) (Note: EPA's role is to set guidelines and has veto authority, but rarely uses it because of the high bar to do so. In a few cases – Michigan and New Jersey – state environmental programs have joint enforcement authority with USACE.)
- **What it is:** Projects with minimal impacts to waters may be covered under a USACE nationwide permit or a general permit. USACEs issues Nationwide Permits (NWP) for certain classes of discharge of dredge or fill material – including the recent NWP 39 for hyperscale data centers. There are over 50 such permits which offer a streamlined process to receive a permit. (See Nationwide Permit Information for more detail.) The term "general permits" is equivalent but used in the context of NPDES permits.
- **When it is required:** Under usual circumstances, a dredge-and-fill permit is required if siting or construction will cause a discharge of dredge or fill material to jurisdictional wetlands, streams, or other waters of the U.S. In the case of data center construction, this might have included grading, culverts, or utility corridors, and potentially other activities, so long as they include direct discharge into a jurisdictional water body.
  However, since USACE added data centers to its streamlined permit category (NWP 39), hyperscale developers may not have to notify the public when they start construction or have to get public comment on their discharge of dredge or fill material to wetlands or streams that are covered by CWA if the discharge is less than the half-acre of non-tidal wetlands in total. Importantly, you cannot combine multiple nationwide permits.
    - Some states (e.g., Colorado and New Mexico) and municipalities (e.g., coastal South Carolina) are exploring issuing wetlands protection regulations to offset the change in the federal program. Concerned stakeholders need to check with both the state and local authorities.

- ***Additional Threat*:** Reporting by POLITICO from July 2026 found that data centers have received permits without any fuller review because of the narrowing of the definition of jurisdictional waters under the *Sackett v. EPA* U.S. Supreme Court ruling (WOTUS). This exclusion also has other impacts because CWA review is often the federal trigger for broader National Environmental Policy Act (NEPA) review and public participation. Until EPA and USACE issue a final regulation defining WOTUS, there will continue to be considerable confusion on how to apply *Sackett*.

**How concerned community members can intervene under Section 404:**

- **Engage in the State CWA Section 401 Water Quality Certification Process:** Concerned citizens can engage in the state CWA Section 401 certification process when states attach regional conditions or require individual reviews, which often include public notice and comment opportunities. For example, while there may be federal NWPs under Section 404, NWPs cannot authorize activities unless the relevant state environmental agency grants or waives CWA Section 401 Water Quality Certification. States frequently attach regional conditions or require individual Section 401 reviews for specific sensitive watersheds or project thresholds.
- **Monitor and Intervene During Pre-Construction Notification (PCN):** Many NWPs require developers to submit a PCN to the district engineer before starting work. While PCNs generally do not trigger a formal public notice, community members can proactively monitor local USACE district public notices, submit unsolicited comments, or provide technical data directly to the district engineer demonstrating that the project's impacts exceed the "minimal adverse environmental effects" threshold allowed under general permits.
- **Trigger Endangered Species Act (ESA) or National Historic Preservation Act (NHPA) Section 106 Consultations:** If the project may impact threatened or endangered species or cultural/historic sites, USACE must engage in consultation under ESA Section 7 or Section 106 of the NHPA. Citizens can document and submit evidence of listed species habitat or cultural resources, which forces USACE to suspend NWP authorization until formal reviews are completed.
- **Challenge Discretionary Authority and NWP Eligibility:** Citizens can formally petition the USACE District Commander to exercise "discretionary authority" to revoke or modify the NWP authorization.

## 4. Pretreatment Requirements (CWA 307)

- **Who issues the permit:** Pretreatment requirements are imposed by a state agency in 37 states or by the EPA where there is no state authority, including for Tribes and territories. More about roles and responsibilities can be found at EPA's website here.

- **What it is:** CWA 307 regulates industrial discharges to POTWs to ensure industrial wastewater doesn't disrupt municipal treatment or contaminate receiving waters.
- **When it is required:** If a data center discharges specific pollutants (e.g., cooling tower blowdown, water treatment chemicals) into a POTW or municipal wastewater treatment system, industrial pretreatment standards may apply. Some pretreatment requirements apply to any indirect discharges to a POTW, known as general and specific prohibitions, e.g. prevent excess heat, extreme pH, etc. See 40 CFR 403.5(a) & (b).

**How concerned community members can intervene under Section 402:**

- **Highlight CWA Section 307 (Pretreatment) Standards to POTWs:** Citizens can work with local POTWs to ensure that industrial pretreatment standards are enforced, limiting the amount of chemical waste and cooling runoff data centers route through municipal infrastructure.

## *Strategy Note:* Addressing Water Quantity

Using the **Clean Water Act (CWA)** to address *water quantity* issues (such as massive withdrawals for cooling towers) is legally challenging because **the CWA is primarily a water quality statute, not a water allocation law**. Under CWA Section 510(2), the U.S. Congress explicitly preserves states' sovereign authority over water rights and water quantity allocation.

However, environmental groups, municipalities, and regulators use several indirect leverage points within the CWA—along with state-level statutory frameworks—to tackle hyperscale data center water consumption. These include provisions from sections above. Working closely with legal and permit writing teams familiar with CWA is useful.

**Regulatory & Legal Workarounds Outside Standard CWA Applicability**

Because the CWA has inherent limits regarding pure water allocation, strategies to address hyperscale quantity issues usually combine the CWA with other mechanisms:

- **State Water Rights Laws (Riparian vs. Prior Appropriation):**
  - **Eastern U.S. (Riparian):** States enforce "reasonable use" doctrines. Communities argue that a single hyperscale facility drawing 1 to 5+ million gallons per day (MGD) impairs the reasonable use of downstream owners.
  - **Western U.S. (Prior Appropriation):** Direct quantity is managed via state water permits. Regulators evaluate whether a data center's groundwater

pumping impacts senior water rights or connected surface streams (conjunctive management).

- **Safe Drinking Water Act (SDWA) / Wellhead Protection:** If groundwater withdrawals endanger public water supply wells or cause saltwater intrusion, local agencies leverage SDWA source-water protection programs to restrict pumping zones.
- **Pre-treatment Standards for POTWs:** Data centers often buy potable municipal water or discharge effluent into city sewers rather than drawing directly from rivers. Local POTWs can use CWA pretreatment standards (Section 307) to limit how much water and chemical waste a data center can route through public infrastructure.

# Clean Air Act (CAA)

## General Overview

- The CAA regulates air emissions from stationary and mobile sources to protect public health and the environment. For data centers, which house massive concentrations of backup power generators and cooling infrastructure, compliance hinges on aggregating localized emissions to determine if the facility qualifies as a major stationary source of criteria or hazardous air pollutants.
- **Who issues the permit:** For each subsection, states and some Tribes run the program.

## Subsections

### 1. New Source Review (NSR) & Prevention of Significant Deterioration (PSD)

- **What it is:** A pre-construction permitting program designed to ensure that air quality does not significantly deteriorate when new industrial sources are built or modified.
- **When it is required:** Triggered if a data center's on-site combustion units (such as large backup diesel generator farms or boilers) exceed major-source emission thresholds for criteria pollutants (typically 100 or 250 tons per year, depending on the region). If triggered, the facility must undergo air dispersion modeling, apply Best Available Control Technology (BACT), and go through a public notice and comment period. If the emissions are not large enough to qualify as a major source, they would still need to go through minor NSR permitting.

### 2. Title V Operating Permit

- **What it is:** A comprehensive federal operating permit program that aggregates all pollutant-emitting units under common control at a single site into a single stationary source. Rather than permitting individual engines, regulators assess the collective impact of the entire facility.
- **When it is required:** Hyperscale data centers frequently face "major stationary source" classifications due to their massive aggregated emissions potential:

- **Massive Aggregated Emissions Potential:** A large data center housing 50 to 150 diesel generators possesses a huge potential to emit nitrogen oxides (NOx) and particulate matter (PM), even if engines only run for emergency backups and routine testing.
- **The "Synthetic Minor" Escape Route:** To avoid intensive Title V permitting and the rigorous NSR/PSD process, operators routinely apply for "synthetic minor" permits. These permits impose legally enforceable caps on operating hours and fuel usage to keep actual emissions below the major-source thresholds.
- **Tier II vs. Tier IV Standards:** Older or cheaper Tier 2 generators lack advanced exhaust filters and emit nine times more NOx than newer Tier 4 engines. In high-density data center hubs (such as Northern Virginia) or nonattainment areas (like Los Angeles), regulators increasingly mandate Tier 4-equivalent emissions controls for new permits to prevent localized air quality crises.
- The Better Data Center Project developed a helpful report, *Diesel Generators at Data Centers Status, Impacts, and Protective Practices*, explaining the current status and what could be done.

### 3. National Emission Standards for Hazardous Air Pollutants (NESHAP)

- **What it is:** Dictates emission standards, testing, and operational limits for hazardous air pollutants (HAPs) from specific industrial source categories. Under the Clean Air Act Section 112(b)(1), HAPs (or "air toxics") are a specific list of 188 EPA-regulated substances, such as formaldehyde, benzene, and toluene, known to cause cancer, reproductive dysfunction, or severe environmental harm. For data center generator fleets, these standards target the toxic chemical compounds embedded within diesel exhaust emissions.
- **When it is required:** Directly impacts emergency diesel generators under 40 CFR Part 63, Subpart ZZZZ (commonly known as Reciprocating Internal Combustion Engines (RICE) NESHAP). To maintain "emergency" status and avoid extensive HAP control and continuous monitoring requirements, engines are strictly limited to 100 hours per year of non-emergency operation (including a nested 50-hour limit for non-emergency situations). Exceeding these limits permanently reclassifies the engine as a "non-emergency" source.
    - Unpermitted Power Generation Warning: We are seeing cases of stationary gas-fired turbines generating primary power for computing clusters, or hyperscale data centers —such as the 27 unpermitted, portable gas turbines deployed at the xAI "Colossus" data center site in Memphis, on the border between Tennessee and Mississippi. This violates the CAA and invites immediate citizen litigation and federal regulatory intervention over unpermitted emissions.

**4. Risk Management Plan (RMP) – Chemical Accident Prevention (CAA Section 112(r))**

- **What it is:** Requires facilities holding extremely hazardous substances above specified threshold quantities to develop a Risk Management Program to detect, prevent, and minimize the consequences of accidental chemical releases.
- **When it is required:** Triggered if a data center stores substances found on the EPA's List of Regulated Substances under Section 112(r) in a single process above federal threshold quantities (e.g., storing more than 10,000 pounds of anhydrous ammonia, which is sometimes used in large-scale industrial cooling loops). Triggered facilities must submit a formal Risk Management Plan to the EPA every five years, run hazard assessments, and coordinate emergency response plans with local responders.

**How concerned community members can intervene:**

- **Find out who is your state/Tribal permit writer** and contact them for more information on any provisions of interest. EPN's technical assistance team can support you. See EPN's intake form here.
- **Advocate for Public Participation:** While the current Administration is trying to reduce opportunities for public comment, with CAA provisions, it is important to look out for remaining opportunities to file public comment. Urge local decision-makers to open public comment periods for facility permits, even when not explicitly mandated by law. Ensuring public input reflects good governance and helps regulatory personnel identify and mitigate community-level risks..
- **Organize and Use Media:** Simultaneously, communities should be ready to use organizing techniques and media attention to persuade decision-makers to apply the tools under the law protecting health and the environment.
- **Watch Out for Power Generation Methods:** Keep your eye on diesel- and gas-fired generators at data centers to see how they are being used to meet power demand as they are being permitted across the country in novel ways. The data center may characterize them as "emergency" generators, which are supposed to be used only in a true emergency such as power outage. But in some cases the generators may be used more frequently (e.g., on hot summer days when there is high electricity demand). Whether or not they are "emergency" generators is relevant to whether and what kind of CAA permits may be required.
- **Investigate Regulatory Enforcement Protocols by raising key oversight questions to the proper (likely state) authority, such as:**
    1. Which oversight authority is tasked with facility inspections, and do they possess adequate capacity to audit all generators and turbines?

2. If non-compliance occurs, will federal regulators be permitted to pursue enforcement actions, or will administrative policy shifts constrain their authority regarding energy infrastructure?
3. When enforcement remedies are executed, will the resulting settlements mandate continuous monitoring safeguards to prevent future violations?

- **Mandate Air Quality Monitoring Conditions:** Press permitting agencies and lawmakers to require localized air monitoring equipment within permits for sites relying on extensive backup generator fleets. Enforcement actions, such as Virginia's against Microsoft over unpermitted non-emergency generator operations (documented in reporting by CBS News), demonstrate the necessity of establishing mandatory air monitoring provisions before permits are finalized.
- **Deploy Community Air Sensors:** If regulatory authorities omit monitoring mandates, community groups can acquire commercial air sensors for installation near residential zones and include monitoring to make it part of negotiations with companies (e.g., community benefits agreements or memoranda of understanding). The EPA notes that while lower-cost sensors do not match regulatory-grade station precision (see EPA's Air Sensor Toolbox), these much more cost-effective and accessible devices—costing merely hundreds to a few thousand dollars—provide vital localized screening. Real-time data collection offers an essential early warning system for residents, local representatives, and environmental regulators, as demonstrated by vendor platforms like IQAir.

# Resource Conservation and Recovery Act (RCRA)

## General Overview

- RCRA establishes the "cradle-to-grave" regulatory framework for governing the generation, transportation, treatment, storage, and disposal of solid and hazardous waste. It ensures that hazardous materials, from manufacturing byproducts to electronics turnover, are handled safely to prevent environmental contamination, while promoting material recovery and sustainable resource conservation. In some situations, developers are looking to reuse land that may have been contaminated by hazardous wastes. In such a case, RCRA sets forth requirements for cleanup ("corrective action") of portions of a hazardous waste treatment, storage or disposal (TSD) facility that would apply.
- **Who runs the program:** Unless otherwise mentioned below, states oversee the RCRA programs, unless the entity does not have an authorized program. In the latter case, EPA regions issue permits. It is, therefore, important to look into the jurisdiction where the data center is located.

## Subsections

### 1. Hazardous Waste Management & Generator Status (RCRA Subtitle C)

- **What it is:** Imposes strict, legally binding tracking and handling regulations on facilities based on the volume of hazardous waste they produce in a single calendar month.
- **When it is required:** Data centers routinely trigger Large Quantity Generator (LQG) status due to the bulk, periodic disposal of facility solvents, electronic components, chemical treatments, and heavy-duty battery materials. Triggering this status enforces mandatory compliance with:
    - **Satellite Accumulation Areas:** Maintaining designated, secure collection points where hazardous wastes (e.g., spent solvents and lead-acid batteries) are safely contained at or near the point of generation.
    - **Universal Waste Rules:** Applying streamlined, less-rigid storage and transport standards specifically for common items like lamps, aerosol cans, lithium batteries, and qualifying electronics.
    - **Used Oil Management Standards:** Adhering to specific storage, labeling, and recycling protocols for backup-generator lubricants, hydraulic oils, and transformer oils.

### 2. Electronic Waste (E-waste) & Information Technology (IT) Equipment Turnover

- **What it is:** RCRA regulates the decommissioning and disposal pipeline of corporate technology assets. Depending on specific waste characteristics, some materials may constitute hazardous waste under RCRA and have specific, more stringent, conditions. Others fall under "universal waste rules" which are streamlined, less-rigid standards for the storage and transport of commonly generated hazardous waste items like lamps, aerosol cans, lithium batteries, and qualifying electronics. Proper characterization, manifesting, and vendor qualification of e-waste and IT equipment are required.
- **When it is required:** This provision is continually active since data centers routinely cycle and retire significant quantities of servers, networking equipment, cooling controls, and electronic components. Operators must perform accurate waste characterizations, complete official shipping manifests, and secure certified logistics workflows for all e-waste turnover.

### 3. EPA Sustainable Materials Management (SMM) Framework

- **What it is:** A non-regulatory federal policy framework (under RCRA) that has evolved into EPA's modern Circular Economy initiative, shifting focus from waste disposal to life-cycle material efficiency. The EPA is continuing these policies under their "circular economy" approach.
- **When it is required:** While not mandatory legal requirements, these resource conservation approaches are increasingly integrated by developers, federal agencies, and local zoning

boards into data center procurement and corporate sustainability strategies. It directly impacts facility planning by:

- Encouraging systemic design for reuse, demanufacturing, and structural materials recovery of servers, hardware racks, backup batteries, and power distribution units.
- Prioritizing the reduction of embodied carbon (the greenhouse gas emissions associated with the production - the extraction, transport and manufacturing - stages of a product's life) through material circularity (the system where materials never become "waste" under RCRA by being disassembled, remanufactured, or recycled) and supporting Environmentally Preferable Purchasing (EPP) for structural components.
- Promoting the exclusive use of certified electronics recyclers and refurbishers to ensure the responsible recovery of critical minerals.

**How concerned community members can intervene:**

- **Monitor Hazardous Waste & Generator Status:** Track state environmental agency records or EPA ECHO (Enforcement and Compliance History Online) to determine whether the facility properly registers as a LQG and complies with hazardous waste and used oil regulations.
- **Engage in Brownfield Cleanup & Corrective Action:** When data centers are built on redeveloped industrial sites, review RCRA Corrective Action permits and submit public comments to ensure contaminated soil and groundwater are thoroughly remediated.
- **Push for Certified E-Waste Recycling & Circularity:** Encourage local planning boards and regulators to mandate enforceable commitments that decommissioned servers, batteries, and e-waste are handled by accredited third-party recyclers (such as e-Stewards or R2).

# Safe Drinking Water Act (SDWA)

## General Overview

- The SDWA protects public health by regulating the nation's public drinking water supply and protecting underground sources of water. It establishes maximum contaminant levels for harmful substances, dictates monitoring and record-keeping frameworks, and governs the subsurface disposal of fluids to prevent groundwater pollution.

## Subsections

1. **Underground Injection Control (UIC) Program (SDWA Section 1421)**

- **Who issues permits:** States, Tribes, and territories typically have "primacy" to issue permits, unless the EPA runs a program where there is a gap. See details on EPA's website here.
- **What it is:** Regulates the subsurface emplacement of fluids to prevent contamination of Underground Sources of Drinking Water (USDWs). The program establishes strict classification tracks for injection wells based on depth, waste type, and containment strategies. The most potentially applicable classification is Class V Wells.
    - **Class V Wells:** Shallow disposal wells (such as drywells, drainfields, French drains, or infiltration trenches) used for non-hazardous fluids. Because they lack extensive pretreatment and drain directly into or above USDWs via gravity, they require stringent oversight to protect groundwater quality.
- **When it is required:**
    - **Class V Wells:** Directly triggered if a data center utilizes localized shallow subsurface infrastructure to manage its water, heat, or runoff footprint. These requirements are primarily regulated by state-level environmental agencies (under EPA-delegated primacy) alongside local municipal water or stormwater authorities. This includes:
        - **Stormwater and Wastewater Disposal:** Employing dry wells, shallow drainfields, or infiltration trenches to dispose of non-contact cooling water, stormwater runoff from extensive paved areas, or operating large-capacity septic systems for on-site staff. There is no minimum volume threshold for stormwater drainage wells, any subsurface design that manages runoff automatically triggers Class V inventory registration. For on-site septic systems, the regulatory threshold is triggered if the system has the capacity to serve 20 or more people per day (or has a design flow rate exceeding 1,000 gallons per day under most state regulations).
        - **Geothermal & Open-Loop Systems:** Utilizing geothermal reinjection wells or open-loop heat pump return wells to pass groundwater through heat exchangers and return the water back into the same aquifer. This forces mandatory compliance and registration under federal or state Class V UIC tracks. Any active open-loop system that withdraws and reinjects groundwater automatically forces mandatory Class V compliance and registration under federal or state UIC tracks, with no minimum volume threshold.

**What you can do about it:**

- Keep your eye on water disposal from data centers. UIC provisions may not be well understood or adhered to, and related information about disposal of wastewater may not be tracked or reported. Bring any observations to the attention of primacy agency permit issuers and/or other decision-makers.

2. **Public Water System (PWS) Compliance (SDWA Section 1412)**
   **Who issues the permit:** In all states (plus U.S. territories) except for Wyoming and the District of Columbia, state agencies oversee public water systems. They review engineering plans, issue permits to construct/operate, establish monitoring schedules, and issue approvals for new drinking water sources.
   **What it is:** Mandates that entities providing water for human consumption meet strict health-based federal thresholds under the National Primary Drinking Water Regulations (NPDWRs). Compliance forces operators to maintain rigorous sampling intervals, run routine water quality monitoring, maintain infrastructure integrity, certify treatment operators, and deliver annual water quality consumer confidence reports.
   **When it is required:** Directly triggered if a large-scale data center campus or localized administrative facility operates an independent, self-sustaining potable water system that serves 25 people or more for at least 60 days out of the year. Furthermore, if a developer intends to entirely disconnect a hyperscale data center facility from the municipal utility system to run private well operations, they must navigate and secure state or local water facility construction and operation permits (e.g., becoming a non-transient non-community water system (NTNCWS)).

**What you can do about it:**

- Keep your eye on the water provision for data centers and note if they should be NTNCWS. If they do avail themselves of this option, the public can press government oversight entities to require them to have regular water quality monitoring, certified operators, and sanitary surveys (periodic inspections of equipment and operations).

# Toxic Substances Control Act (TSCA)

## General Overview

- TSCA provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions and bans relating to chemical substances and/or mixtures. It addresses the production, importation, processing, distribution in commerce use, and

disposal of most chemicals (except for pesticides, food, drugs, cosmetics, tobacco, and chemicals subject to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)). It includes specific provisions for specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, mercury, and lead-based paint.

- **Who oversees the program:** Unlike other major federal environmental statutes (e.g., CWA, CAA, or RCRA), TSCA remains largely a federally centralized program. However, the U.S. Congress allowed delegation to co-regulator agencies for the lead-based paint and asbestos in schools programs. The below provisions related to data centers are all focused on EPA authority.

## Subsections

### 1. Pre-Manufacture Notification (PMN) for New Chemical Substances (TSCA Section 5)

- **What it is:** PMN under TSCA Section 5 requires chemical manufacturers (domestic producers and importers) to submit a safety review notice before manufacturing or introducing a brand-new chemical substance into U.S. commerce.
    - Data Center Priority Lane Note: *Pursuant to Executive Order 14178 ("Accelerating Federal Permitting of Data Center Infrastructure"), the EPA provides an expedited "priority review track" allowing manufacturers of qualifying data center infrastructure to bypass the standard PMN backlog via a targeted cover letter through the Central Data Exchange (CDX).*
- **When it is required:** PMN is triggered when hardware manufacturers or facility developers adopt novel chemical formulations not already listed on the active 83,000+ chemical TSCA Inventory. For data centers, this applies to specialized next-generation AI liquid immersion cooling fluids (dielectric fluorinated compounds), waterless gaseous fire suppressants, and transmission loop corrosion inhibitors or biocides. This also applies to domestic producers or importers of new chemicals for use in the data centers.

### 2. Significant New Use Rules (SNURs) (TSCA Section 5)

- **What it is:** Section 5 of TSCA allows the EPA to designate a specific use of a new or existing chemical as a "significant new use," requiring entities to submit a Significant New Use Notice (SNUN). The EPA must review the SNUN and approve before the company can utilize the chemical for that purpose.
- **When it is required:** TSCA Section 5 applies if a data center's hardware vendor(s) or cooling technician(s) transition a chemical into an unprecedented operational scenario (such as massively scaling a specific chemical's use inside heavy-duty high-voltage data center transformers) that the EPA has designated as a significant new use. A significant new use is typically flagged under a SNUR due to concerns based on potential changes to exposure or releases.

**What you can do about it:**

**Monitor and Challenge Expedited Section 5 PMN Submissions**

- **Watch PMN Submission:** The EPA publishes public notices of receipt of new chemical PMNs. Concerned community members should monitor TSCA Section 5 filings for new fluorinated chemicals (i.e., alternatives to per- and polyfluoroalkyl substances (PFAS)) or novel dielectric fluids intended for local data center projects.
- **Comments & Health Reviews:** Push for robust health and safety testing (e.g., toxicity, bioaccumulation, degradation products) as part of the safety review and determination. Highlight risks such as accidental spills from immersion cooling systems into local watersheds or thermal runaway byproducts.

### 3. Chemical Testing Requirements (TSCA Section 4)

- **What it is:** TSCA Section 4 grants the EPA the authority to mandate that chemical domestic producers, importers, and processors perform targeted health and environmental safety testing if an absolute risk or significant exposure concern is identified.
- **When it is required:** Generally, Section 4 of TSCA impacts the advanced computing hardware supply chain rather than everyday facility operations. It applies if a data center's specialized component manufacturers are ordered to run testing protocols on proprietary chemical components or custom battery systems.

**What you can do about it:**

- Collaborate with a partner organization or coalition that works with the computer supply chain to identify and address health concerns from advanced computer hardware.

### 4. Inventory Reporting and Record-Keeping (TSCA Section 8)

- **What it is:** Mandates comprehensive tracking, maintenance of facility-specific chemical records, and regular data submissions by entities that manufacture (includes domestic production and import), process, or distribute chemical substances.
- **When it is required:** Triggered when a data center manages massive commercial inventories of chemical treatments or specialized fluids on campus. It also encompasses specific federal reporting requirements for PFAS contained in procured or imported hardware components.
    - Note: *This section strictly dictates tracking and data collection; it does not impose active chemical use or storage bans at the facility level.*

5. **Reporting Substantial Risk Information (TSCA Section 8(e))**

- **What it is:** A strict, mandatory reporting requirement forcing any person or company that obtains information reasonably supporting the conclusion that a handled chemical substance presents a substantial risk of injury to public health or the environment to immediately inform the EPA.
- **When it is required:** Legally active at all times. If data center facility managers or researchers uncover evidence of a severe, unrecorded toxic hazard or exposure event stemming from their advanced cooling systems, they must file an immediate Section 8(e) submission to the EPA.

**What you can do about it:** Access Disclosed Data via TSCA Section 8 & EPA ChemView

- **Public Data Rights:** TSCA Section 8 mandates that chemical risk data, health/safety studies, and chemical inventory volumes be reported to the EPA. Request or monitor public records on what refrigerants, PFAS compounds, and flame retardants local facilities are utilizing.
- **Identify PFAS Exposure:** Use data published under TSCA Section 8(a)(7) to map local environmental exposure risks from cooling fluids and firefighting foam/materials used on site.

6. **Import and Export Certification Reporting (TSCA Sections 12(b) & 13)**

- **What it is:** Enforces strict compliance certifications for any entity actively shipping regulated chemicals into or out of the U.S.
- **When it is required:** Triggered if a hyperscale data center developer directly imports pre-packaged, overseas server racks containing specialized chemical coolants, or exports custom, proprietary backing hardware utilizing custom chemical formulations.

7. **Prioritization, Risk Evaluation, and Regulation of Chemical Substances and Mixtures (TSCA Section 6)**

- **What it is:** Provides for the regulation of the manufacture (includes domestic production and import), processing, distribution in commerce, use and disposal of existing chemicals, including through bans and restrictions, most notably polychlorinated biphenyls (PCBs), asbestos, trichloroethylene, methylene chloride and other chlorinated solvents.
- **When it is required with hyperscalers:**
    - PCBs (Section 6(e)): Mandatory if expanding or retrofitting older industrial grid sites where legacy power transformers and capacitors contain active PCBs that require marking, tracking, or certified disposal. The use of PCBs is prohibited unless there is an existing use authorization

- Use of certain chlorinated solvents for decreasing, paint removal, and other uses are restricted or banned.

**What you can do about it:** Exercise TSCA Citizen Rights (Petitions and Suits)

- **TSCA Section 21 Petitions:** The public can petition the EPA to initiate rulemaking under Section 6 to restrict or ban specific data center chemicals (e.g., specific liquid coolants or PFAS-based refrigerants) if they present an unreasonable risk to public health or the environment.
- **TSCA Section 20 Citizen Suits:** People can sue the EPA to compel performance of non-discretionary duties or sue data center developers/operators in federal court if they are violating TSCA chemical restriction rules, SNURs (Significant New Use Rules), or reporting mandates.

## Conclusion

The federal permitting landscape for data centers is complex, often involving intricate layers of environmental statutes that intersect with local, state, and federal jurisdictions. As this document has outlined, whether navigating the CWA, CAA, RCRA, SDWA, or TSCA, there are numerous opportunities for communities and stakeholders to engage meaningfully. Additional opportunities through statutes, such as NEPA, ESA and Brownfields (CERCLA) are also possible and will be explored in updates to this guide.

By monitoring public notices, exercising citizen rights, and leveraging technical expertise, you can play a critical role in ensuring that data center development does not come at the expense of environmental safeguards or public health. We encourage you to utilize the resources listed throughout this guide and reach out to the EPN technical assistance team using this form to support your efforts in oversight and advocacy.

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Partners are integral to this work. Select resources from our partners are linked below.

## Useful Resource Links

- A decision tree resource published by Fair Shake Environmental Legal Service specific to Pennsylvania, Ohio, and West Virginia.
- EPN Data Center Resource Directory Dashboard contains a wide range of helpful resources intended for anyone, from the community to government levels, and aims to inform, advocate, and shape policy during a data center's pre-approval and construction phases.
- EPN's report helps set the record straight about human health implications of the Trump Administration EPA's regulatory rollbacks. See: *Hidden Health Costs: How EPA is helping speed the AI data center buildout while weakening pollution safeguards and shifting health risks and costs onto families and communities*.
- This xAI memo, focused on the xAI data center in Memphis, Tennessee was prepared by former EPA regulators and CAA attorneys to explain how the Trump Administration is rolling back longstanding public health protections for on-site power generation at data centers.
- The Better Data Center Project's "*AI's Gas Rush: Risks and Implications of "Bring Your Own Power*" and "Diesel Generators at Data Centers" can both be found here.
- We Build Progress' Communities Take Charge: Data Center Model Policy Guide offers an interactive set of practical and customizable policy tools for community-based organizers and state and local lawmakers to regulate proposed and existing data center development.
- EPN offers pro bono Technical Assistance for any of the permitting issues below. Fill out EPN's intake form here.
- Lawyers for Good Government (L4GG) offers the Green and Equitable Communities Clinic (GECC) for direct pro bono legal services to communities in need. Fill out L4GG's intake form here.

## Glossary

| | |
|---|---|
| AI | Artificial Intelligence |
| ATF | Bureau of Alcohol, Tobacco, Firearms and Explosives |
| ATTAINS | Assessment and Total Maximum Daily Load Tracking and Implementation System |
| BACT | Best Available Control Technology |
| BTA | Best Technology Available |
| CAA | Clean Air Act |
| CDX | Central Data Exchange |
| CGP | Construction General Permit |
| CWA | Clean Water Act |
| EA/EIS | Environmental Assessment/Environmental Impact Statement |
| ECHO | Enforcement and Compliance History Online |
| EPA | U.S. Environmental Protection Agency |
| EPN | Environmental Protection Network |
| EPP | Environmentally Preferable Purchasing |
| ESA | Endangered Species Act |
| E-waste | Electronic Waste |
| FERC | Federal Energy Regulatory Commission |
| HAP | Hazardous Air Pollutants |
| IT | Information Technology |
| L4GG | Lawyers for Good Government |
| LQG | Large Quantity Generator |
| MSGP | Multi-Sector General Permit |
| NAICS | North American Industry Classification System |
| NEPA | National Environmental Policy Act |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NHPA | National Historic Preservation Act |
| NPDES | National Pollutant Discharge Elimination System |
| NPDWRs | National Primary Drinking Water Regulations |
| NSR | New Source Review |
| NTNCWS | Non-transient Non-community Water System |
| NWP | Nationwide Permits |
| PCB | Polychlorinated Biphenyls |
| PCN | Pre-Construction Notification |
| PFAS | Per- and Polyfluoroalkyl Substances |
| PMN | Pre-Manufacture Notification |
| POTWs | Publicly Owned Treatment Works |
| PSD | Prevention of Significant Deterioration |
| PUD | Public Utility District |
| PWS | Public Water System |

| | |
|---|---|
| RCRA | Resource Conservation and Recovery Act |
| RICE | Reciprocating Internal Combustion Engines |
| RMP | Risk Management Plan |
| SIC | Standard Industrial Classification |
| SDWA | Safe Drinking Water Act |
| SMM | Sustainable Materials Management |
| SNUN | Significant New Use Notice |
| SNUR | Significant New Use Rules |
| SWPPP | Stormwater Pollution Prevention Plan |
| TMDL | Total Maximum Daily Load |
| TSCA | Toxic Substances Control Act |
| UIC | Underground Injection Control |
| USACE | U.S. Army Corps of Engineers |