Disposal Options and Requirements for Polychlorinated Biphenyl Waste

Prepared by:
Washington State Department of Ecology
and
Pacific Rim Environmental, Inc.

Publication 24-04-027 | **May** 2024

DEPARTMENT OF ECOLOGY
State of Washington

Publication Information

This document is available on the Department of Ecology's website at:
https://apps.ecology.wa.gov/publications/summarypages/2404027.html

Contact Information

Washington State Department of Ecology
Hazardous Waste & Toxics Reduction Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6700

Website: ecology.wa.gov/contact

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The U.S. Environmental Protection Agency (EPA) funded this project under the National Estuary Program (NEP), Project Tracking Number 2018-0473. The contents of this document are pursuant to **Task 6** of the Statement of Work, and do not necessarily reflect the views and policies of EPA, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Table of Contents

Introduction

Polychlorinated biphenyls (PCBs) are part of a family of man-made organic compounds called chlorinated hydrocarbons. PCBs vary in consistency from light-colored liquids to black, wax-like solids, and have a range of toxicity. Congress banned the manufacture and use of PCBs in 1978. PCBs are subject to regulations and pose a long-term liability to the environment and people.

In Washington State, PCBs are regulated by the Washington State Department of Ecology (Ecology) and the United States Environmental Protection Agency (EPA). Ecology regulates PCB wastes containing up to 50 parts per million (ppm) PCBs that meet the Washington Polychlorinated Biphenyls (WPCB) listing in WAC 173-303-9904.[1] EPA regulates two types of PCB wastes relevant to this disposal guidance under 40 Code of Federal Regulations (CFR) 761:

- PCB remediation waste is regulated at any concentration greater than 1 ppm if the PCBs are spilled or released from a source not authorized for use.
- PCB bulk product waste is regulated at 50 ppm and greater.

Both agencies have requirements for the management and disposal of PCB waste. The federal Toxic Substances Control Act (TSCA) regulates currently used building materials that contain PCBs in concentrations greater than or equal to 50 ppm and enforces disposal requirements. TSCA authority is not delegated to the states. Therefore, both TSCA and state regulations may apply to PCB material designated for disposal.

This guide describes how to properly dispose of four types of potential PCB wastes in Washington found at sites carrying out PCB abatement activities during demolition, renovation, and remediation. The four types of waste are:

- PCB bulk product wastes, such as nonliquid bulk building materials, applied products, and fluorescent light ballasts.
- PCBs in liquid, including water, oil, and other fluids.
- PCB articles, such as transformers, capacitors, electrical equipment, hydraulic machines, containers, bushings, and other items containing PCBs.
- PCB remediation wastes, such as PCB-contaminated soils, sediments, rags, and other debris created during the cleanup of spills containing PCBs. This can also include sewage sludge with less than 50 ppm PCBs and contaminated buildings and structures resulting from PCB leaks.

[1] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-303-9904

Sludges and slurries are a type of PCB remediation waste. They can be separated (processed) into solid and liquid phases prior to disposal. More information on sludge and slurry separation can be found in Appendix A.

Additionally, some types of wastes are WPCB-listed wastes in Washington State. Guidance specific to WPCB-listed wastes is in Appendix B.

For a complete list of TSCA and Washington State PCB disposal methods in table format, see Appendix C.

Important Considerations Before You Use This Guidance

Before you determine your disposal options, you must identify the waste type, characterize your waste, consider disposal and landfill options, and take into account state- and federal-specific considerations.

How Is Parts Per Million (ppm) Determined?

- From sampling analytical results.
- Presumed to be greater than or equal to 50 ppm, based on historical use.
- From a permanent label, mark, or other documentation from the manufacturer of the equipment indicating its PCB concentration at the time of manufacture.

Disposal and Landfills

PCB waste must be characterized or assumed to be present before disposal. Only dangerous waste transporters who have notified Ecology and are registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter or disposal specialist. However, the generator of the PCB waste is ultimately responsible for its proper management and disposal.

Additional Information and Links:

- Hazardous waste service providers.[2]
- Dispose, recycle, or treat dangerous waste.[3]
- List of approved PCB commercial storage and disposal facilities.[4]

Appendix D provides a list of the permitted municipal solid waste landfills in and around Washington State. You may still need to contact the landfills before disposal to determine if they will accept PCB waste. Before notifying the landfill, you will need to characterize the waste, provide laboratory analysis reports, and prepare a waste profile. A uniform hazardous

[2] ecology.wa.gov/DWContractors
[3] ecology.wa.gov/DWDisposal
[4] https://www.epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities

waste manifest is required before the waste is removed from the project site by a notified waste transporter.

In 2016, EPA proposed and finalized a reinterpretation regarding PCB-contaminated building materials. The reinterpretation specifically addresses the definitions of bulk product waste (like PCB-contaminated caulk or coatings) and remediation waste (like PCB-containing soils). This distinction is important because it determines the disposal options. The reinterpretation allows building material (substrate) "coated or serviced" with PCB bulk product waste (like caulk, coatings, mastics, sealants) at the time of disposal to be managed as PCB bulk product waste.

In 2023, the EPA released a new rule: Alternate PCB Extraction Methods and Amendments to PCB Cleanup and Disposal Regulations.[5] These updates allow for the disposal of nonliquid PCB remediation waste at Resource Conservation and Recovery Act (RCRA) Subtitle C landfills under 40 CFR 761.61(b) (performance-based cleanup and disposal), in addition to the existing disposal options (such as TSCA landfills and TSCA incinerators). This should allow more transportation and disposal options related to nonhazardous, nonliquid PCB remediation waste for the regulated community.

Washington State–Specific Waste Codes

WPCB is Washington's additional listed waste code for:

- Discarded transformers, capacitors, or bushings contaminated with PCBs greater than or equal to 2 ppm.
- Waste generated from salvaging, rebuilding, or discarding transformers, capacitors, or bushings contaminated with PCBs greater than or equal to 2 ppm (WAC 173-303-9904).

Because WPCB is a listed waste code, solid waste mixed with or derived from WPCB waste retains the WPCB listing based on the original concentration of the PCB mineral oil derived from the source transformer, capacitor, or bushing.

Washington regulates WPCB waste with concentrations greater than or equal to 2 ppm and less than 50 ppm as dangerous waste. If the waste is not WPCB or WPCB-contaminated, then the waste is only governed by TSCA and any other applicable federal or state regulations regarding the type of waste.

Washington also regulates halogenated organic compounds, including PCBs, at greater than or equal to 100 ppm. The following waste codes apply:

- **WP02**. Waste that contains 100 to 10,000 ppm PCBs designates as a state-only criteria persistent dangerous waste, with the waste code WP02.

[5] https://www.federalregister.gov/documents/2023/08/29/2023-17708/alternate-pcb-extraction-methods-and-amendments-to-pcb-cleanup-and-disposal-regulations

- **WP01**. Waste that contains greater than 10,000 ppm PCBs designates as a state-only extremely hazardous waste for persistence, with the waste code WP01.

There is a limited exclusion from regulation of certain TSCA-regulated PCB wastes as Washington dangerous waste. See WAC 173-303-071(3)(k).

For more information on state-specific waste designation, visit Ecology's webpage: Designate your Waste.[6]

Disposal Requirements for PCB Wastes With a Concentration Above 2 ppm and Below 50 ppm

PCB wastes (not including WPCB wastes) containing less than 50 ppm must be disposed of responsibly, typically in a municipal waste landfill or similar facility. When disposing of any PCB waste, consider your potential liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

- PCBs and PCB items with concentrations below 50 ppm cannot be disposed of in ways prohibited by 40 CFR 761.20(d), such as road oiling, general dust control, use as a pesticide or herbicide carrier, or as a rust preventative on pipes.
- Burning waste oil containing quantifiable levels of PCBs (greater than or equal to 2 ppm but less than 50 ppm) for energy recovery is allowed, but subject to TSCA requirements at 40 CFR 761.20(e).
- You must meet notification requirements under 40 CFR 761.61(a)(5)(i)(B)2(iv) and 40 CFR 761.62(b)(4) when disposing of PCB remediation and bulk product waste in a non-TSCA landfill.

Anti-Dilution Rule

Materials containing less than 50 ppm PCB are also subject to the Anti-Dilution Rule (40 CFR 761.1(b)).[7] This rule prohibits diluting PCB materials with concentrations of 50 ppm or more with PCB-free materials or low-concentration PCBs to lower the resultant mixture's concentration below 50 ppm, regardless of whether the dilution was deliberate, unintentional, or accidental.

For example:

- Solvents used to flush a PCB transformer (with greater than or equal to 500 ppm PCB) must be disposed of as PCB liquid waste containing greater than or equal to 500 ppm PCB, even if the actual concentration of PCBs in the solvent is lower.

[6] ecology.wa.gov/designation
[7] https://www.ecfr.gov/current/title-40/part-761/section-761.1#p-761.1(b)

- Soil contaminated by a leaking capacitor must be disposed of as if it contained the PCB concentration of the capacitor, even if some parts of the soil contain less than 50 ppm PCB.

Due to the anti-dilution rule, materials with PCB concentrations below 50 ppm are deemed to maintain their original concentration and must be disposed of following TSCA disposal regulations.

Typical PCB Building Material Waste by Concentration

Manufactured PCB bulk products that contain PCBs greater than 50 ppm are unauthorized for use and must be removed for disposal as a PCB bulk product waste (see 40 CFR 761.3, 761.20(a), and 761.62). PCBs at greater than or equal to 50 ppm in a nonliquid state are defined as PCB bulk product waste in 40 CFR 761.3. Table 1 provides waste determinations for building material waste based on PCB concentration.

Table 1. Typical PCB building material waste (including PCB bulk waste and PCB listed waste) by parts per million (ppm) PCB concentration.

Concentration (ppm)	Waste Type	Disposal Option
Less than 2 ppm	Not regulated.	Municipal or non-municipal nonhazardous waste landfill (See Appendix D).
2 ppm to less than 50 ppm	**Washington State only PCB listed waste (WPCB)** when waste is from capacitors, transformers, and bushing equipment.	Ecology-permitted dangerous waste facilities,[8] RCRA Subtitle C Landfill.
2 ppm to less than 50 ppm	Non-WPCB wastes are not regulated at these concentrations.	Municipal or non-municipal nonhazardous waste landfill.
Greater than or equal to 50 ppm	**TSCA PCB bulk product waste** disposed of in accordance with performance-based disposal at an incinerator, approved landfill, or limited recycling facility (40 CFR 761.62a[9]).	Ecology-permitted dangerous waste facilities,[10] TSCA incinerator, TSCA chemical waste landfill, RCRA Subtitle C landfill, TSCA Subtitle D landfill.
Greater than or equal to 50 ppm	**Solid, non-leaching PCB building material waste** listed in 40 CFR 761.62b.[11]	Municipal or non-municipal nonhazardous solid waste landfill.

[8] ecology.wa.gov/Regulations-Permits/Permits-certifications/Dangerous-waste-permits
[9] www.ecfr.gov/current/title-40/part-761/section-761.62#p-761.62(a)
[10] ecology.wa.gov/Regulations-Permits/Permits-certifications/Dangerous-waste-permits
[11] www.ecfr.gov/current/title-40/part-761/section-761.62#p-761.62(b)

PCB Bulk Product Waste Disposal Guidance

Bulk product waste includes nonliquid bulk building materials, applied products, and fluorescent light ballasts.

Is the PCB bulk product waste a fluorescent light ballast?

Yes: See the TSCA Storage and Disposal of Fluorescent Light Ballasts Requirements.[12] For more information, see the EPA Fact Sheet PCBs in Fluorescent Light Ballasts.[13]

No: Continue to the next question.

Is the PCB bulk product waste less than 50 ppm?

Yes: Waste is not regulated in the dangerous waste regulations in Washington State. It can be taken to a **municipal or non-municipal nonhazardous waste landfill.**

No: If greater than or equal to 50 ppm continue to the next question.

Is the PCB bulk product waste greater than or equal to 50 ppm?

Yes: Waste must be disposed of in accordance with performance-based disposal at an **incinerator, approved landfill, or limited recycling facility** (40 CFR 761.62a[14]) or disposed of if a solid, non-leaching PCB building material waste listed in 40 CFR 761.62b[15] at a **municipal or non-municipal nonhazardous waste landfill** (40 CFR 761.62b).

Additional Information and Links:

PCB waste must be characterized before disposal. Only dangerous waste transporters who have notified Ecology and registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter and/or disposal specialist. The generator of the PCB waste is ultimately responsible for proper waste management and disposal.

- Hazardous waste service providers[16]
- Dispose, recycle, or treat dangerous waste[17]

[12] www.epa.gov/pcbs/disposal-fluorescent-light-ballasts-flb
[13] www.epa.gov/sites/default/files/2020-07/documents/pcb-flb-factsheet-final-july-2020.pdf
[14] www.ecfr.gov/current/title-40/part-761/section-761.62#p-761.62(a)
[15] www.ecfr.gov/current/title-40/part-761/section-761.62#p-761.62(b)
[16] ecology.wa.gov/DWContractors
[17] ecology.wa.gov/DWDisposal

- List of approved PCB commercial storage and disposal facilities[18]
- PCB bulk product waste definition according to 40 CFR 761.3[19]

[18] www.epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities
[19] www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-A/section-761.3#p-761.3(PCB%20bulk%20product%20waste)

Liquid PCB Waste Disposal Guidance

Liquid PCB waste includes all homogenous flowable material containing PCBs, including water, oil, and other fluids.

Is the PCB liquid a used oil?

Yes: If the concentration is greater than or equal to 2 ppm and less than 50 ppm then the waste may be burned as a fuel only by approved burners listed under 40 CFR 761.20(e) or 40 CFR 279. This includes but is not limited to a **TSCA incinerator.**

No: Continue to the next question.

Is the PCB liquid waste from a WPCB-listed source, such as a transformer, capacitor, or bushing?

Yes: Continue to the next question.

No: Not regulated when the concentration is less than 50 ppm. Skip the next question.

Is the PCB liquid waste greater than or equal to 2 ppm and less than 50 ppm?

Yes: This is WPCB liquid and is regulated as dangerous waste and must be disposed of in a permitted Treatment, Storage, and Disposal Facility (TSDF).

No: A. If **less than 2 ppm,** the material is not regulated but may be considered a used oil. Contact your regional EPA coordinator for more disposal guidance.

B. If **greater than 50 ppm** continue to the next question.

Is the PCB liquid waste greater than or equal to 50 and less than 500 ppm?

Yes: Must be disposed of in a **TSCA incinerator**. Mineral oil dielectric fluid may be disposed of in a **high-efficiency boiler** according to 761.71(a).[20] Other PCB liquid waste may be disposed of in a **high-efficiency boiler** in accordance with 761.71(b).[21]

No: Continue to the next question.

Is the PCB liquid waste greater than or equal to 500 ppm?

Yes: Must be disposed of in a **TSCA incinerator**.

[20] www.ecfr.gov/current/title-40/part-761/section-761.71#p-761.71(a)
[21] www.ecfr.gov/current/title-40/part-761/section-761.71#p-761.71(b)

Additional Information and Links:

- **Reference table**: What is Used Oil?[22]
- **Used oil definition**: Used Oil Fact Sheet[23]
- **Code of Federal Regulations**: PCB Liquid Waste Definition[24]

No person may discharge water containing PCBs to a treatment works (as defined in 40 CFR 503.9(aa)[25]) or to navigable waters unless one of the following applies:

- The PCB concentration is less than 3 µg/L (approximately 3 ppb).
- The discharge is in accordance with a PCB discharge limit included in a permit issued under section 307(b) or 402 of the Clean Water Act.

PCB waste must be characterized before disposal. Only dangerous waste transporters who have notified Ecology and registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter and/or disposal specialist, although the generator of the PCB waste is ultimately responsible for proper waste management and disposal.

- Hazardous waste service providers[26]
- Dispose, recycle, or treat dangerous waste[27]
- List of approved PCB commercial storage and disposal facilities[28]

[22] www.epa.gov/hw/reference-table-question-what-used-oil
[23] apps.ecology.wa.gov/publications/documents/0204006.pdf
[24] www.ecfr.gov/current/title-40/part-761/section-761.3#p-761.3(Liquid%20PCBs)
[25] www.ecfr.gov/current/title-40/part-503/section-503.9#p-503.9(aa)
[26] ecology.wa.gov/DWContractors
[27] ecology.wa.gov/DWDisposal
[28] www.epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities

PCB Article Waste Disposal Guidance

Article waste includes transformers, capacitors, electrical equipment, hydraulic machines, containers, bushings, and other items containing PCBs.

PCB transformers:

Greater than or equal to 2 ppm and less than 50 ppm PCBs: Designated as WPCB (see Appendix B).

Greater than or equal to 50 ppm: May be disposed of in a **TSCA incinerator**; or **TSCA chemical waste landfill** if first drained of dielectric fluid and then flushed with an appropriate solvent.

PCB capacitors:

Greater than or equal to 2 ppm and less than 50 ppm PCBs: Designated as WPCB (see Appendix B).

Greater than or equal to 50 and less than 500 ppm PCBs: This is regulated waste and must be disposed of in a **TSCA incinerator**, **TSCA chemical waste landfill**, or by an EPA-approved alternative method.

Greater than 500 ppm PCBs: must be disposed of in a **TSCA incinerator**.

PCB-contaminated electrical equipment (electric motors, switches, voltage regulators, etc.):

Less than 50 ppm PCBs: Not regulated at concentrations less than 50 ppm.

Greater than or equal to 50 ppm and less than 500 ppm PCBs: Must be drained of all free-flowing liquid before disposal (see the liquid PCB waste disposal guidance section), decontaminated, and then managed as follows:

- In accordance with 40 CFR 761.79, disposed of in a **TSCA incinerator** or **TSCA chemical waste landfill**, OR
- By an EPA-approved alternative method, OR
- In a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72.

500 ppm or greater PCBs: must be disposed of in a **TSCA incinerator**.

PCB hydraulic machines:

Less than 50 ppm PCBs: Not regulated at concentrations less than 50 ppm.

Greater than or equal to 50 ppm and less than 1000 ppm PCBs: Must be drained of all free-flowing liquid before disposal (see the liquid PCB waste section) and then be managed as follows:

- In accordance with 40 CFR 761.79, disposed of in a **TSCA incinerator** or **TSCA chemical waste landfill**, OR
- By an EPA-approved alternative method, OR
- In a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72.

1000 ppm or greater PCBs: Must also be flushed with a solvent before disposal and solvent must be disposed of in a **TSCA incinerator.**

Bushings:

Greater than or equal to 2 ppm and less than 50 ppm PCBs: Designated as WPCB (see Appendix B).

Greater than or equal to 50 ppm and less than 500 ppm: Must be drained of all free-flowing liquid before disposal (see the liquid PCB waste disposal guidance), then disposed of in a permitted **municipal solid waste landfill**.

Greater than or equal to 500 ppm PCBs: Must be disposed of in a **TSCA incinerator.** Thoroughly drained items can be disposed of at a **TSCA chemical waste landfill** if drained and all free-flowing liquids are separated and disposed of at a **TSCA incinerator**.

Other PCB articles:

Less than 500 ppm: Must be drained of all free-flowing liquid before disposal (see the liquid PCB waste disposal guidance), then disposed of in a permitted **municipal solid waste landfill**.

Greater than or equal to 500 ppm PCBs: Must be disposed of in a **TSCA incinerator.** Thoroughly drained items can be disposed of at a **TSCA chemical waste landfill** if drained and all free-flowing liquids are separated and disposed of at a **TSCA incinerator**.

PCB containers:

Greater than or equal to 50 ppm and less than 500 ppm PCBs: Must be drained of all free-flowing liquid before disposal (see the liquid PCB waste disposal guidance), then disposed of in a permitted **municipal waste landfill**.

Greater than 500 ppm PCBs: may be disposed of in a **TSCA incinerator** or drained of all free-flowing PCBs and disposed of in a **TSCA chemical waste landfill**. May also be decontaminated with solvents and reused as PCB containers (see decontamination requirements in 40 CFR 761.79).[29]

Additional Information and Links:

PCB waste must be characterized before disposal. Only dangerous waste transporters who have notified Ecology and registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter and/or disposal specialist, although the generator of the PCB waste is ultimately responsible for proper waste management and disposal.

[29] www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-D/section-761.79

Salvaging and smelting are options for PCB-contaminated articles that meet legitimacy criteria for recycling hazardous secondary materials in WAC 173-303-019.[30]

- Hazardous waste service providers[31]
- Dispose, recycle, or treat dangerous waste[32]
- List of approved PCB commercial storage and disposal facilities[33]

[30] app.leg.wa.gov/WAC/default.aspx?cite=173-303&full=true#173-303-019
[31] ecology.wa.gov/DWContractors
[32] ecology.wa.gov/DWDisposal
[33] www.epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities

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PCB Remediation Waste Disposal Guidance

PCB remediation waste refers to contaminated soil, sediment, rags, and other debris created during the cleanup of spills containing PCBs. This includes various materials like polluted environmental media (such as soil and gravel), sludges and slurries, and contaminated buildings and structures resulting from PCB leaks.

Did you use performance-based disposal methods in accordance with 40 CFR 761.61(b)?

Yes: **If greater than 1 ppm PCBs,** then this is remediation waste and must be disposed of in a **TSCA chemical waste or RCRA Subtitle C landfill**. See the EPA PCB Cleanup Guide.[34]

No: Continue to the next question.

Is the PCB soil, sediment, or other material waste less than or equal to 1 ppm?

Yes: This material is not regulated and can be taken to a nonhazardous construction waste landfill.

No: Continue to the next question.

Was the PCB soil, sediment, or other material waste contaminated from a WPCB waste source greater than or equal to 2 ppm and less than 50 ppm?

Yes: This is listed as WPCB dangerous waste in Washington and must be disposed of in a **TSCA chemical waste landfill.**

No: Continue to the next question.

Is the PCB soil, sediment, or other material waste greater than 1 ppm and less than 50 ppm?

Yes: This waste may be regulated under TSCA depending on the PCB source concentration, the date of release, the current PCB concentration in the materials, the location of the PCB contamination, and whether the original source was authorized for use. **Contact your Regional PCB Coordinator[35] for further guidance.**

No: **If greater than or equal to 50 ppm** continue to the next question.

[34] www.epa.gov/sites/default/files/2020-01/documents/region_4_pcb_clenaup_guide_for_environmental_professionals_v2.pdf
[35] www.epa.gov/pcbs/epa-regional-polychlorinated-biphenyl-pcb-programs

Is the PCB soil, sediment, or material waste greater than or equal to 50 ppm?

Yes: This is regulated waste and must be disposed of in a **TSCA incinerator**, **TSCA chemical waste landfill**, **RCRA Subtitle C landfill,** or by an EPA-approved alternative method.

Additional Information and Links:

Remediation Waste Cleanup Guidelines: For remediation waste cleanup option guidance, see the Managing Remediation Waste from Polychlorinated Biphenyls (PCBs) Cleanups.[36] Visit the Code of Federal Regulations website for the PCB Remediation Definition.[37]

PCB waste must be characterized before disposal. Only dangerous waste transporters who have notified Ecology and registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter and/or disposal specialist, although the generator of the PCB waste is ultimately responsible for proper waste management and disposal.

- Hazardous waste service providers[38]
- Dispose, recycle, or treat dangerous waste[39]

Sludges and slurries: The solid and liquid phases of sludges and slurries may be separated and disposed of according to the TSCA disposal regulations for nonliquid and liquid PCBs, respectively. For more information see Appendix A.

[36] www.epa.gov/pcbs/managing-remediation-waste-polychlorinated-biphenyls-pcbs-cleanups
[37] www.ecfr.gov/current/title-40/part-761/section-761.3#p-761.3(PCB%20remediation%20waste)
[38] ecology.wa.gov/DWContractors
[39] ecology.wa.gov/DWDisposal

Useful Links to Additional Information and Regulations

Links are in the order they appear in the document above:

Ecology permitted dangerous waste facilities: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Dangerous-waste-permits

40 CFR 761.62a: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-D/section-761.62

40 CFR 761.62b: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-D/section-761.62

Waste service providers - Washington State Department of Ecology: https://ecology.wa.gov/DWContractors

Dispose, recycle, or treat dangerous waste: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Dispose-recycle-or-treat

List of Approved Polychlorinated Biphenyl (PCB) Commercial Storage and Disposal Facilities: https://www.epa.gov/pcbs/list-approved-polychlorinated-biphenyl-pcb-commercial-storage-and-disposal-facilities

EPA 2023 Ruling "Alternate PCB Extraction Methods and Amendments to PCB Cleanup and Disposal Regulations": https://www.federalregister.gov/documents/2023/08/29/2023-17708/alternate-pcb-extraction-methods-and-amendments-to-pcb-cleanup-and-disposal-regulations#footnote-18-p59670

40 CFR 761.61(b): https://www.ecfr.gov/current/title-40/part-761/section-761.1#p-761.1(b)

Designate your Waste: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Dangerous-waste-basics/Designation

CERCLA: https://www.epa.gov/enforcement/comprehensive-environmental-response-compensation-and-liability-act-cercla-and-federal#EPA%20CERCLA%20Regulations

40 CFR 761.20(e): https://www.ecfr.gov/current/title-40/part-761/section-761.20#p-761.20(e)

Anti-dilution Rule (40 CFR 761.1(b)): https://www.ecfr.gov/current/title-40/part-761/section-761.1#p-761.1(b)

PCB Bulk Product Waste definition according to 40 CFR 761.3:
https://www.ecfr.gov/current/title-40/part-761/section-761.3#p-761.3(PCB%20bulk%20product%20waste)

EPAs Reference Table for the Question "What is Used Oil?":
https://www.epa.gov/hw/reference-table-question-what-used-oil

Washington State Department of Ecology "Used Oil Fact Sheet":
https://apps.ecology.wa.gov/publications/documents/0204006.pdf

40 CFR 761.71(a): https://www.ecfr.gov/current/title-40/part-761/section-761.71#p-761.71(a)

40 CFR 761.71(b): https://www.ecfr.gov/current/title-40/part-761/section-761.71#p-761.71(b)

PCB Liquid Waste Definition According To 40 CFR 761.3: https://www.ecfr.gov/current/title-40/part-761/section-761.3#p-761.3(liquid%20pcbs)

40 CFR 503.9(aa): https://www.ecfr.gov/current/title-40/part-503/section-503.9#p-503.9(aa)

40 CFR 761.79: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-D/section-761.79

40 CFR 761.72: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-D/section-761.72

EPA PCB Cleanup Guide: https://www.epa.gov/sites/default/files/2020-01/documents/region_4_pcb_clenaup_guide_for_environmental_professionals_v2.pdf

PCB Remediation Definition: https://www.ecfr.gov/current/title-40/part-761/section-761.3#p-761.3(PCB%20remediation%20waste)

Polychlorinated Biphenyl Dangerous Waste Guide:
https://apps.ecology.wa.gov/publications/documents/2104034.pdf

Washington State Definitions WAC 173-303-040:
https://app.leg.wa.gov/WAC/default.aspx?cite=173-303-040

EPA Definitions 40 CFR 791.3: https://www.ecfr.gov/current/title-40/section-761.3

Cleanup, Decontamination, Storage, and Disposal Requirements

This is not intended to be a comprehensive list, and other requirements may apply. See 40 CFR 761[40] for the complete PCB regulations.

- Notification, cleanup, and disposal requirements for PCB remediation waste: 40 CFR 761.61.
- Disposal requirements for PCB bulk product waste: 40 CFR 761.62.
- Decontamination requirements for PCB-contaminated non-porous surfaces: 40 CFR 761.79.

The documents below are also available. Although they describe important components of the overall management of PCB wastes, we did not reference them elsewhere in this document.

- Sampling non-porous surfaces for measurement-based use, reuse, and decontamination under 40 CFR 761.79(b)(3) and 40 CFR 761, Subpart P.
- PCB Spill Cleanup Policy: 40 CFR Part 761, Subpart G.
- PCB waste marking: 40 CFR 761.40 and 761.45.
- PCB storage for disposal and PCB waste container storage: 40 CFR 761.65 and 761.65(c)(6).
- Notification and Manifesting: 40 CFR 761.205 and 761.207.

[40] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761?toc=1

Definitions

See the links below for a full list of definitions related to PCB waste disposal. Definitions may vary between Washington State dangerous waste regulations under WAC 173-303-040 and EPA TSCA definitions under 40 CFR 791.3. Refer to the definitions based on which authority regulates your PCB waste.

- Visit WAC 173-303-040[41] for a list of definitions used in the Washington State dangerous waste regulations.
- Visit the Code of Federal Regulations website for the full list of EPA TSCA definitions under 40 CFR 761.3.[42]

[41] https://app.leg.wa.gov/WAC/default.aspx?cite=173-303-040
[42] https://www.ecfr.gov/current/title-40/section-761.3

Appendix A: Sludges and Slurries Separation Options

The solid and liquid phases of industrial sludges and slurries may be separated (processed) and each phase may be disposed of according to the TSCA disposal regulations for nonliquid and liquid PCBs, respectively. In this case, **the anti-dilution rule applies, and TSCA requires that the liquid and nonliquid phases of the sludge or slurry be disposed of according to the original PCB concentration of the material**. Processing may not be used to avoid incineration requirements that apply to PCB liquids.

Disposal of industrial sludges and slurries containing PCBs at concentrations greater than or equal to 50 ppm is not specifically regulated under 40 CFR 761. Therefore, disposal of these sludges and slurries should be based on whether the waste is in solid or liquid form:

- **Solid phase PCB waste** separated from a sludge or slurry that is greater than or equal to 50 ppm can be disposed of as follows:
    - In a **TSCA incinerator**,
    - In a **TSCA chemical waste landfill**,
    - In a **RCRA Subtitle C landfill**, OR
    - By an EPA-approved alternative method.
- **Liquid phase PCB waste** separated from a sludge or slurry that is greater than or equal to 50 ppm must be disposed of as follows:
    - in a **TSCA incinerator**, OR
    - by an EPA-approved alternative method.

Appendix B: Guidance for Waste Listed as WPCB

Not all waste less than 50 ppm PCBs will be designated as WPCB in Washington State.

WPCB waste is defined as: Discarded transformers, capacitors, or bushings containing PCBs at concentrations of 2 ppm or greater (except when drained of all free-flowing liquid) and the following wastes generated from the salvaging, rebuilding, or discarding of transformers, capacitors, or bushings containing PCB at concentrations of 2 ppm or greater: Cooling and insulating fluids and cores, including core papers.

Is the WPCB waste greater than or equal to 2 ppm and less than 50 ppm PCBs?

Yes: This is regulated as dangerous waste and must be disposed of in a permitted **TSCA chemical waste landfill**.

No: **A.** If less than 2 ppm, this waste is not regulated material. It can be taken to a municipal or non-municipal nonhazardous waste landfill.

B. If greater than 50 ppm, this waste is regulated under TSCA. See the guidance for PCB article waste (transformers, capacitors, etc.).

Additional Information and Links:

Additional Information regarding WPCB is available on Ecology's website and in the Polychlorinated Biphenyl Dangerous Waste Guide.[43]

PCB waste must be characterized before disposal. Only dangerous waste transporters who have notified Ecology and registered with the Department of Transportation can move PCB wastes off-site for disposal. The PCB waste must be properly contained and sent to an approved transfer facility or landfill. This can be done by hiring a notified waste transporter and/or disposal specialist, although the generator of the PCB waste is ultimately responsible for proper waste management and disposal.

- Hazardous waste service providers[44]
- Dispose, recycle, or treat dangerous waste[45]

[43] apps.ecology.wa.gov/publications/SummaryPages/2104034.html
[44] ecology.wa.gov/DWContractors
[45] ecology.wa.gov/DWDisposal

Appendix C: TSCA and Washington State PCB Disposal Requirements Chart

Table 2. TSCA and Washington State PCB disposal requirements.

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
PCB Bulk Product Waste	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	Not required	Not required but acceptable	Acceptable	No
PCB Bulk Product Waste	≥50 ppm	Acceptable	Acceptable	Discuss with your EPA Region 10 Coordinator#	Acceptable	Acceptable if this is a solid, non-leaching PCB building material waste listed in 40 CFR 761.62b	No
Liquid PCB waste (Used oil)	≥2 ppm to <50 ppm	Acceptable	Not acceptable	Not acceptable	Not acceptable	Not acceptable	No
Liquid PCBs (water, oil, or fluid from a WPCB-listed source)	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	Not required	Typically RCRA Subtitle C Landfills do not accept liquids. Please note that this waste can go to any TSDF that can treat this type of waste.	Not acceptable	Yes
Liquid PCBs (water, oil, or other fluid)	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	Not required	Not required but acceptable	Not acceptable	No

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
Liquid PCBs (water, oil, or other fluid)	≥50 ppm to <500 ppm	Acceptable	Acceptable only if source is incidental and associated with PCB articles and other non-PCB waste, if information is provided showing PCB level is not above 500 ppm and the liquid is not an ignitable waste	High-efficiency boiler that meets required criteria if the waste is a mineral oil dielectric fluid or other PCB liquid waste. Discuss with your EPA Region 10 Coordinator.	Not acceptable	Not acceptable	No
Liquid PCBs (water, oil, or other fluid)	≥500 ppm	Acceptable	Not acceptable	None	Not acceptable	Not acceptable	No
Remediation waste (contaminated soil, sediments, sludges, slurries, rags, and other debris) via performance-based disposal methods	>1 ppm to <50 ppm	Acceptable	Acceptable	Discuss with your EPA Region 10 Coordinator#	Acceptable	Not acceptable	No
Remediation waste not from a WPCB-listed source (contaminated soil, sediments, sludges, slurries, rags, and other debris)	>1 ppm to <50 ppm	Acceptable	Acceptable	Discuss with your EPA Region 10 Coordinator#	Acceptable	Acceptable	No

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
Remediation waste (contaminated soil, sediments, sludges, slurries, rags, and other debris from a WPCB-listed source)	≥2 ppm to <50 ppm	Acceptable	Acceptable	Discuss with your EPA Region 10 Coordinator#	Not acceptable	Not acceptable	Yes
Remediation waste (contaminated soil, sediments, sludges, slurries, rags, and other debris)	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	Discuss with your EPA Region 10 Coordinator#	Acceptable	Acceptable	No
Remediation waste (contaminated soil, sediments, sludges, slurries, rags, and other debris)	≥50 ppm	Acceptable	Acceptable	Discuss with your EPA Region 10 Coordinator#	Acceptable	Not acceptable	No
PCB transformers	≥2 ppm to <50 ppm	Acceptable if drained, filled with solvent, allowed to stand for 18 hours, and then drained	Acceptable if drained, filled with solvent, allowed to stand for 18 hours, and then drained	None	Not acceptable	Not acceptable	Yes
PCB transformers	≥50 ppm	Acceptable	Acceptable if drained, filled with solvent, allowed to stand for 18 hours, and then drained	None	Not acceptable	Not acceptable	No
Large high- or low-voltage PCB capacitors	≥2 ppm to <50 ppm	Acceptable	Acceptable	None	Not acceptable	Not acceptable	Yes

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
Large high- or low-voltage PCB capacitors	≥50 ppm	Acceptable	Not acceptable	None	Not acceptable	Not acceptable	No
Small PCB capacitors (owned by manufacturers of PCB capacitors or PCB equipment and acquired in the course of such manufacturing)	≥2 ppm to <50 ppm	Acceptable	Acceptable	If less than 3 pounds of fluid may be disposed of as a municipal solid waste in small quantities (five small capacitors or less) 40 CFR 761.60(b)(2)	Not acceptable	Acceptable if less than 3 pounds of fluid and in small quantities.	Yes
Small PCB capacitors (owned by manufacturers of PCB capacitors or PCB equipment and acquired in the course of such manufacturing)	≥50 ppm to <500 ppm	Acceptable	Not acceptable	If less than 3 pounds of fluid may be disposed of as a municipal solid waste in small quantities (five small capacitors or less) 40 CFR 761.60(b)(2)	Not acceptable	Acceptable if less than 3 pounds of fluid and in small quantities.	No
Small PCB capacitors (owned by manufacturers of PCB capacitors or PCB equipment and acquired in the course of such manufacturing)	≥500 ppm	Acceptable	Not acceptable	None	Not acceptable	Not acceptable	No

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
Small PCB capacitors (other than the above)	≥2 ppm to <50 ppm	Acceptable	Acceptable	If less than 3 pounds of fluid may be disposed of as municipal solid waste in small quantities (five small capacitors or less) 40 CFR 761.60(b)(2)	Not acceptable	Acceptable if less than 3 pounds of fluid and in small quantities.	Yes
Small PCB capacitors (other than the above)	≥50 ppm to <500 ppm	Acceptable	Acceptable	Municipal solid waste	Not acceptable	Acceptable if less than 3 pounds of fluid and in small quantities.	No
Small PCB capacitors (other than the above)	≥500 ppm	Acceptable	Not acceptable	None	Not acceptable	Not acceptable	No
PCB hydraulic machines (if drained of free-flowing fluid)	<50 ppm	Not required but acceptable	Not required but acceptable	None	Not required but acceptable	Acceptable	No
PCB hydraulic machines (if drained of free-flowing fluid)	≥50 ppm to <500 ppm	Acceptable	Acceptable	Municipal solid waste	Not acceptable	Acceptable	No
PCB hydraulic machines (if drained of free-flowing fluid with approved solvent)	≥1000 ppm	Acceptable	Acceptable	None	Not acceptable	Acceptable	No
Bushings	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	None	Not acceptable	Acceptable	Yes

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
Bushings	≥50 ppm to <500 ppm	Acceptable	Acceptable if free-flowing liquid is drained before disposal	None	Not acceptable	Acceptable if drained and free flowing liquid is removed	No
Bushings	≥500 ppm	Acceptable	Acceptable if free-flowing liquid is drained before disposal	None	Not acceptable	Not acceptable	No
Other PCB articles	<500 ppm	Acceptable	Acceptable if free-flowing liquid is drained before disposal	None	Not acceptable	Acceptable if drained and free flowing liquid is removed	No
Other PCB articles	≥500 ppm	Acceptable	Acceptable if free-flowing liquid is drained before disposal	None	Not acceptable	Not acceptable	No
PCB containers (not decontaminated)	≥2 ppm to <50 ppm	Not required but acceptable	Not required but acceptable	None	Acceptable	Acceptable, if drained of all liquid	No

Item	PCB Concentration	Incineration Disposal Method	Chemical Waste Landfill Disposal Method	Other EPA-Approved Disposal Method*	RCRA Subtitle C Landfill Disposal Method^	Municipal/Non-Municipal Landfill Disposal Method	WA State WPCB^^ Designation (Yes/No)
PCB containers (not decontaminated)	≥50 ppm to <500 ppm	Acceptable	Acceptable if liquid PCBs are drained	Municipal solid waste if liquid PCBs are drained	Not acceptable	Acceptable, if drained of all liquid	No
PCB containers (not decontaminated)	≥500 ppm	Acceptable	Acceptable if liquid PCBs are drained	Decontaminated with solvents and reused as PCB containers (40 CFR 761.79)	Not acceptable	Not acceptable	No
PCB containers (containing only PCBs at concentrations below 500 ppm)	≥2 ppm to <500 ppm	Acceptable	Acceptable	Municipal solid waste if liquid PCBs are drained or decontaminated with solvents, reused as PCB containers (40 CFR 761.79)	Not acceptable	Acceptable, if drained or decontaminated	No
PCB containers (decontaminated)	Not applicable	Acceptable	Acceptable	Reuse or municipal solid waste	Acceptable	Acceptable	No

Table Notes:

* The EPA may approve alternative disposal methods on a case-by-case basis in accordance with 40 CFR 761.61(c), 40 CFR 761.62(c), or 40 CFR 761.60(e). Contact the Regional EPA PCB coordinator for more information.

^ In 2023, the EPA released a new rule: Alternate PCB Extraction Methods and Amendments to PCB Cleanup and Disposal Regulations. These updates allow for the disposal of nonliquid PCB remediation waste at RCRA Subtitle C landfills under 40 CFR 761.61(b), in addition to the existing disposal options (for example, TSCA landfills, TSCA incinerators).

^^ If the WPCB article meets conditional exclusion under 071(3)(k) and is managed per TSCA requirements, it is excluded from the dangerous waste regulations.

Region 10 PCB Program Contacts.[46]

[46] https://www.epa.gov/pcbs/region-10-pcb-program#contacts

Appendix D: Permitted Washington State Municipal Solid Waste Landfills

Table 3. List of permitted Washington State municipal solid waste landfills.

Facility Name	Address	City	State	Zip Code	County
Adams County Regional Landfill and Recycle	Hwy 26 and Gray Rd	Washtucna	WA	99371	Adams
Asotin County Regional Landfill	2901 6th Ave	Clarkston	WA	99403	Asotin
Cedar Hills Regional Landfill	16645 228th Ave SE	Maple Valley	WA	98038	King
Cheyne Road Landfill	4970 Cheyne Rd	Zillah	WA	98953	Yakima
Cowlitz County Headquarters Landfill	3434 South Silverlake Road	Castle Rock	WA	98611	Cowlitz
Ephrata Landfill	3803 Neva Lake Rd NW	Ephrata	WA	98823	Grant
Greater Wenatchee Regional Landfill	191 Webb Place S	East Wenatchee	WA	98802	Douglas
Horn Rapids Sanitary Landfill	3102 Twin Bridges Rd	Richland	WA	99352	Benton
LRI Landfill	30919 Meridian St E	Graham	WA	98375	Pierce
Northside Landfill	7202 W Nine Mile Rd	Spokane	WA	99208-3805	Spokane
Okanogan Central Landfill	241 B and O Rd N	Okanogan	WA	98840	Okanogan
Roosevelt Regional Landfill Municipal Solid Waste	500 Roosevelt Grade Rd	Roosevelt	WA	99356	Klickitat
Stevens County Landfill	1257 Landfill Rd	Kettle Falls	WA	99141	Stevens
Sudbury Regional Landfill	414 Landfill Rd	Walla Walla	WA	99362-0216	Walla Walla
Terrace Heights Landfill	7151 Roza Hill Dr	Yakima	WA	98901	Yakima

This list of permitted Washington State municipal solid waste landfills is static and their status may change over time. Contact the landfill to determine permitting status and to see if they accept PCB waste. Before disposal, notify the landfill and provide them with waste disposal characterization information, laboratory analysis reports, and a waste profile before the waste is removed from the project site by a licensed waste transporter.

Appendix E: Acronyms and Abbreviations

CFR	Code of Federal Regulations
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
FLB	Fluorescent light ballast
PCBs	Polychlorinated biphenyls
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facility
WAC	Washington Administrative Code
WPCB	Listed waste code for Washington Polychlorinated Biphenyls