PCB Cleanups

Kurt Limesand
EPA Region 7
Waste Remediation and Permitting
40 CFR Part 761 – Polychlorinated Biphenyls (PCBs)

- **Subpart D**: Storage and disposal
  - §761.61 – PCB Remediation Waste, cleanup of historic releases

- **Subpart G**: PCB Spill Cleanup Policy
  - Cleanup of new releases

- **Subpart N**: Cleanup Site Characterization Sampling
- **Subpart O**: Sampling to Verify Cleanup
PCB Cleanups –
PCB Spill Cleanup Policy
Subpart G: Spill Cleanup Policy

Application:

- For fresh spills, generally less than 72 hours old
- Where concentration is $\geq 50$ parts per million PCBs
- Generic cleanup standards *may not be applied* to spills to surface water, drinking water, sewers, grazing land, gardens (“excluded spills”)
  - Notification, containment and disposal requirements still apply, but EPA determines final cleanup standards
CERCLA spill reporting requirements

National Contingency Plan requires any spill
>1 pound PCBs by weight
be reported to the National Response Center
1-800-424-8802
TSCA PCB Spill Cleanup Policy Reporting Requirements

– apply to *indoor* as well as “*environmental*” spills

- Spills to surface water, sewer, or drinking water must be reported to EPA ASAP, NLT 24 hours from discovery; EPA will provide guidance for cleanup

- Spills to grazing land or gardens must be reported to EPA ASAP, NLT 24 hours, and follow immediate action procedures at §761.125

- Same for any other spills of ≥10 lbs of PCBs by weight
All other fresh spills, less than 10 pounds PCBs by weight, not affecting food, feed, or water, proceed to implement spill cleanup requirements; no reporting required by TSCA

If less than 1 pound total PCBs by weight, no reporting required by CERCLA

Compliance with the procedures and numerical standards of the PCB Spill Policy provides protections from future enforcement by EPA
Immediate Actions:

• Determine low vs. high concentration

  – Low concentration
    • Less than 1 lb of <500 ppm PCBs based on testing
    • Less than 270 gallons of untested mineral oil (see assumption rule)

  – High concentration
    • > 500 ppm PCBs in spilled material
    • ≥ 1 lb of < 500 ppm PCBs based on testing
    • ≥ 270 gallons of untested mineral oil
For **low concentration** spills, **ASAP, but within 48 hours of discovery**

- Double wash/rinse* solid surfaces
  - Indoor residential surfaces must be tested by wipe sampling
- Excavate all visible soil contamination & 1-foot buffer
  - If not visible, use statistical sampling scheme (call us)
- Backfill with clean soil

Cleanup may be delayed due to weather or emergency

*see TSCA definition at 40 CFR §761.123
Following cleanup of low concentration spills,

Dispose all cleanup debris and materials per 40 CFR 761 Subpart D (761.50 et seq)

Gather records and certification of decontamination, maintain for 5 years (see 761.125(b)(3))
For high concentration spills, begin cleanup ASAP but NLT 24 hours from discovery (48 hours for transformers)

- Cordon spill area and 3-foot buffer if visible, or estimate area based on quantity if not visible
- Post warning signs
- Document visible contamination; or, if not visible, contact EPA for sampling strategy guidance
- **Initiate** cleanup of liquids and contaminated media

No time limit to complete cleanup for high concentration spills – “prompt”
High-concentration spill decontamination standards

Post-cleanup verification sampling is required for all “high-concentration” spills
- Any “statistically valid, reproducible sampling scheme”
- Random or grid
- Recommended methods at http://www.epa.gov/pcb
- Call us

Soil removal and impervious surface decontamination standards vary based on:

- Restricted access vs. non-restricted access
  - Within those area, by high-contact vs. low-contact
    - Special rules for electrical substations

see: 40 CFR §761.125(c) (2), (3), and (4), and definitions at 40 CFR §761.123
Following cleanup of high concentration spills,

- Dispose all cleanup debris and materials per 40 CFR 761 Subpart D (761.50 et seq)

- Gather records and certification of decontamination, maintain for 5 years (see 761.125(b)(3))
Meant to be simple, fast, and clear

Confused? Call us!

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40 CFR §761.61 – PCB Remediation Waste

Cleanup of historic releases, greater than 72 hours old
Three options for cleanup:

40 CFR §761.61(a) – Self-implementing on-site cleanup and disposal of PCB remediation waste

40 CFR §761.61(b) – Performance-based disposal

40 CFR §761.61(c) – Risk-based disposal approval
Core questions for all PCB cleanups:

- How will the contaminated property be used?
  - “high occupancy” vs “low occupancy”
  - ”high contact” vs “low contact”

- What is the type of waste material contaminated with PCBs?
  - liquid PCBs
  - bulk remediation waste
  - porous surfaces
  - non-porous surfaces

- What are the appropriate cleanup levels?
Dilution of PCBs is prohibited

- PCB liquids and contaminated media (soil, wood, oyster shells, concrete) that cannot be decontaminated must be managed and disposed based on the concentration of PCB-containing material released.

- Where the original concentration is unknown, either default to conservative (most contaminated) assumption, or base management and disposal on “as found” concentration.
  - Cannot stockpile and dispose based on pile sample results; disposal is based on the concentration as determined in place.
PCB Remediation Waste

- Result of a spill, release or other unauthorized disposal

- Disposed prior to 1978

- Currently ≥50 parts per million, or

- Originally ≥500 parts per million, or greater than 50 parts per million as of July 2, 1979,

- Or any concentration if released from a source not authorized for use under TSCA

Remediation waste includes contaminated media such as soil, sediment, water, rags, sludge, concrete, wood, wallboard, etc.
Critical questions for all remediation waste cleanups are:

- When did the release occur? (pre- or post-TSCA)

- What was the concentration of the spilled material?
- if unknown, what is the (in place) concentration now?

Review 761.3 definitions carefully
761.61(a) – Self-implementing PCB cleanup

- For qualified releases, must follow TSCA rules **EXACTLY**
  
  - Characterization sampling
  - Verification sampling
  - Analytical requirements
  - Storage and disposal requirements

- Must notify EPA, state, local, tribal environmental authorities
  
  - “notice” includes investigation and cleanup plans
761.61(a) excluded spills:

- Surface or groundwater
- Sediments in aquatic ecosystems
- Sewers or sewage treatment systems
- Drinking water sources or systems
- Grazing land
- Vegetable gardens
761.61(a) -

- Site characterization must support notice
  - Site must be fully characterized prior to cleanup
- Notice to region, state, tribal, local authorities:
  - 30 days before cleanup (can request waiver)
  - Nature of contamination
  - Summary of procedures and results of sampling
  - A topo map of contamination extent w/sample numbers
  - Cleanup plan
    - Schedule, disposal, approach, contingencies
  - Certification signed by owner – records available
761.61(a) -

EPA has 30 days to respond, approve, disapprove, or request more info
   -If no response from EPA, proceed with cleanup

Changes to approved plan must be noticed to EPA 14 days before implementing
   -EPA has 7 days to provide verbal comment and 14 days to respond in writing, or change is acceptable
Five categories of remediation waste:

• Bulk PCB remediation waste
  – Soil, sediments, sludge, etc.

• Liquids

• Non-porous surfaces
  – Metal, glass, glazed ceramics, etc.

• Porous surfaces
  – Paint, corroded metal, fiberglass, porous ceramics, porous building stone, coated or uncoated wood, concrete or cement, plaster, wallboard, asphalt, etc.

• Cleanup Wastes
  – PPE, rags, decon solvents, equipment, etc.
Cleanup levels differ based on land use -

- High Occupancy – an area occupied ≥ 840 hours per year (~17 hours per week) for non-porous surfaces and ≥ 335 hours per year (~7 hours per week) for bulk PCB remediation waste and porous surfaces

- Low Occupancy – everything else
  - must be anchored with deed restriction certified and provided to EPA within 60 days of cleanup
### 761.61 PCB Remediation Waste Cleanup Levels

**Bulk Remediation Waste**

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Occupancy Type</th>
<th>Level Remaining</th>
<th>Required Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Remediation Waste</td>
<td>High</td>
<td>PCB ≤ 1 mg/L</td>
<td>No further conditions (unrestricted use)</td>
</tr>
<tr>
<td>[40 CFR 761.61(a)(4)(i)(A)]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Remediation Waste</td>
<td>High</td>
<td>1 &lt; PCB ≤ 10 mg/L</td>
<td>Cap Site; Deed Restriction</td>
</tr>
<tr>
<td>[40 CFR 761.61(a)(4)(i)(A)]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Remediation Waste</td>
<td>Low</td>
<td>PCB ≤ 25</td>
<td>Deed Restriction</td>
</tr>
<tr>
<td>[40 CFR 761.61(a)(4)(i)(B)(1)]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Remediation Waste</td>
<td>Low</td>
<td>25 &lt; PCB ≤ 50 mg/L</td>
<td>Fence Site; Mₗ mark signs; Deed restriction (does not require fence or marking)</td>
</tr>
<tr>
<td>[40 CFR 761.61(a)(4)(i)(B)(2)]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk Remediation Waste</td>
<td>Low</td>
<td>25 &lt; PCB ≤ 100 mg/L</td>
<td>Cap Site; Deed Restriction</td>
</tr>
<tr>
<td>[40 CFR 761.61(a)(4)(i)(B)(3)]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# PCB Remediation Waste Cleanup Levels - Non-Porous and Porous Surface Remediation Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Occupancy Type</th>
<th>Level Remaining</th>
<th>Required Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Porous Surface</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Porous Surface [40 CFR 761.61(a)(4)(ii)]</td>
<td>High</td>
<td>PCB ≤ 10 μg/100cm²</td>
<td>No further conditions (unrestricted use)</td>
</tr>
<tr>
<td>Non Porous Surface [40 CFR 761.61(a)(4)(ii)]</td>
<td>Low</td>
<td>PCB &lt; 100 μg/100cm²</td>
<td>Deed Restriction</td>
</tr>
<tr>
<td>Porous Surface</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Surface [40 CFR 761.61(a)(4)(iii)]</td>
<td>High</td>
<td>PCB ≤ 1 mg/L</td>
<td>No further conditions (unrestricted use)</td>
</tr>
<tr>
<td>Porous Surface [40 CFR 761.61(a)(4)(iii)]</td>
<td>High</td>
<td>1 &lt; PCB ≤ 10 mg/L</td>
<td>Cap Site; Deed Restriction</td>
</tr>
<tr>
<td>Porous Surface [40 CFR 761.61(a)(4)(iii)]</td>
<td>Low</td>
<td>PCB ≤ 25 mg/L</td>
<td>Deed Restriction</td>
</tr>
<tr>
<td>Porous Surface [40 CFR 761.61(a)(4)(iii)]</td>
<td>Low</td>
<td>25 &lt; PCB ≤ 50 mg/L</td>
<td>Fence Site; Mₗ mark signs; Deed restriction (does not require fence or marking)</td>
</tr>
<tr>
<td>Porous Surface [40 CFR 761.61(a)(4)(ii)]</td>
<td>Low</td>
<td>25 &lt; PCB ≤ 100 mg/L</td>
<td>Cap Site; Deed Restriction</td>
</tr>
</tbody>
</table>
### 761.61 PCB Remediation Waste Cleanup Levels
- Liquid Remediation Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Occupancy Type</th>
<th>Level Remaining</th>
<th>Required Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid [40 CFR 761.79(b)(1)(i)]</td>
<td>High or Low</td>
<td>PCB &lt; 200 μg/L in water</td>
<td>Non-contact use - in closed system - no releases</td>
</tr>
<tr>
<td>Liquid [40 CFR 761.79(b)(1)(ii)]</td>
<td>High or Low</td>
<td>PCB &lt; 3 μg/L in water (or)</td>
<td>Discharged to treatment works or navigable waters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discharge limit in Clean Water Act Permit under §307(b) or §402</td>
<td></td>
</tr>
<tr>
<td>Liquid [40 CFR 761.79(b)(1)(iii)]</td>
<td>High or Low</td>
<td>PCB &lt; 0.5 μg/L in water</td>
<td>No further conditions (unrestricted use)</td>
</tr>
<tr>
<td>Liquid [40 CFR 761.79(b)(2)]</td>
<td>High or Low</td>
<td>PCB &lt; 2 μg/L in inorganic and non-aqueous liquids</td>
<td>No further conditions (unrestricted use)</td>
</tr>
</tbody>
</table>
Disposal is based on “as found” concentrations
- No dilution by mixing
- Contact rule

Segregation of low, intermediate, and high concentration wastes can have different disposal fates and costs
761.61(a) Recordkeeping requirements

- Must maintain cleanup records for 5 years
  - Source, date, location of spill
  - Characterization and verification sampling data
  - Description of cleanup
  - Certification of any deed restrictions for caps, fences, or low-occupancy cleanups
  - 761.125(c)(5)
40 CFR §761.61(b) – Performance-Based Disposal

- Waste may be disposed in approved facilities or by approved methods
- Must meet performance standards
  - Liquids by combustion, alternate method, or decontamination
  - Non-liquids by incineration, alternate method, chemical waste landfill, decontamination
No PCBs!
Must apply in writing to EPA to deviate from sampling, cleanup, storage or disposal methods provided in 761.61(a) Self-Implementing and 761.61(b) Performance-based

-Most flexible, but requires significant interaction with EPA

-Most common approach for old spills

-Approved at EPA’s discretion
Deviations big and small
- use of alternate storage
- use of alternate sampling strategy
- use of alternate cleanup standards
- phased approach with cleanup under other authorities
- quantitative baseline risk assessment
- access limitations

40 CFR §761.61(c) – Risk-Based Disposal Approval
PCB site sampling by the numbers –
Why you want a 761.61(c) approval from EPA

Following Subparts N and O,
1-acre site
homogenous medium

Characterization - ~450 samples (or 50 composites)
Verification - ~1764 samples (or 200 composites)
@$120 per analysis, not including labor…$$$$
Devil in the Details

- Subpart A - Definitions
- Subpart D - Storage for disposal
- Subpart D - Decontamination standards
- Subpart K - Manifesting and records
- Subpart N – Cleanup site characterization
- Subpart O – Cleanup site verification
- Subpart P – Sampling non-porous surfaces
  - review checklists available
Westinghouse type FPW water cooled Inertne capacitor 367C750A72B

Item condition: Used

Price: US $529.00

Best Offer:

BillMeLater: Spend $99+ and get 6 months to pay
Subject to credit approval. See terms

Shipping:
Item location: Knoxville, Iowa, United States
Ships to: Worldwide

Delivery: Varies

Payments: PayPal, Bill Me Later | See details

Returns: 60 days money back, buyer pays return shipping | Read details

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