

# Evaluating and Regulating PCBs in Vermont's Buildings

white + burke

**VERMONT**  
**DEVELOPMENT**  
CONFERENCE

What comes to mind  
when you think of PCBs?



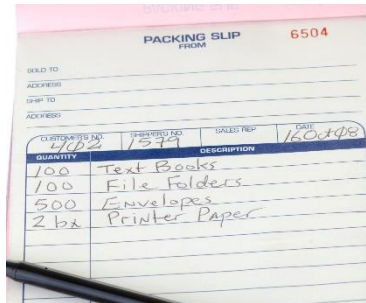
# Why are PCBs used in products?

- Fire-resistant
- Non-degradable
- Low electrical conductivity
- High resistance to thermal breakdown
- High degree of chemical stability
- Resistant to many oxidants and chemicals
- Water insoluble

PCBs were  
commonly used  
from approx.  
**1950–1980**

# Where are PCBs found in building products?

- Paint
- Caulking and grout
- Sealants and floor finishings
- Fluorescent light ballasts
- Printing inks
- Cable insulations
- Voltage regulators
- Circuit breakers
- Dedusting agents
- Fire retardants
- Wood treatments
- Insulation materials
- Ceiling and floor tiles
- Asphalt roofing and tar paper
- Carbonless copy paper



# Characteristics of PCBs

*How do they affect building materials?*

- Wicks into adjacent substances
- Impacts air quality
  - Off gassing - rates differ across various materials
  - HVAC systems moving air
- Impacts soil/GW quality



# PCBs Are Dangerous



- Cancer
- Immune Effects
  - Increased susceptibility to viruses and infections such as Epstein-Barr and pneumonia
- Reproductive Effects
  - Reduces birth weight, conception rates, and live birth rates
- Neurological Effects
  - Stunts neurological development: visual recognition, short-term memory
- Endocrine Effects
  - Decrease thyroid levels
  - Hearing deficits
- Other Non-cancer Effects
  - Dermatological issues
  - Liver toxicity
  - Elevated blood pressure, cholesterol
  - Nervousness
  - Fatigue/depression
  - Respiratory issues



# Federal Regulation

- TSCA – 50 ppm threshold
- PCB bulk product waste v. PCB remediation waste
- No testing requirement
- CERCLA liability for releases to the environment



# VT Regulation of PCBs

- Release to the Environment
- In School Buildings
  - Act 74 (2021)
  - RAL – 22.5 ng/m<sup>3</sup>
  - School Action Levels (SALs)





# Regulation of PCB's in Non-School Buildings

- Act 74 definition of PCB "release" originally applied to all buildings - school buildings & non-school buildings.
- 2022 VT legislation rolled back application of new PCB "Release" language to exclude non-school buildings.
- But requires further study of the issue.
- Specifically, requires ANR to provide report to legislature by January 12, 2023 regarding indoor air quality testing of non-school buildings for PCB releases from building materials.

# Regulation of PCBs in Non-School Buildings

ANR Report must include:

- (1) Best method for regulating PCB releases in non-school buildings
- (2) Proposal outlining who will need to test and how/whether testing will be required under BRELLA
- (3) Details about when during corrective action or property transaction such testing will be required
- (4) Standards used to determine if a release has occurred
- (5) The action or remediation that would be required in there is an exceedance of a standard
- (6) How response action or remediation would be funded
- (7) How regulations may affect investment in redevelopment of historic downtown areas



# Development of New PCB Regulations



Photo Credit: <https://legislature.vermont.gov/the-state-house/galleries/images-of-the-state-house/>

- Important considerations
  - What can we learn from the school sampling efforts?
  - Where does it fit within the existing regulatory landscape?
  - RESOURCES
    - What is necessary to administer a PCB regulatory program?
    - What would the development community need to respond to PCBs?
  - For brownfields redevelopments - what would it mean for the state to provide a liability release knowing that we aren't evaluating a contaminant that can cause significant health effects?

# Where Does this Fit in with Federal Regulations?



- EPA regulates PCB containing building materials  $\geq 50$  ppm
- EPA DOES NOT regulate releases of PCBs to indoor air  
→ no notification requirement
- **BUT** DEC/EPA coordination is a critical component of success

# In the Meantime...

- Following initial 2021 legislation, several entities opted to sample
- Six sites in total (in Hartford, Montpelier, Rochester, St. Johnsbury, and Springfield)
- The data is limited!
-



# What Does it Mean for Me?

- No current obligation to sample indoor air for PCBs (in non-school buildings)
- Consider your project timelines
- What do you consider “acceptable” risk
- You can sample (and access funding) NOW



# Funding

- Will vary by project, can include:
  - Traditional brownfields funding sources for BRELLA enrolled sites
  - Developer/private funding
  - CDBG funding through ACCD

# PCB Evaluation Process

Step 1: Inventory

Step 2: Synthesize data – develop “Groupings”

Step 3: Indoor Air Sampling Plan & Sampling

Step 4: Evaluate results – identify trends

Step 5: Supplemental Sampling (Air or Material)

Step 6: Remediation plan

# PCB Evaluation Process: Inventory

Floor #	Common Room # (if different than ID)	Room Type	Year Built	Sampled Strike #	Paint/Wall Covering	Accent pai	Ceiling pai	Flooring	Ceramas	Lighting	Heating Type(s)	Unirat dr	Heating ac	HVAC Not	Window Type(s) (w/ or w/ Glass)	Visible Window/Cas	General Casling Resaltity	mason Expans Joints/Ca
2		Closet	1995	213	All new						No hvac							
2		Closet	1995	214	All new						No hvac							
2		Closet	1995	217	All new						No hvac							
2		Closet	1995	218	All new						No hvac							
2		Closet	1995	219	All new						No hvac							
3		Air Handler Room	1995		All new													
3		Attic	1995		All new						Moodiness units, no hvac							
3		Storage of flooring type	1995		All new													
10.2		Hallway stairs	1995		All new						Hvac							
1		Entryway	1995		Bricks	Teal		Ceramic		Various New FL	Hvac				New office windows	Little	1 old doorway	
2		Office	1995		Old exterior brick wall						Baseboard no hvac							
2		Utility/air handler	1995		Old Exterior Brick Wall Connected						No hvac							
2		Utility	1995		Old brick exterior wall						No hvac							
1		Bathroom	1962	106	Peach	--		Ceramic tile	Ceramic gray	Bulb								
1		Bathroom	1962	108	Ceramic	--		Vinyl dark blue	Ceramic gray tall	Bulb								
1		Bath	1962	111	Peach	Ceramic	Teal	Ceramic	Gray ceramic	Bulb								
1		Bathroom	1962	112	Mint	Peach		Ceramic tile	Ceramic gray	Bulb								
1		Bathroom	1962	116	Light blue	--	White	Ceramic	Ceramic gray	Bulb								
1		Old boiler	1962		Unpainted	--		Unpainted concrete		Bulb/No FL	Boilers							
1		New boiler	1995		Unpainted	Old exterior brick		Unpainted concrete		Bulb/No FL	Boilers							
1		Office	1962		White	--			Navy	F13	Hvac		Connected with others			No		Typical
1	138	Bath	1962	137A	Pale blue	--	White	Vinyl dark gray	Black	Bulb	Baseboard radiator					Yes	1 door	Typical
1	139	Closet	1962	137A	Yellow	--												
1		Conference	1962		White	--		Vinyl dark gray	Black	F13	Baseboard heat and hvac		Connected to class 126 HV		Metal frame	Yes	2 windows baseboard	Typical
1		Nurses office	1962		Lavender	Fabric		Vinyl cream	Navy	F13	Baseboard / hvac				Never aluminum windows	No		Few
1		Office	1962		White	--		Vinyl dark gray	Navy	F13	Asceboard/hersche				Metal frame	Yes	2 windows	Typical
1		Kitchen	1962		Purple	Blue		Vinyl dark blue	Black	F13						Yes	Multiple doors	Typical
1		Mop closet	1962		Peach	--		Vinyl sheet	Gray	Bulb						Yes	1 door	Typical
1		Utility closet/bath	1962		Yellow	Pale blue/peach	Peach	Vinyl dark blue	Black, gray	F1, bulb	Baseboard					Yes	3 doors	
1		Kitchen Office	1962		Mint	--		Vinyl white	Black	F12	None					Yes	1 door	
1		Storage	1962		Cream	--	White		Black	F12						Yes	1 door	Few
1	117	Jauntor closet	1962		Light blue	--	White	Vinyl lt brown/gray		F12								Few
1	120	Jauntor closet	1962		Mustard and peach and blue	--	White	Gray painted concrete		Bulb						Yes	1 door	Typical
1		Hallway	1962		Light blue, black and brick	Blue		Various vinyl	Black	F13				None	None	Yes	Many doors	Typical
1		Girls bath	1962		Purple	White	White	Square ceramic tile	Brown ceramic	F16				Passive Air Yards				
1		Boys bathroom	1962		Light blue	Purple	White	Square ceramic tile	Black	F16				Passive Air Yards		Yes	1 door	Typical

Inventory Spreadsheet Example

# Inventory Data Evaluation : Groupings



Example groupings



# PCB Evaluation Process: Sampling Plan & Sampling



PCB air sampling apparatuses

# Practical Considerations

- Ownership/Liability
- Purchase/ Due Diligence
- Renovation/ Redevelopment



# QUESTIONS?

## SPEAKERS

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