

Source Tracing Lower Duwamish Waterway

Seattle Public Utilities
October 24, 2013

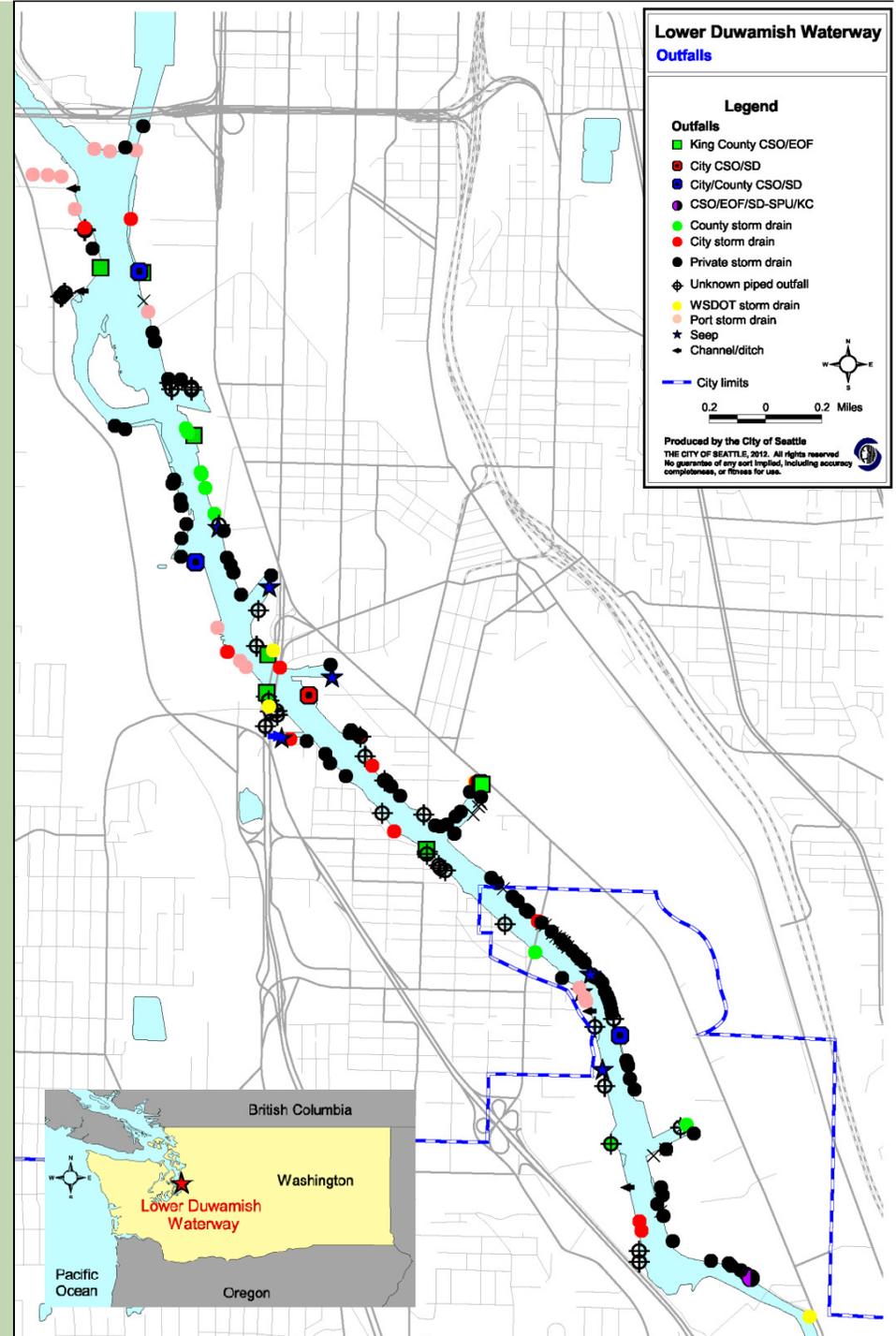
SPU source control website:
http://www.seattle.gov/util/Services/Drainage_&_Sewer/PollutionControl/index.htm

Lower Duwamish Waterway

- 5 mile reach
- Tidally influenced

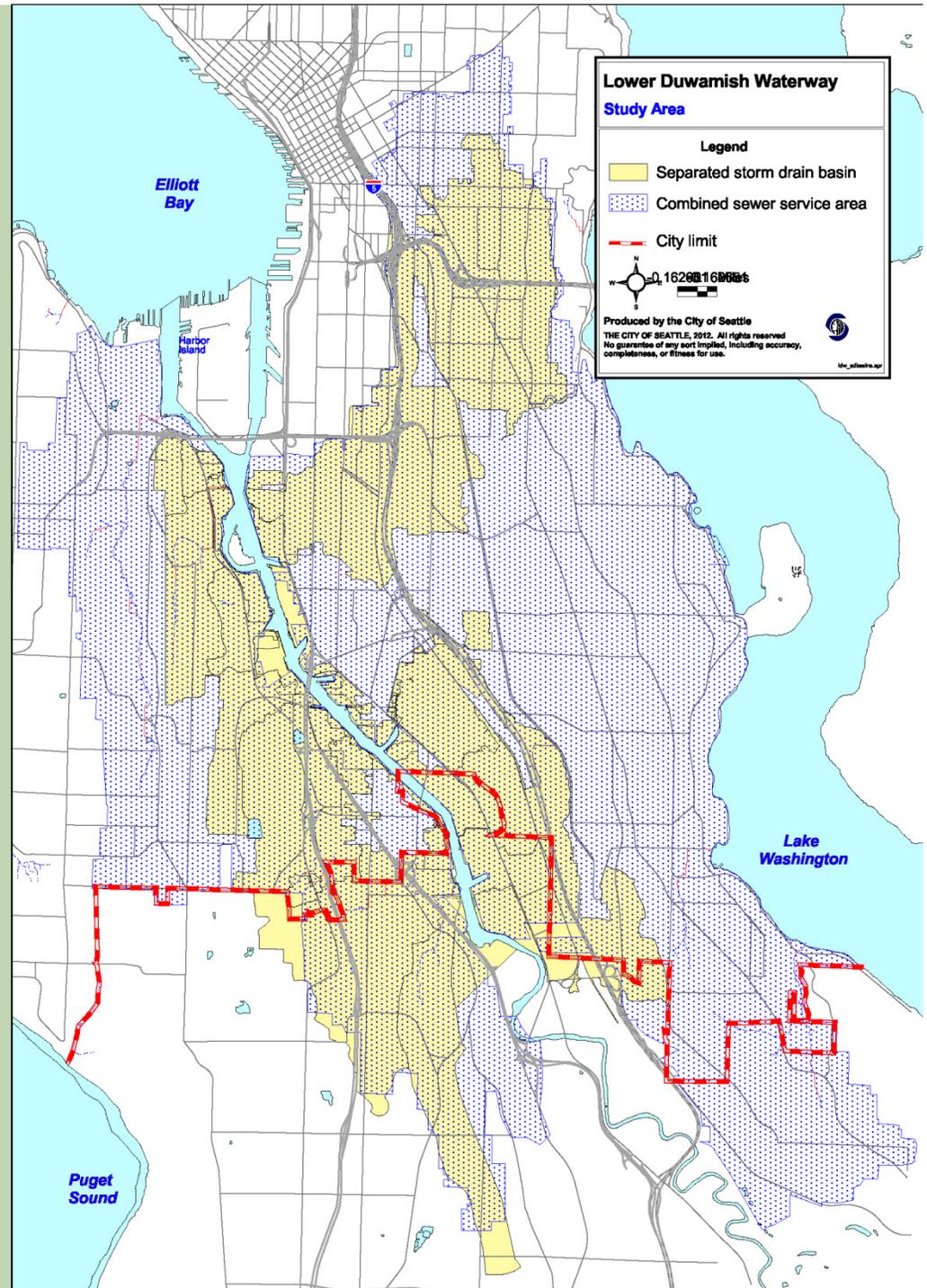
215 outfalls

- 151 storm drains
- 8 CSOs
- 4 emergency overflows
- 5 ditches/swales
- 7 major seeps
- 40 unknown outfalls



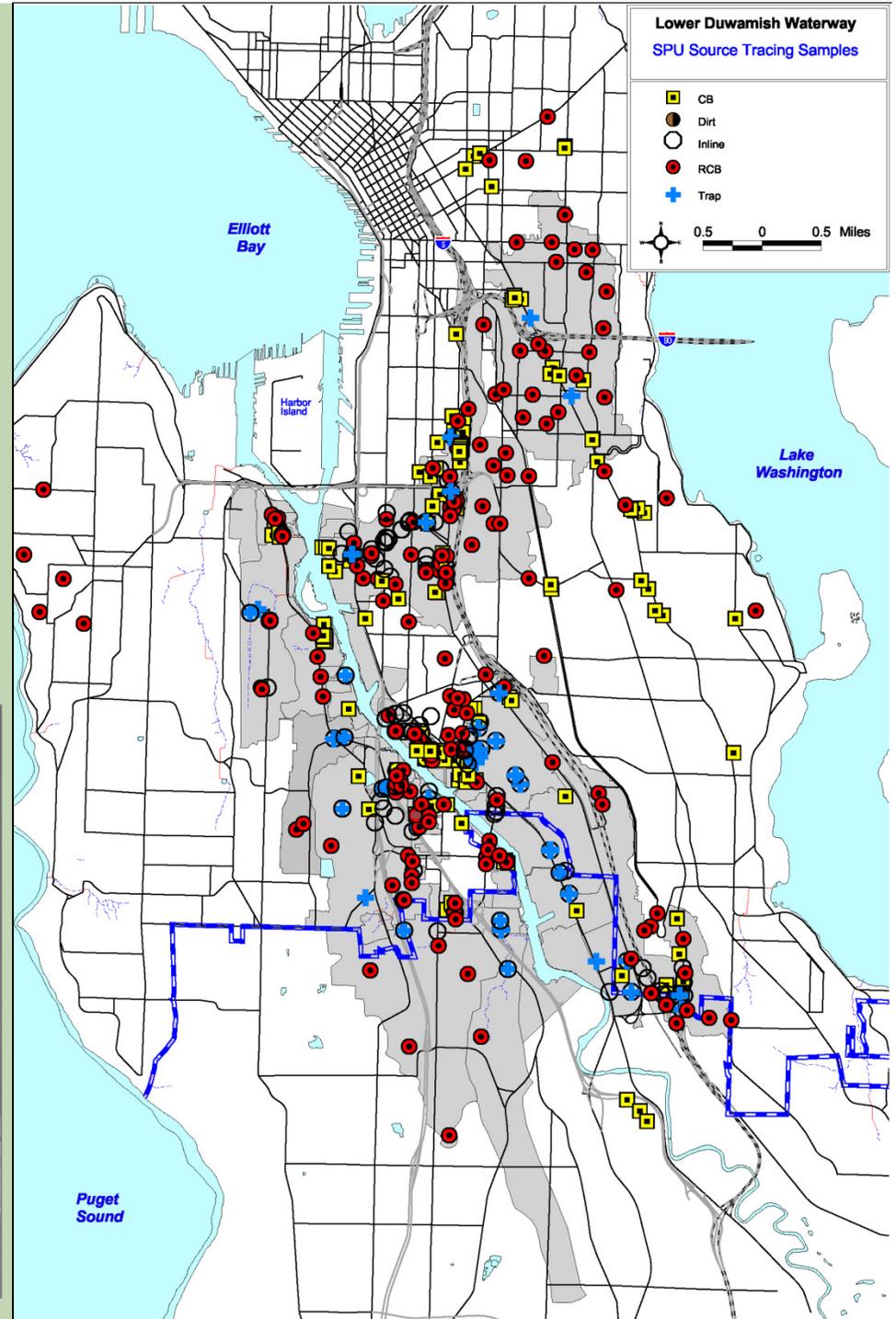
Lower Duwamish Waterway

- Contaminants of concern in sediment:
 - PCBs
 - Arsenic
 - Dioxins/furans
 - Phthalates
 - PAHs
 - Other metals
- ~450 sq mile upper basin
- Study area:
 - 8,400 acre separated storm drain
 - 20,000 acre combined sewer system



Source Samples

- Inline traps
- Inline grabs
- Onsite catch basins
- Right-of-way catch basins
- Street dirt and soil

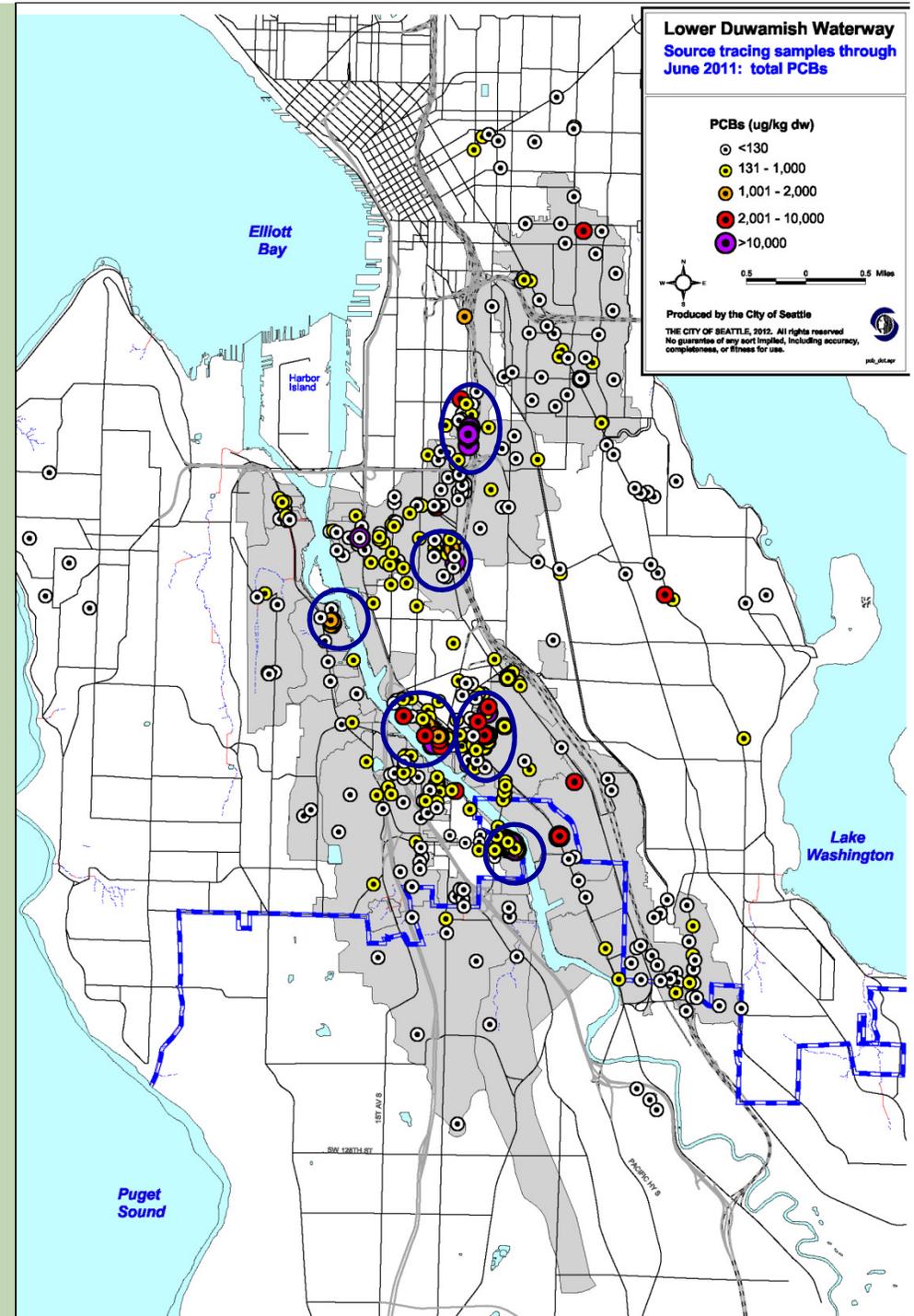


Source Tracing: PCBs

Samples through Dec 2012

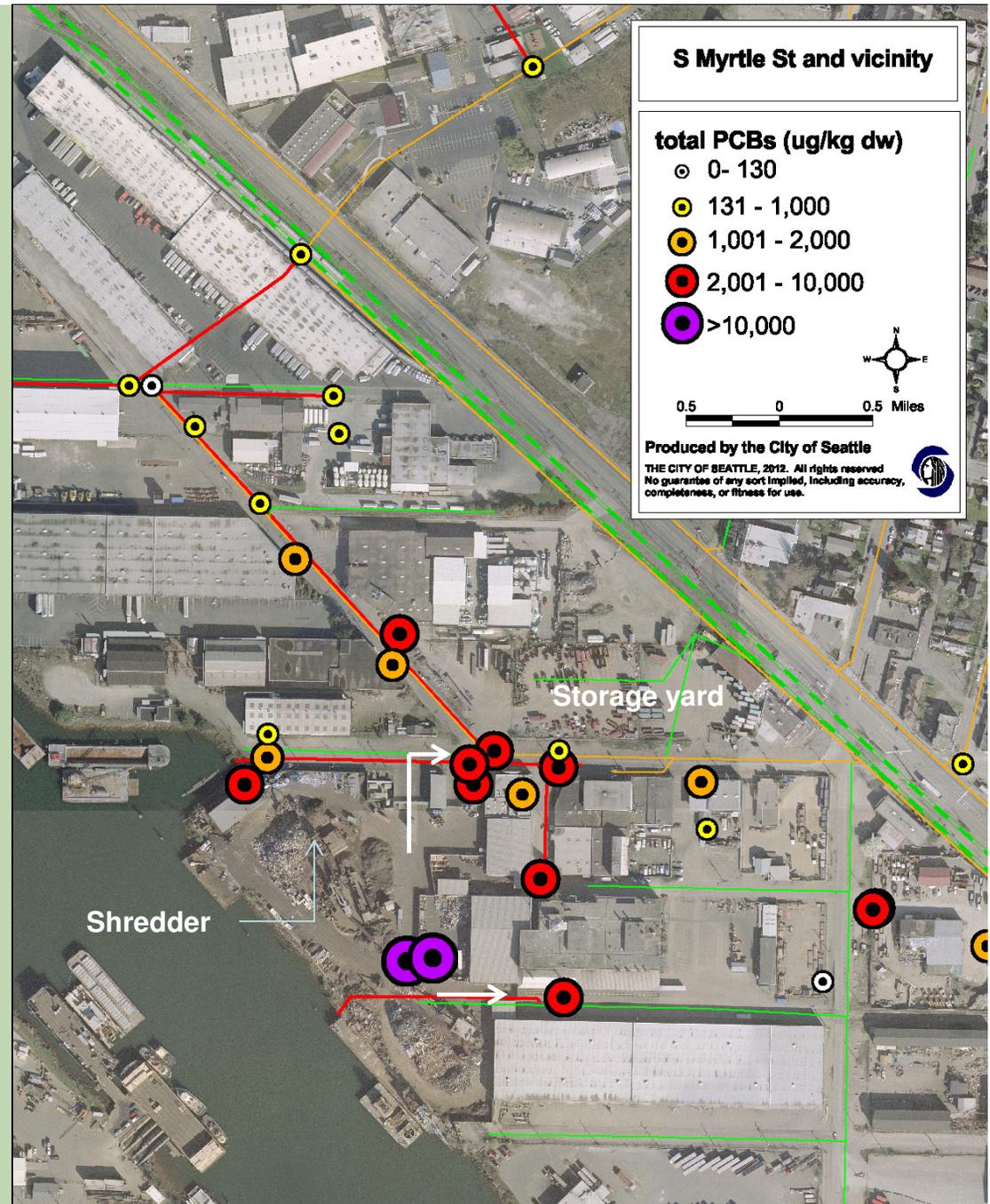
Hotspots

- T117
- GTSP/NBF
- KC-Jorgensen SD
- Rainier Commons
- Others



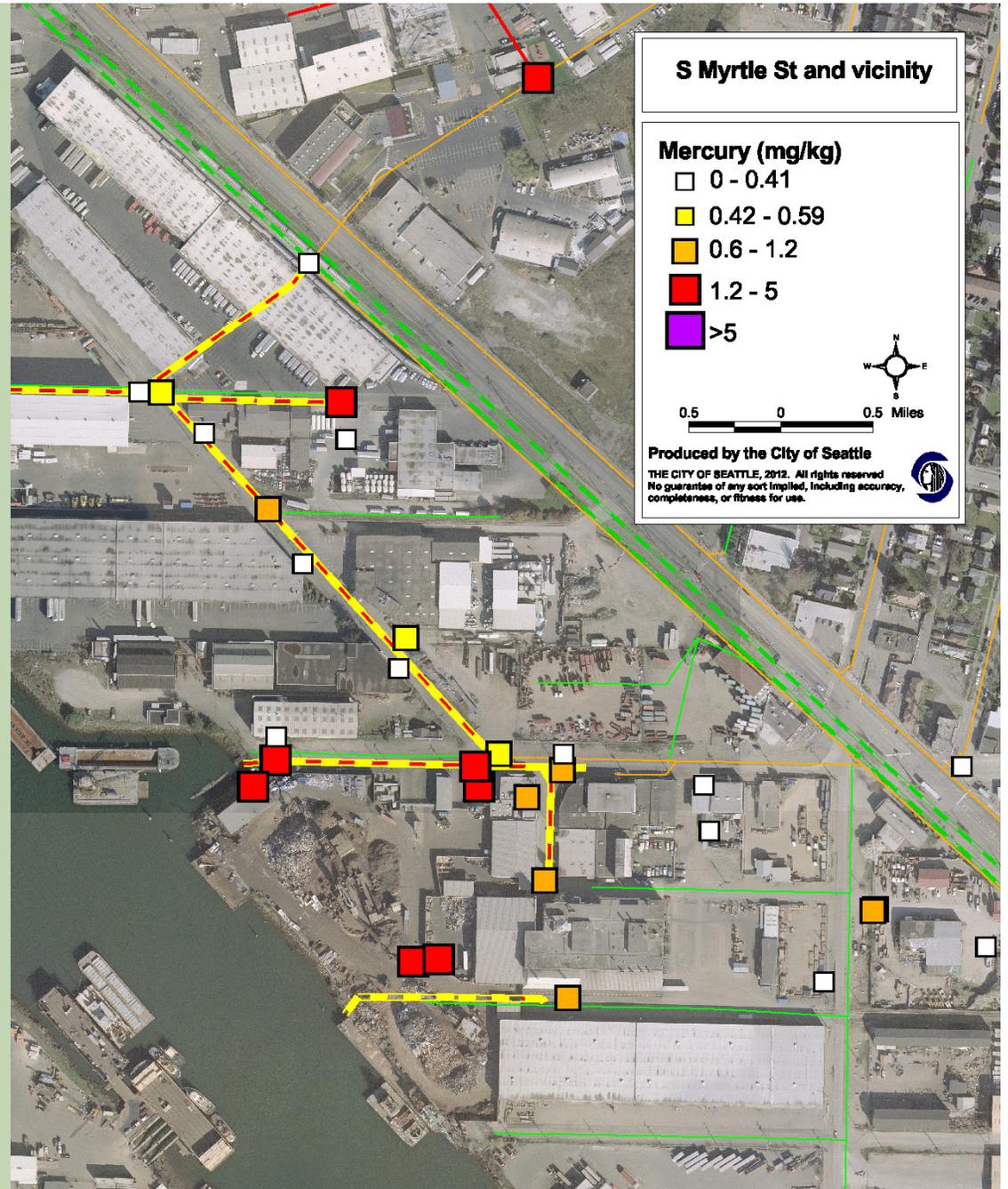
Metal Shredding Facility

- Elevated PCBs, Hg found:
 - Right-of-way and onsite catch basins
PCBs = 18.3 mg/kg
Hg = 2.72 mg/kg
 - Inline grabs
PCBs = 1.6 mg/kg
Hg = 1.88 mg/kg
 - Roof drains/gutters
PCBs = 4.6 mg/kg
Hg = 2.56 mg/kg
- Transport pathways:
 - Fugitive dust
 - Track out
 - Stormwater runoff



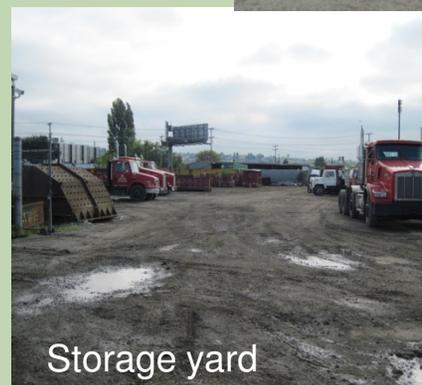
Metal Shredding Facility

- SPU cleans storm drains in 2009-2010
- PCBs and Hg elevated in CB adjacent to driveway entrance within 6 months
- CB cleaned several times, but PCBs, Hg remain elevated



Metal Shredding Facility

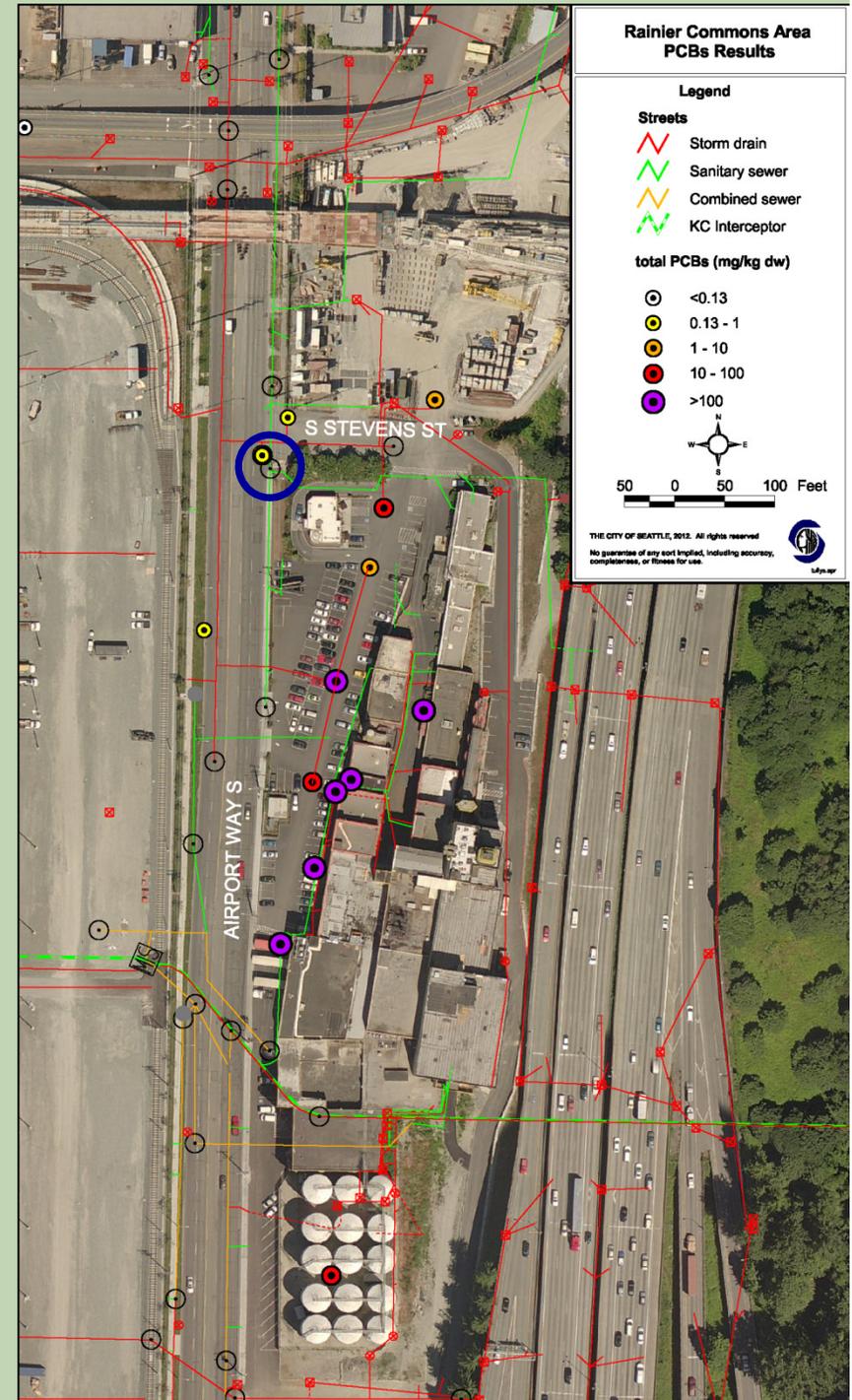
- SPU issued NOV (2009), negotiated voluntary compliance agreement (2010-2011)
 - Route roof runoff through onsite treatment system
 - Sweep streets
 - Install Filterra™ unit in problem catch basin
- State revising NPDES permit



Old Brewery

PCBs in building paint

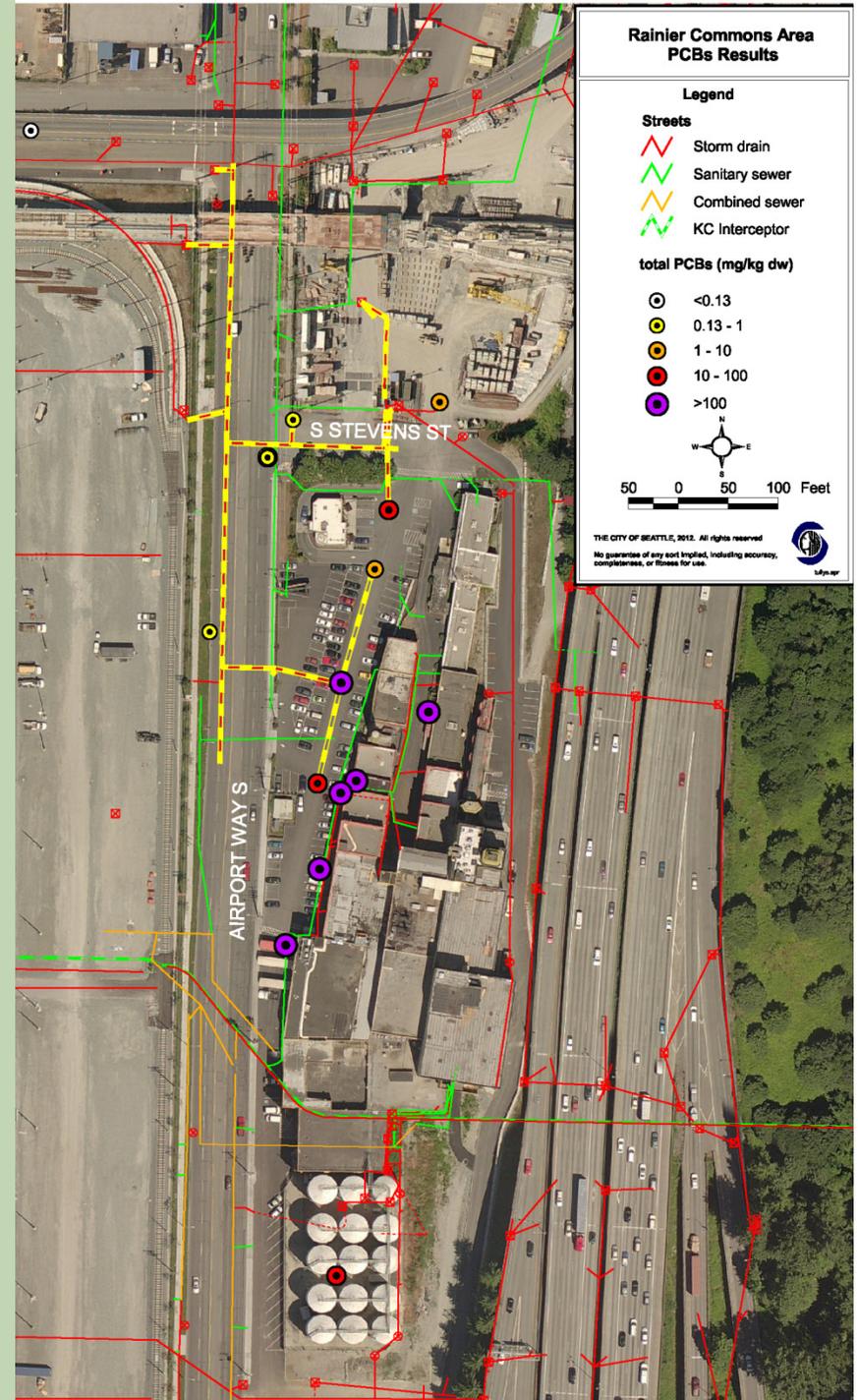
- 2004: Found 10 mg/kg PCBs in ROW catch basin
- Up to 321,000 mg/kg in exterior building paint
- EPA TSCA site
- 2013: EPA reviewing Work Plan for cleanup



Old Brewery

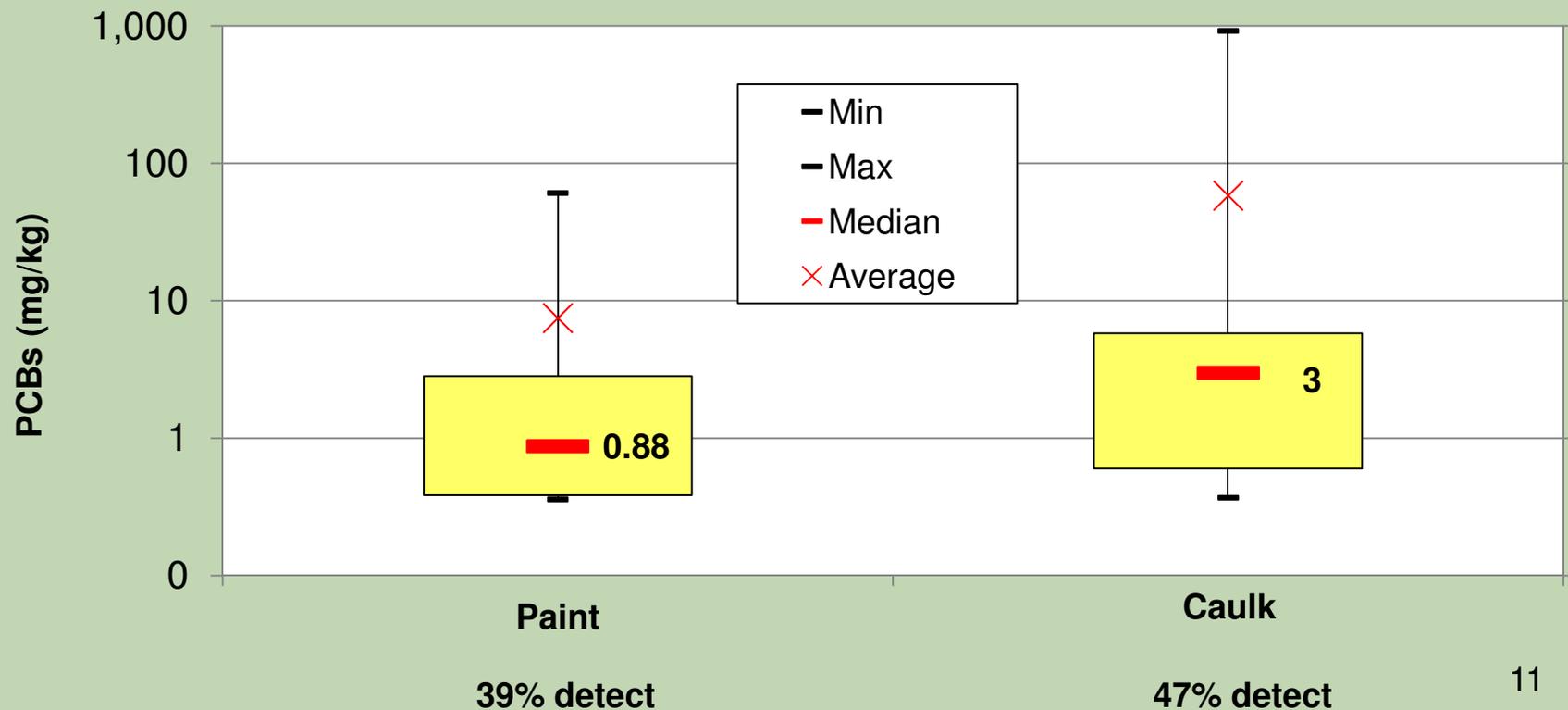
PCBs in building paint

- 2004: Found 10 mg/kg PCBs in ROW catch basin
- 2008: SPU jets and cleans lines
- Owner installed filter fabric in CBs
- 2012: SPU re-samples lines
PCBs elevated (7.3 – 12.4 mg/kg)
- 2013: Rainier Commons jets and cleans lines again.

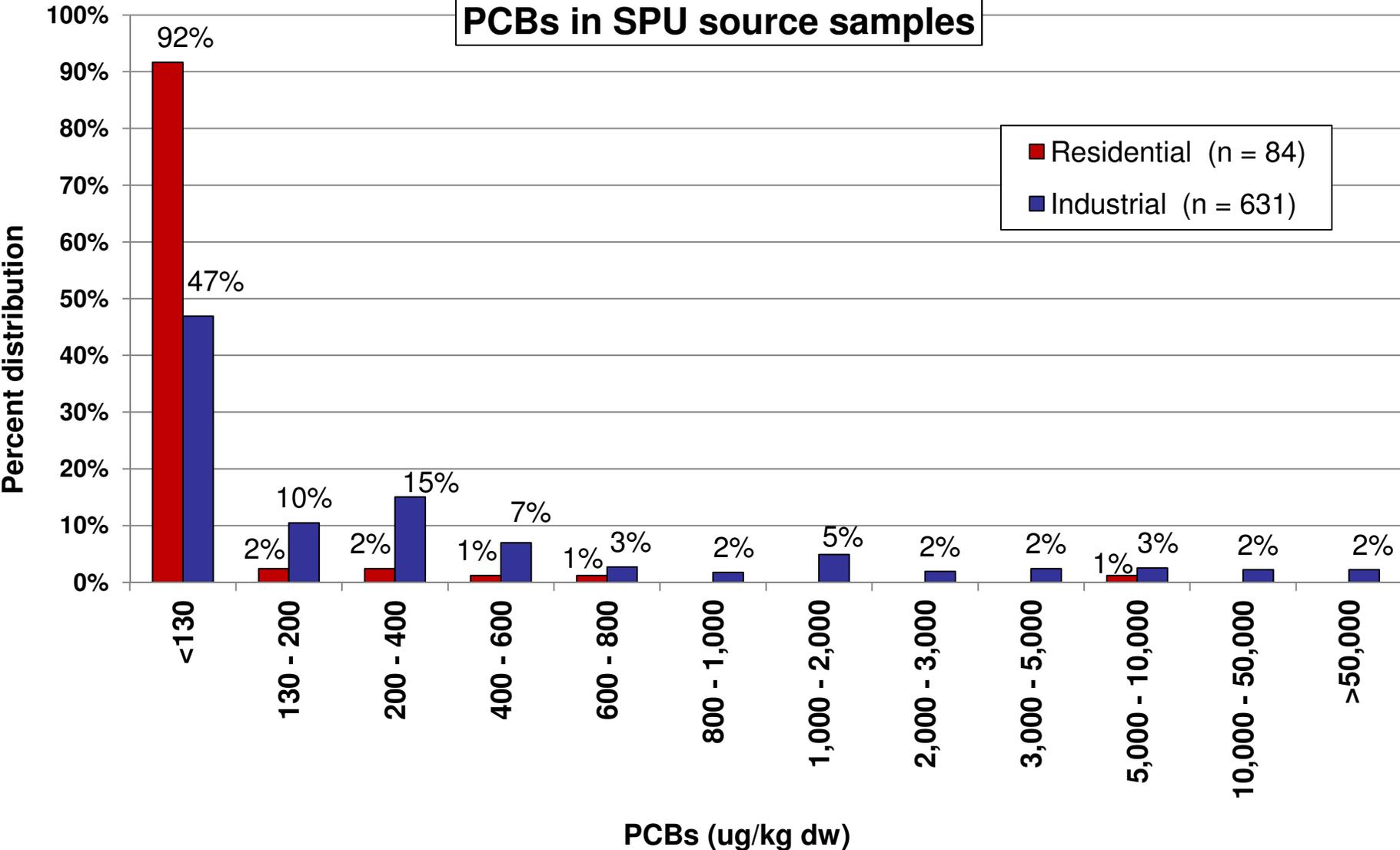


Ecology Building Survey

- Composite samples from buildings constructed 1950-1977
- 2 or more buildings per composite
- 38 Paint and 17 caulk samples



PCBs: Land Use

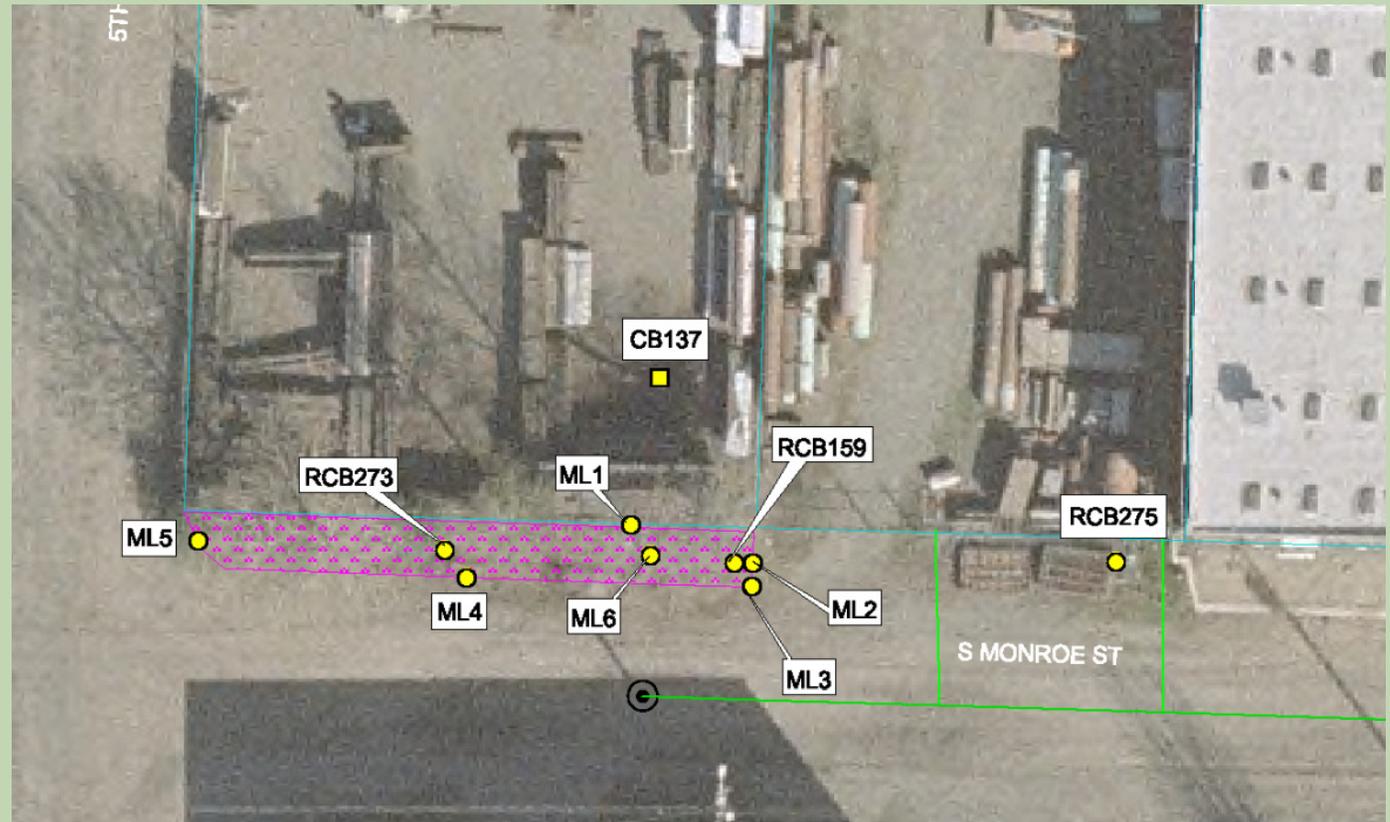


Arsenic



- Marine lumber storage yard
- Ammoniacal copper zinc arsenate (ACZA)
- 710 mg/kg As in dirt in yard
- 750 mg/kg As in ditch in street

Arsenic



- Find 544 mg/kg As in ditch downstream of property
- Ecology order owner to cleanup
- Owner cleans up 10' x 100' section of ROW
- Up to 220 mg/kg As remains at edge of excavation