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Salish Sea Ecosystem Conference

2014 Salish Sea Ecosystem Conference
(Seattle, Wash.)

Apr 30th, 10:30 AM - 12:00 PM

PCB source tracing in storm drains in the Lower Duwamish Waterway

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Schmoyer, Beth, "PCB source tracing in storm drains in the Lower Duwamish Waterway" (2014). *Salish Sea Ecosystem Conference*. 83.

<https://cedar.wwu.edu/ssec/2014ssec/Day1/83>

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PCBs Source Tracing In Storm Drains Lower Duwamish Waterway

Seattle Public Utilities
April 30, 2014

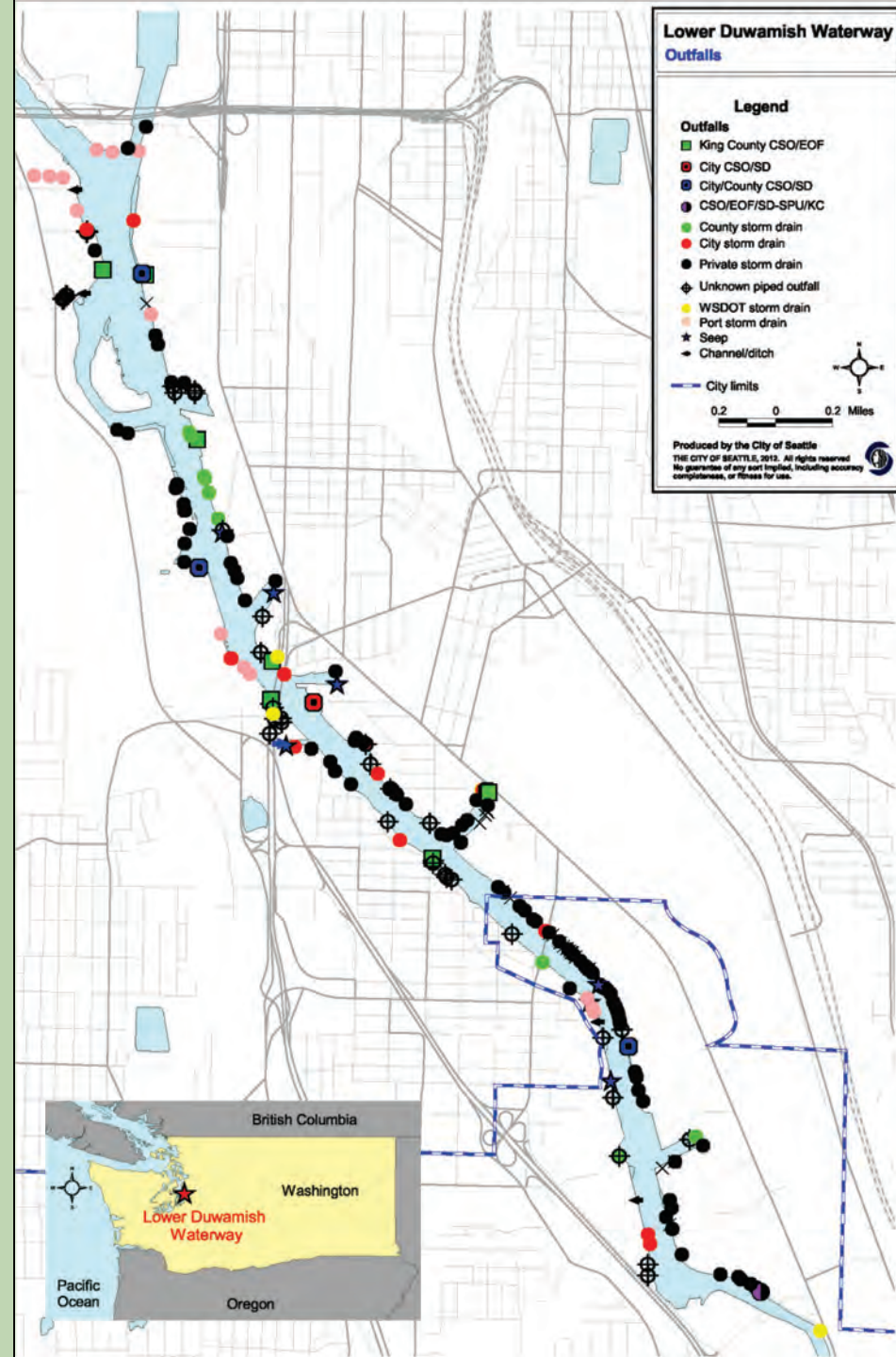
SPU source control website:
http://www.seattle.gov/util/Services/Drainage_&_Sewer/PollutionControl/index.htm

Lower Duwamish Waterway

- 5 mile reach
- Tidally influenced

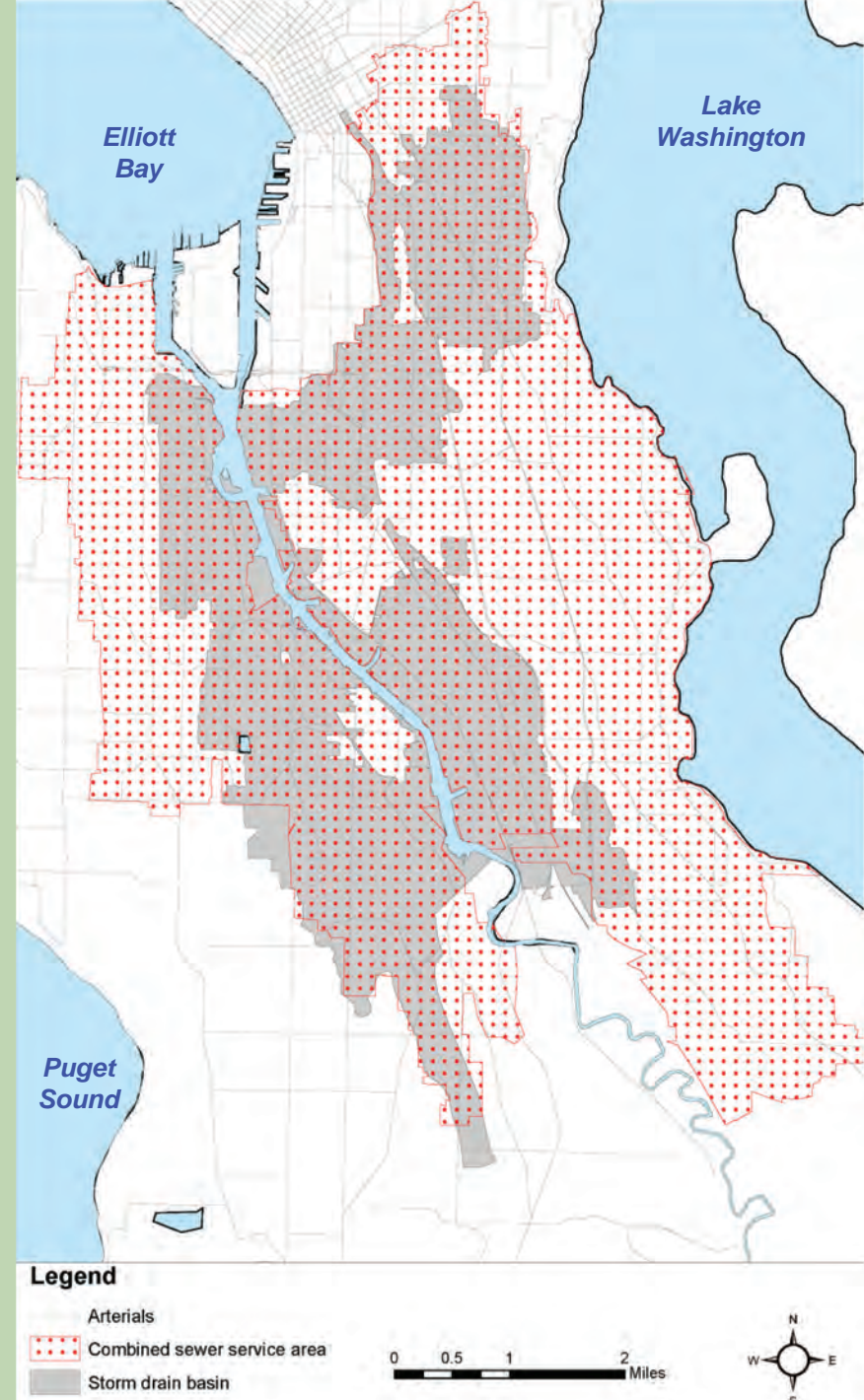
237 outfalls

- 198 storm drains
- 8 CSOs
- 4 emergency overflows
- 10 ditches/creeks
- 7 major seeps
- 17 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

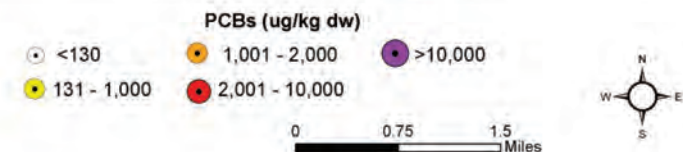
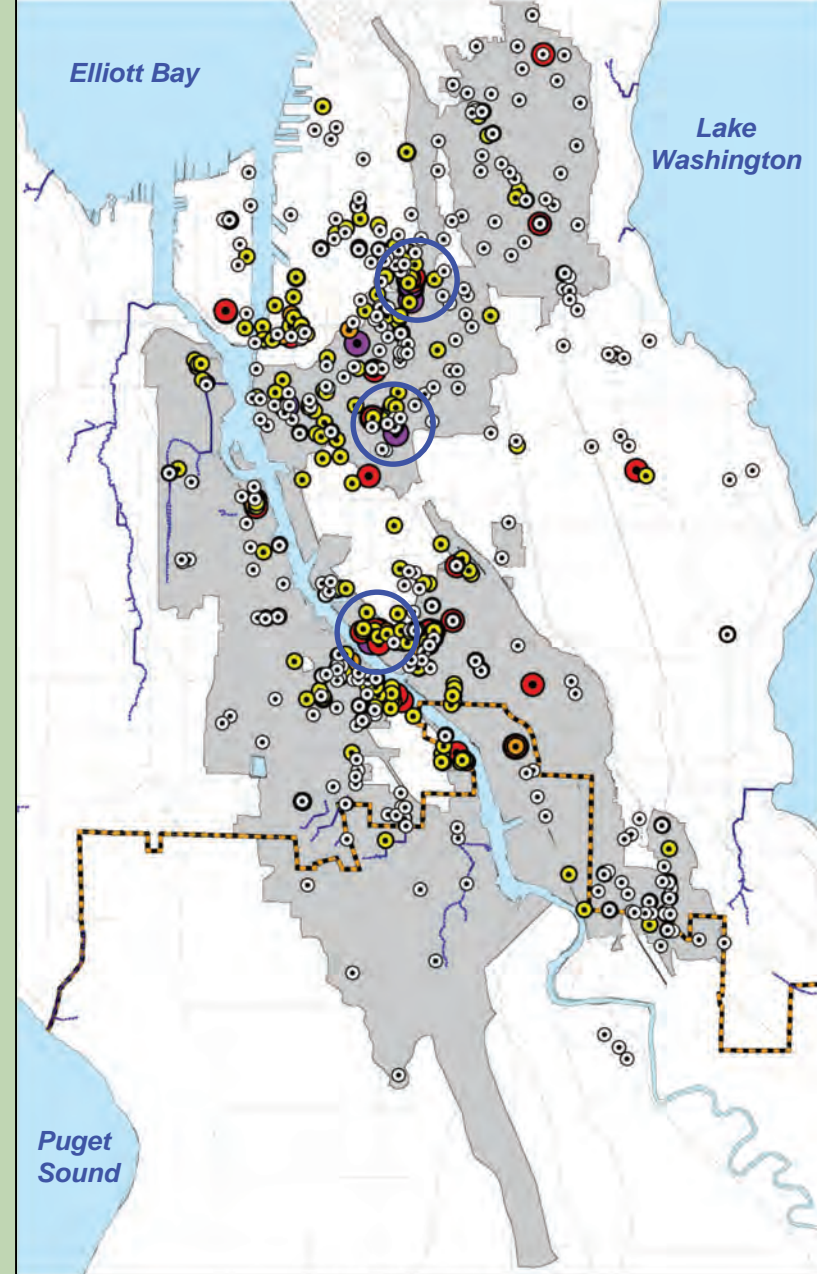


Source Tracing: PCBs

Samples through Dec 2013

Hotspots

- T117
- GTSP/NBF
- KC-Jorgensen SD
- Metal shredding facility
- Old brewery
- Diagonal-Snoqualmie subbasin

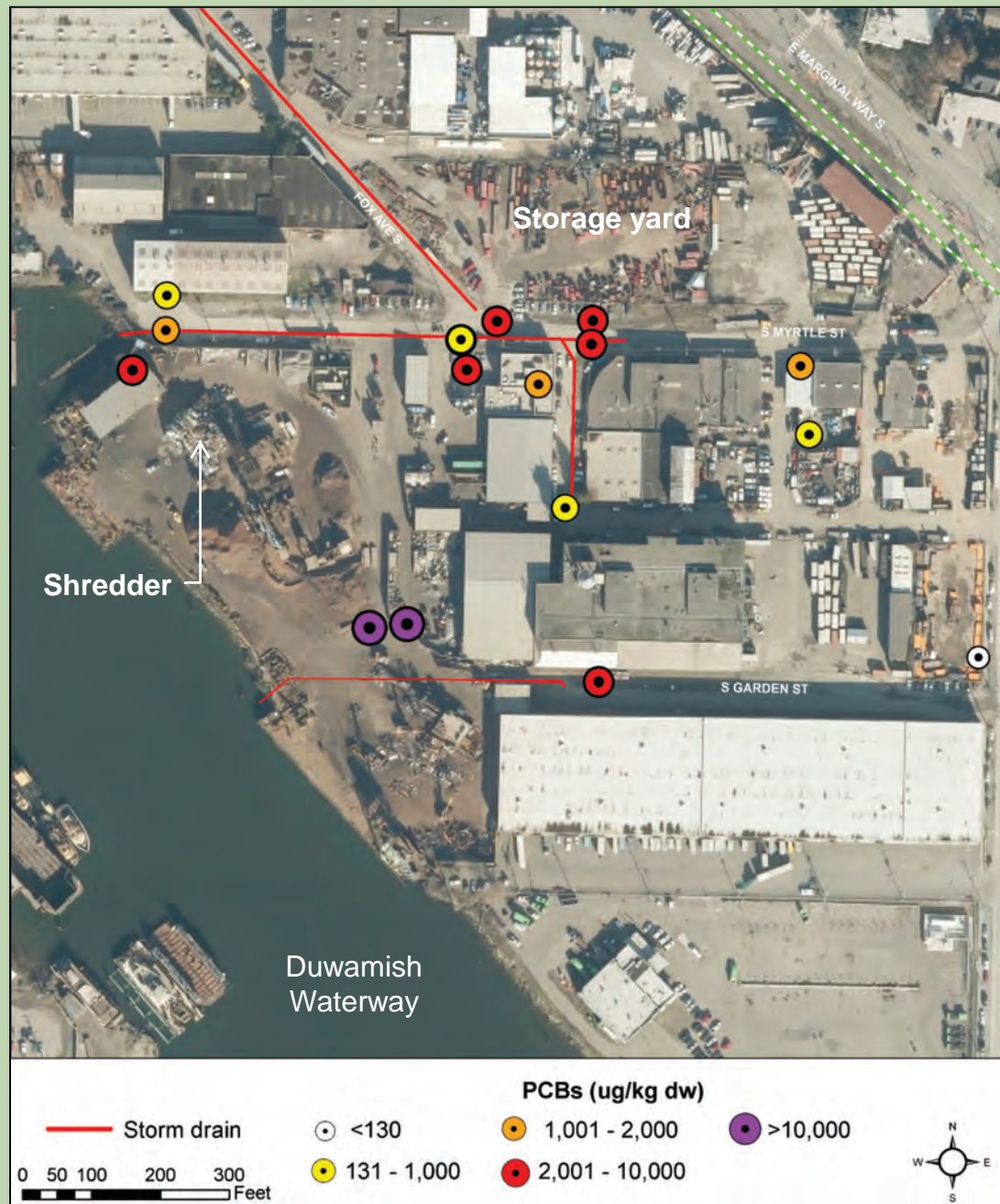


Metal Shredding Facility

Sample Location	PCBs (mg/kg dw)
ROW catch basins	0.7 – 8.2
Inline grabs	1.6
Onsite catch basins	18 - 25
Roof drains/gutters	1.9 - 4.6

Transport pathways:

- Fugitive dust
- Track out
- Stormwater runoff



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



Metal Shredding Facility

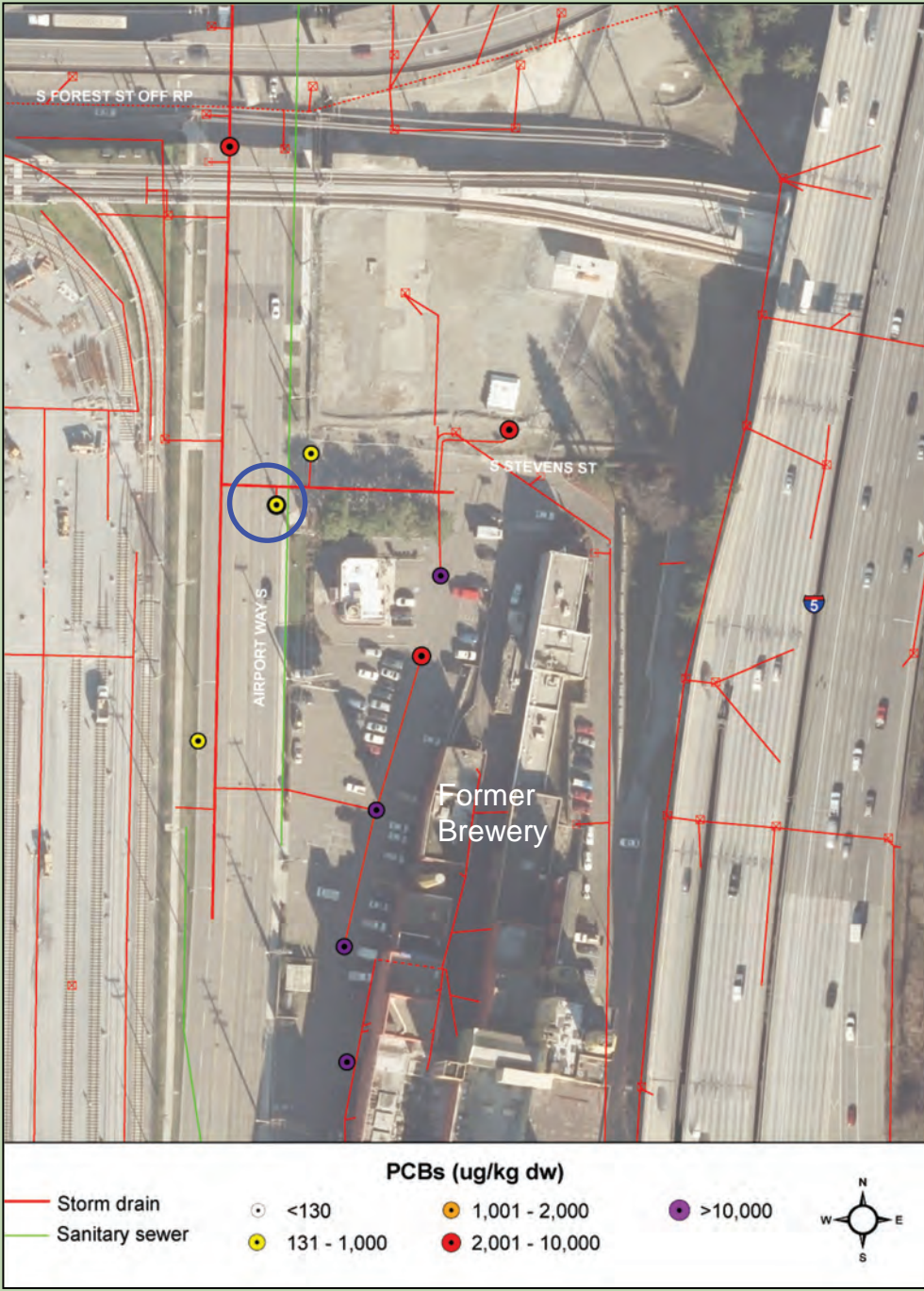
- SPU cleans storm drains in 2009-2010
- PCBs elevated in CB adjacent to driveway entrance within 6 months
- CB cleaned several times, but PCBs remain elevated



Old Brewery

PCBs in building paint

Source	PCBs (mg/kg dw)
Right-of-way CBs	0.2 - 10
Onsite CBs	2.6 - 189
Exterior building paint	0.8 – 321,000



Old Brewery

PCBs in building paint

- 2004: 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.
- 2014: 1st phase TSCA cleanup scheduled to start



Diag-Snoq Basin

PCBs in MH18

Date	Action
2008-2009	Tracing for Hg
2010	Lines cleaned
2011	Ecology finds PCBs in base flow, filtered solids, sediment trap samples
2013	Elev PCBs (46 mg/kg dw) found in MH18
2014	More source tracing



Diag-Snoq Basin

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Diag-Snoq Basin

2014 Tracing

- 6 and 10 mg/kg in CBs near transformer
- Paint chips in CB

