

**Dioxin and furan TEQ (ng/kg dw)<sup>a</sup>**

- ◆ Sediment grab sample location
- Beach sediment composite sample area
- 1 Assumed beach play exposure area
- Early Action Area

**Outfall classification<sup>b</sup>**

- ◆ CSO
- ◆ CSO/storm drain
- ◆ EOF
- ◆ EOF/storm drain
- ◆ Permitted private storm drain
- ◆ Private storm drain
- ◆ Public storm drain
- ◆ Pipe of unresolved origin and/or use
- ◆ Abandoned
- ◆ Not an outfall
- ◆ Stream, channel, or swale
- Road
- River mile
- Navigation channel

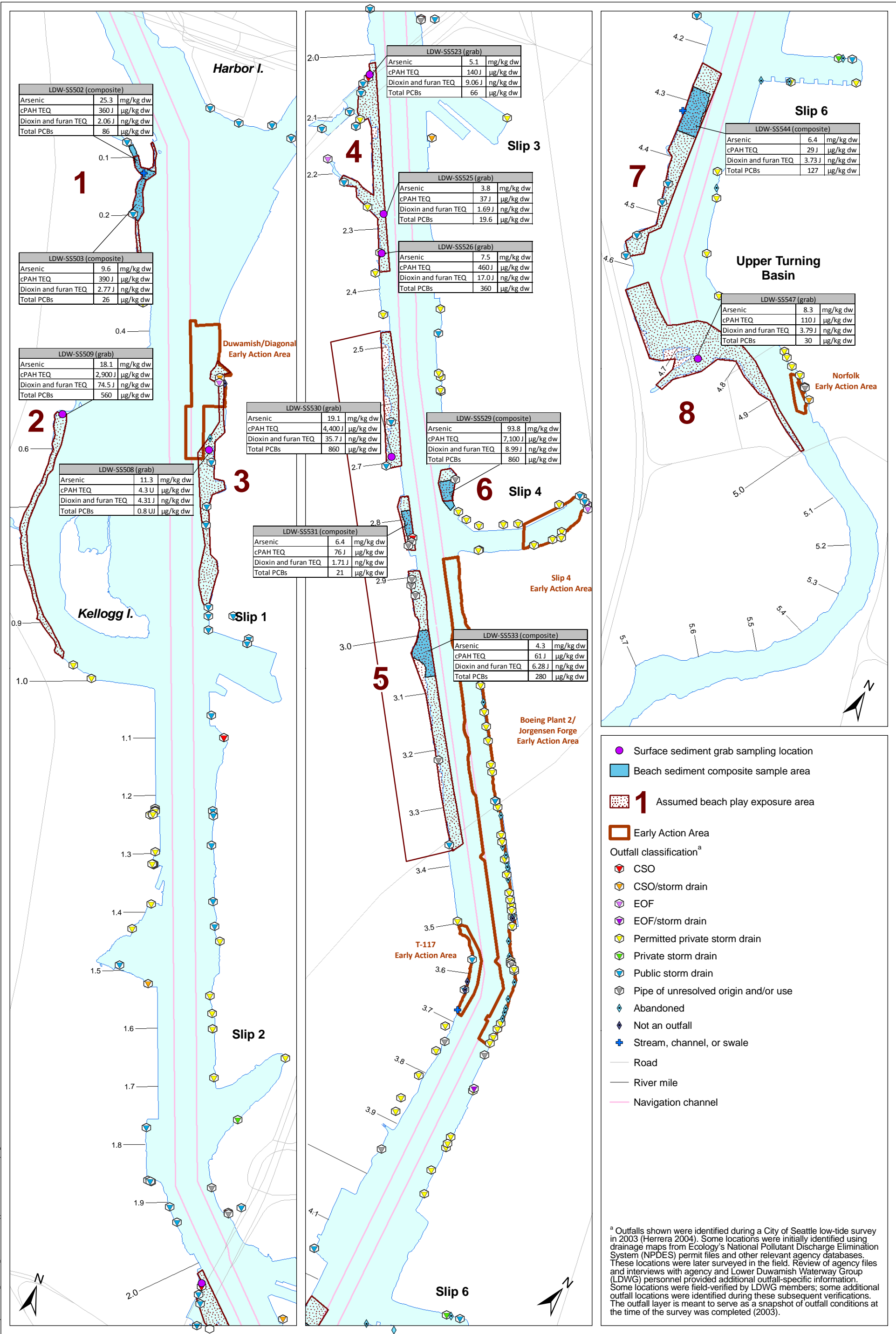
<sup>a</sup> TEQs were calculated with mammalian TEFs for individual dioxin and furan congeners (Van den Berg et al. 2006), using one-half the reporting limit for undetected congeners. Percentiles were calculated on a numerical basis using all values from the baseline surface sediment, dataset.

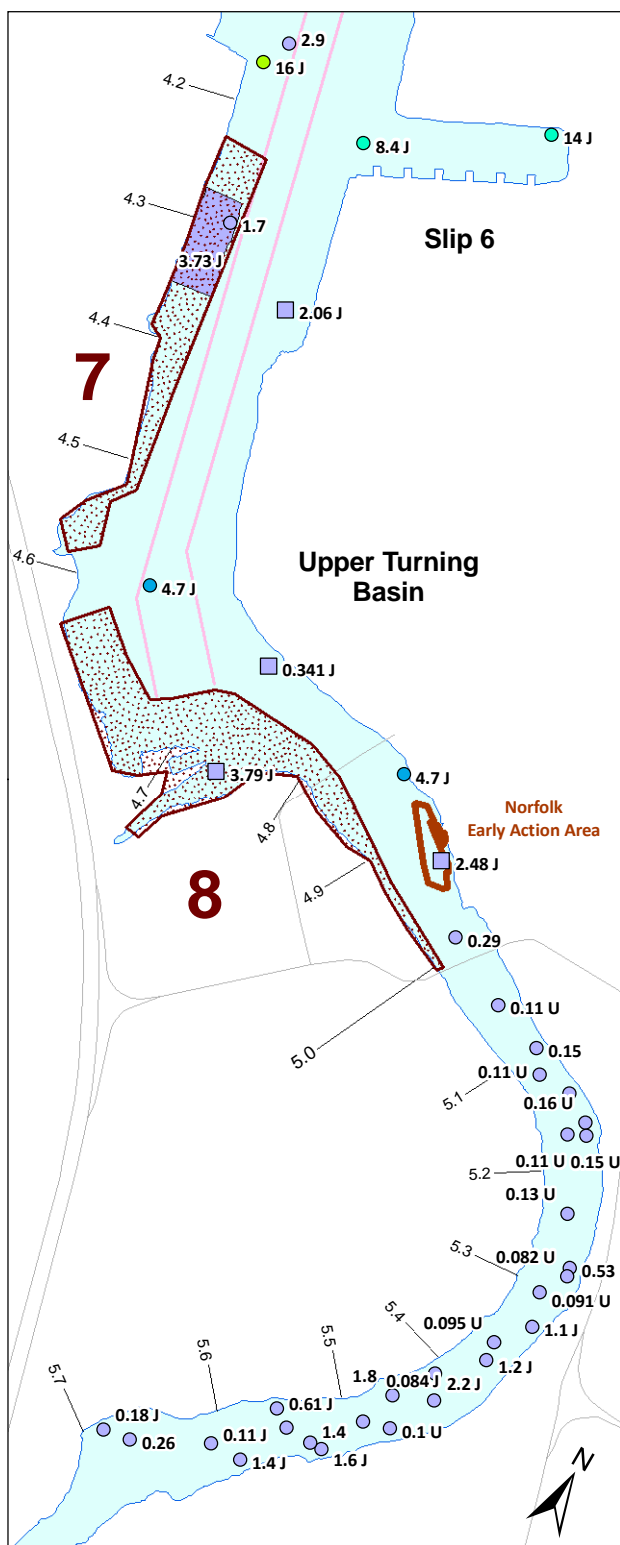
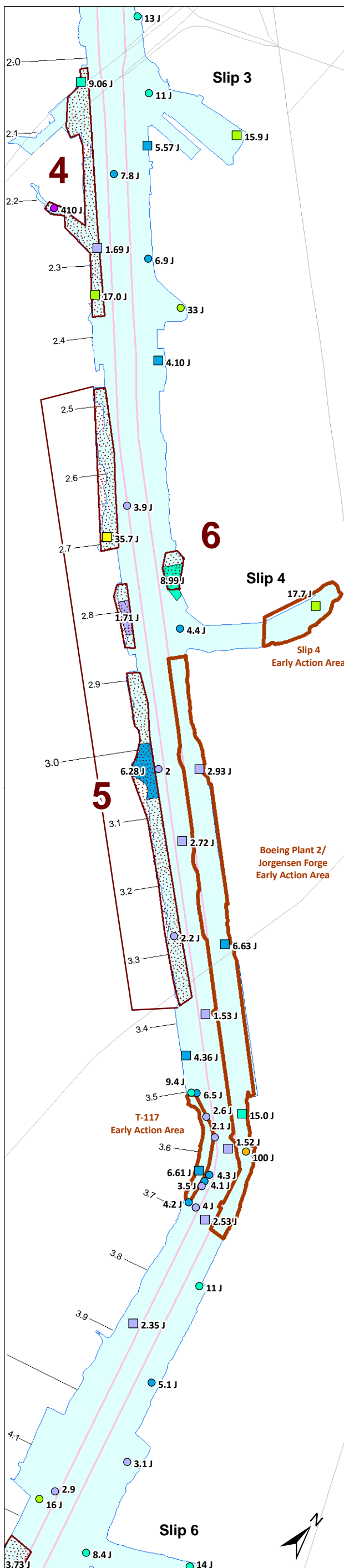
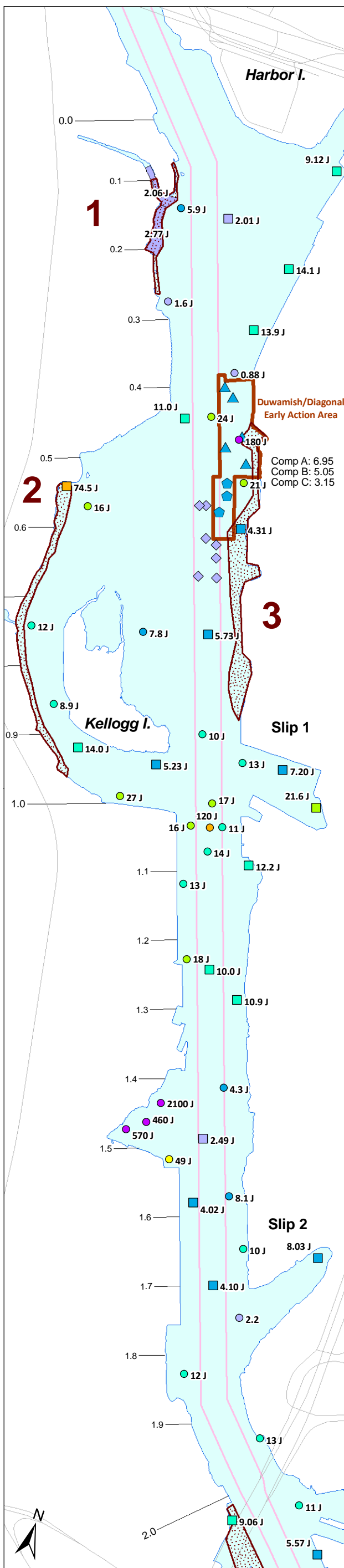
<sup>b</sup> Outfalls shown were identified during a City of Seattle low-tide survey in 2003 (Herrera 2004). Some locations were initially identified using drainage maps from Ecology's National Pollutant Discharge Elimination System (NPDES) permit files and other relevant agency databases. These locations were later surveyed in the field. Review of agency files and interviews with agency and Lower Duwamish Waterway Group (LDWG) personnel provided additional outfall-specific information. Some locations were field-verified by LDWG members; some additional outfall locations were identified during these subsequent verifications. The outfall layer is meant to serve as a snapshot of outfall conditions at the time of the survey was completed (2003).

**Map 2. Dioxin and furan TEQ results for the 2009/2010 LDW sediment sampling event**

0 0.1 0.2 Miles  
0 0.1 0.2 Kilometers

Scale is the same for each inset map





**Dioxin and furan TEQ (ng/kg dw)<sup>a</sup>**

<b>Baseline RI and other historical surface sediment sampling locations<sup>b</sup></b>	<b>2009/2010 sediment grab sample location</b>
● > 160	■ > 160
● > 50 and ≤ 160	■ > 50 and ≤ 160
● > 35 and ≤ 50	■ > 35 and ≤ 50
● > 15 and ≤ 35	■ > 15 and ≤ 35
● > 8.1 and ≤ 15	■ > 8.1 and ≤ 15
● > 4.0 and ≤ 8.1	■ > 4.0 and ≤ 8.1
● ≤ 4.0	■ ≤ 4.0

**King County 2009 composite samples<sup>c</sup>**

▲ DUD-Composite A: L49689-1	95 <sup>th</sup> percentile = 160
▲ > 4.0 and ≤ 8.1	75 <sup>th</sup> percentile = 15
▲ DUD-Composite B: L49689-2	50 <sup>th</sup> percentile = 8.1
▲ > 4.0 and ≤ 8.1	25 <sup>th</sup> percentile = 4.0
▲ DUD-Composite C: L49689-3	
▲ ≤ 4.0	

**Beach sediment composite sample area dioxin and furan TEQ (ng/kg dw)<sup>a</sup>**

■ > 8.1 and ≤ 15
■ > 4.0 and ≤ 8.1
■ ≤ 4.0

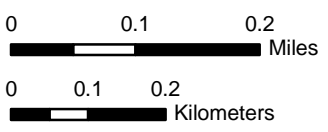
**Legend:**

- 1 Assumed beach play exposure area
- Early Action Area
- Road
- River mile
- Navigation channel

<sup>a</sup> TEQs were calculated with mammalian TEFs for individual dioxin and furan congeners (Van den Berg et al. 2006), using one-half the reporting limit for undetected congeners. Percentiles were calculated on a numerical basis using all values from the following datasets: RI baseline; FS baseline; LDW Dioxin Sampling 2009; Ecology Upstream bedded sediment; PSAMP 2008; T115 Berth 1; T117 Sediment Boundary 2009; and King County monitoring April 2009.

<sup>b</sup> The discrete grab sample within the Duwamish/Diagonal Early Action Area (180 J ng/kg dw) was collected prior to the removal action.

<sup>c</sup> Composite samples were collected after the removal action.



Scale is the same for each inset map

**Map 4. Dioxin and furan TEQ results for the 2009/2010 LDW sediment sampling event, including results from historical sampling events**