

Chlorinated Pesticides in Delaware Estuary Sediment



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Toxics Advisory Committee
September 15, 2004

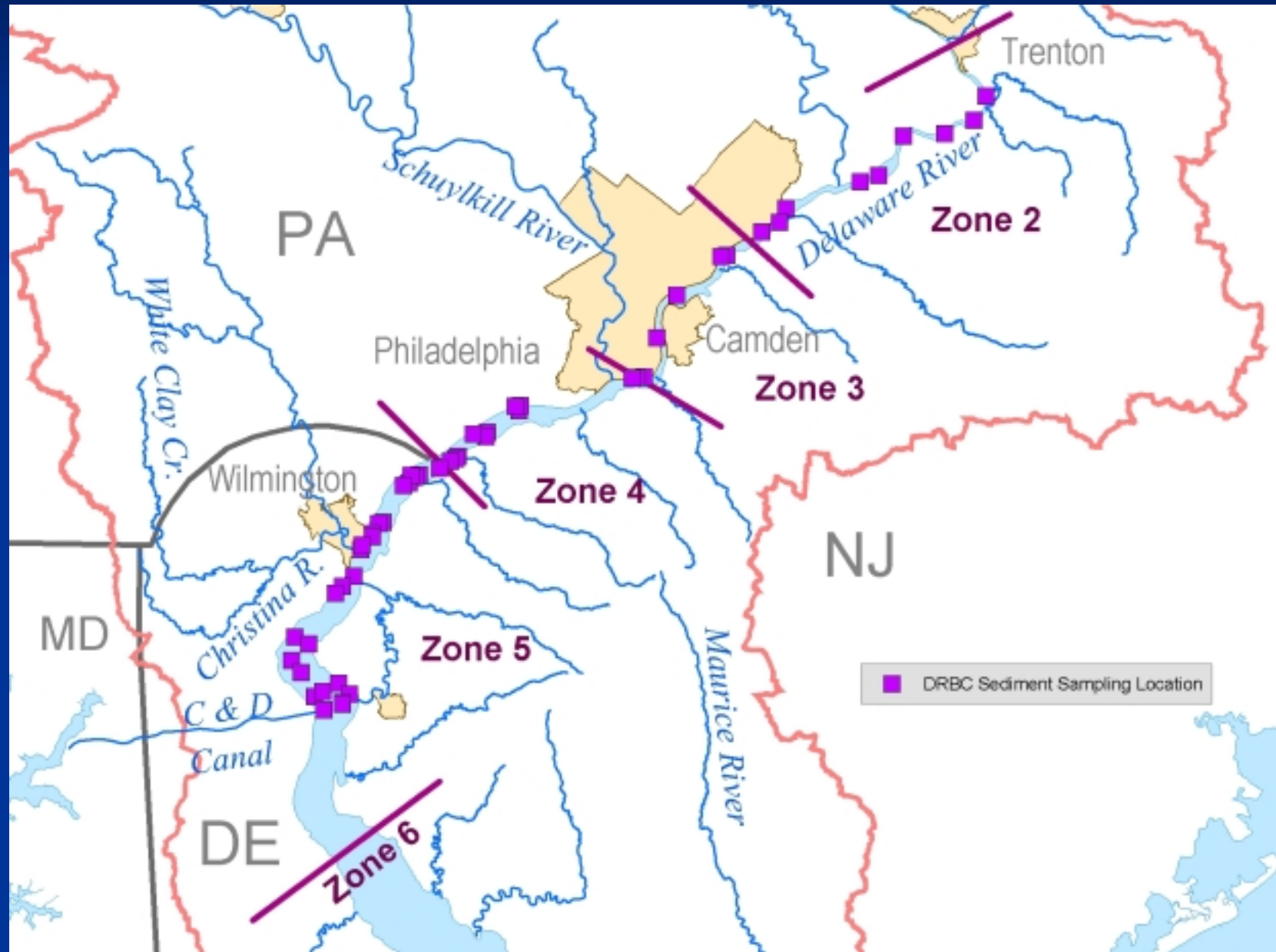
Sampling Methodology

- 51 Samples collected October 2001
- Targeted “active” areas
 - Erosional
 - Depositional
 - Cyclic (cycles of erosion and deposition)
- Targeted upper 5 cm

Chlorinated Pesticides Analyzed

- HCH, alpha
- HCH, beta
- HCH, gamma
- Heptachlor
- Chlordane, oxy
- Chlordane, gamma (trans)
- Chlordane, alpha (cis)
- Nonachlor, trans
- Nonachlor, cis
- 2,4'- DDD
- 2,4'- DDE
- 4,4'- DDE
- 2,4'- DDT
- 4,4'- DDT

DRBC Sediment Sample Locations



Sediment Quality Guidelines

PEL – Probable effect level (Smith et. al. 1996).

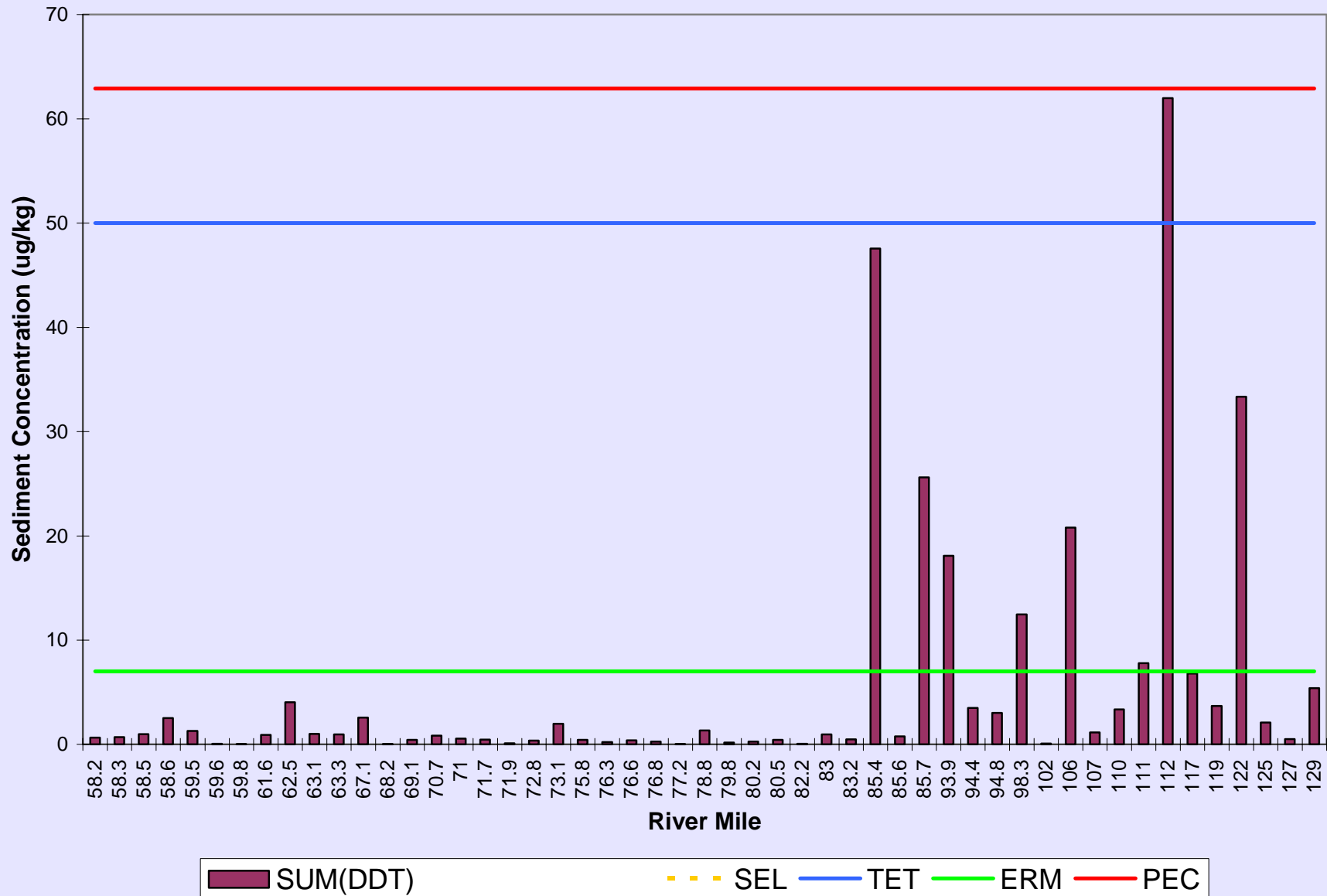
SEL – Severe effect level (Persaud et. Al. 1993).

TET – Toxic effect threshold (EC & MENVIQ 1992).

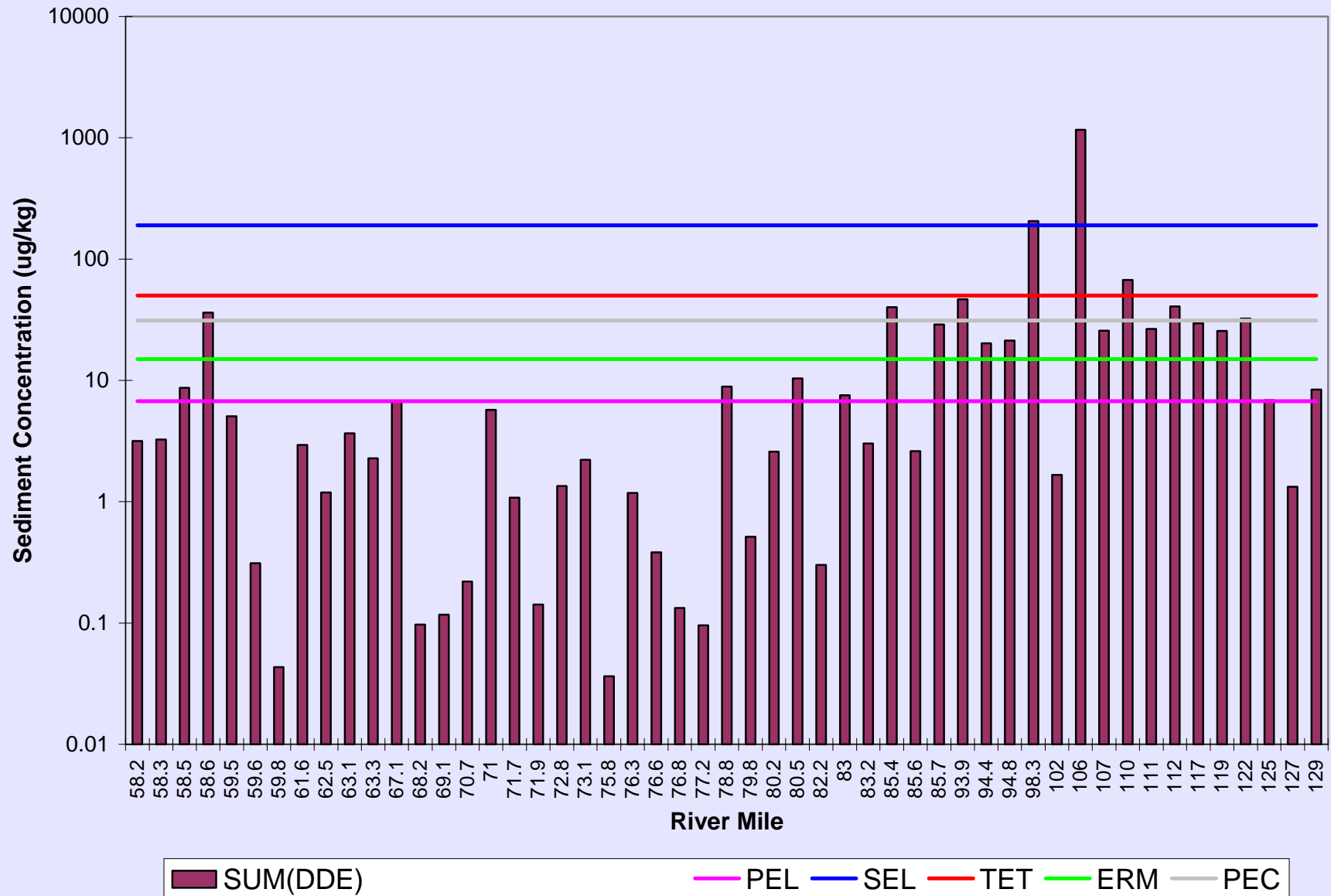
ERM – Effects range medium (Long & Morgan 1991).

PEC – Consensus based probable effect concentration
(MacDonald et al. 2000).

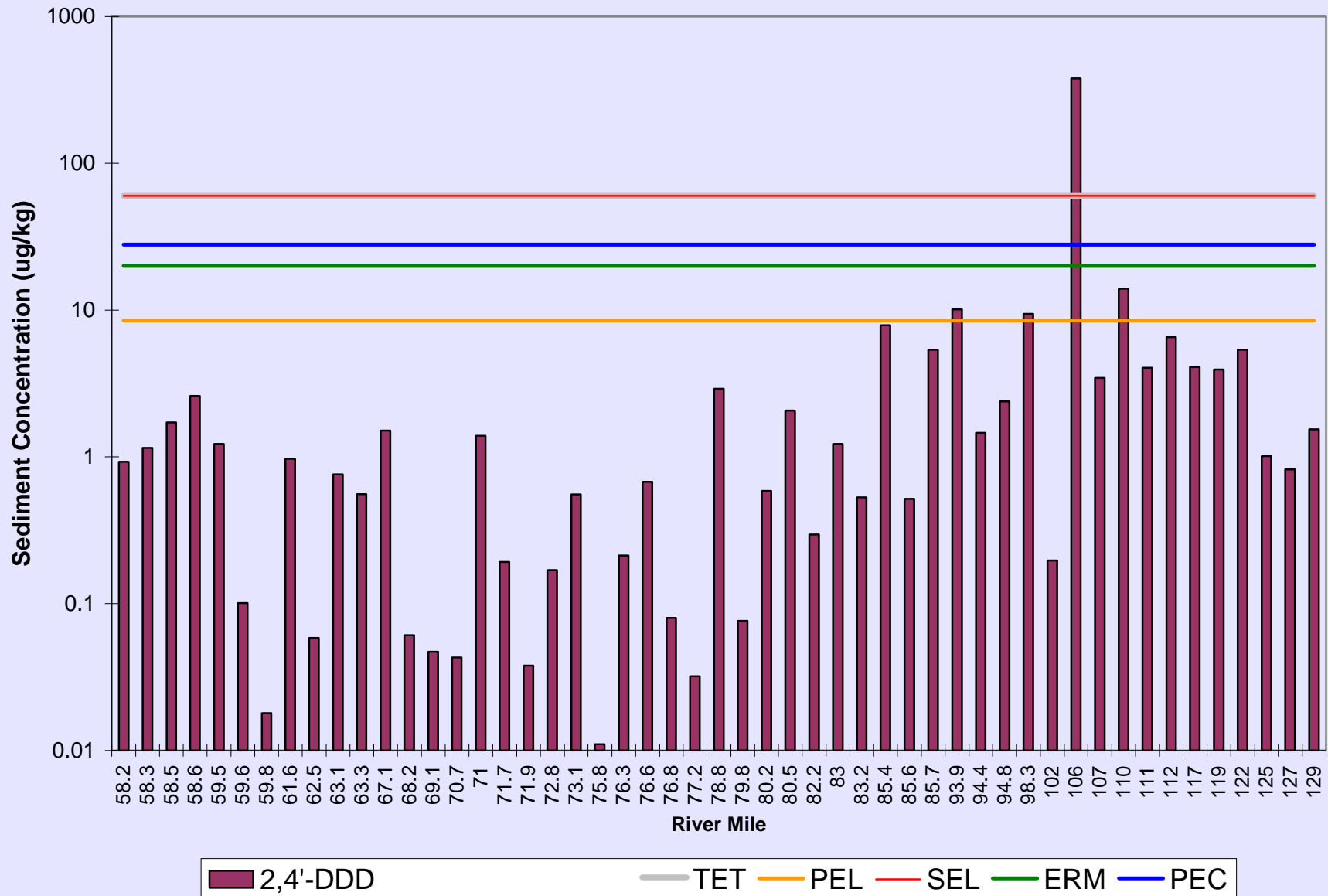
Comparison of Sum(DDT) to Sediment Quality Guidelines



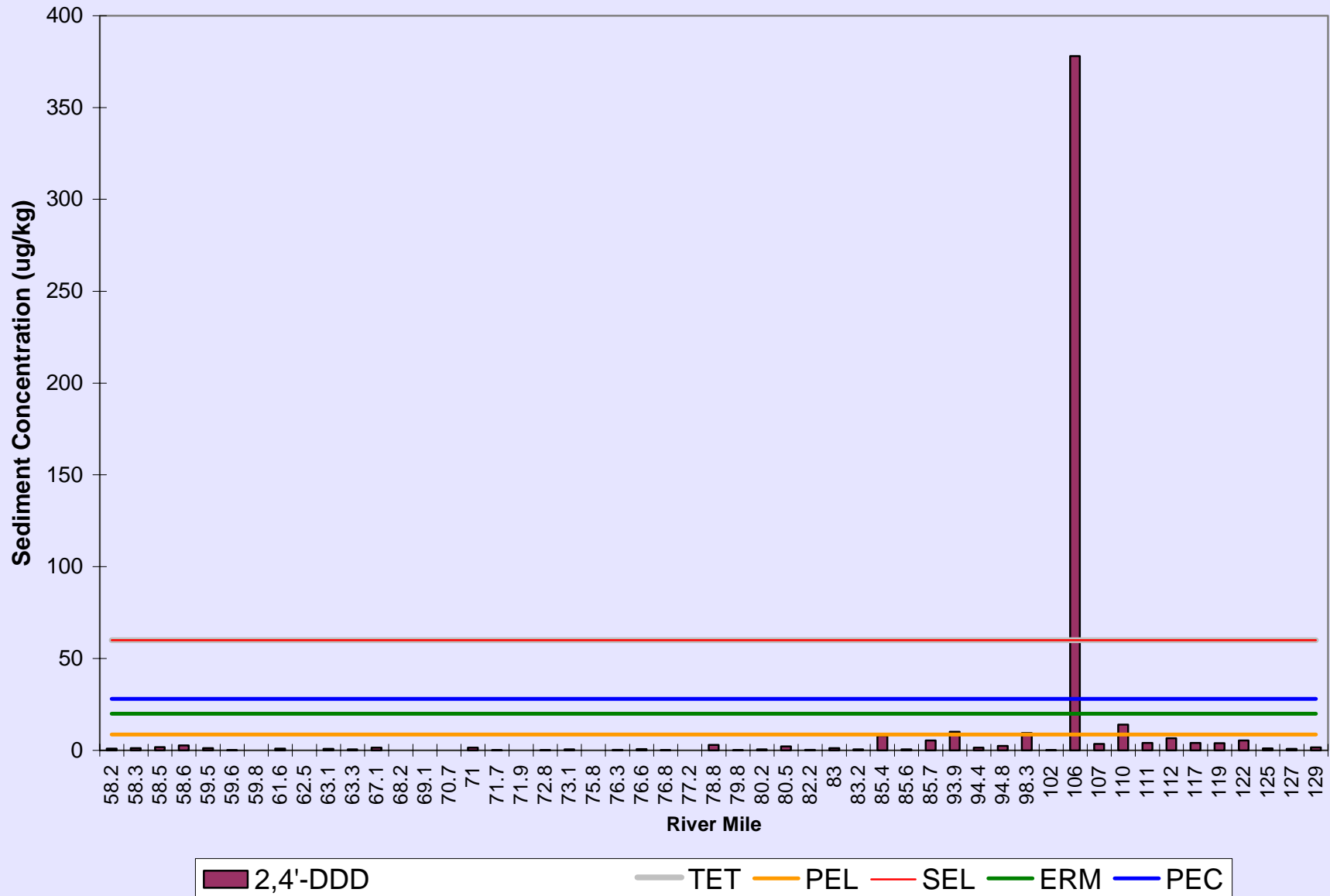
Comparison of Sum(DDE) to Sediment Quality Guidelines (log scale)



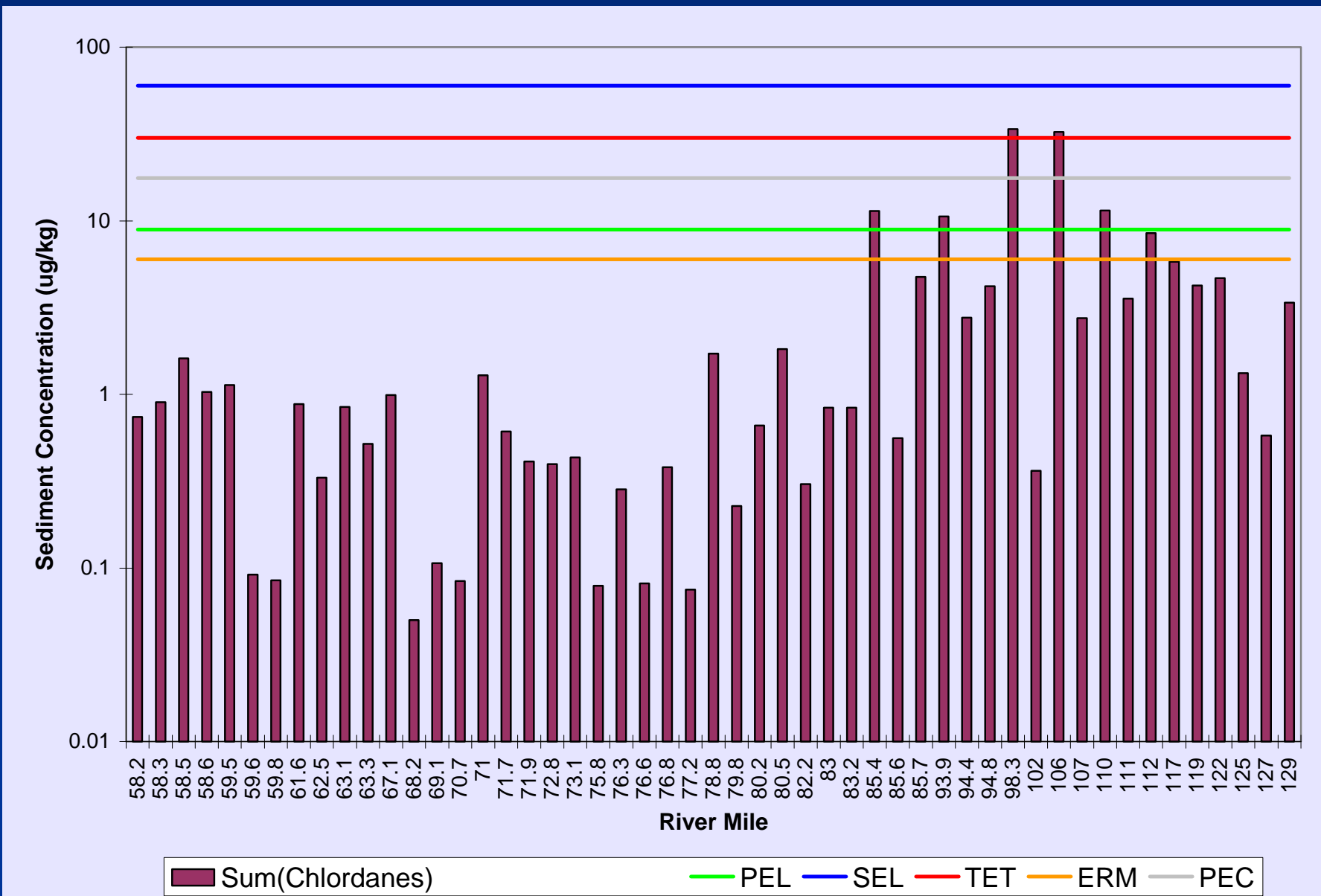
Comparison of Sum(DDD) to Sediment Quality Guidelines (log scale)



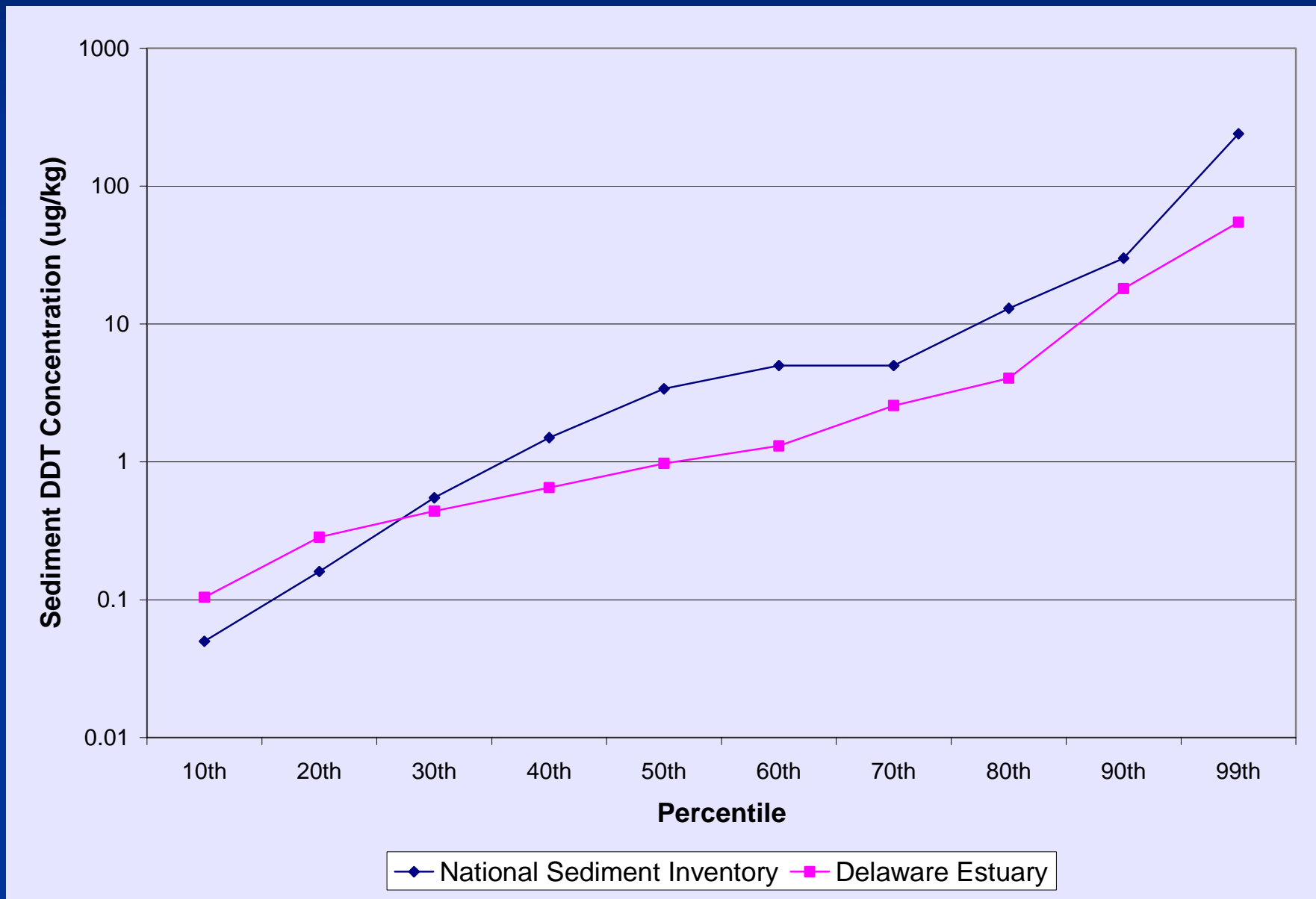
Comparison of Sum(DDD) to Sediment Quality Guidelines



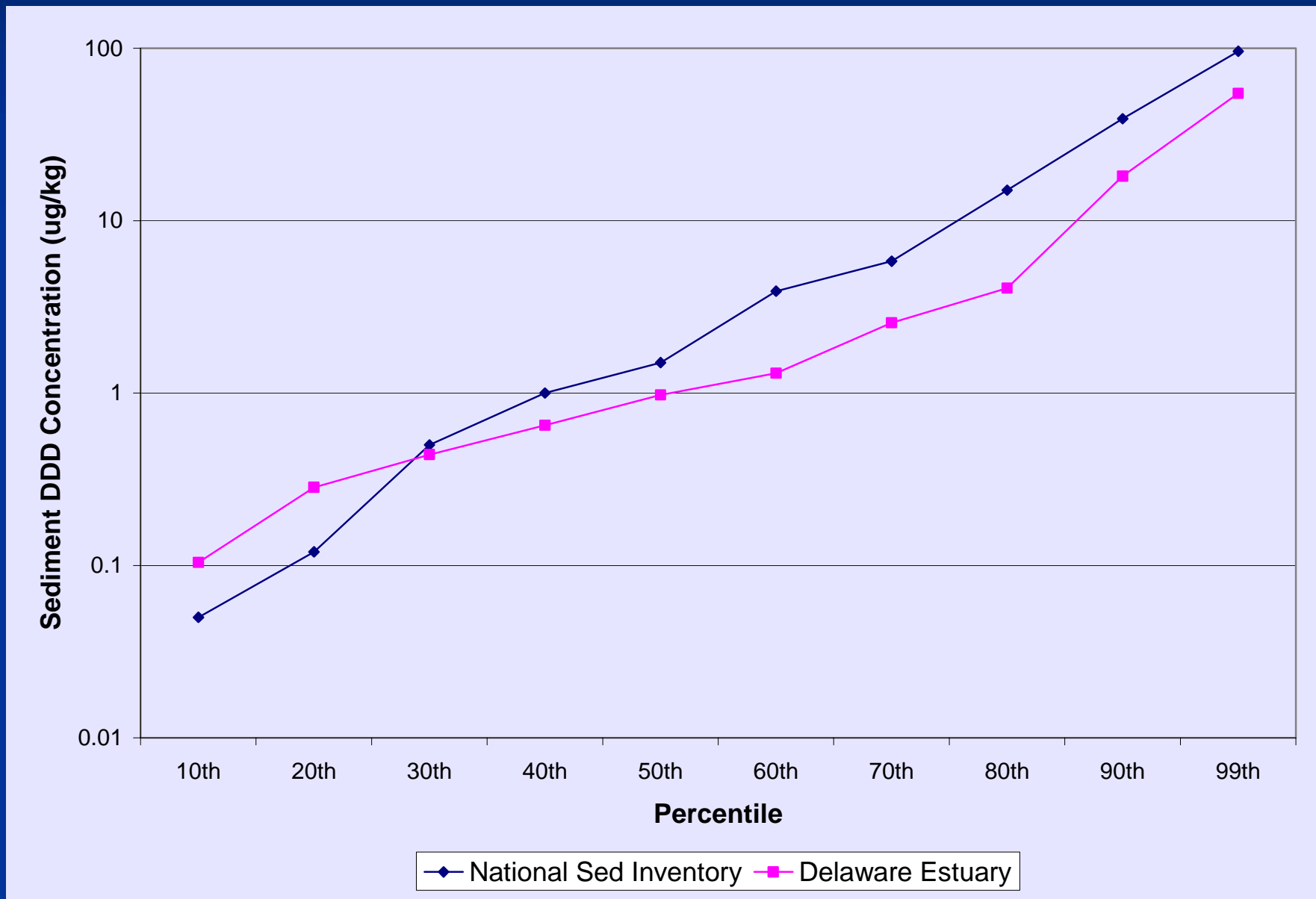
Comparison of Sum(Chlordanes) to Sediment Quality Guidelines (log scale)



Comparison of DDT ranges to National Sediment Inventory



Comparison of DDD ranges to National Sediment Inventory



Comparison of DDE ranges to National Sediment Inventory

