

# **Polychlorinated Biphenyls in the Upper Rio Grande Watershed**

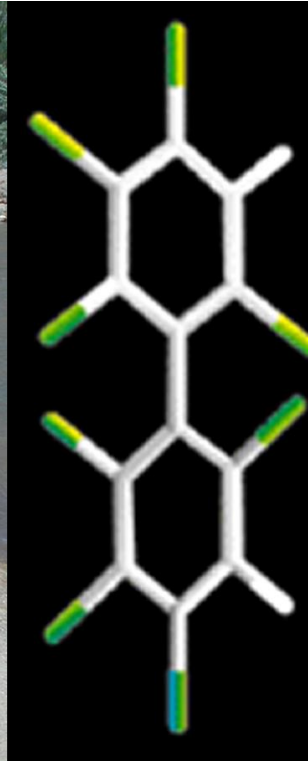
2000-2003 Surface Water, Soils, and Sediment Sampling  
A Cooperative Study

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# PCBs



Concentrations in fish from Cochiti Reservoir and Rio Grande could warrant fish consumption advisories based on EPA guidance

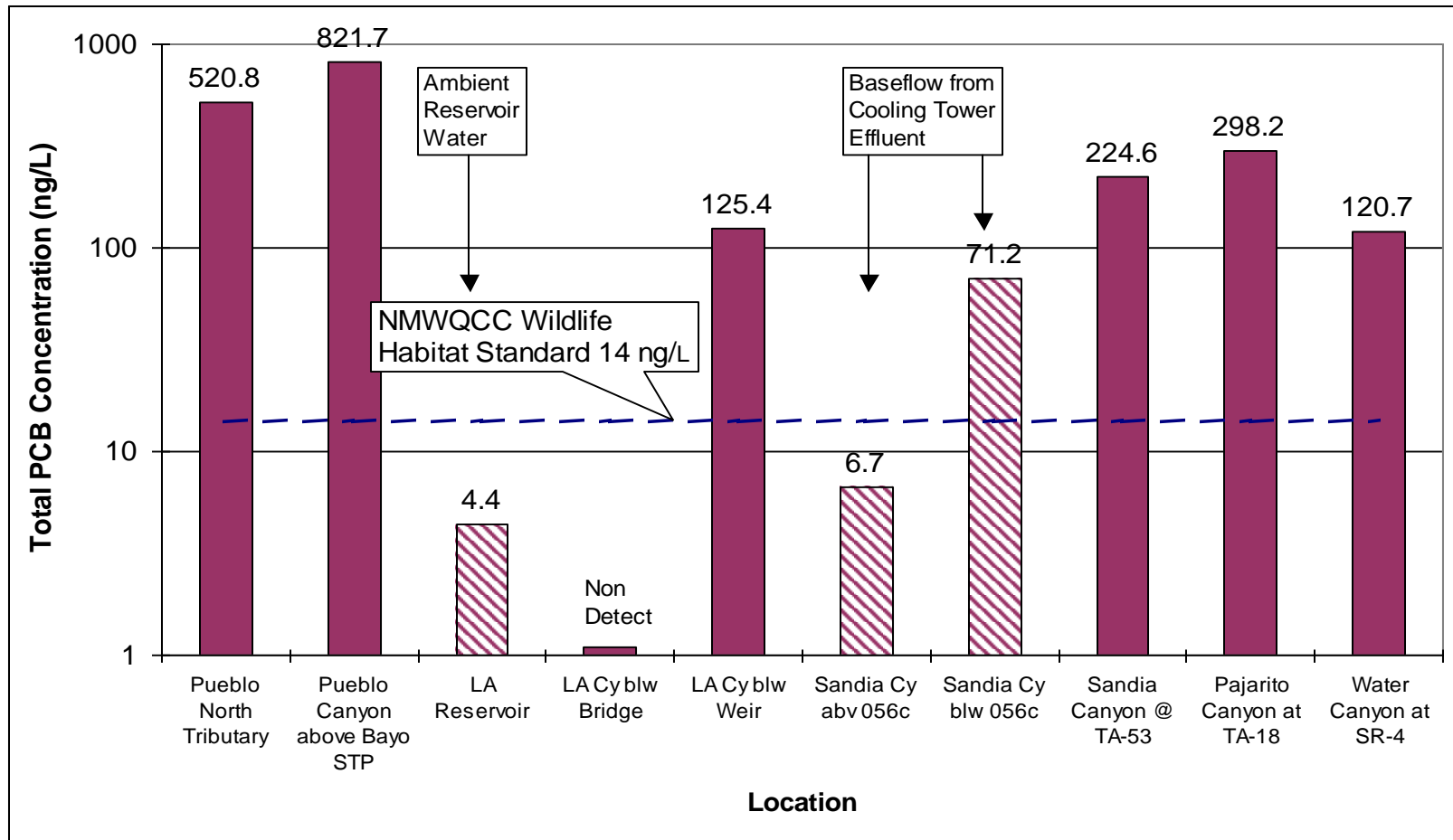
LA-UR-04-7341

# Standards and Analytical Methods

- NMWQCC Standards
  - 0.64 ng/L Human Health Standard
  - 14 ng/L Wildlife Standard
- 500 ng/L EPA MCL for drinking water
- Analytical Methods
  - Aroclor Method 608
    - 8 Aroclors
    - Detection limit -100 ng/L
  - Congener Method 1668
    - 209 Congeners
    - Detection limit - pg/L

# NMED Total PCB Concentration in Surface Water 2000 - 2001

Source: NMED, February 26, 2003

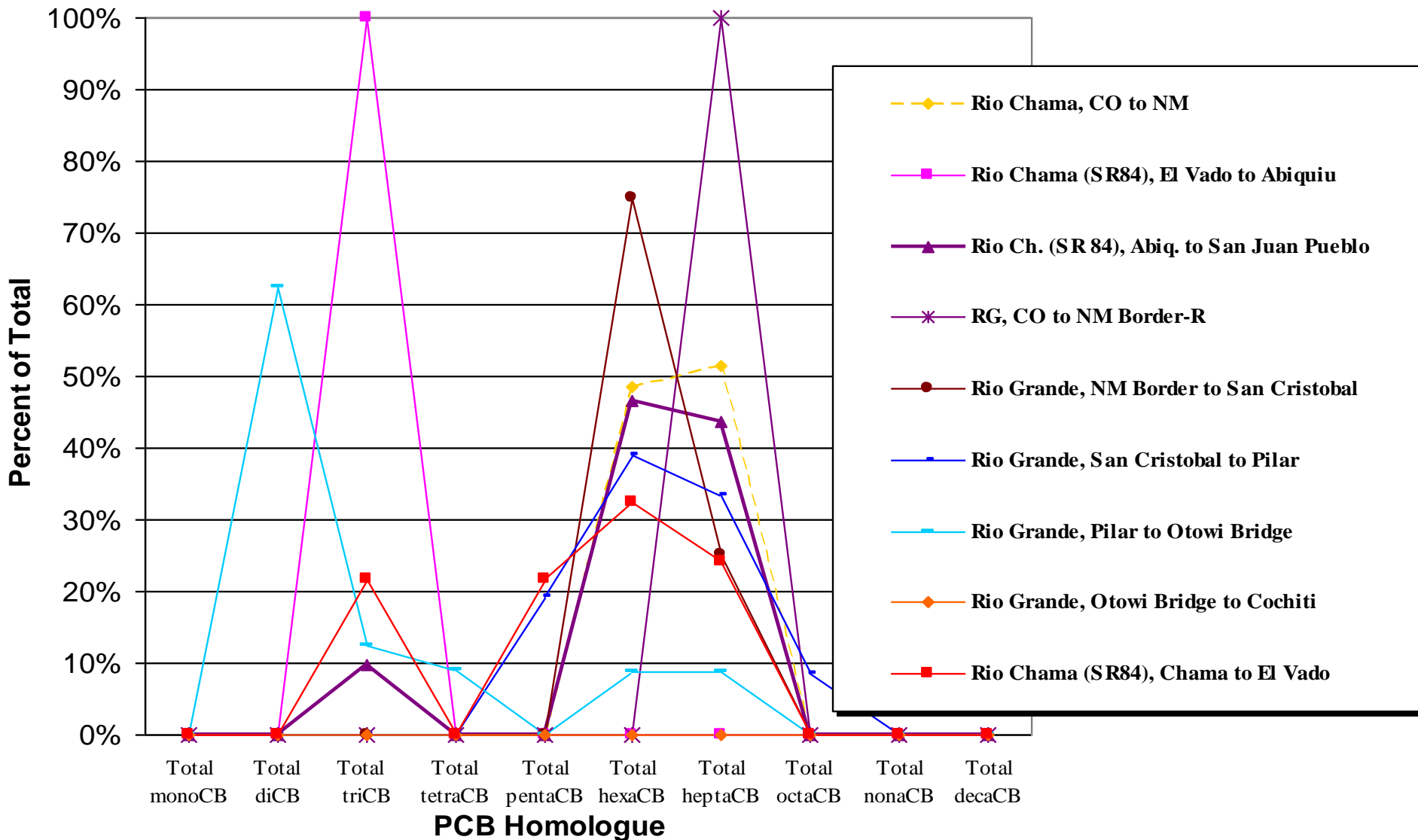


Note: Runoff solid bars, baseflow striped bars  
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# PCB Cooperative Study

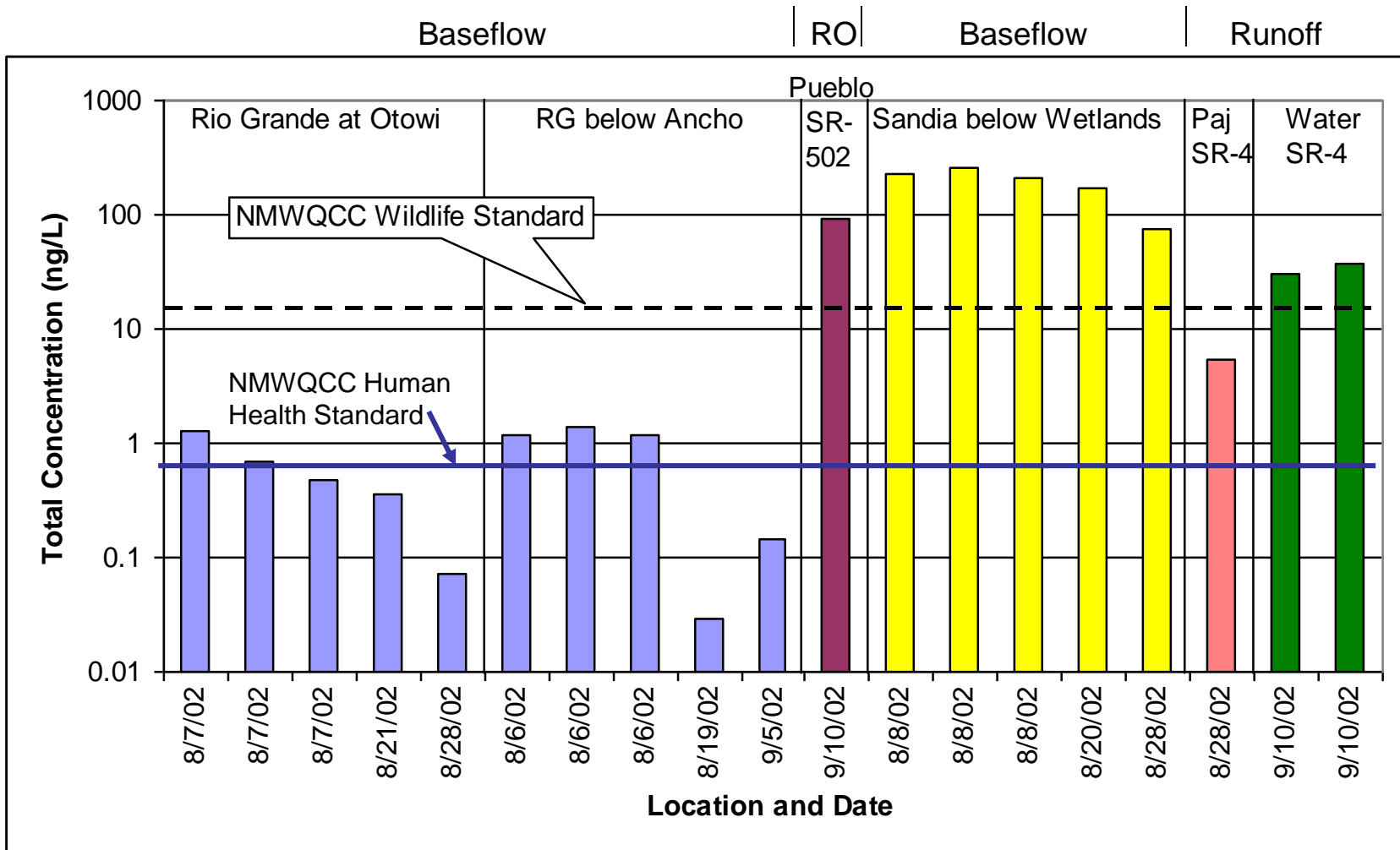
- Participants:
  - Los Alamos County
  - Santa Fe City and County
  - City of Albuquerque
  - LANL
    - Water Quality and Hydrology
    - Ecology
    - Legal
  - DOE
  - San Ildefonso Pueblo
  - Cochiti Pueblo
  - NMED Oversight and Surface Water Quality Bureaus

# PCB Homologue Percent of Total Concentration in Background Soils

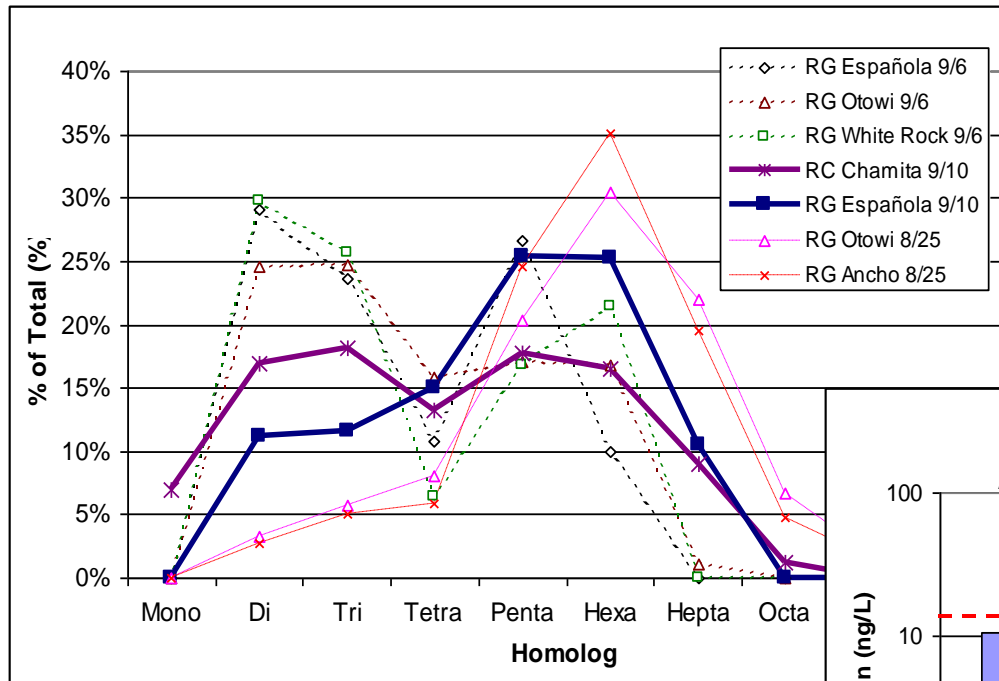


# 2002 Surface Water PCB Results

## Total Concentration in Baseflow and Runoff

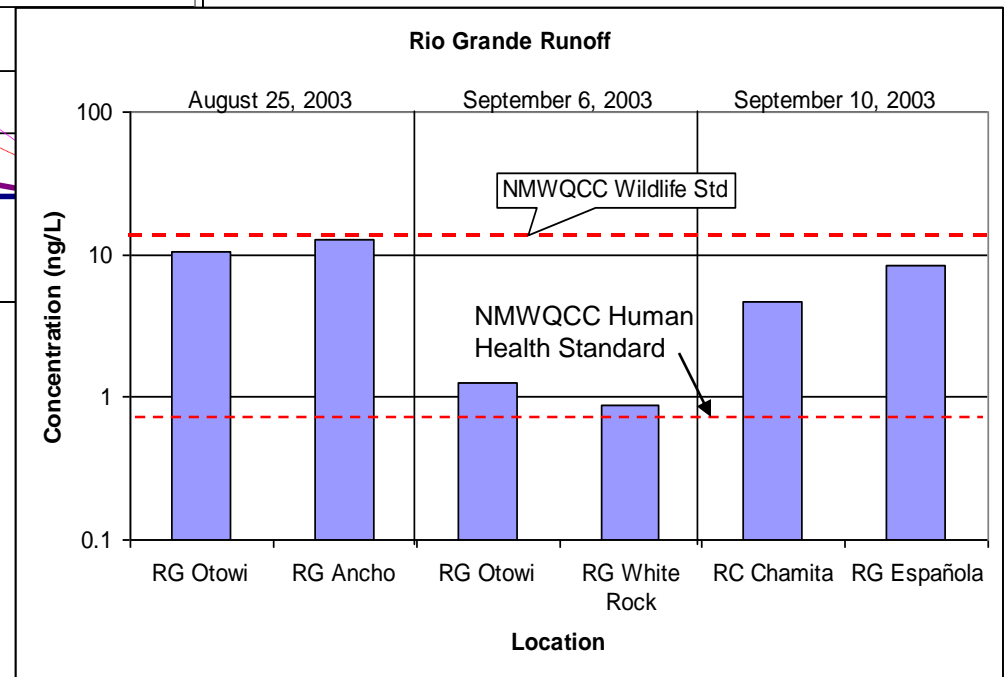


# Rio Grande Runoff Events Sample Results



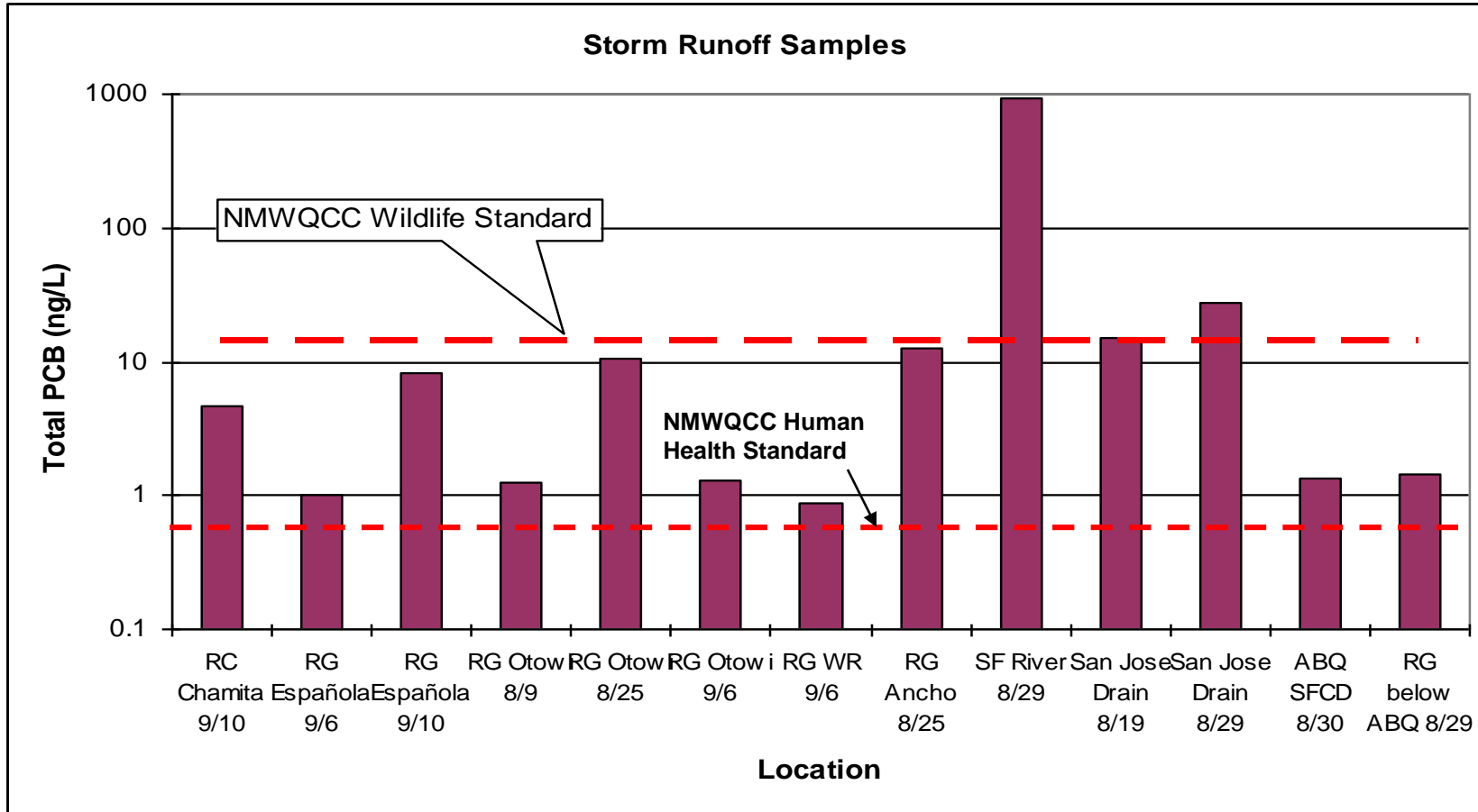
Runoff collected from RG Ancho on 8/25/03 has slightly higher total than at Otowi. Runoff from RG Espanola 9/10/03 has higher PCB concentration than upstream in Rio Chama

Runoff from Rio Grande on different dates have different homolog signatures. Runoff on 8/25/03 has weathered Aroclor 1260 signature, but appears to be coming from upstream of Otowi



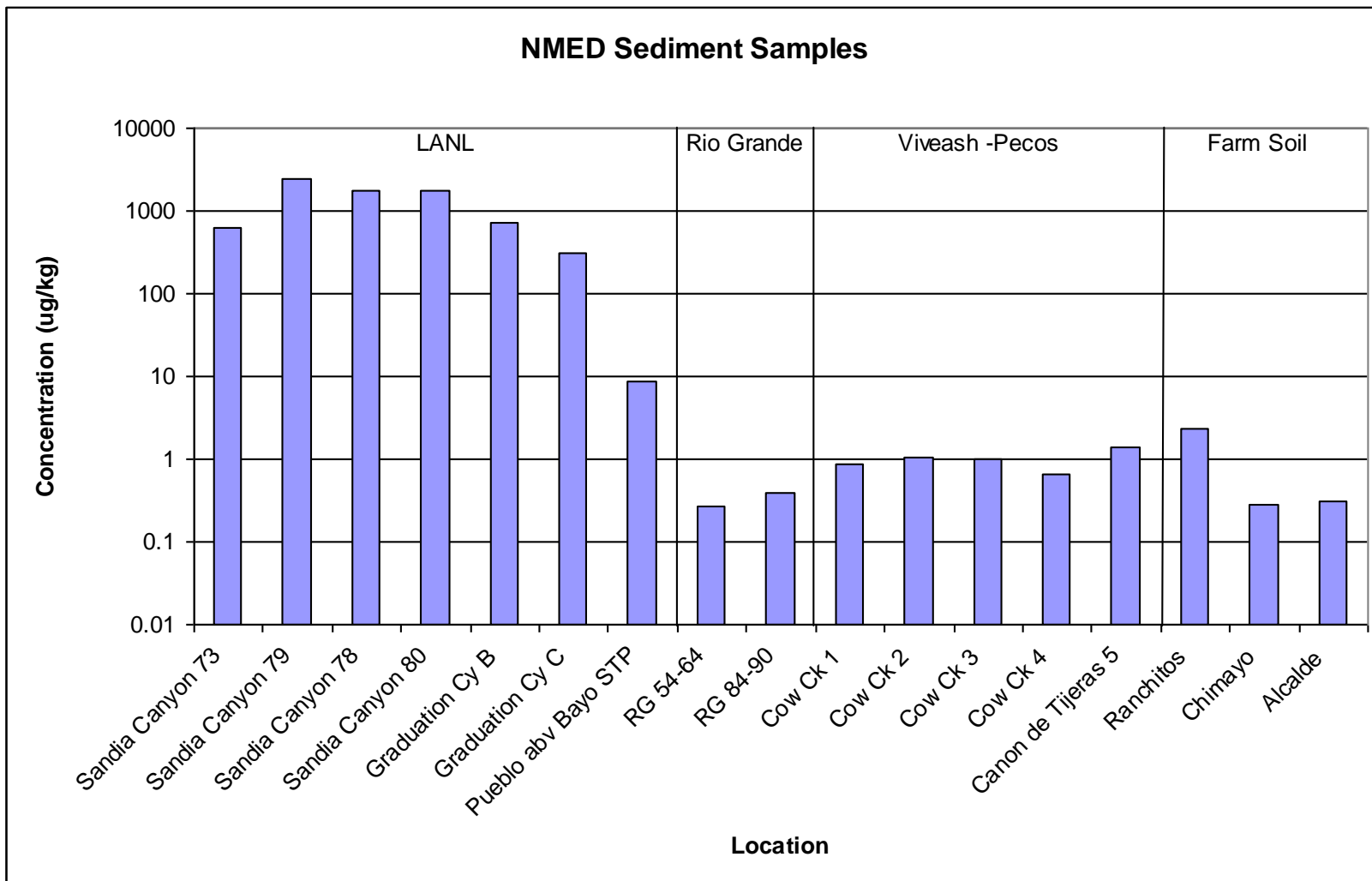


# Regional Runoff Total PCB Results

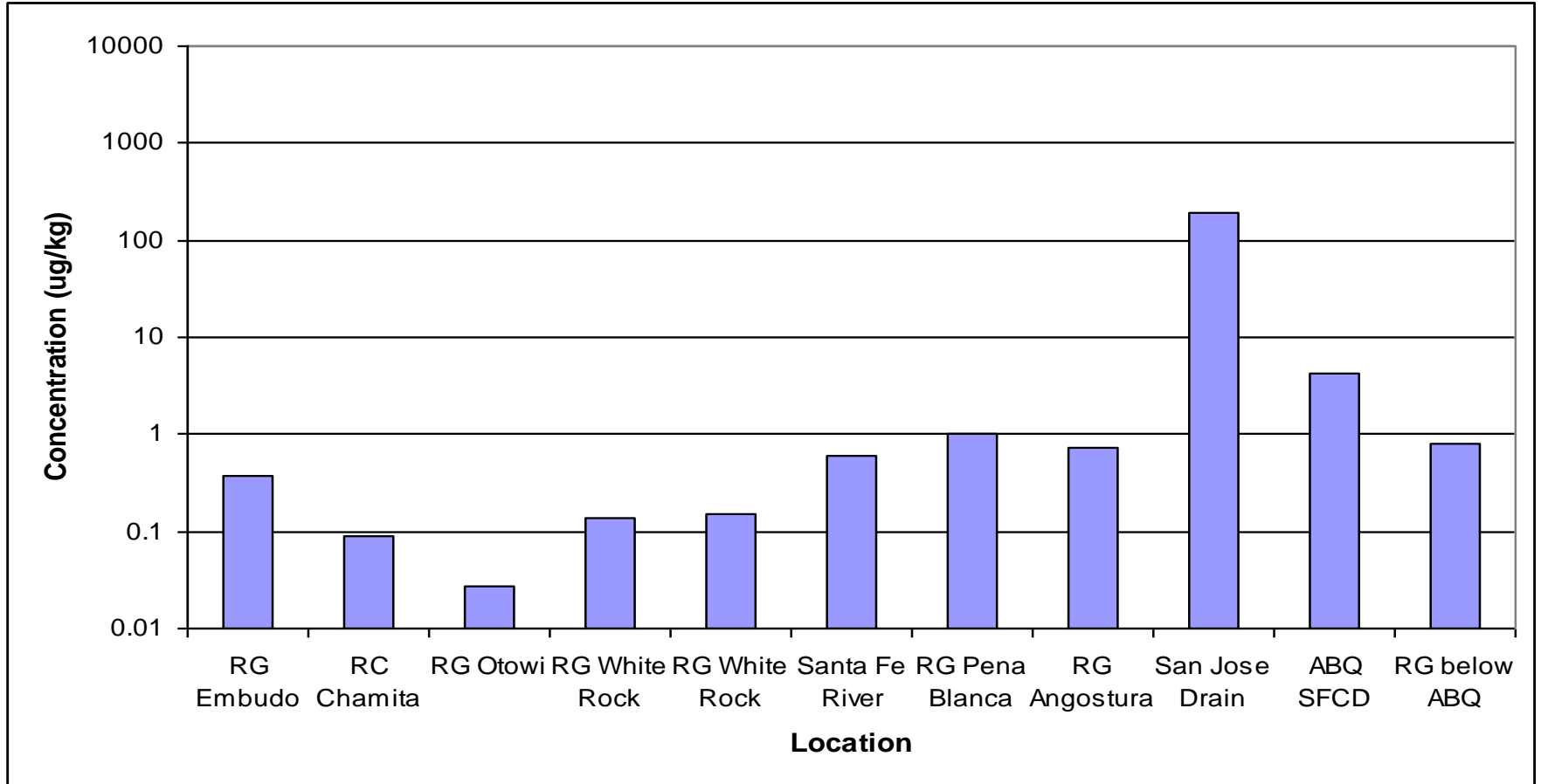


**Highest total PCB concentration in regional runoff samples was 925 ng/L from Santa Fe River above STP. Two samples from the San Jose Drain in ABQ were above the NMWQCC Wildlife Standard of 14 ng/L. Other runoff samples were below the standard.**

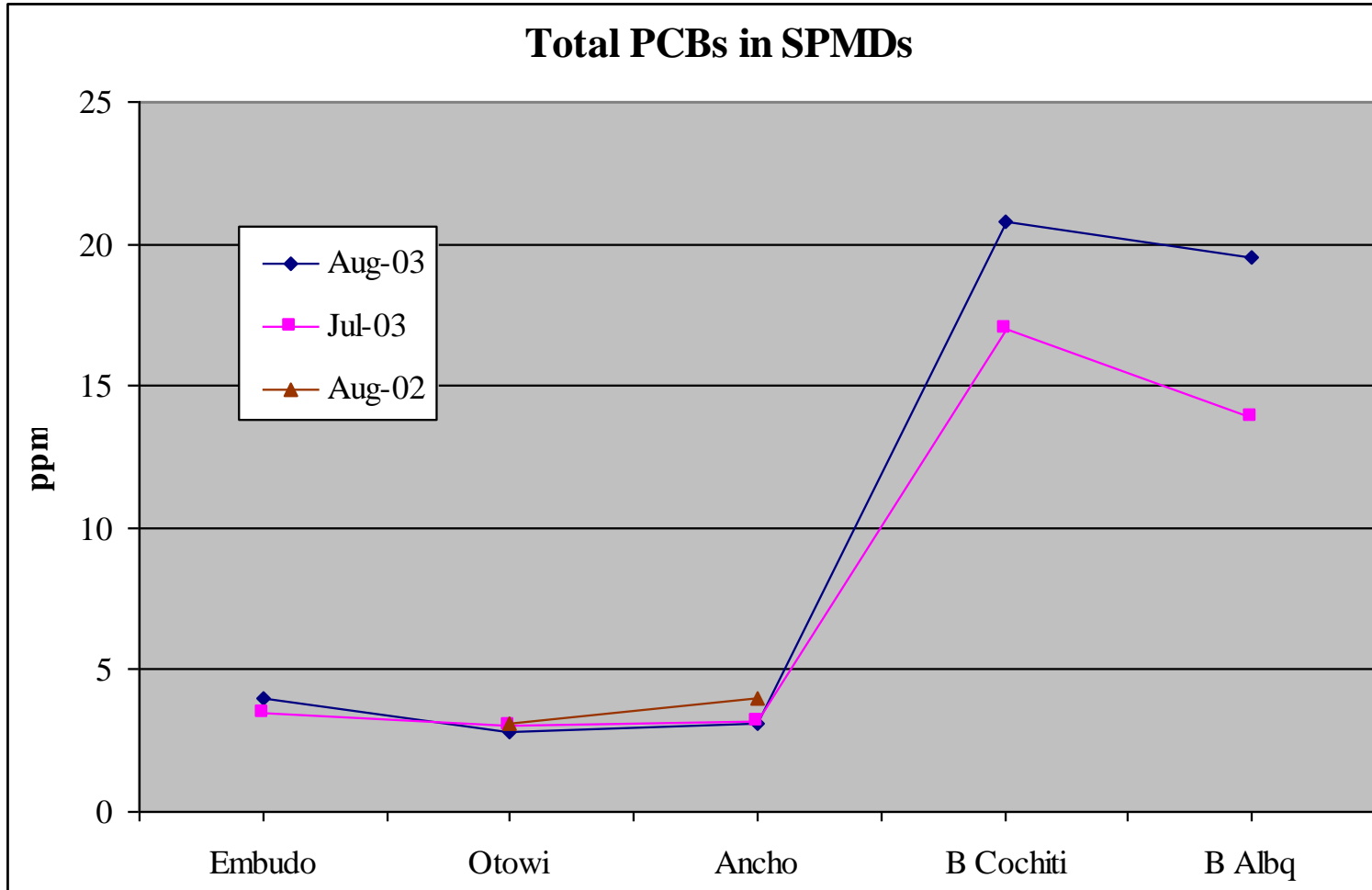
# NMED PCB Results in Sediments



# Regional PCB Results in Sediment

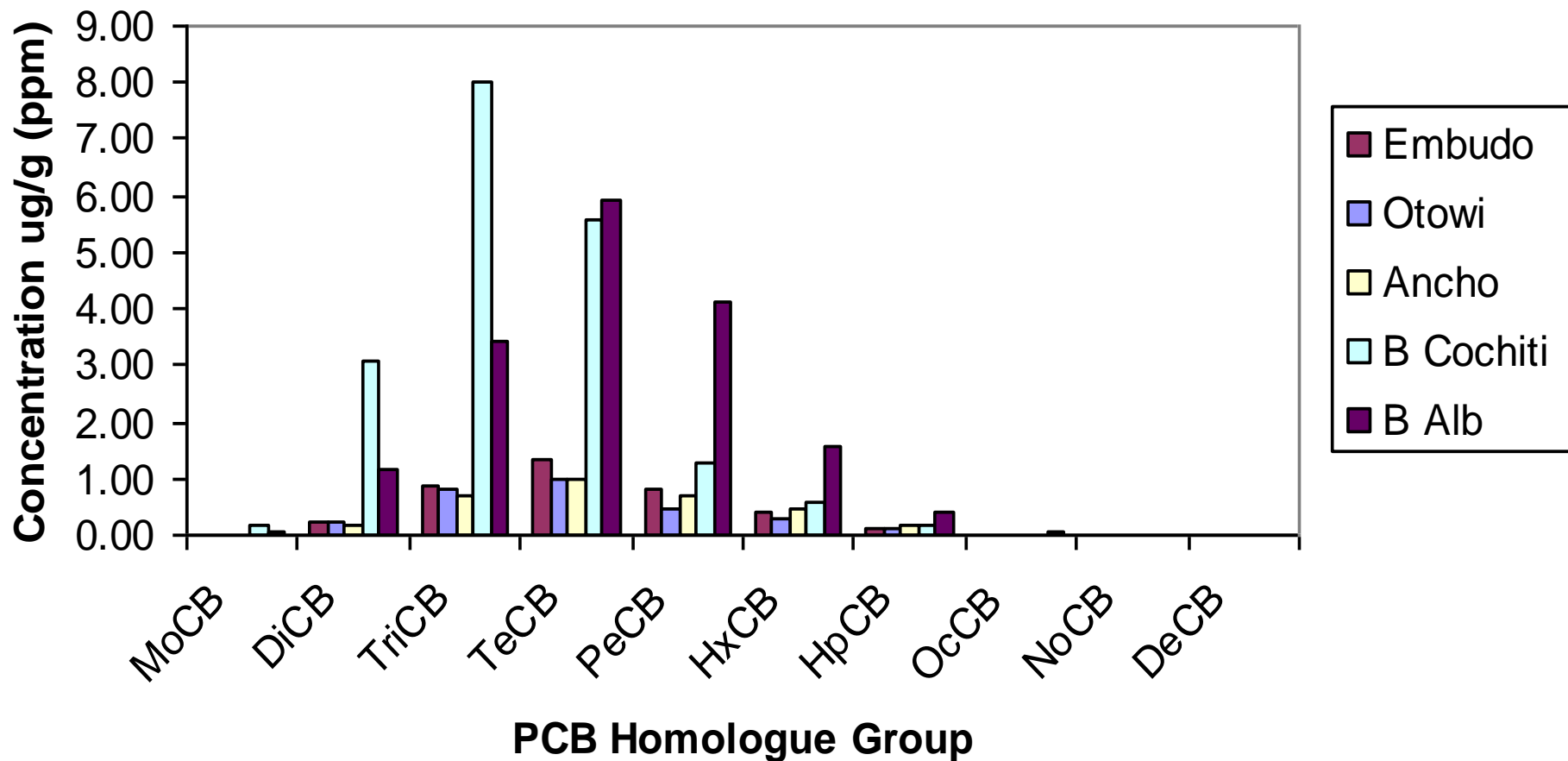


# SPMD Results

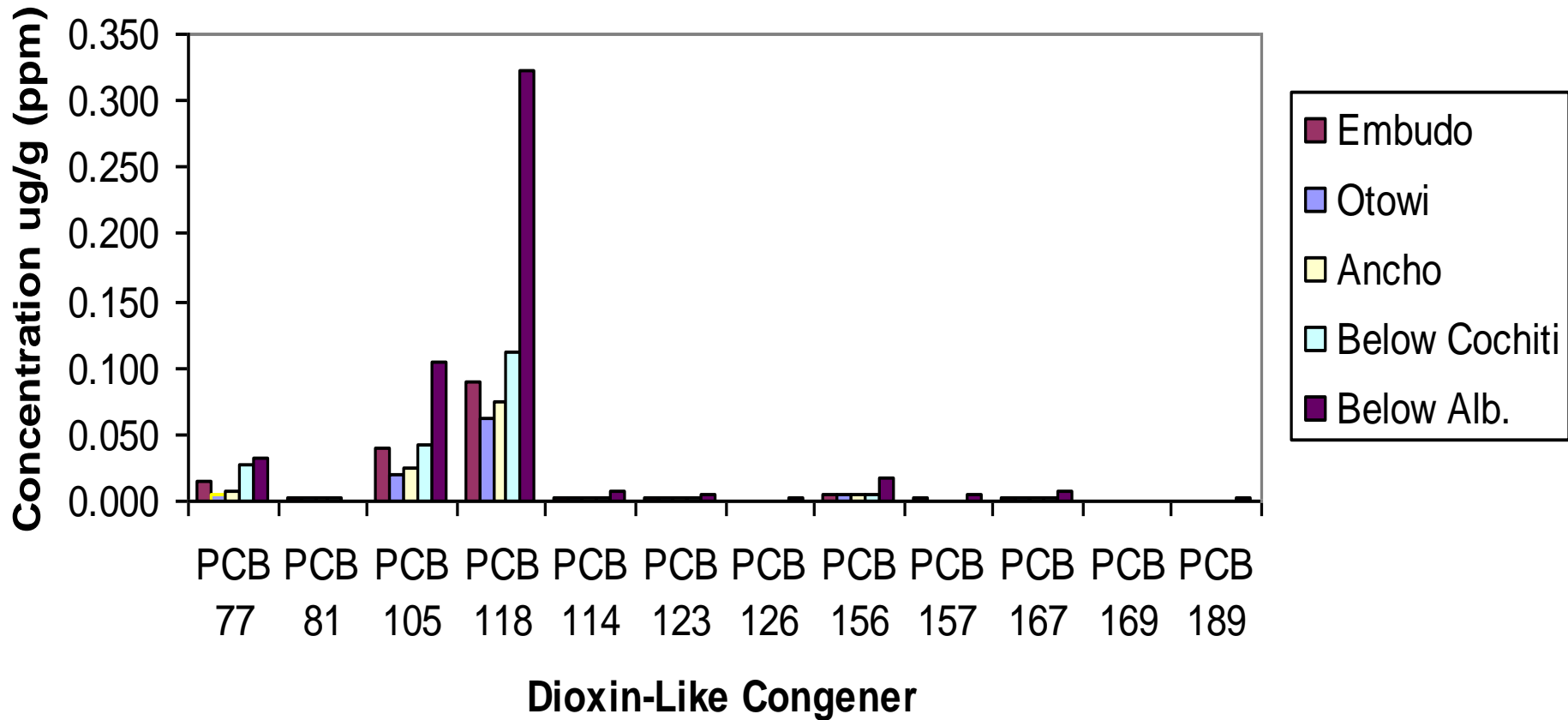


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# PCB Homologue Distribution in SPMDs Along the Rio Grande



# SPMD Dioxin-Like Congener Concentrations Along The Rio Grande



# Key findings:

- 1) There are low levels of PCBs in the upper Rio Grande watershed soils, likely due to atmospheric deposition
- 2) Levels of PCBs in fish may warrant may consumption advisories
- 3) Levels of PCBs in storm runoff in tributaries to the Rio Grande often exceed the wildlife habitat standard
- 4) Levels of PCBs in the Rio Grande do not exceed the Wildlife Habitat standard but often exceed the Human Health standard
- 5) Levels of PCBs in the Rio Grande do not exceed the EPA drinking water standard for PCBs
- 6) Levels of dissolved PCBs in the Rio Grande (based on fat bag data) increase below Cochiti Reservoir and remain elevated through Albuquerque
- 7) The levels of toxic congeners (based on fat bag data) increase from Cochiti Reservoir through Albuquerque