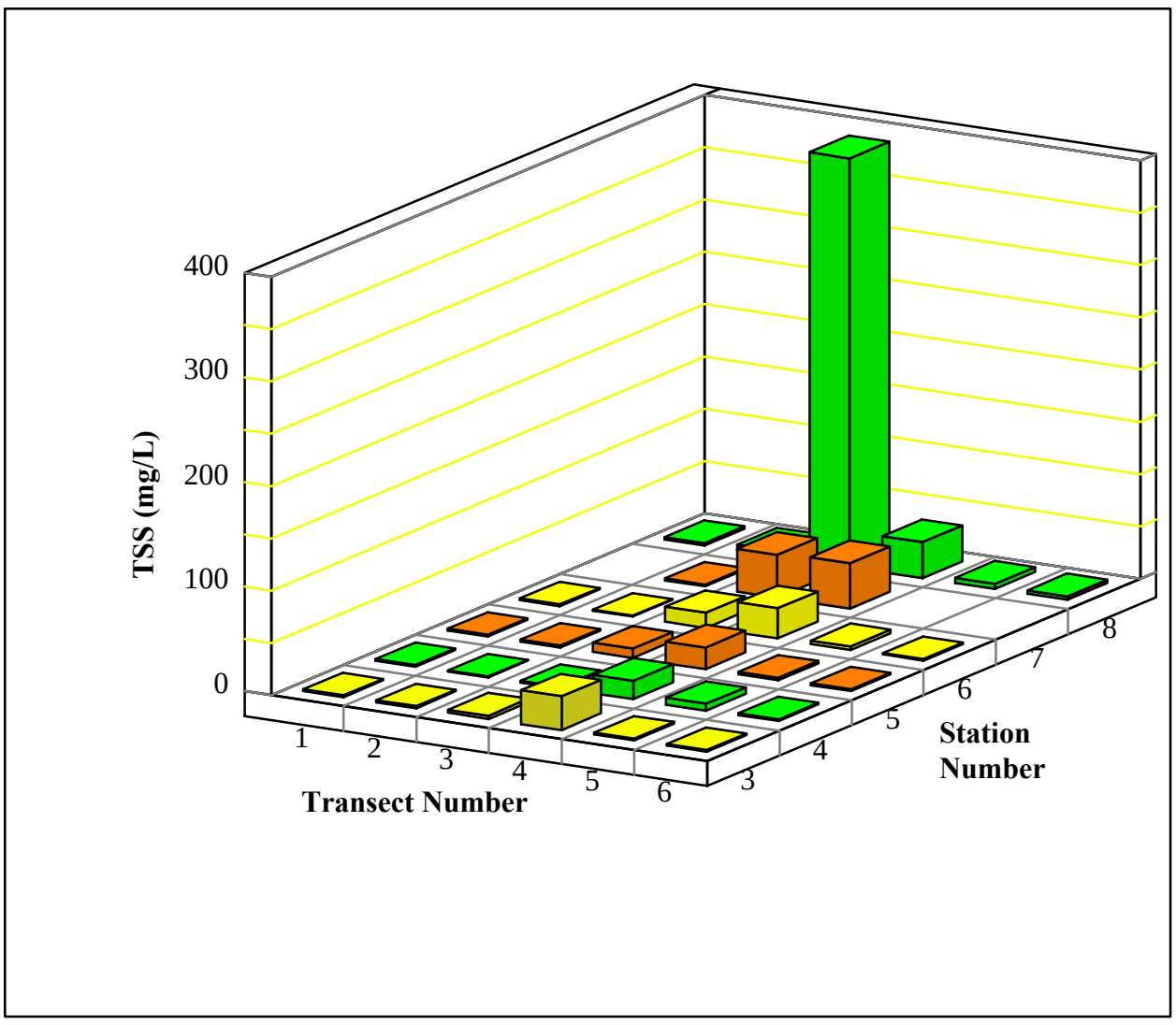
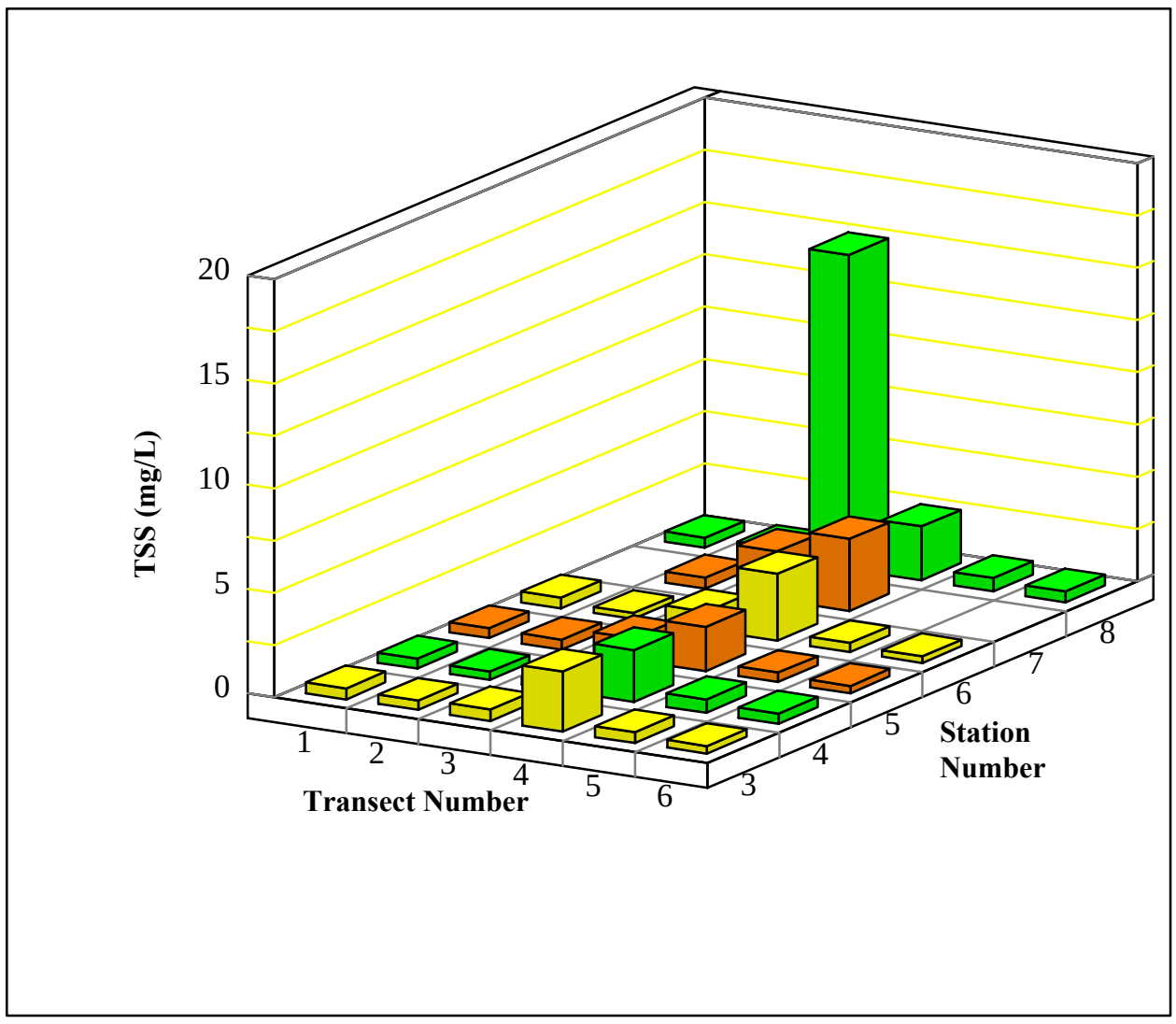
Figure 3-1
Total Suspended Solids Concentration [TSS],
Upper Hudson River Water Column Transects



Source: TAMS/Gradient Database

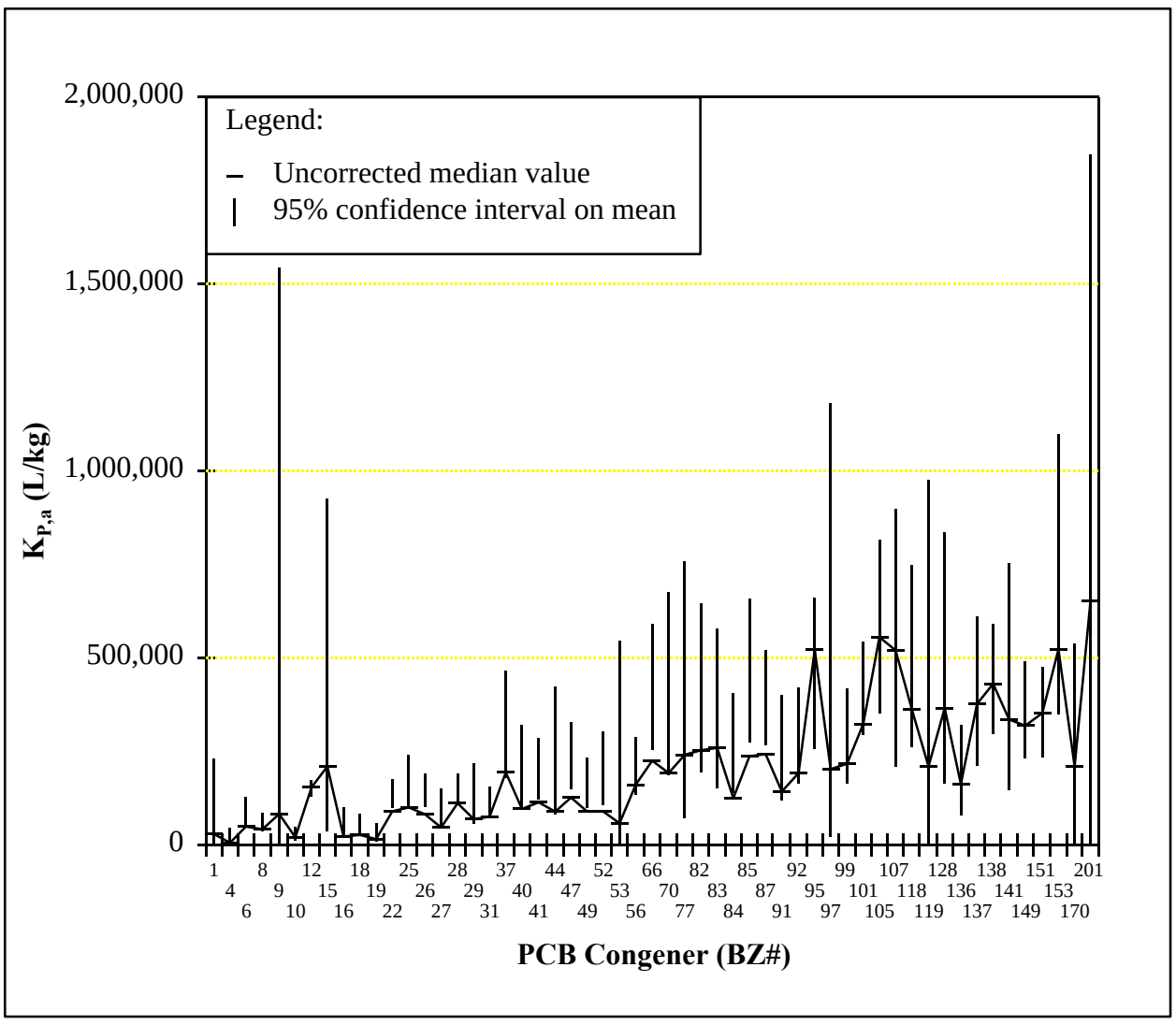
Figure 3-2
Particulate Organic Carbon [POC],
Upper Hudson River Water Column Transects



Note: POC concentration calculated from weight loss on ignition data.

Source: TAMS/Gradient Database

Figure 3-3
Two-Phase Partition Coefficients to Particulate Matter ($K_{P,a}$) for Water-Column Transects



Notes:

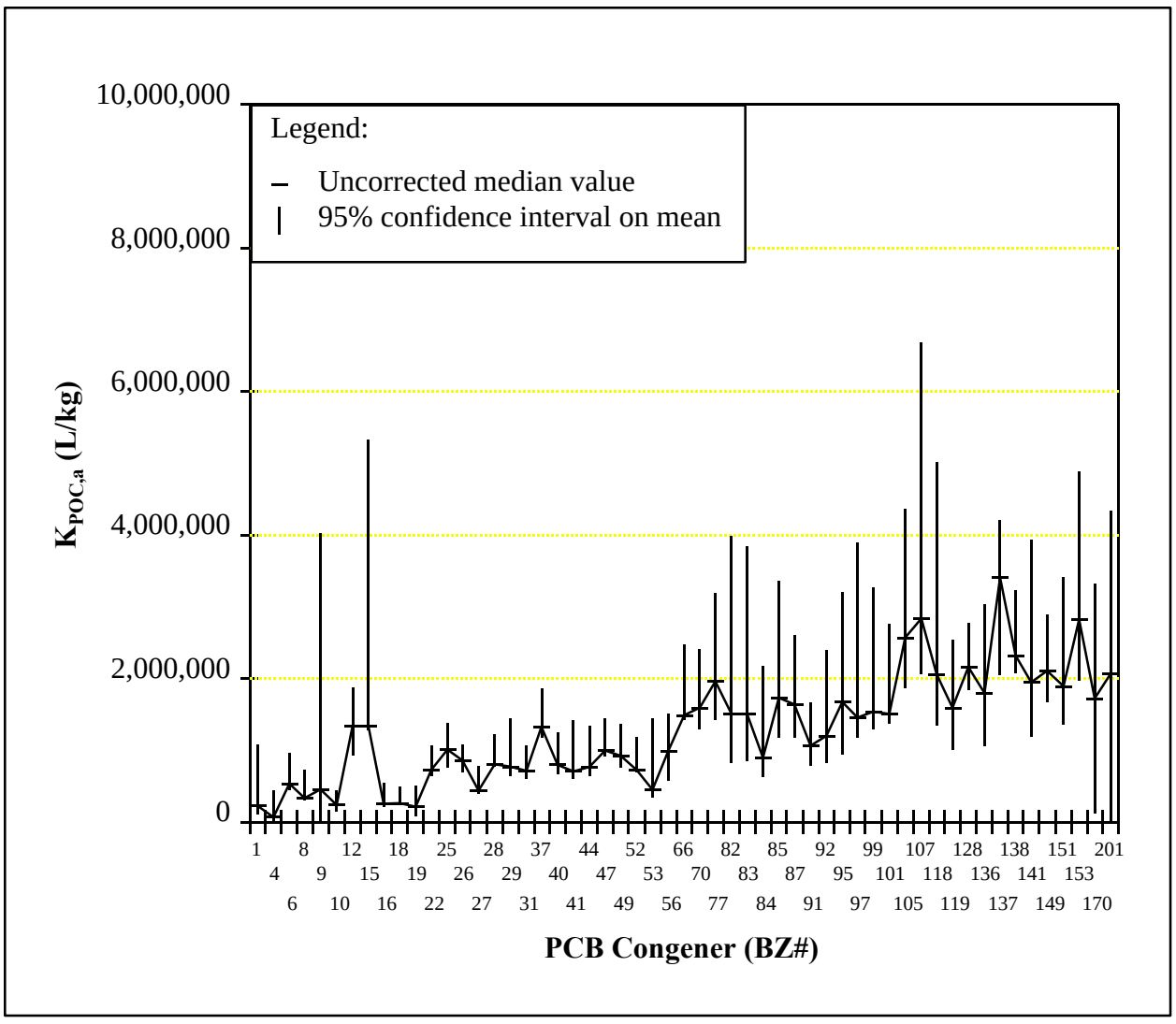
a. No temperature correction.

b. Plot includes congeners having at least three samples quantitated for both dissolved and particulate phases.

c. For some congeners with skewed sample distributions the median may be below the confidence interval on the mean.

Source: TAMS/Gradient Database

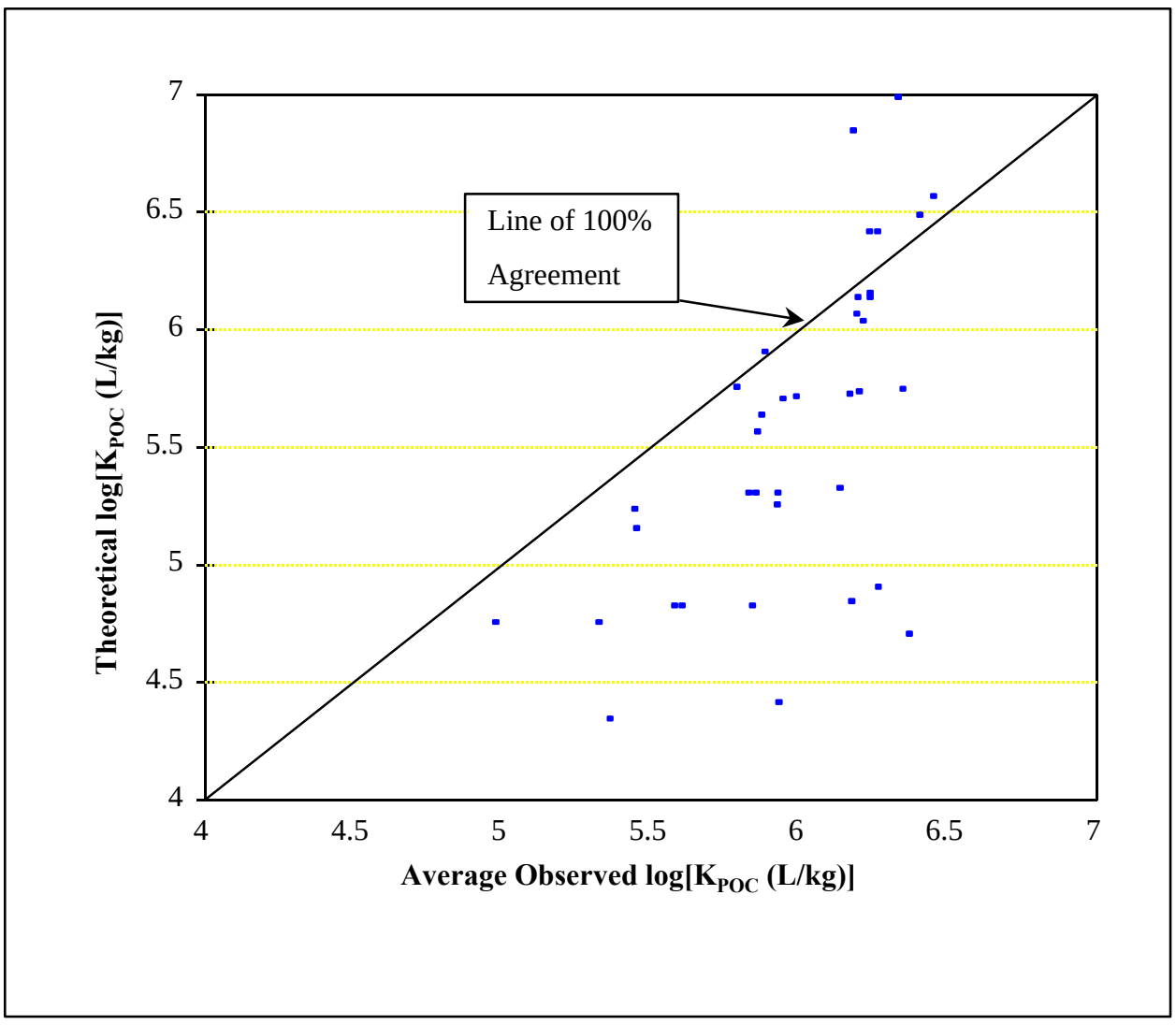
Figure 3-4
Two-Phase Partition Coefficients to Particulate Organic Carbon ($K_{POC,a}$) for Water-Column Transects



Notes:
a. No temperature correction.
b. Plot includes congeners having at least three samples quantitated for both dissolved and particulate phases.

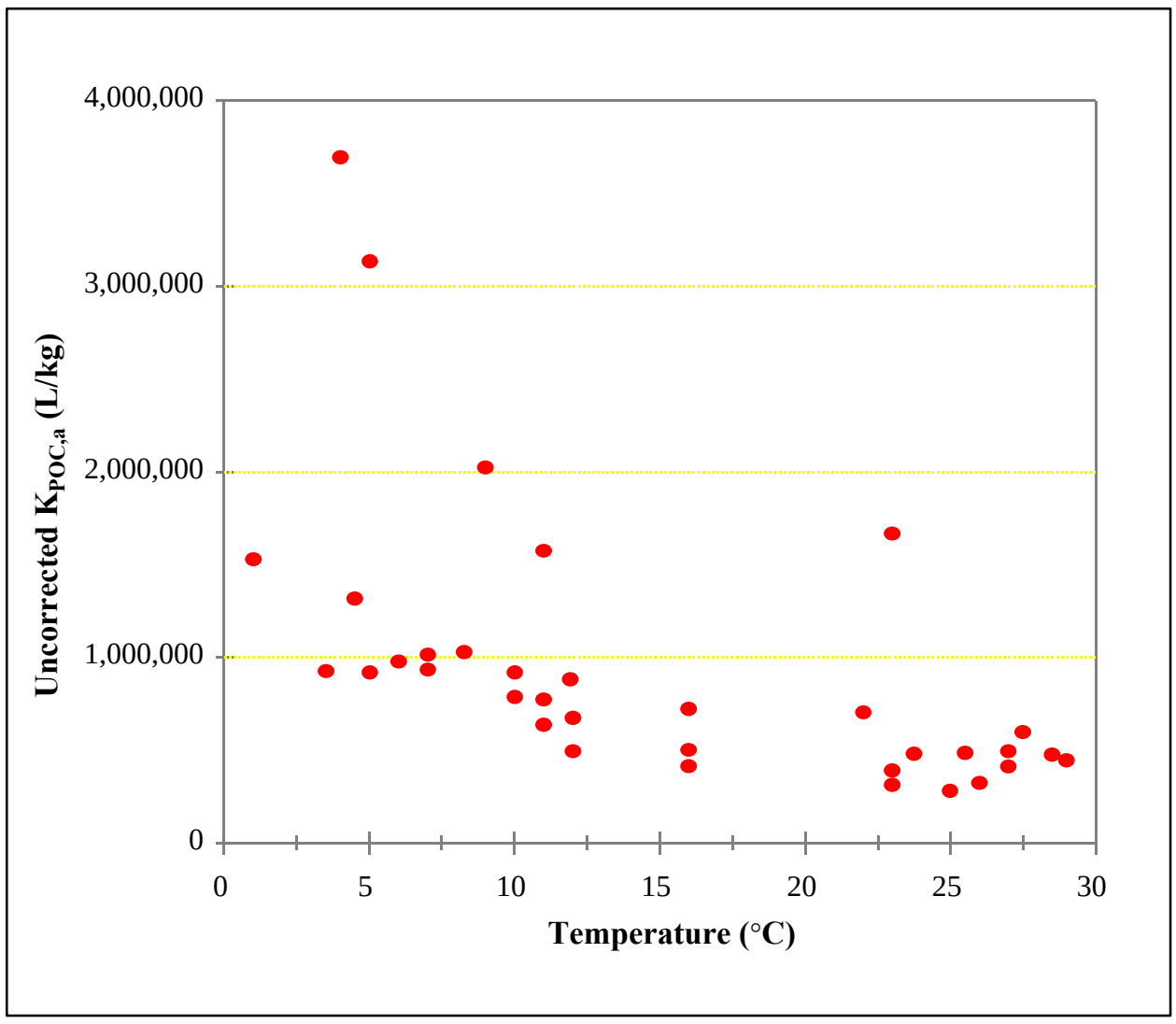
Source: TAMS/Gradient Database

Figure 3-5
Observed vs Theoretical Partitioning to Particulate Organic Carbon for PCB Congeners in the Freshwater Hudson



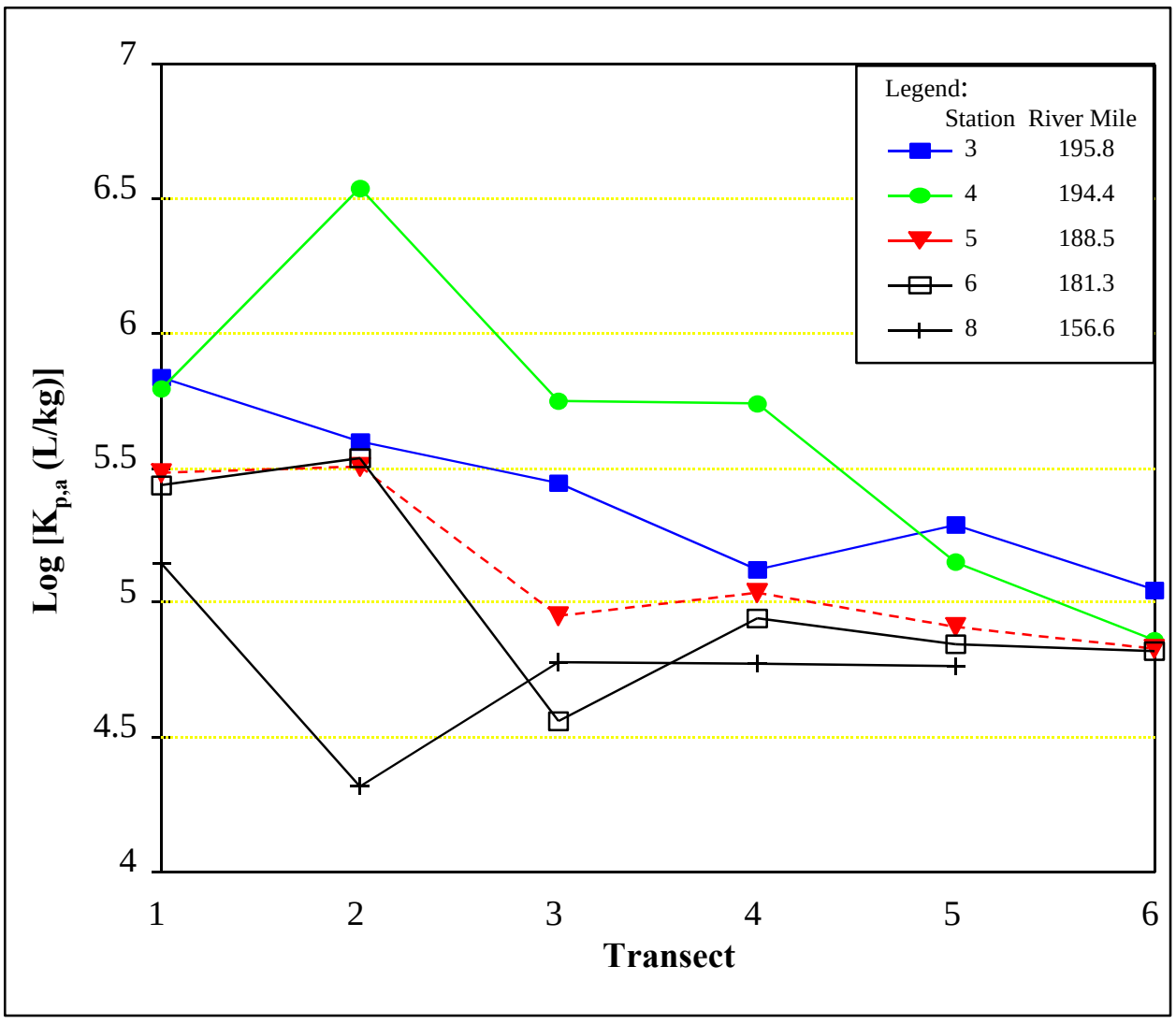
Note: Theoretical values from Mackay *et al.* (1992).

Figure 3-6
$K_{POC,a}$ Estimates vs. Water Temperature for BZ#52,
Hudson River Water-Column Transect Samples



Source: TAMS/Gradient Database

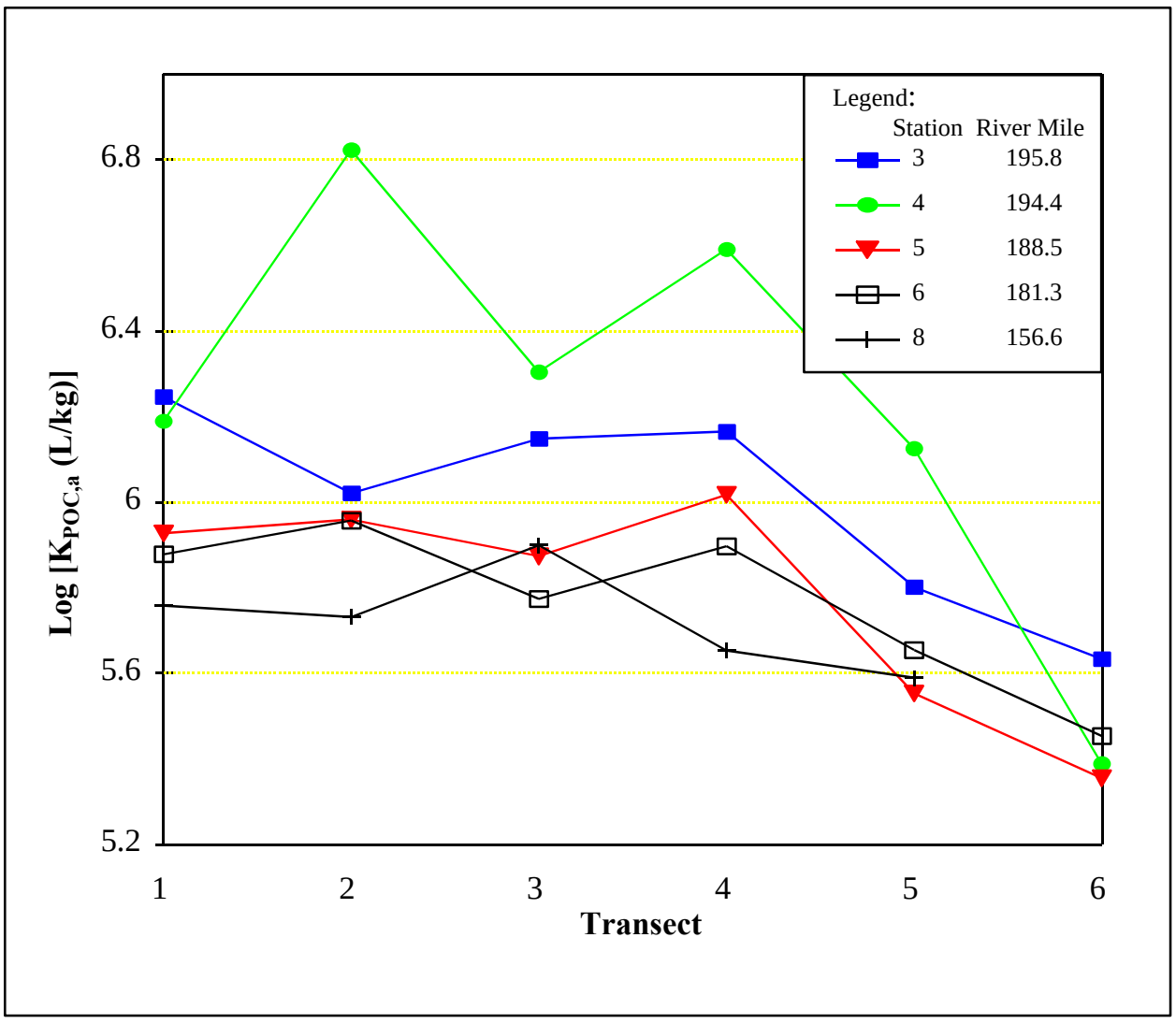
Figure 3-7
Variation in log $K_{P,a}$ by Transect for BZ#44



Note: Estimates without temperature correction.

Source: TAMS/Gradient Database

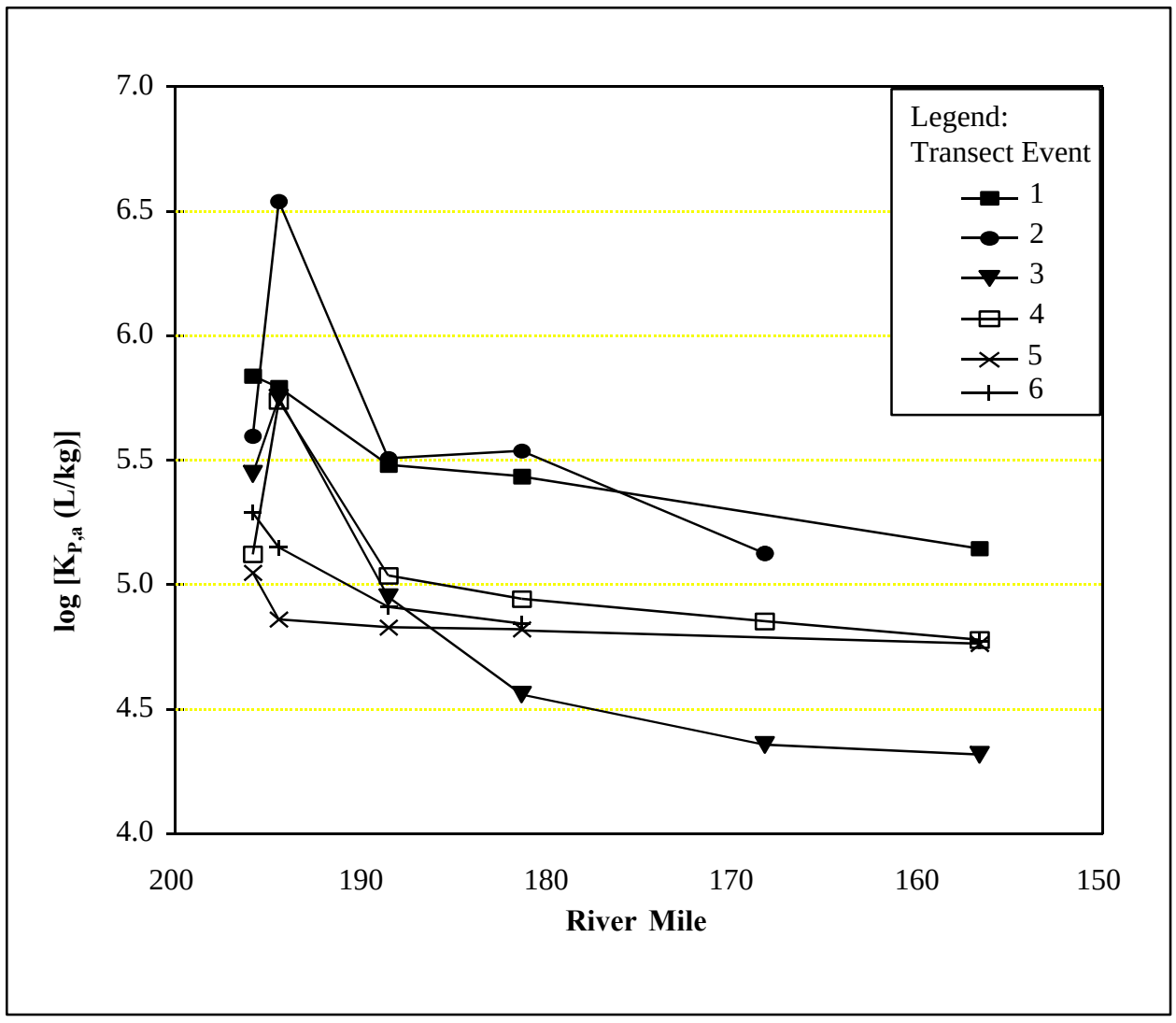
Figure 3-8
Variation in log $K_{POC,a}$ by Transect for BZ#44



Note: Estimates without temperature correction.

Source: TAMS/Gradient Database

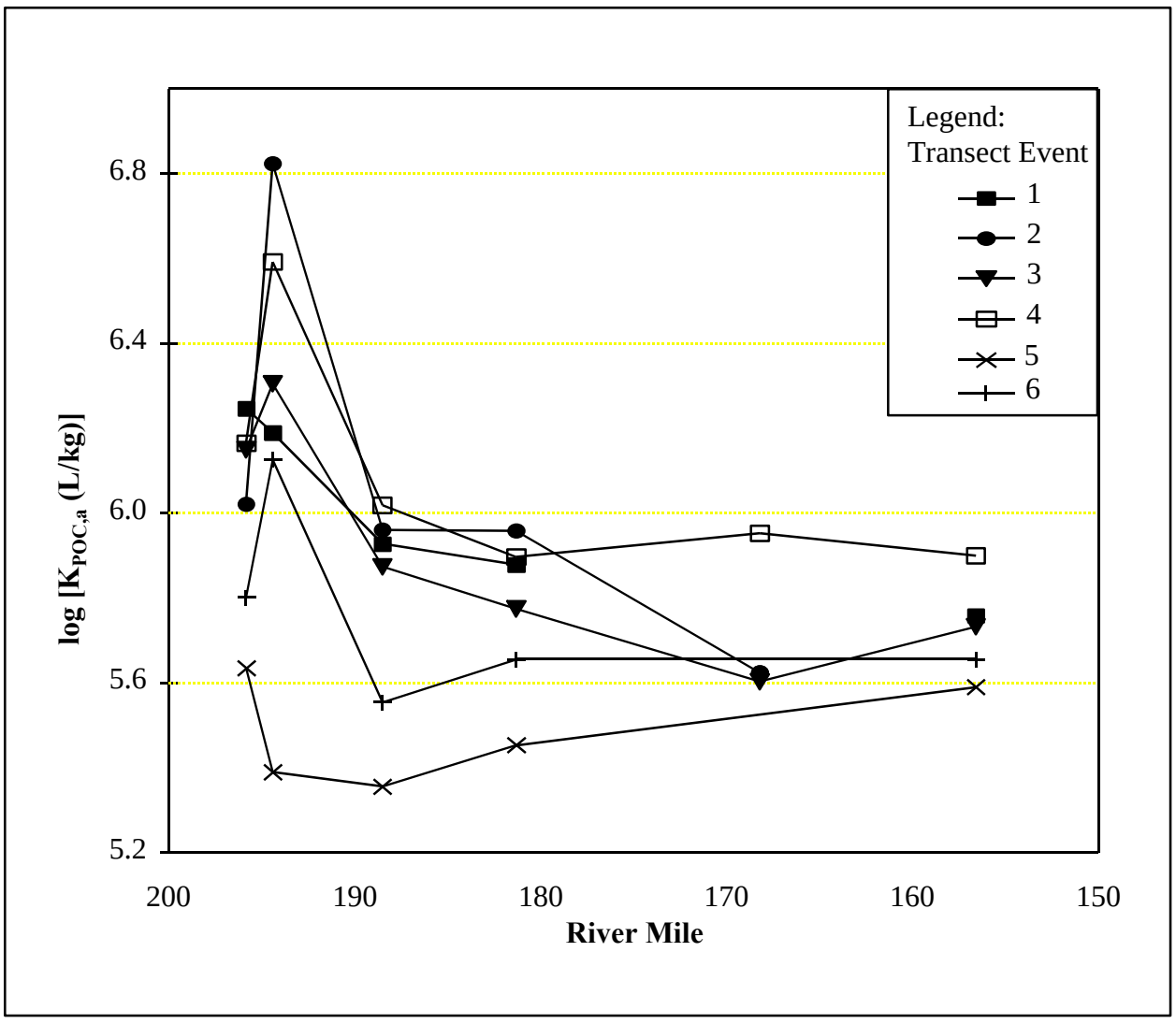
Figure 3-9
Variation in log $K_{P,a}$ by River Mile for BZ#44



Note: Estimates without temperature correction.

Source: TAMS/Gradient Database

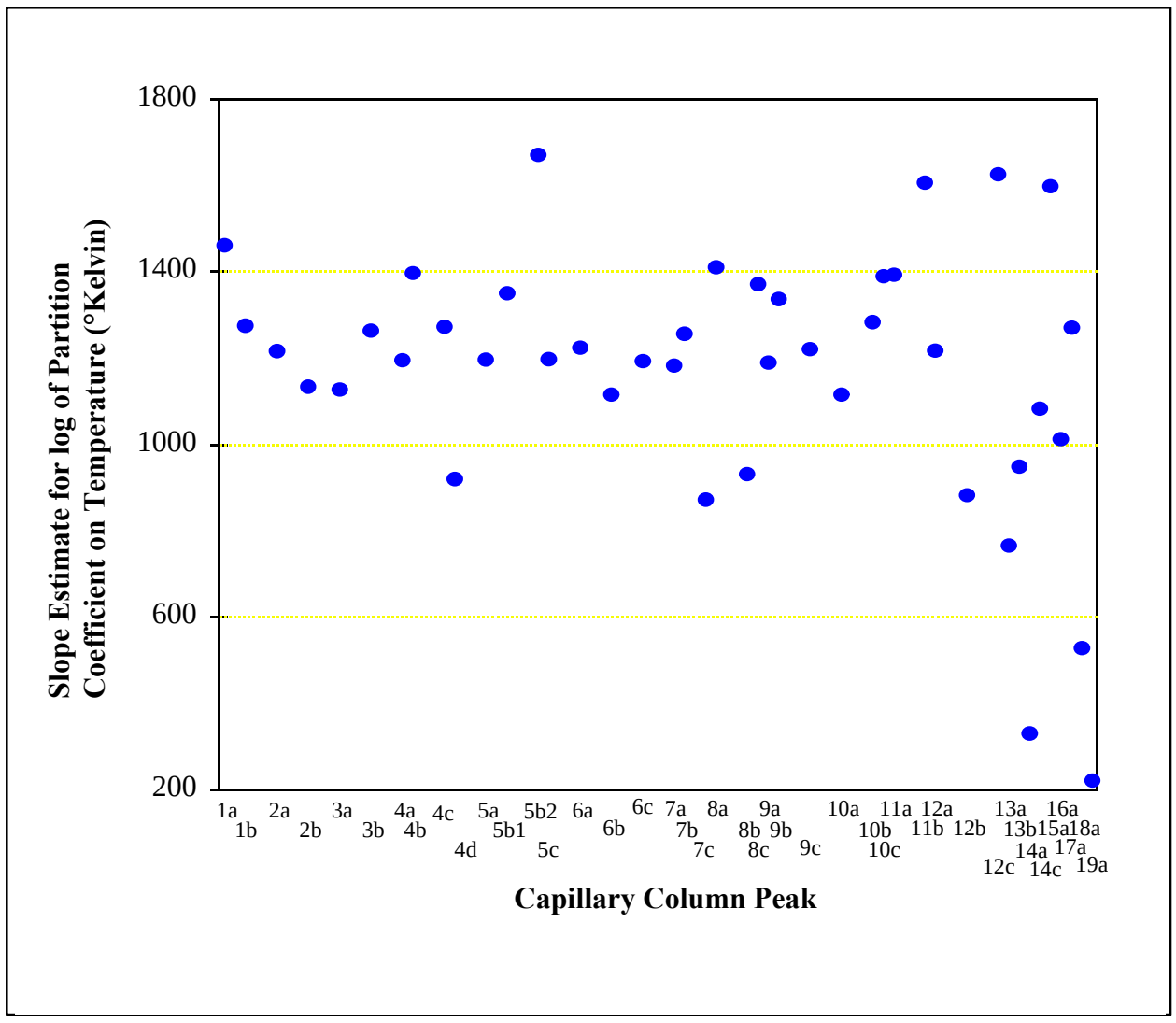
Figure 3-10
Variation in log $K_{POC,a}$ by River Mile for BZ#44



Note: Estimates without temperature correction.

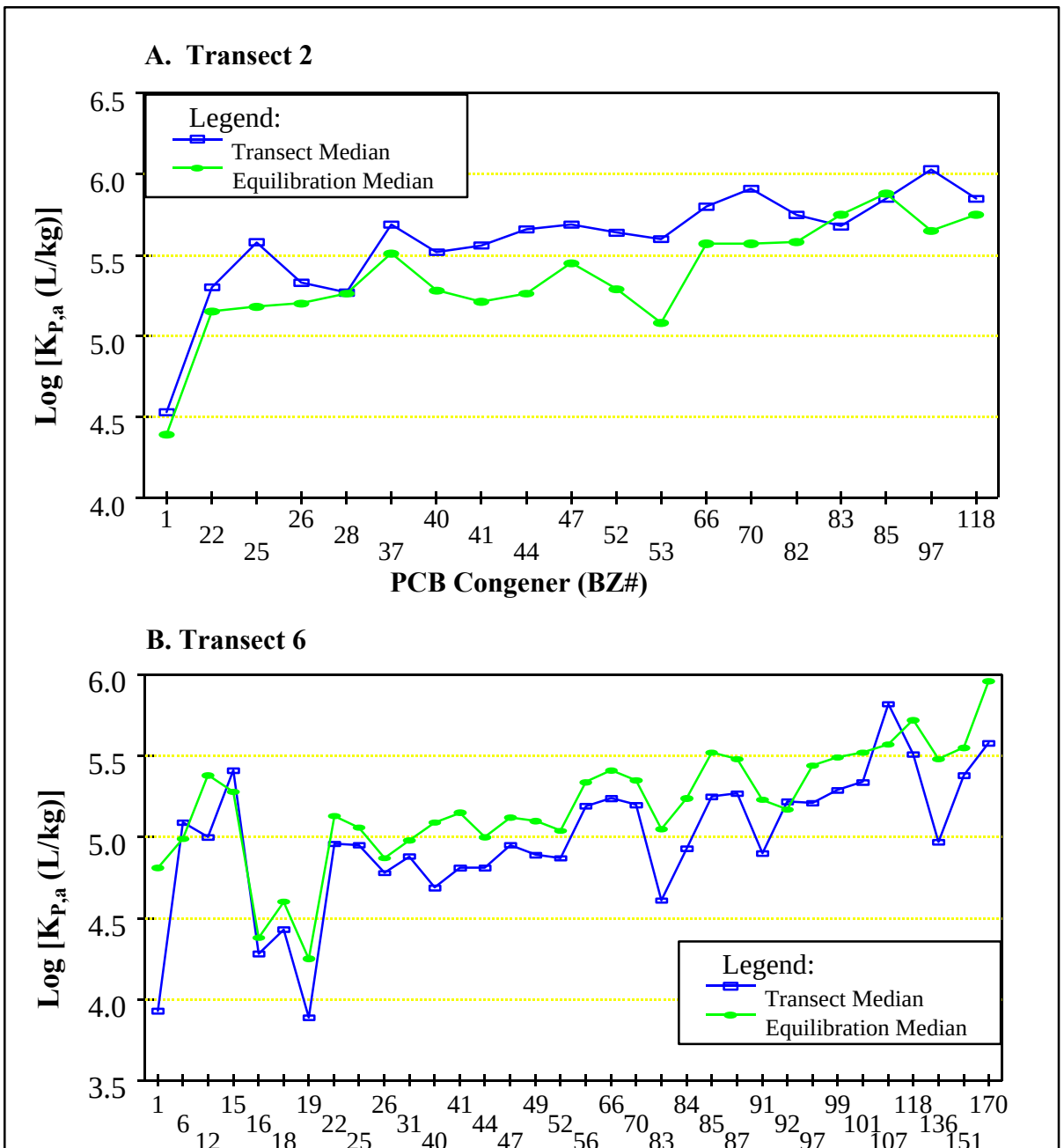
Source: TAMS/Gradient Database

Figure 3-11
Temperature Correction Slope Estimates for
PCB Capillary Column Peaks



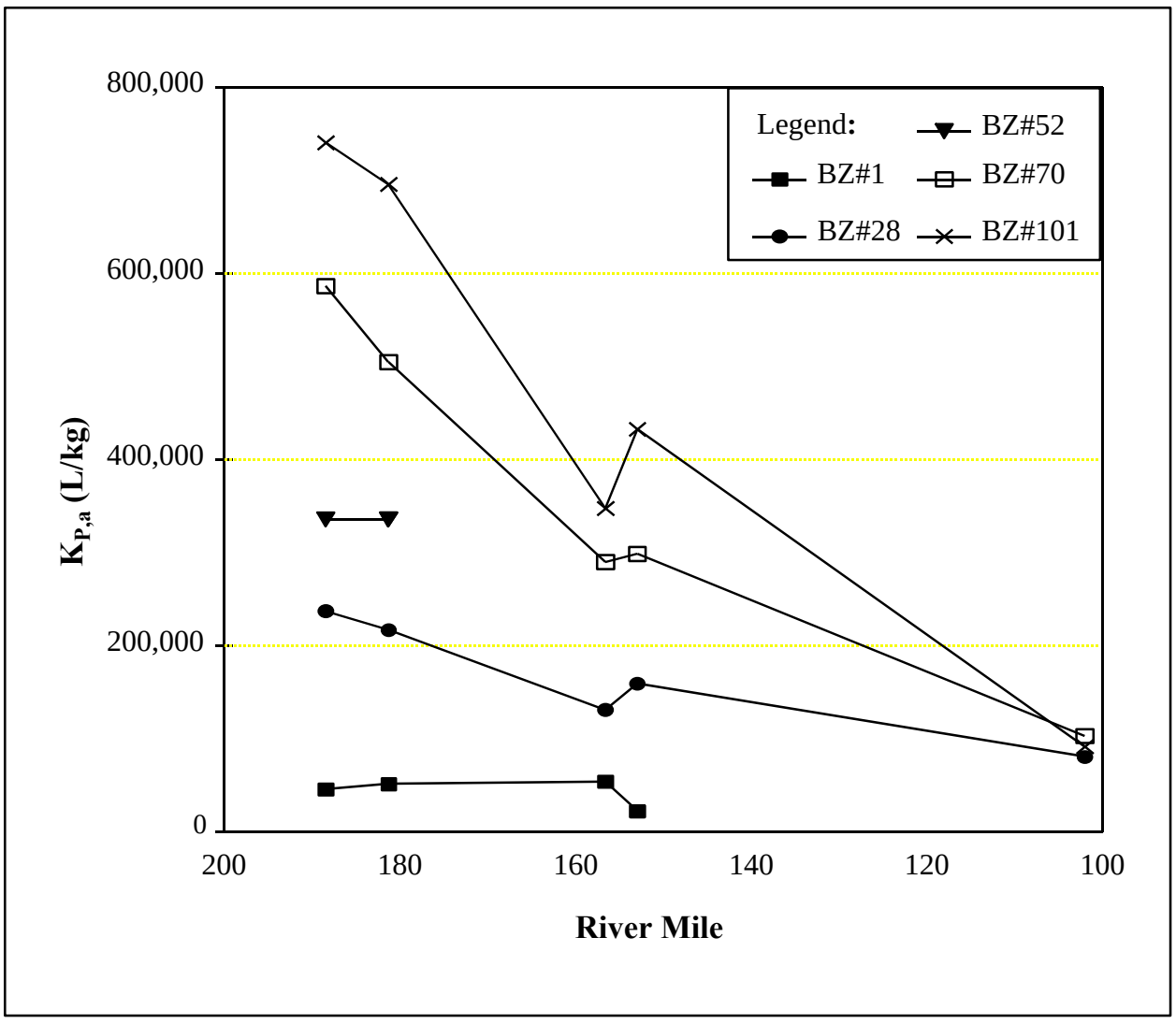
Source: Warren *et al*. (1987)

Figure 3-12
Equilibration $K_{P,a}$ Estimates for PCB Partitioning in Hudson River Transect Samples



Source: TAMS/Gradient Database

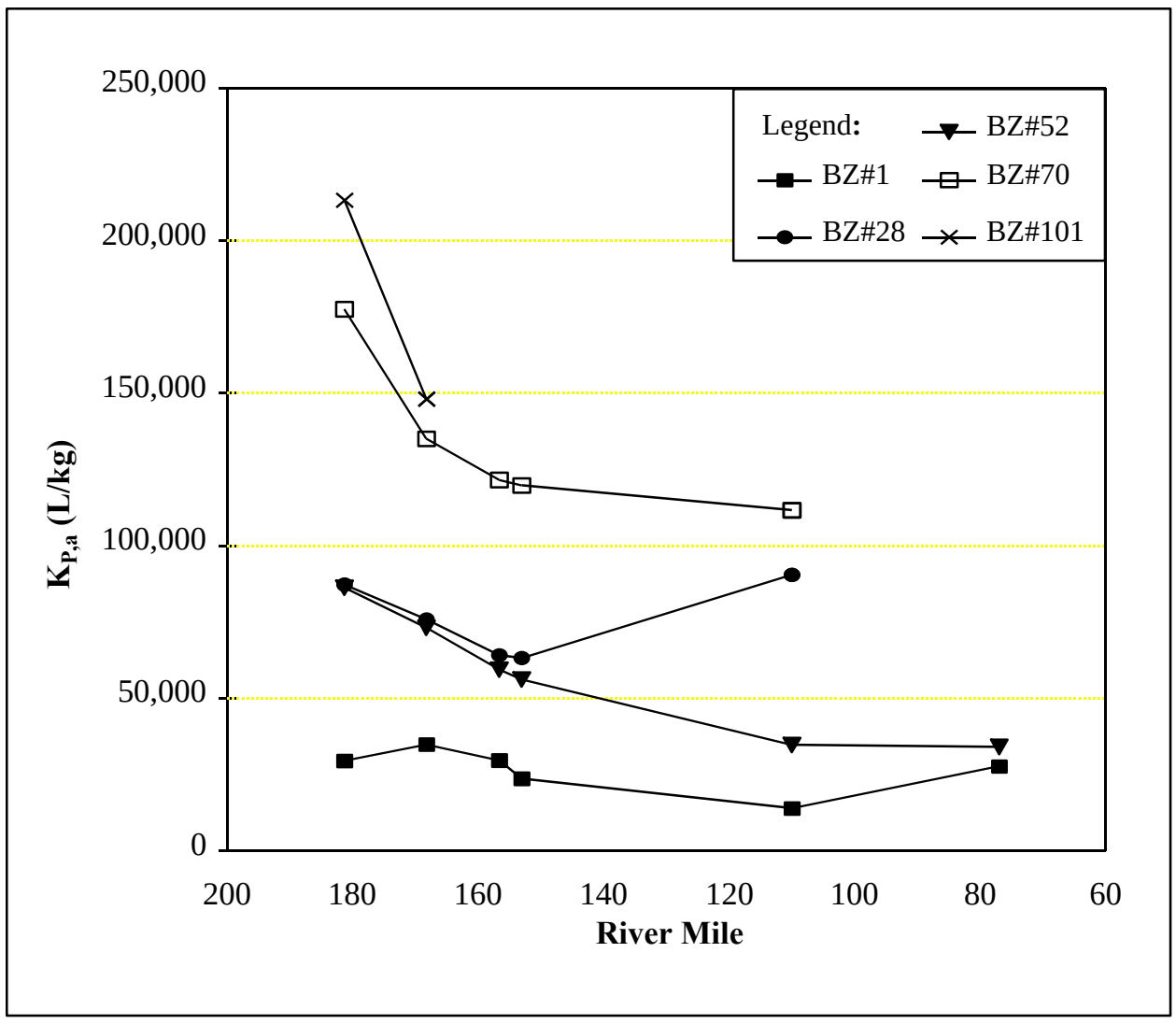
Figure 3-13
$K_{P,a}$ Estimates for Hudson River Transect 1



Note: Estimates without temperature correction.

Source: TAMS/Gradient Database

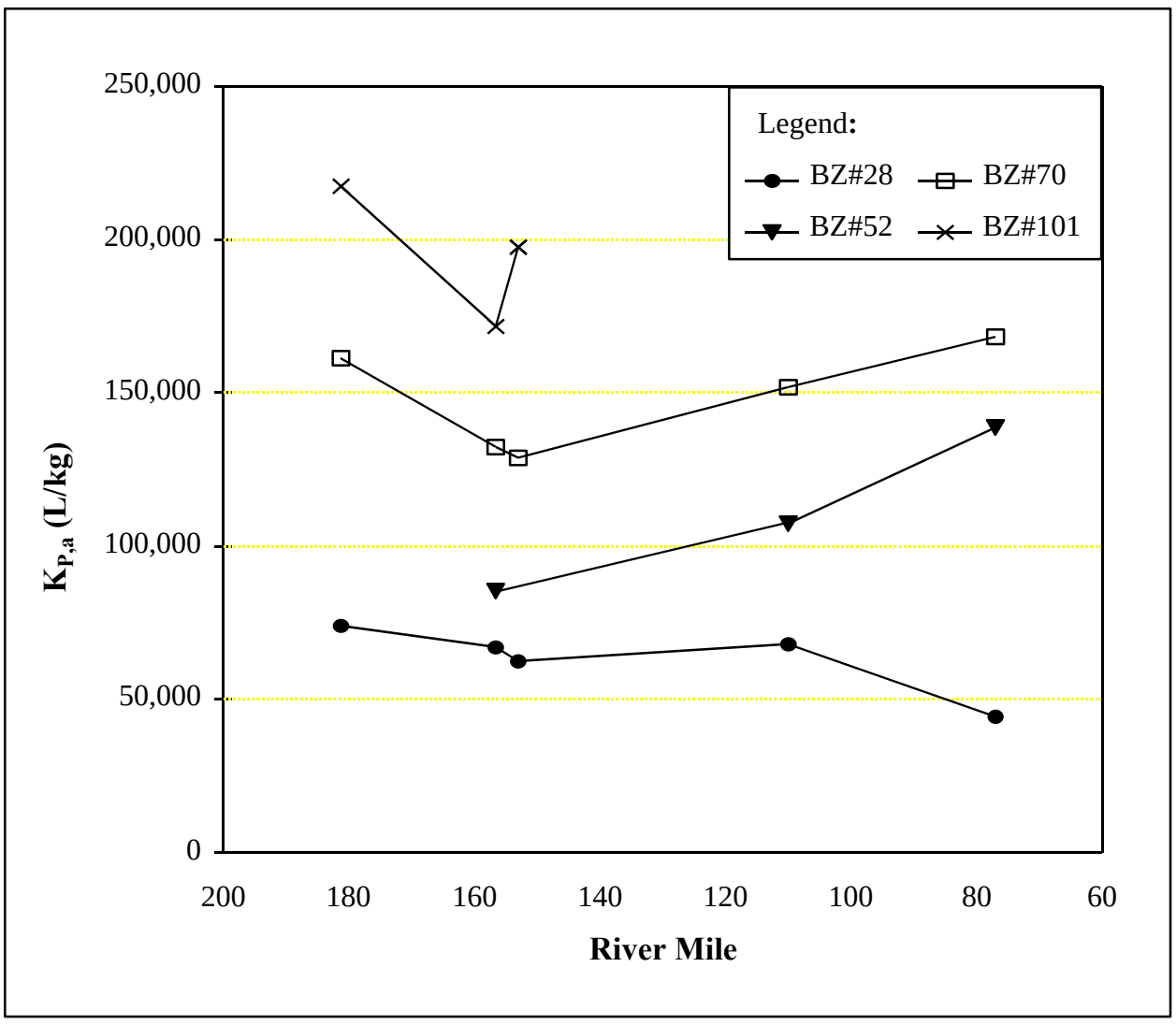
Figure 3-14
$K_{P,a}$ Estimates for Hudson River Transect 4



Note: Estimates without temperature correction.

Source: TAMS/Gradient Database

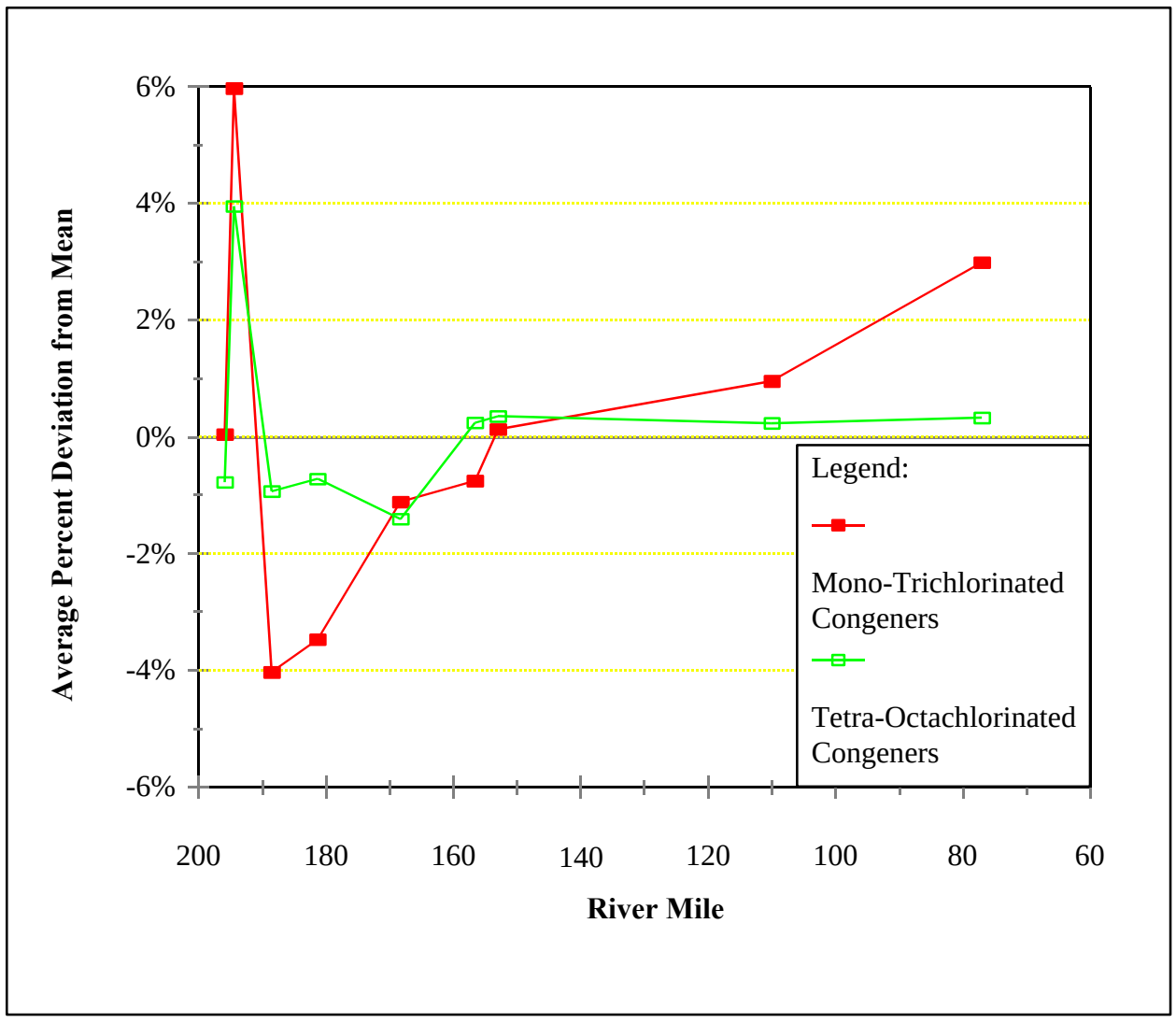
Figure 3-15
$K_{P,a}$ Estimates for Hudson River Transect 6



Note: Estimates without temperature correction.

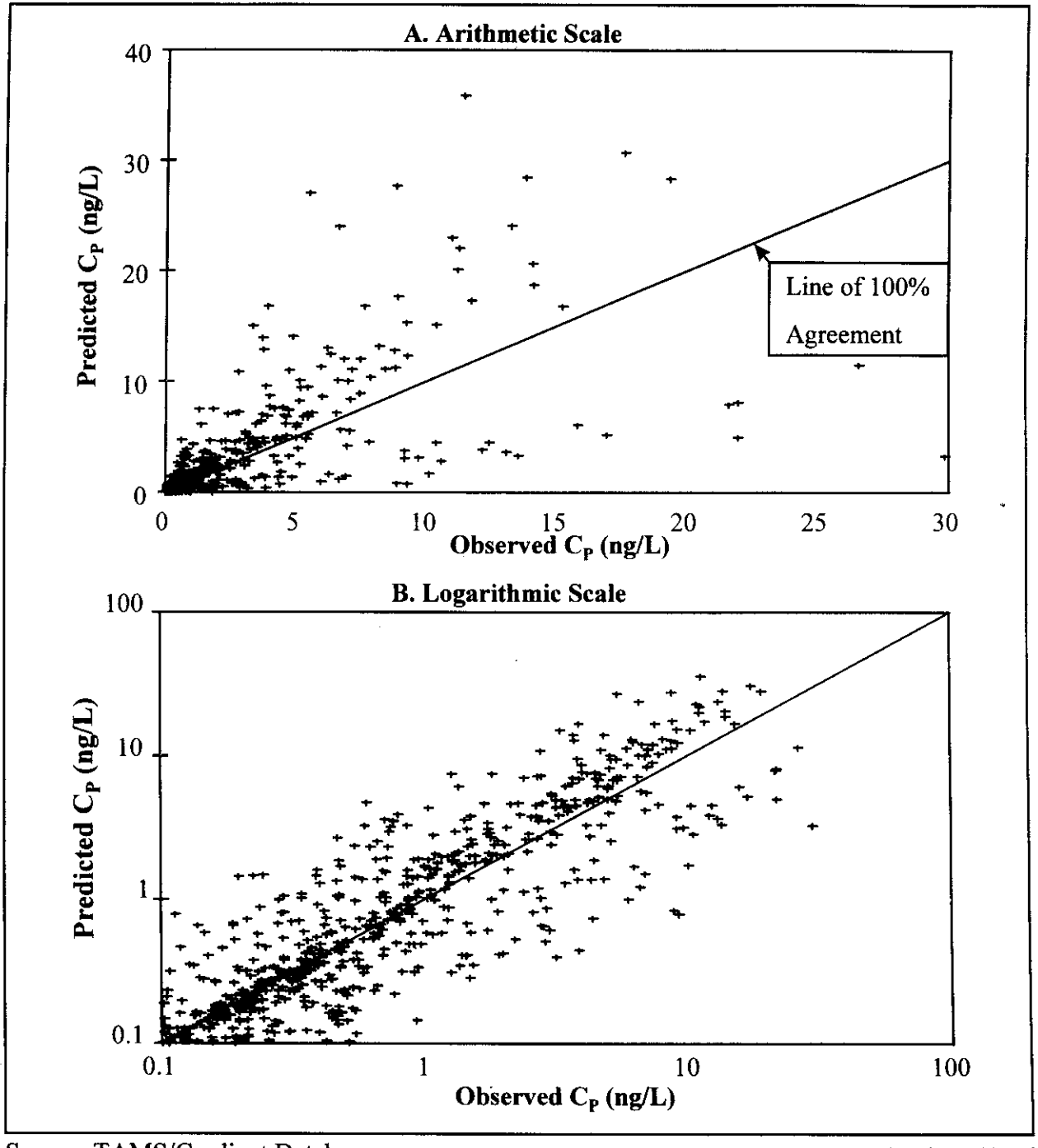
Source: TAMS/Gradient Database

Figure 3-16
Percent Deviations in log $K_{POC,a}$ Estimates for PCB Congeners by River Mile



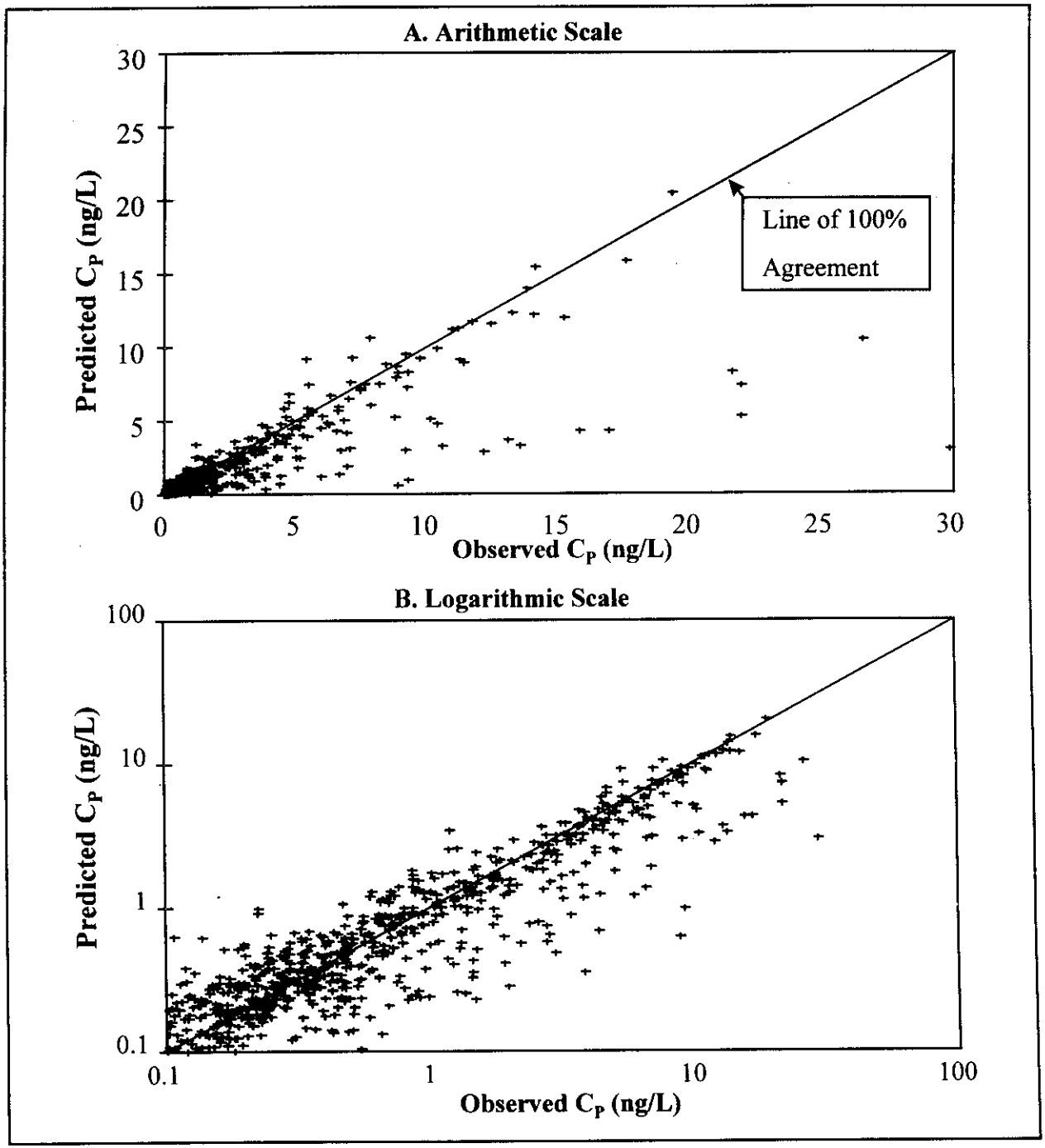
Source: TAMS/Gradient Database

Figure 3-17
Prediction of Particulate-Phase PCB Congener Concentration Using $K_{P,a}$ with Temperature Correction



Source: TAMS/Gradient Database

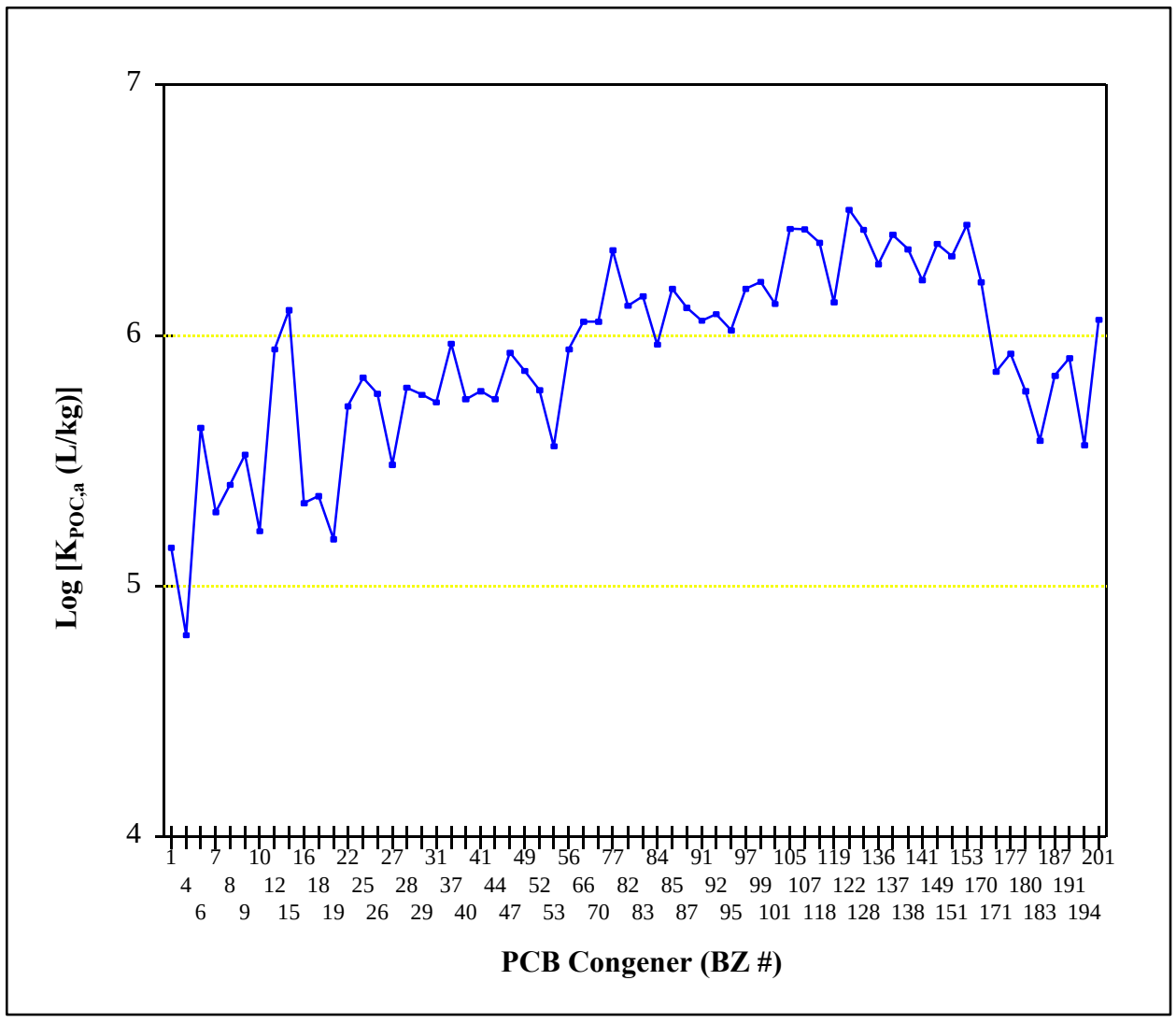
Figure 3-18
Prediction of Particulate-Phase PCB Congener Concentration Using $K_{POC,a}$ with Temperature Correction



Source: TAMS/Gradient Database

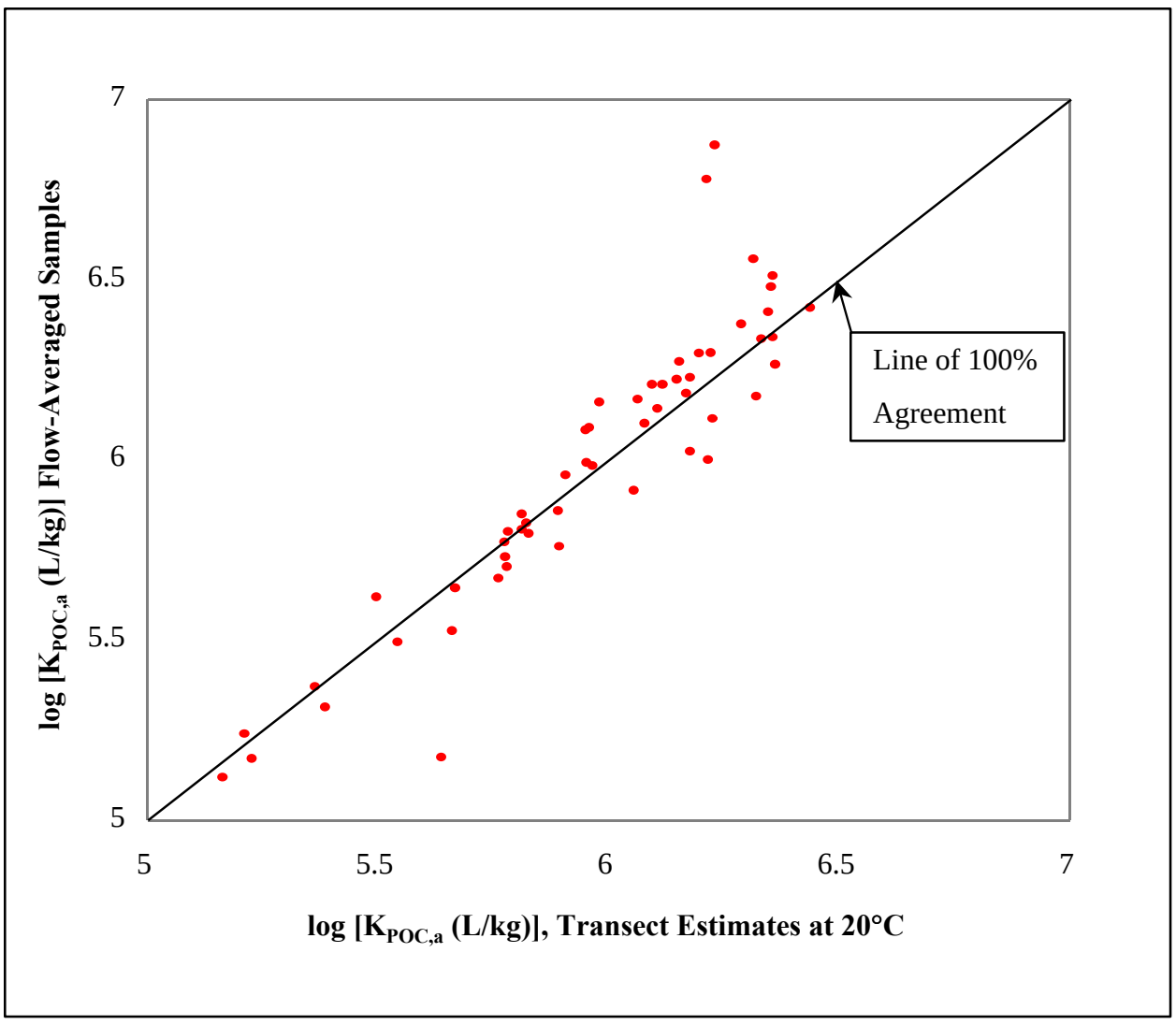
TAMS/Cadmus/Gradient

Figure 3-19
Median Values of log $K_{POC,a}$ Corrected to 20 °C



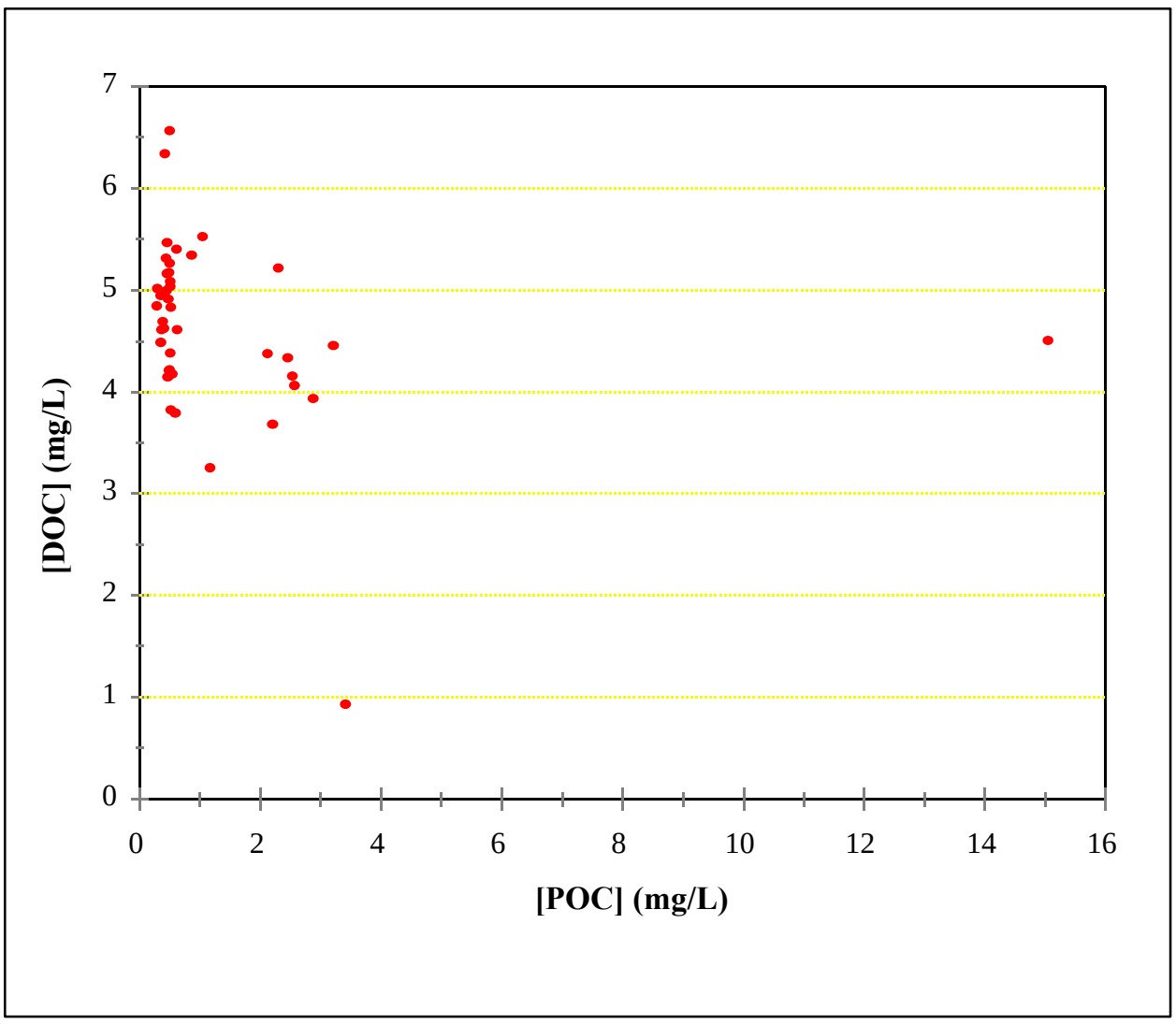
Source: TAMS/Gradient Database

Figure 3-20
PCB Congener $K_{POC,a}$ Estimates for
Hudson River Flow-Averaged vs. Transect Samples



Source: TAMS/Gradient Database

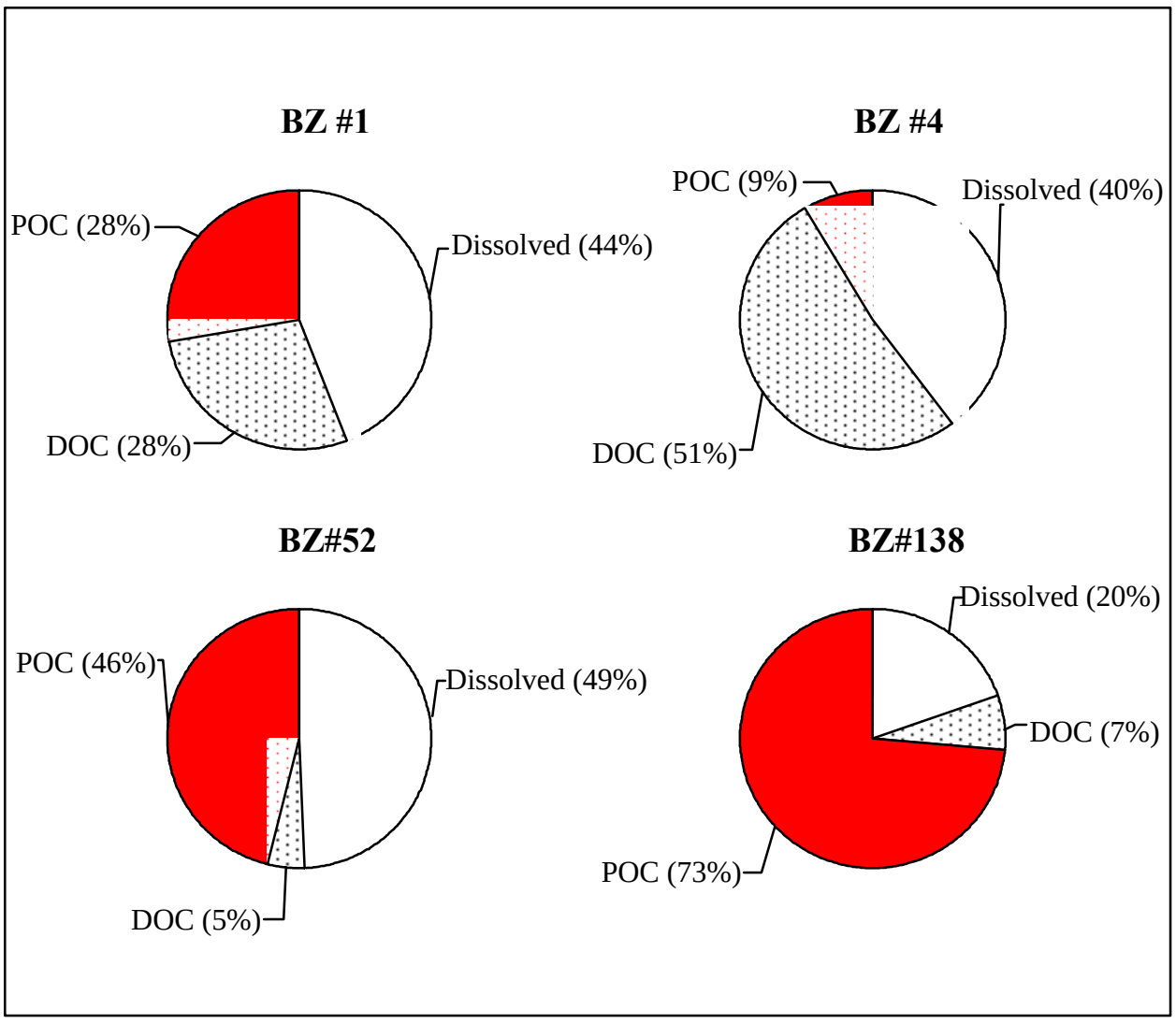
Figure 3-21
Relationship of Dissolved and Particulate Organic Carbon Concentrations in Upper Hudson River Transect Samples



Note: [POC] calculated from weight-loss-on-ignition data.

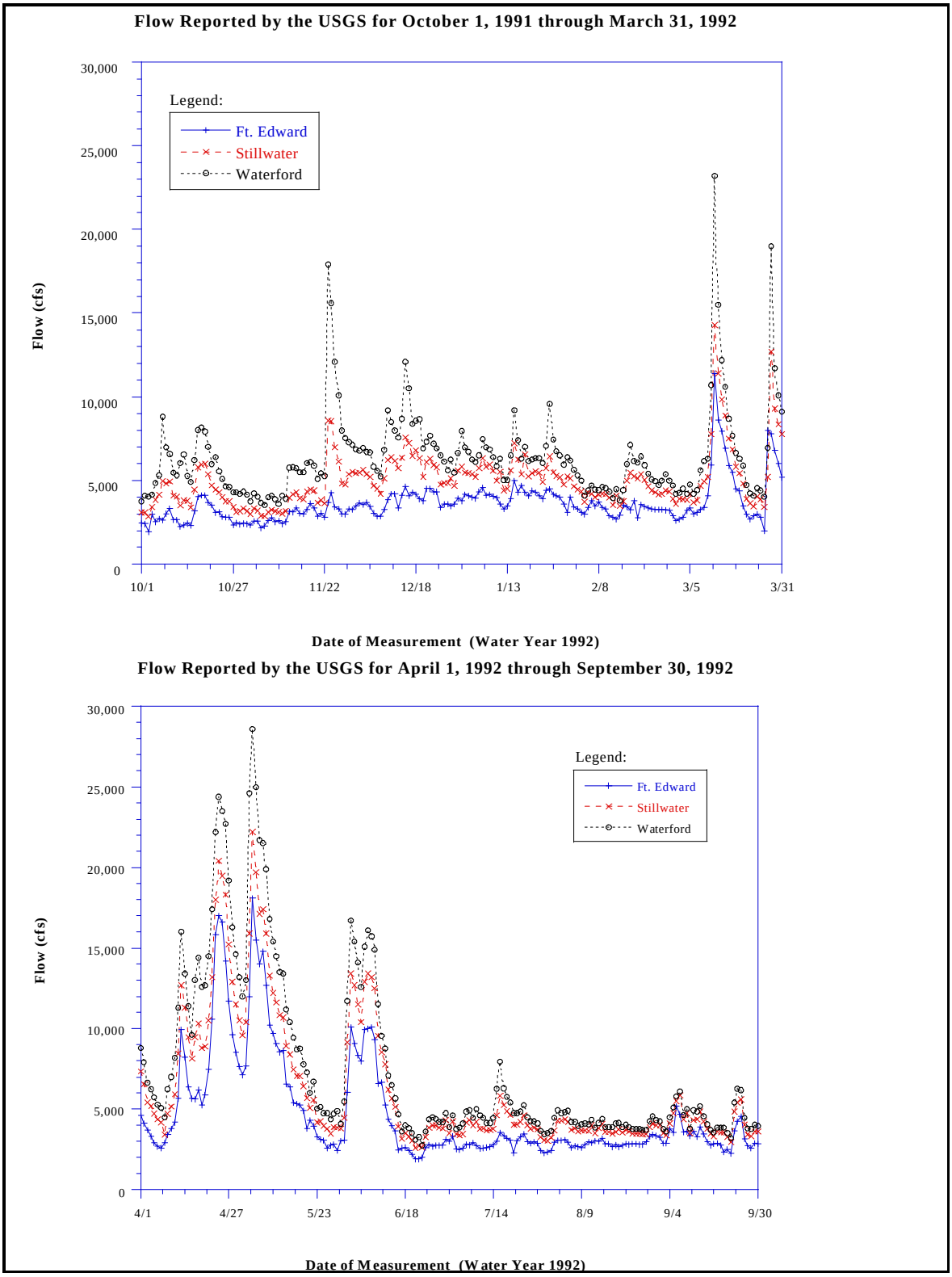
Source: TAMS/Gradient Database

Figure 3-22
Estimated Average Percent Distribution of PCB Congeners among Dissolved, POC, and DOC Phases in Upper Hudson River Water-Column Transect Data



Note: Percentages calculated at mean concentrations observed in Upper Hudson River of DOC = 4.79 mg/L and POC = 1.40 mg/L.

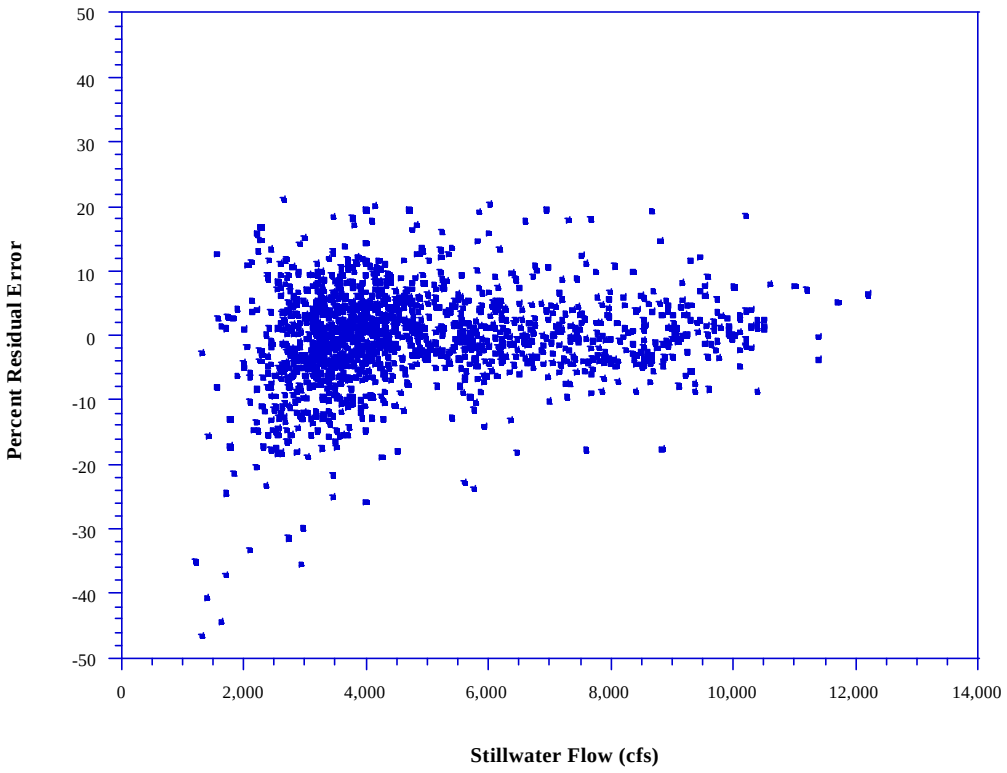
Source: TAMS/Gradient Database



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-23
Comparison of USGS Measured Flows at Fort Edward, Stillwater and Waterford for Water Year 1992



Notes:

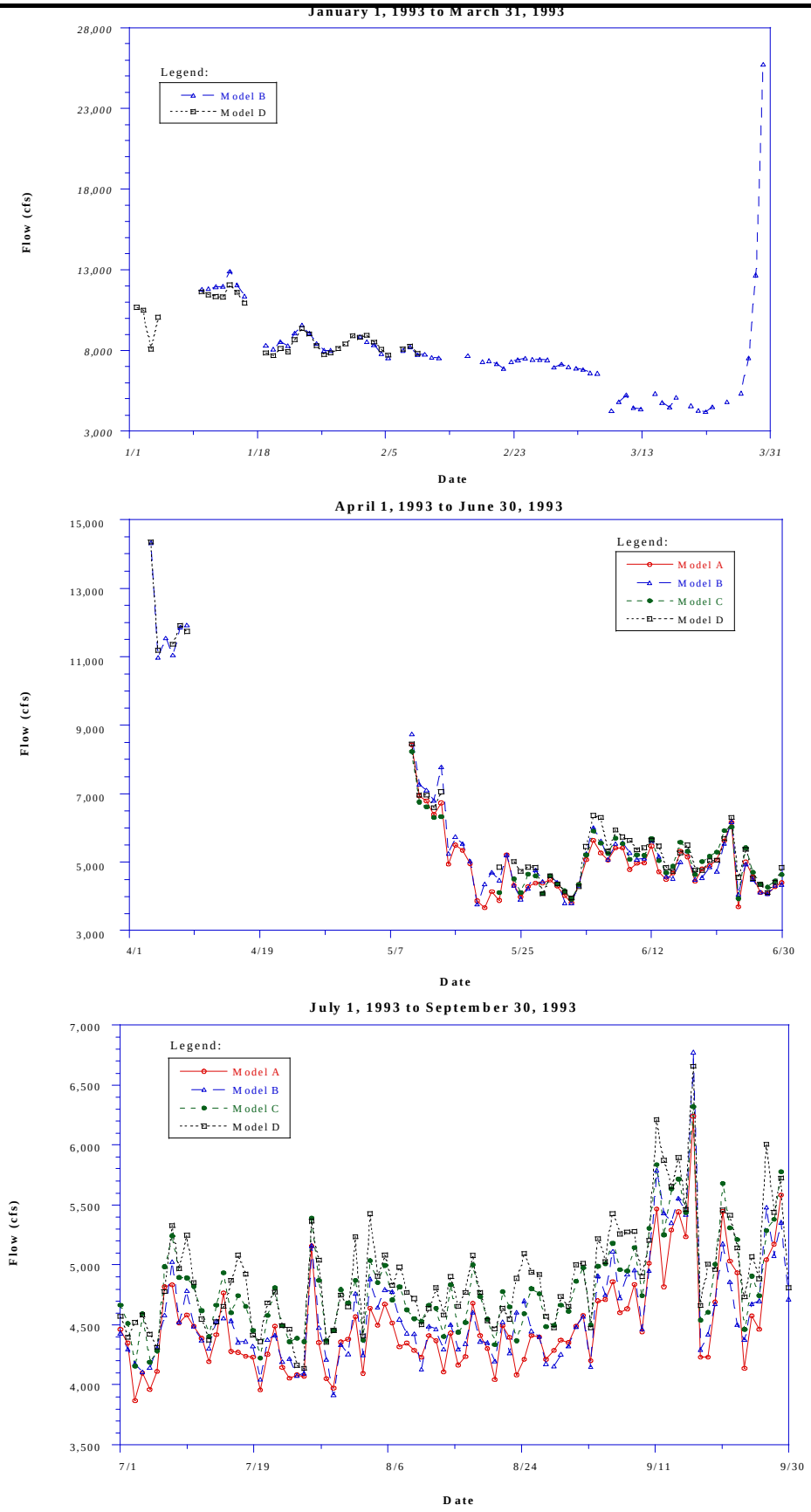
a. For Stillwater Flow $\leq$ 4,000 cfs:
97.5% Quantile = 12.2%
2.5% Quantile = -18.5%

b. For 4,000 cfs < Stillwater Flow $\leq$ 6,000 cfs:
97.5% Quantile = 13.5%
2.5% Quantile = -10.8%

c. For Stillwater Flow > 6,000 cfs:
97.5% Quantile = 11.2%
2.5% Quantile = -8.5%

Source: NYS Thruway Authority, Office of Canals (1994)

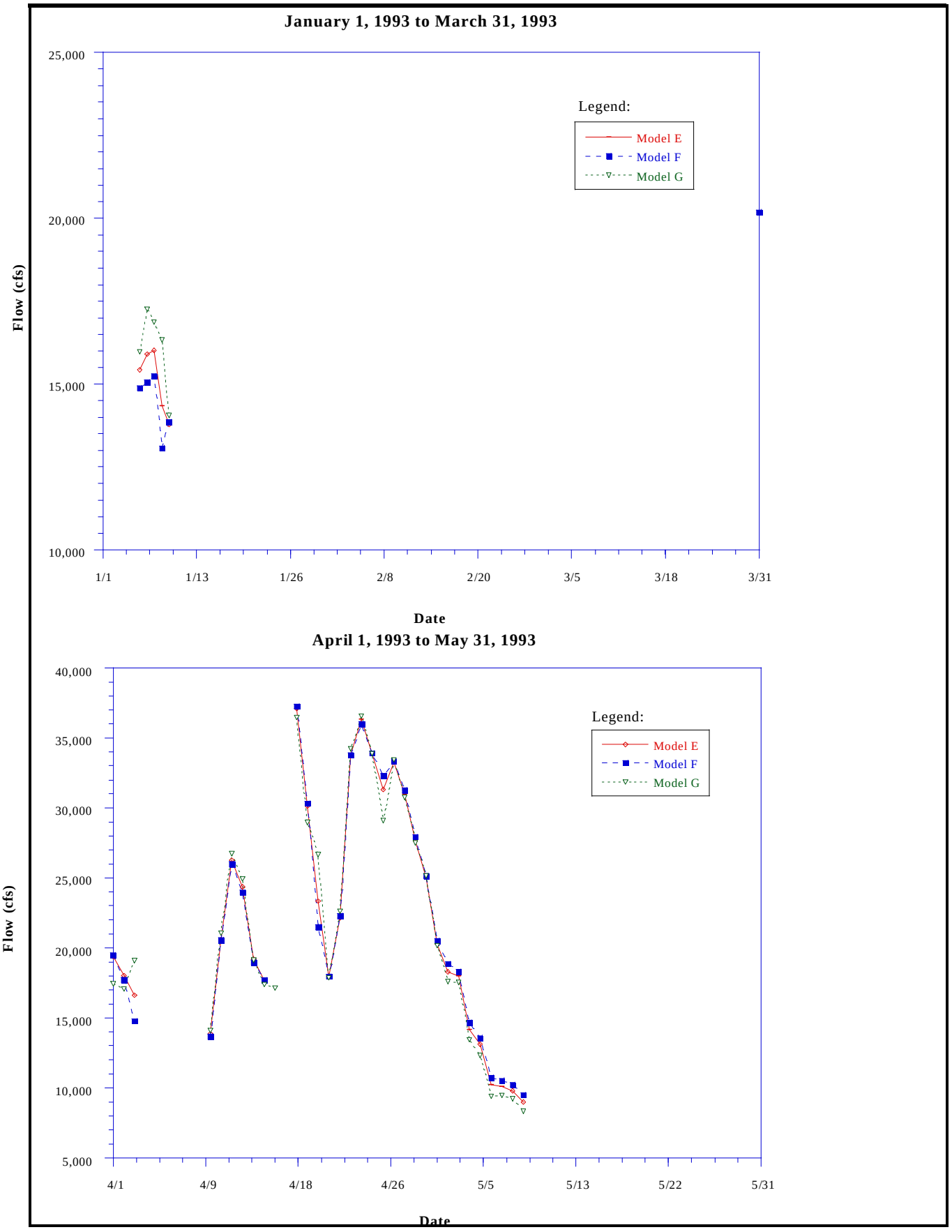
Figure 3-24
Stillwater Low-Flow Model C Prediction Uncertainty
as a Function of Stillwater Flow



Source: TAMS/Gradient Database

TAMS/*Gradient*

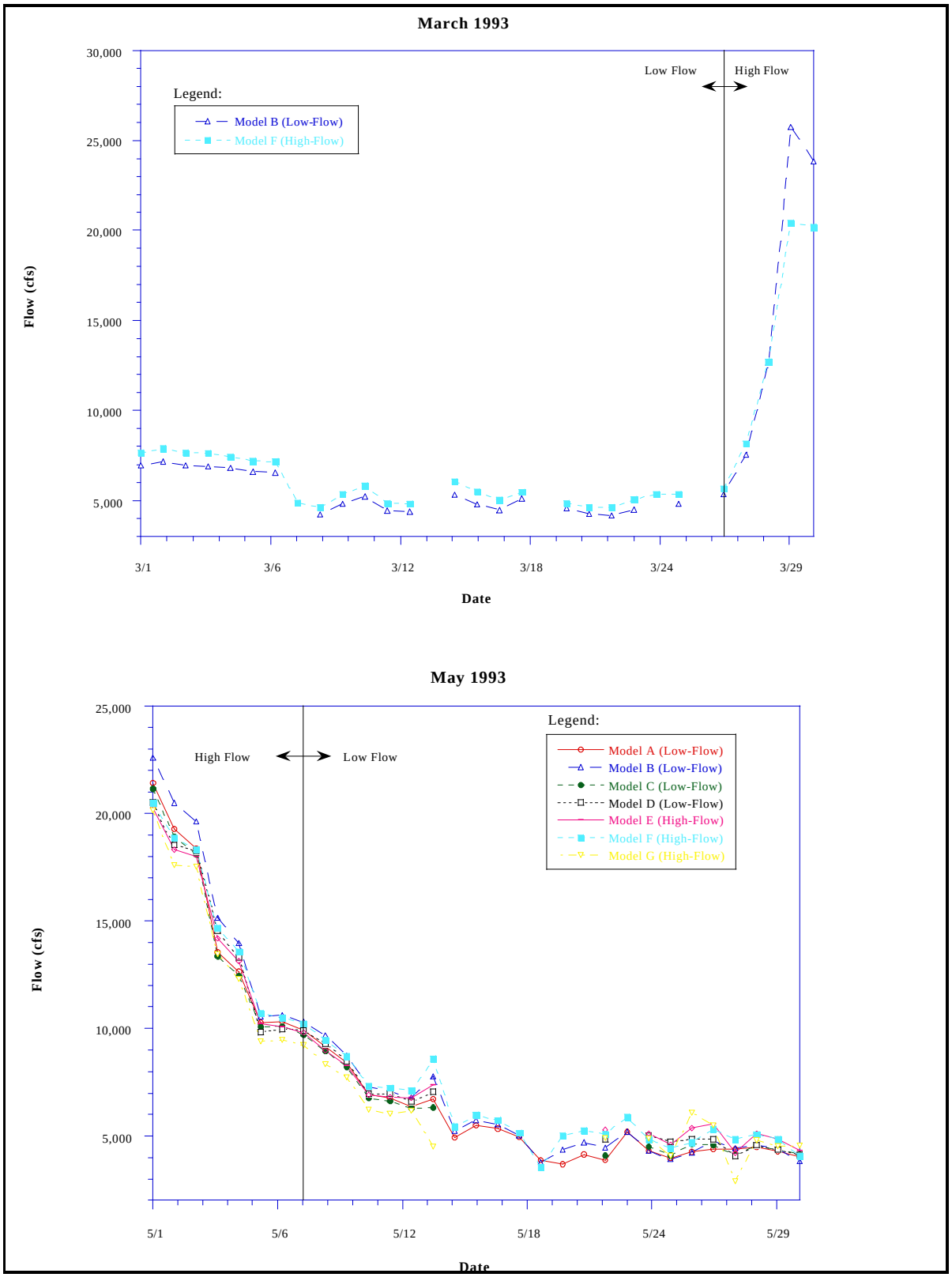
Figure 3-25
Comparison of Flows Predicted by Stillwater
Low Flow Models (Fort Edward Flow ≤ 8,000 cfs)



Source: TAMS/Gradient Database

TAMS/ *Gradient*

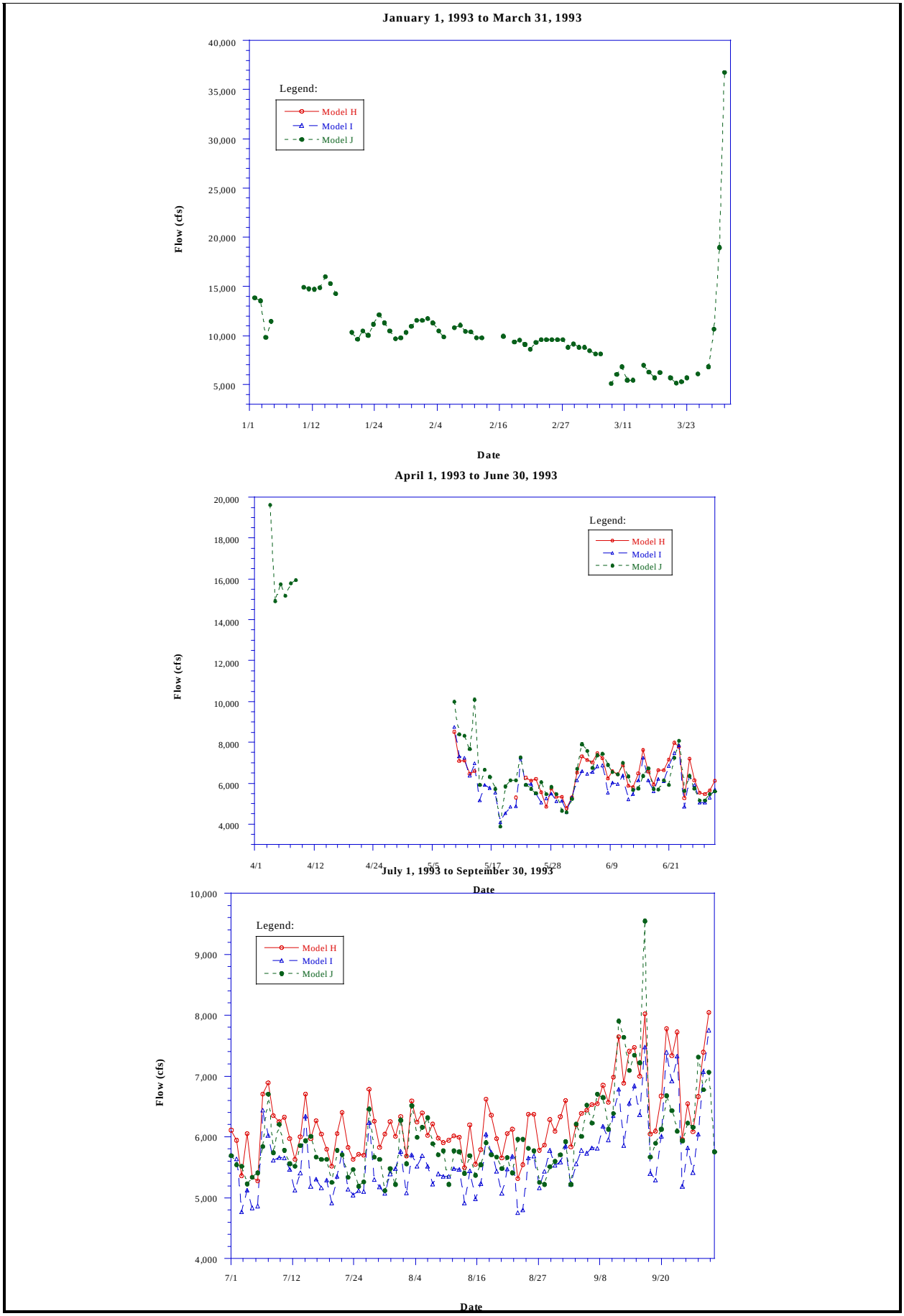
Figure 3-26
Comparison of Flows Predicted by Stillwater
High-Flow (Fort Edward Flow > 8,000 cfs) Models



Source: TAMS/Gradient Database

TAMS/ *Gradient*

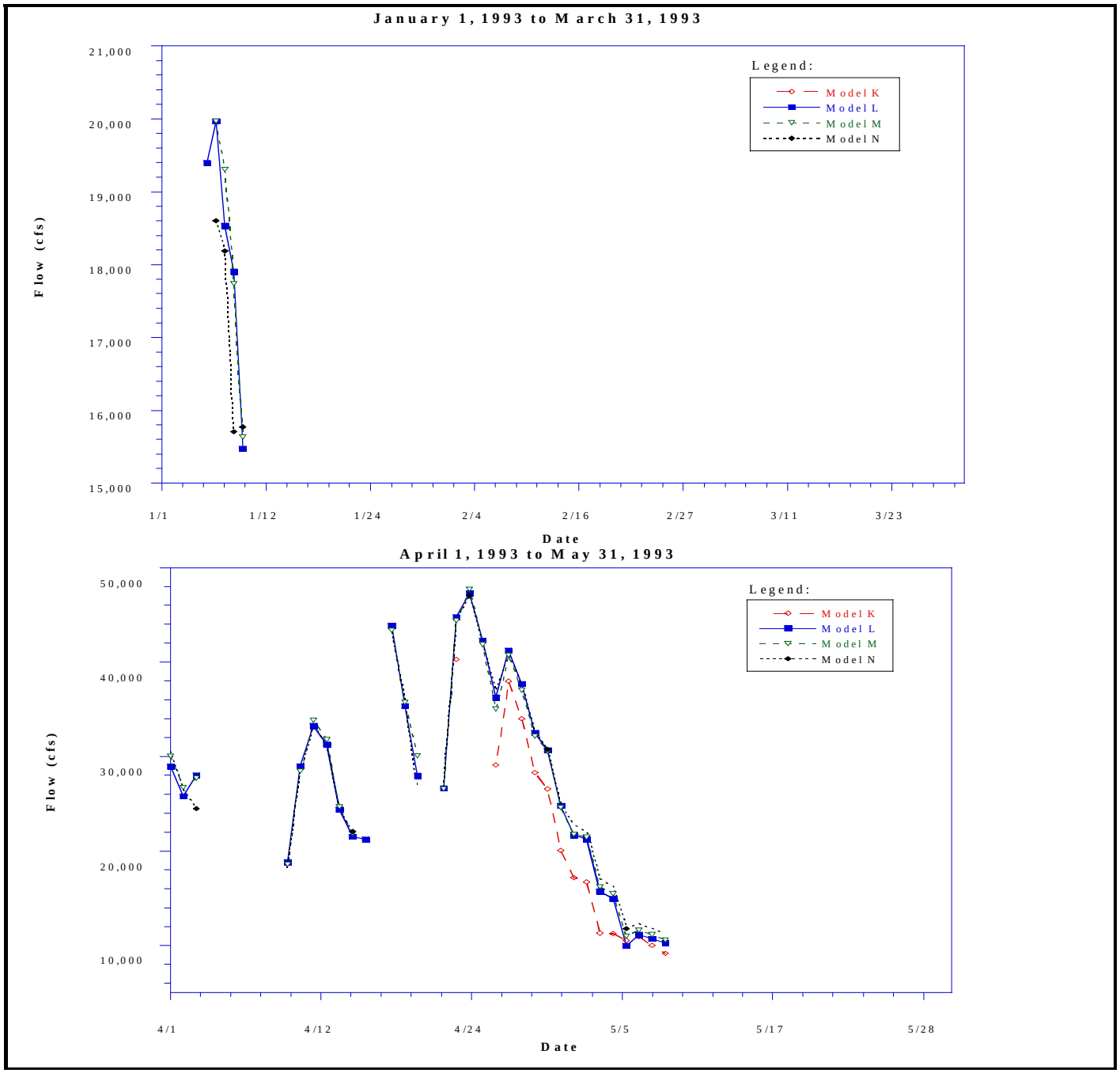
Figure 3-27
Comparison of Flows Predicted by Stillwater
Low-Flow (Fort Edward Flow ≤ 8,000 cfs) and
Stillwater High-Flow (Fort Edward Flow > 8,000 cfs) Models



Source: TAMS/Gradient Database

TAMS/ *Gradient*

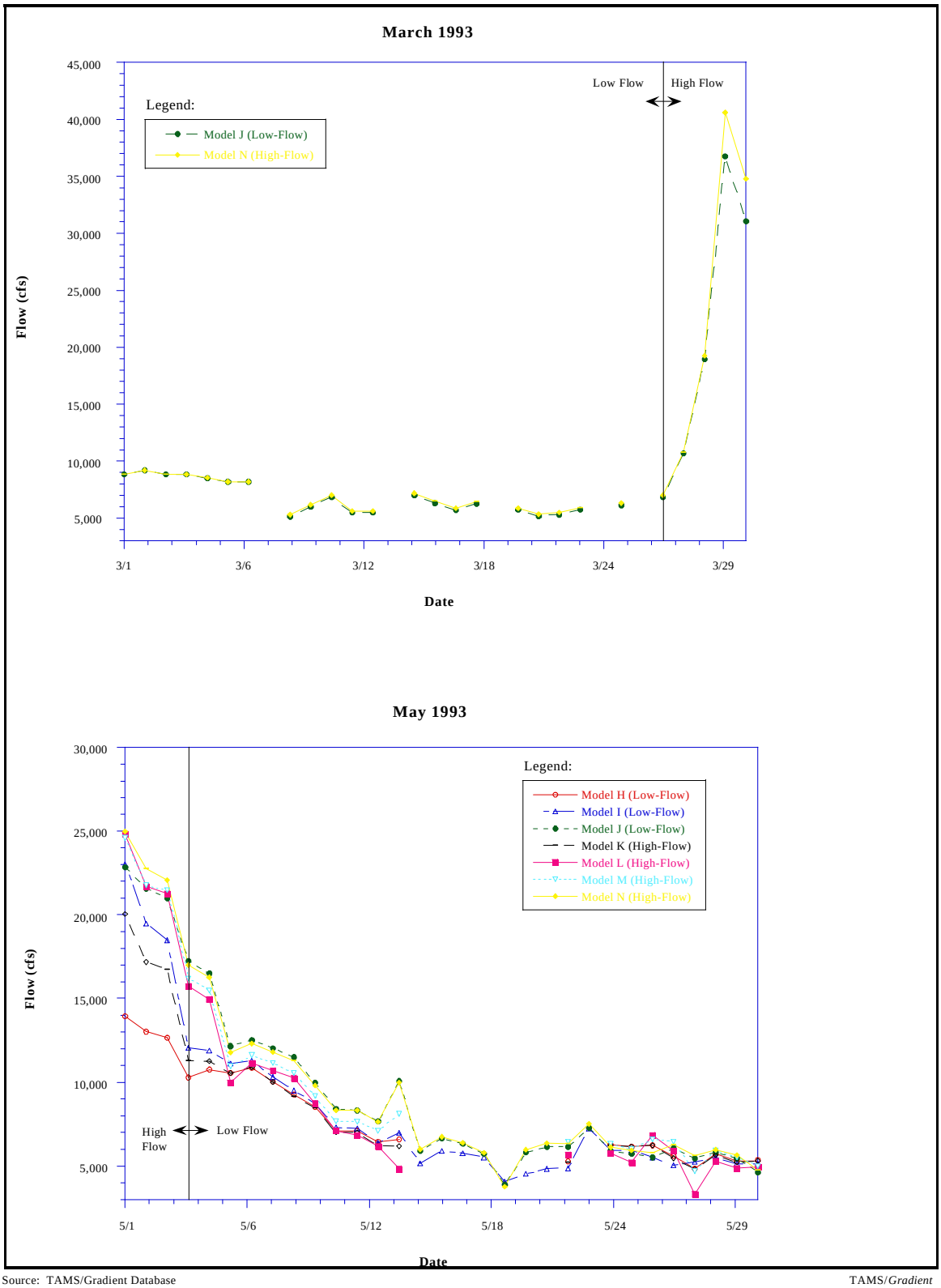
Figure 3-28
Comparison of Flows Predicted by Waterford
Low-Flow (Fort Edward Flow ≤ 8,000 cfs) Models



Source: TAMS/Gradient Database

TAMS/*Gradient*

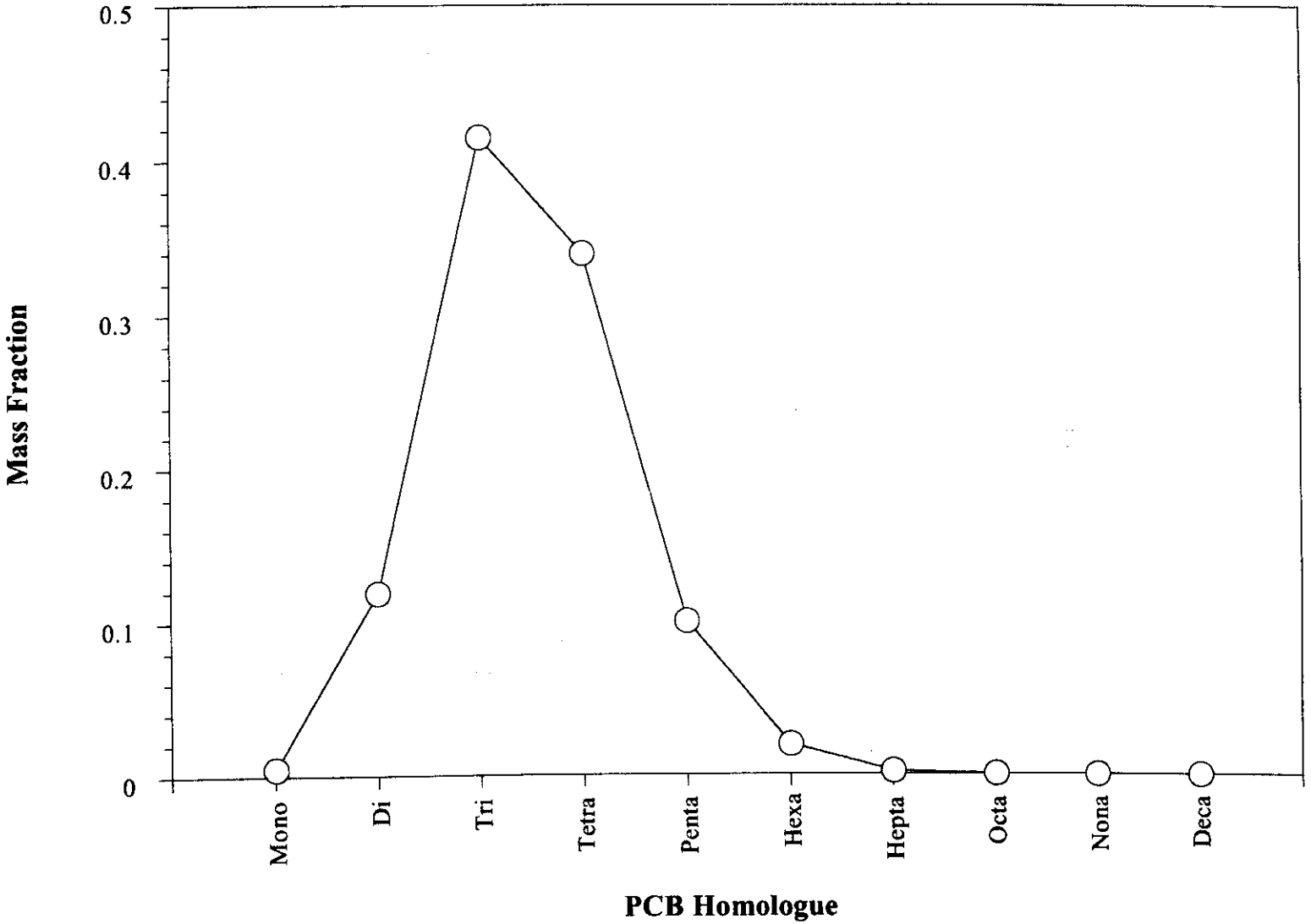
Figure 3-29
Comparison of Flows Predicted by Waterford
High-Flow (Fort Edward Flow > 8,000 cfs) Models



Source: TAMS/Gradient Database

TAMS/*Gradient*

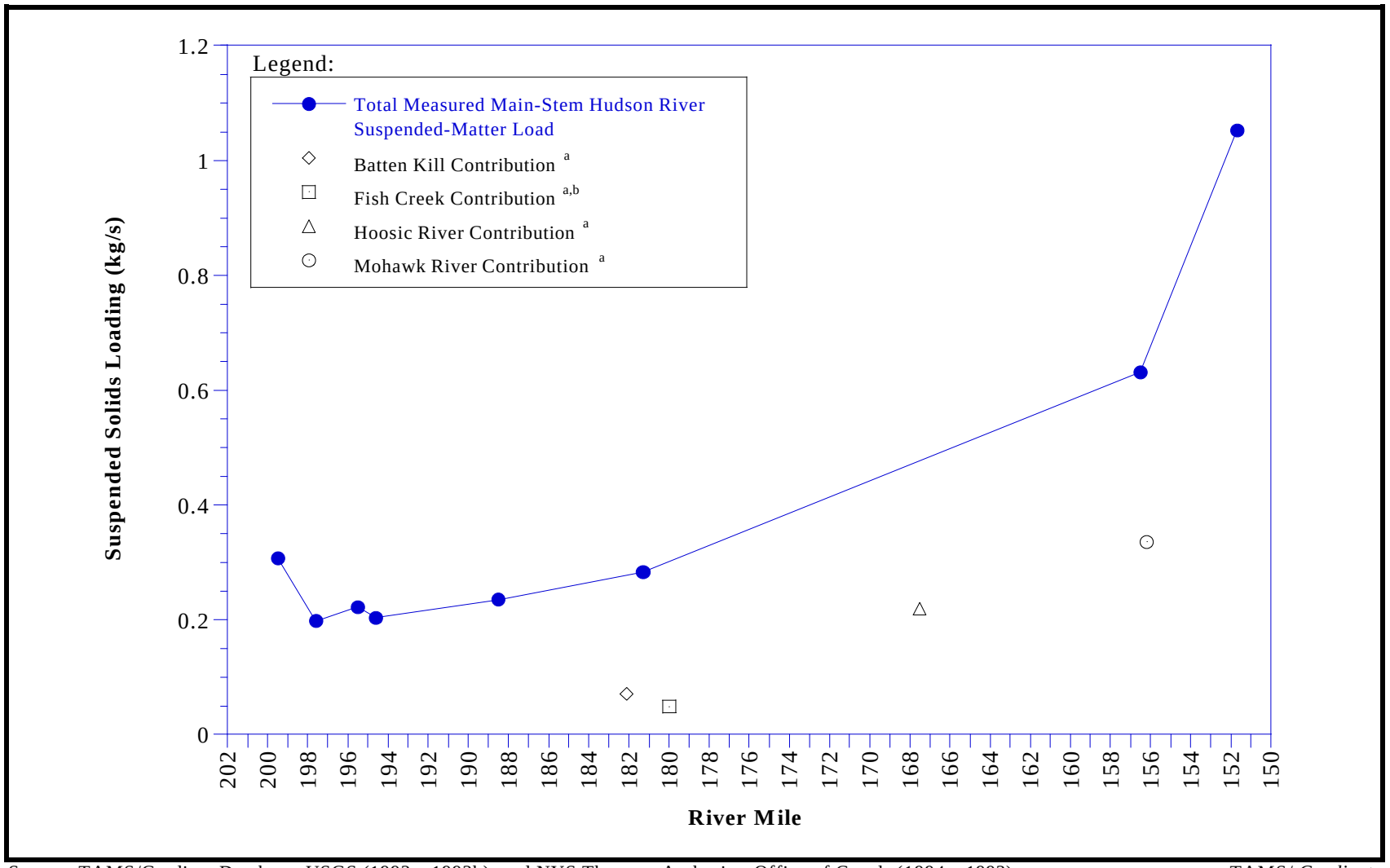
Figure 3-30
Comparison of Flows Predicted by Waterford
Low-Flow (Fort Edward Flow • 8,000 cfs) Models and Waterford
High-Flow (Fort Edward Flow > 8,000 cfs) Models



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

Figure 3-31
Homologue Distribution of the GE Hudson Falls Facility Source as Characterized by the Transect 1 Remnant Deposit Area (RM 195.8) Sample



Source: TAMS/Gradient Database, USGS (1993a, 1993b), and NYS Thruway Authority, Office of Canals (1994a, 1993) TAMS/ *Gradient*

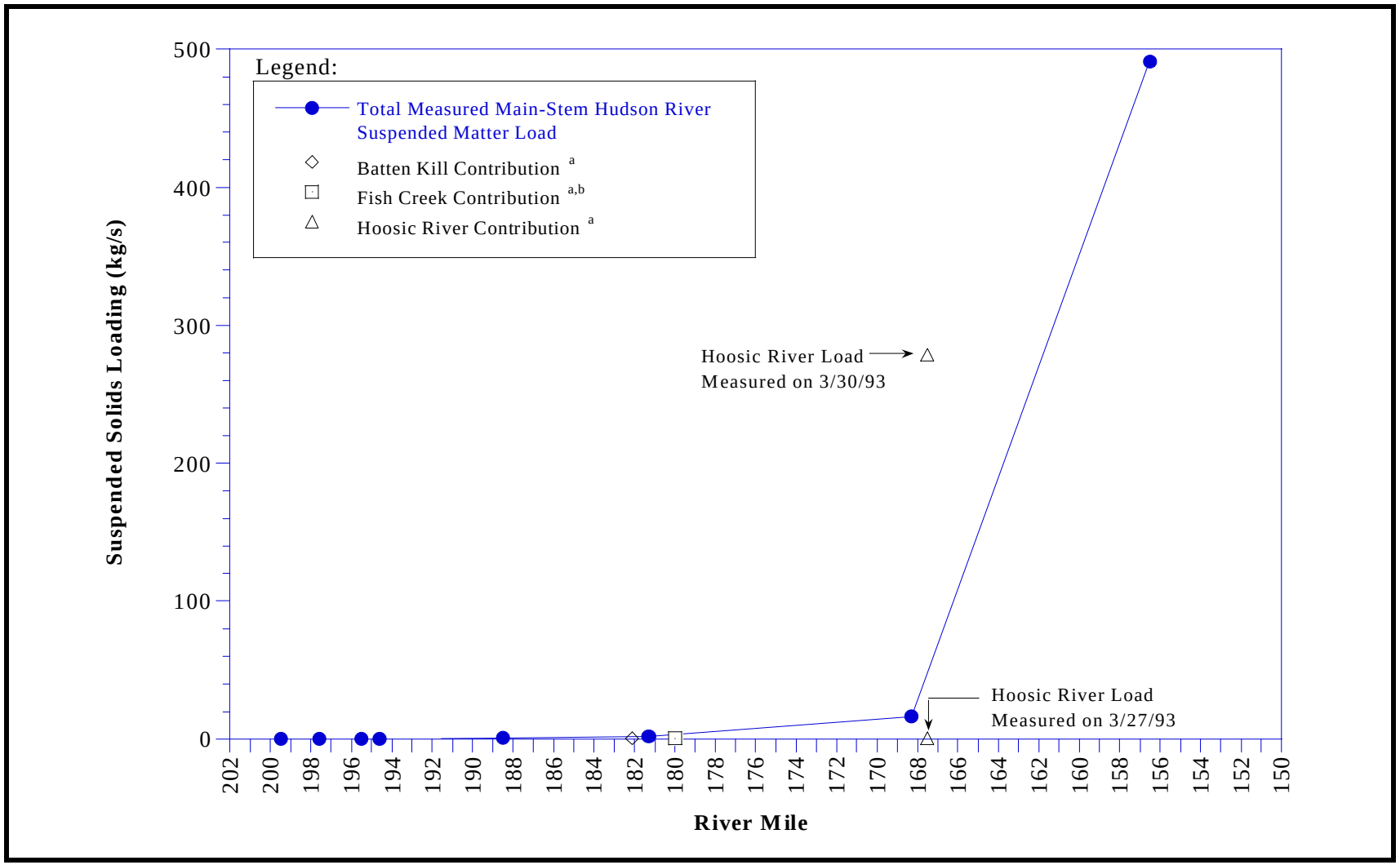
Note:

a) Tributary river mile designations correspond to point of confluence with the Hudson River.

b) Fish Creek suspended matter load is estimated using the suspended solids value for the Batten Kill and a flow estimate based on drainage basin area.

Figure 3-32

Suspended-Matter Loading in the Upper Hudson River - Transect 1 Low-Flow Conditions



Source: TAMS/Gradient Database, USGS (1993a, 1993b), and NYS Thruway Authority, Office of Canals (1994a, 1993) TAMS/ *Gradient*

Note:

a) Tributary river mile designations correspond to point of confluence with the Hudson River.

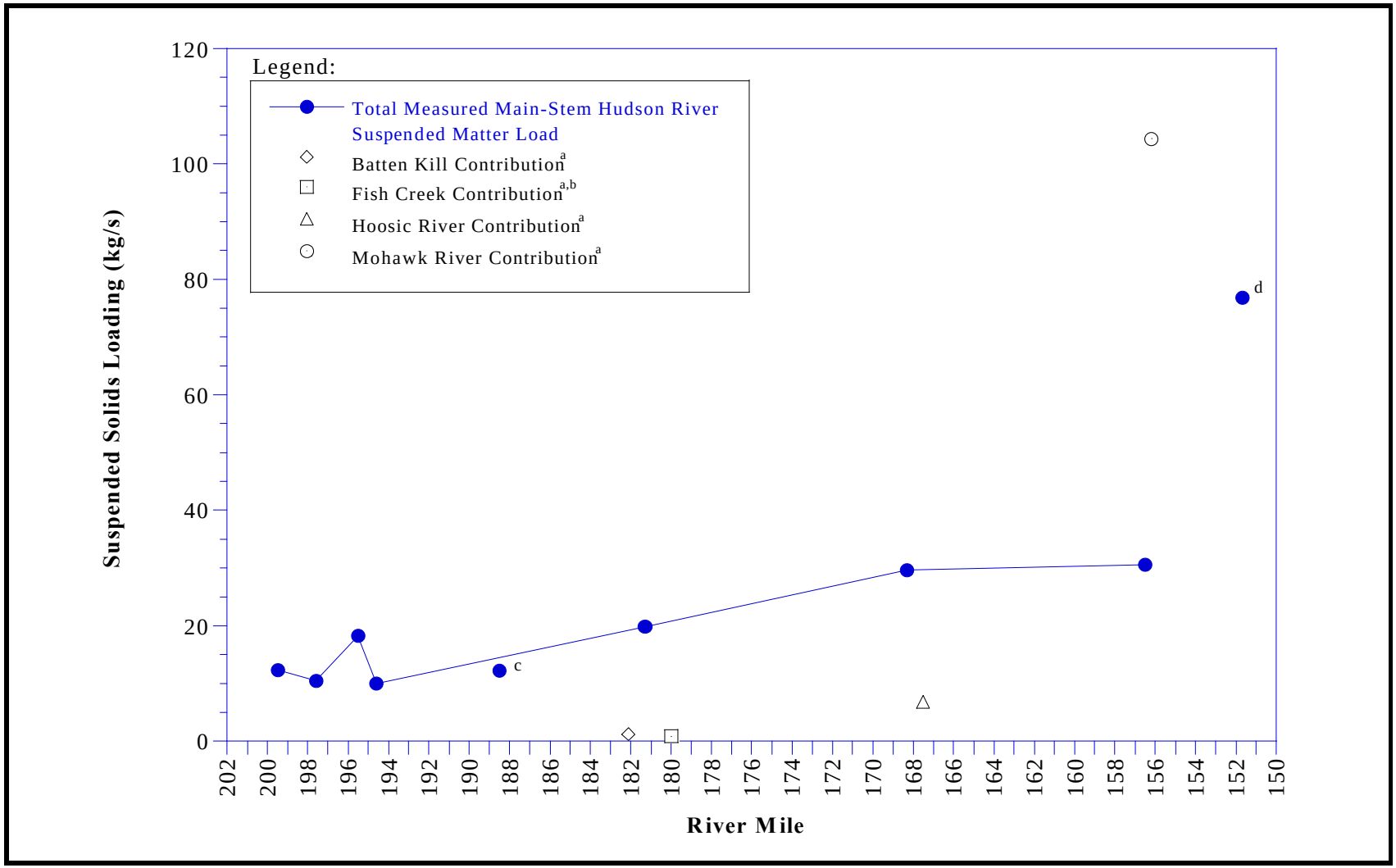
b) Fish Creek suspended matter load is estimated using the suspended solids value for the Batten Kill and a flow estimate based on drainage basin area.

c) Scour Event due to onset of spring flood event in lower part of the Upper River.

Figure 3-33

Suspended-Matter Loading in the Upper Hudson River

Transect 3 - Transition between Low-Flow and High-Flow Conditions



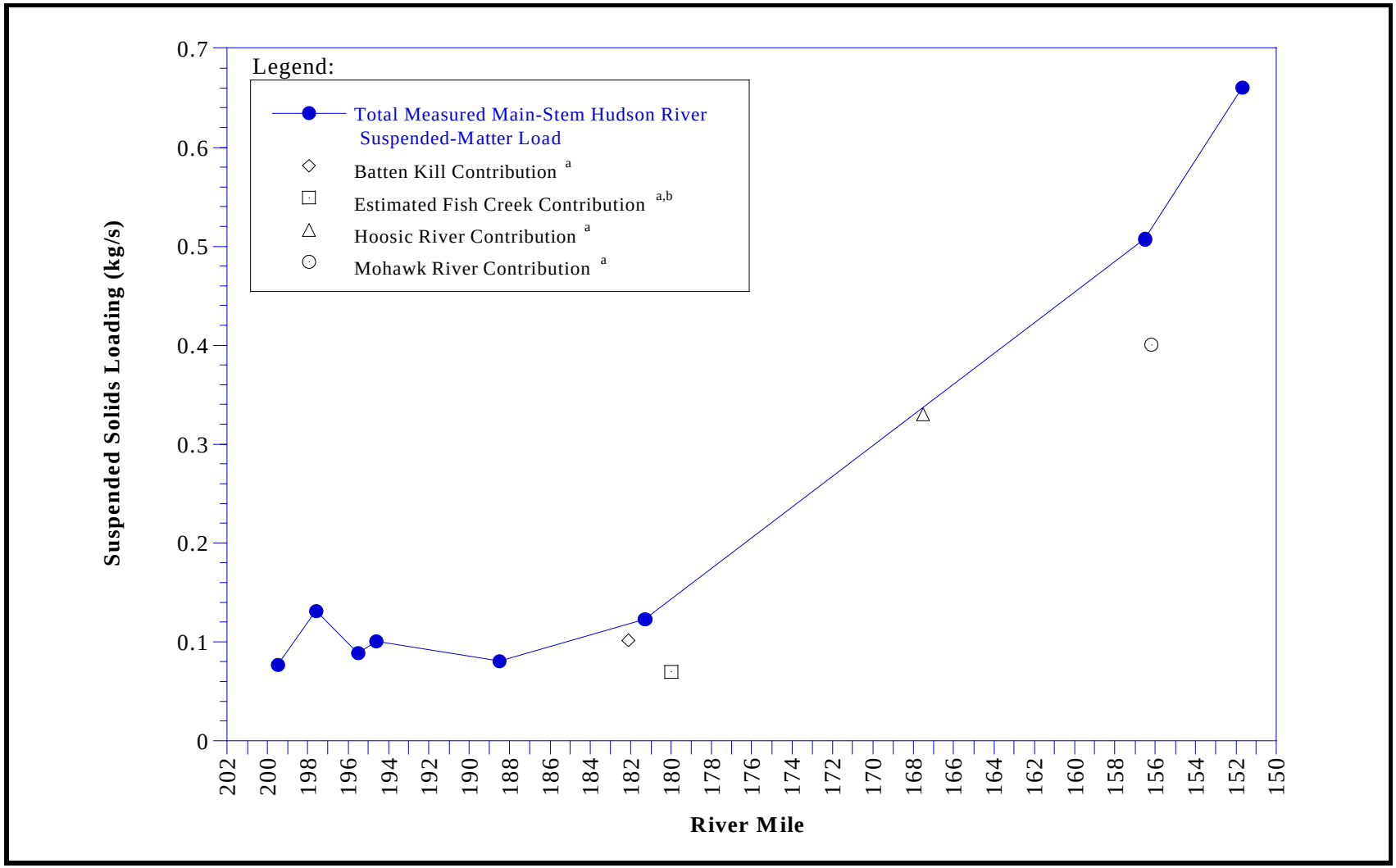
Source: TAMS/Gradient Database, USGS (1993a, 1993b), and NYS Thruway Authority, Office of Canals (1994a, 1993) TAMS/*Gradient*

Note:

a) Tributary river mile designations correspond to point of confluence with the Hudson River.
b) Fish Creek suspended matter load is estimated using the suspended solids value for the Batten Kill and a flow estimate based on drainage basin area.
c) Sample is believed to over-represent dilution by the Moses Kill due to proximity of sampling location to Moses Kill confluence.
d) Sample is believed to over-represent upstream Main-Stem Hudson River loading due to incomplete mixing of the Mohawk River.

Figure 3-34

Suspended-Matter Loading in the Upper Hudson River - Transect 4 High-Flow Conditions



Source: TAMS/Gradient Database, USGS (1993a, 1993b), and NYS Thruway Authority, Office of Canals (1994a, 1993) TAMS/ *Gradient*

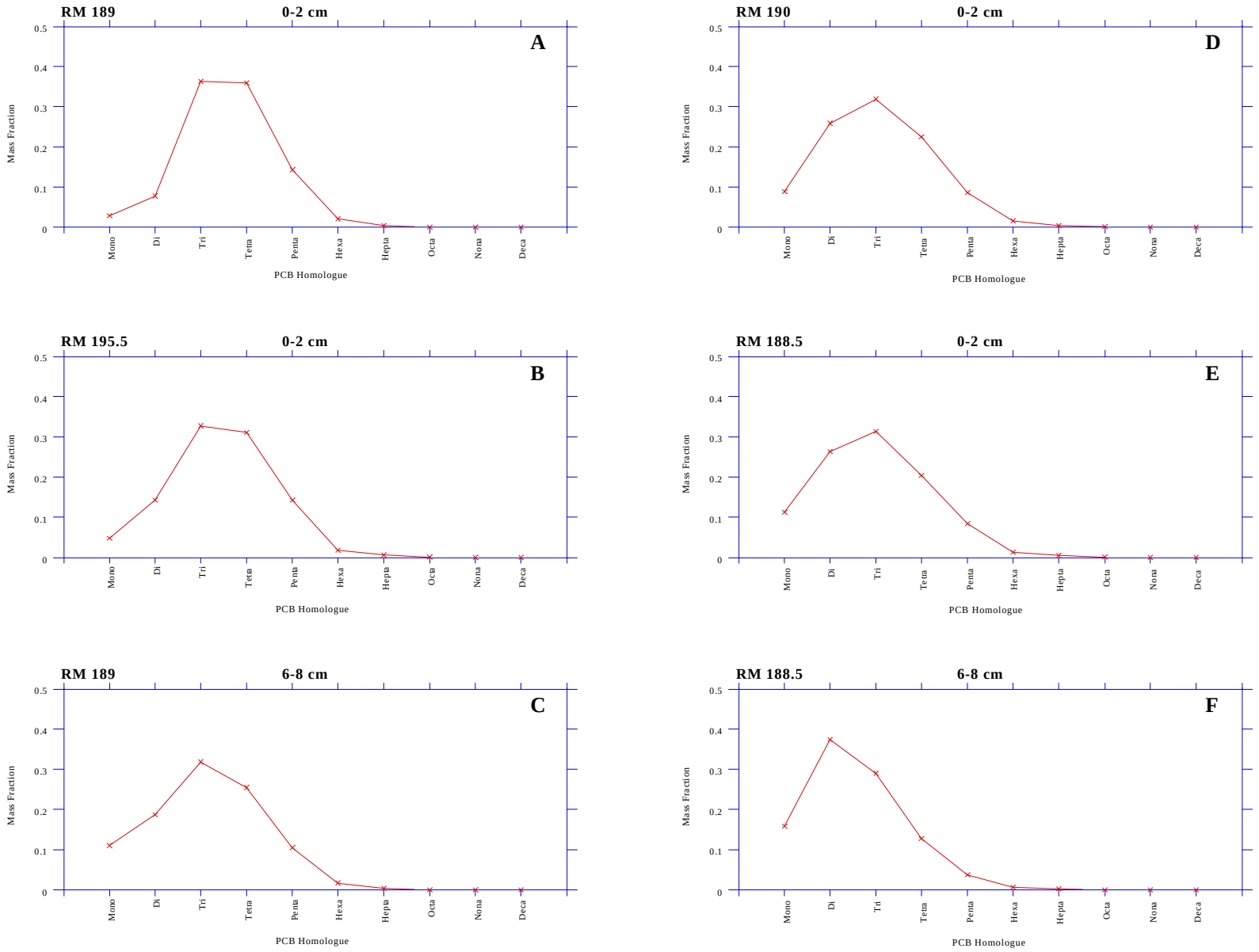
Note:

a) Tributary river mile designations correspond to point of confluence with the Hudson River.

b) Fish Creek suspended matter load is estimated using the suspended solids value for the Batten Kill and a flow estimate based on drainage basin area.

Figure 3-35

Suspended-Matter Loading in the Upper Hudson River - Transect 6 Low-Flow Conditions

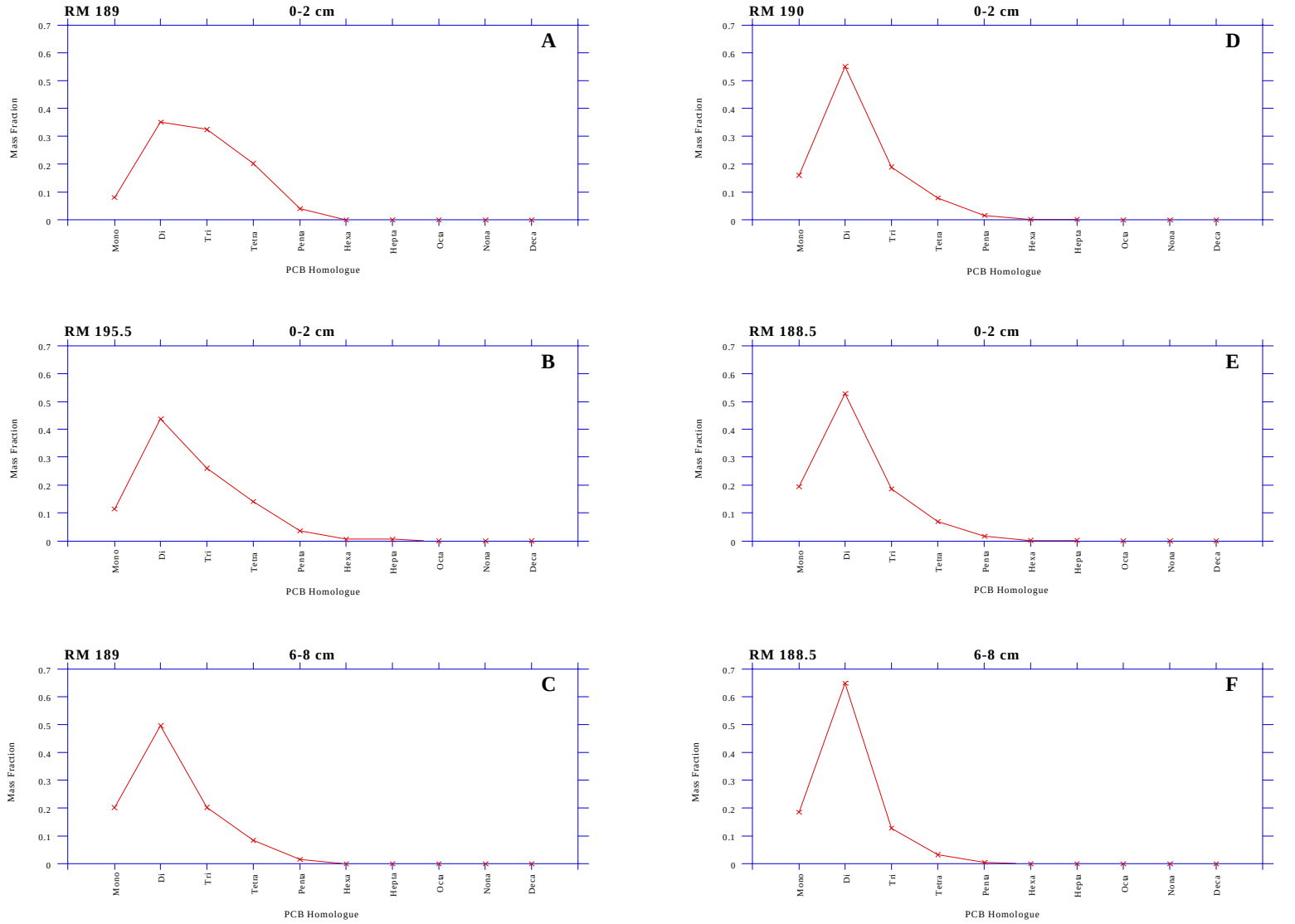


Note:
The level of dechlorination shown in the sediment distribution patterns increases from graph A through F.

Source: TAMS/Gradient Database

TAMS/Cadmus/ *Gradient*

Figure 3-36
Sediment Homologue Distributions in the Thompson Island Pool



Note:

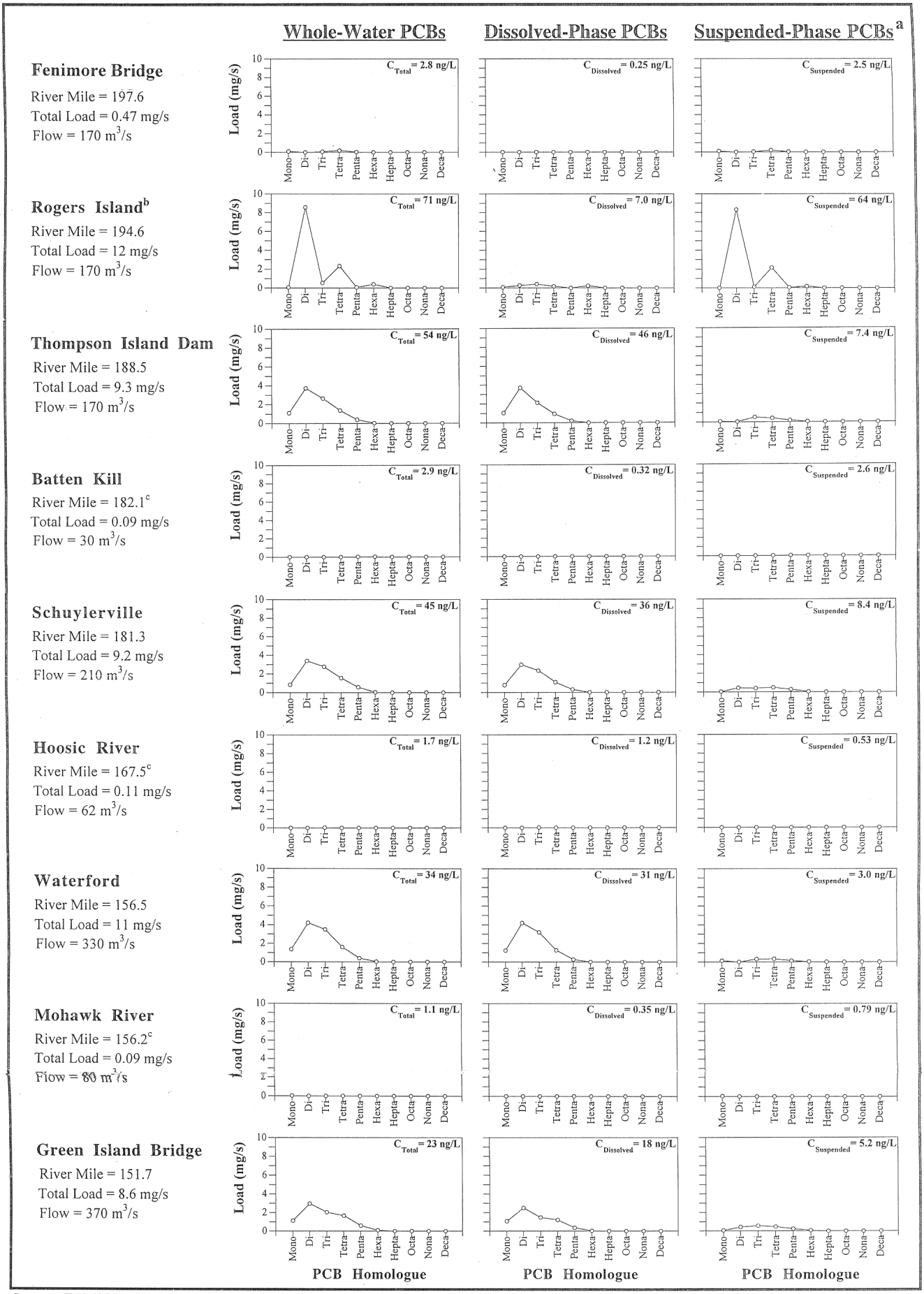
a. Mass fractions are calculated using the homologue distributions shown in Figure 3-36 and the two phase water column partition coefficients developed in Section 3.1.

b. For congeners with out partition coefficients, the median value of the homologue group was used. For Nona and Deca congeners, the median Octa value was used.

Source: TAMS/Gradient Database

TAMS/Cadmus/ *Gradient*

Figure 3-37
Estimated Porewater Homologue Distributions in Sediments from the Thompson Island Pool



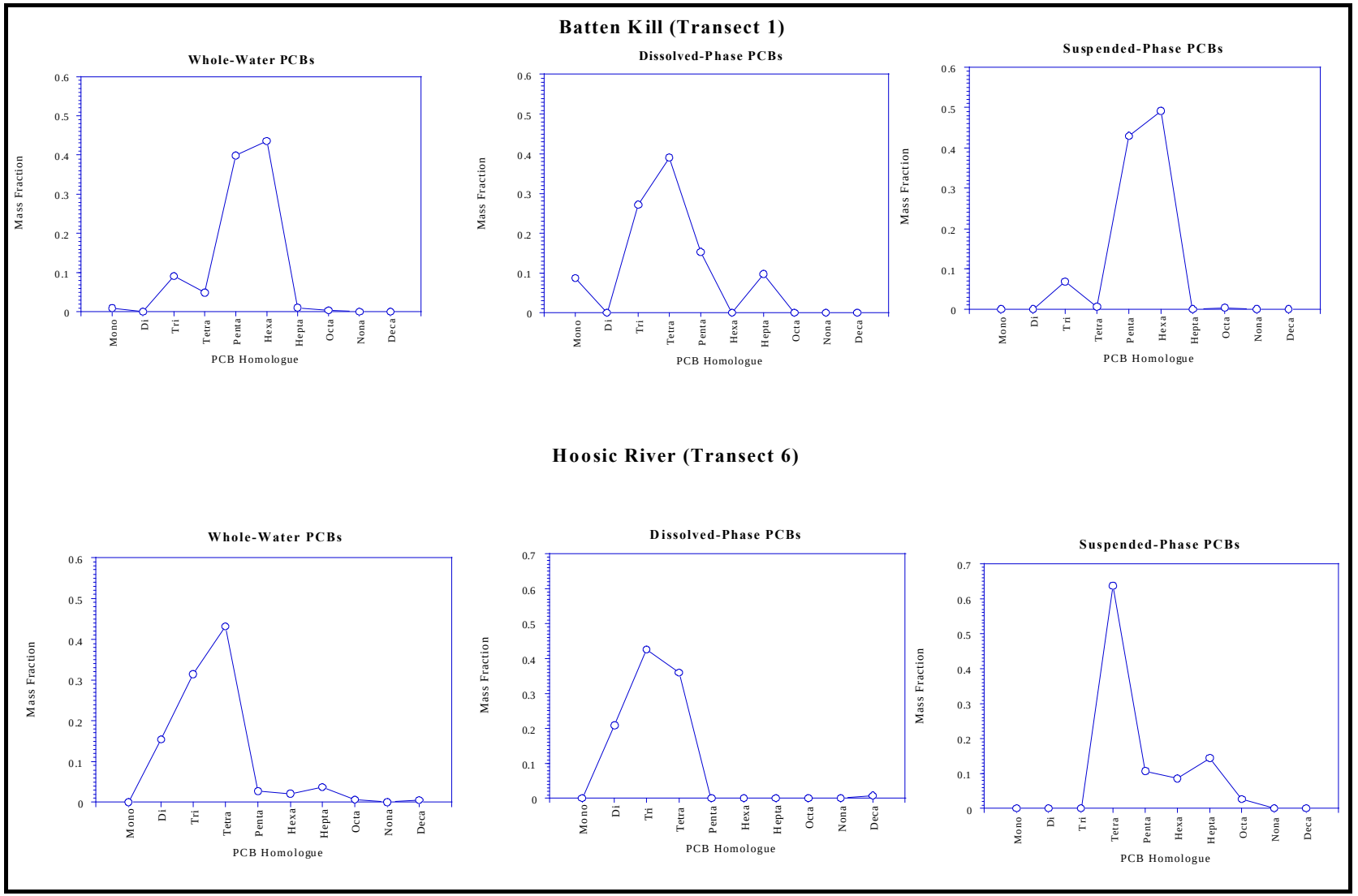
Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993)

TAMS/Cadmus/Gradient

Notes:

a. Suspended-phase PCB concentration in ng/L calculated as function of dry weight concentration (ug/kg) and total suspended solids concentration (mg/L).
b. The homologue pattern measured for this station was unlike any seen in other Phase 2 samples and is considered suspect.
c. Tributary river mile designations correspond to point of confluence with the Hudson River.

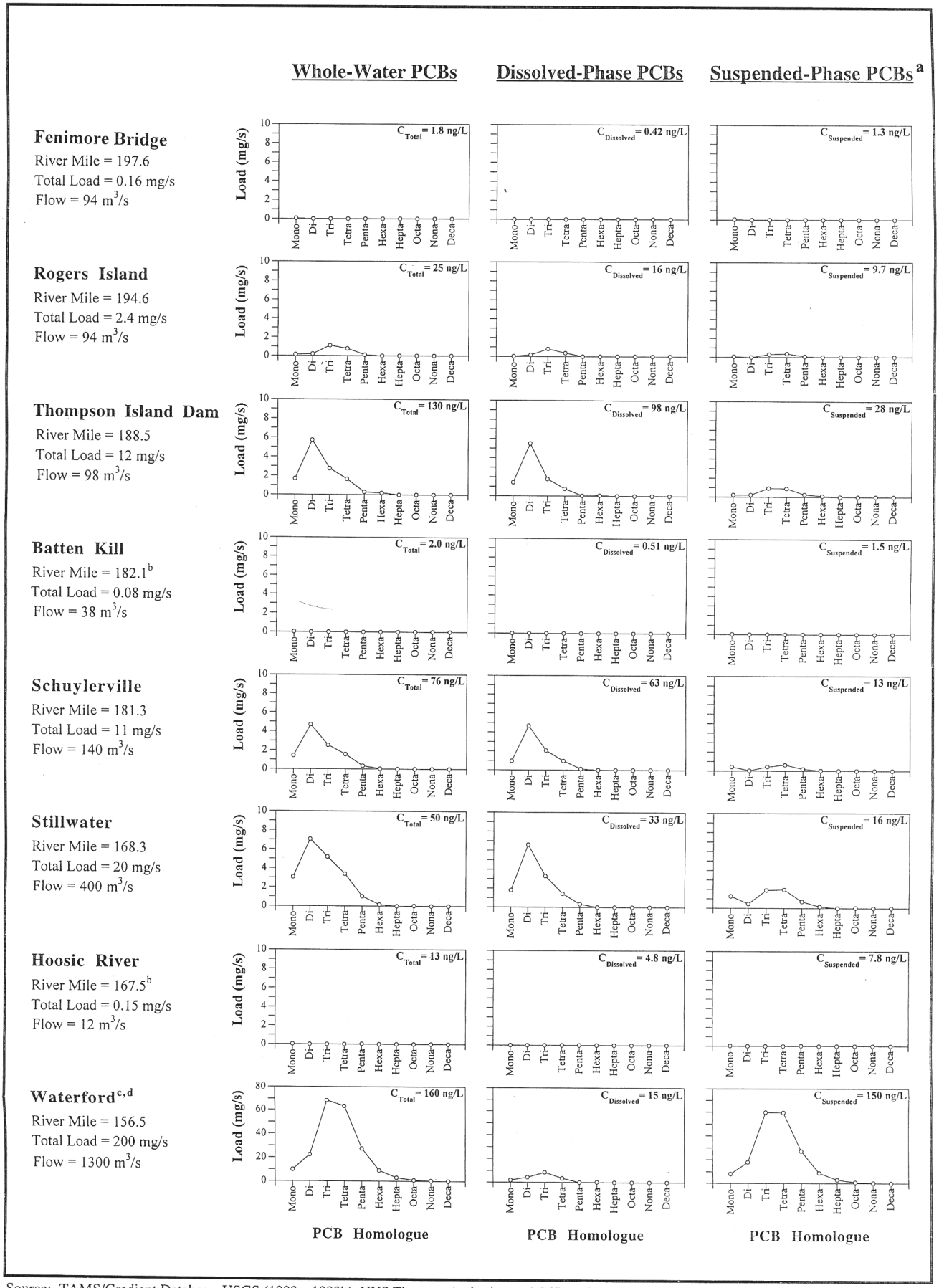
Figure 3-38
Upper River Water-Column Instantaneous PCB Loading for Transect 1 Low-Flow Conditions



Source: TAMS/Gradient Database

TAMS/ *Gradient*

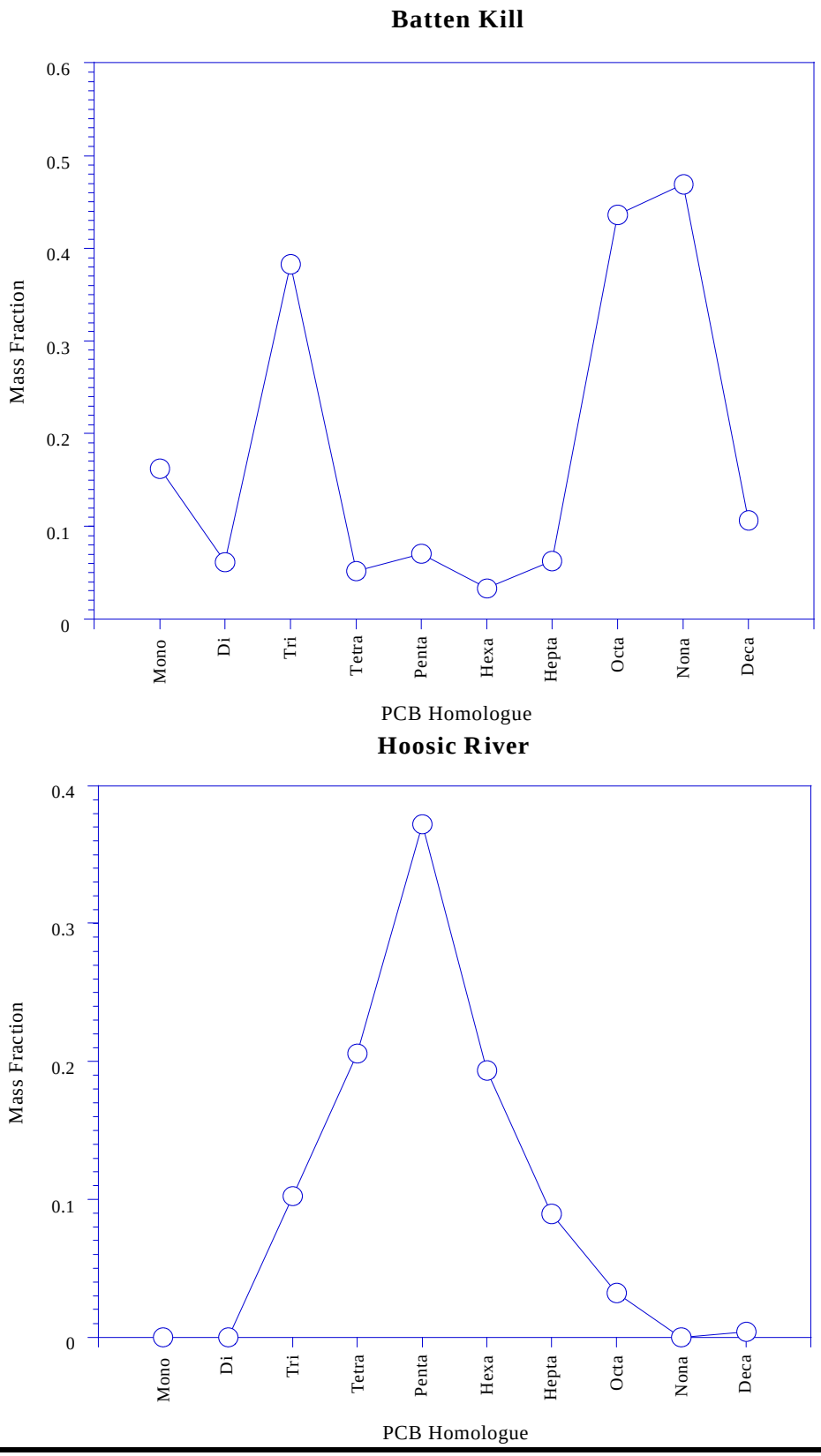
Figure 3-39
Typical Homologue Distributions of the Batten Kill and Hoosic River PCB Water-Column Loads



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/Cadmus/Gradient

Notes:
a. Suspended-phase PCB concentration in ng/L calculated as function of dry weight concentration (ug/kg) and total suspended solids concentration (mg/L).
b. Tributary river mile designations correspond to point of confluence with the Hudson River.
c. Scour event due to onset of spring flood in lower part of the Upper River.
d. Vertical scale expanded to show full scour event loading.

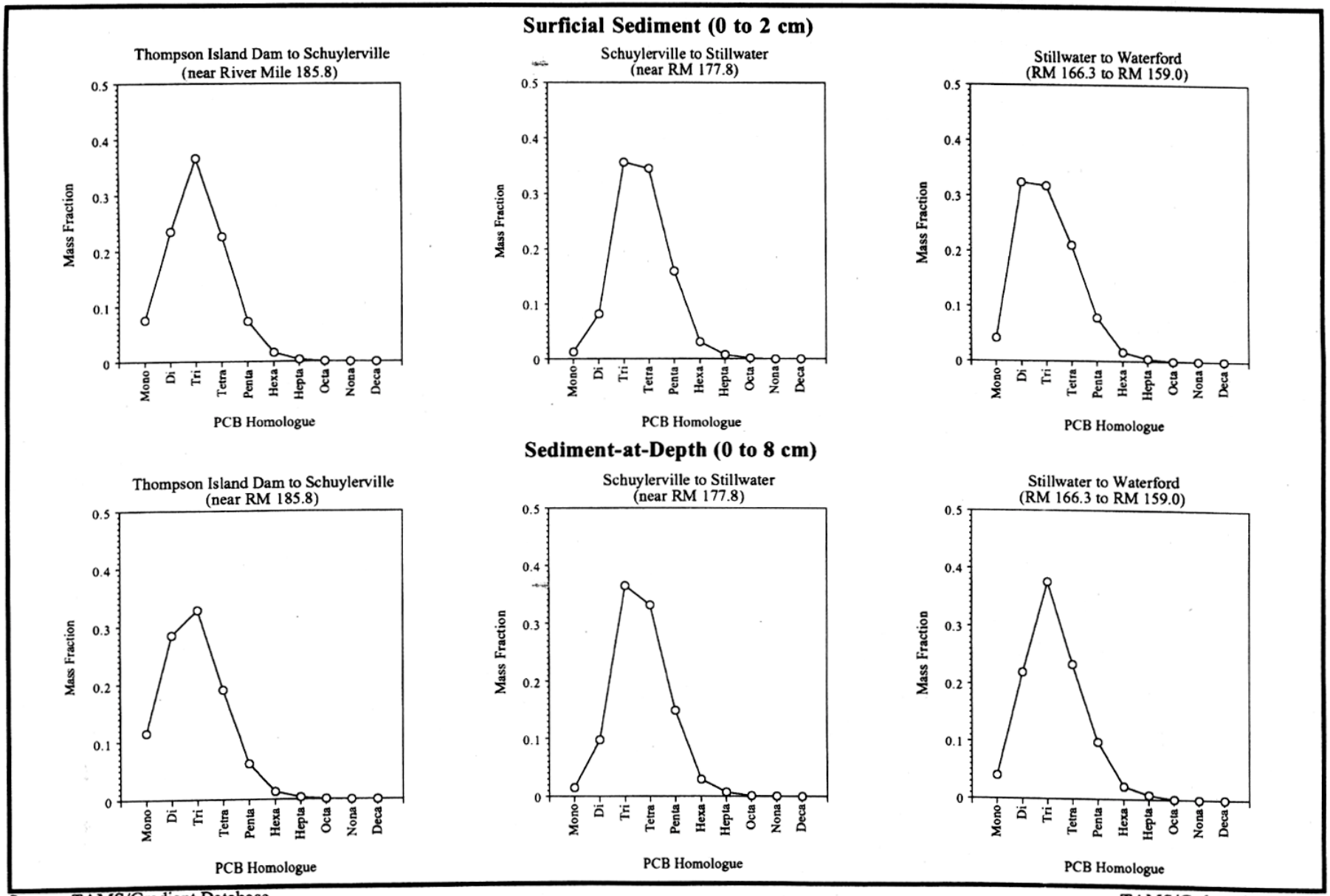
Figure 3-40
Upper River Water-Column Instantaneous PCB Loading for Transect 3
Transition from Low-Flow to High-Flow Conditions



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-41
Homologue Distributions of Surficial Sediments (0 to 2 cm)
in the Batten Kill and the Hoosic River

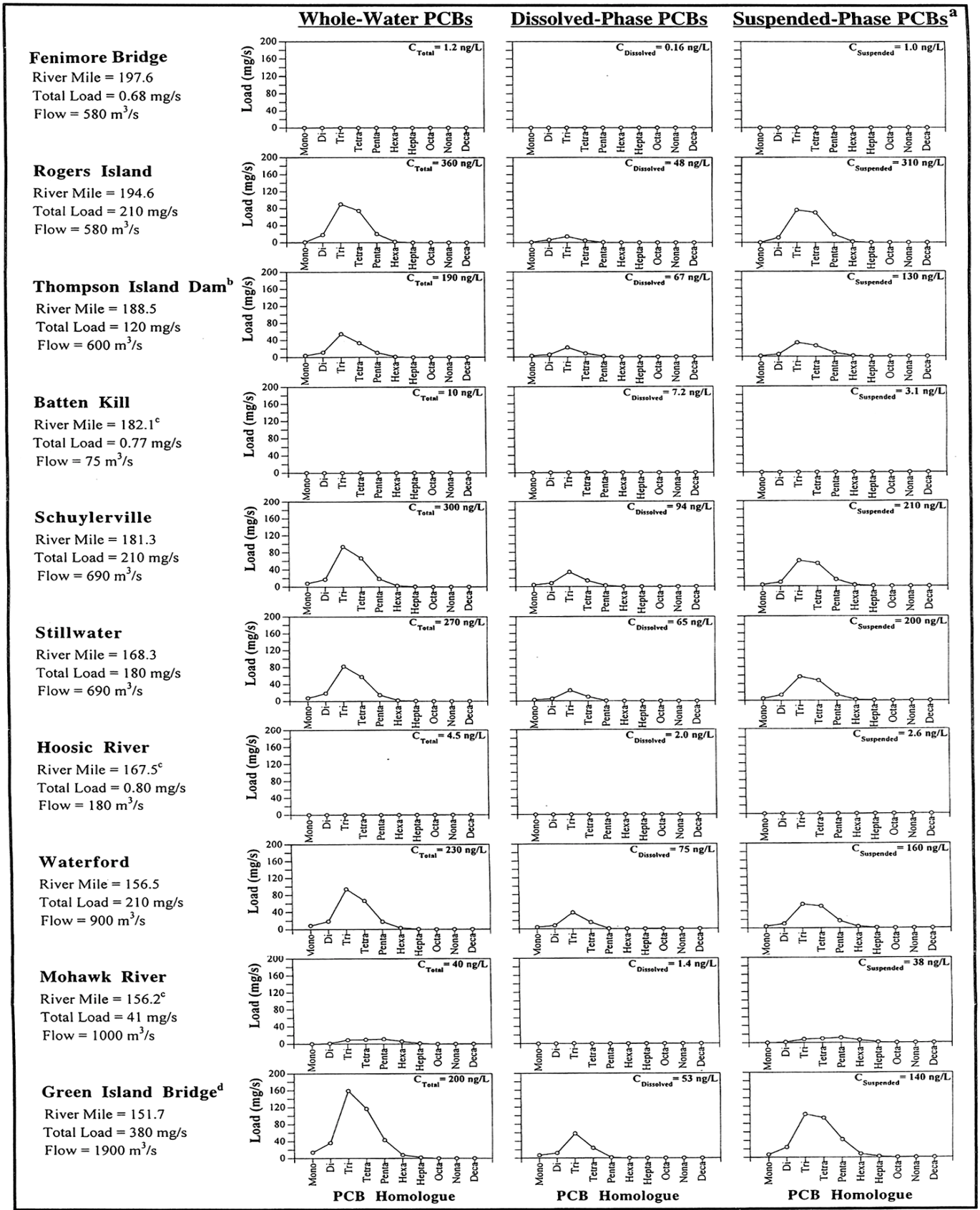


Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

Figure 3-42

Sediment Homologue Distributions in the Upper River Reaches below the Thompson Island Dam



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/Cadmus/Gradient

Notes:

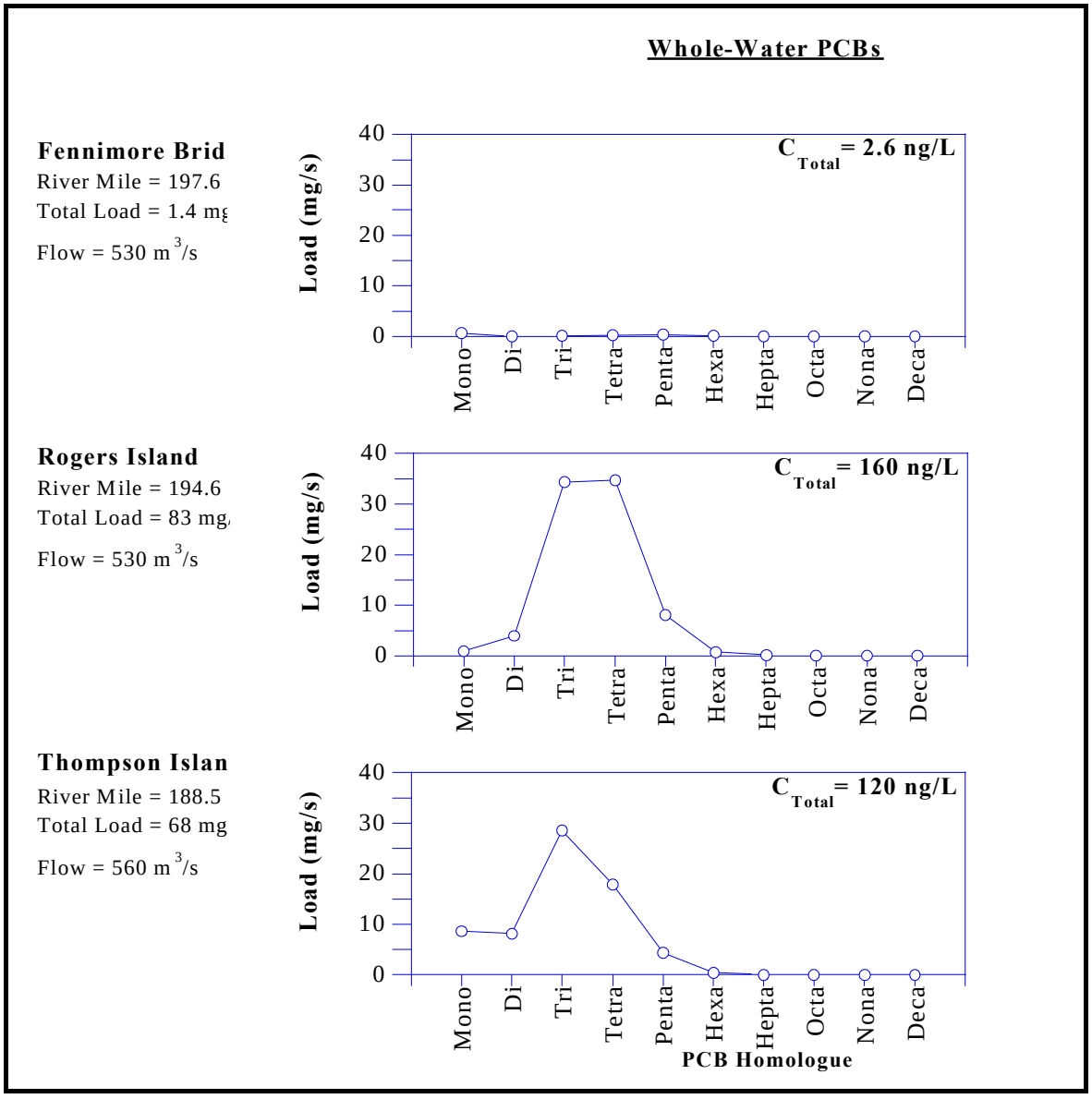
a. Suspended-phase PCB concentration in ng/L calculated as function of dry weight concentration (ug/kg) and total suspended solids concentration (mg/L)

b. Sample is believed to over-represent dilution by Moses Kill due to proximity of sampling location to Moses Kill confluence.

c. Tributary river mile designations correspond to point of confluence with the Hudson River.

d. Sample is believed to over-represent upstream load contribution due to incomplete mixing of the Mohawk River.

Figure 3-43
Upper River Water-Column Instantaneous PCB Loading for Transect 4 High-Flow Conditions

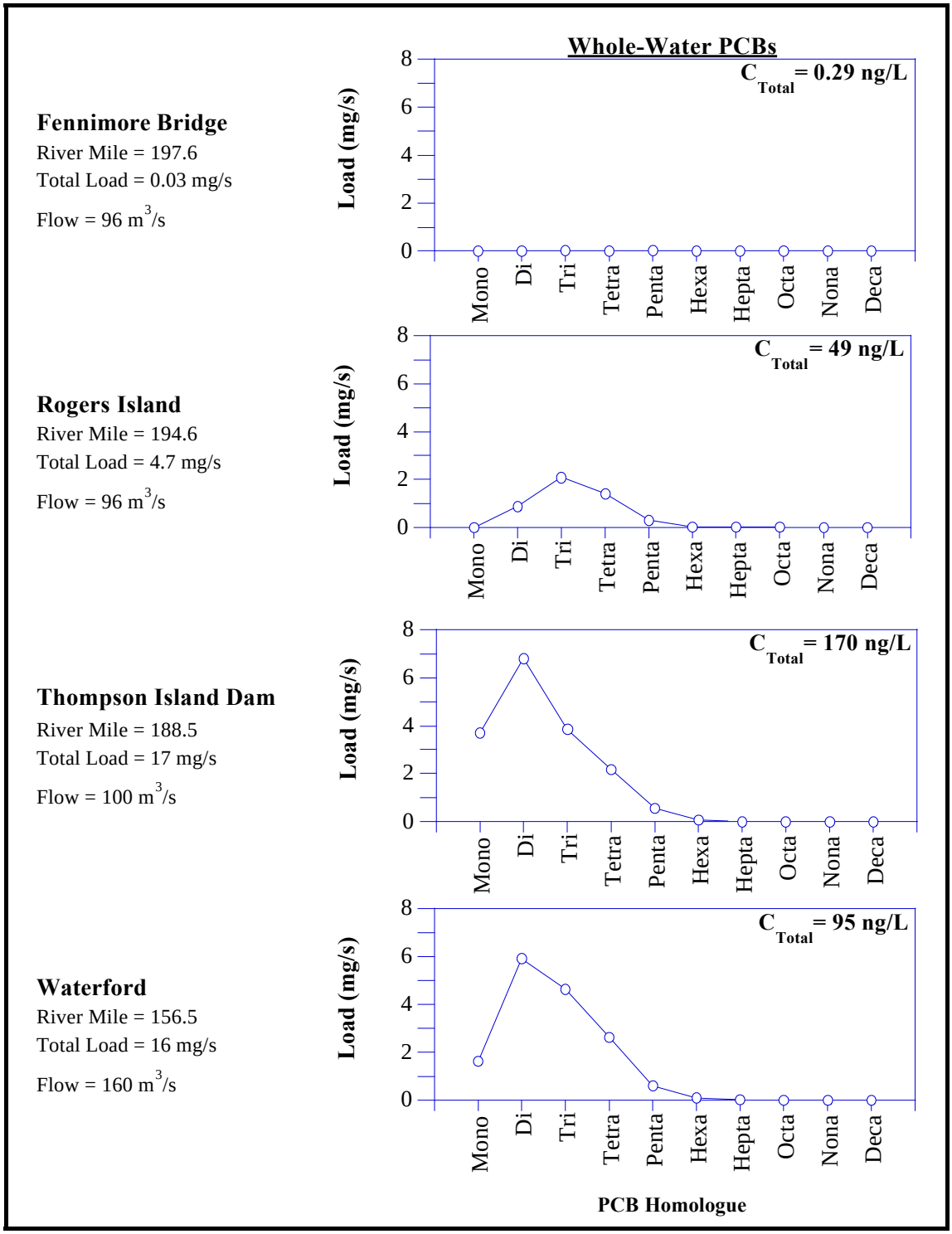


Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/ *Gradient*

Notes:

a. Flow-Averaged Event 1 samples were collected during the period of April 23 to May 8, 1993.
b. Samples collected at Waterford are not represented here due to local canal construction which is believed to have influenced the samples.

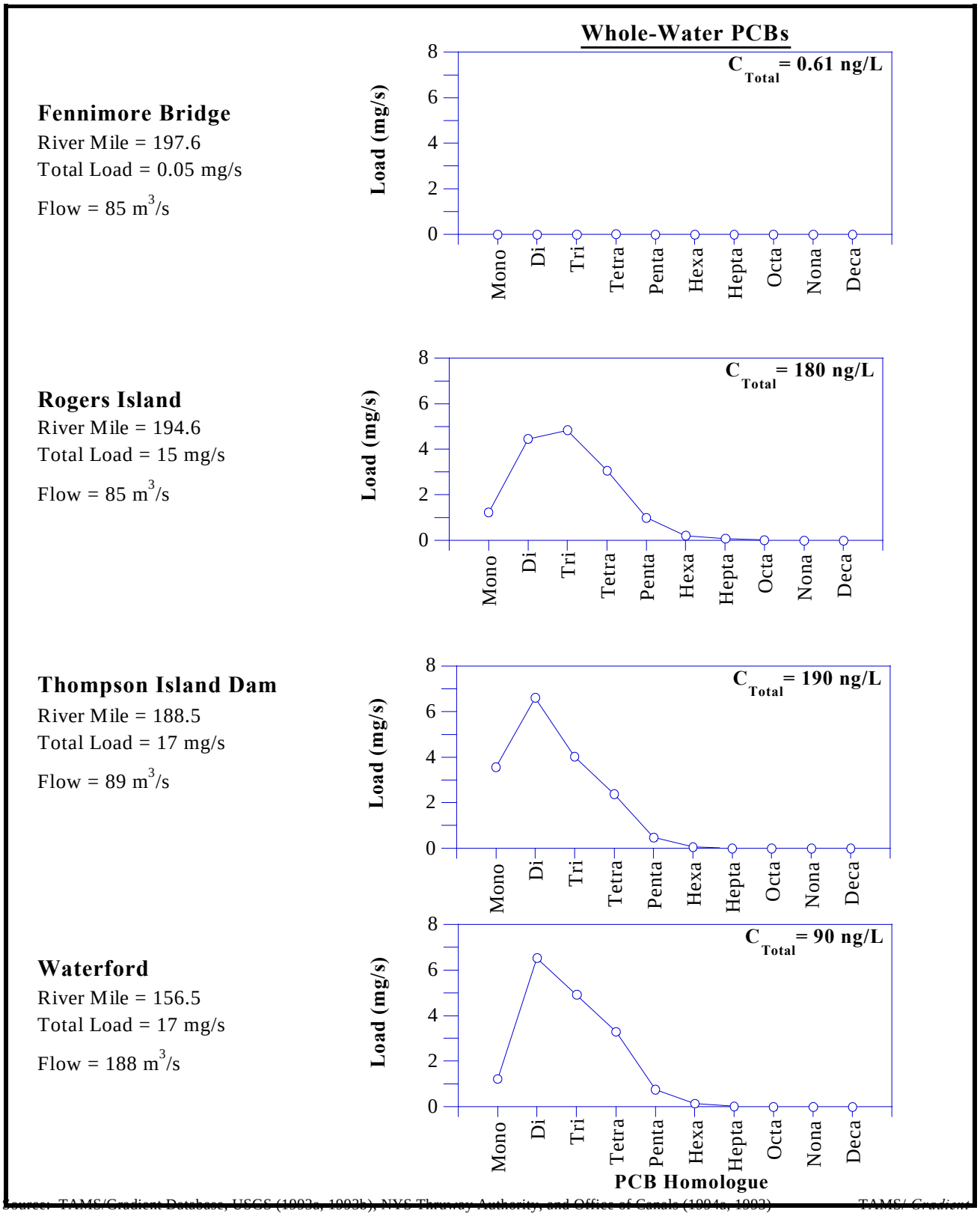
Figure 3-44
Upper River Water-Column PCB Loading for
Flow-Averaged Event 1 High-Flow Conditions



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/ *Gradient*

Note: Flow-Averaged 2 samples were collected during the period of May 12 to May 27, 1993.

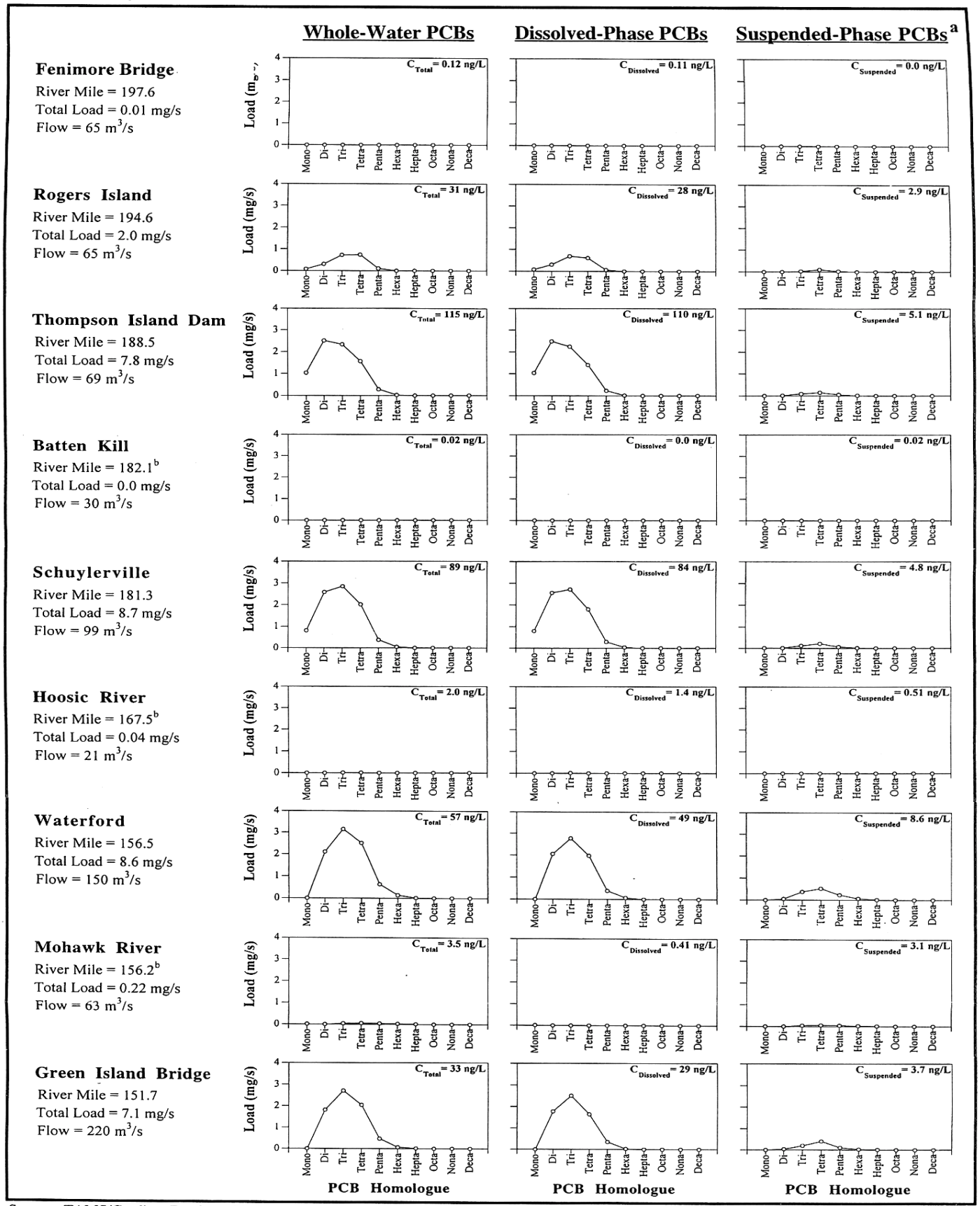
Figure 3-45
Upper River Water-Column PCB Loading for
Flow-Averaged Event 2 Low-Flow Conditions



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/*Gradient*

Note: Flow-Averaged 3 samples were collected during the period of June 6 to June 19, 1993.

Figure 3-46
Upper River Water-Column PCB Loading for
Flow-Averaged Event 3 Low-Flow Conditions



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/Cadmus/Gradient

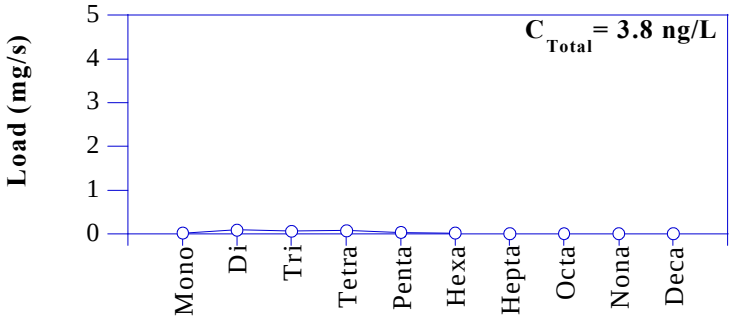
Notes:

a. Suspended-phase PCB concentration in ng/L calculated as function of dry weight concentration (ug/kg) and total suspended solids concentration (mg/L).
b. Tributary river mile designations correspond to point of confluence with the Hudson River.

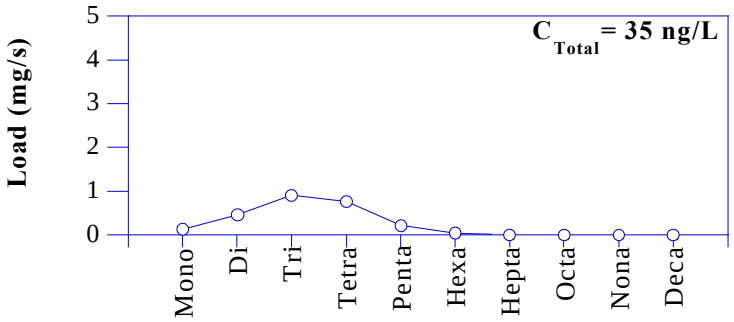
Figure 3-47
Upper River Water-Column Instantaneous PCB Loading for Transect 6 Low-Flow Conditions

Whole-Water PCBs

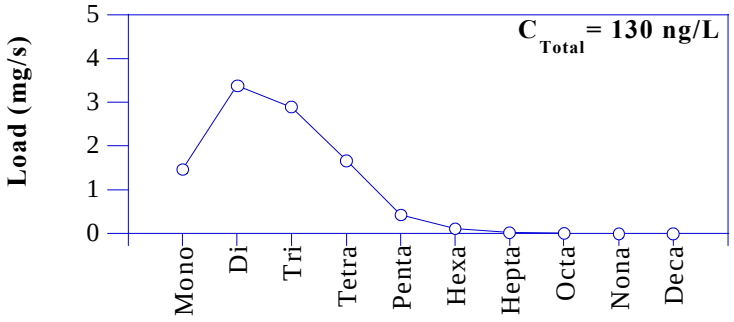
Fennimore Bridge
River Mile = 197.6
Total Load = 0.27 mg/s
Flow = 71 m^3/s



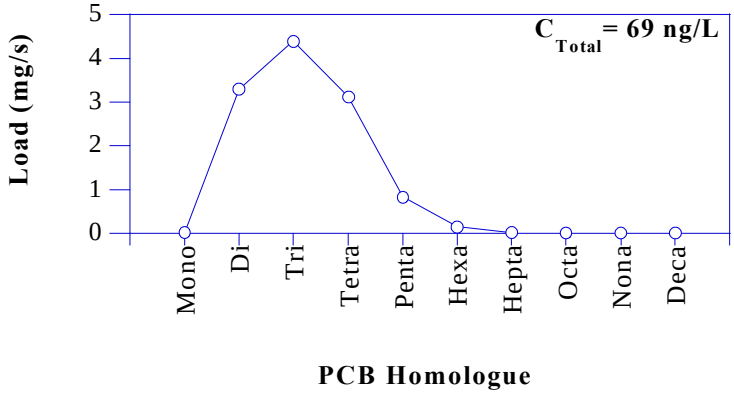
Rogers Island
River Mile = 194.6
Total Load = 2.5 mg/s
Flow = 71 m^3/s



Thompson Island Dam
River Mile = 188.5
Total Load = 10 mg/s
Flow = 75 m^3/s



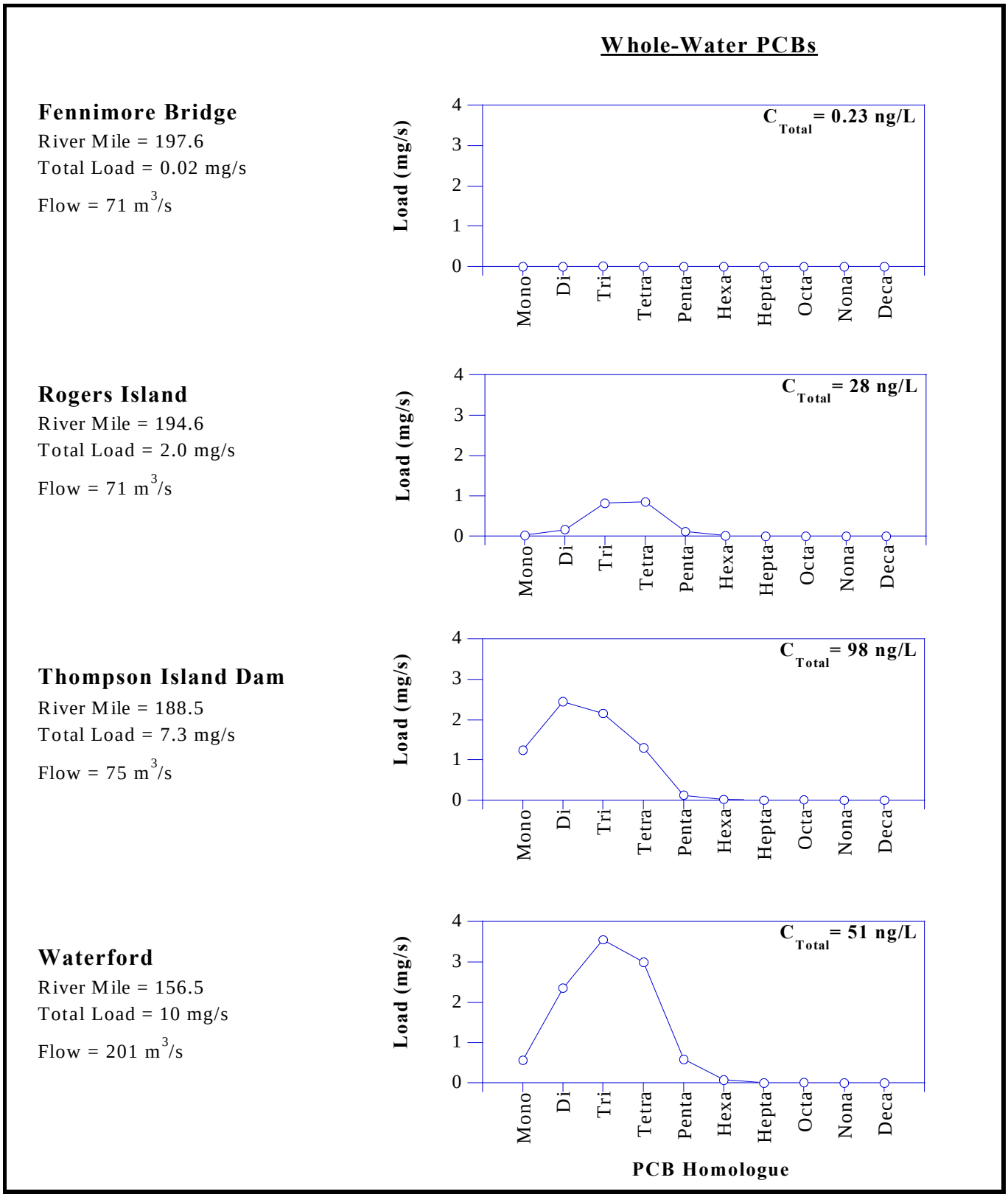
Waterford
River Mile = 156.5
Total Load = 12 mg/s
Flow = 171 m^3/s



Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/ *Gradient*

Note: Flow-Averaged 5 samples were collected during the period of August 2 to August 17, 1993.

Figure 3-48
Upper River Water-Column PCB Loading for
Flow-Averaged 5 Low-Flow Conditions

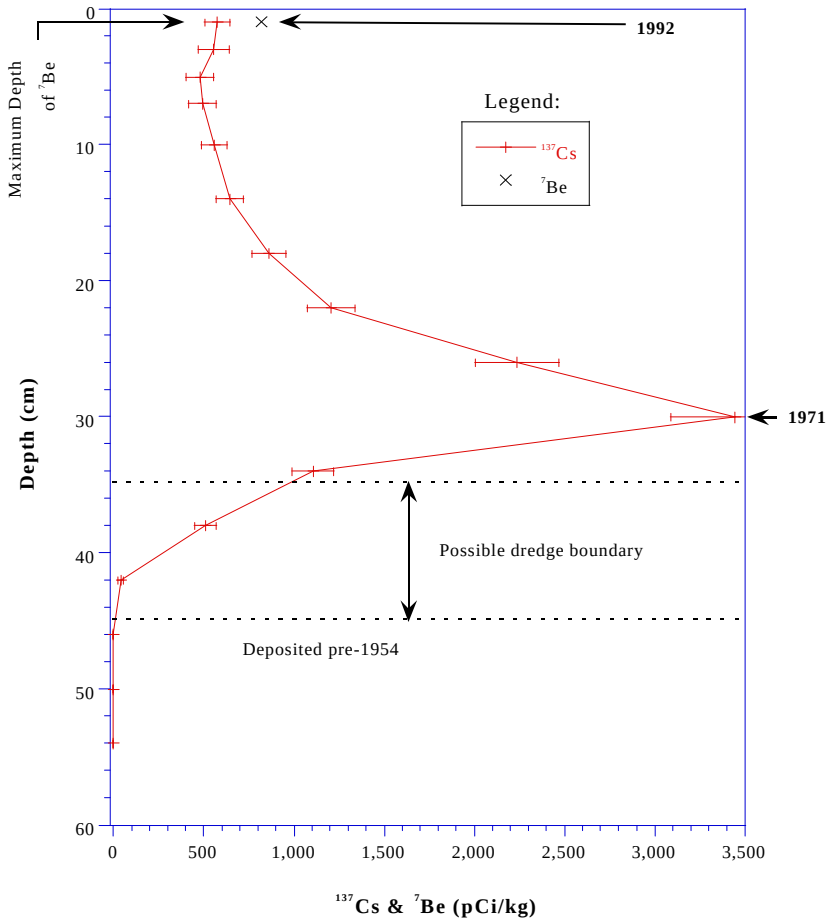


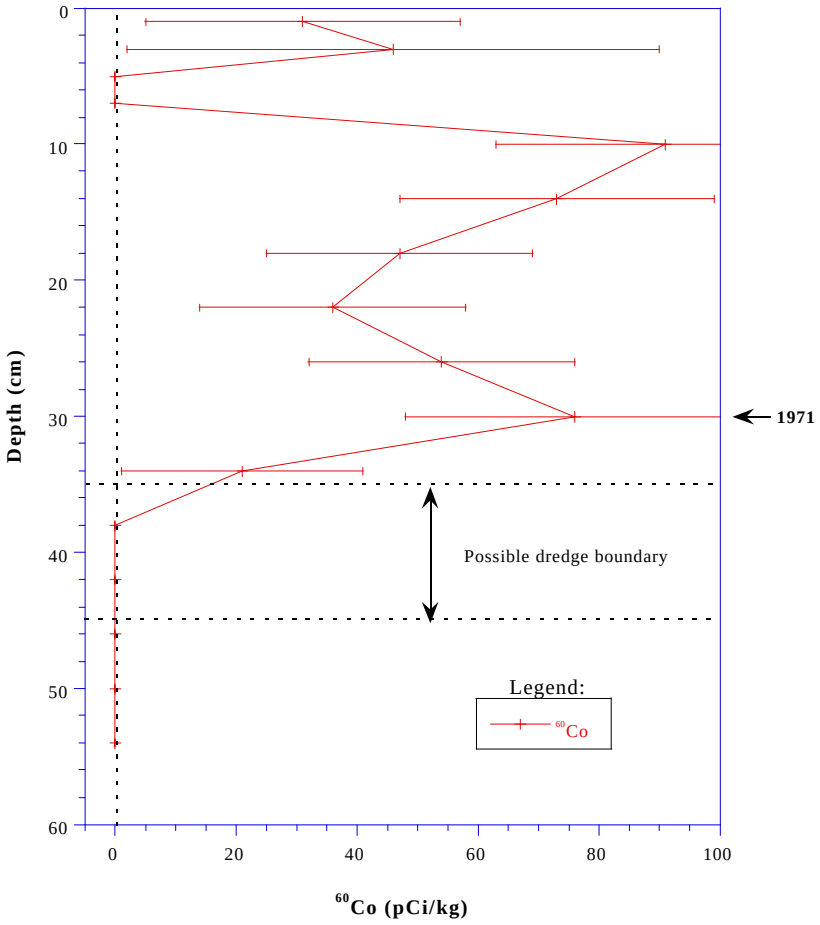
Source: TAMS/Gradient Database, USGS (1993a, 1993b), NYS Thruway Authority, and Office of Canals (1994a, 1993) TAMS/*Gradient*

Note: Flow-Averaged 6 water column samples were collected during the period of September 9 to September 23, 1993.

Figure 3-49
Upper River Water-Column PCB Loading for
Flow-Averaged 6 Low-Flow Conditions

High-Resolution Sediment Core 6 (River Mile 43.2)
Lents Cove





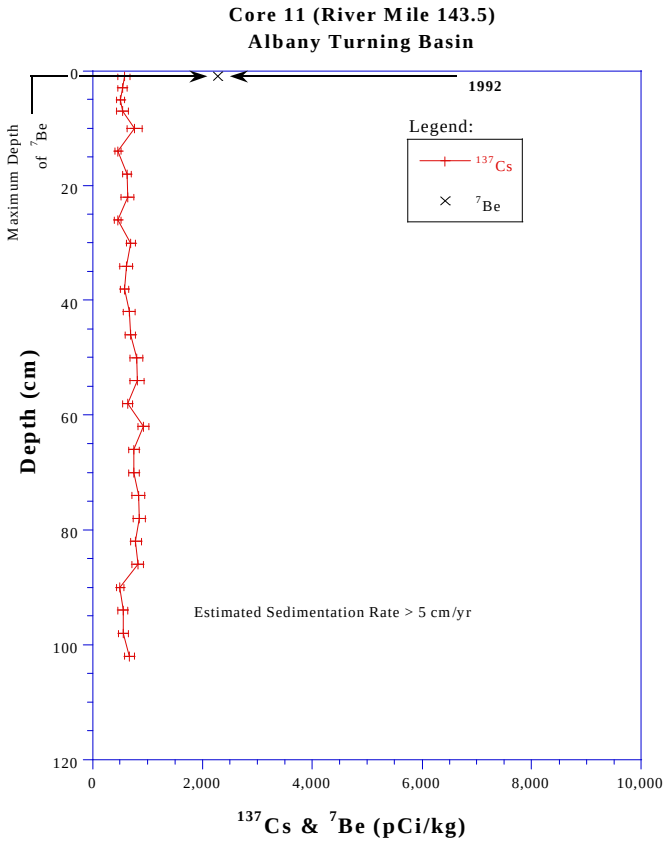
Note:
Error bars represent two standard deviations in counting uncertainty. The radionuclide is considered to be present when this uncertainty does not contain zero.

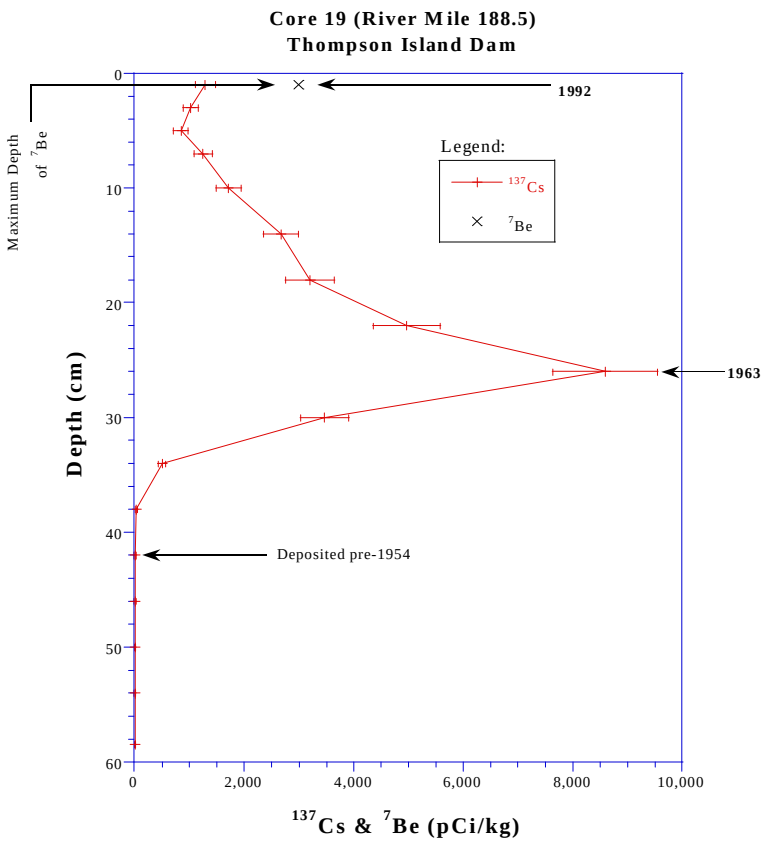
Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-50

The Coincidence of the ^{137}Cs and ^{60}Co Maxima at River Mile 43.2 (Core 6)





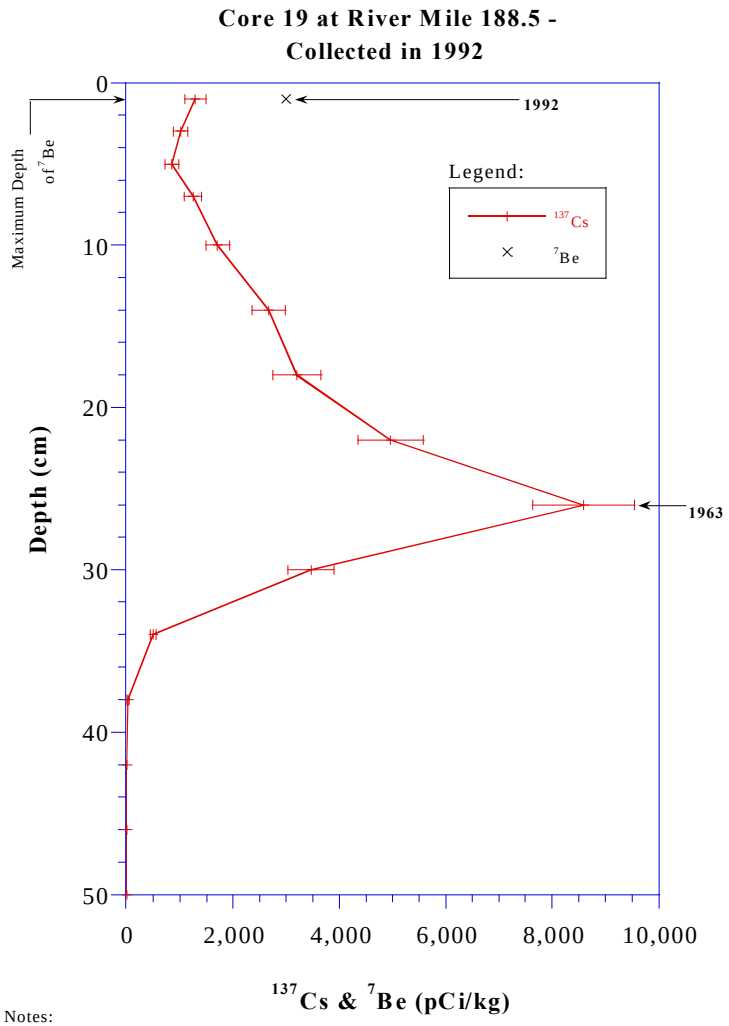
Note:
Error bars represent two standard deviations of counting uncertainty. The radionuclide is considered to be present when this uncertainty does not contain zero.

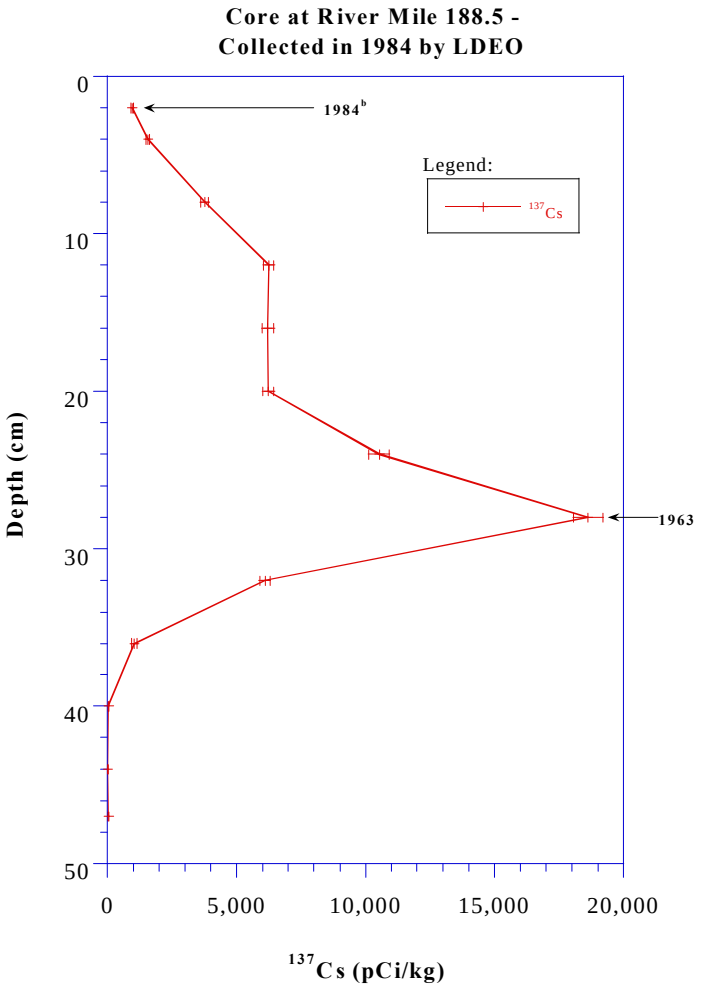
Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-51

^{137}Cs Concentrations in High Resolution Sediment Core 11 and Core 19





Notes:

a. Error bars represent two standard deviations of counting uncertainty. The radionuclide is considered to be present when this uncertainty does not contain zero.

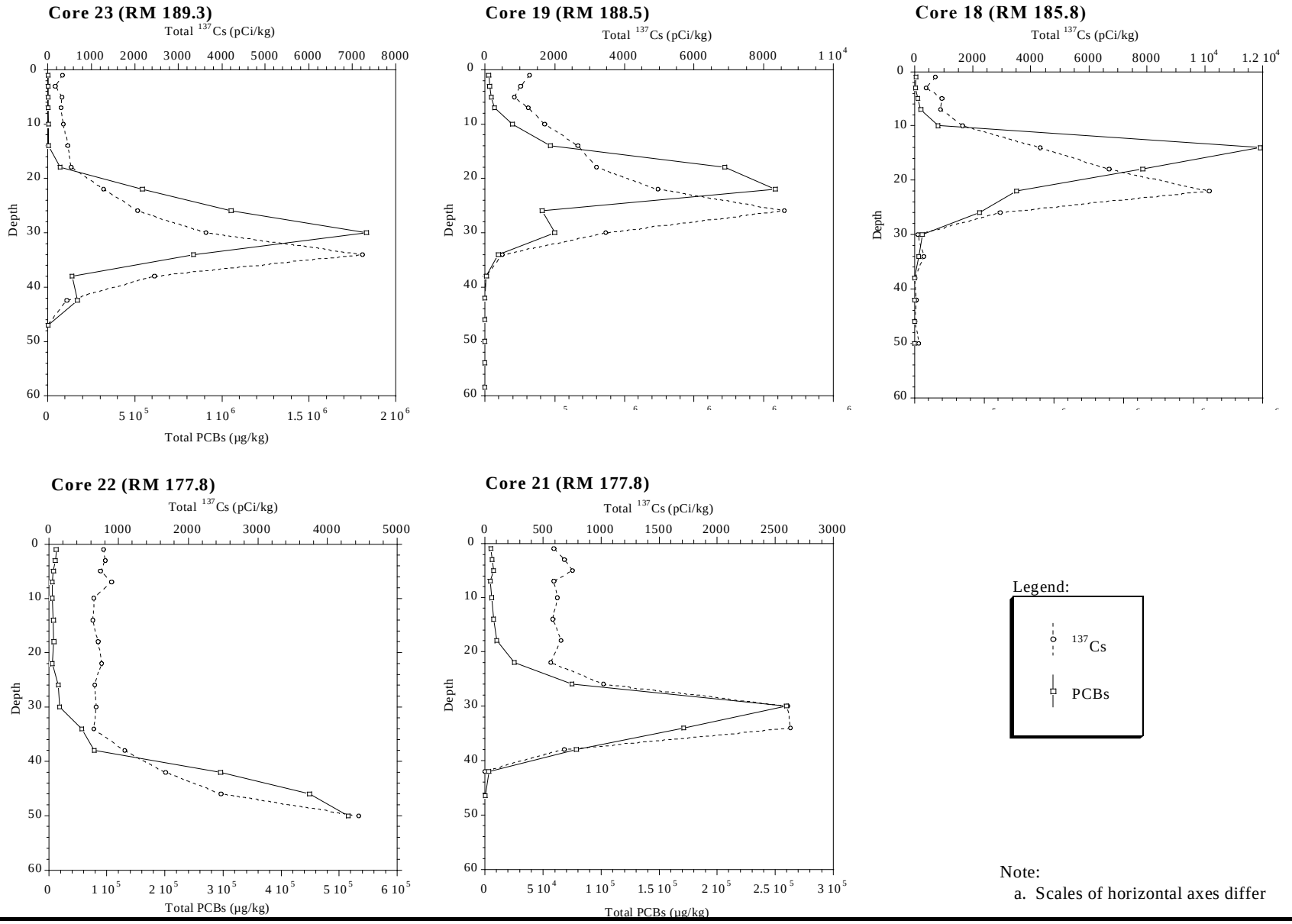
b. The historical core was not analyzed for ^{7}Be; its core top is assumed to represent the 1984 period of collection.

Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-52

Comparison of ^{137}Cs Profiles between a Phase 2 High-Resolution Sediment Core and a Historical Core at River Mile 188.5

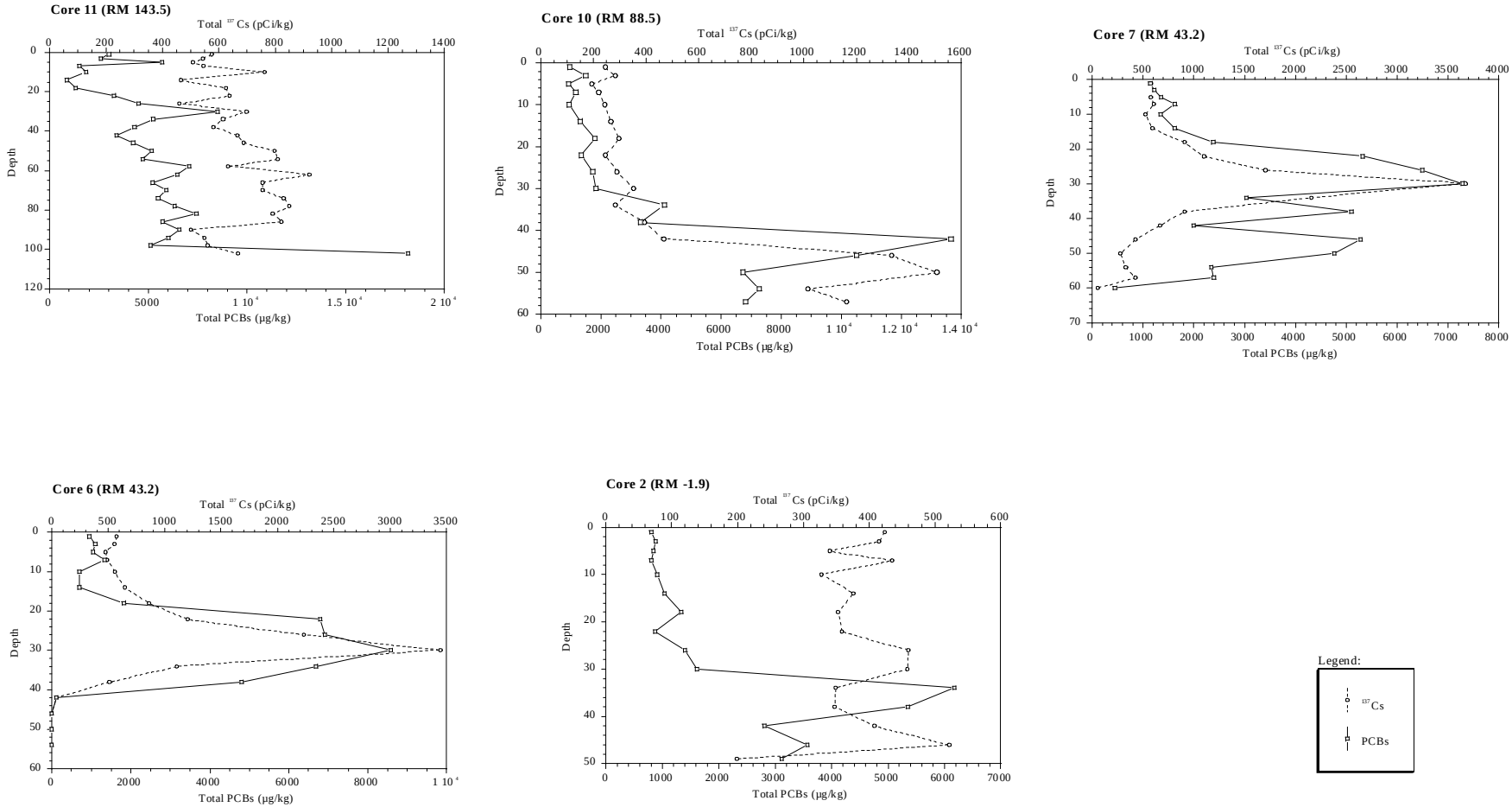


Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-53

Upper River High-Resolution Sediment Cores Depth vs. ^{137}Cs Concentration and PCB Concentration

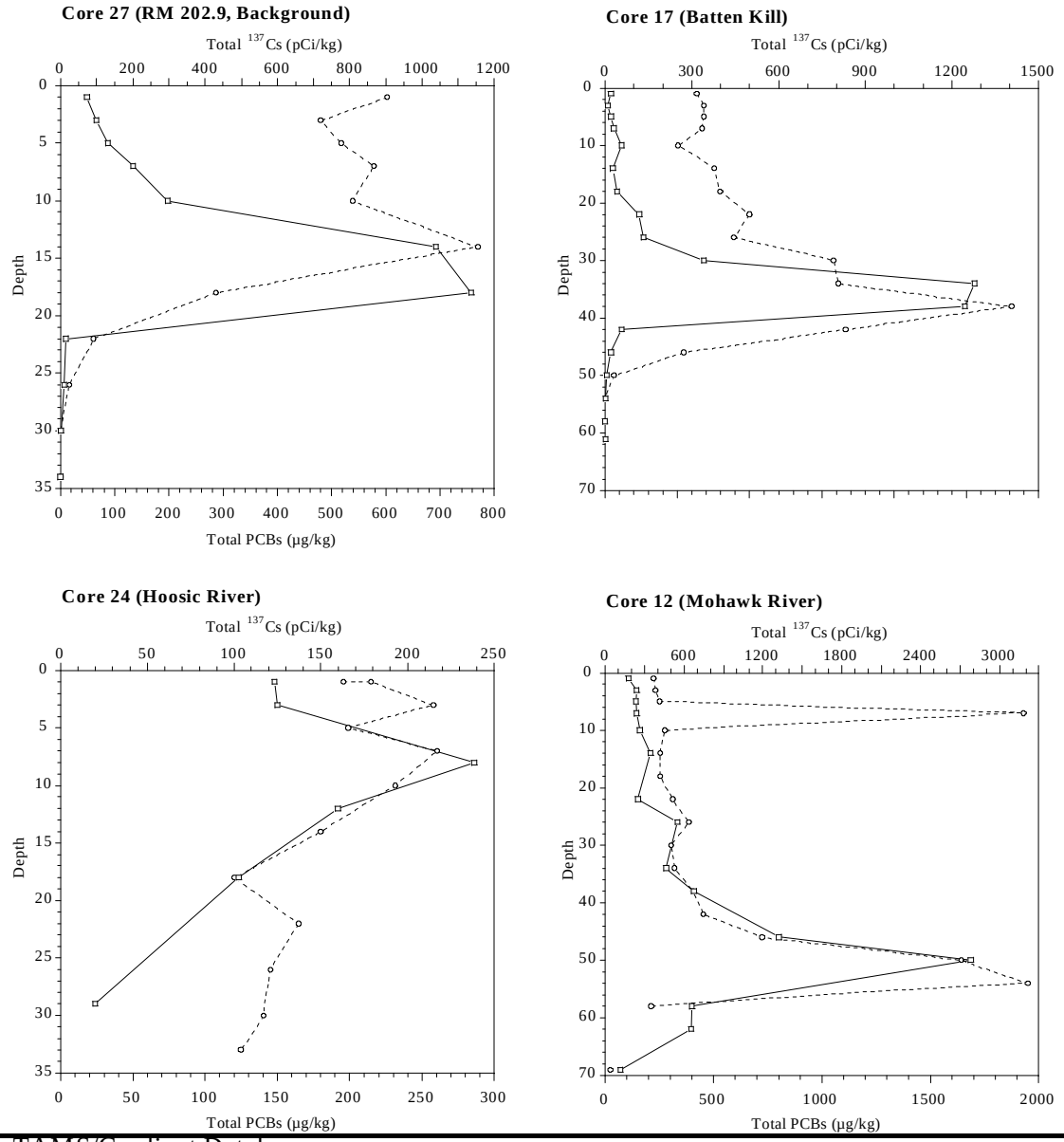


Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-54

Lower River High-Resolution Sediment Cores Depth vs. ^{137}Cs Concentration and PCB Concentration



Note:
Scales of horizontal and vertical axes differ

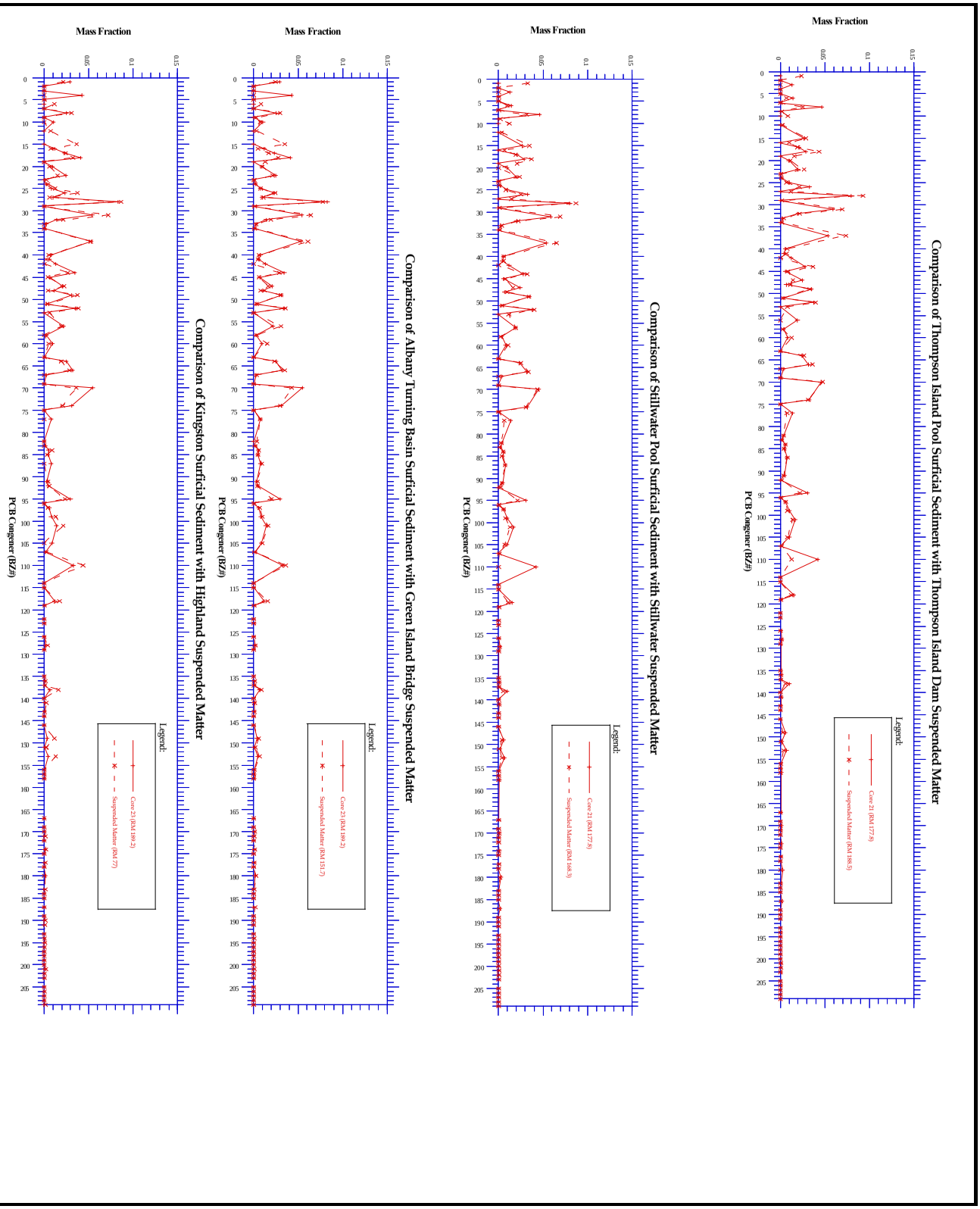
Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-55

Tributaries and Background High Resolution Sediment Cores

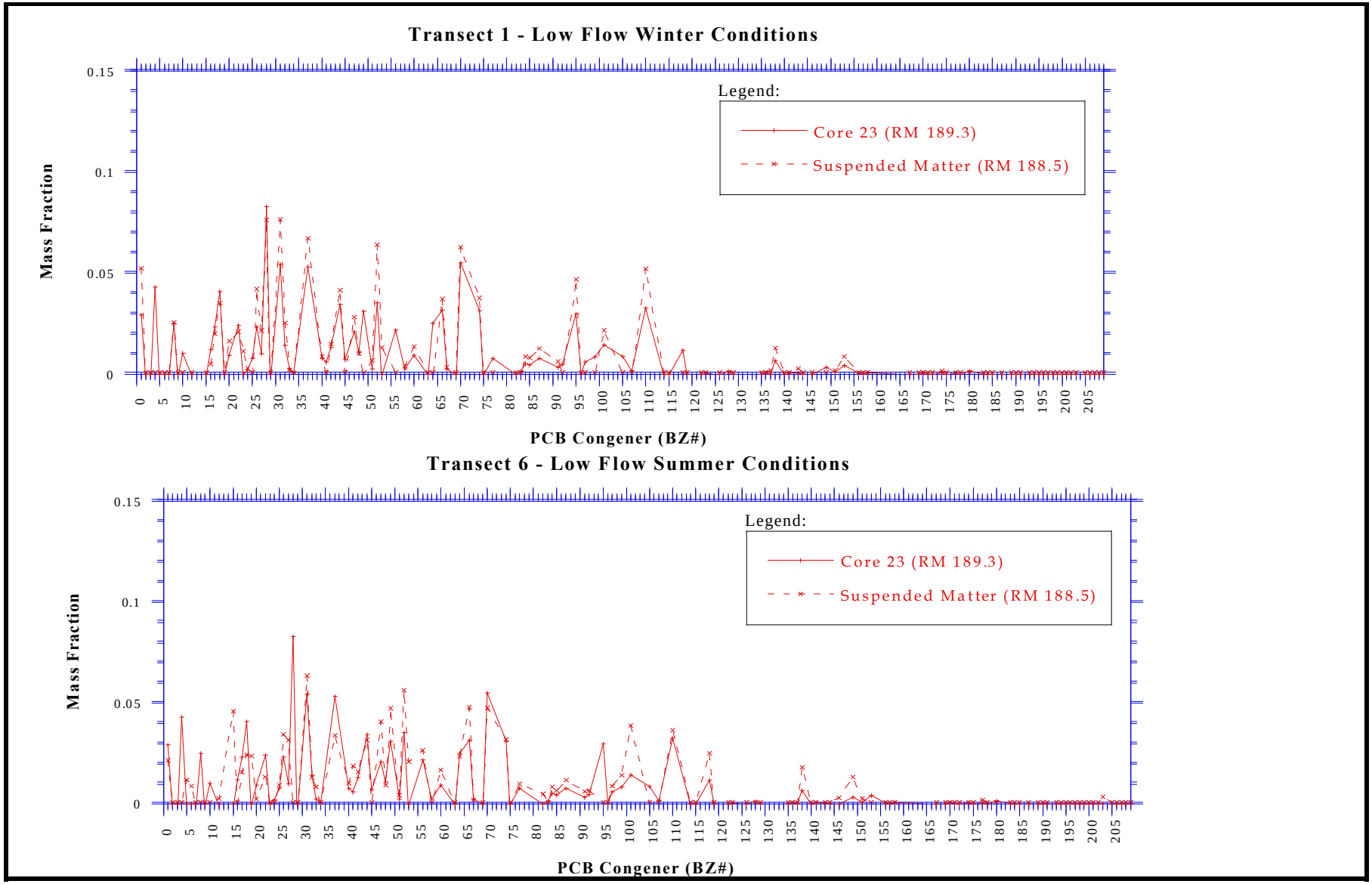
Depth vs. ^{137}Cs Concentration and PCB Concentration



Source: TAMS/Gradient Database

TAMS/ *Gradient*

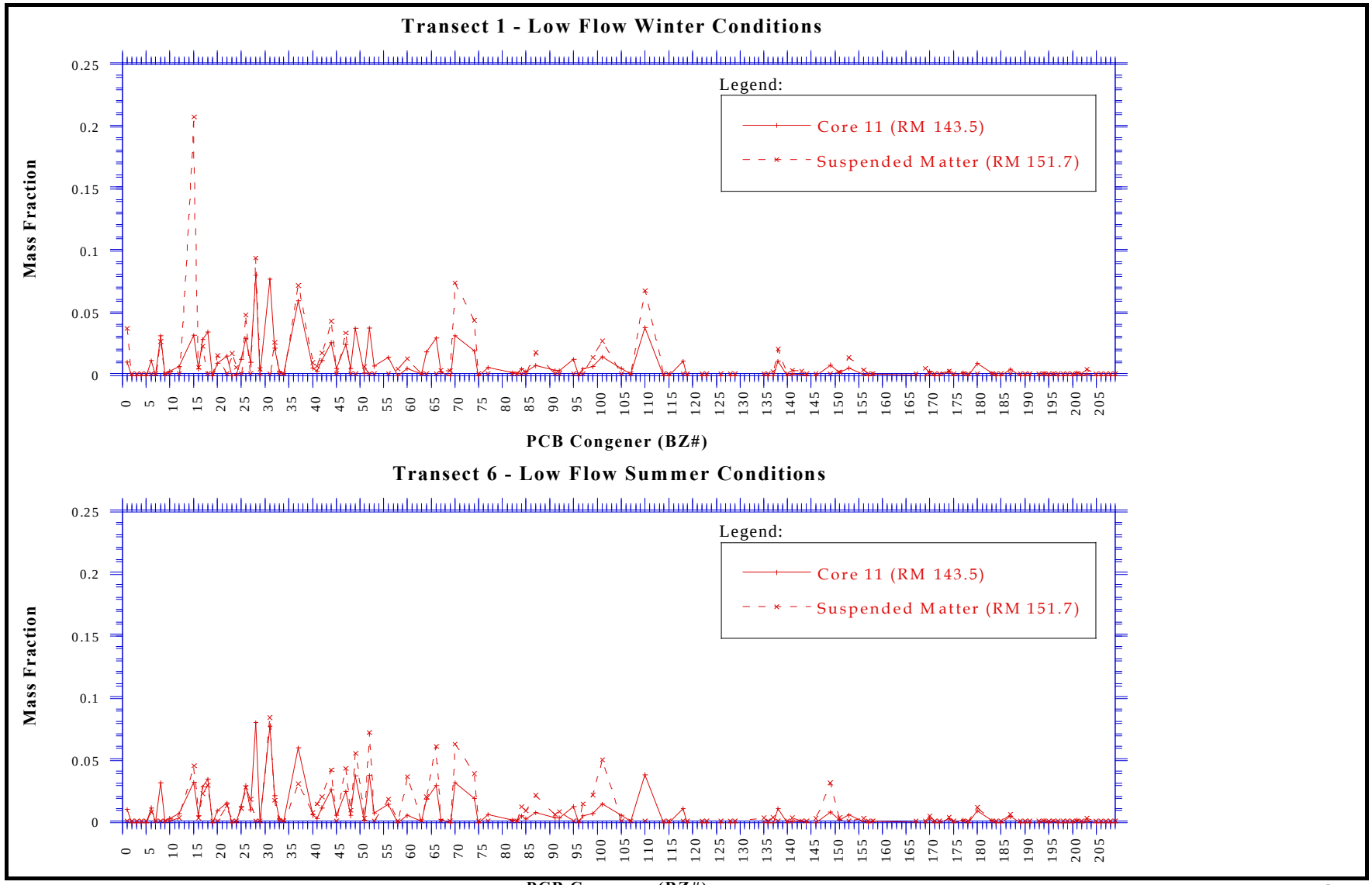
Figure 3-56
Comparison of the Surficial Sediment Congener Distribution
with the Corresponding Transect 4 High-Flow Suspended-Matter Congener Distribution



Source: TAMS/Gradient Database

TAMS/*Gradient*

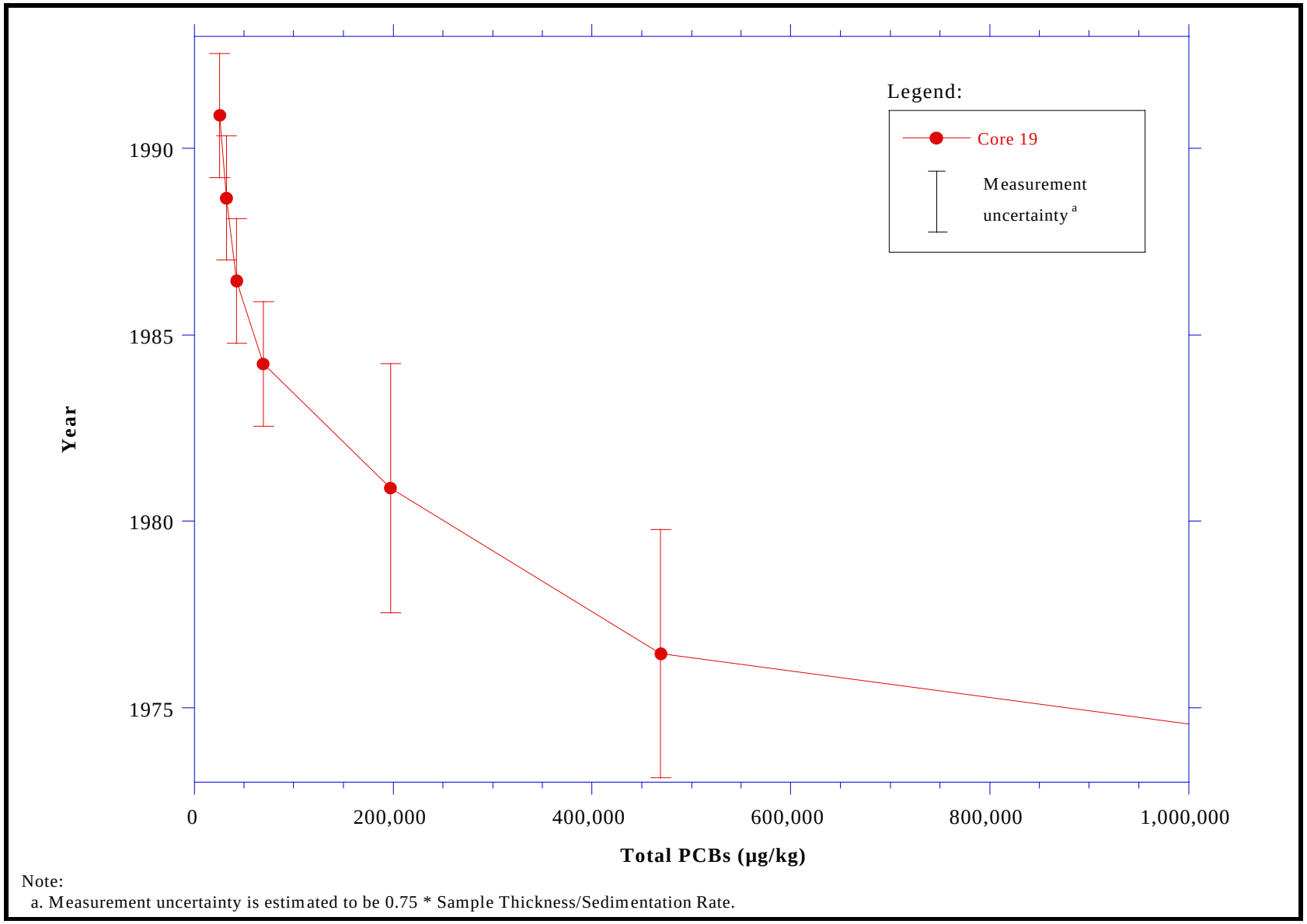
Figure 3-57
Comparison of the Thompson Island Pool Surficial Sediment Congener Distribution with the Thompson Island Dam Suspended-Matter Congener Distributions associated with Low-Flow Winter and Summer Conditions



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-58
Comparison of the Albany Turning Basin Surficial Sediment Congener Distribution with the Green Island Bridge Suspended-Matter Congener Distributions associated with Low-Flow Winter and Summer Conditions

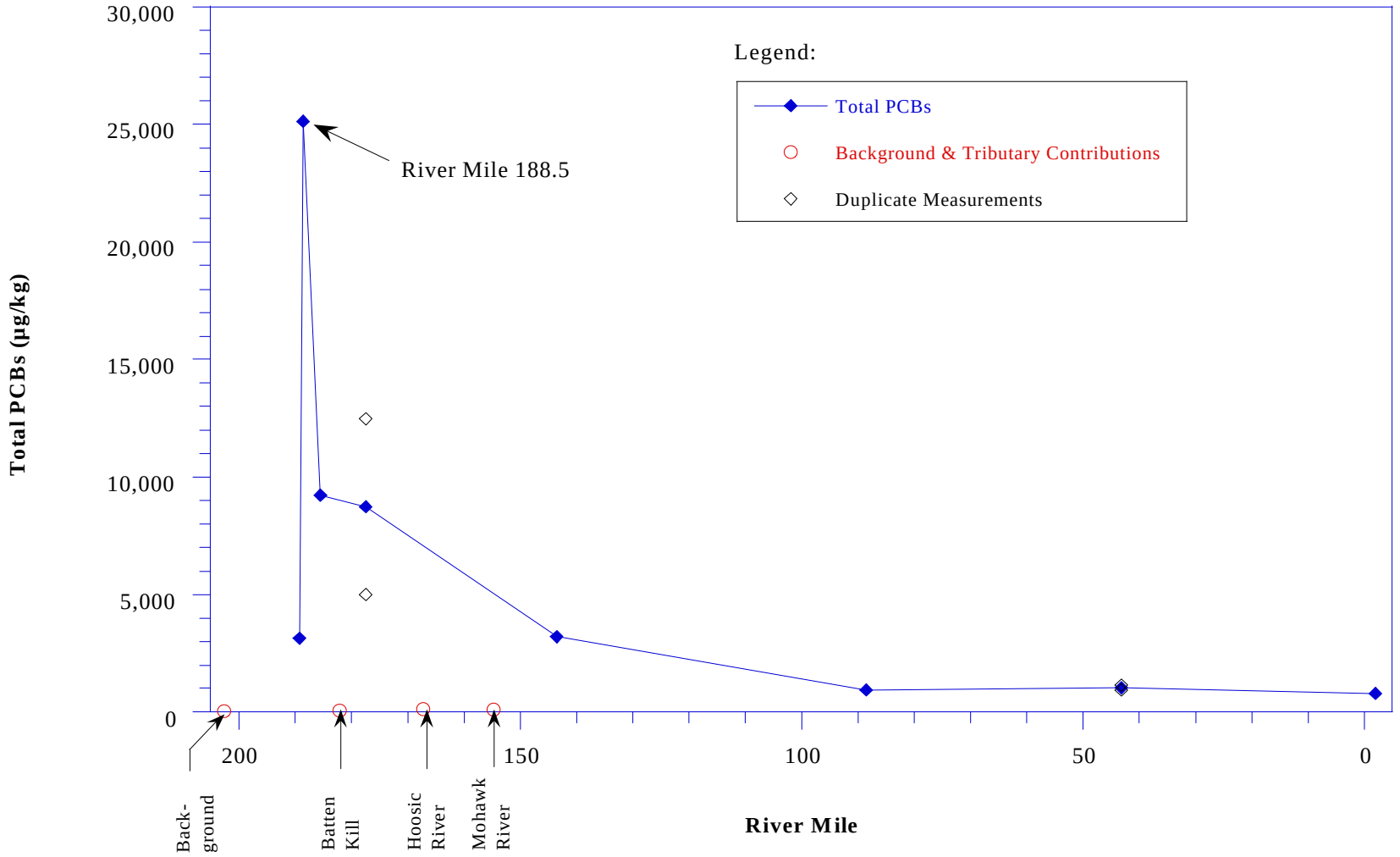


Note:
a. Measurement uncertainty is estimated to be 0.75 * Sample Thickness/Sedimentation Rate.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-59
Total PCBs in Sediment vs. Approximate Year of Deposition at River Mile 188.5
Near the Thompson Island Dam: High Resolution Sediment Core 19

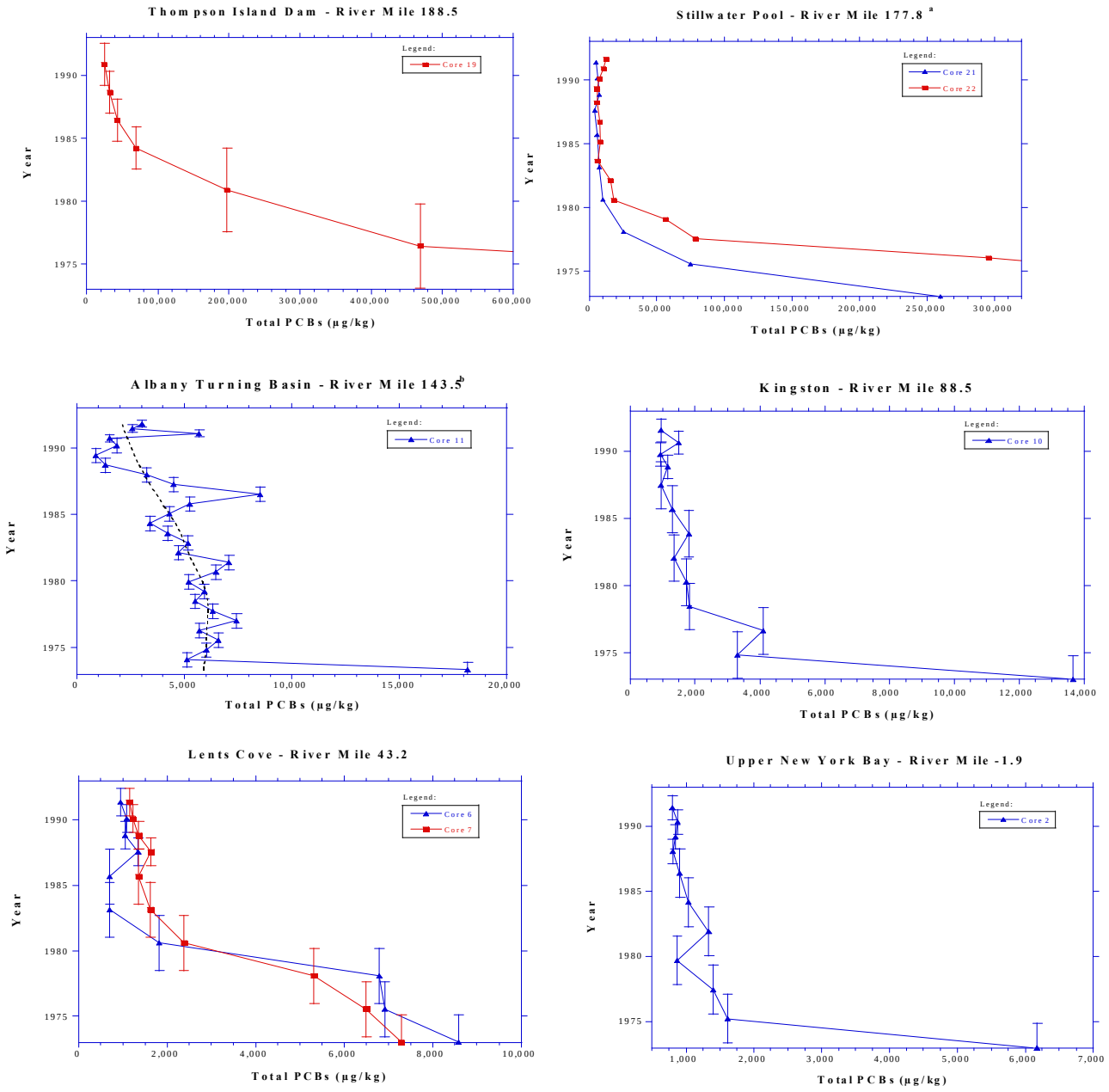


Note:
a. Duplicate pairs exist at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

TAMS*Gradient*

Figure 3-60
Total PCB Content in Sediment Deposited Between 1991 and 1992 vs. River Mile



Notes:

a. Measurement uncertainty is not shown in order to improve visual clarity of the data.

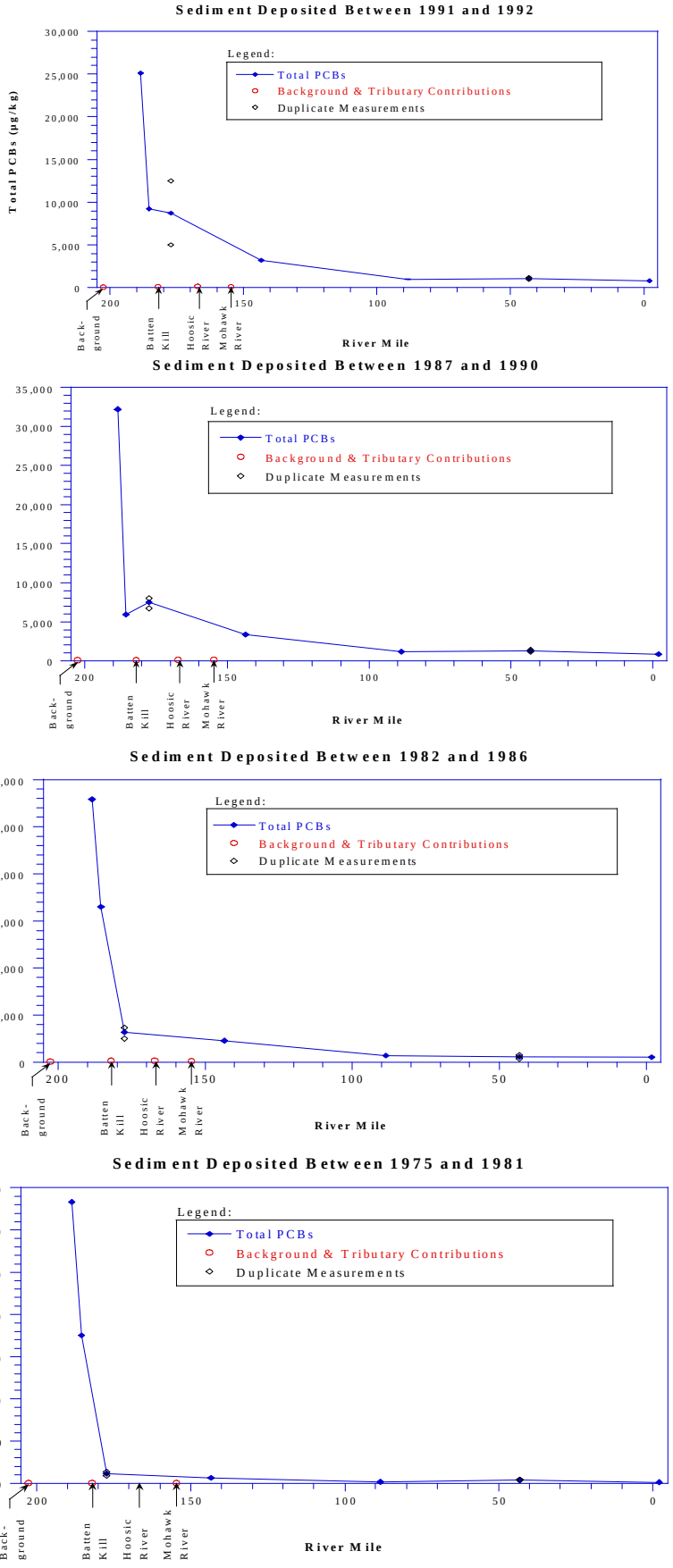
b. Dashed line represents a weighted running average of the data and is included for visual reference.

c. For all diagrams, measurement uncertainty ⊥ is estimated to be = 0.75 x sample thickness/sedimentation rate.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-61
Total PCBs in Post-1975 Sediment vs.
Approximate Year of Deposition in the Hudson River



Note:

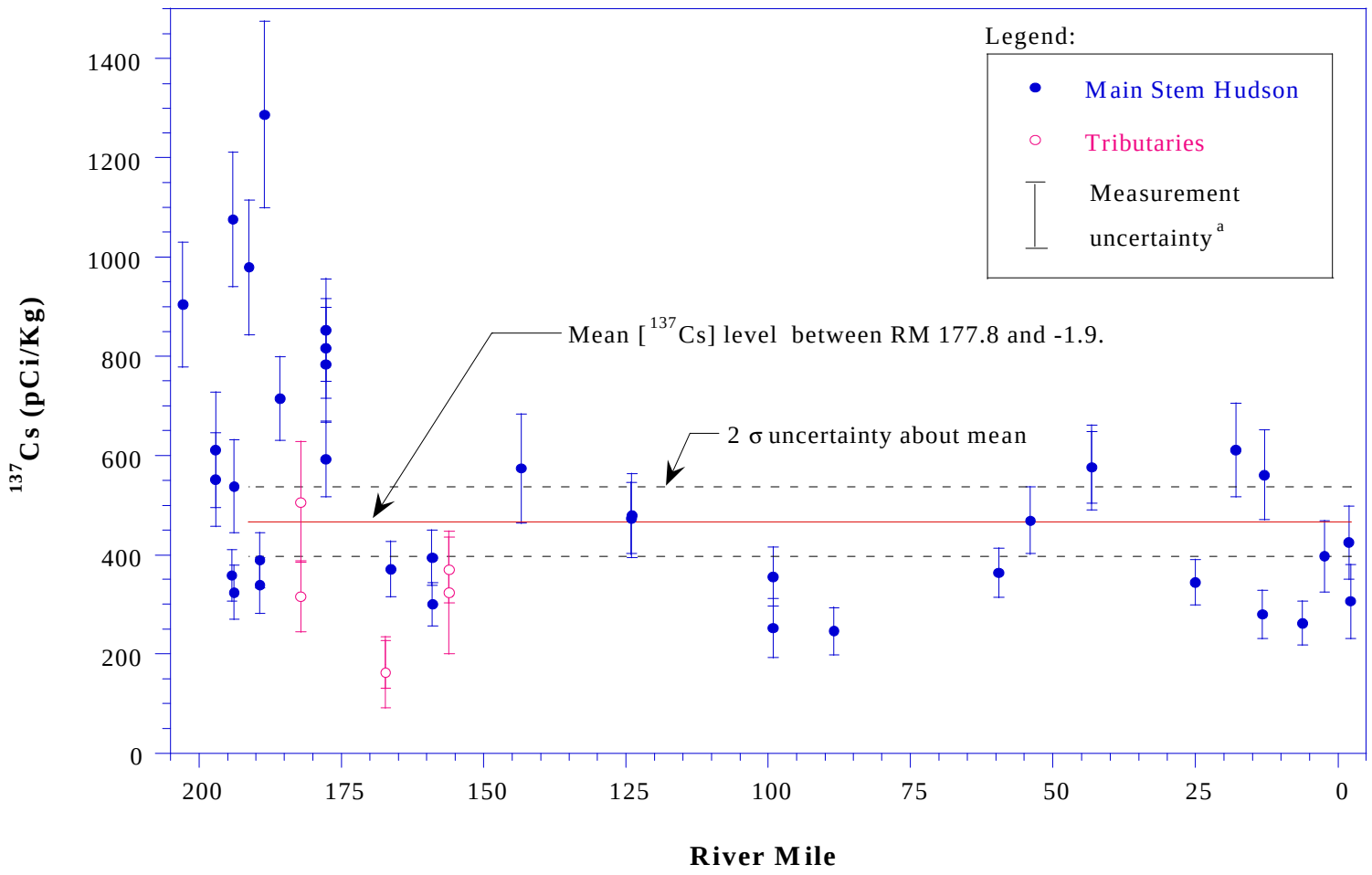
a. Vertical axis range increases in successive diagrams as age of sediment represented increases.

b. Duplicate pairs exist on all graphs at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-62
Total PCB Content in Sediment vs River Mile



Notes:
a. Measurement uncertainty represents ý two standard deviations (ý2)σ

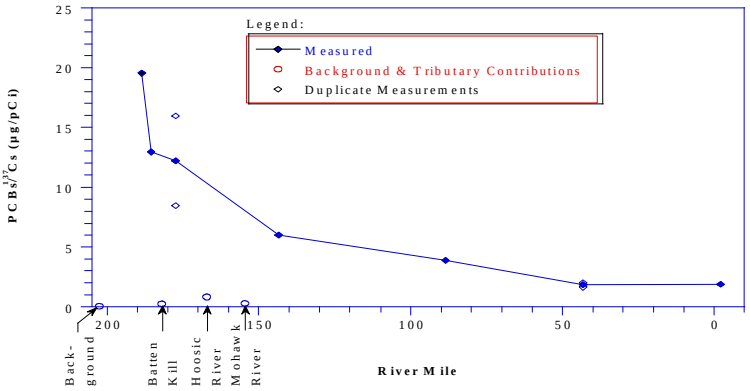
Source: TAMS/Gradient Database

TAMS/*Gradient*

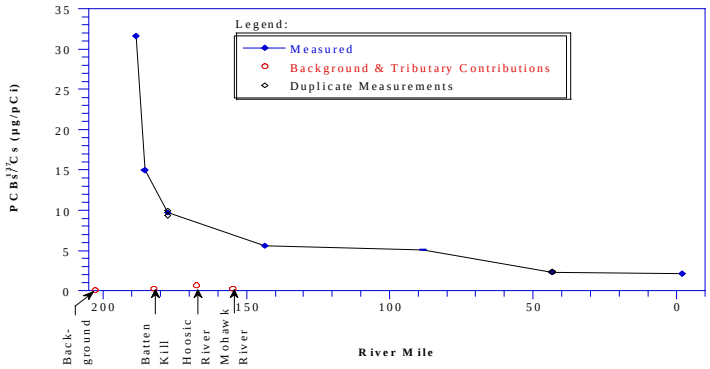
Figure 3-63

^{137}Cs Levels in Surface Sediments in the Hudson River Based on High-Resolution Sediment Coring Results

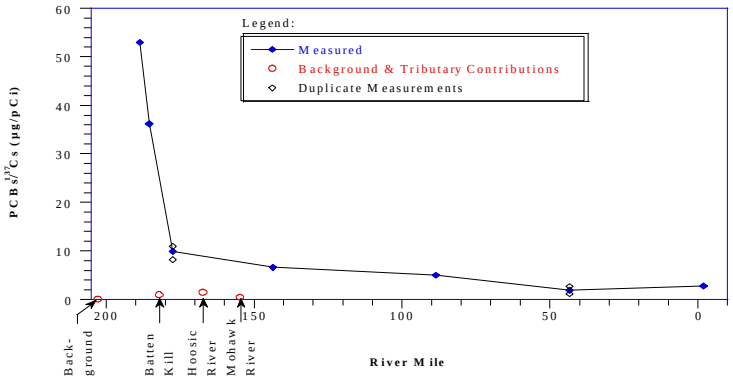
Sediment Deposited between 1991 and 1992



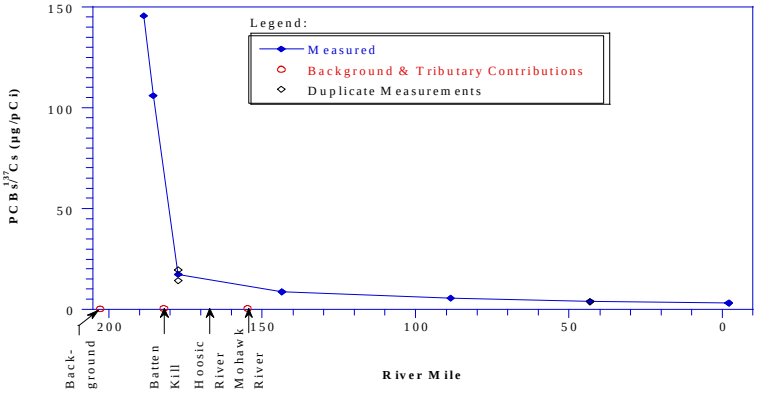
Sediment Deposited between 1987 and 1990



Sediment Deposited between 1982 and 1986



Sediment Deposited between 1975 and 1981



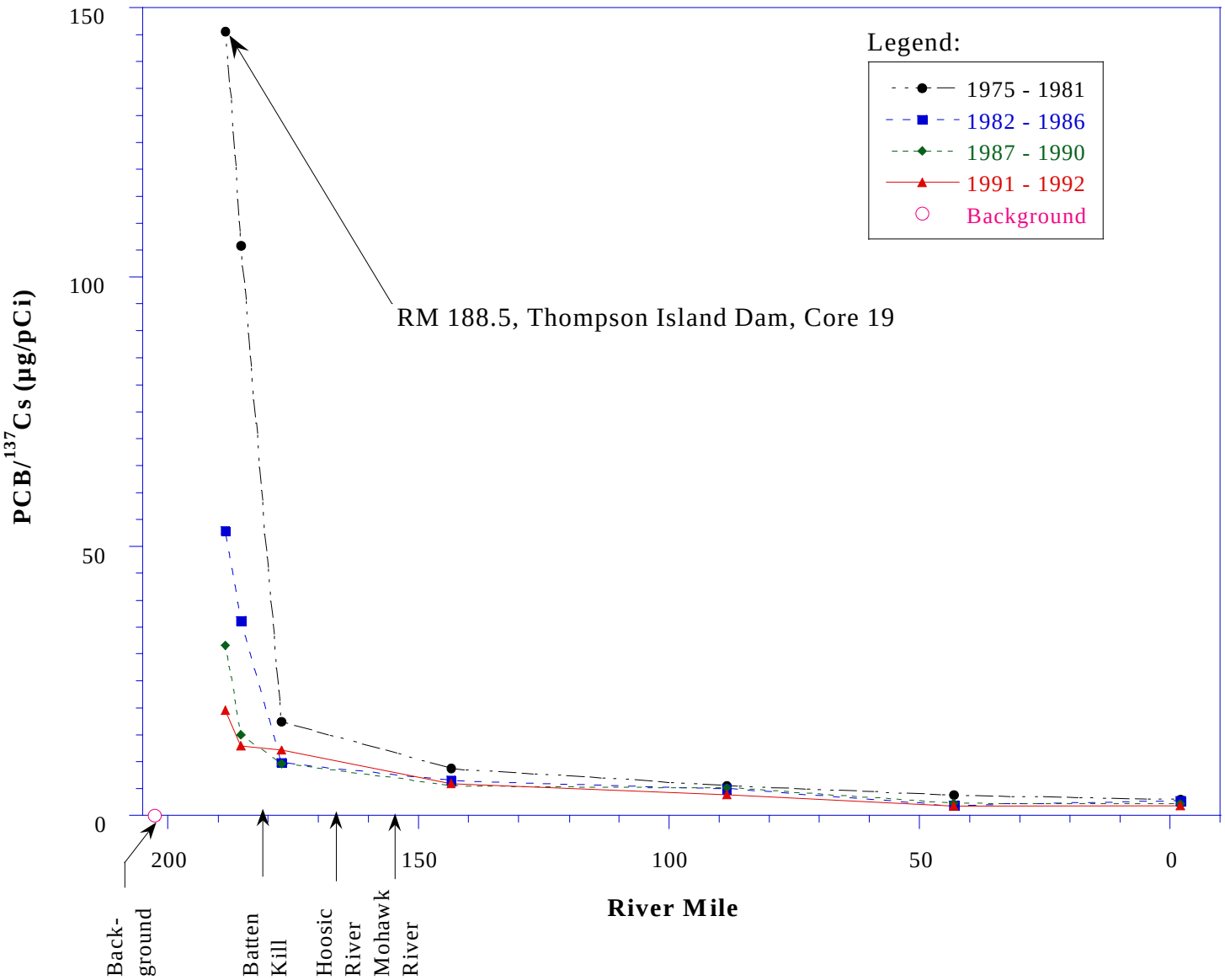
Note:
a. Vertical axis range increases in successive diagrams as age of sediment represented increases.
b. Duplicate pairs exist on all graphs at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-64

Total PCBs/^{137}Cs Content in Sediment vs River Mile

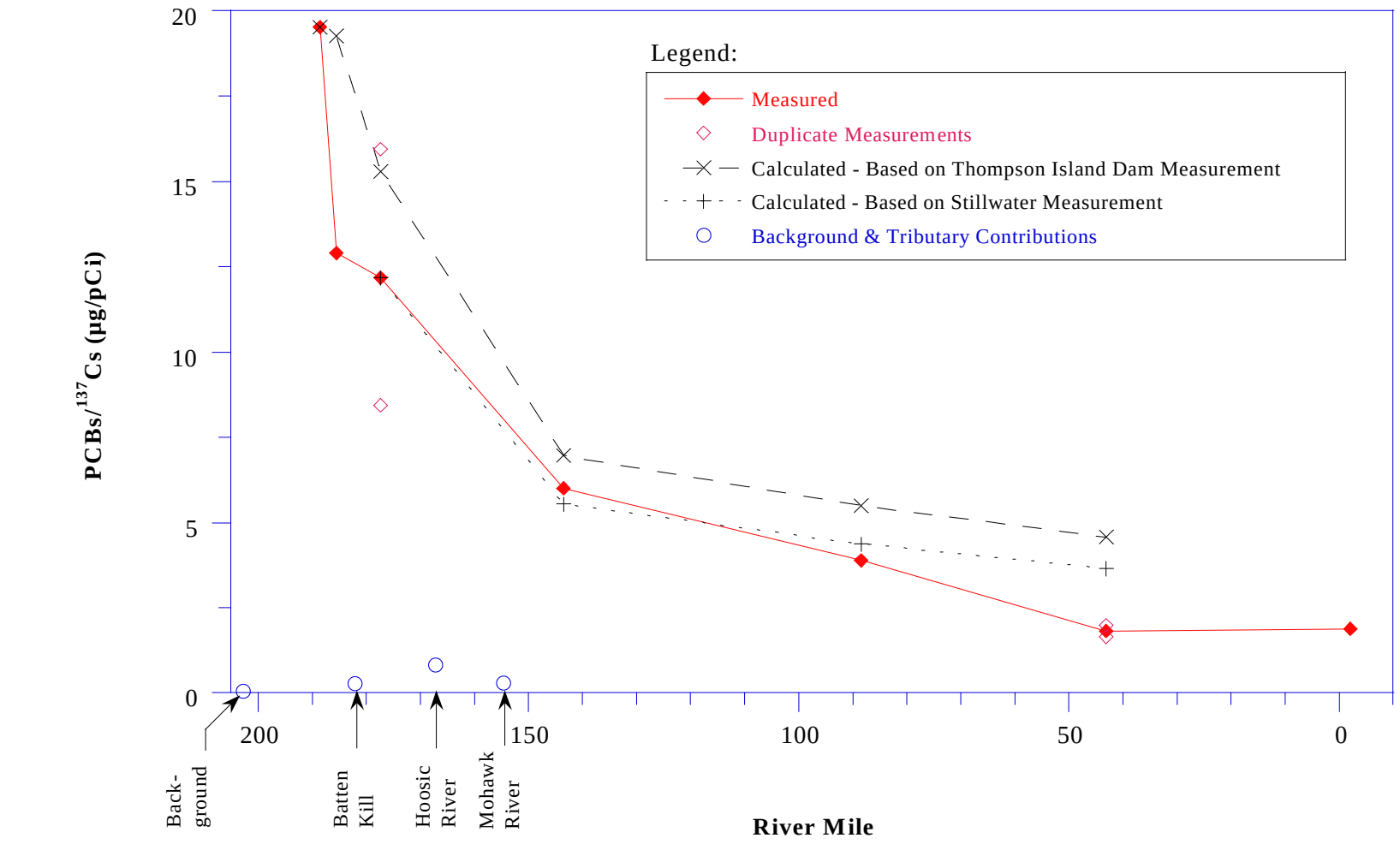


Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-65

Time Interval Comparison for Total PCBs/ ^{137}Cs Ratios: 1975 through 1992



Note:

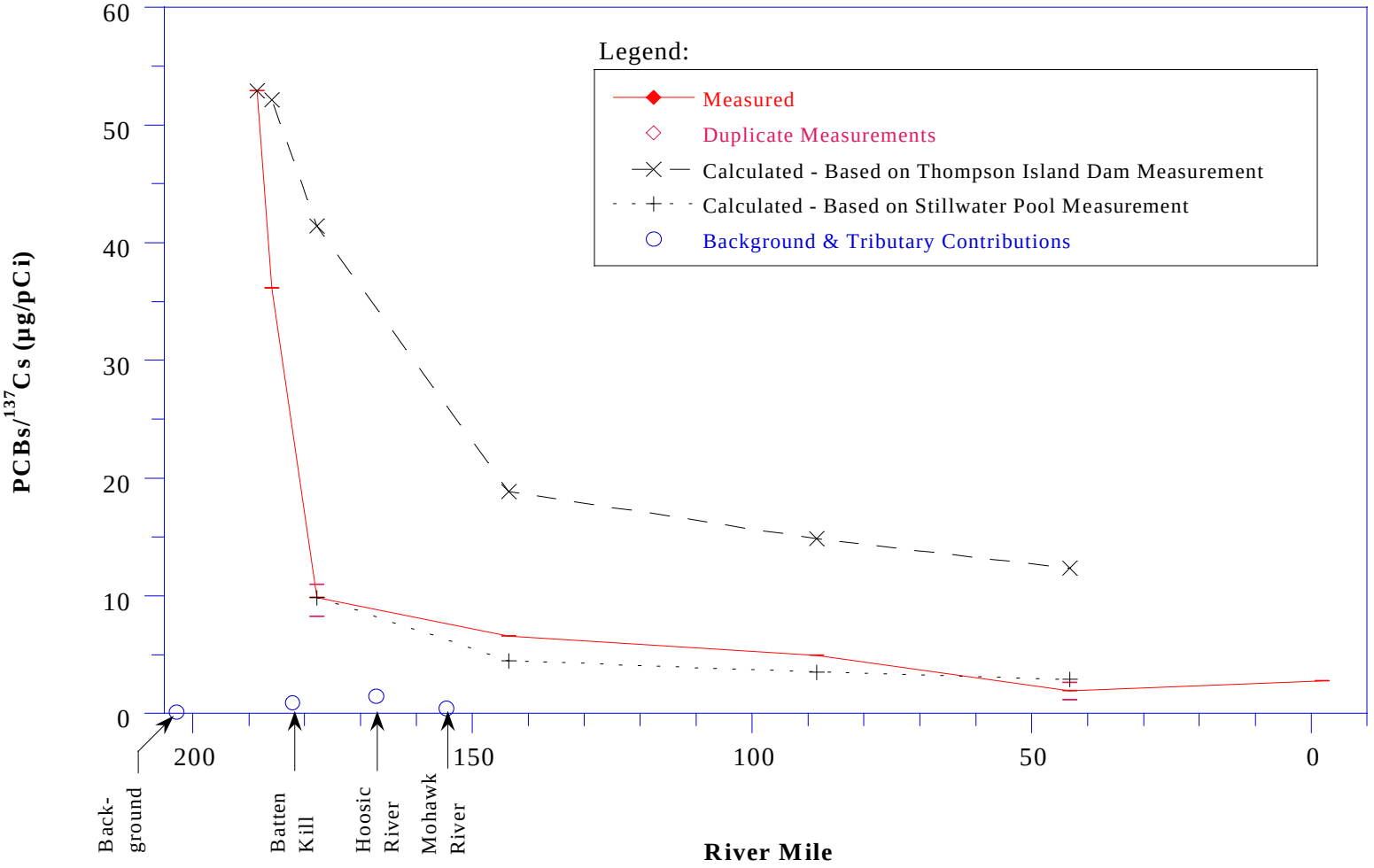
a. Duplicate pairs exist at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-66

Comparison of Measured and Calculated Total PCBs/ ^{137}Cs Ratios for Sediment Deposited between 1991 and 1992



Note:

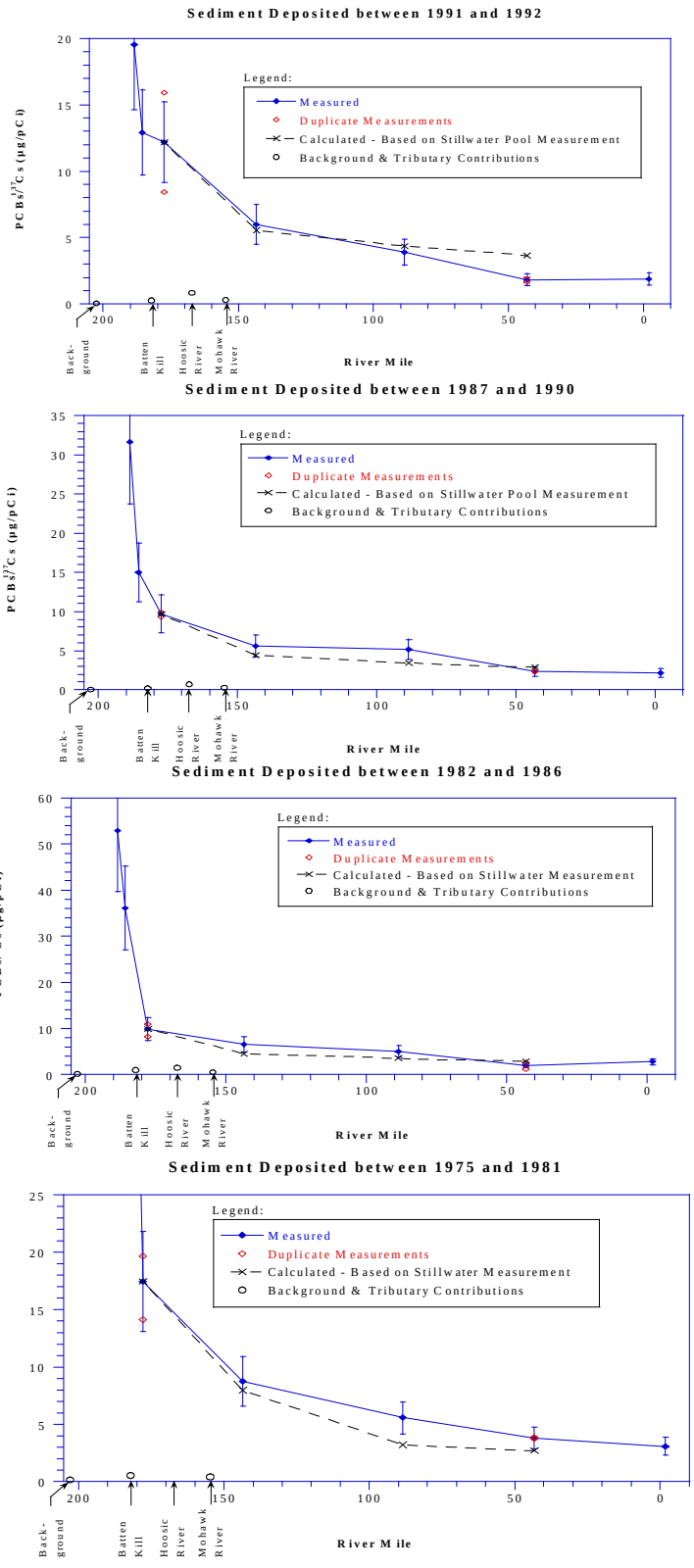
Duplicate pairs exist at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-67

Comparison of Measured and Calculated Total PCBs/^{137}Cs Ratios for Sediment Deposited between 1982 and 1986



Note:

a. Vertical axis range increases in successive diagrams as age of sediment represented increases.

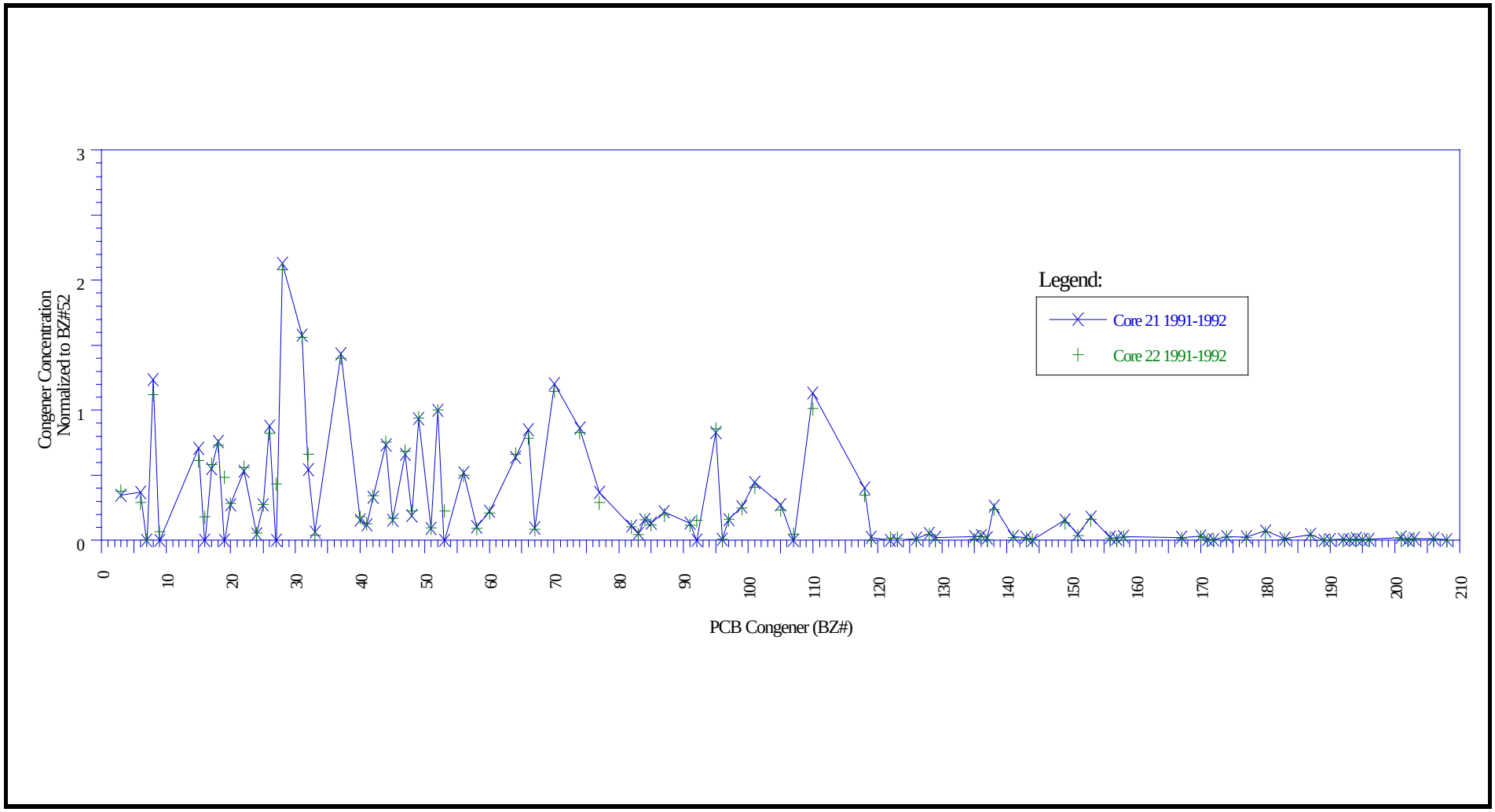
b. Error bars represent ý25% uncertainty in the measured value.

c. Duplicate pairs exist on all graphs at River Miles 177.8 and 43.2. The solid symbol represents the mean of the duplicate pair.

Source: TAMS/Gradient Database

Figure 3-68

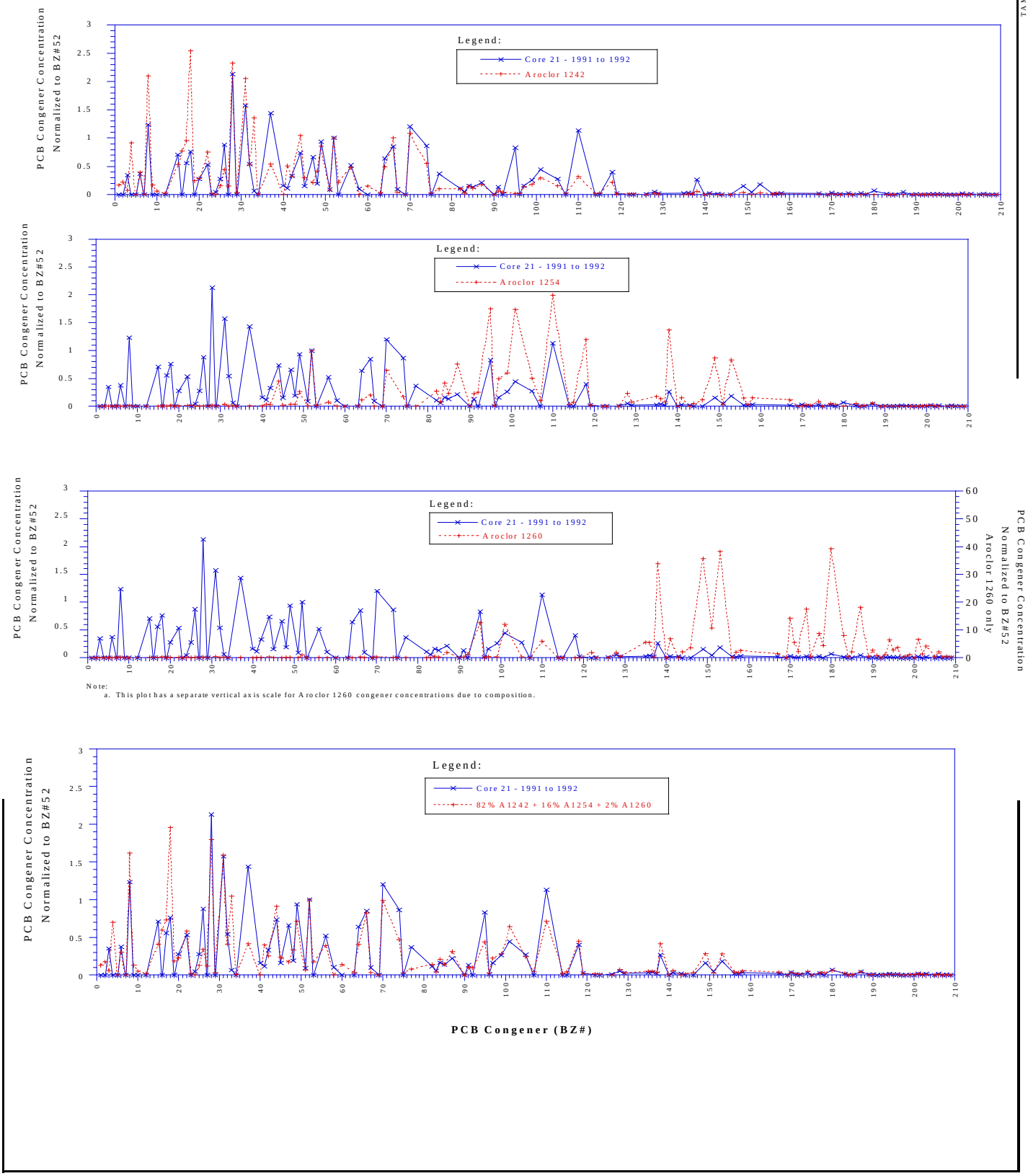
Total PCBs/ ^{137}Cs Ratios in Dated Sediment vs River Mile: A Comparison of Calculated and Measured Results



Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-69
Comparison of the Duplicate Core Results on a Congener Basis
for RM 177.8 near Stillwater for 1991 to 1992



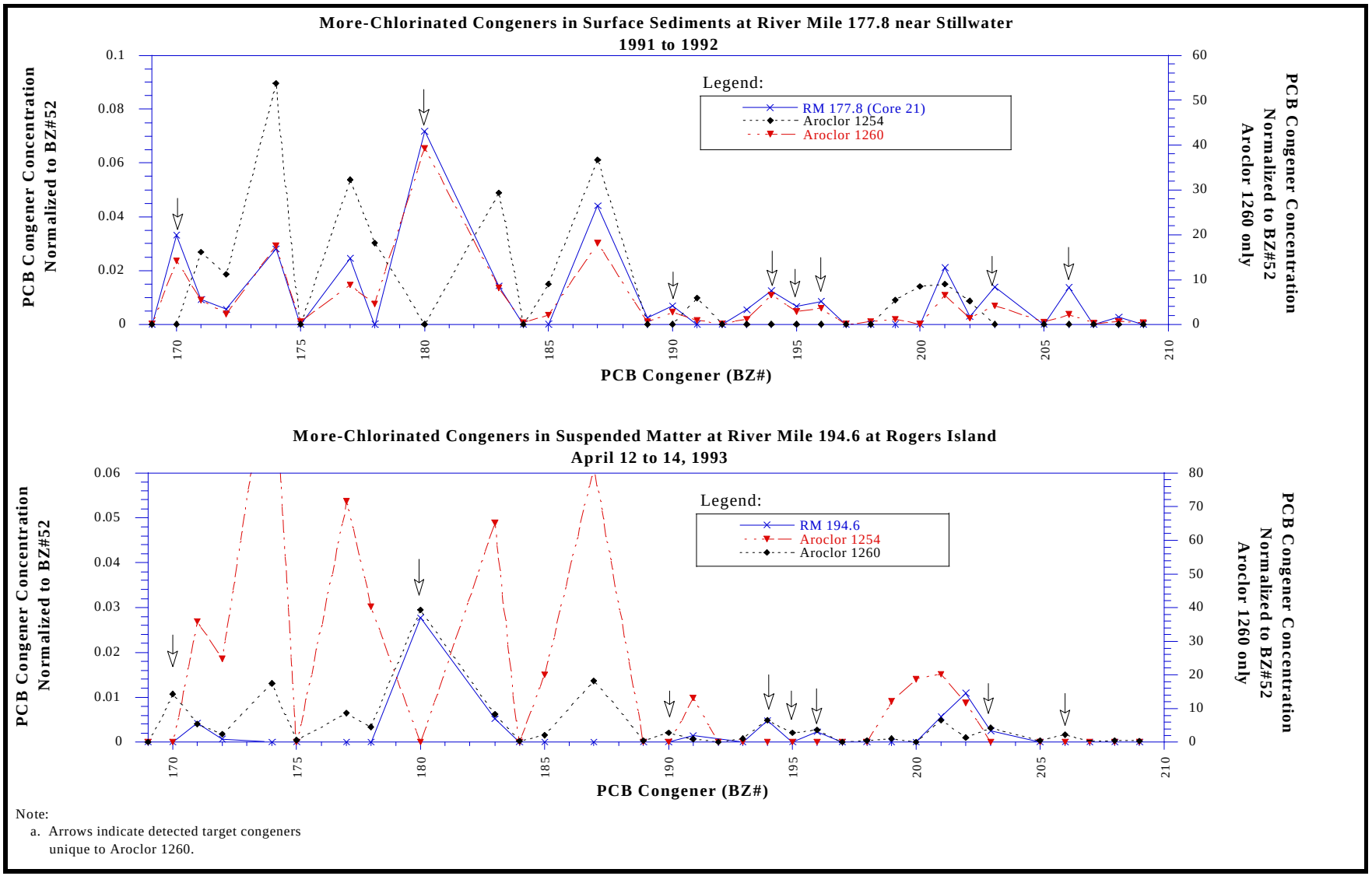
Note:
a. This plot has a separate vertical axis scale for Aroclor 1260 congener concentrations due to composition.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-70
A Comparison between the Post-1990 Sediment PCB Congener Pattern for Core 21 at River Mile 177.4 near Stillwater and Three Aroclor Mixtures

More-Chlorinated Congeners in Surface Sediments at River Mile 177.8 near Stillwater
1991 to 1992

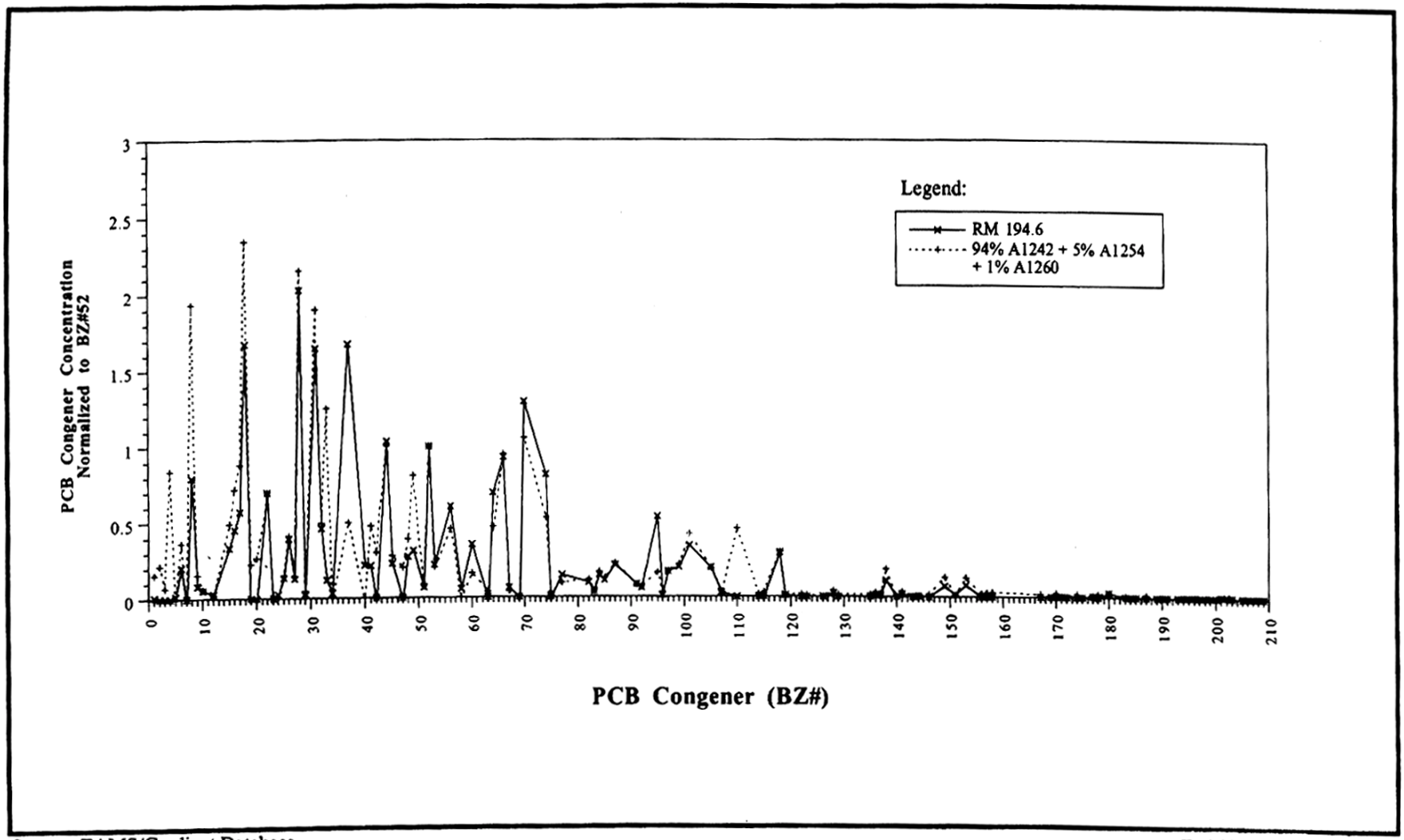


Note:
a. Arrows indicate detected target congeners unique to Aroclor 1260.

Source: TAMS/Gradient Database

TAMS/ *Gradient*

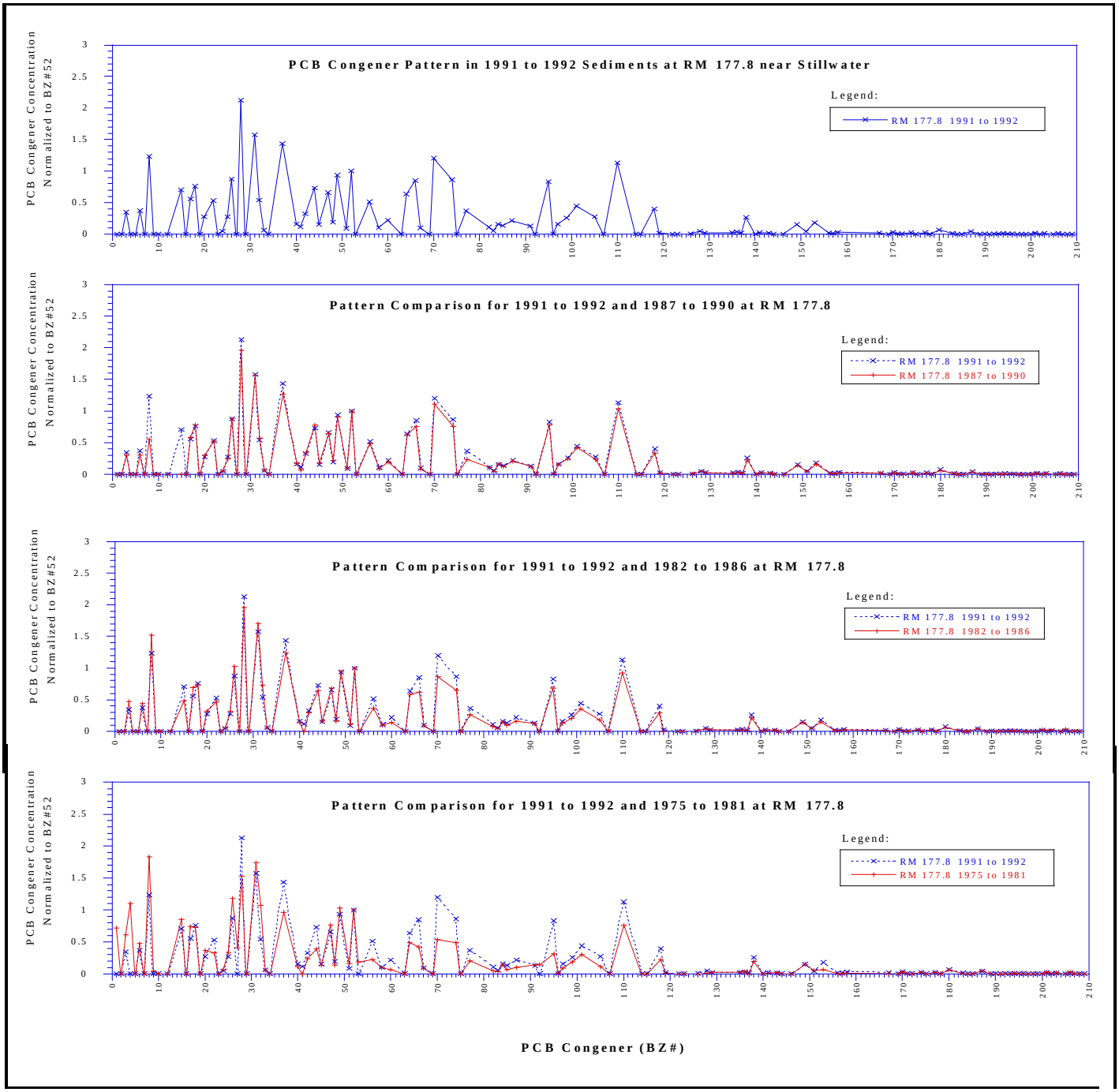
Figure 3-71
Normalized PCB Congener Concentrations in Stillwater 1991 to 1992
Sediments and Rogers Island Suspended Matter vs. Aroclors 1254 and 1260



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

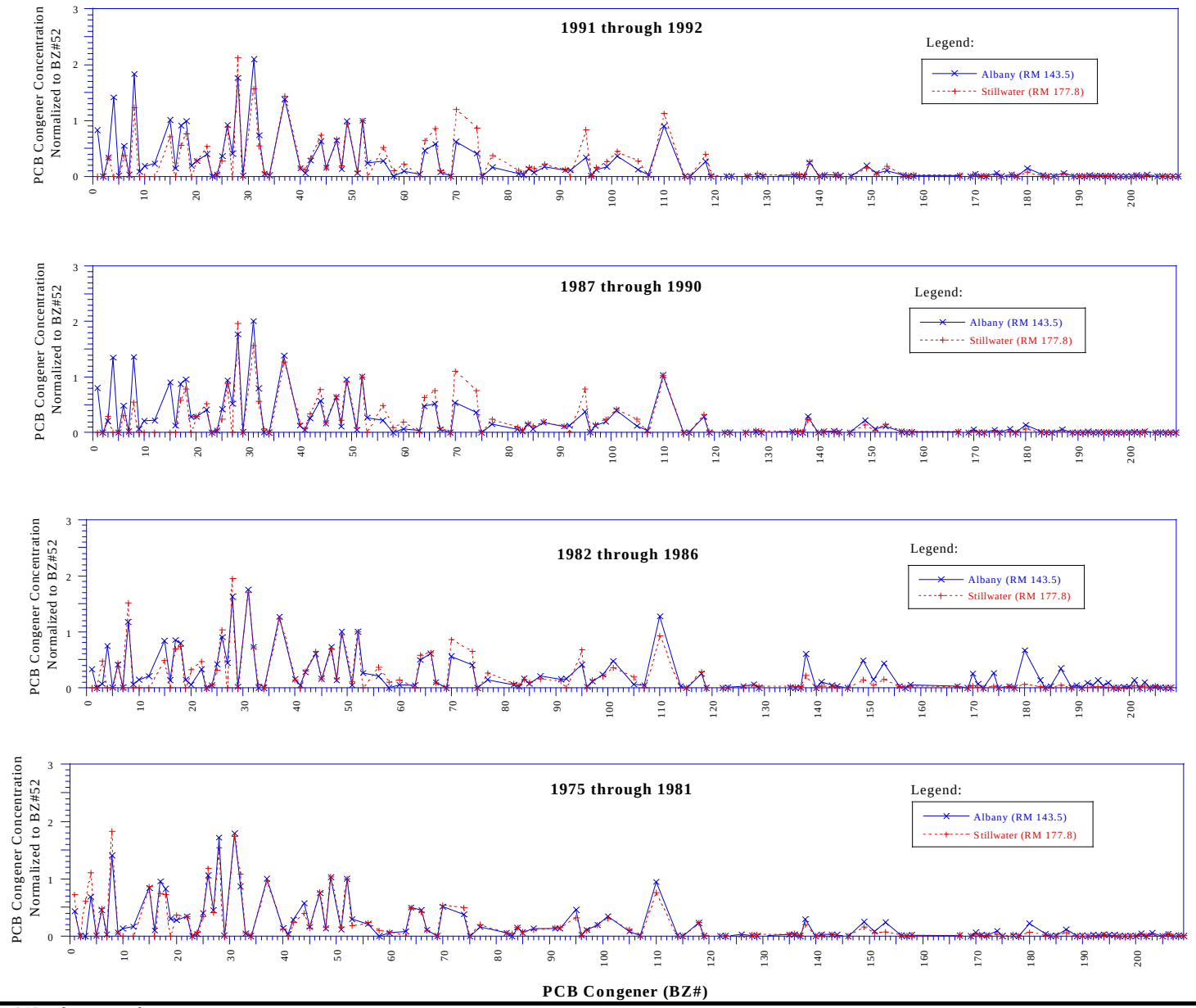
Figure 3-72
Comparison of PCB Congener Patterns: Suspended Matter from River Mile 194.6 at Rogers Island for Transect 4, April 12 to 14, 1993 and a Mixture of 94% Aroclor 1242 + 5% Aroclor 1254 + 1% Aroclor 1260



Source: TAMS/Gradient Database

TAMS/ *Gradient*

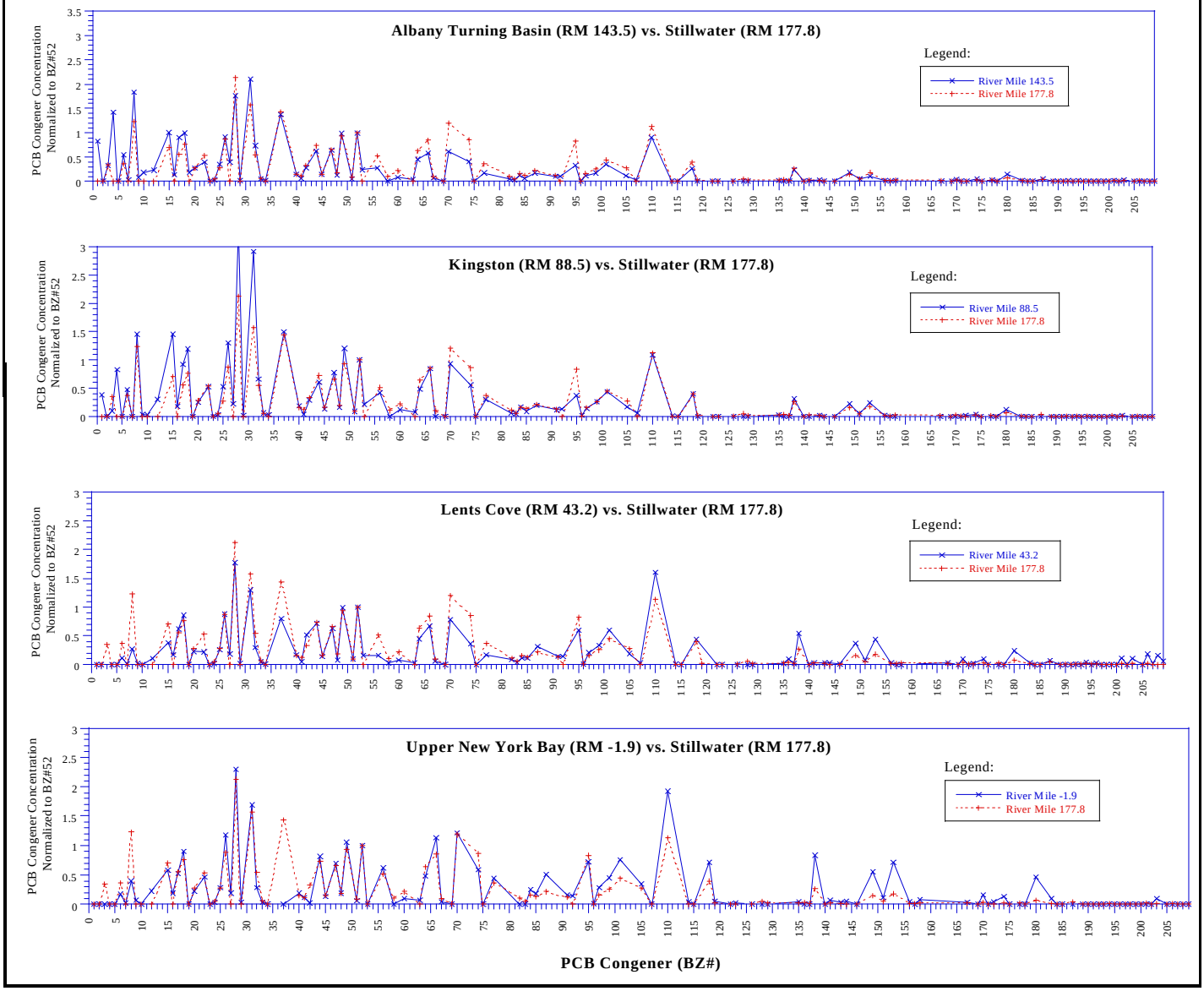
Figure 3-73
A Comparison between the 1991 to 1992 PCB Congener Pattern at River Mile 177.8 near Stillwater with the Period 1975 to 1990



Source: TAMS/Gradient Database

TAMS/ *Gradient*

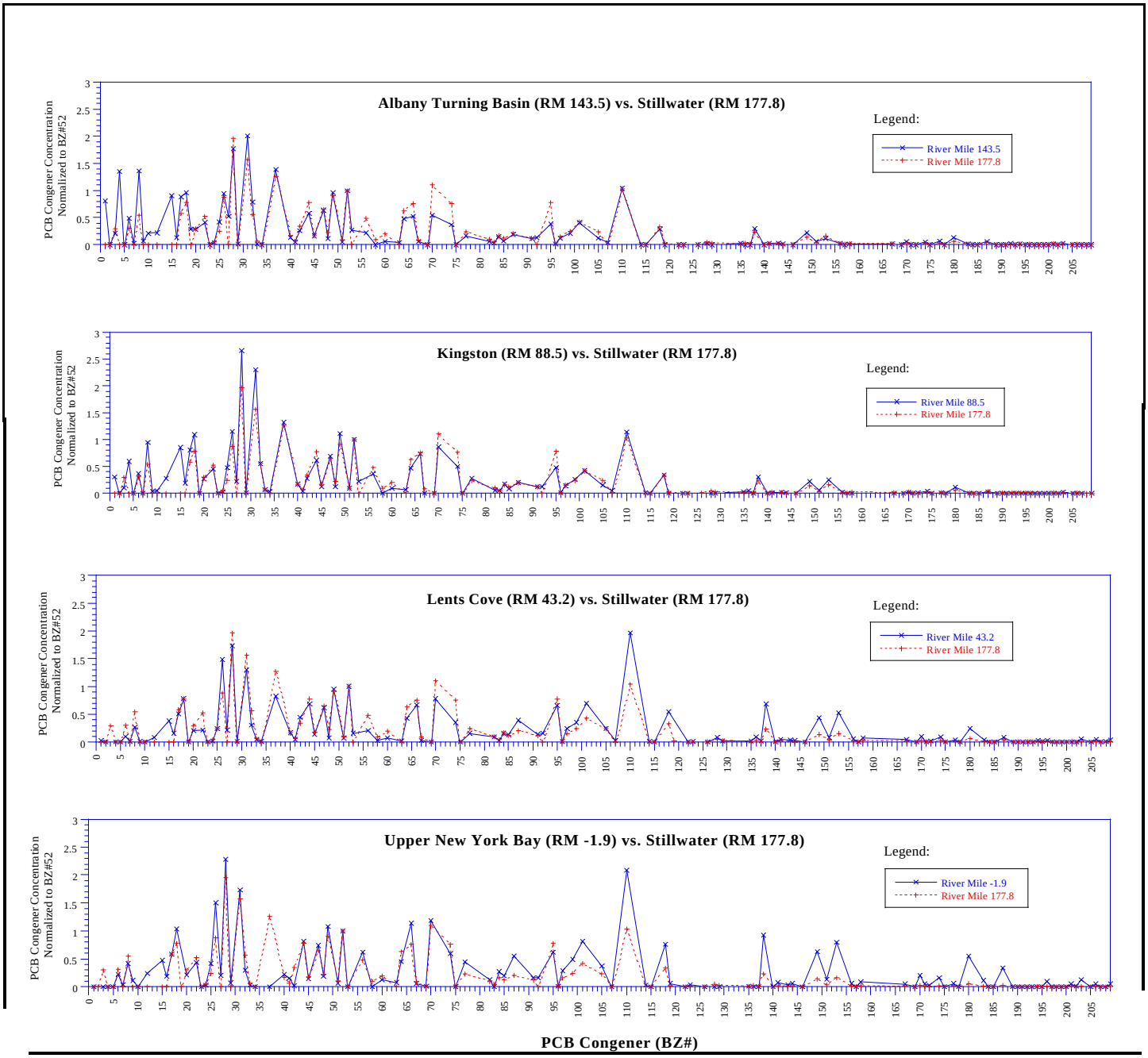
Figure 3-74
A Comparison of the PCB Congener Pattern Chronology between River Mile 143.5 near Albany and River Mile 177.8 near Stillwater for 1975 to 1992



Source: TAMS/Gradient Database

TAMS/*Gradient*

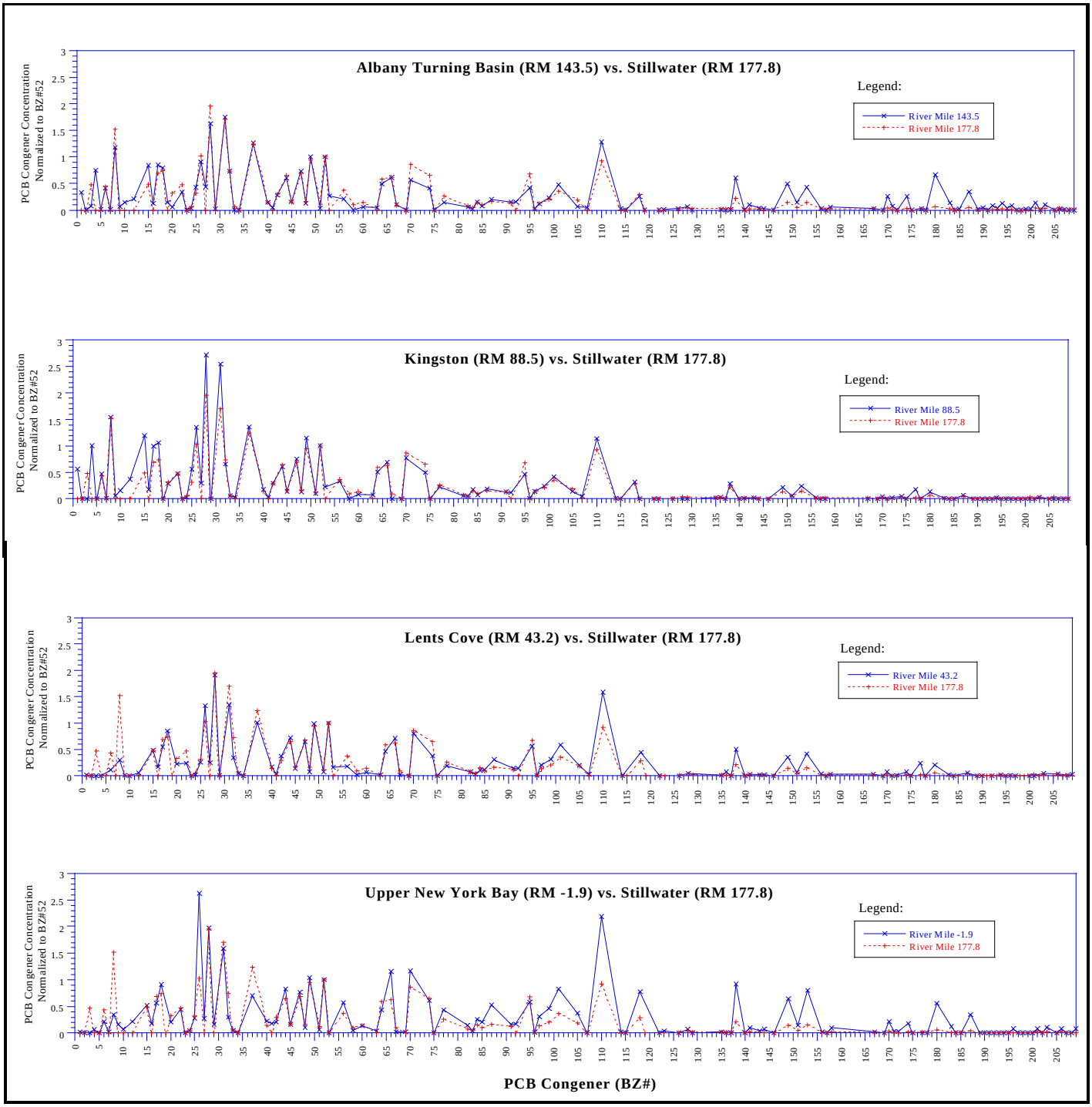
Figure 3-75
A Comparison of the Combined Thompson Island Dam PCB Load Congener Pattern Recorded at Stillwater with Downstream Congener Patterns in Sediments Dated Post-1990



Source: TAMS/Gradient Database

TAMS/*Gradient*

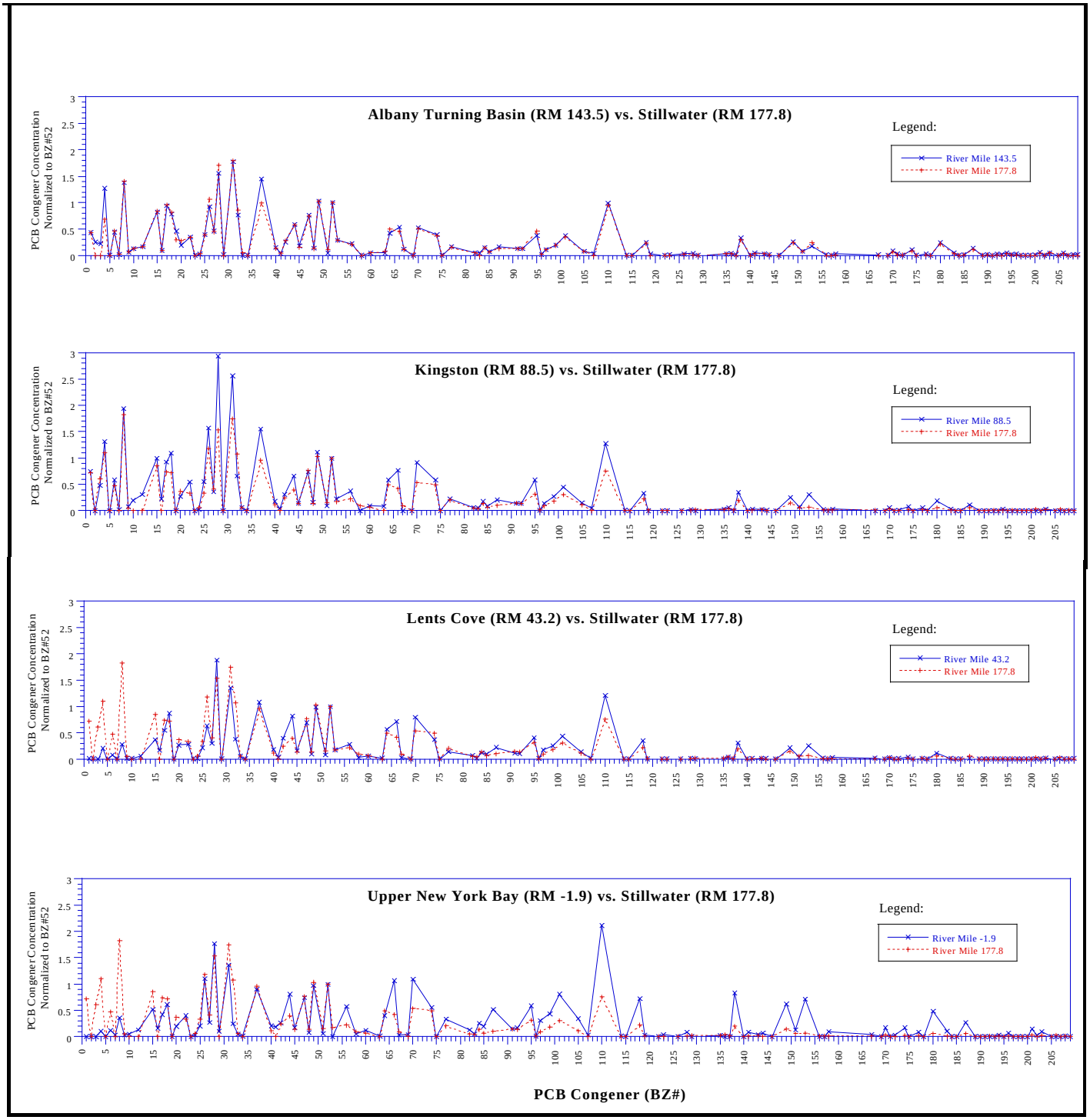
Figure 3-76
A Comparison of the Combined Thompson Island Dam PCB Load Congener Pattern Recorded at Stillwater with Downstream Congener Patterns in Sediments Dated 1987 to 1990



Source: TAMS/Gradient Database

TAMS/*Gradient*

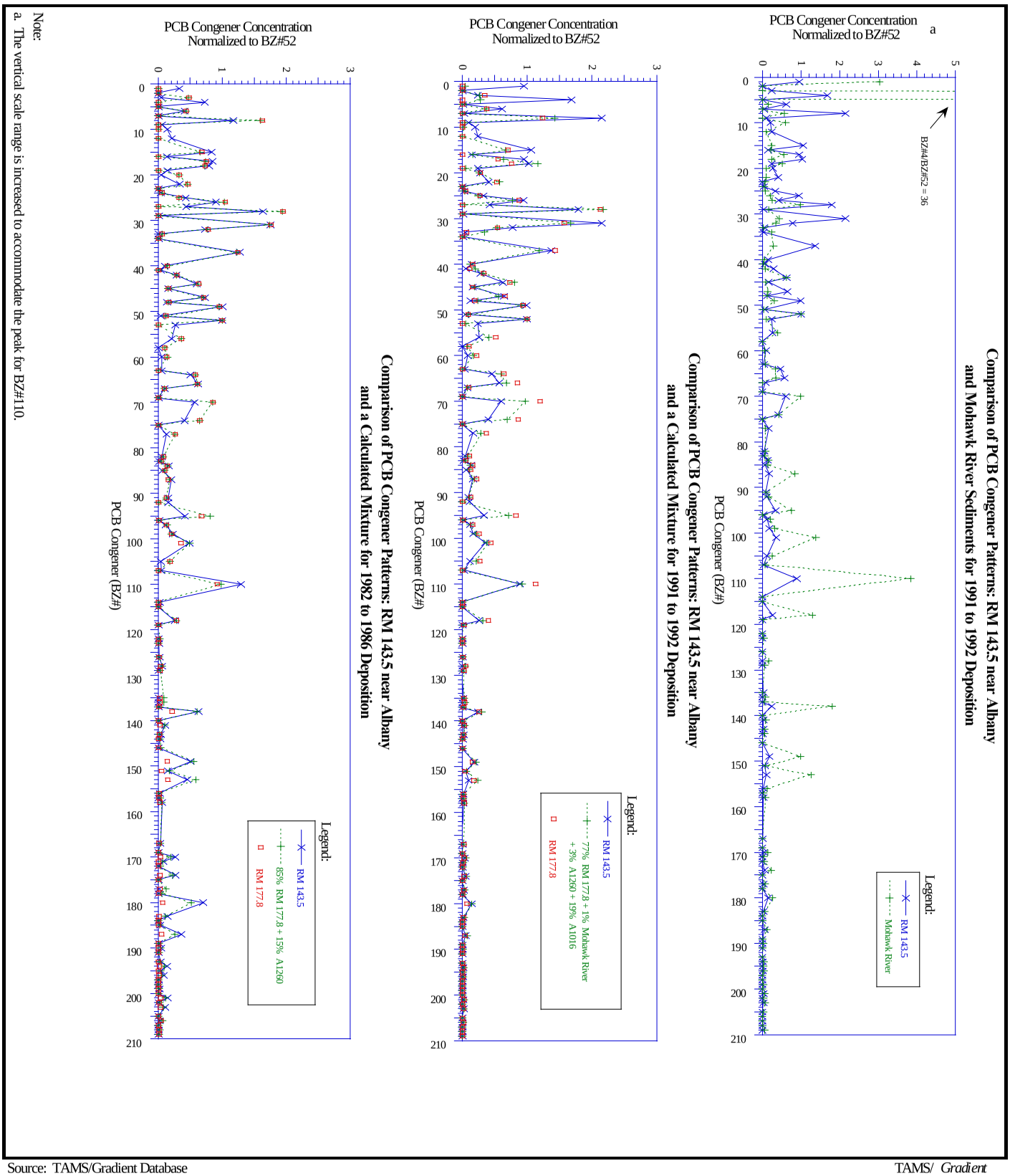
Figure 3-77
A Comparison of the Combined Thompson Island Dam PCB Load Congener Pattern Recorded at Stillwater with Downstream Congener Patterns in Sediments Dated 1982 to 1986



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-78
A Comparison of the Combined Thompson Island Dam PCB Load Congener Pattern Recorded at Stillwater with Downstream Congener Patterns in Sediments Dated 1975 to 1981

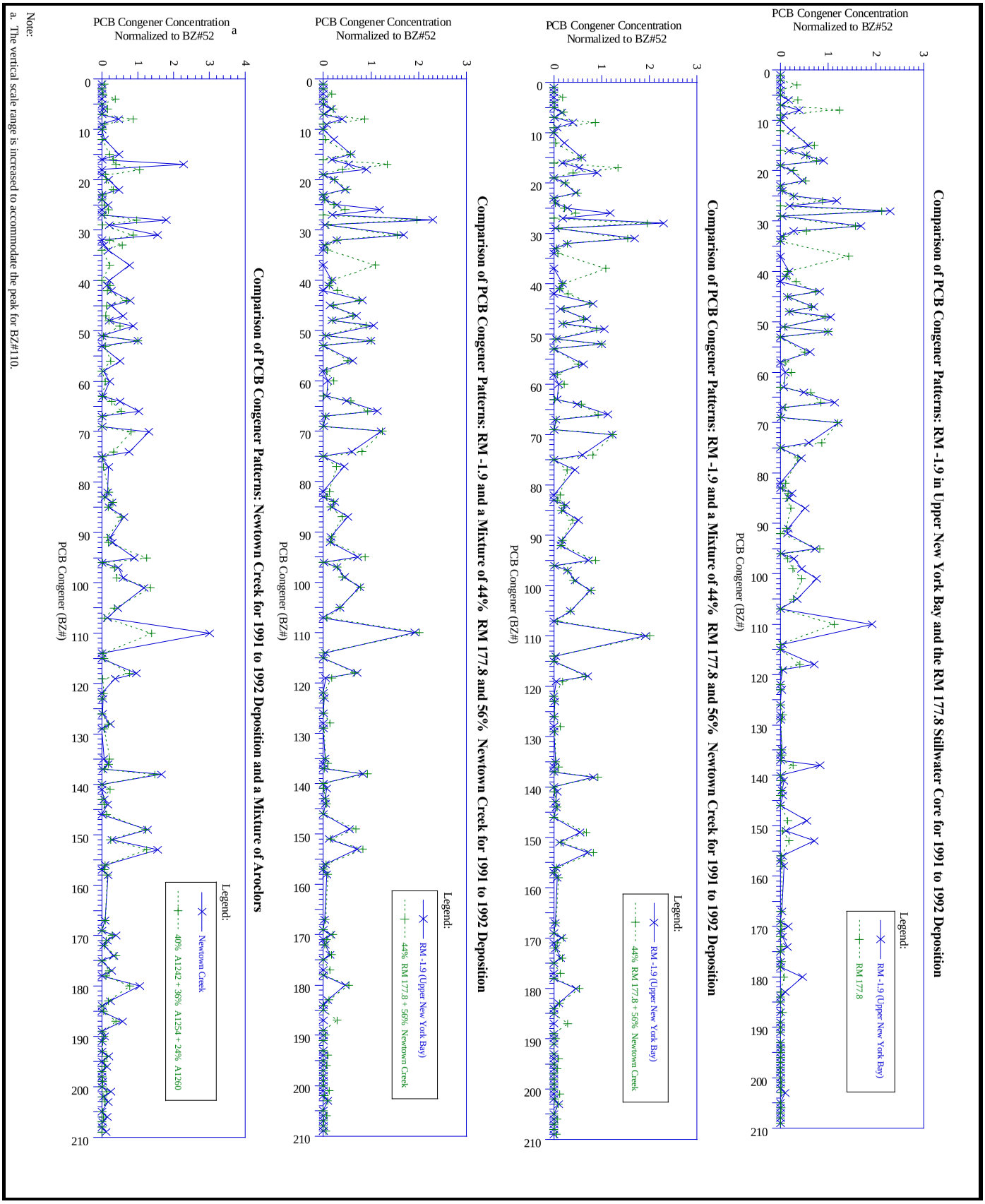


Note:
a. The vertical scale range is increased to accommodate the peak for BZ#110.

Source: TAMS/Gradient Database

TAMS/ *Gradient*

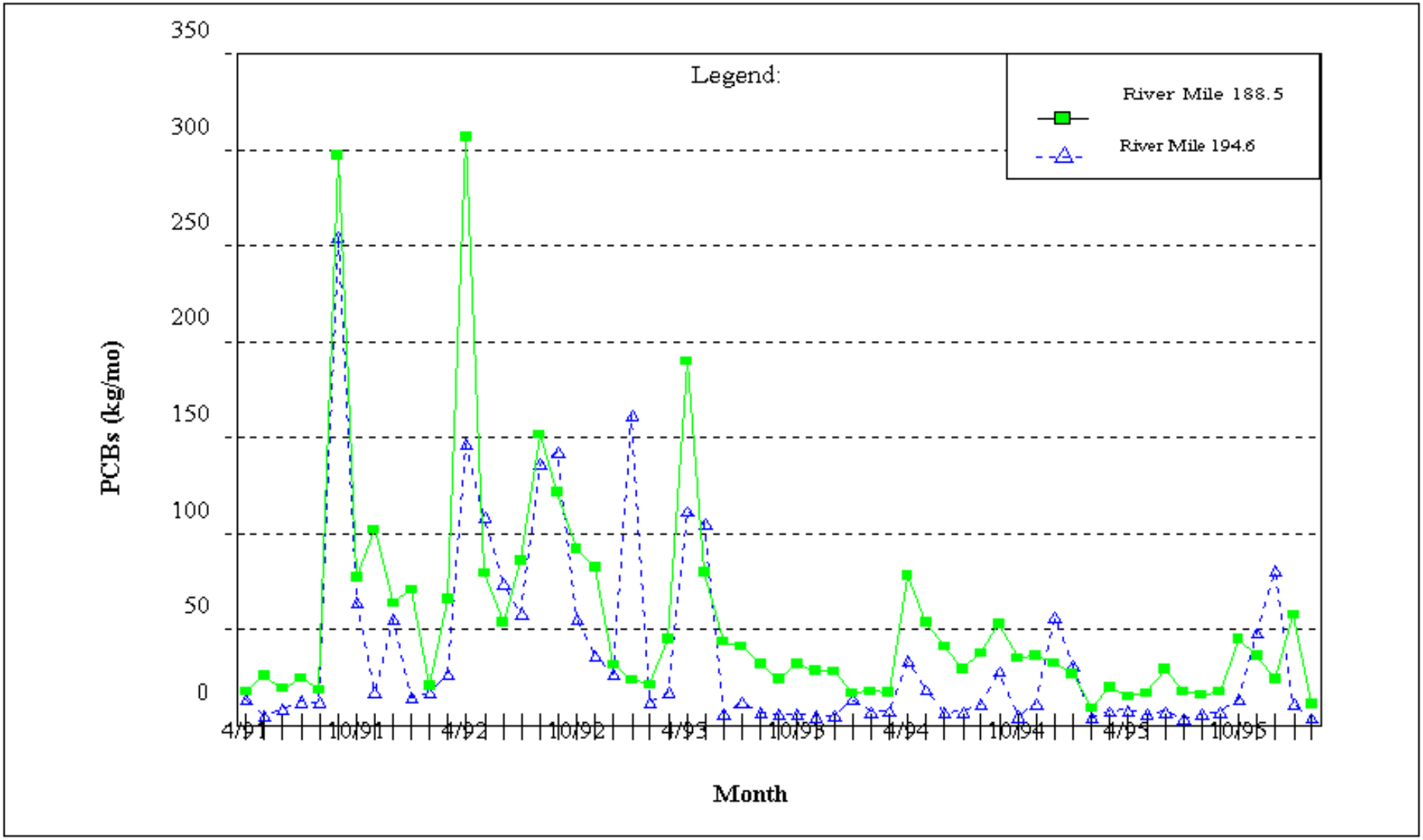
Figure 3-79
Comparison of PCB Congener Patterns at River Mile 143.5



Source: TAMS/Gradient Database

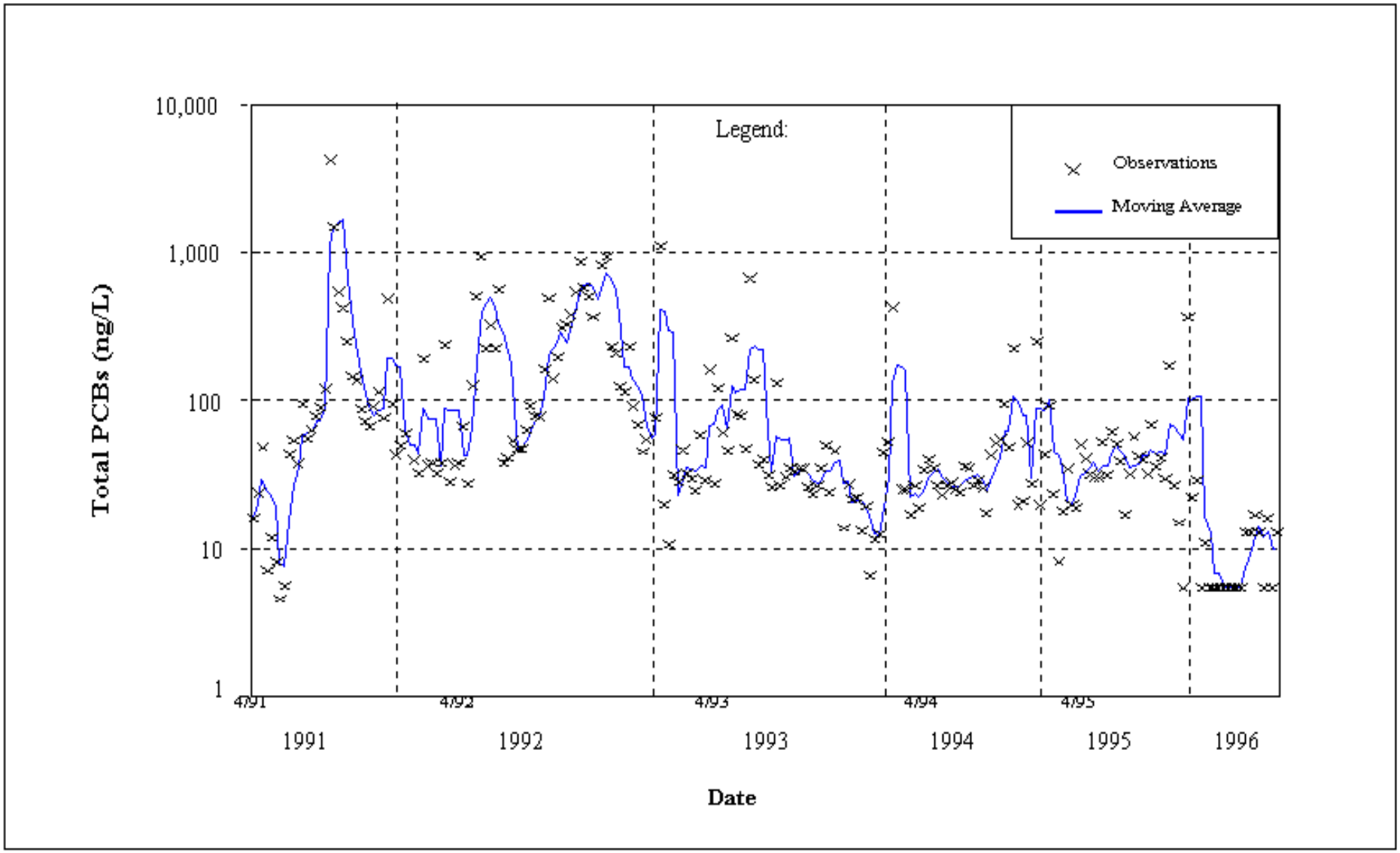
TAMS/ *Gradient*

Figure 3-80
Comparison of PCB Congener Patterns at River Mile -1.9



Source: TAMS/Gradient Database

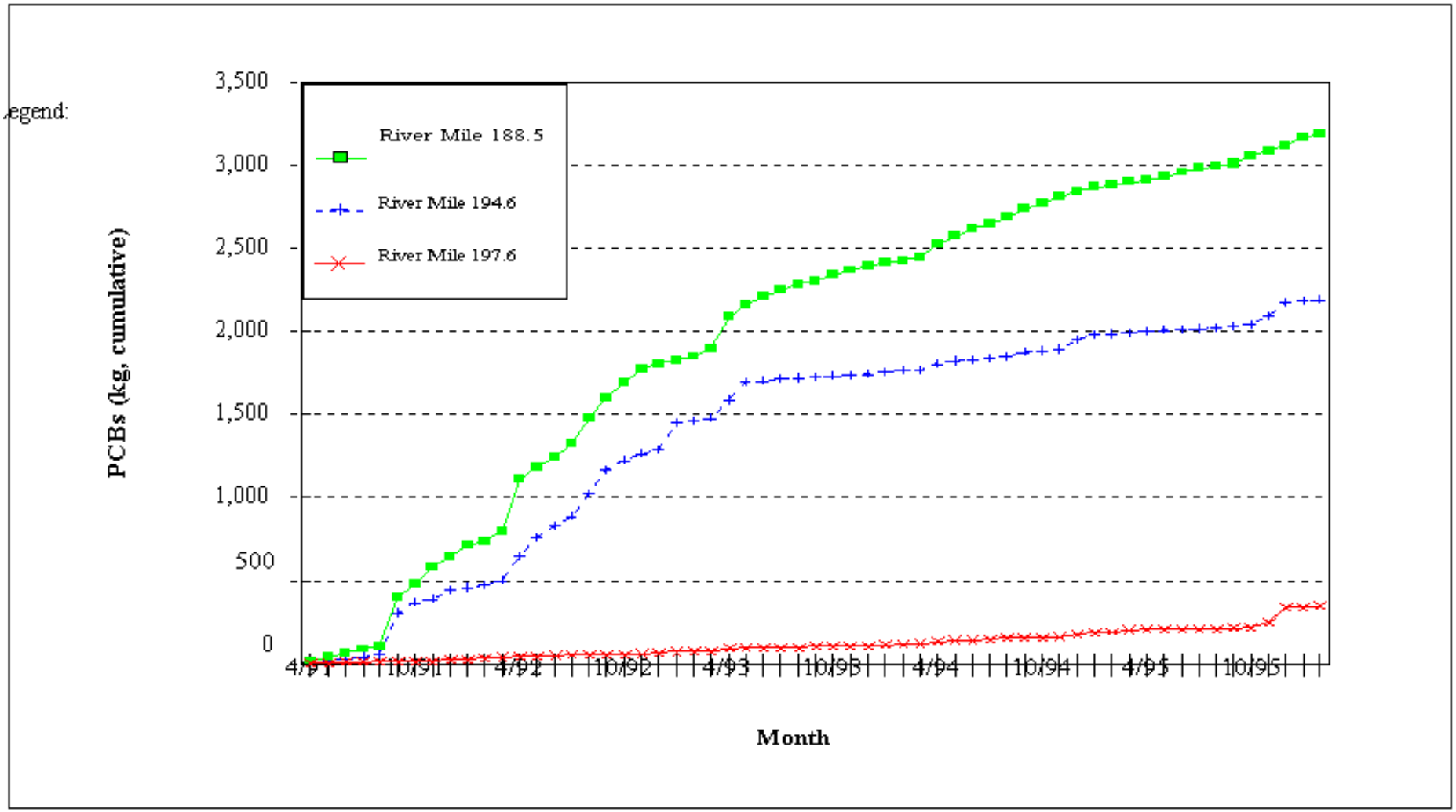
Figure 3-81
Monthly PCB Load, River Mile 194.6 at Rogers Island
And River Mile 188.5 at Thompson Island Pool
Averaging Estimate on GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

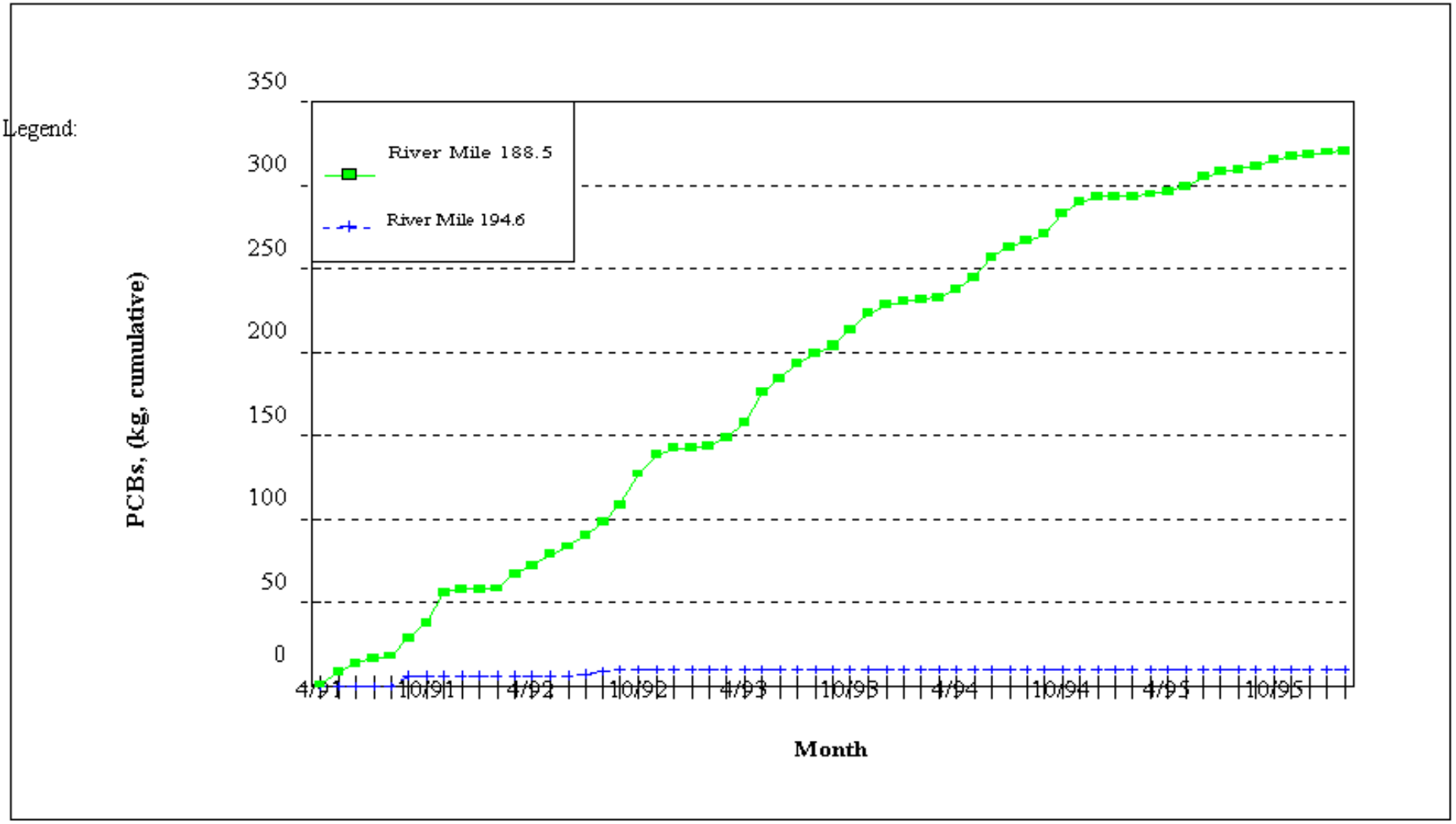
Figure 3-82
Total PCB Concentrations at River Mile 194.6
GE Data, with Moving Average



Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-83
Load across the Thompson Island Pool
Total PCBs, GE Data



Source: TAMS/Gradient Database

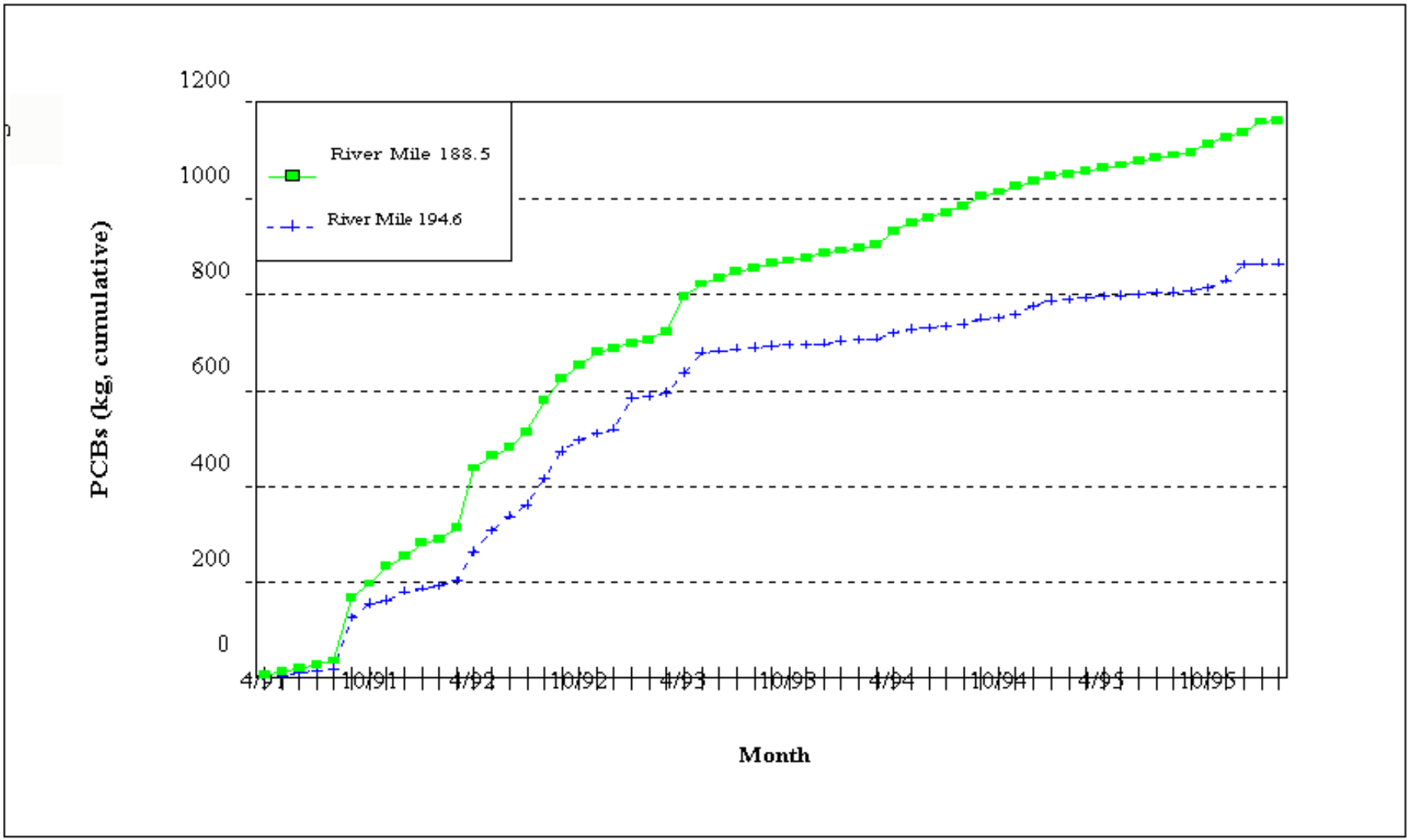
TAMS/ *Gradient*

Figure 3-84
Load across the Thompson Island Pool
Mono-Chlorinated PCB Homologues, GE Data

Source: TAMS/Gradient Database

TAMS/ *Gradient*

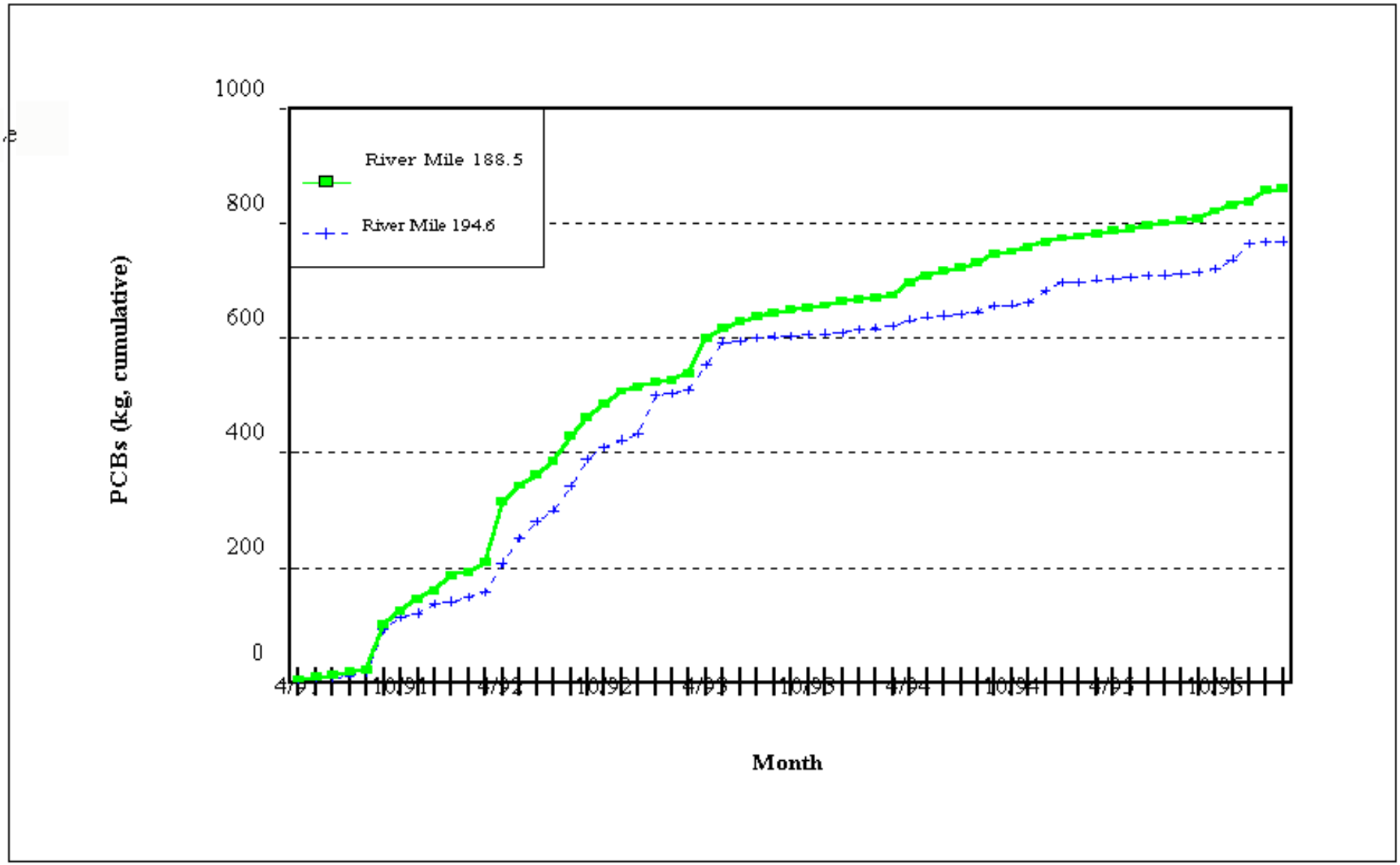
Figure 3-85
Load across the Thompson Island Pool
Di-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

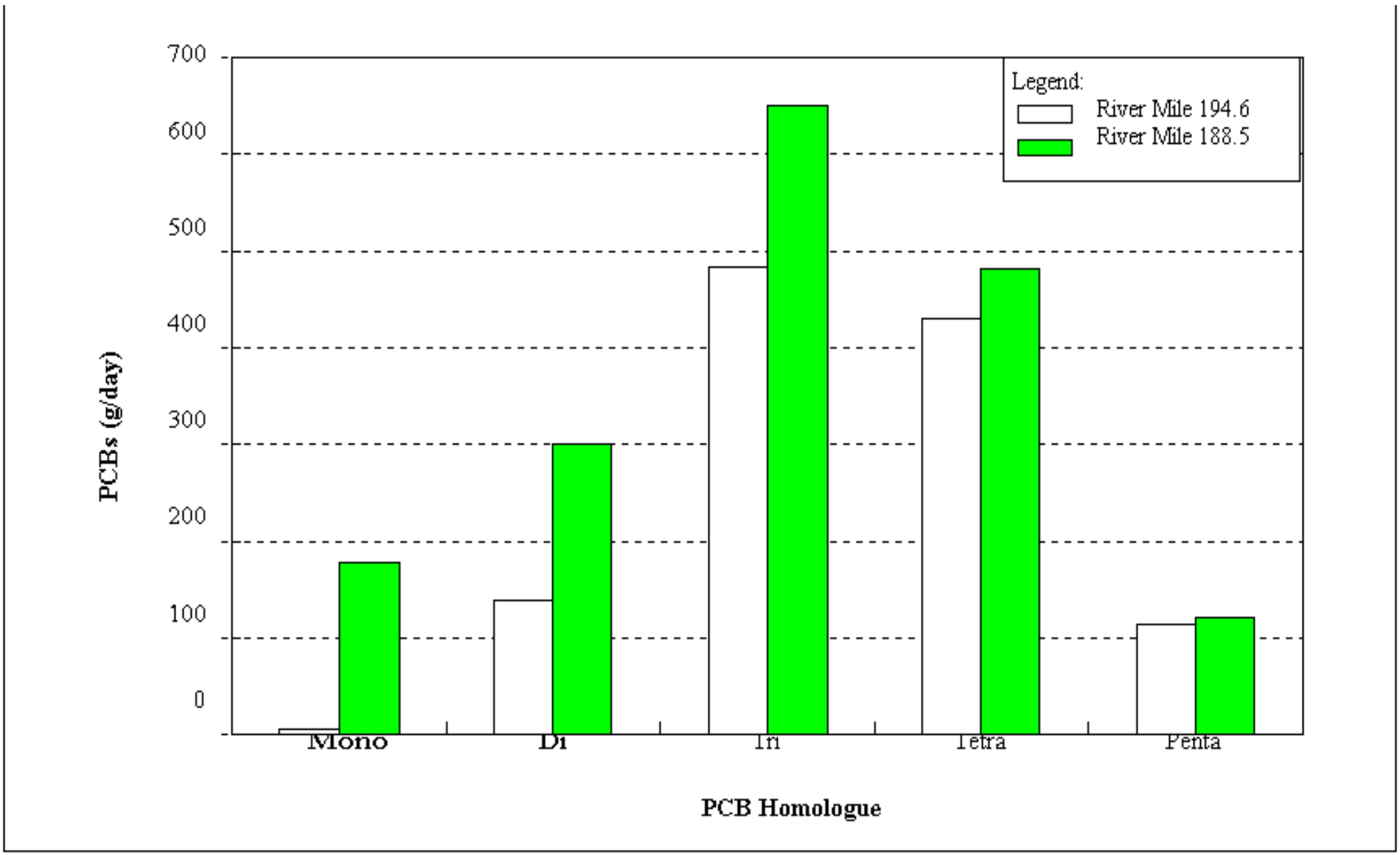
Figure 3-86
Load across the Thompson Island Pool
Tri-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-87
Load across the Thompson Island Pool
Tetra-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

Figure 3-88

Average Daily PCB Homologue Load at Rogers Island (river Mile 194.6) and Thompson Island Dam (River Mile 188.5)

April 1991 through February 1996, Averaging Estimate on GE Data

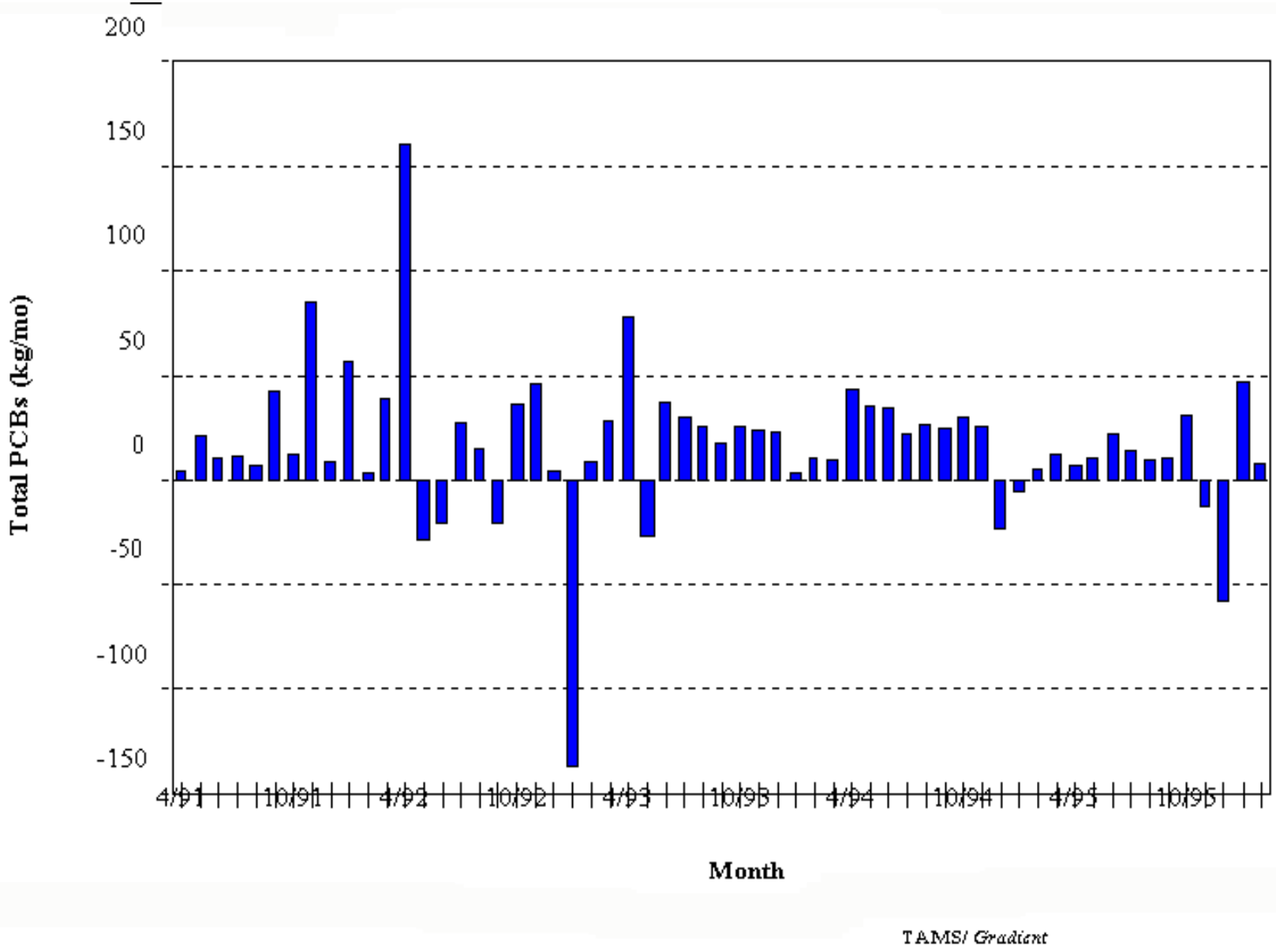


Figure 3-89
Gain across the Thompson Island Pool
Total PCBs, GE Data

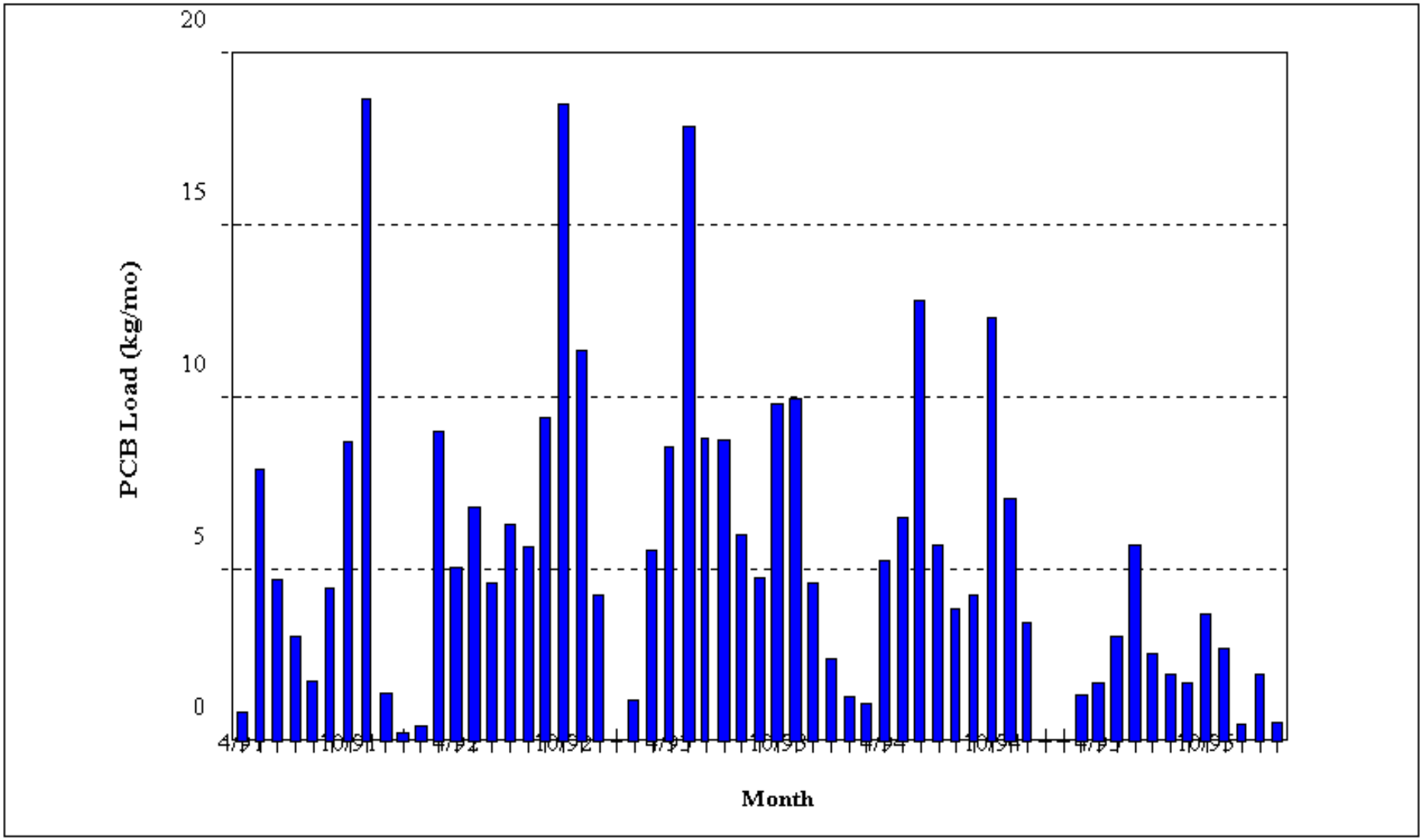
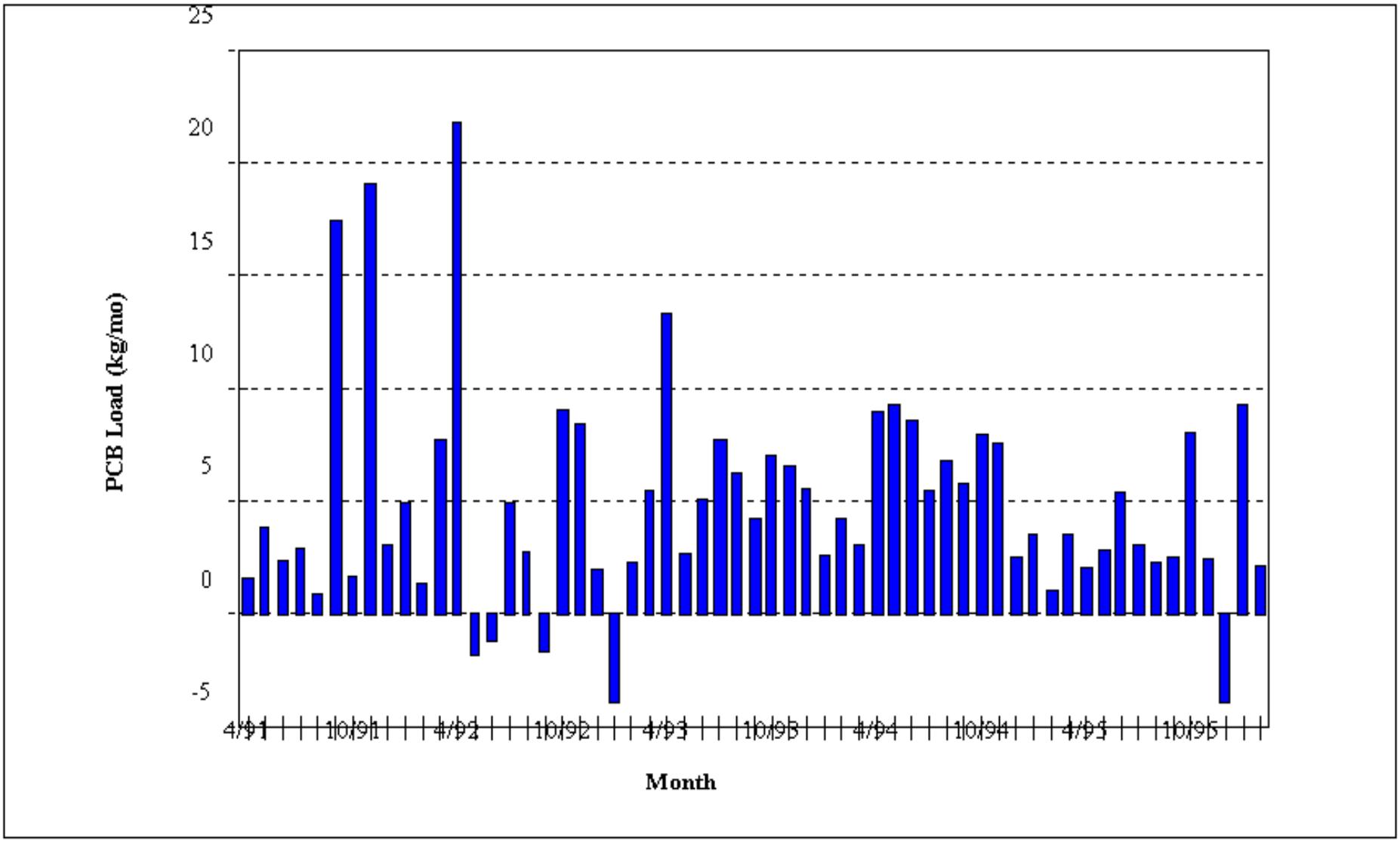


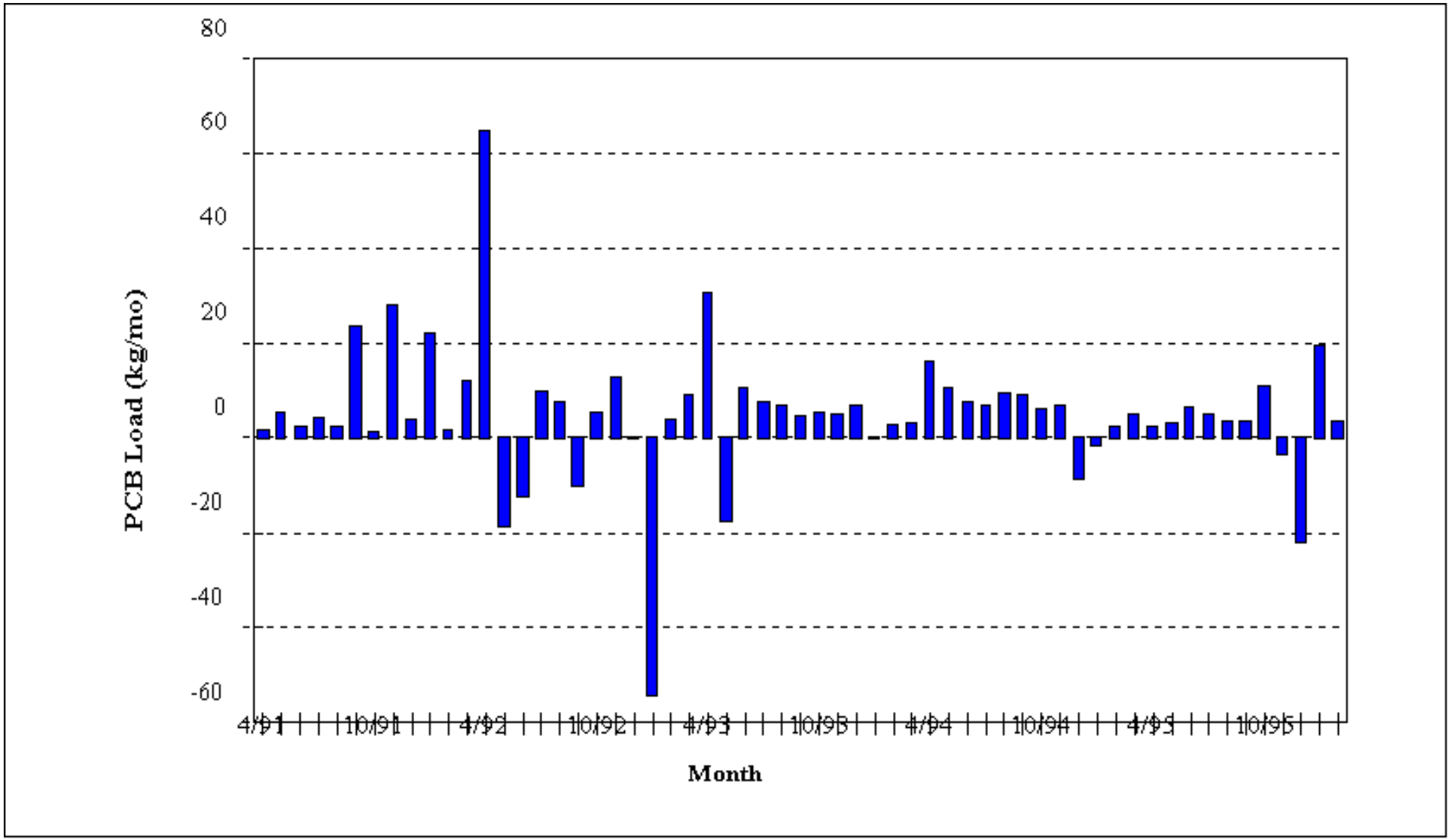
Figure 3-90
Gain across the Thompson Island Pool
Mono-Chlorinated PCBs, GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

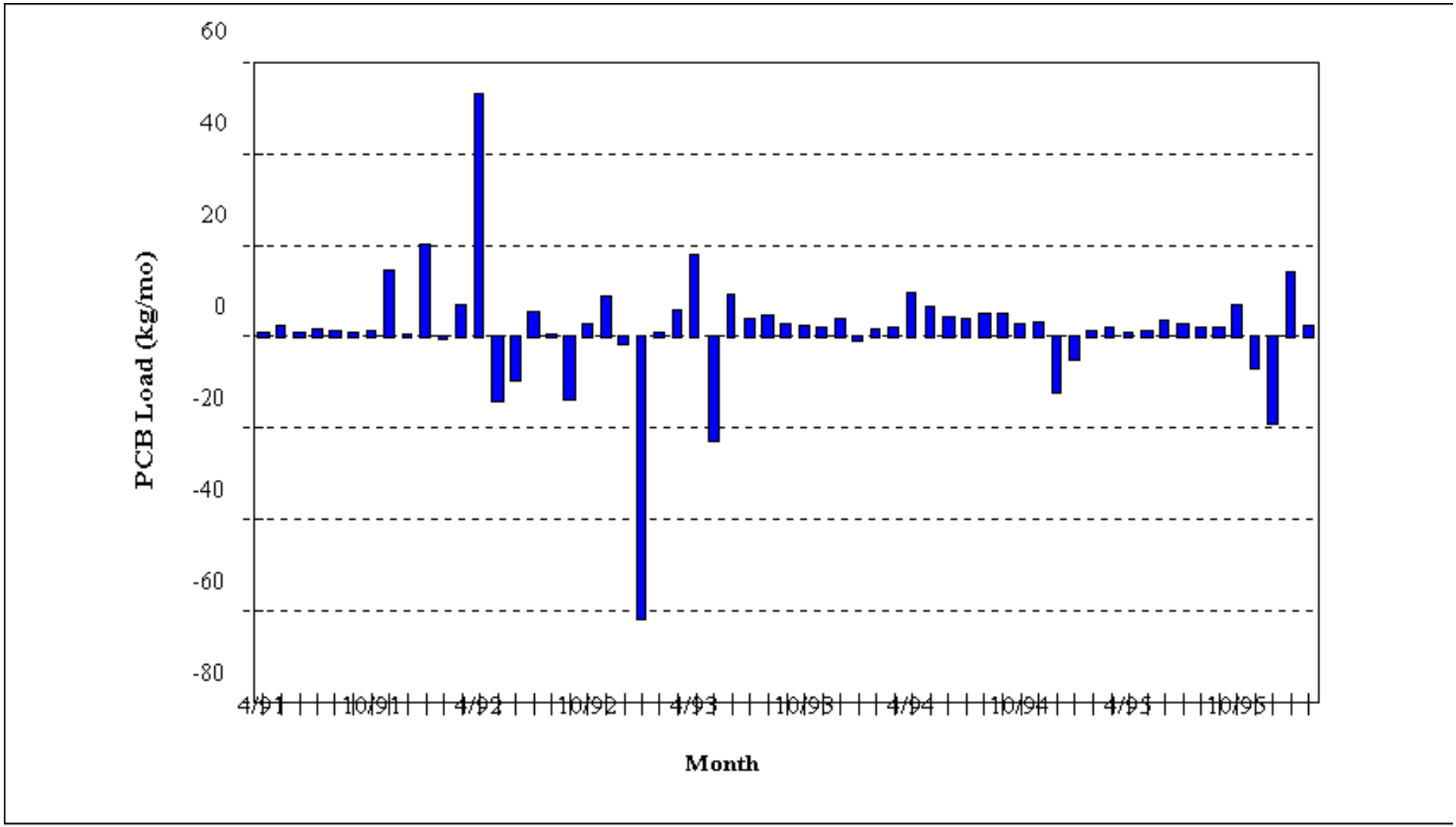
Figure 3-91
Gain across the Thompson Island Pool
Di-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

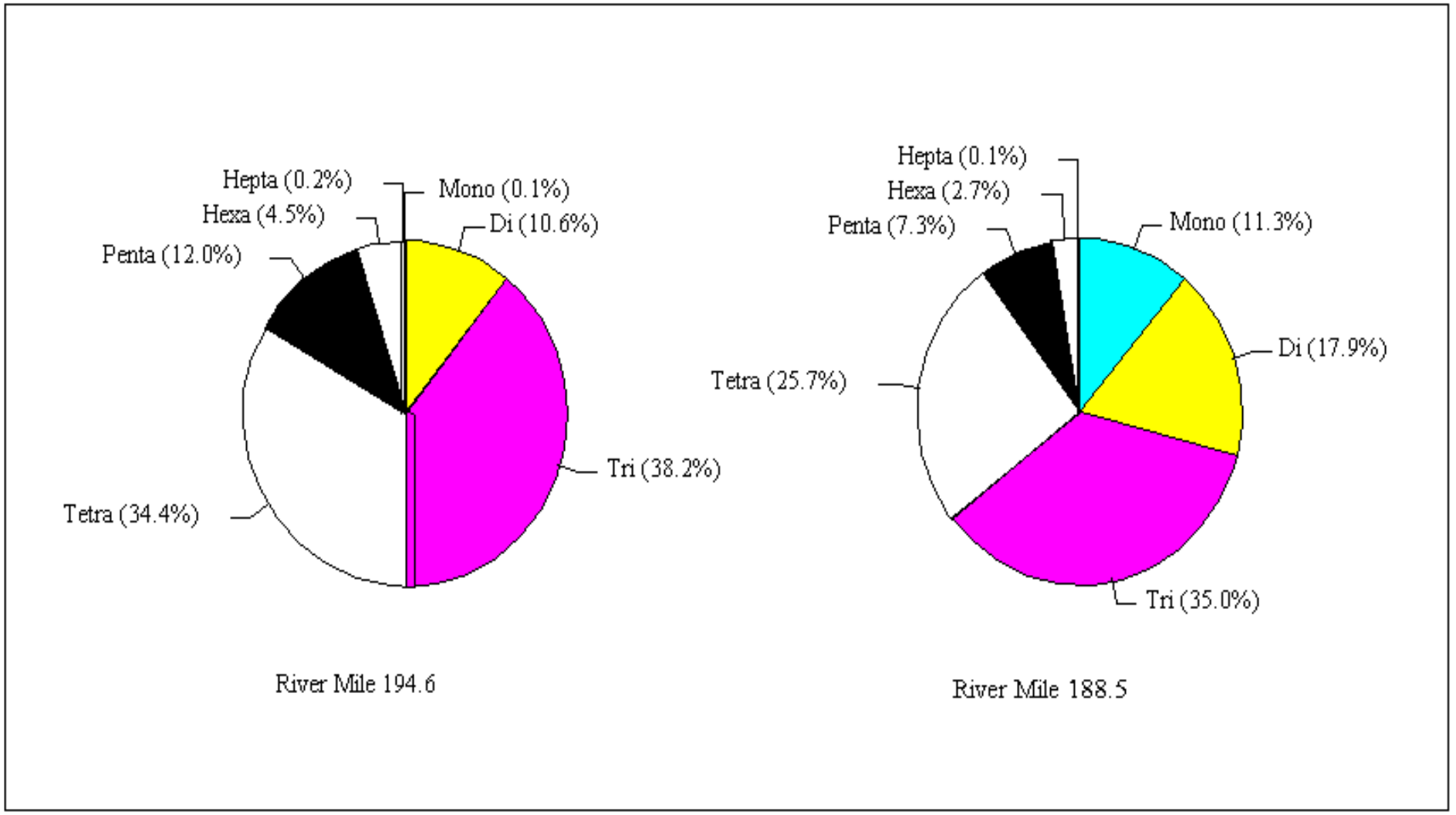
TAMS/ *Gradient*

Figure 3-92
Gain across the Thompson Island Pool
Tri-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

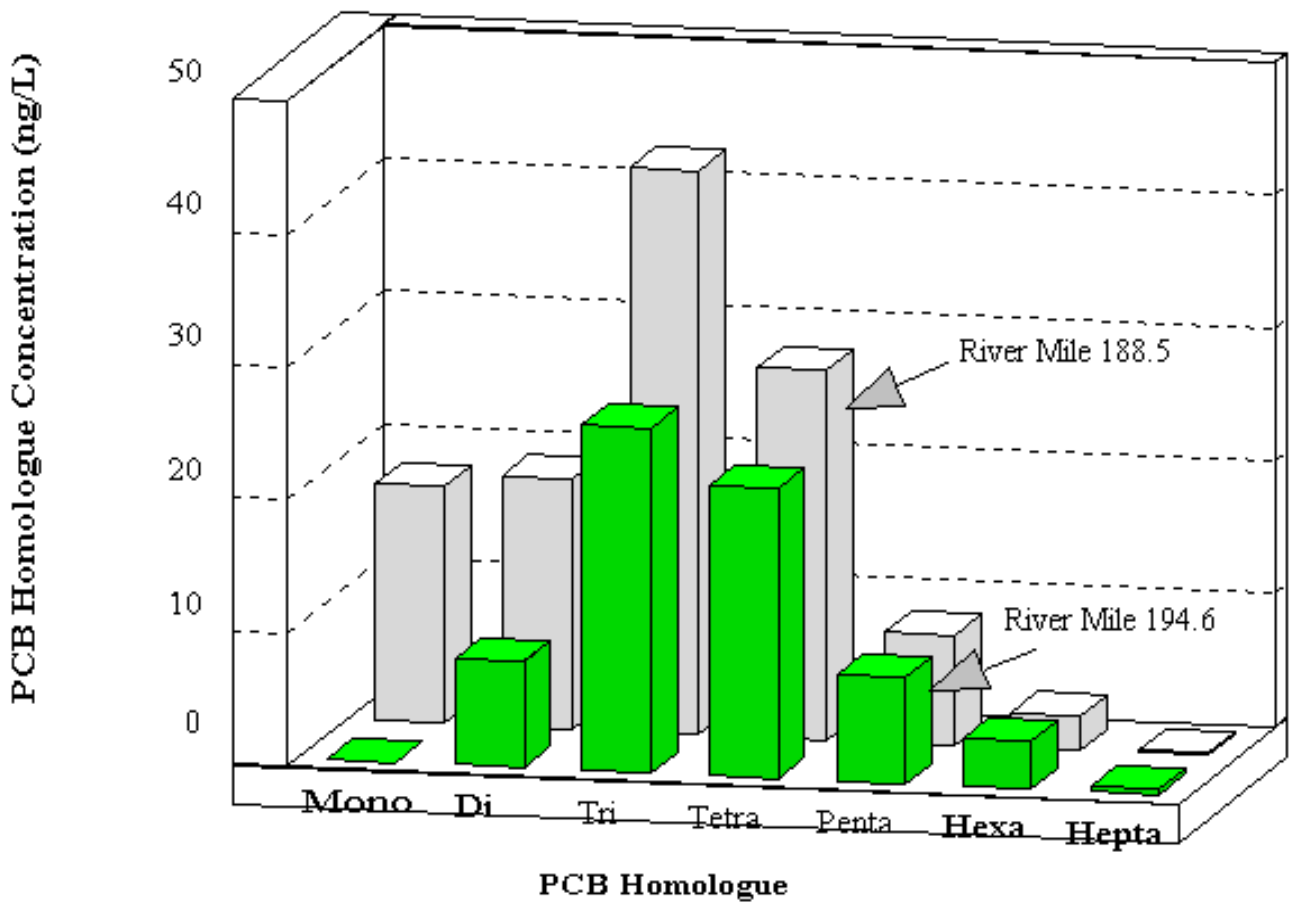
Figure 3-93
Gain across the Thompson Island Pool
Tetra-Chlorinated PCB Homologues, GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

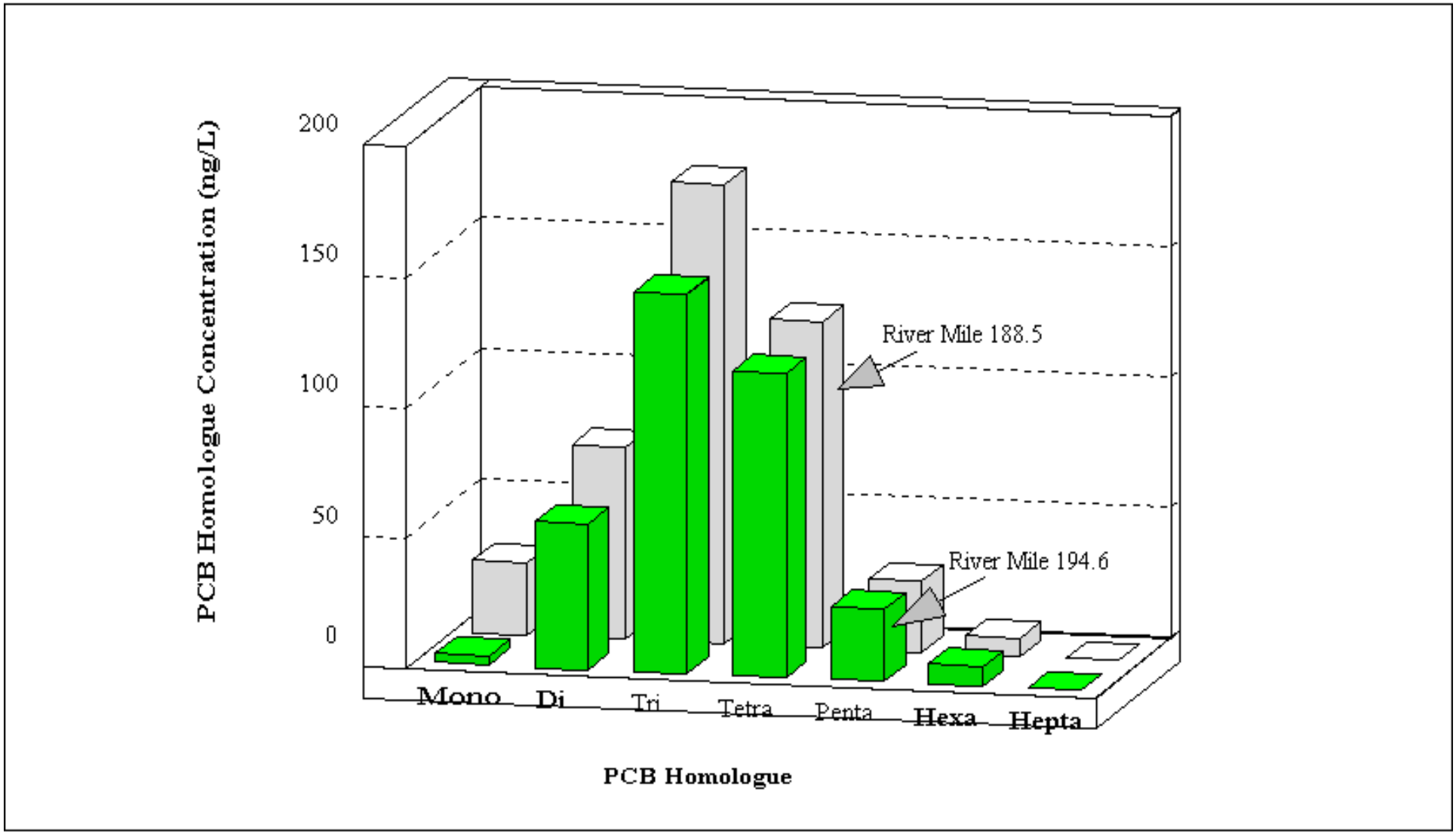
Figure 3-94
PCB Homologue Composition Change across the Thompson Island Pool
April 1991 through February 1995, GE Data



Source: TAMS/Gradient Database

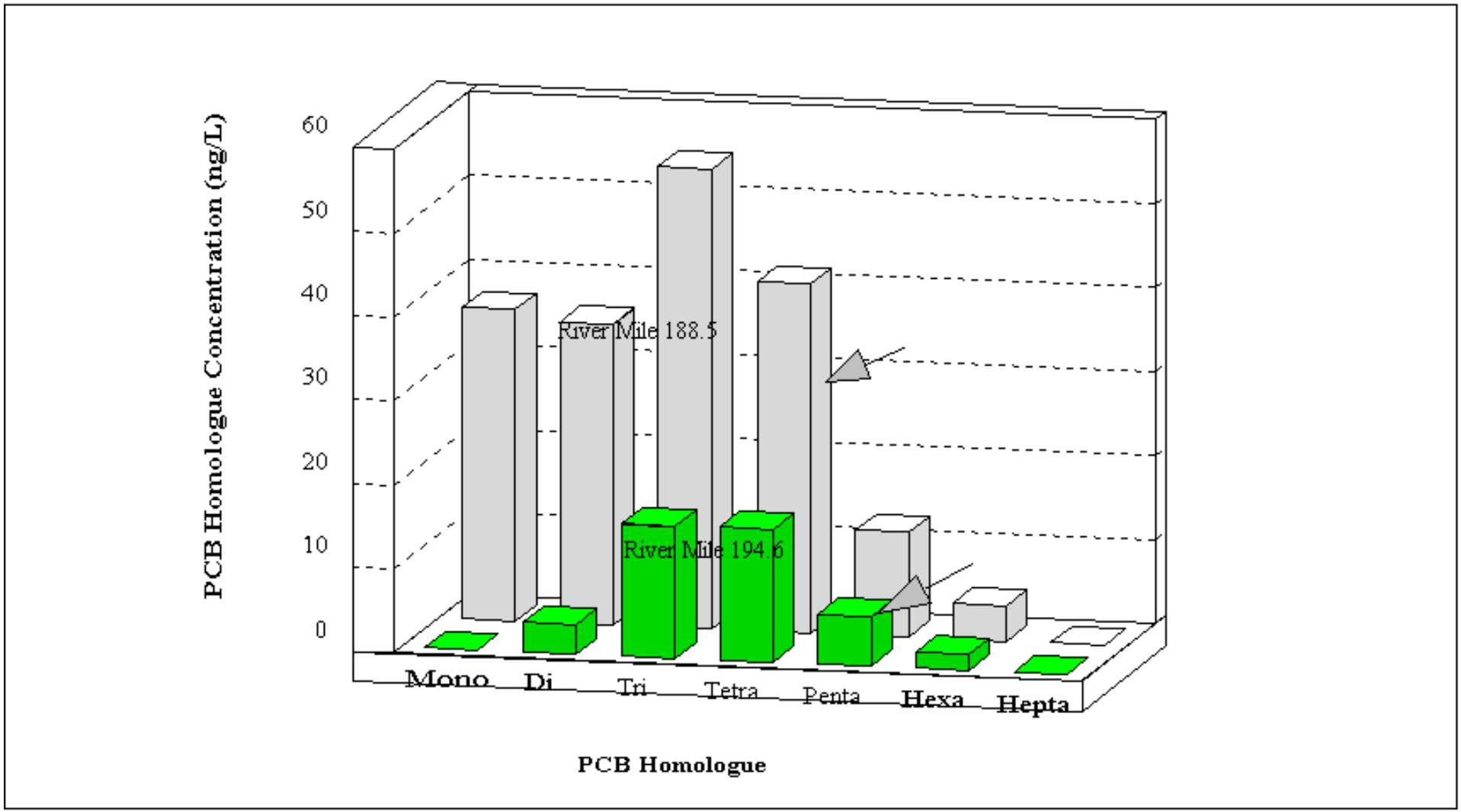
TAMS/ *Gradient*

Figure 3-95
Summer PCB Homologue Concentrations
June through August 1991, GE Data



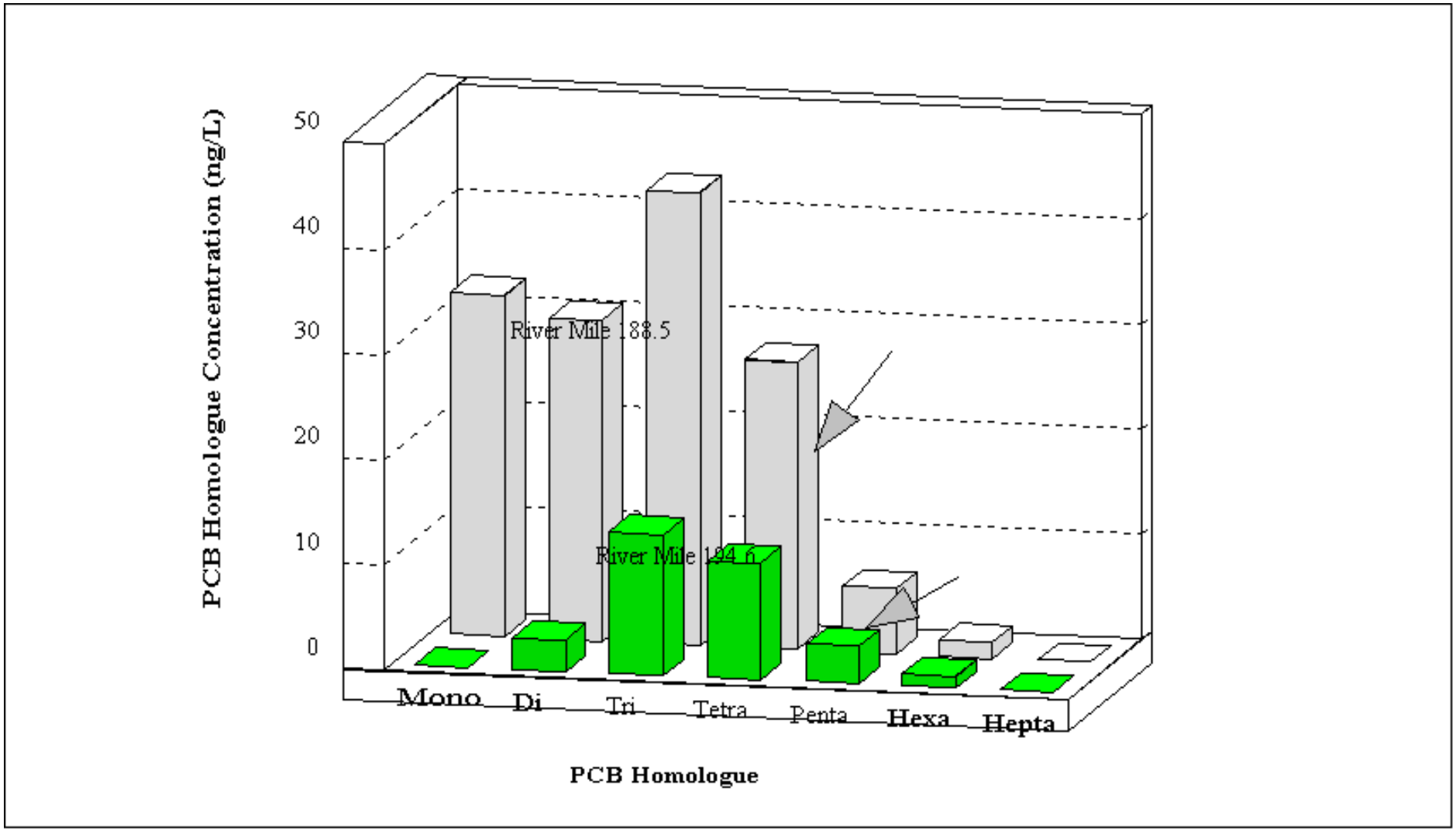
Source: TAMS/Gradient Database

Figure 3-96
Summer PCB Homologue Concentrations
June through August 1992, GE Data



Source: TAMS/Gradient Database

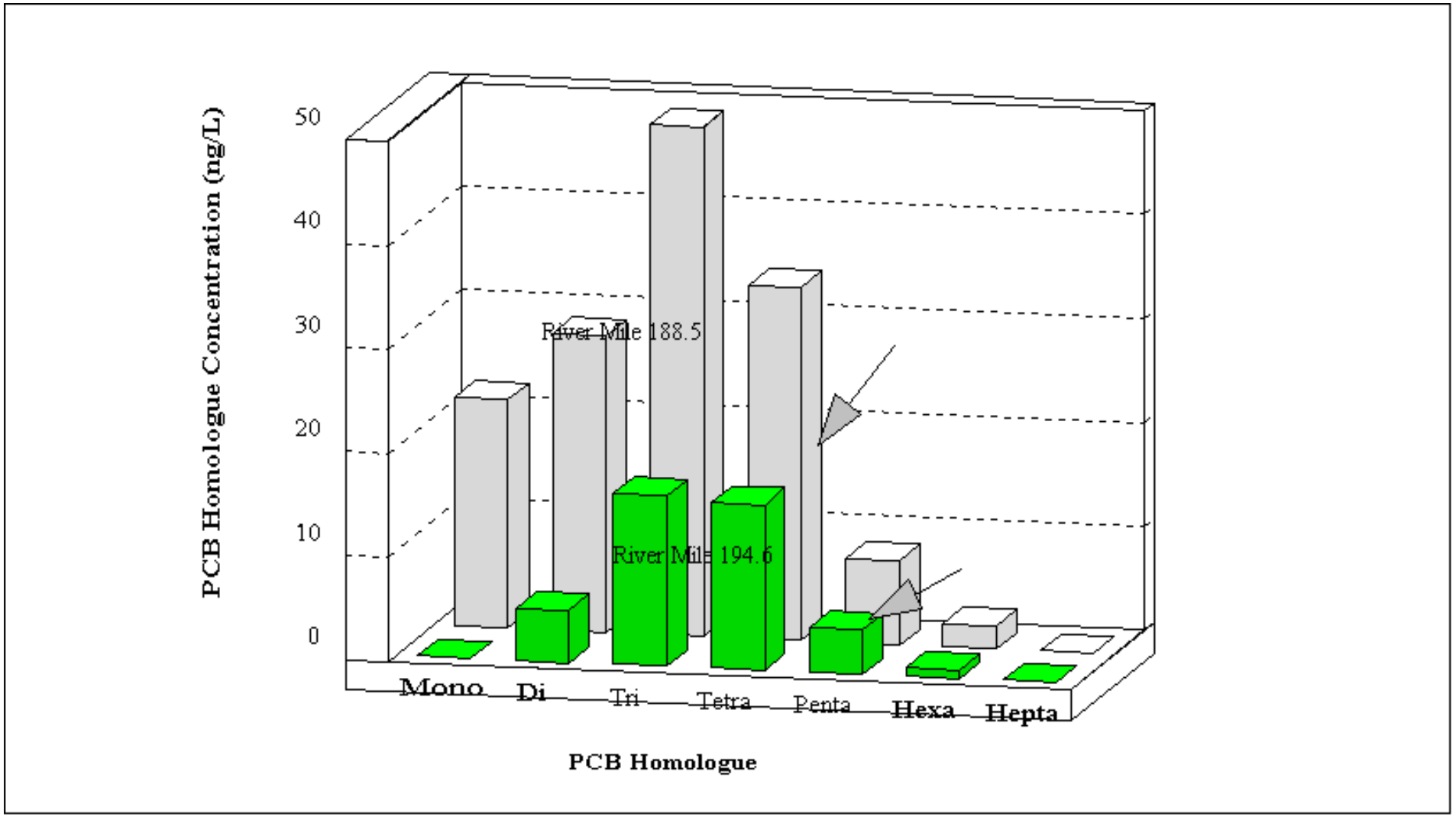
Figure 3-97
Summer PCB Homologue Concentrations
June through August 1993, GE Data



Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-98
Summer PCB Homologue Concentrations
June through August 1994, GE Data

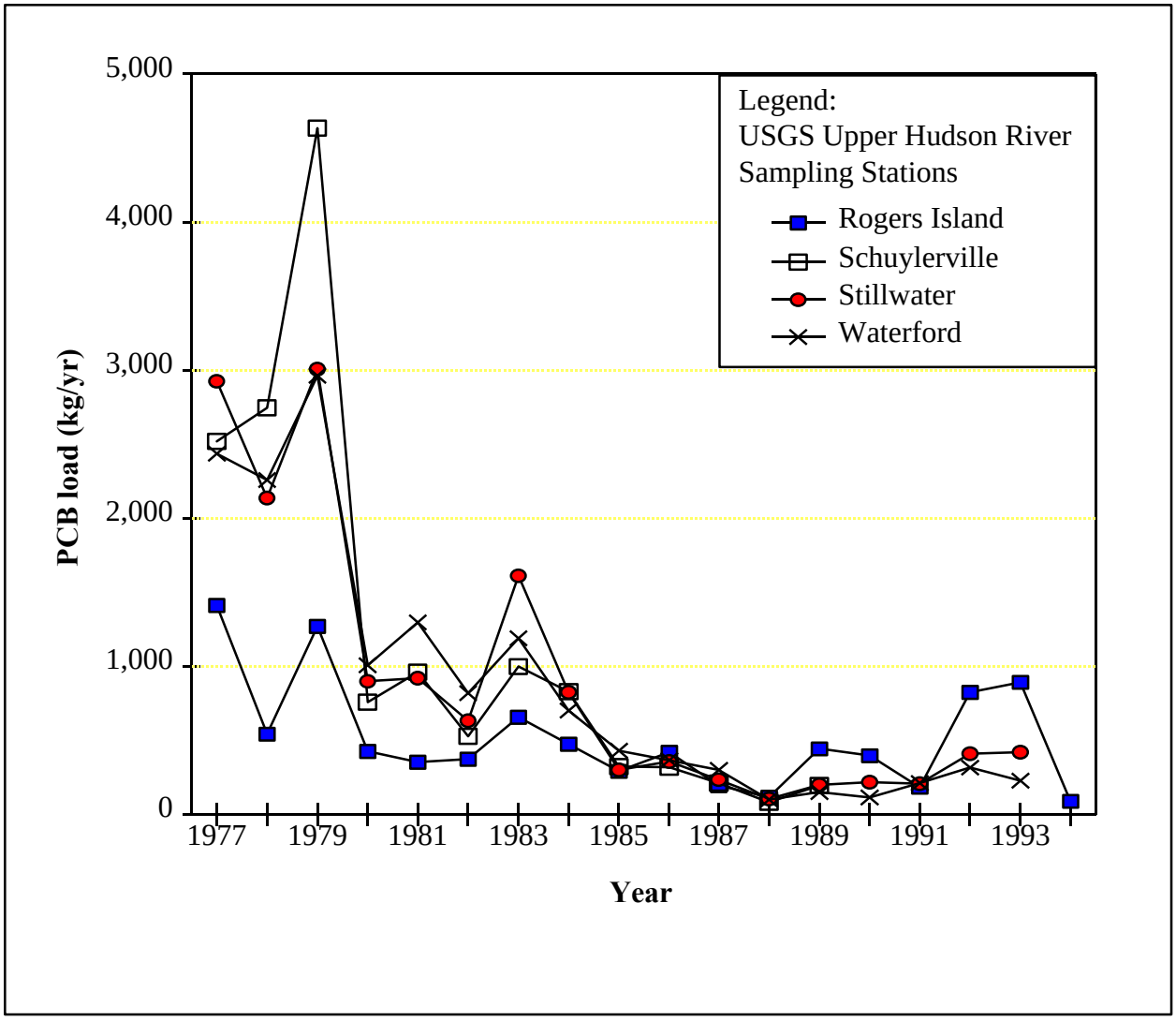


Source: TAMS/Gradient Database

TAMS/ *Gradient*

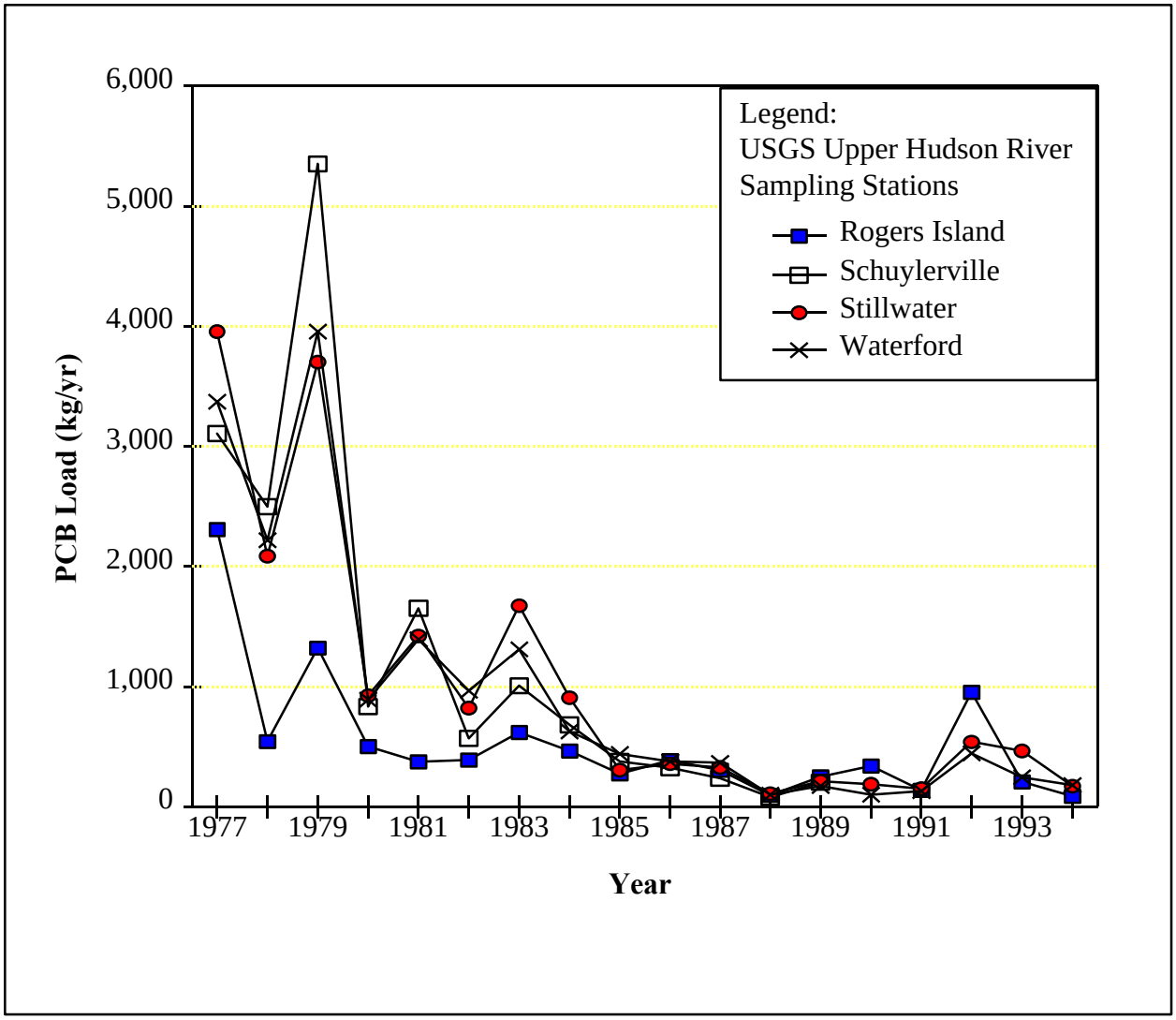
Figure 3-99
Summer PCB Homologue Concentrations
June through August 1995, GE Data

Figure 3-100
Total PCB Load from USGS Data:
Ratio Estimator

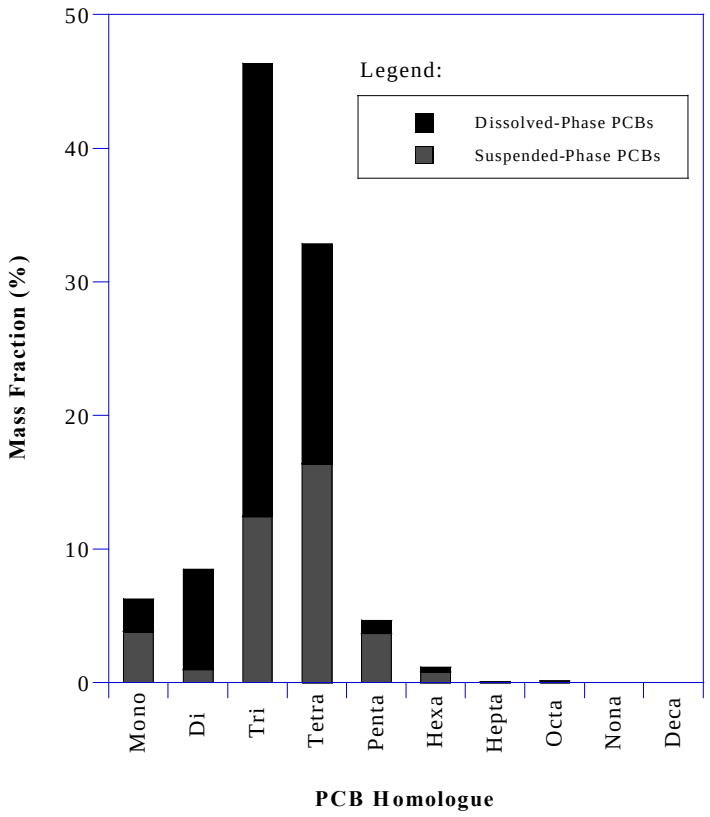


Source: TAMS/Gradient Database

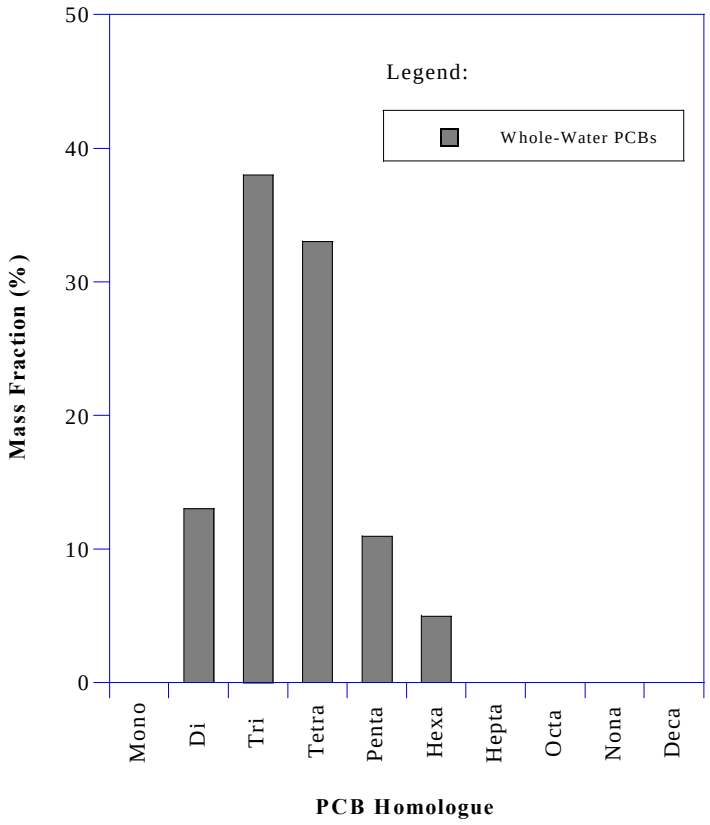
Figure 3-101
Total PCB Load from USGS Data:
Averaging Estimator



Source: TAMS/Gradient Database



Transect 3[a]: March 26-31, 1993
6 kg/month



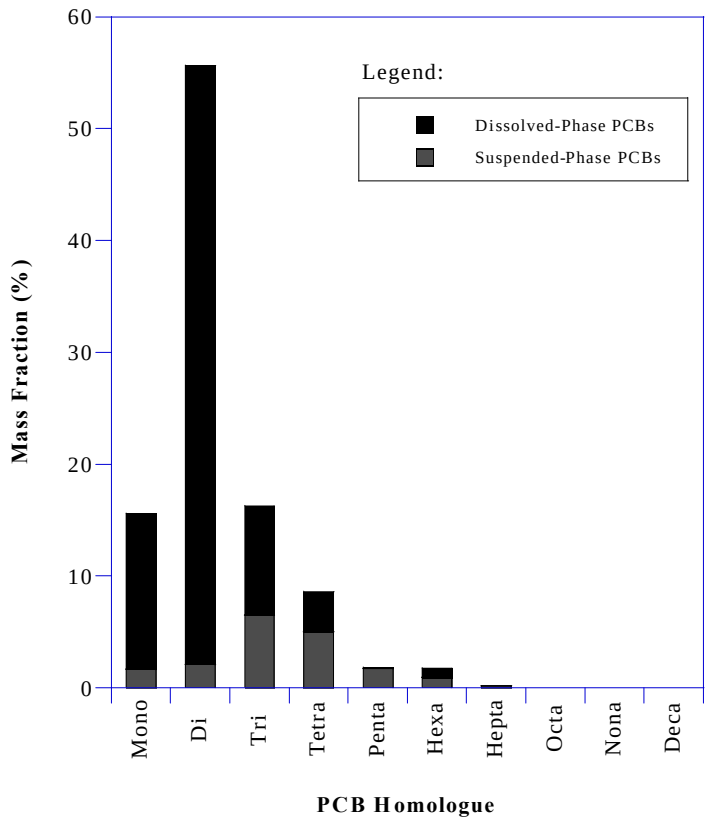
Mean March Condition
Based on GE Data[b]
17 kg/month

Notes:
a. Loading for Transect 3 converted to monthly basis.
b. Represents whole-water analysis.

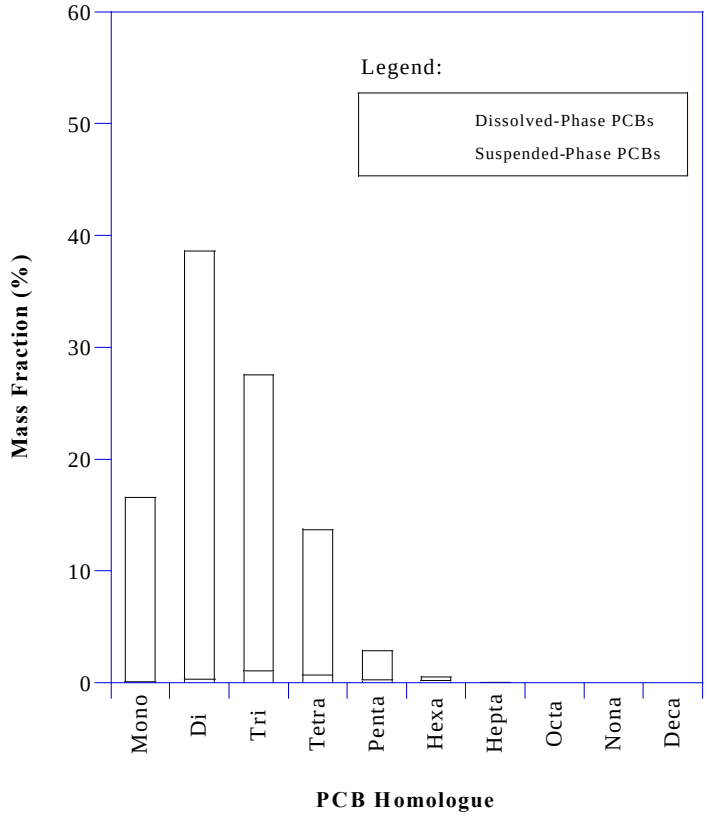
Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-102
Water-Column PCB Homologue Composition at River Mile 194.6 at Rogers Island



Transect 3[a]: March 26 - 31, 1993
26 kg/month



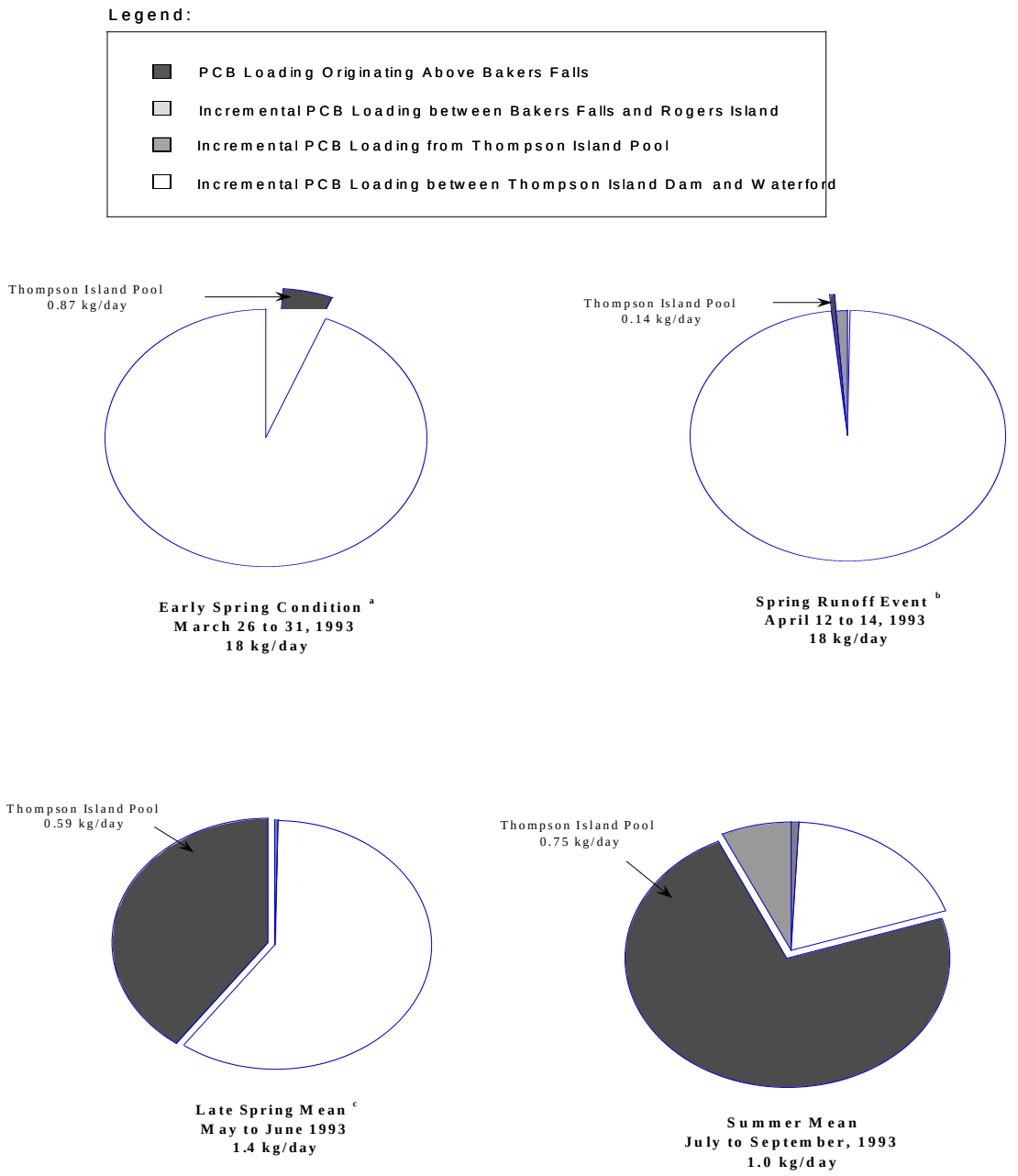
Transect 6[a]: August 19 - September 1, 1993
15 kg/month

Note:
a. Loading for transects converted to monthly basis.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-103
Water-Column PCB Homologue Composition of the Net Thompson Island Pool Load



Notes:

a. The large PCB loading below the Thompson Island Pool is the result of scour of the Hudson River sediments caused by onset of the spring flood event in the Hoosic River.

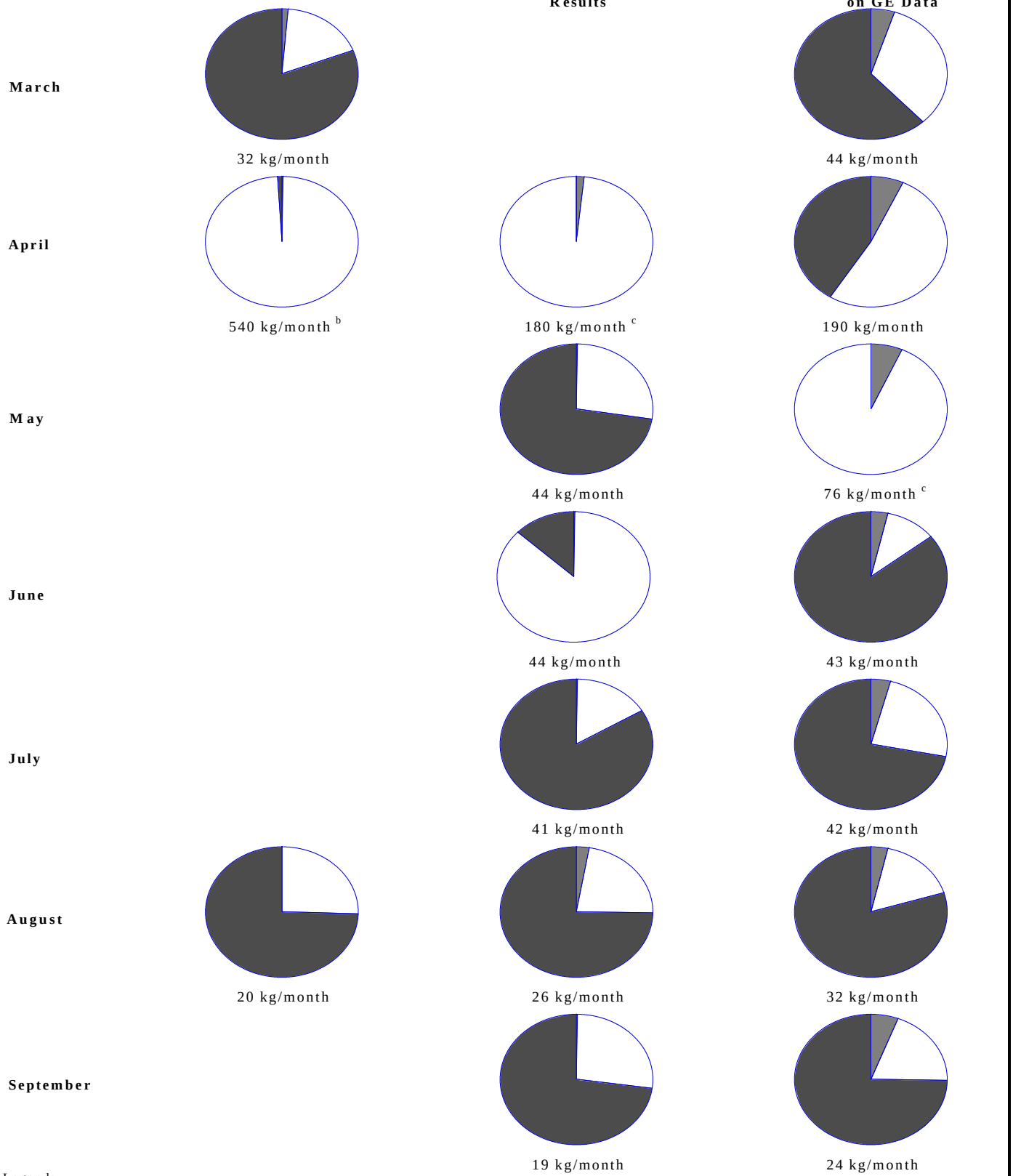
b. The PCB loading across the Thompson Island Pool is estimated as the difference between the PCB loadings at Schuylerville and Rogers Island since the Thompson Island Dam sample is considered to over-represent dilution by the Moses Kill.

c. The 7% decrease in PCB load between Thompson Island Dam and Waterford is within measurement uncertainty and is not represented here.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-104
Comparison of 1993 Upper Hudson River PCB Loadings at Waterford based on Phase 2 Data

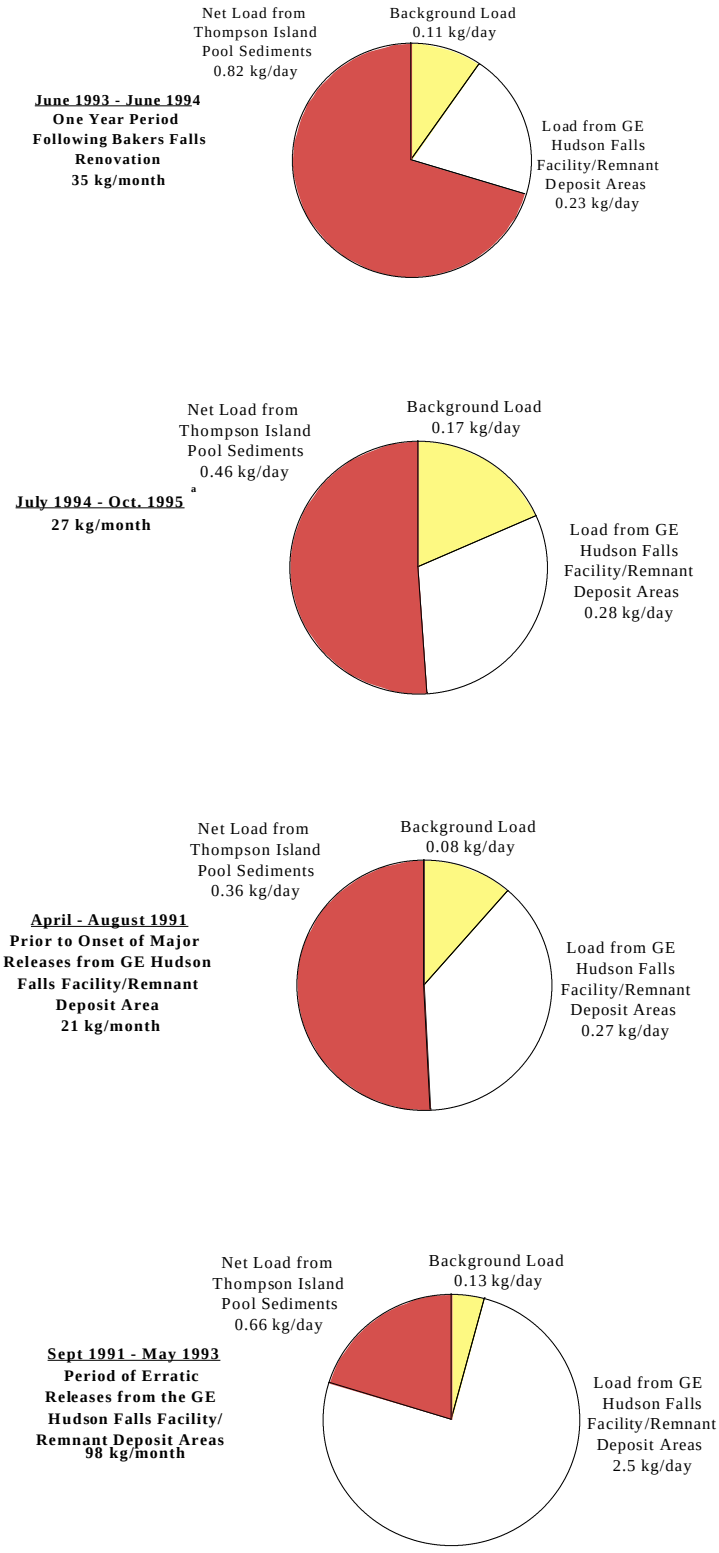


Notes:
a. PCB Loading for transects and flow-averaged events is converted to a monthly basis.
b. The PCB loading across the Thompson Island Pool is estimated as the difference between the PCB loading at Schuylerville and Rogers Island since the Thompson Island Dam sample is considered to over-represent dilution by the Moses Kill.
c. Sampling event exhibits a net decrease in PCB load between Rogers Island and Thompson Island Dam which is not represented here.

Source: TAMS/Gradient Database•

TAMS/Cadmus/*Gradient*

Figure 3-105
Comparison of Transect Results, Flow-Averaged Event Results, and Monthly Mean Based on GE Data



Note

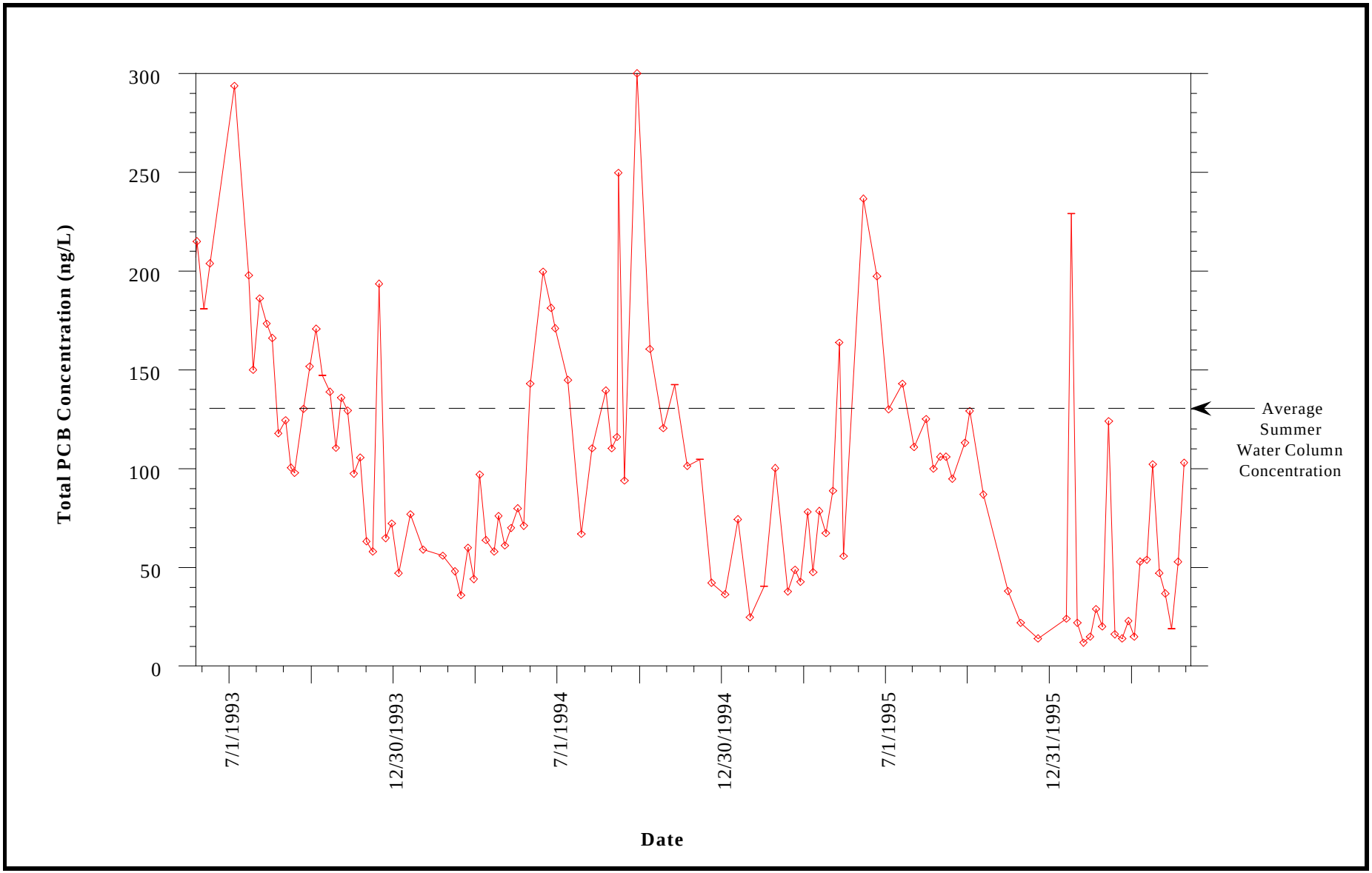
a. Data for November 1995 through February 1996 are not represented here due to two anomalously high background load measurements which were not observed consistently at downstream locations.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 3-106

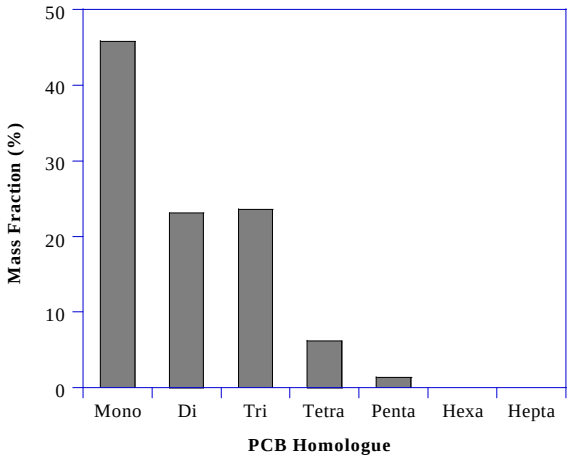
Mean PCB Loadings at the Thompson Island Dam



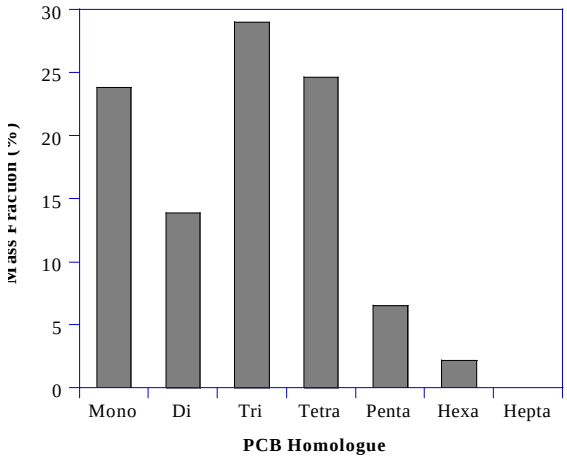
Source: TAMS/Gradient Database

TAMS/*Gradient*

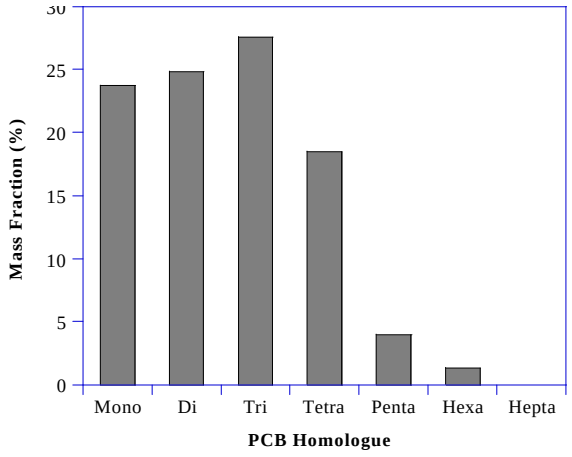
Figure 3-107
Water Column Total PCB Concentrations at the Thompson Island Dam:
June 1993 to May 1996 - GE Data



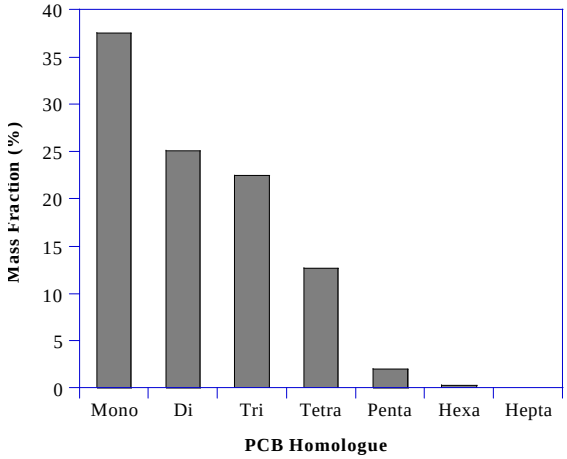
June 1991
11 kg/month (0.37 kg/day)



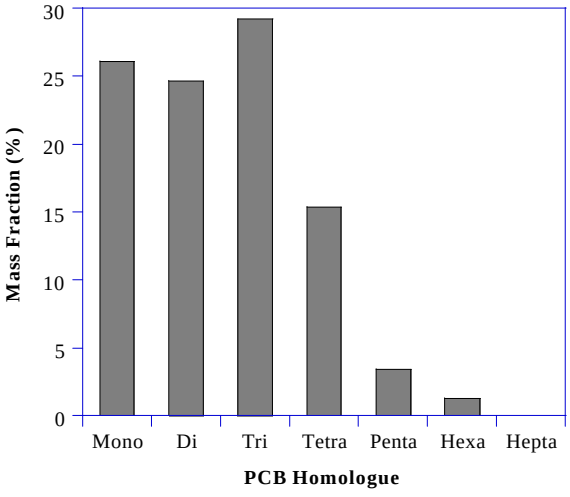
June 1993
36 kg/month (1.2 kg/day)



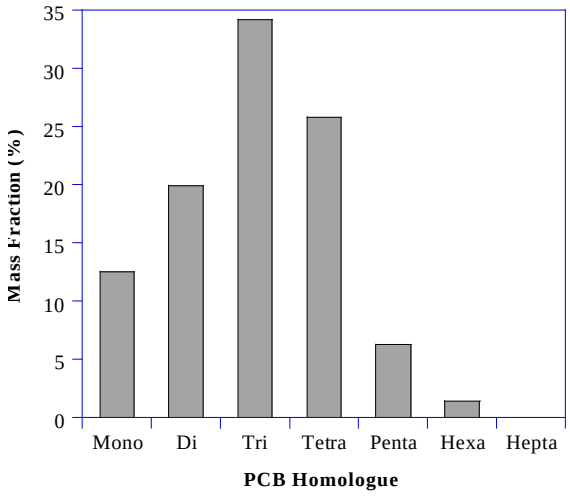
August 1993
26 kg/month (0.87 kg/day)



June 1994
34 kg/month (1.1 kg/day)



June 1995
22 kg/month (0.73 kg/day)



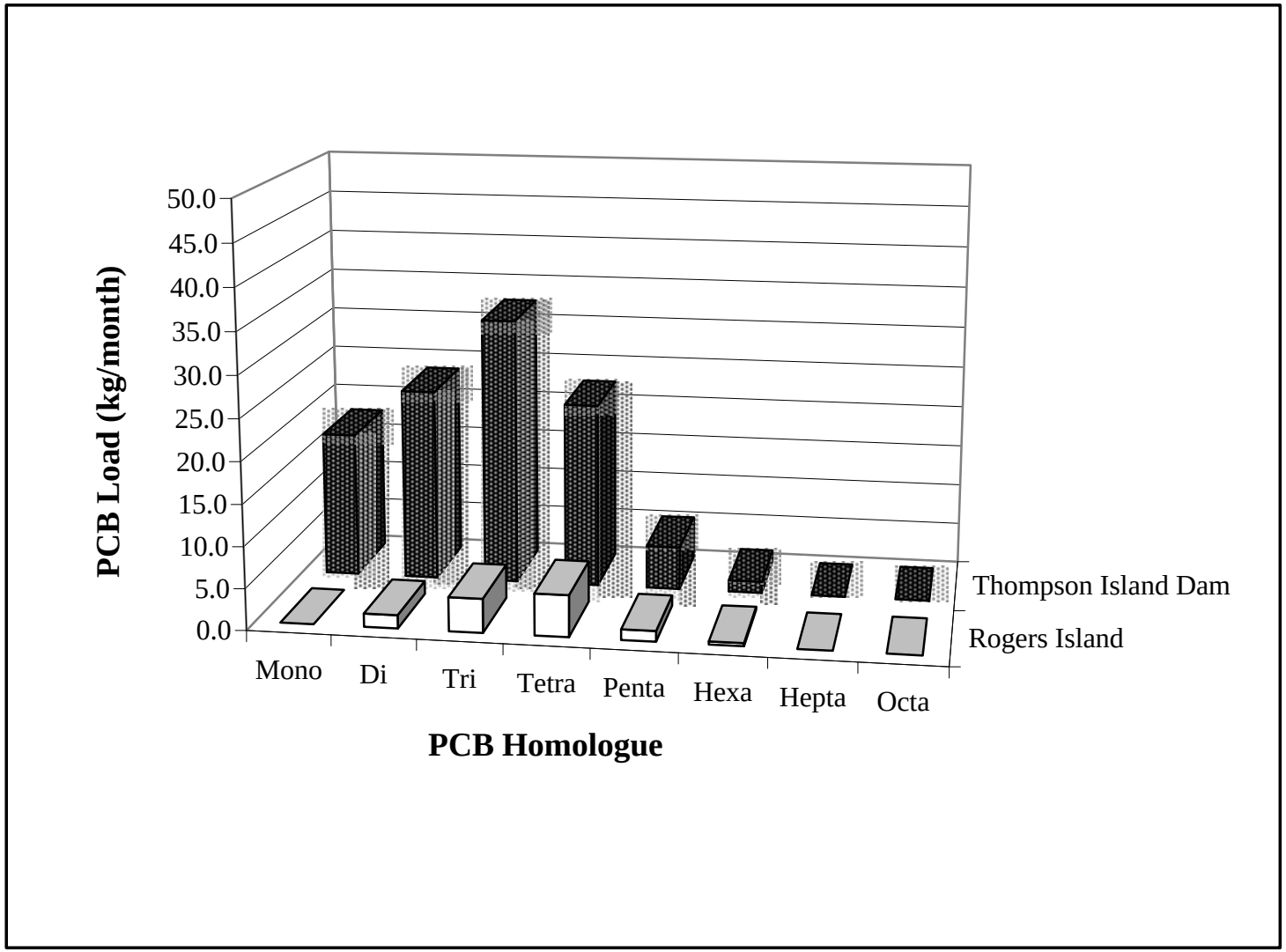
May 1996 [a]
52 kg/month (1.7 kg/day)

Note:
a. Mass transport is based on instantaneous flow values reported by GE.

Source: TAMS/Gradient Database

TAMS/ *Gradient*

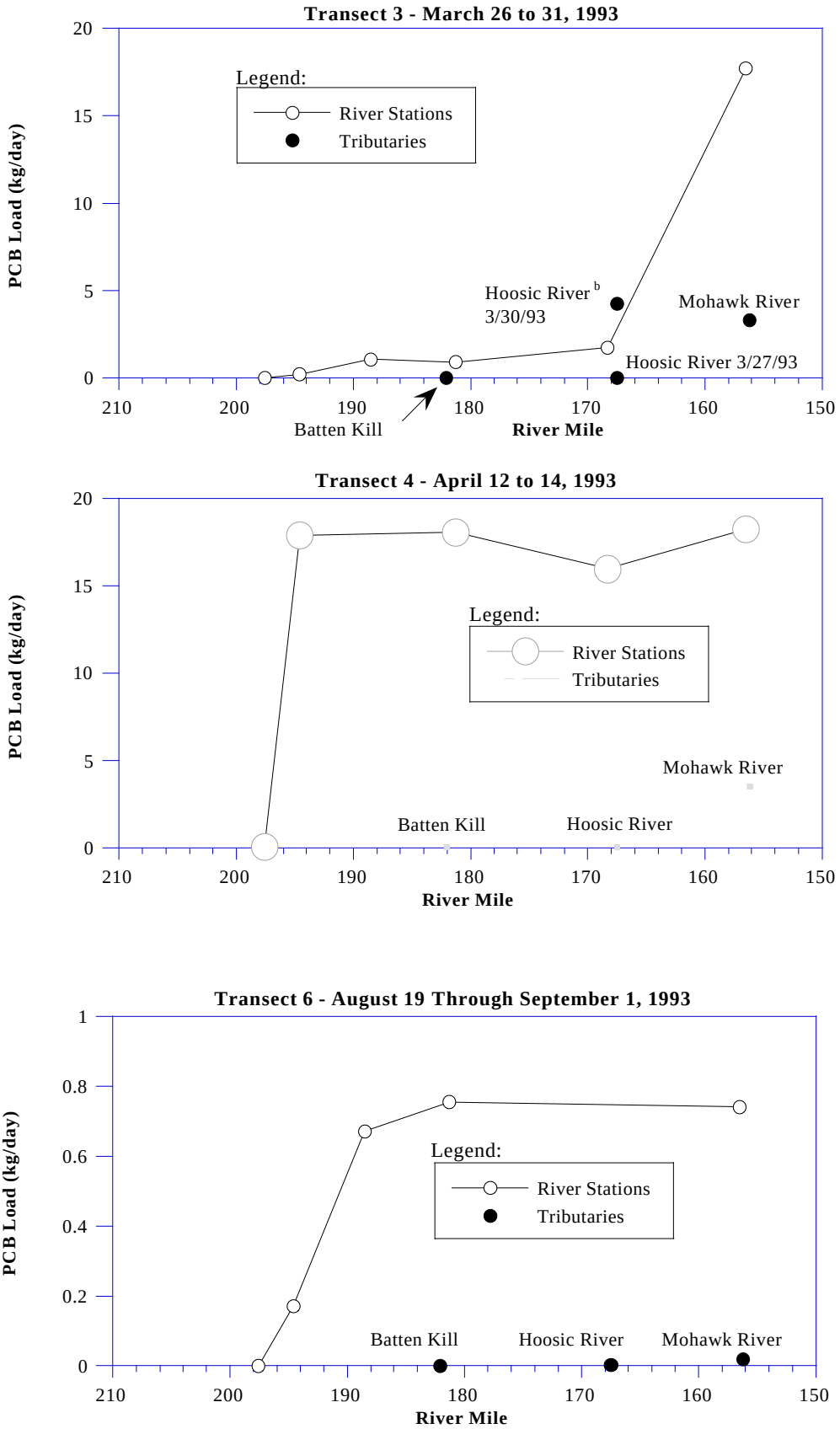
Figure 3-108
PCB Homologue Composition of the Net Thompson Island Pool Load, GE Data



Source: GE Remnant Deposit Monitoring Report Monthly Update, July 5, 1996

TAMS/*Gradient*

Figure 3-109
Total PCB Load at Rogers Island and the Thompson Island Dam - May 27 1996, GE Data



Note:

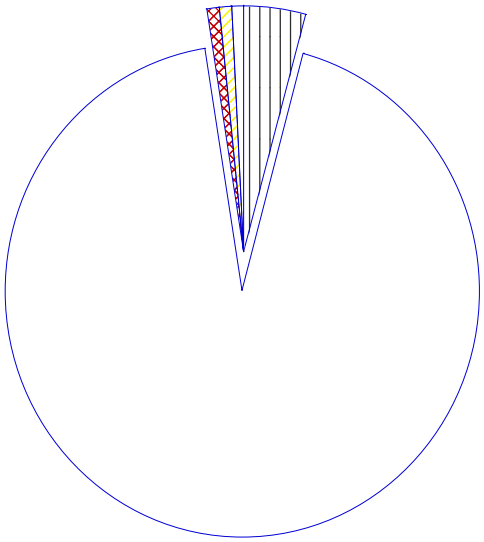
a. The vertical scale for each plot is adjusted to accommodate the range of loads.

b. Hoosic River dissolved and suspended matter PCB concentrations for 3/27/93 were used here to provide a upper bound estimate on the Hoosic River load.

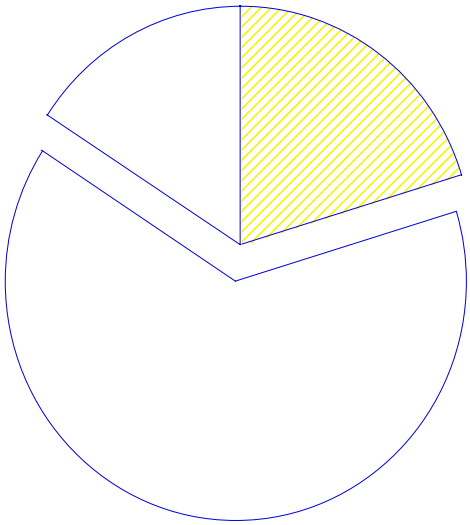
Source: TAMS/Gradient Database

TAMS/ *Gradient*

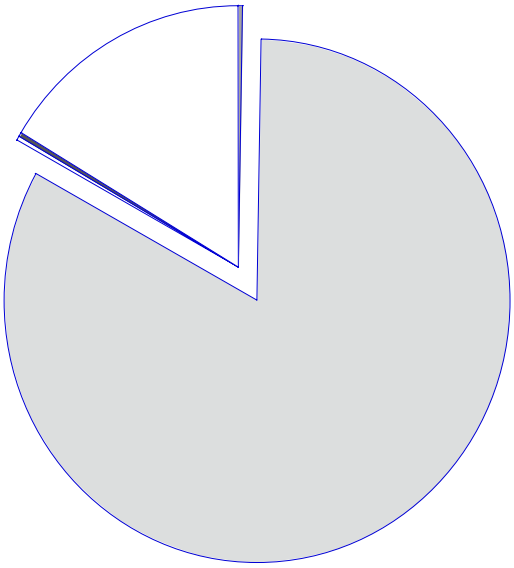
Figure 3-110
PCB Load vs. River Mile for Three Phase 2 Water-Column Transects



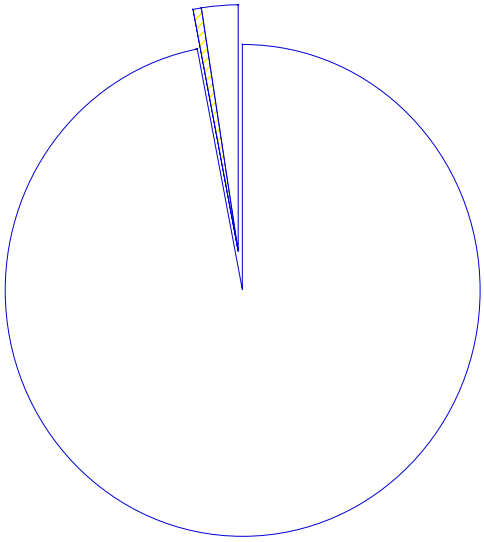
Transect 1 - January 1993
0.98 kg.day



Transect 3 - March 1993
21 kg/day



Transect 4 - April 1993
22 kg/day



Transect 6 - August 1993
0.76 kg/day

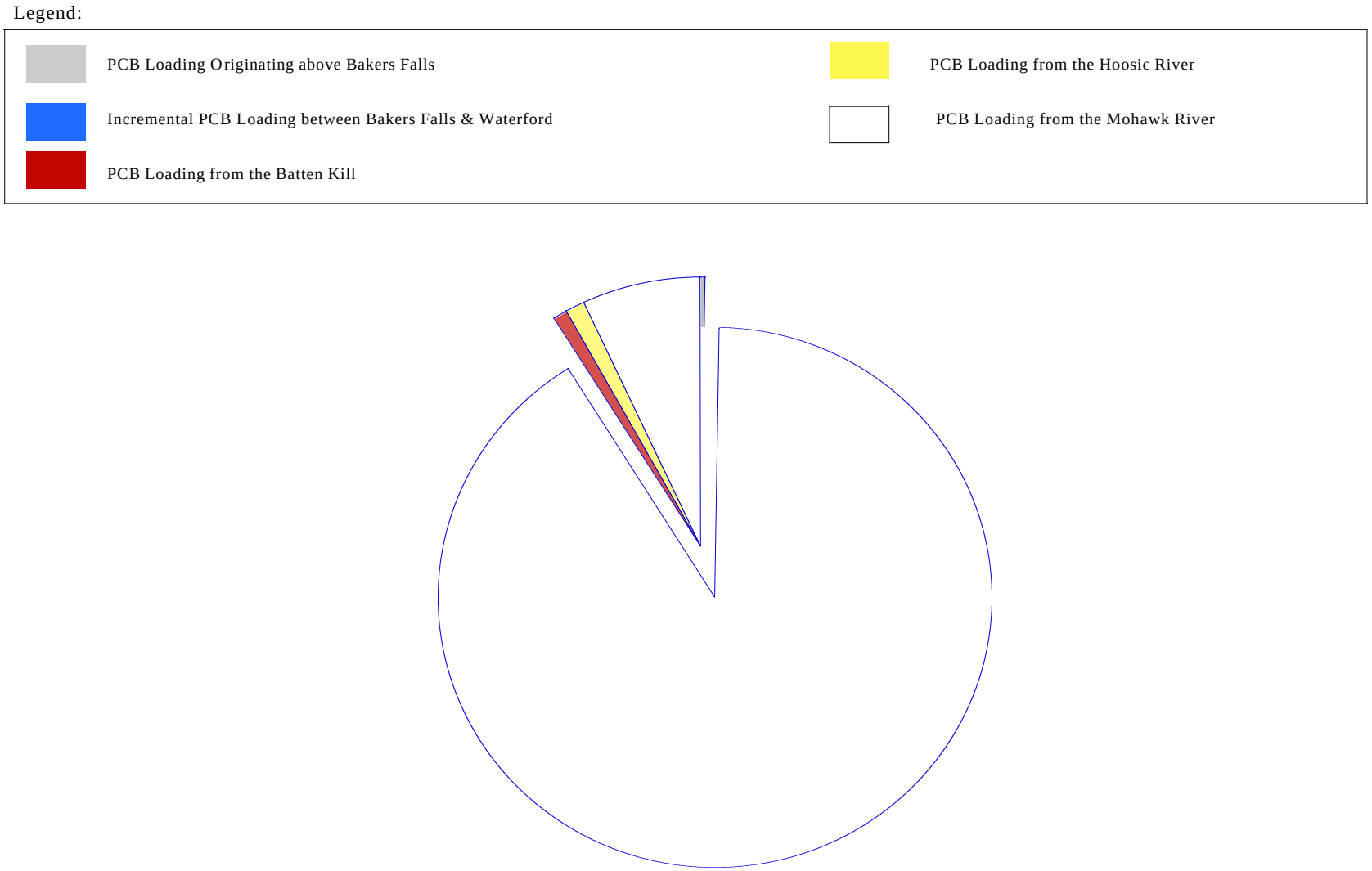
Legend:

- PCB Loading Originating above Bakers Falls
- Incremental PCB Loading between Bakers Falls & Waterford
- PCB Loading from the Batten Kill
- PCB Loading from the Hoosic River
- PCB Loading from the Mohawk River

Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-111
PCB Loadings to the Hudson River at River Mile 153.9
near Albany based on the Water-Column Transect Sampling

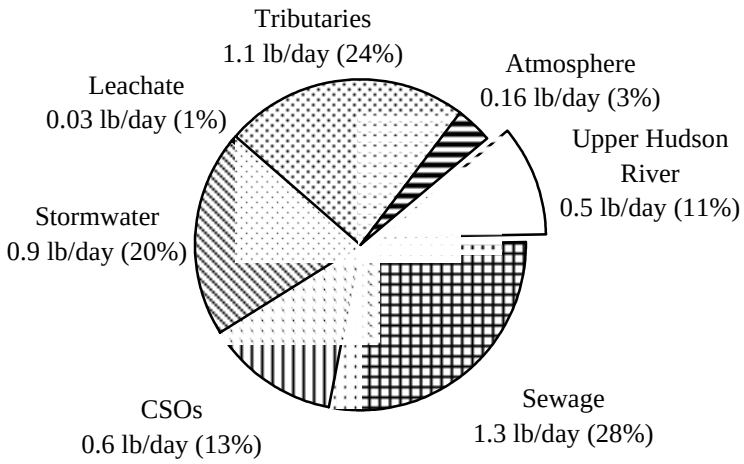


Note: Based on Table 3-25.

Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 3-112
Fractional PCB Loads at Albany for 1991 to 1992
Based on Dated High-Resolution Sediment Core Results



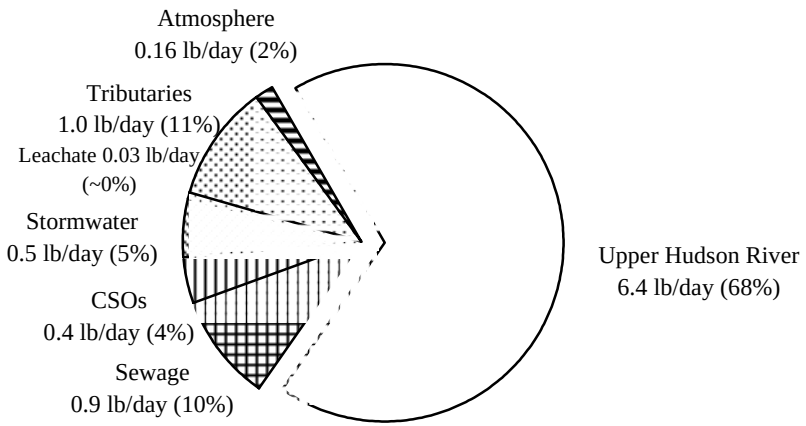
Projected Total Load = 4.6 lb/day (2.1 kg/day)

Notes:
a. Exponential decline in Upper Hudson load = 0.2765/year
b. Exponential decline in downstream loads = 0.057/year
c. 1 lb/day = 0.454 kg/day

Source: Thomann, *et al.* (1989 and 1991)

TAMS/*Gradient*

Figure 3-113
Model-Projected PCB Loadings to Lower Hudson River and Harbor for 1993



Estimated Total Load = 9.4 lb/day (4.3 kg/day)

Notes:
a. Loadings are for 1993 only and should not be used to directly estimate conditions for other time periods (see text for discussio
b. 1 lb/day = 0.454 kg/day

Source: TAMS/Gradient Database and various others discussed in text at Sections 2.3 and 3.5

Figure 3-114
Estimated PCB Loadings to Lower Hudson and Harbor for 1993