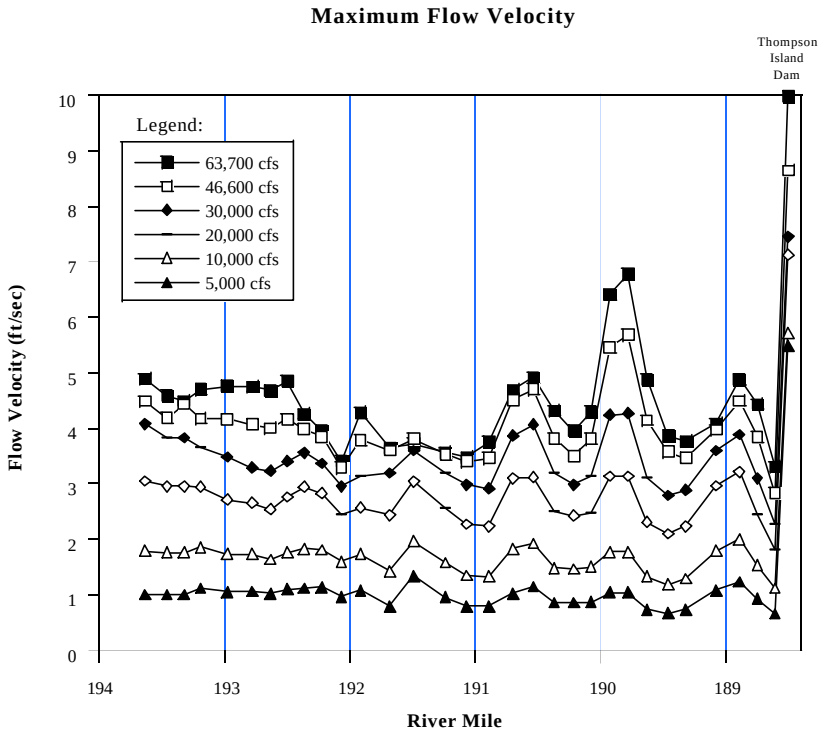
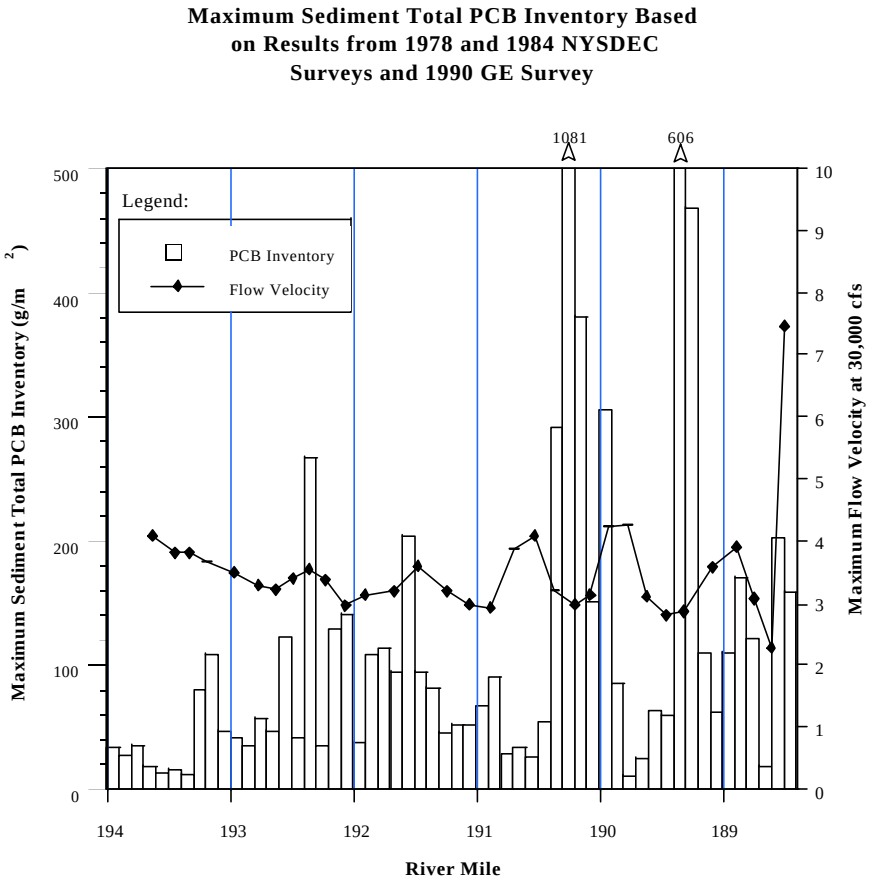
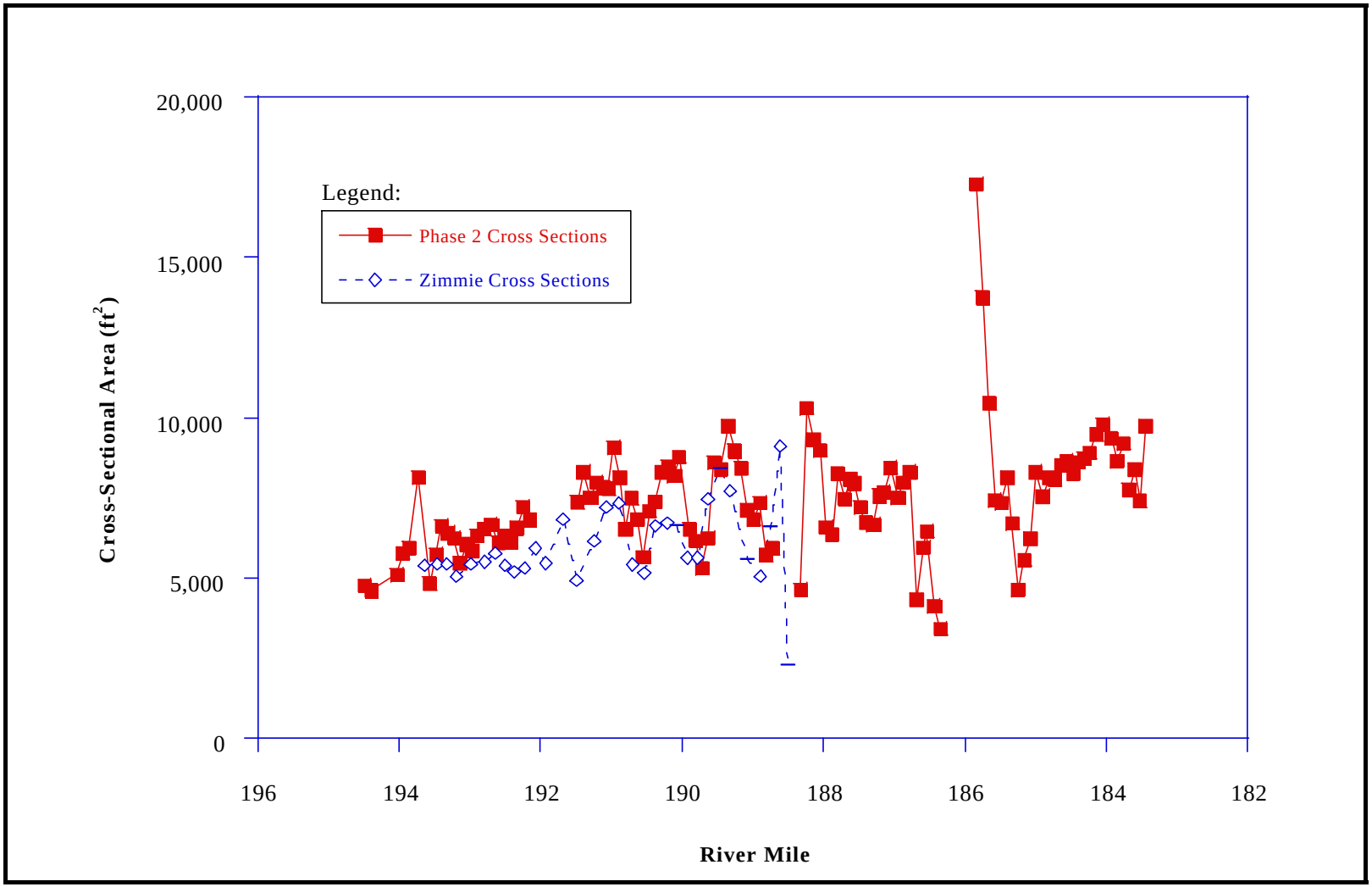




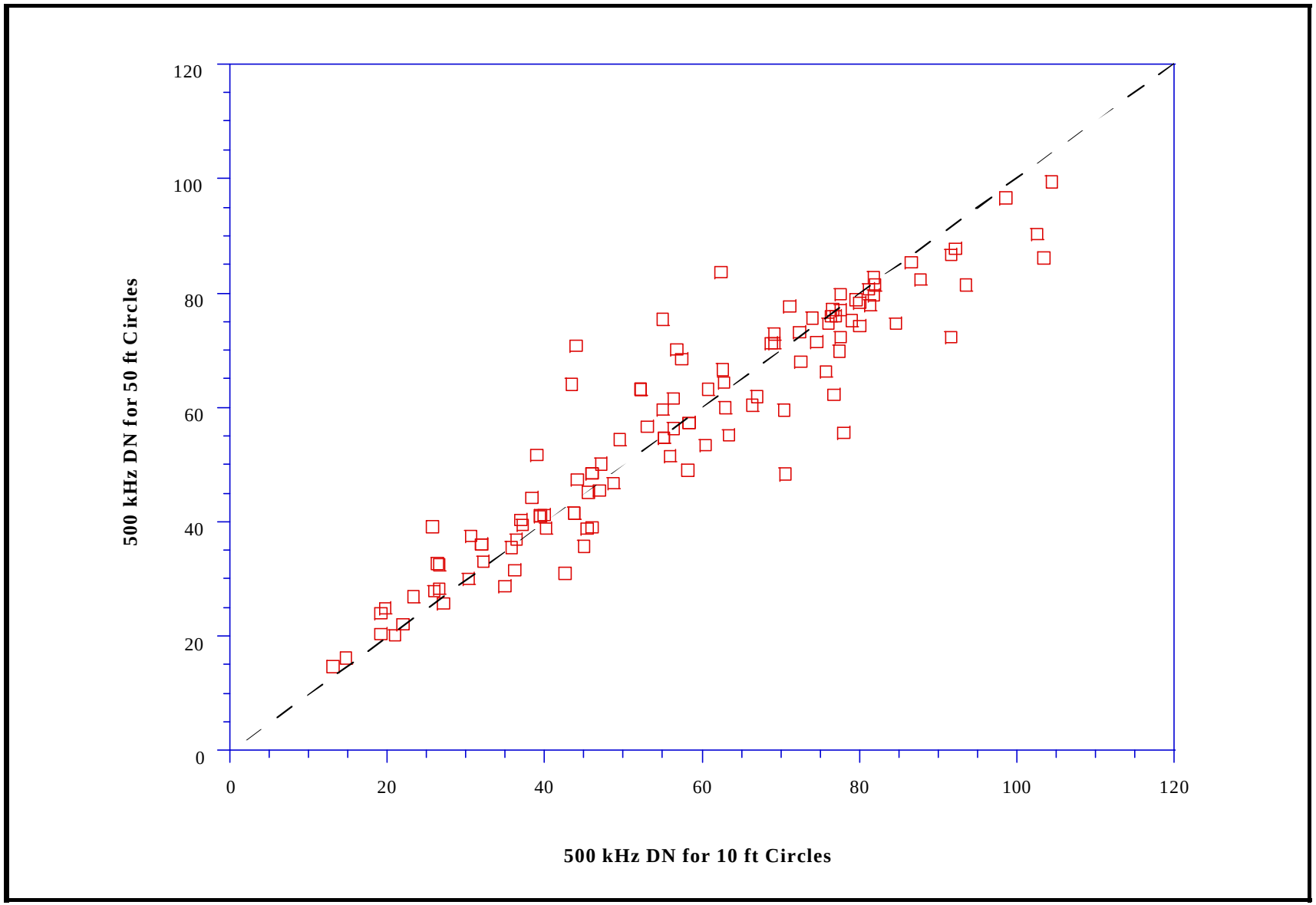
Sources: Zimmie (1985); TAMS/Gradient Database

Figure 4-1
A Comparison between River Flow Velocity and Maximum Sediment PCB Inventory by River Mile in the Thompson Island Pool



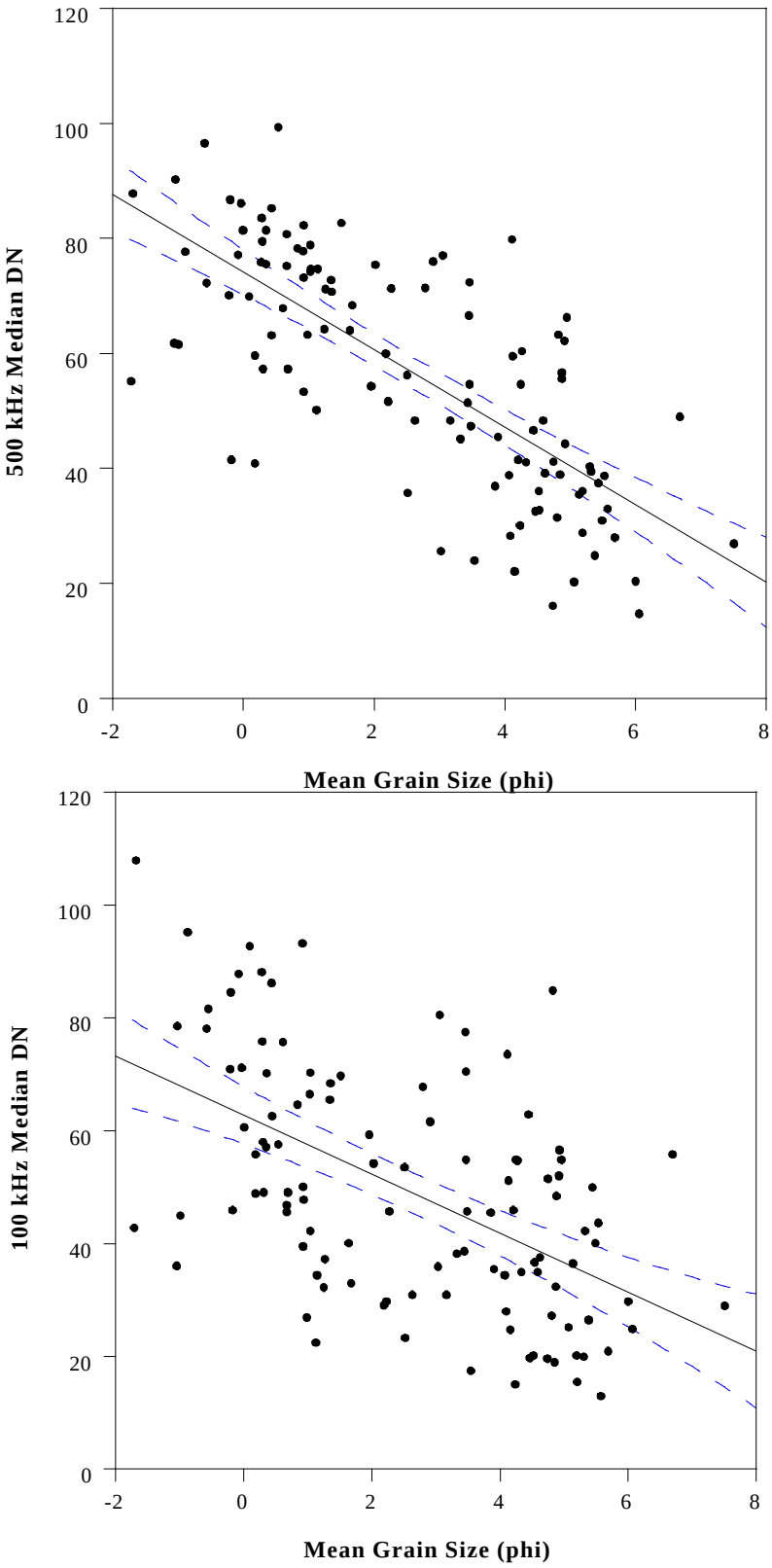
Source: Zimmie (1985); Phase 2 Bathymetric Survey

Figure 4-2
Hudson River Cross-Sectional Area for 8400 cfs Flow at Fort Edward



Source: Phase 2 Side-Scan Sonar Images

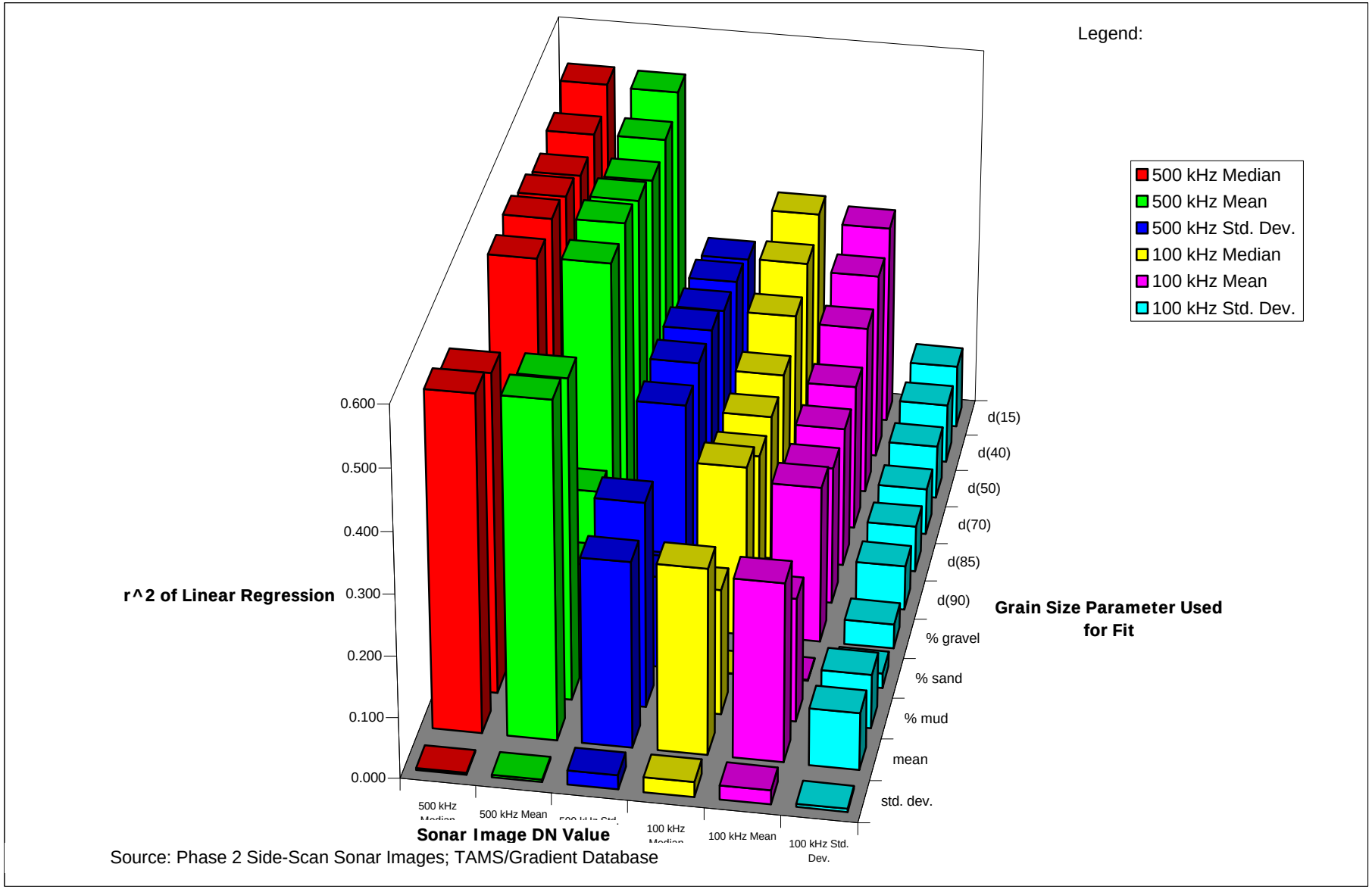
Figure 4-3
Comparison of the DN Value for 10 ft and 50 ft Circles
at Confirmatory Sampling Sites



Note:
a. phi = $\frac{\log[\text{grain-size (mm)}]}{\log 2}$

Source: Phase 2 Side-Scan Sonar Images; TAMS/Gradient Database

Figure 4-4
Calibration Plots of DN vs. Grain-Size



Source: Phase 2 Side-Scan Sonar Images; TAMS/Gradient Database

Figure 4-5
Three-Dimensional Correlation Plot of Digital Number vs Grain Size

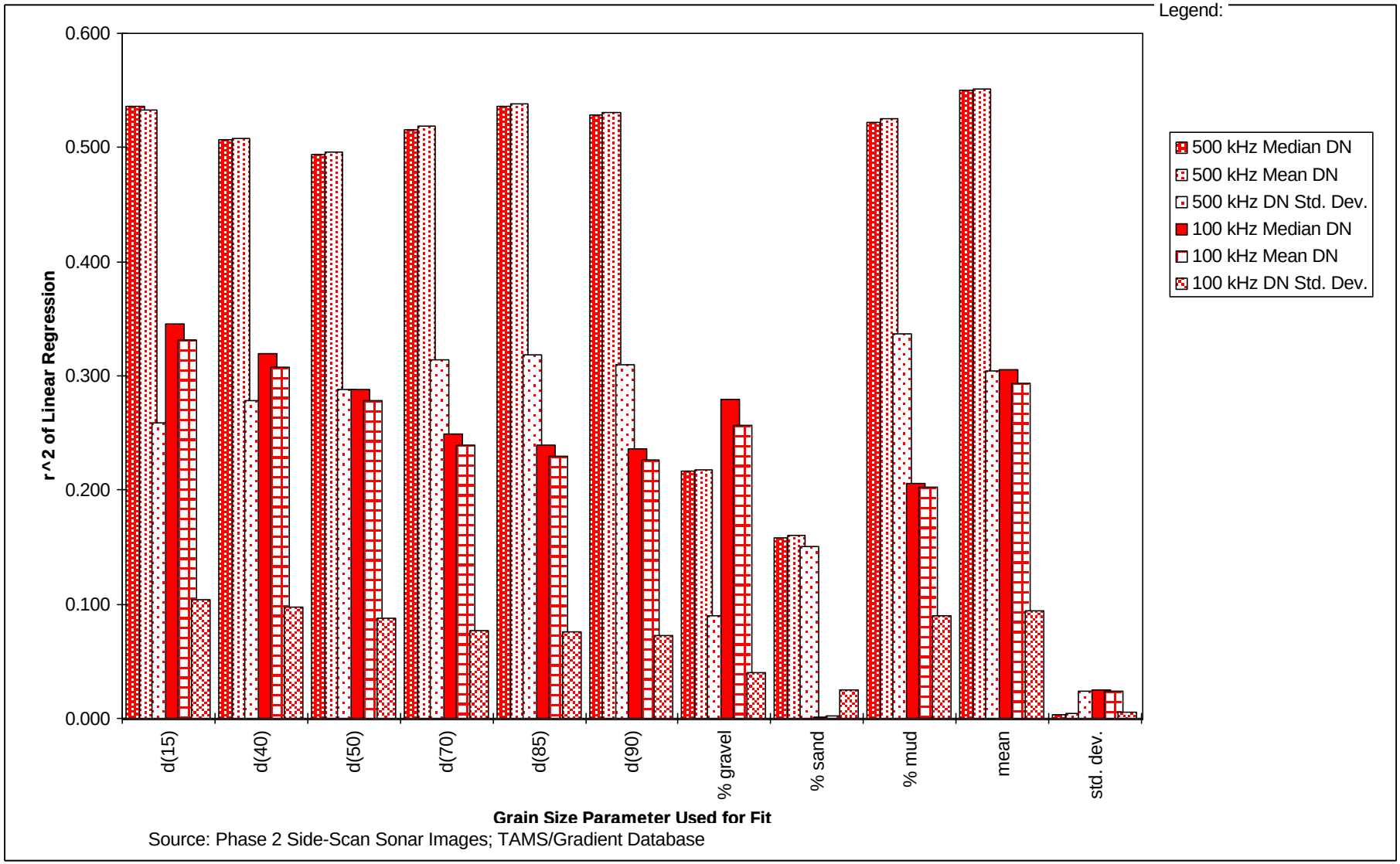
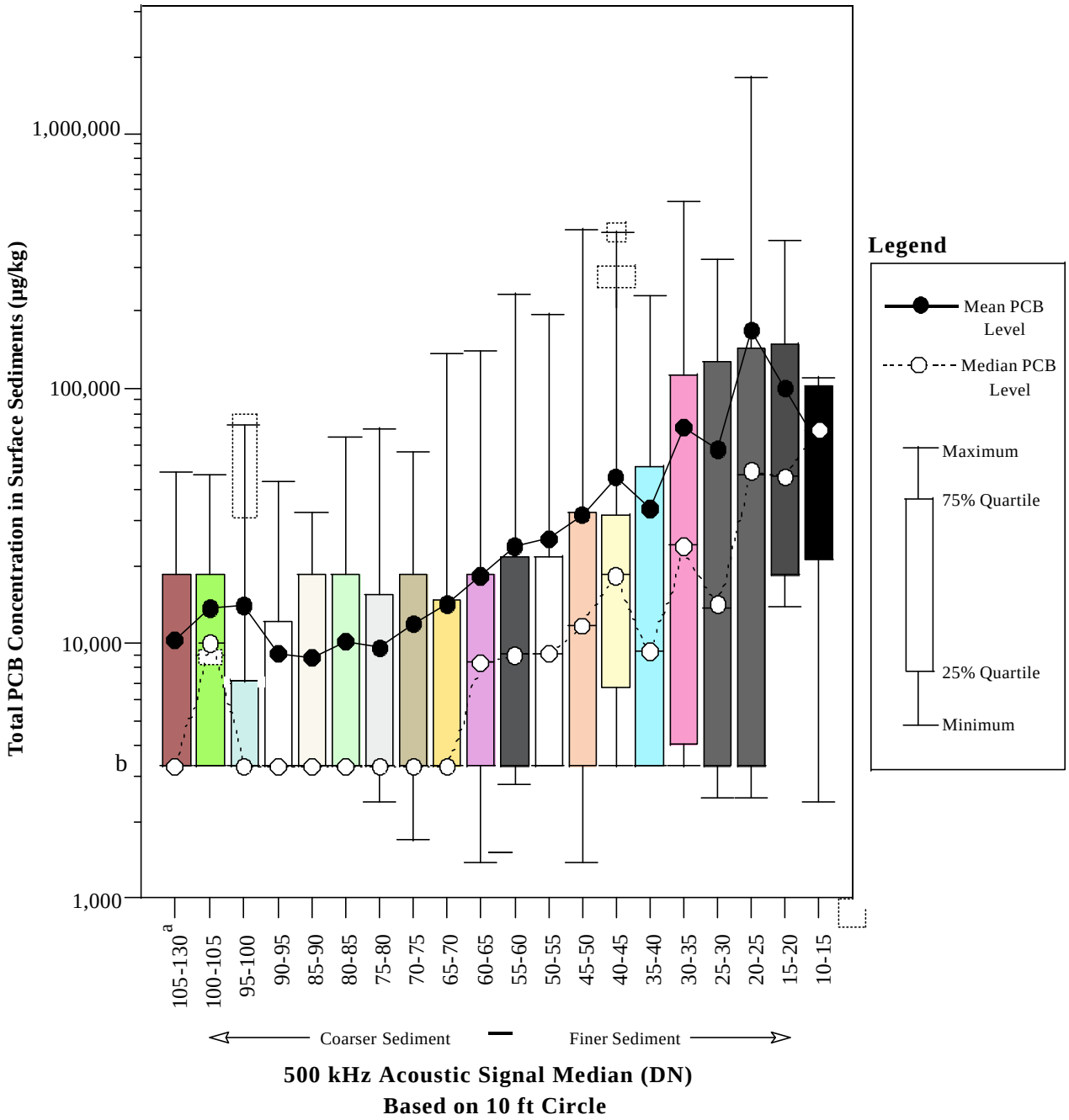


Figure 4-6

Two-Dimensional Correlation Plot of Digital Number vs Grain Size

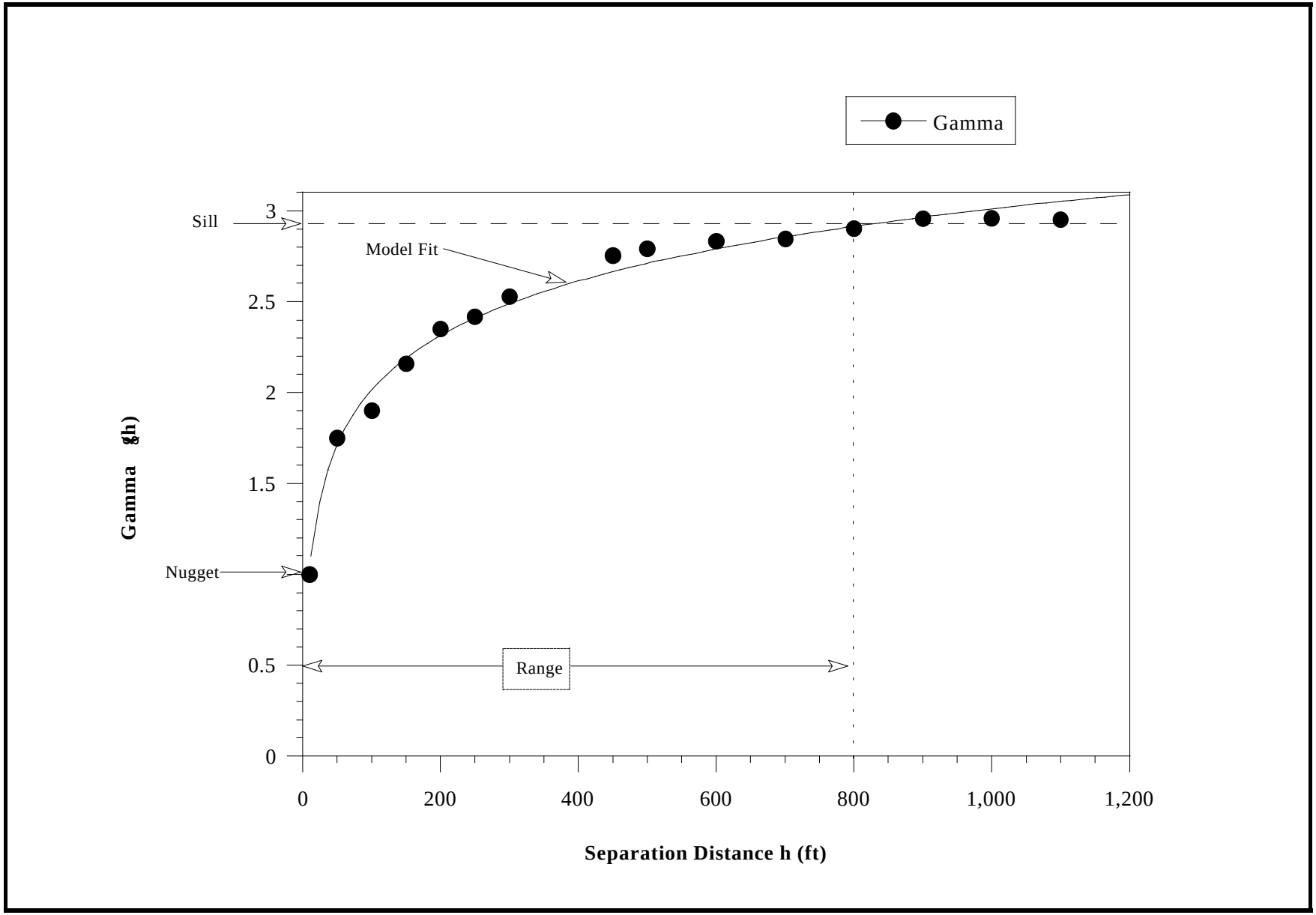


Notes:
a. Increased interval
b. The commonly occurring value of 3300 µg/kg represents the value assigned to NYSDEC sediment samples which were screened as "COLD". See Section 4.2.

Source: Phase 2 Side-Scan Sonar Images; Brown et al, 1988

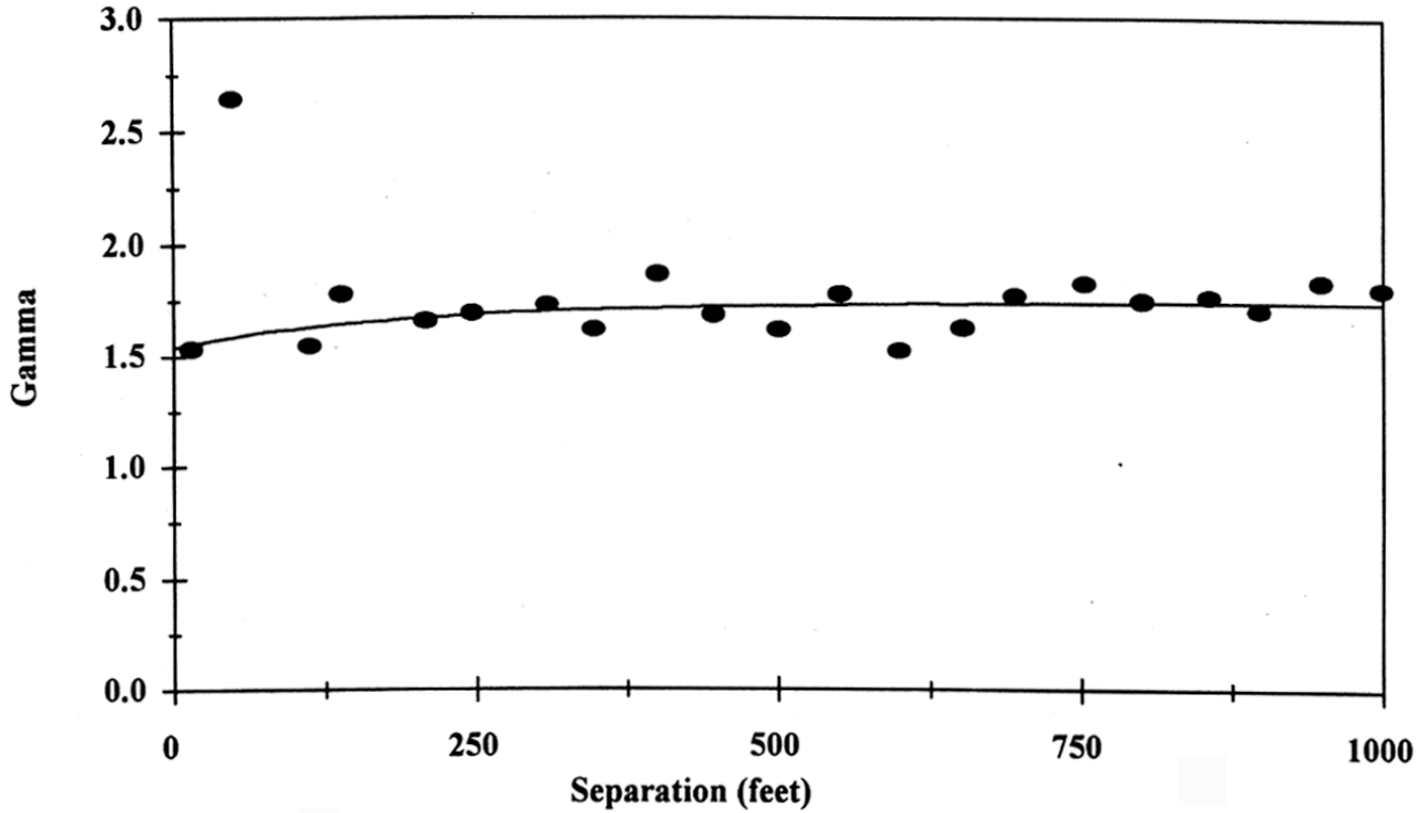
TAMS/*Gradient*

Figure 4-7
Comparison of 500 kHz Acoustic Signal and 1984 NYSDEC PCB Levels in Surface Sediments



TAMS/*Gradient*

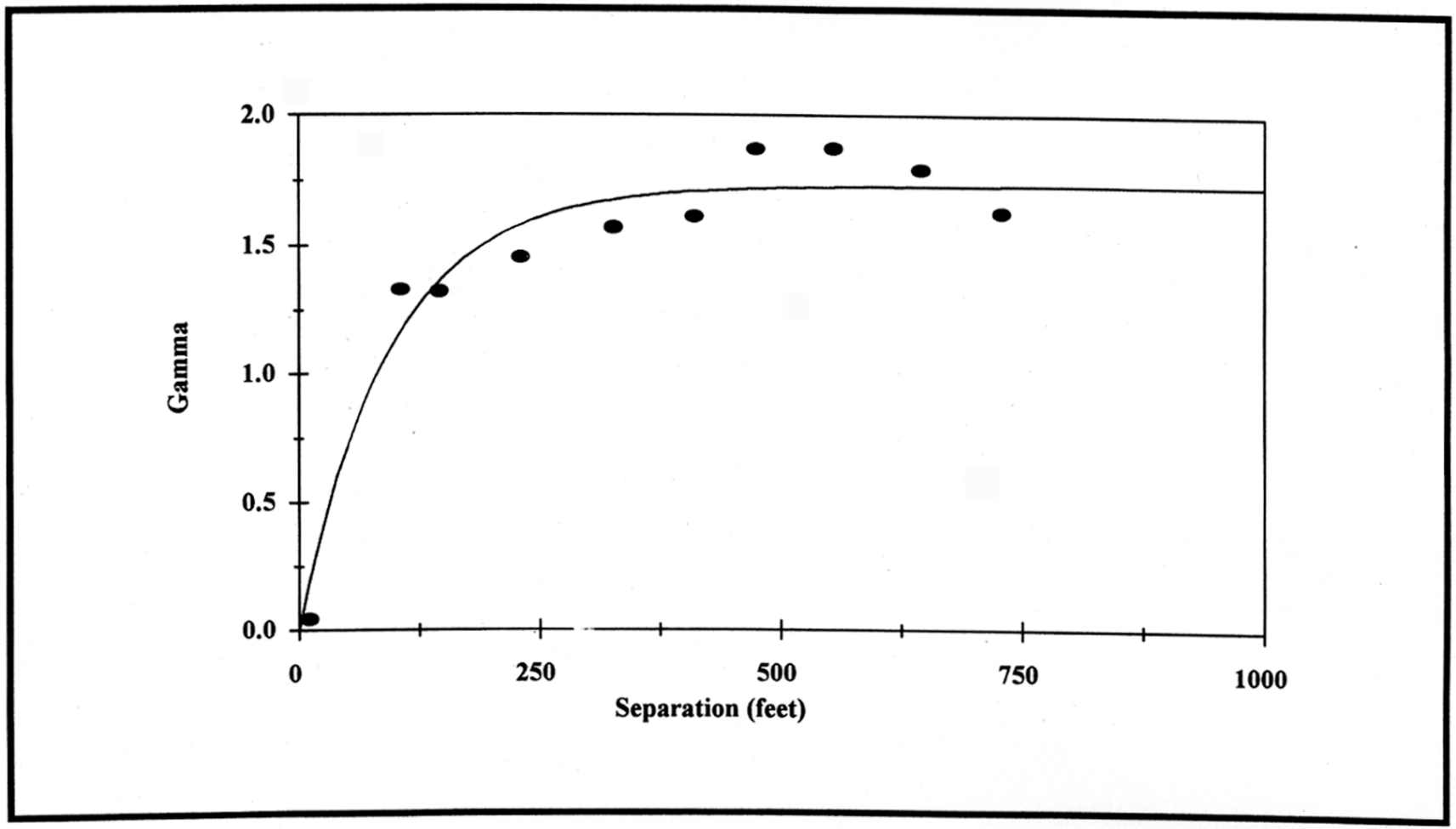
Figure 4-8
Example Semivariogram with Labels



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

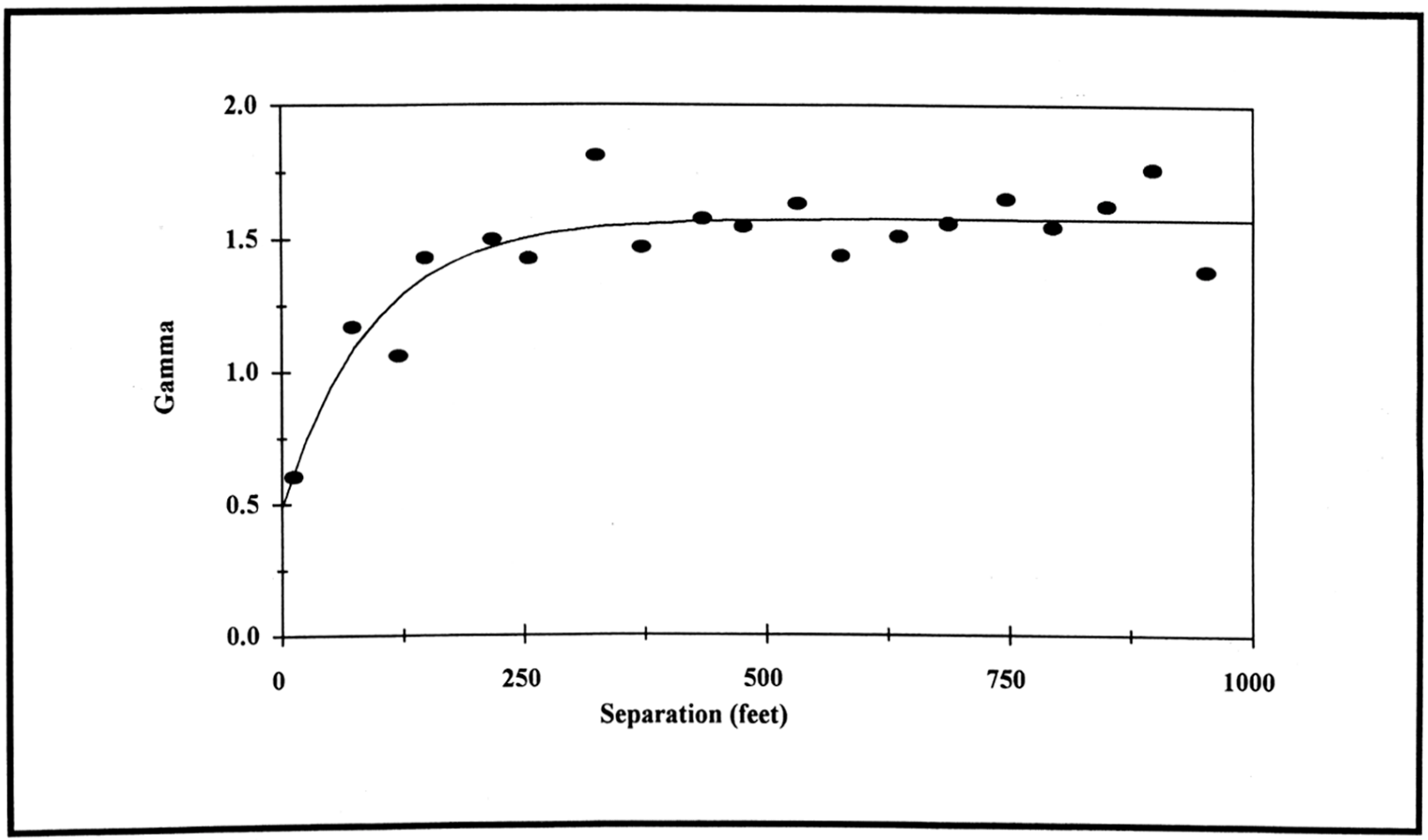
Figure 4-9
Variogram of Natural Log of PCB Mass
Thompson Island Pool, 1984 Sediment Survey
Subreaches 1 and 2, Isotropic Variogram



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

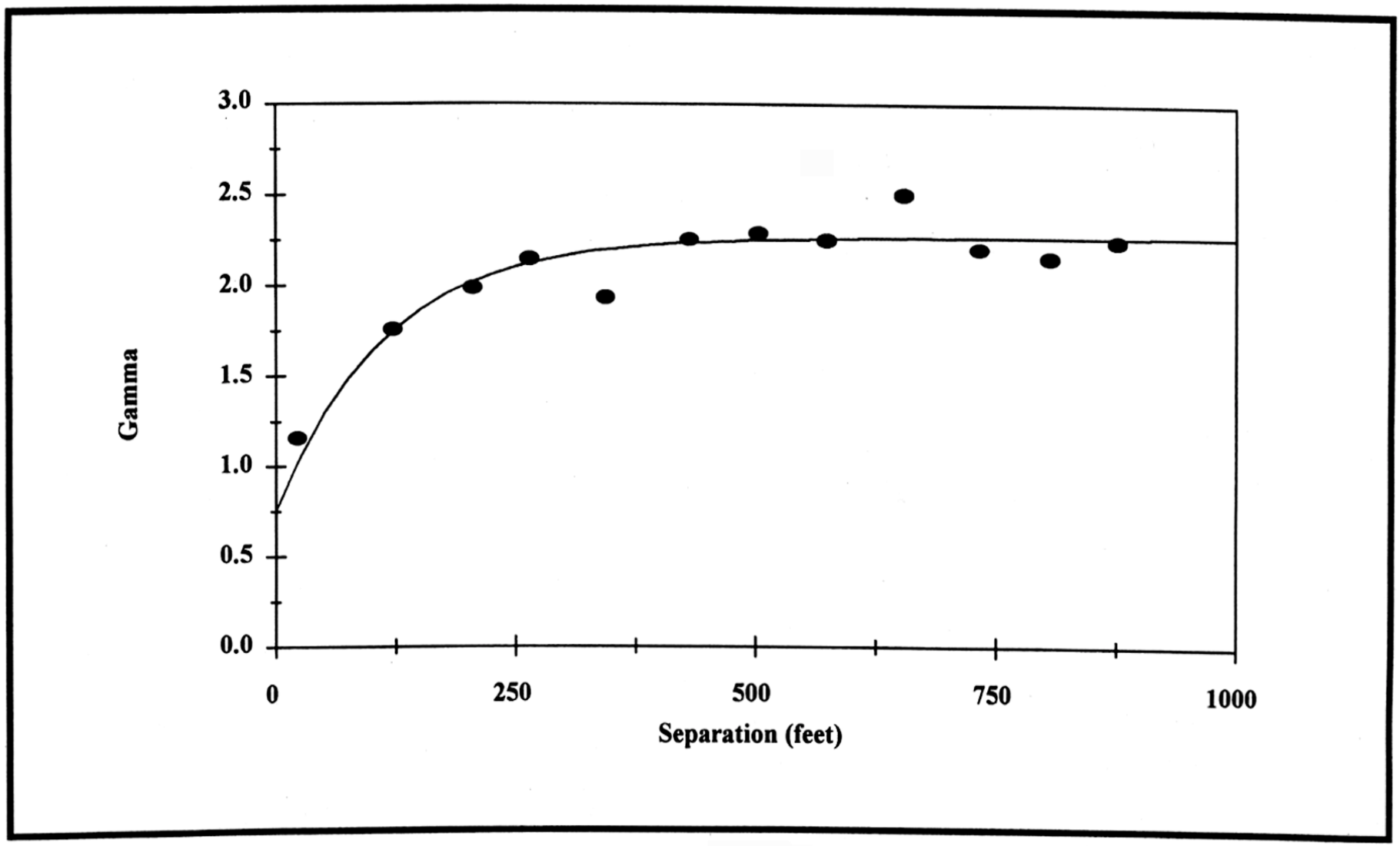
Figure 4-10
Variogram of Natural Log of PCB Mass
Thompson Island Pool, 1984 Sediment Survey
Subreach 3, Major Axis N 35 W



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

Figure 4-11
Variogram of Natural Log of PCB Mass
Thompson Island Pool, 1984 Sediment Survey
Subreach 4, Major Axis N 10 W

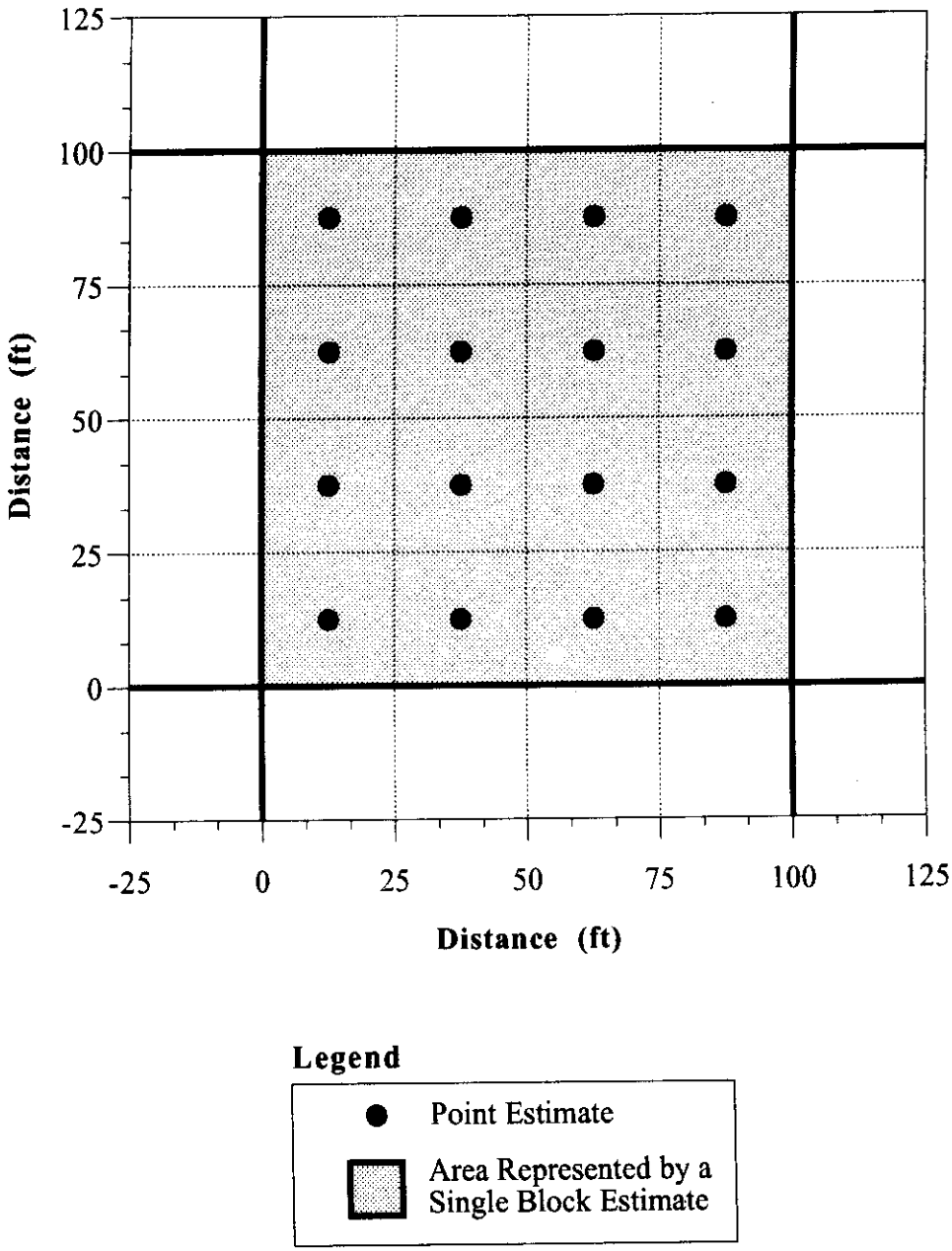


Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

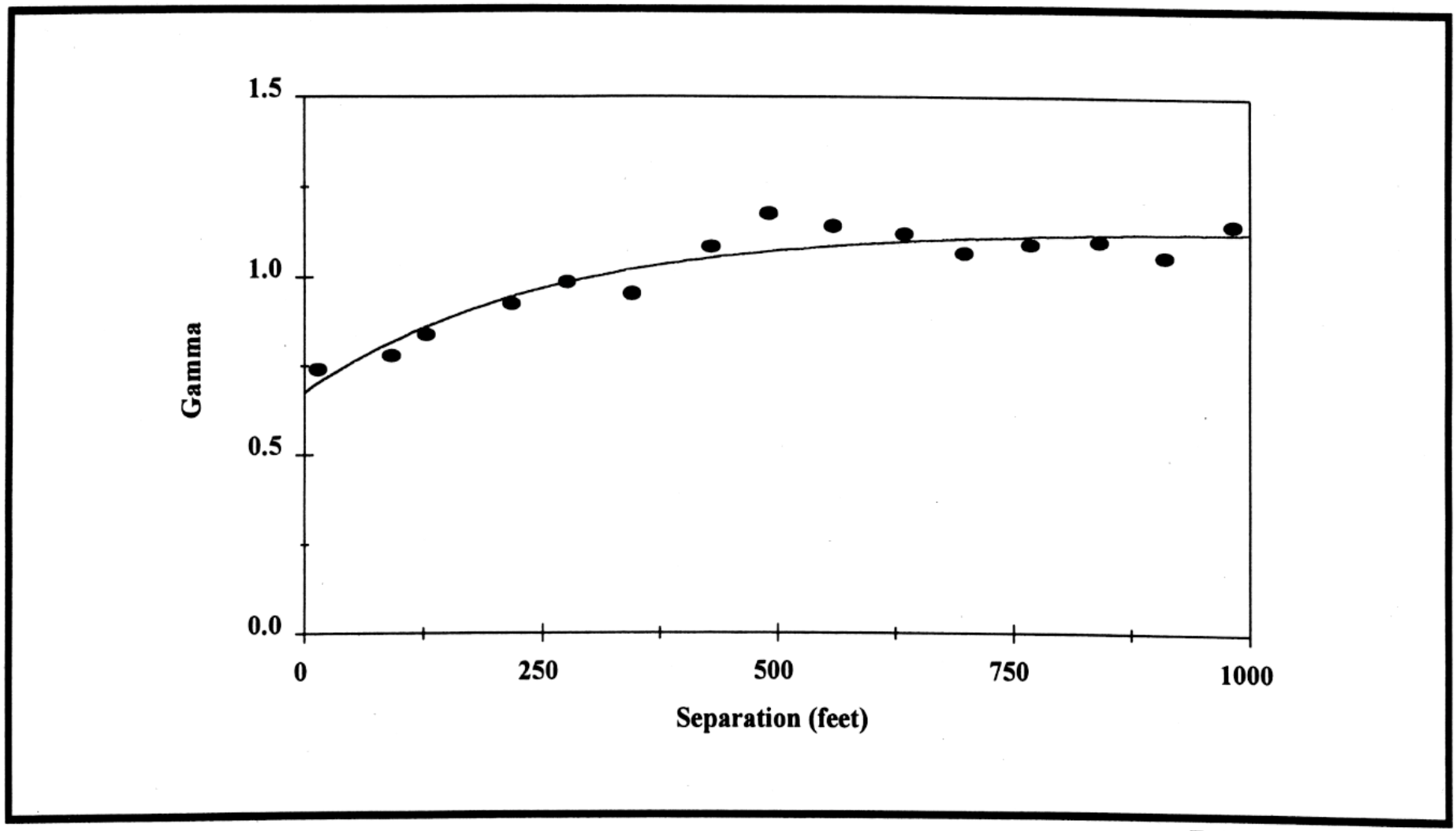
Figure 4-12

Variogram of Natural Log of PCB Mass
Thompson Island Pool, 1984 Sediment Survey
Subreach 5, Isotropic Variogram



TAMS/Cadmus/Gradient

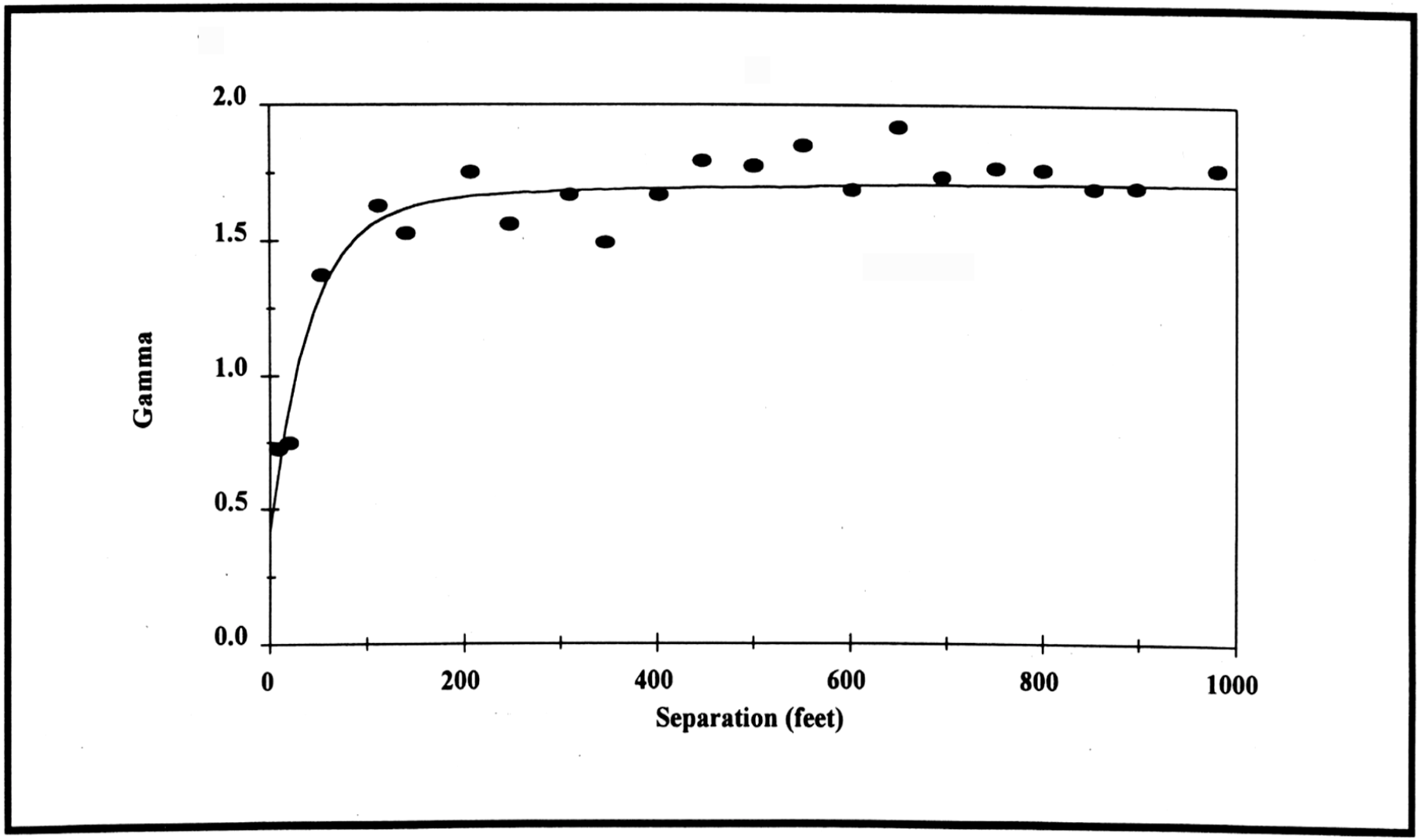
Figure 4-13
Typical Arrangement of the Point Estimates Used in Generating Block Kriging Values



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

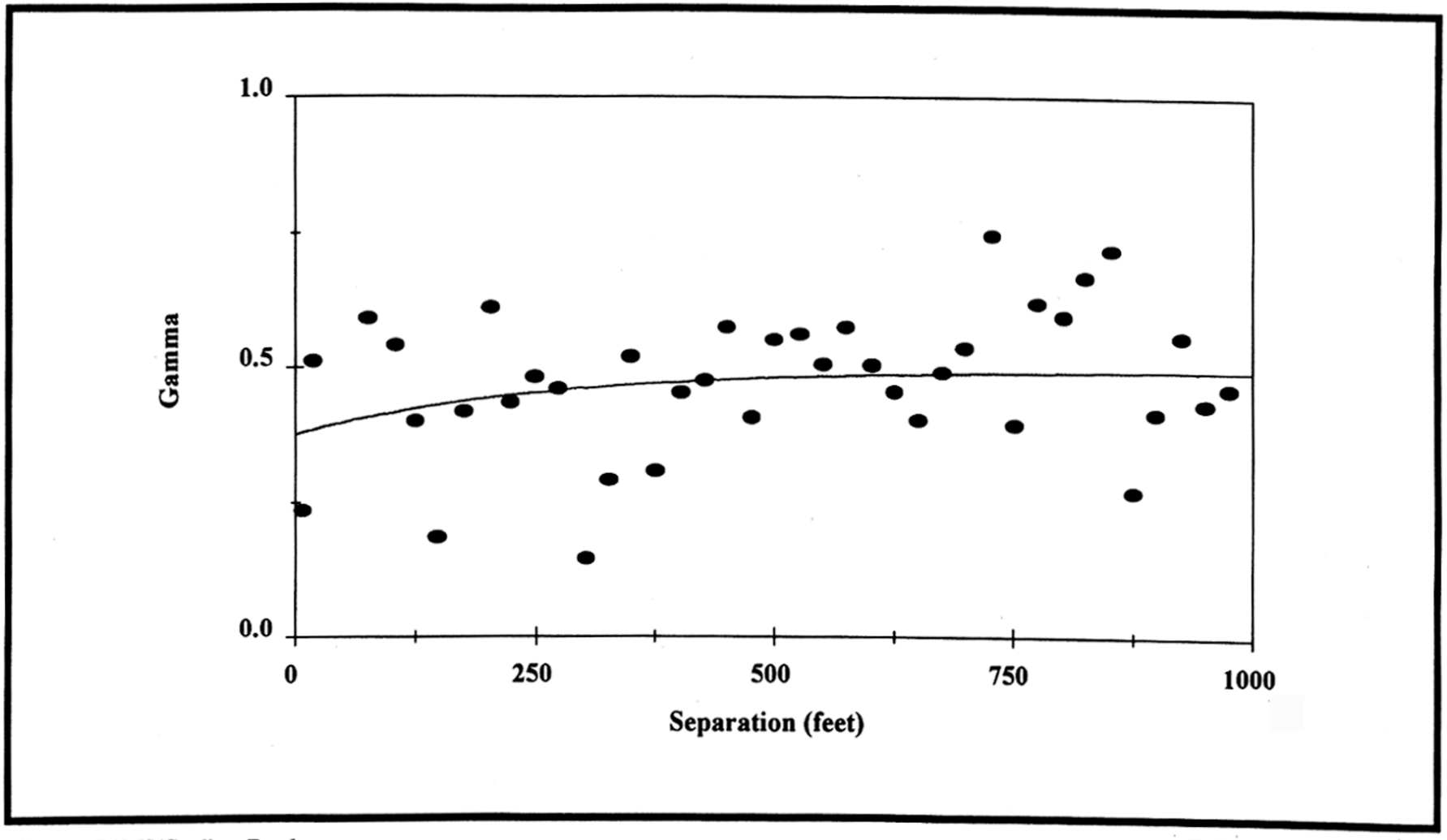
Figure 4-14
Variogram of Natural Log of Surface PCB Concentration
GC/MS Screening Data
Thompson Island Pool, 1984 Sediment Survey



Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

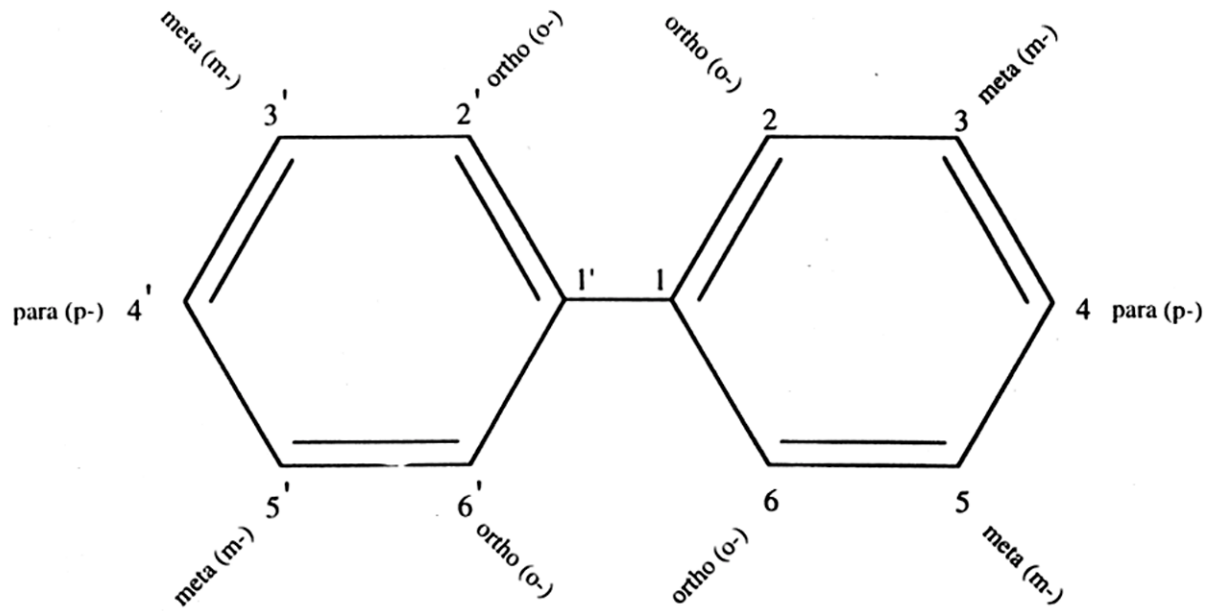
Figure 4-15
Variogram of Natural Log of Surface PCB Concentration
GC/ECD Analytical Data
Thompson Island Pool, 1984 Sediment Survey



Source: TAMS/Gradient Database

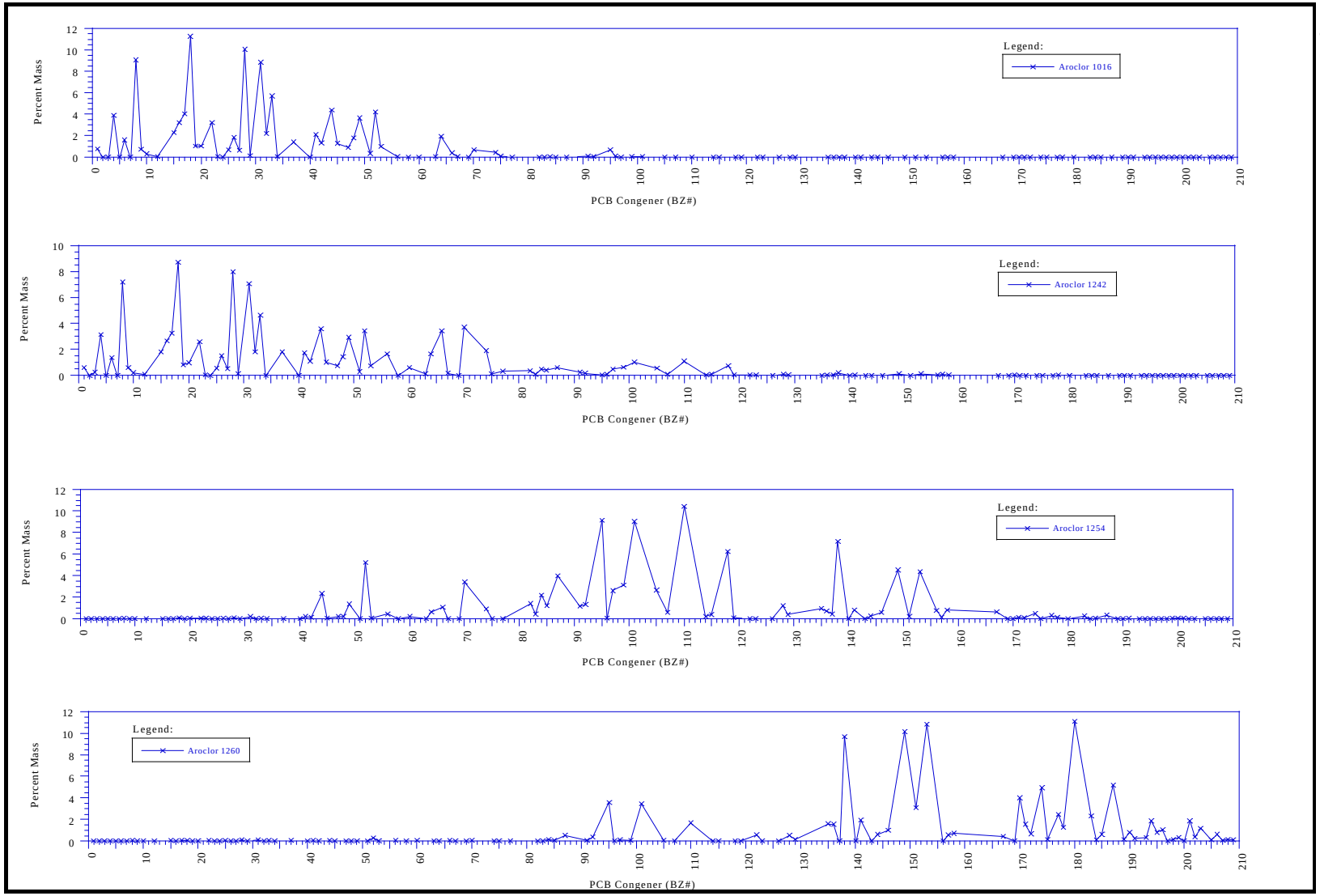
TAMS/Cadmus/Gradient

Figure 4-16
Variogram of Natural Log of Surface PCB Concentration
Cross-Variogram between GC/ECD and GC/MS Data
Thompson Island Pool, 1984 Sediment Survey



TAMS/Cadmus/Gradient

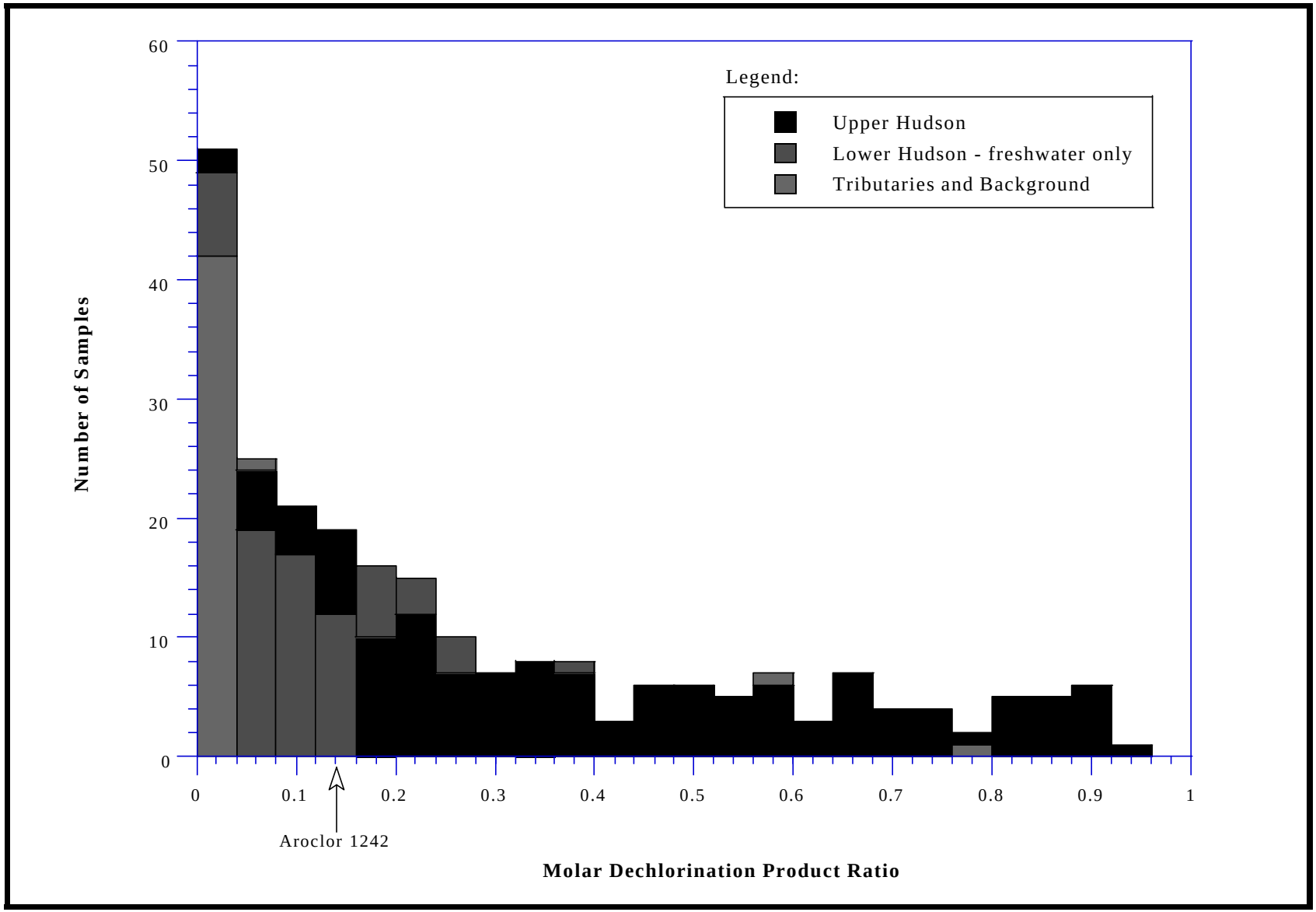
Figure 4-17
Locations of Potential Chlorine Sites on a PCB Molecule



Source: TAMS/Gradient Database

TAMS*Gradient*

Figure 4-18
Congener Content of Four Aroclor Mixtures



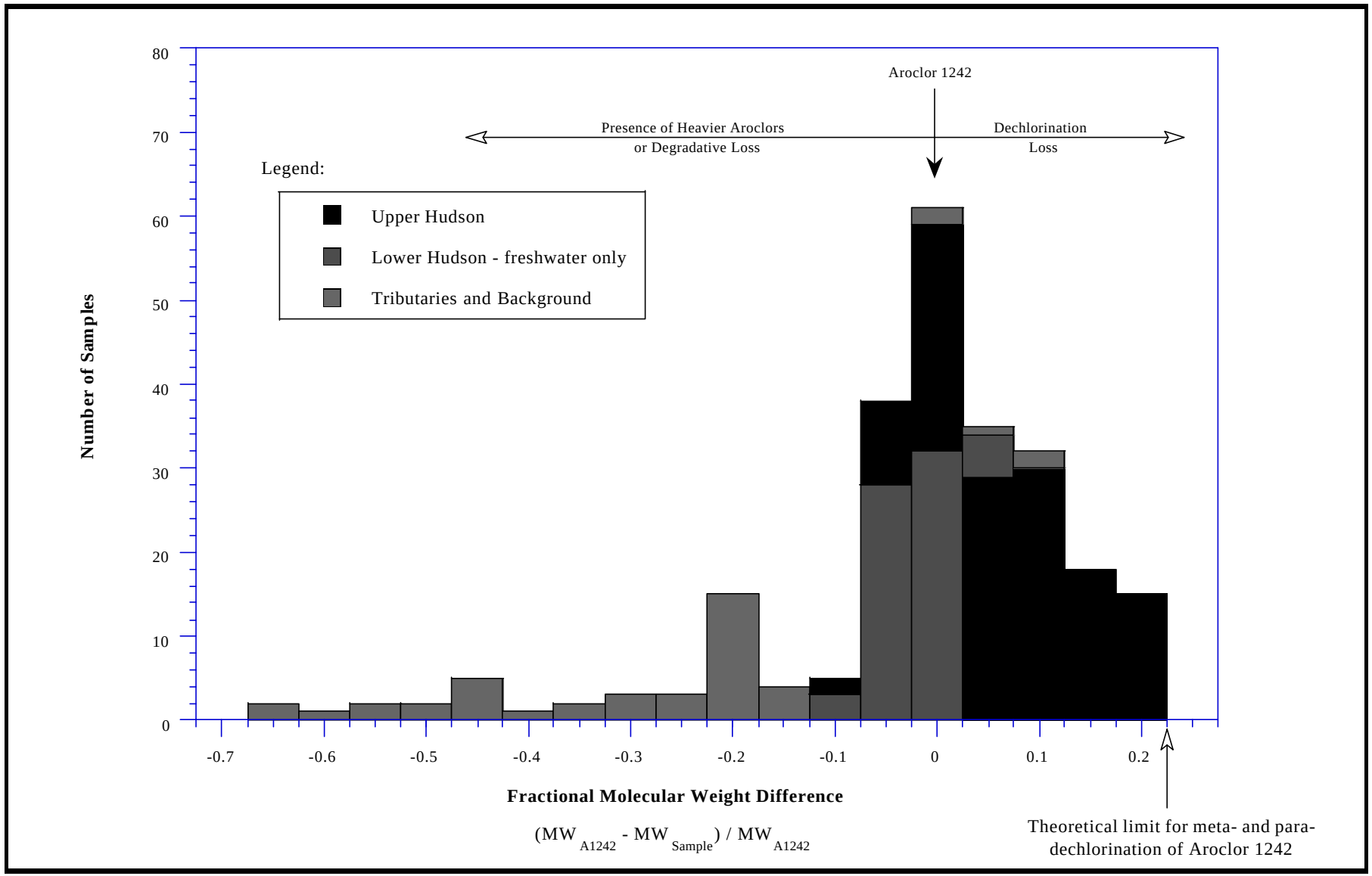
Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-19

Histogram of the Molar Dechlorination Product Ratio

Results of All Freshwater Post-1954 Sediment Samples



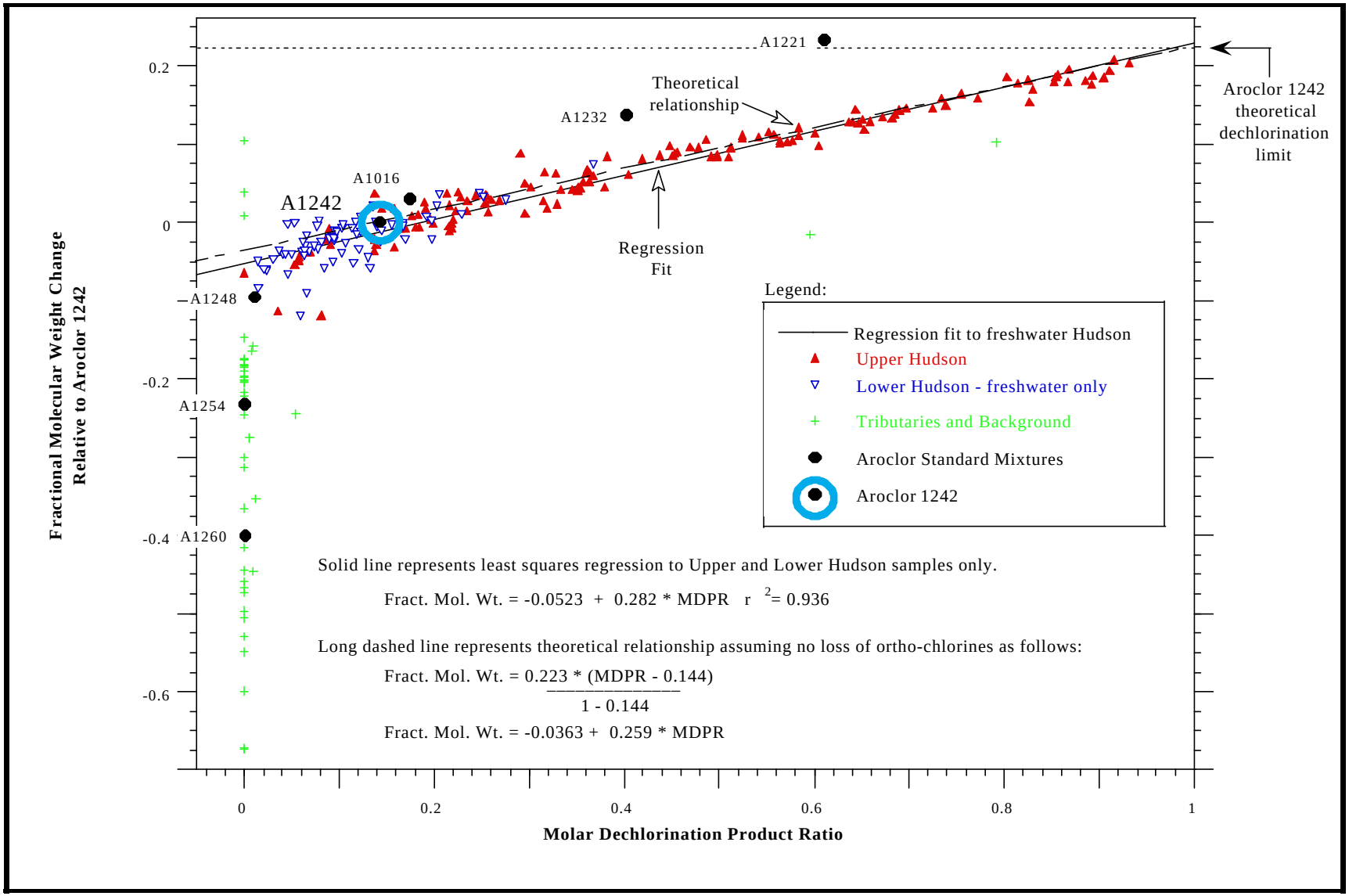
Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 4-20

Histogram of the Fractional Molecular Weight Difference Relative to Aroclor 1242

Results of All Freshwater Post-1954 High Resolution Sediment Samples

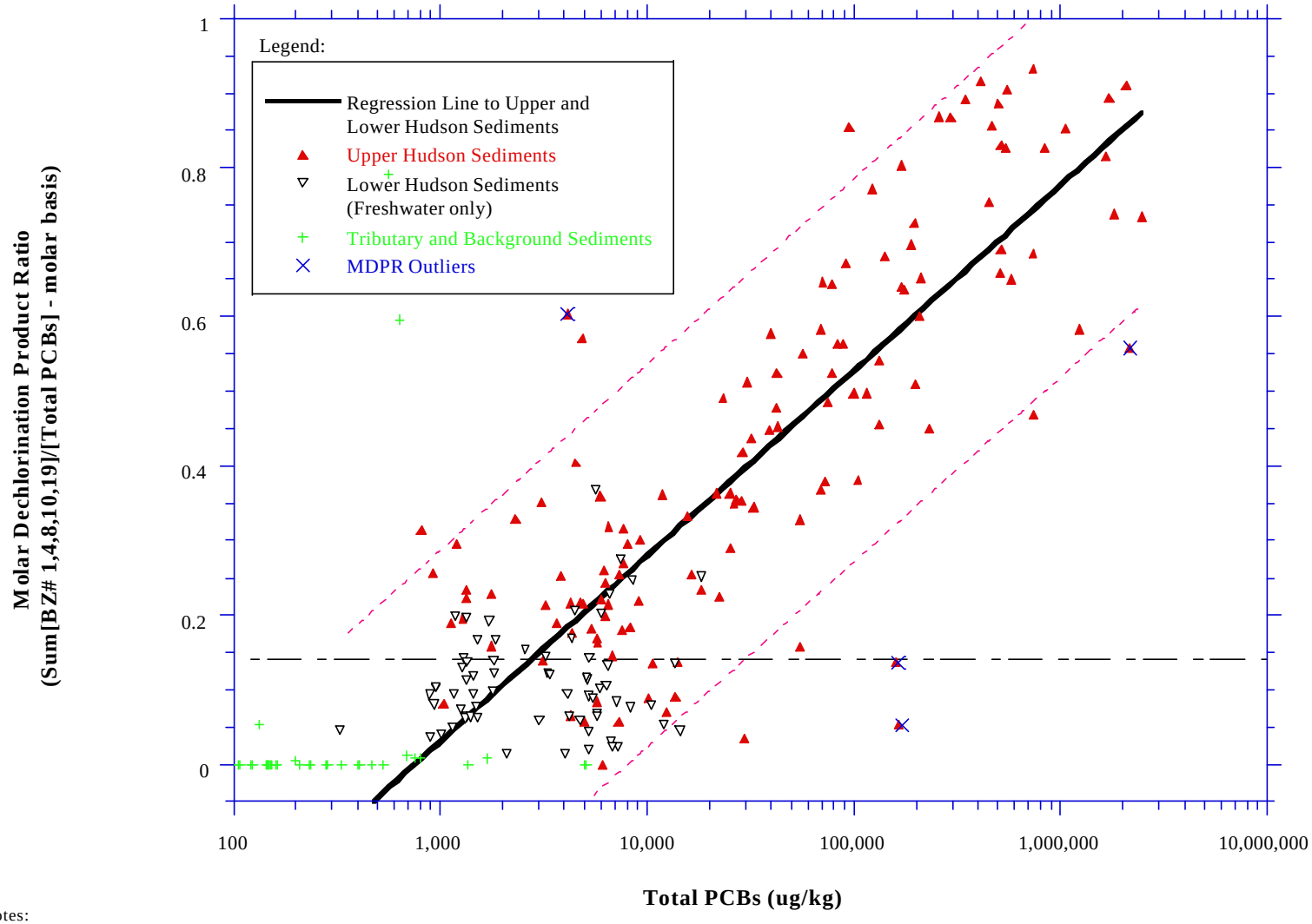


Source: TAMS/Gradient Database

TAMS/TetraTech

Figure 4-21

Comparison Between the Molar Dechlorination Product Ratio and the Fractional Change in Molecular Weight for All Post-1954 Freshwater Sediments



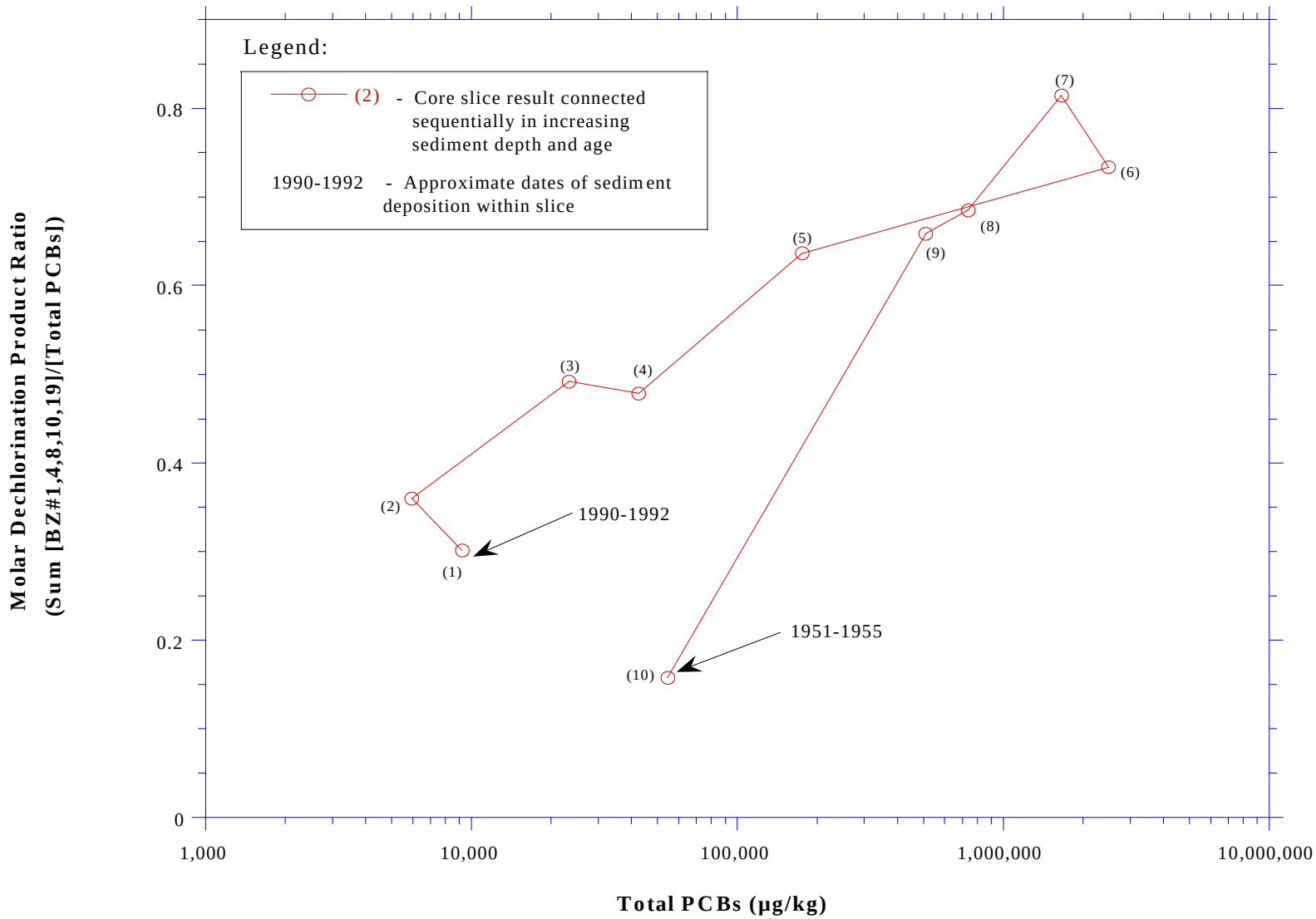
Notes:

1. Solid line represents best fit to all ^{137}Cs-bearing sediments from the Upper and Lower Hudson ($r^2 = 0.75$).
2. Thin dashed lines represent the 95% confidence interval about the regression line for individual measurements.
3. Regression excludes outliers marked with an "X". These outliers were selected based on a statistical analysis of the data.
4. The dashed horizontal line represents the original molar ratio in Aroclor 1242.

Source: TAMS/Gradient Database

TAMS/ TetraTech

Molar Dechlorination Product Ratio vs. Total PCB Concentration in Post-1954 Sediments from the Freshwater Hudson River

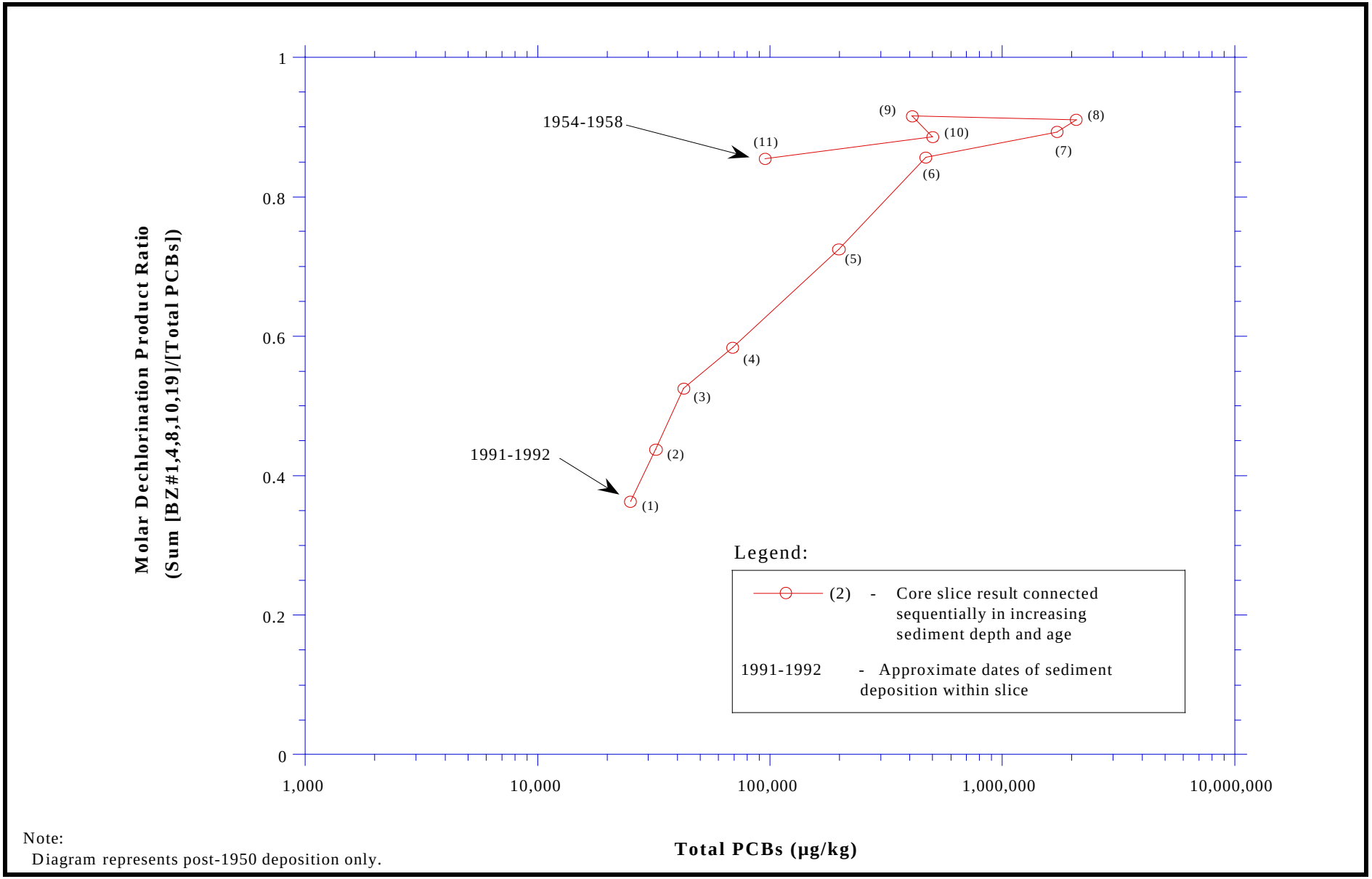


Note:
Diagram represents post-1950 deposition only.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-23
Molar Dechlorination Product Ratio vs. Total PCB Concentration with Depth (Age) in Core 18 at River Mile 185.8

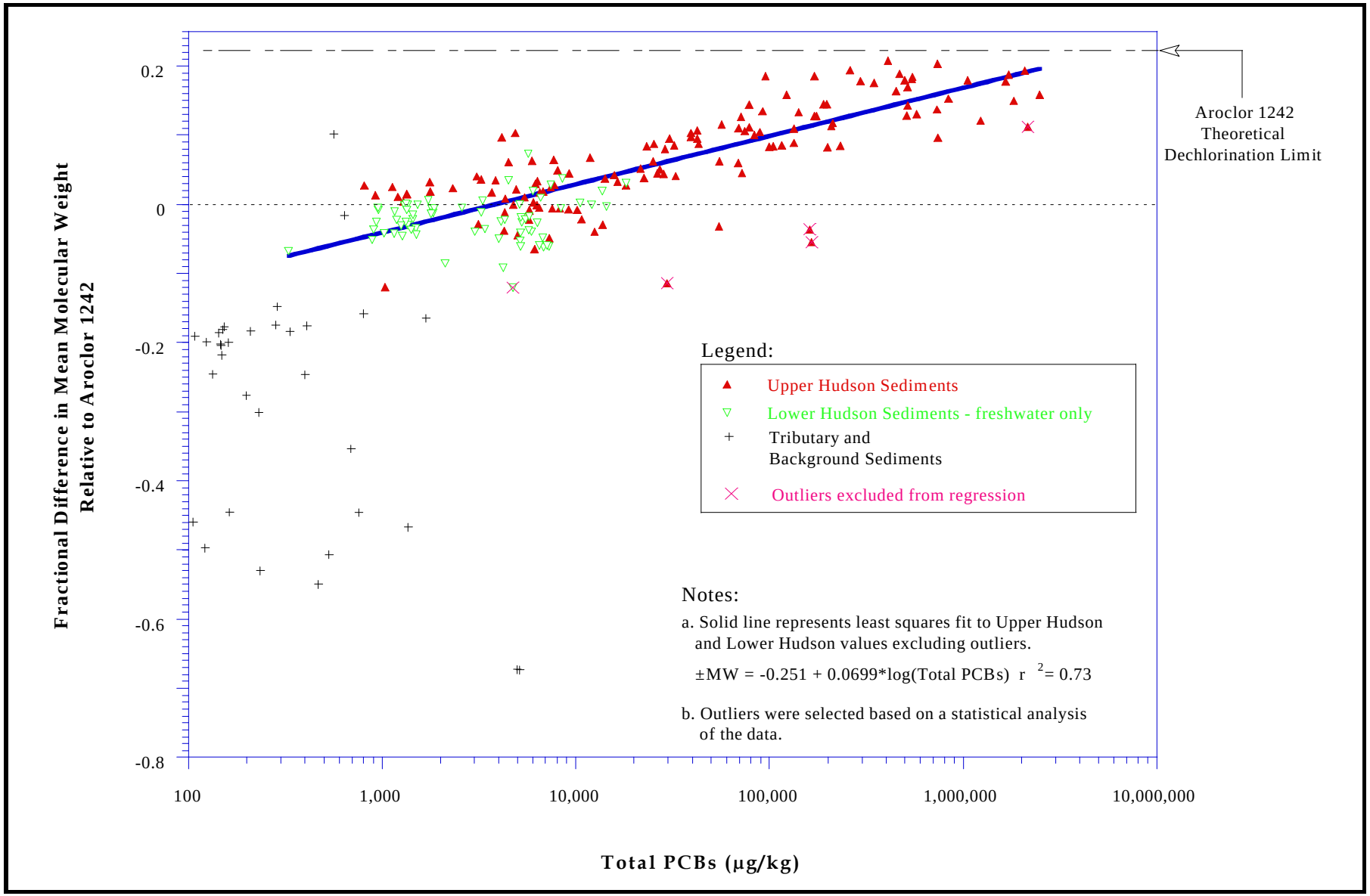


Note:
Diagram represents post-1950 deposition only.

Source: TAMS/Gradient Database

TAMS*Gradient*

Figure 4-24
Molar Dechlorination Product Ratio vs. Total PCB Concentration with Depth (Age) in Core 19 at River Mile 188.5



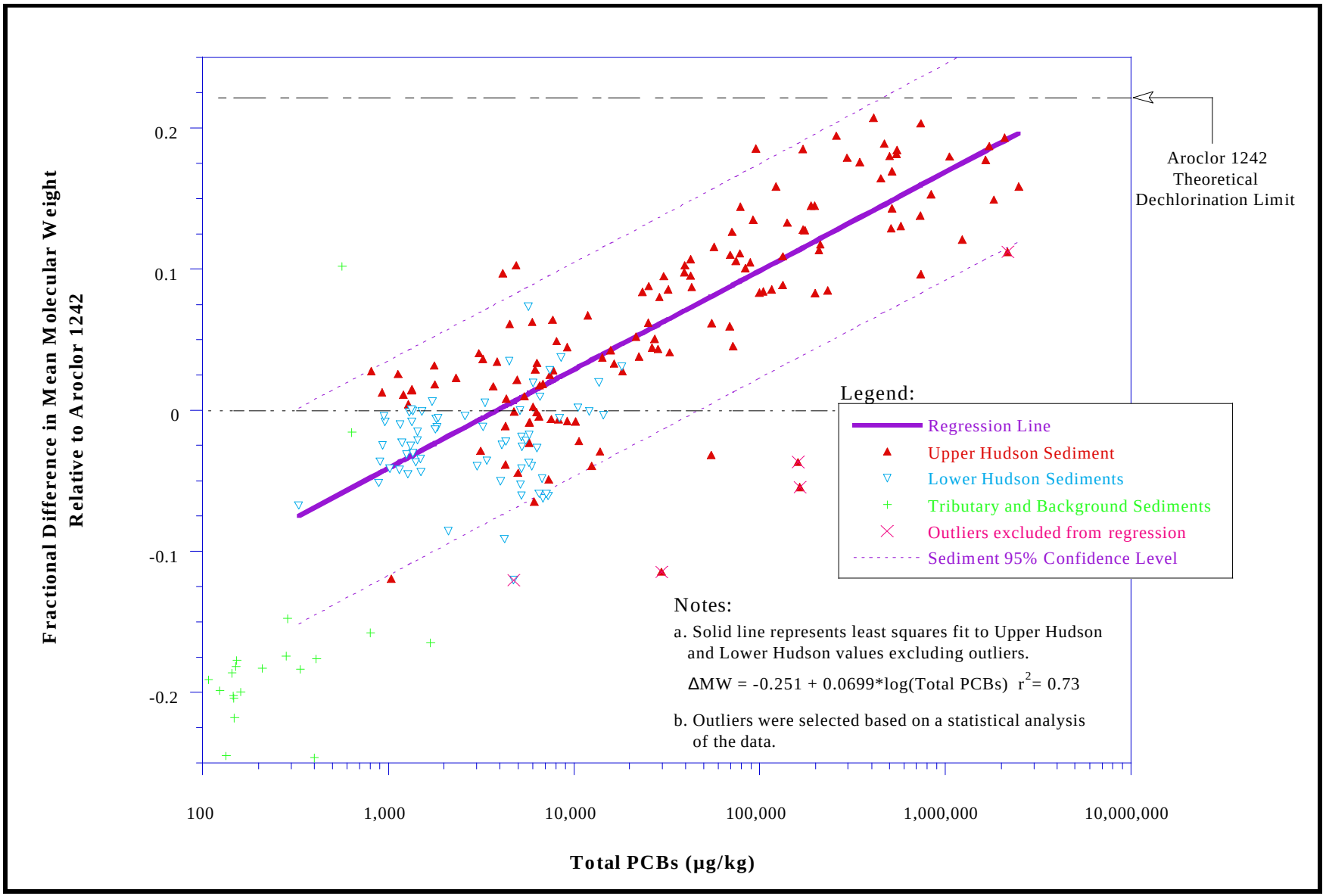
Source: TAMS/Gradient Database

TAMS/ *Gradient*

Figure 4-25

Fractional Mass Loss as Measured by the Change in Mean Molecular Weight

Represents All Post-1954 Freshwater Sediment Core Data



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-26

Fractional Mass Loss as Measured by the Change in Mean Molecular Weight - Expanded Scale

Represents All Post-1954 Freshwater Sediment Core Data

Figure 4-27a
Molar Dechlorination Product Ratio vs. Depth in Post-1954 Sediments from the Hudson River

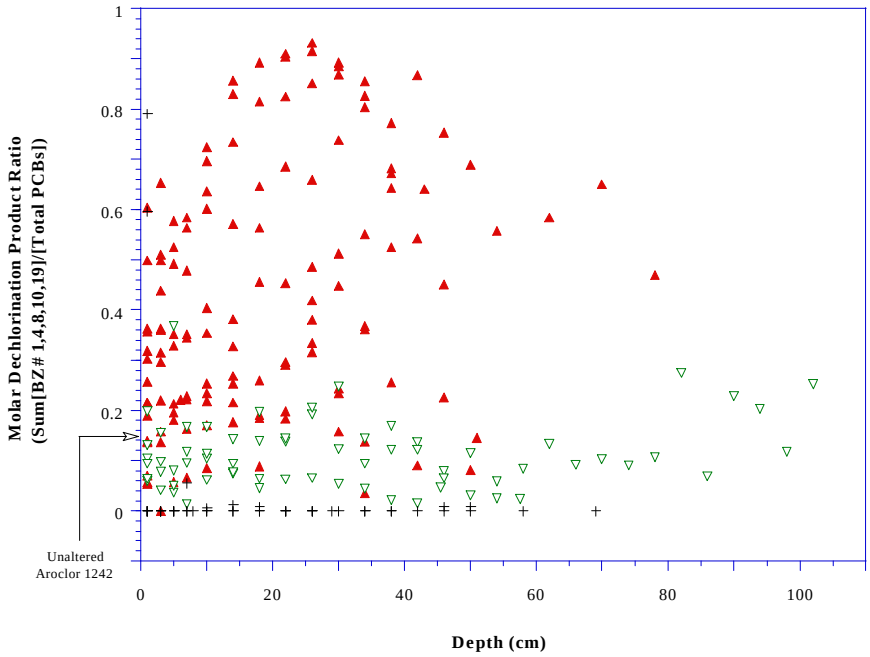
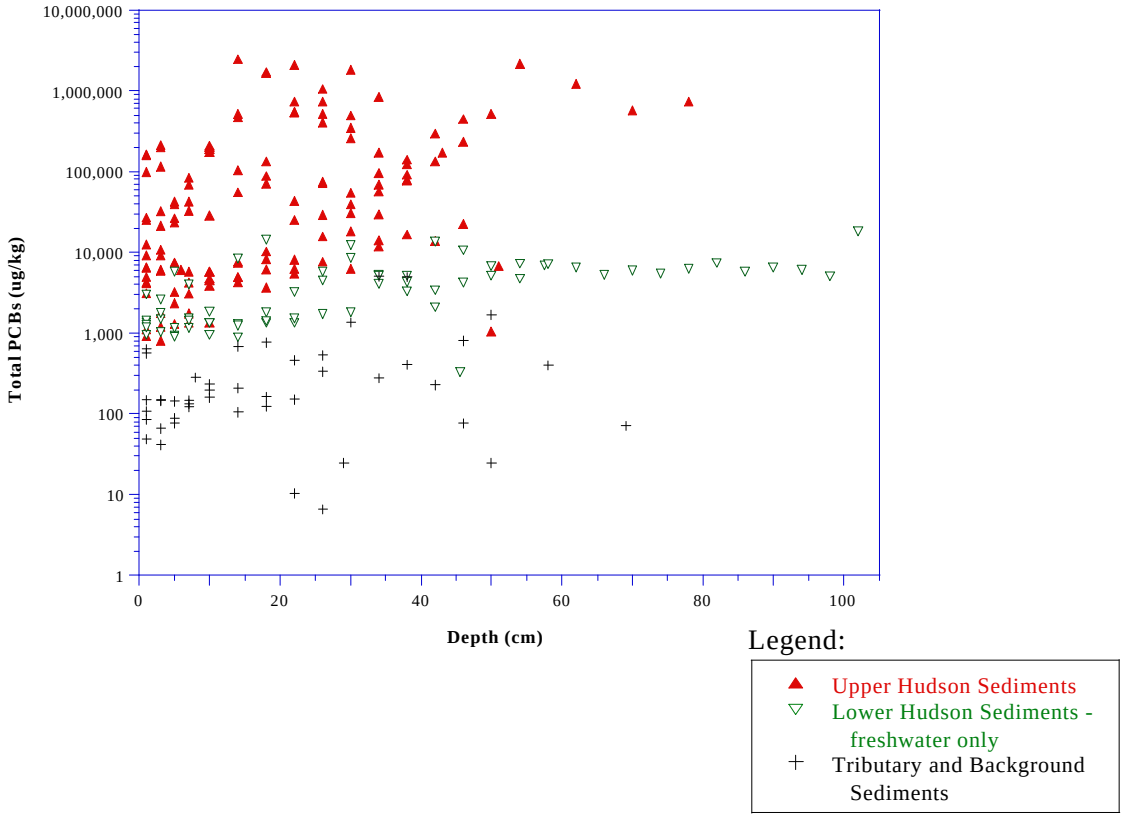


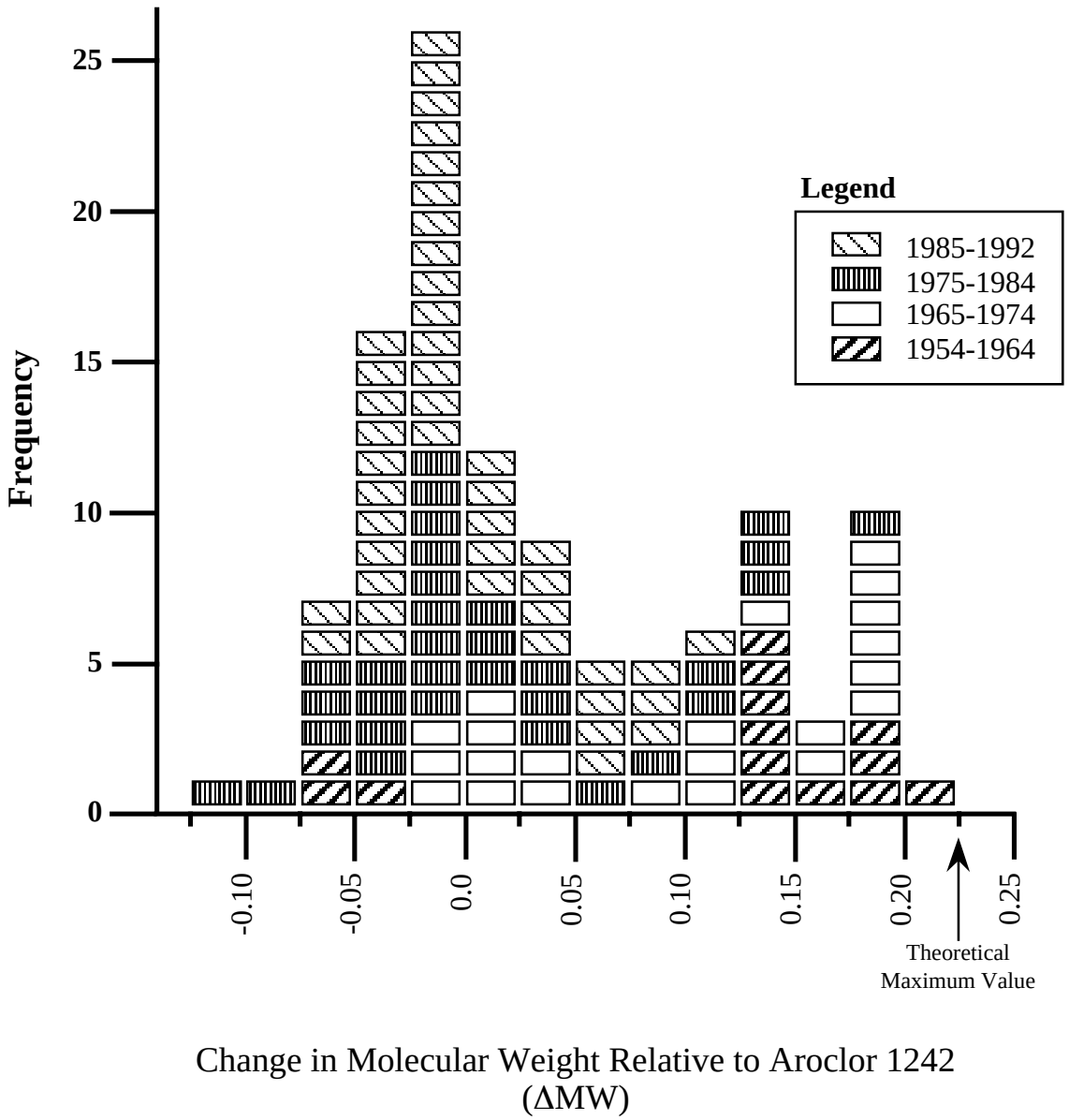
Figure 4-27b
Total PCBs vs. Depth in Post-1954 Sediments from the Hudson River



Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-27
Molar Dechlorination Ratio and Total PCB Concentration vs. Depth for Phase 2 Sediment Core Samples

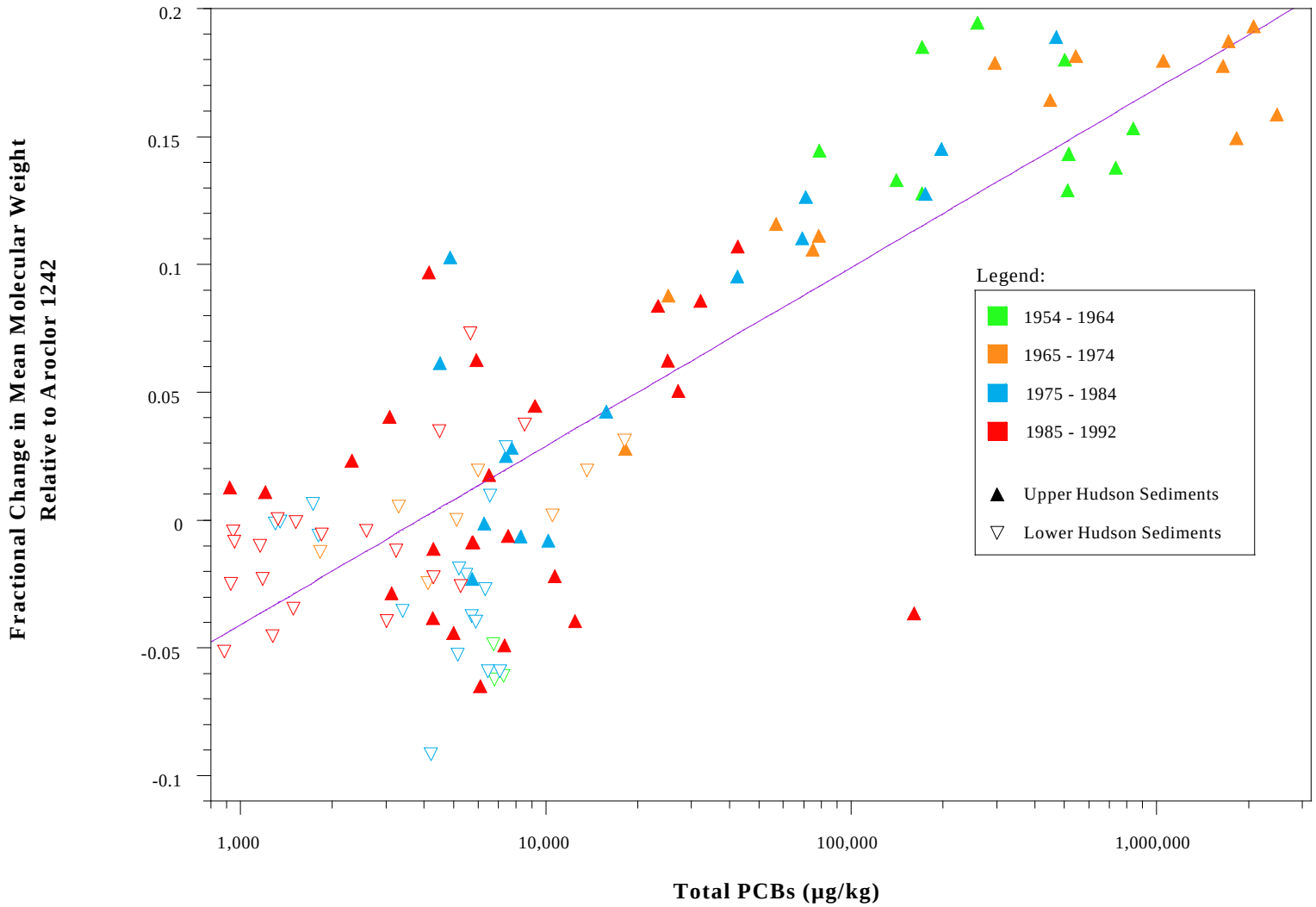


Note: Positive values represent mass loss relative to Aroclor 1242

Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

Figure 4-28a
Histogram of the Change in Molecular Weight as a Function of Time of Deposition in Post-1954 Dated Sediments from the Hudson River

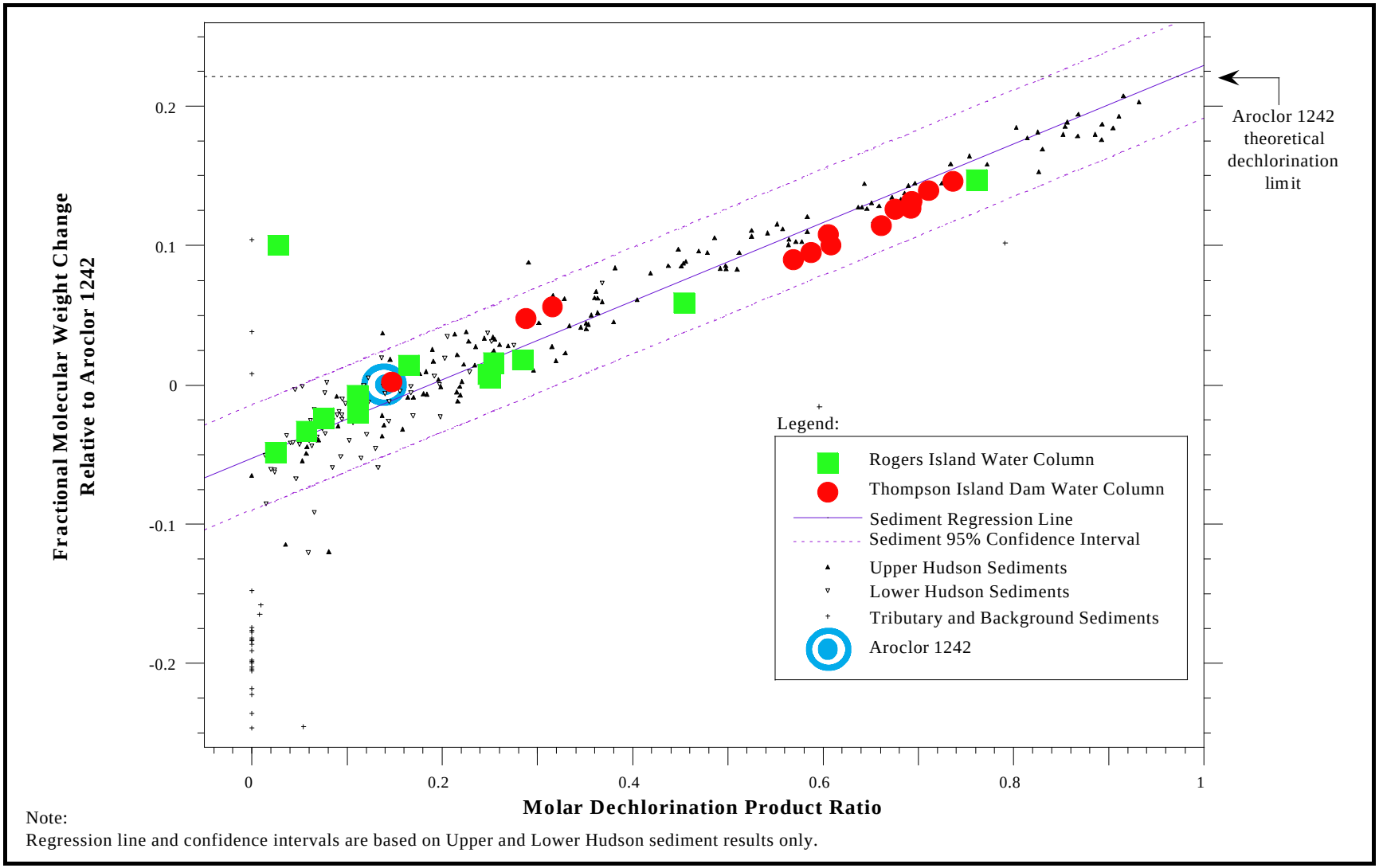


Notes:
a. Background and tributary results excluded.
b. Line represents regression curve from Figure 4-26.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-28b
Fractional Mass Loss as Measured by the Change in Mean Molecular Weight in Post-1954 Dated Sediments from the Hudson River



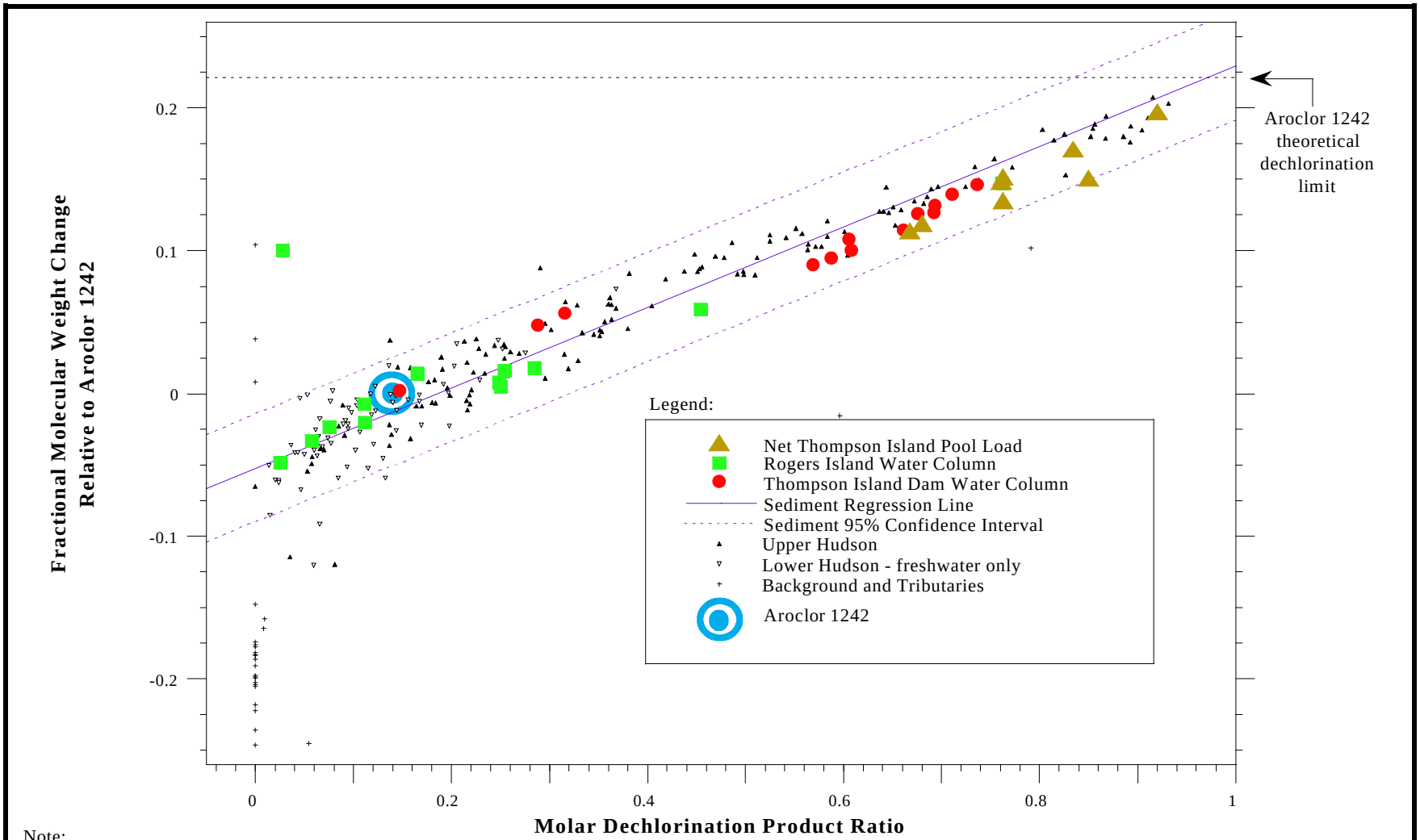
Note:
Regression line and confidence intervals are based on Upper and Lower Hudson sediment results only.

Source: TAMS/Gradient Database

TAMS/*Gradient*

Figure 4-29

A Comparison Between Sediment and Water Column Samples from Rogers Island and Thompson Island Dam

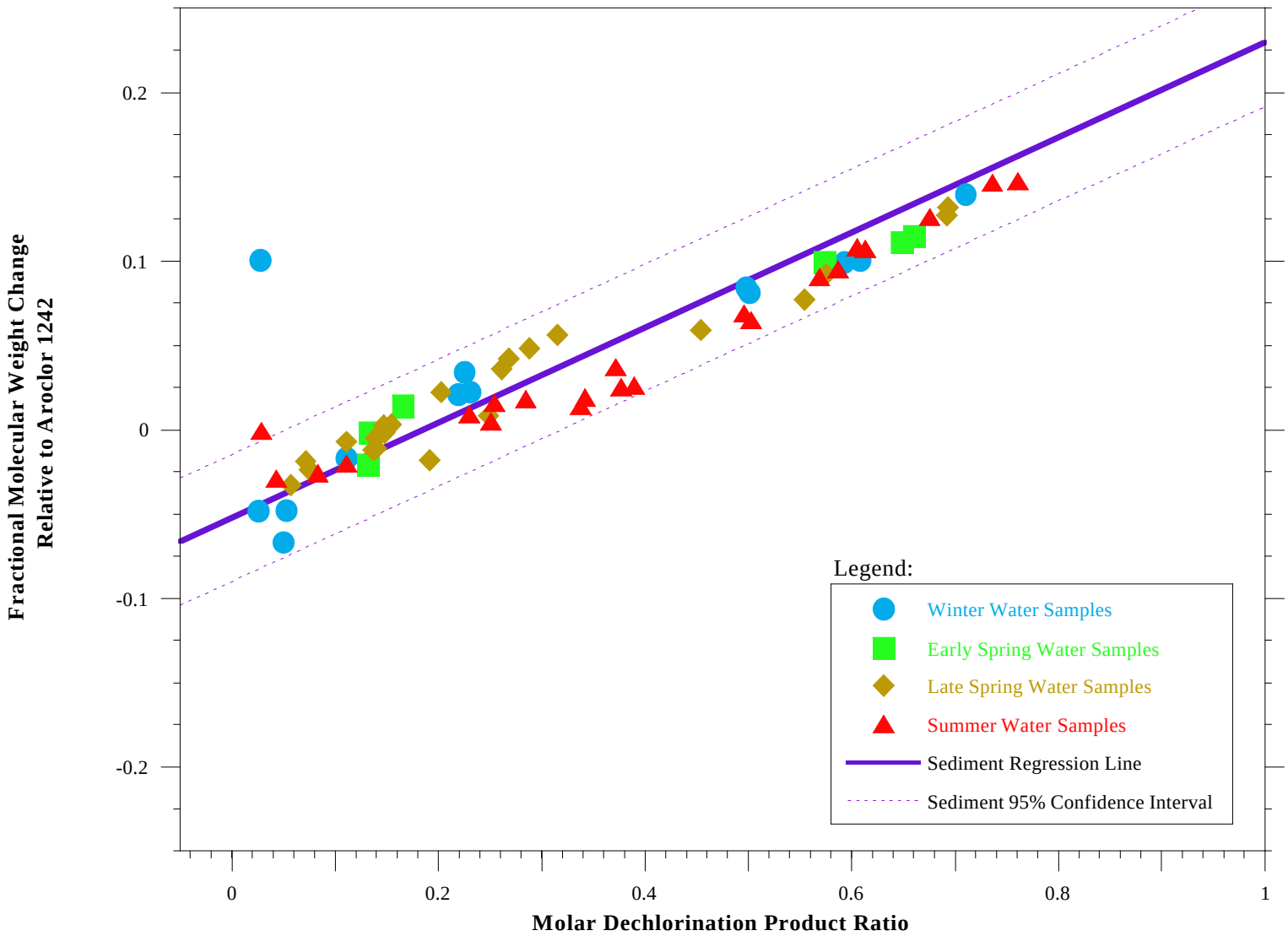


Note:
Regression line and confidence intervals are based on Upper and Lower Hudson sediment results only.

Source: TAMS/Gradient Database

TAMS*Gradient*

Figure 4-30
A Comparison of the Net Thompson Island Pool Contribution to the Water Column with the Sediments of the Upper Hudson



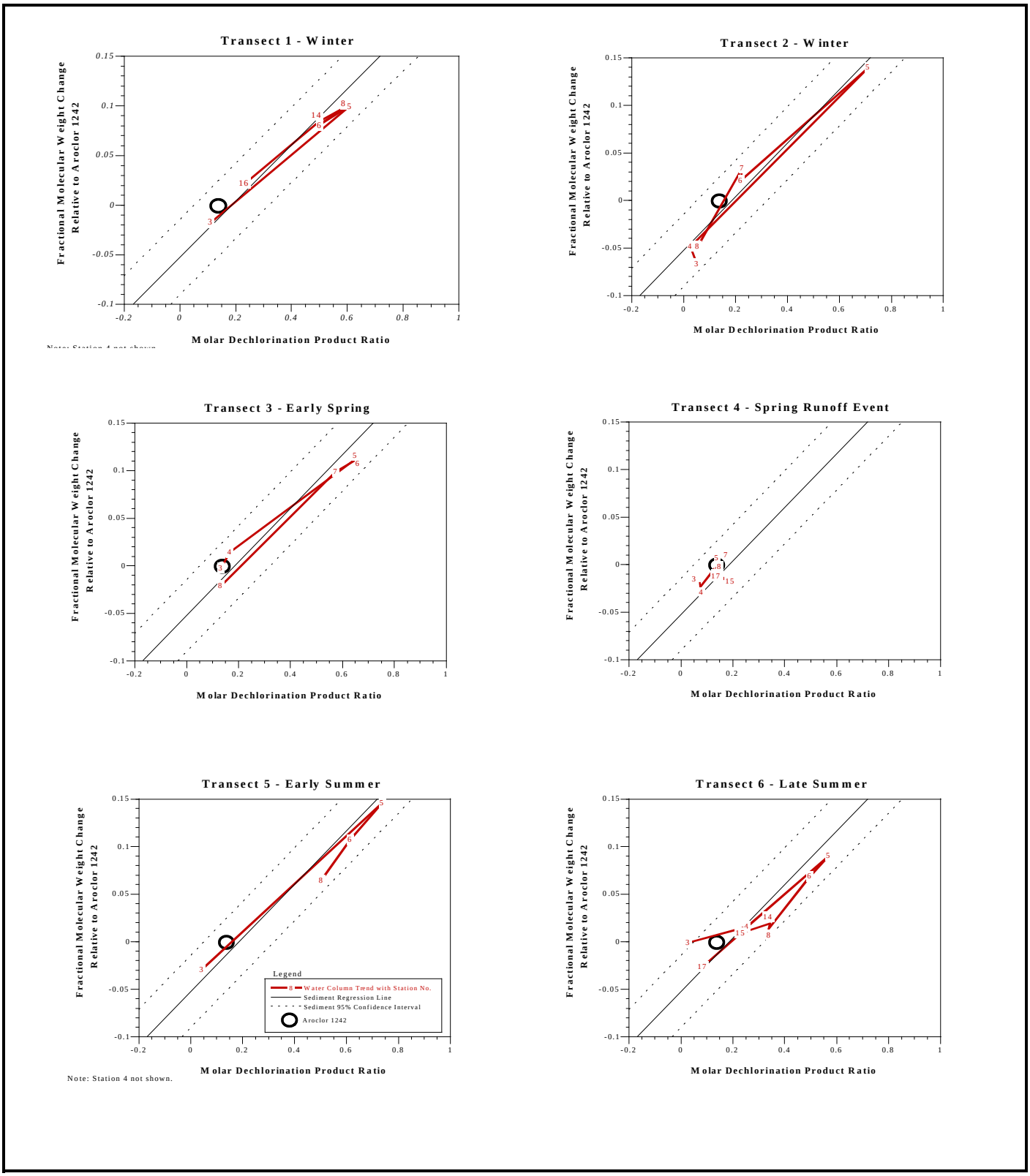
Note:
Regression line and confidence intervals are based on Upper and Lower Hudson sediment results only.
Results represent all main stem Hudson River water samples downstream of Bakers Falls.

Source: TAMS/Gradient Database

TAMS*Gradient*

Figure 4-31

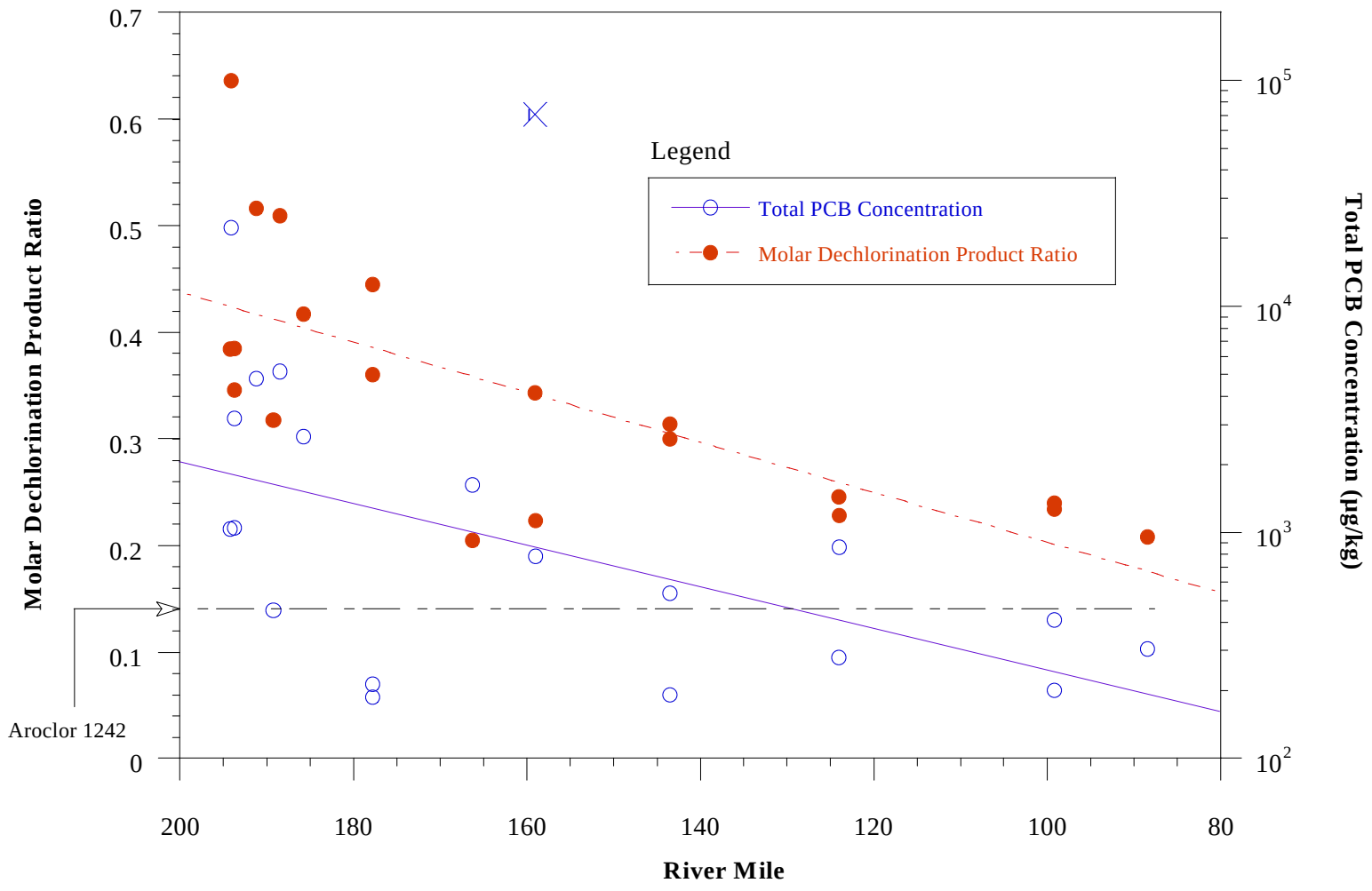
Relationship Between Phase 2 Hudson River Water Column Samples and the Sediment Regression Line - Molar Dechlorination Product Ratio vs. Change in Molecular Weight



Source: TAMS/Gradient Database•

TAMS/*Gradient*

Figure 4-32
Molar Dechlorination Product Ratio vs.
Change in Molecular Weight for Water Column Transects Showing Trend with Station



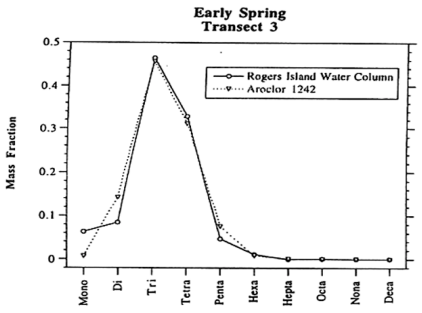
Note:
Value marked with an "X" was considered an outlier and was not used to generate the regression line for the MDPR.

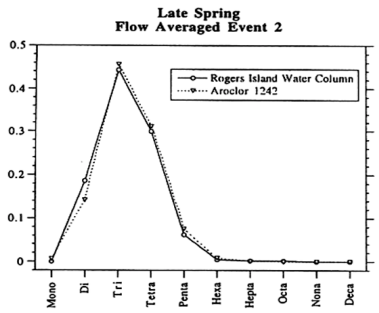
Source: TAMS/Gradient Database

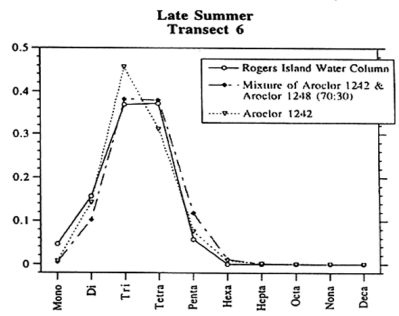
TAMS/*Gradient*

Figure 4-33
Trend of High Resolution Core Top Molar Dechlorination Ratio and Total PCB Concentration with River Mile

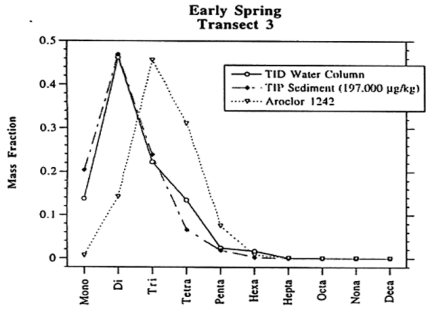
Rogers Island - RM 194.6

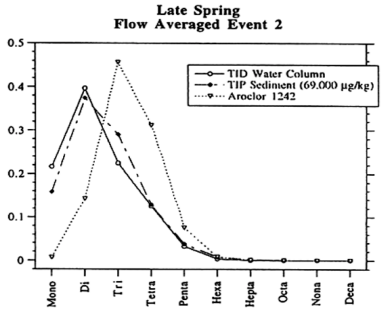


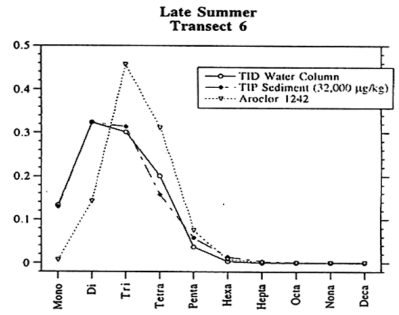




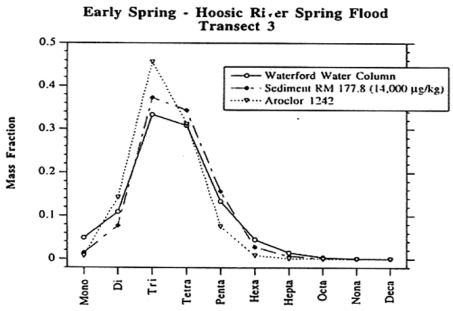
Thompson Island Dam - RM 188.5



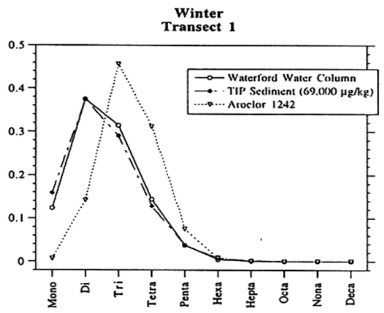


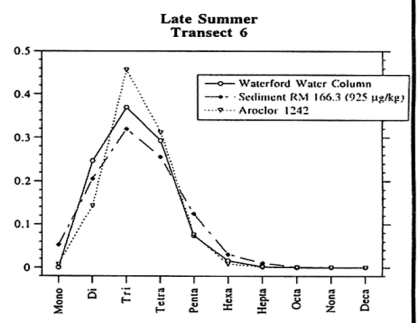


Waterford - RM 156.5

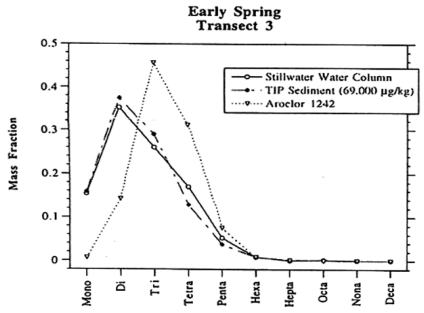


Note: Hoosic River confluence occurs at RM 167.5

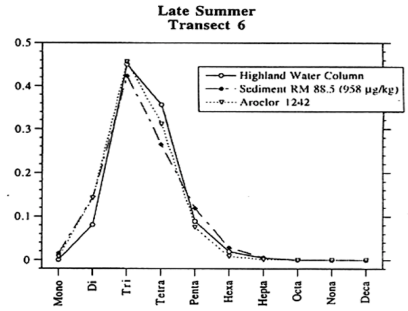




Stillwater - RM 168.3



Highland - RM 77

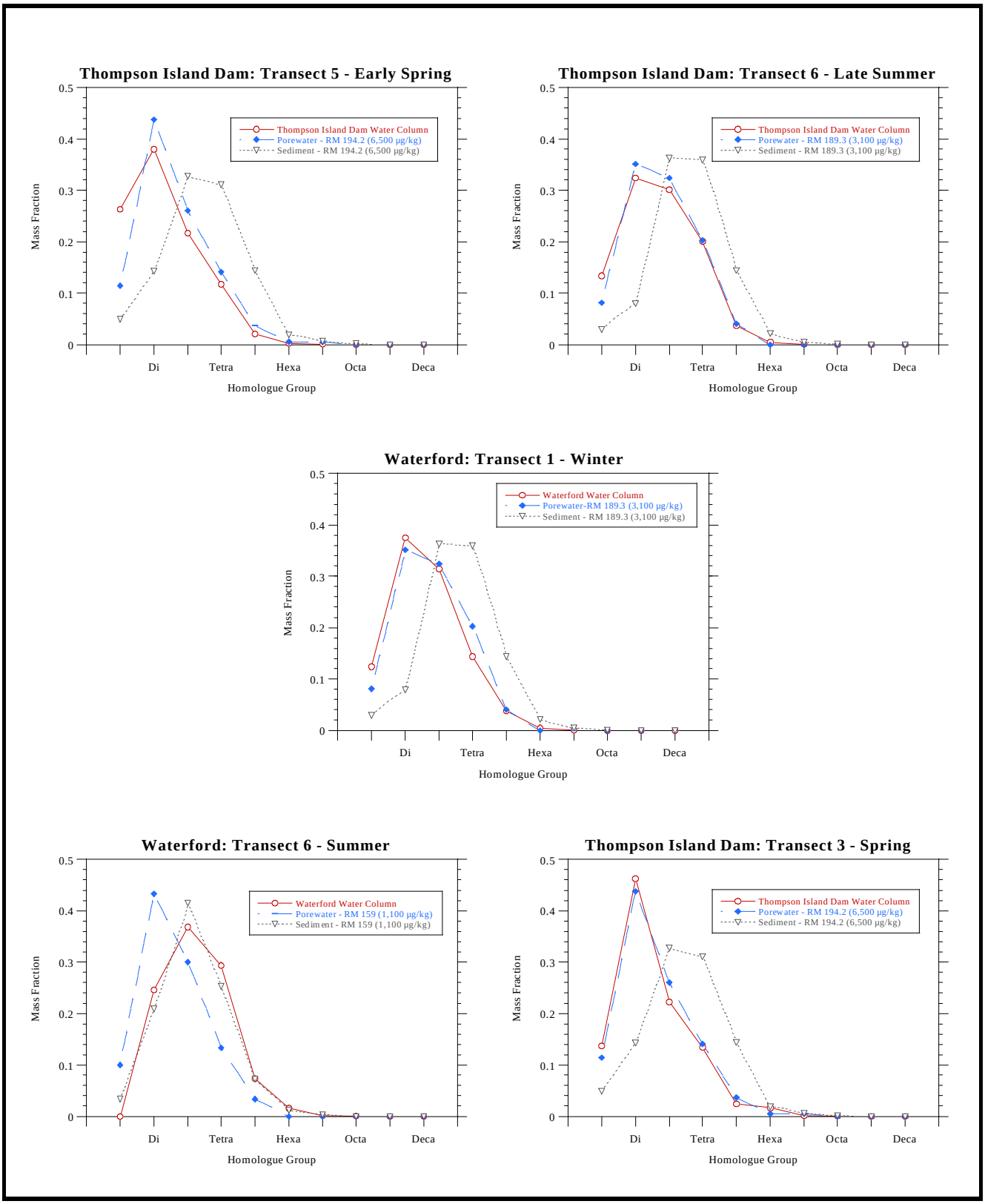


Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

Notes:
TID=Thompson Island Dam - RM 188.5
TIP=Thompson Island Pool

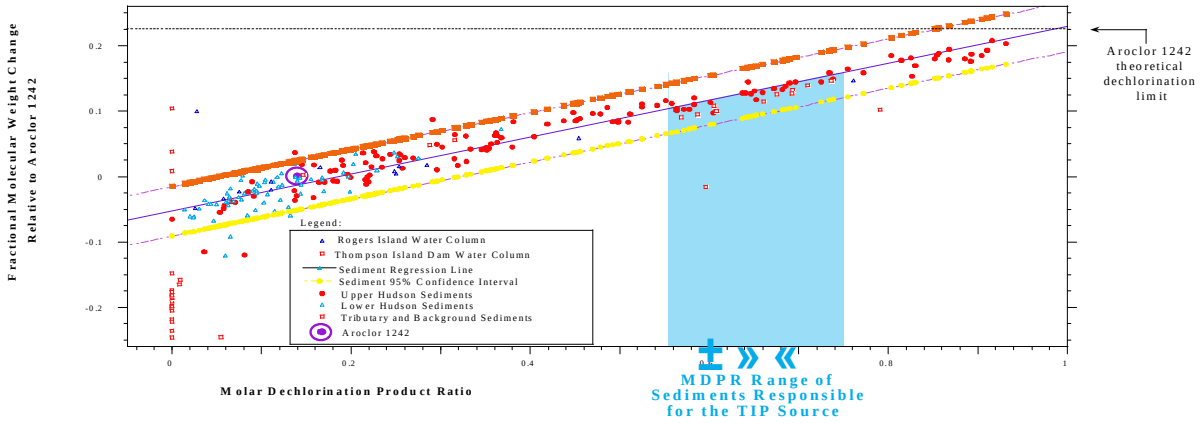
Figure 4-34
A Comparison Among Various Water Column and Sediment Samples on a Homologue Basis



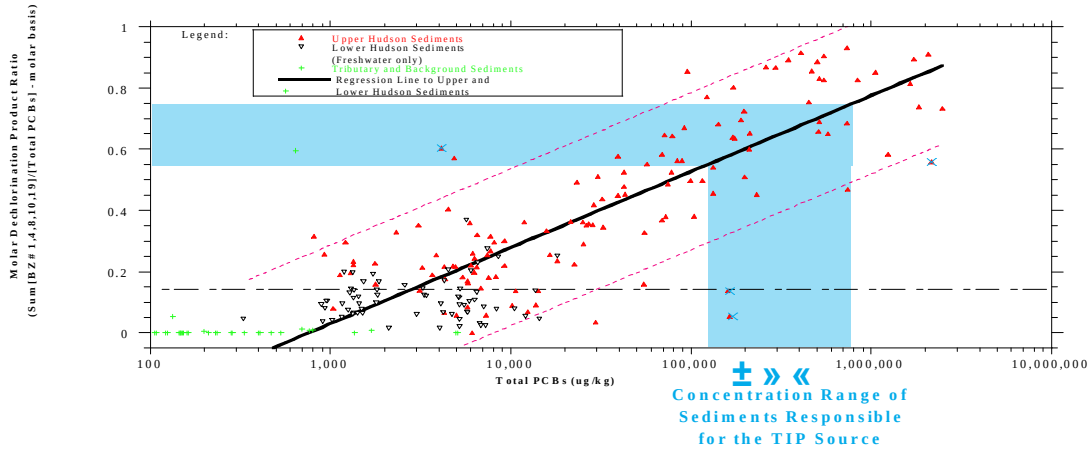
Source: TAMS/Gradient Database

TAMS/Cadmus/Gradient

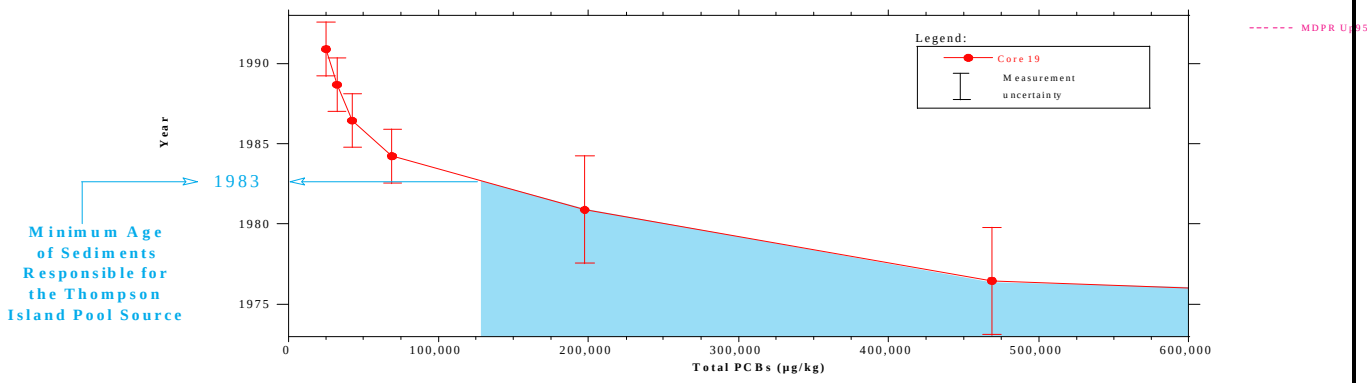
Figure 4-35
Comparison Between Various Water Column and Estimated Porewater Distributions on a Homologue Basis



A Comparison Between Sediment and Water Column Samples from Rogers Island and Thompson Island Dam



Molar Dechlorination Product Ratio vs Total PCB Concentration in Post-1954 Sediments from the Freshwater Hudson River



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

Legend:

Chart Region Characteristic of the Thompson Island Pool Source.

Note:
For notes regarding the individual figures, see original figures 4-29, 4-26 and 3-59, respectively.

Source: TAMS/Gradient Database•

TAMS/*Gradient*

Figure 4-36
Estimation of the Age of the Sediments Responsible for the Thompson Island Pool Source