HUDSON RIVER PCBs REASSESSMENT RI/FS
PHASE 3 REPORT: FEASIBILITY STUDY

DECEMBER 2000

For

U.S. Environmental Protection Agency
Region 2
and
U.S. Army Corps of Engineers
Kansas City District

Book 3 of 6
Plates

TAMS Consultants, Inc.

HUDSON RIVER PCBs REASSESSMENT RI/FS
PHASE 3 REPORT: FEASIBILITY STUDY

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NOTES FOR ALL PLATES

1) Data Set Environment

Arc View GIS

2) Grid Coordinate System

STATE PLANE New York, in Feet, East New York (NY E), FIPZONE 3101.

3) Horizontal Datum Name

The coordinate system is based upon a network of geodetic control points referred to as the North American Datum of 1927 (NAD27).

4) Scale

All plates and appendices (except for Plate 1) are presented at a 1:15000 scale. Therefore, on 11" x 17" size plot, one inch equals 1250 ft. Plate 1 is presented at a 1: 190,080 scale map for an effective scale of one inch to 3 miles.

5) Base Map Data Source

Database for the Hudson River PCBs Reassessment RI/FS, Release 5, October 2000, TAMS Consultants and Environmental Protection Agency.

6) Bathymetry Specifications

Above Lock 5, contour lines (in feet) were provided in elevation (New York State Barge Canal Datum). The elevation for the water surface was calculated for each pool based on a flow of 3,090 cfs. The water depth was obtained by subtracting the river bottom elevation from the water surface elevation, then rounded to the closest 0.5 foot. For this reason, the water depth is indicated as "Approximate Water Depth" on plates.

Below Lock 5, the bathymetry information was digitized from the NOAA Digital Nautical Charts (Charts: 14786-17, 14786-15, 14786-14, 14786-13, 14786-12, 14786-11, 14786-10, 14786-9, 14786-8). Only 6 foot and 12 foot contour lines were available with no elevation information.

7) River Shoreline

The river shoreline presented on plates is based on a flow of 8,471 cfs. (Source: Hudson River Database Release 5, based on Normandeau Associates, Inc. 1977.)

8) Sediment Texture Coverage

The Side-Scan Sonar coverage (Side Scan Sonar survey conducted in 1992) was used from Fort Edward Dam to Lock 5. LTI sediment texture coverage based on a pole survey directed by GE (Conducted in 1991), was used from Lock 5 to Federal Dam.

9) Incomplete Set of Sheets

A full set includes 7 sheets covering the Hudson River from the Former Fort Edward Dam to Federal Dam. However, some plates and appendices in the report are incomplete sets because there are no data to be presented for one or a number of sheets. Data for 1998 Composite Samples and 1984 Samples are available for Thompson Island Pool only (Section 1), therefore only one sheet is presented for both plates and appendices. Data for 1977 were presented for the river from Thompson Island Dam to Federal Dam only and, the set of plate or appendix for 1977 data only has 6 sheets, starting at River Section 2.

Similarly, all plates presenting the Full-Section Remediation Target Boundary include only the first two sheets, since the extent of remediation for this scenario includes only River Section 1 and Section 2.

10) Thiessen Polygons

Plates 4-a and 4-b, as well as Appendex A-3 are respectively presenting the Mass/Area (g/m^2) and the Length Weighted Average using 1984 Thiessen Polygons. These represent polygons of influence where each polygon contains all the area that is closer to a given sample point than to any other sample points. The method is called polygonal declustering and often successfully corrects for irregular sample coverage. The method used the samples location as well as the sediment texture information from the side scan sonar classification.

All samples were assigned a texture (cohesive, non-cohesive) according to their sediment content. Thiessen polygons are first formed around cohesive sample points only and then around non-cohesive sample points only. Polygons formed are respectively clip to cohesive and non-cohesive areas of the sediment texture coverage from the side scan sonar classification, to insure that cohesive samples are applied only to cohesive area of the river and non-cohesive sample to non-cohesive areas. Each polygon was then assigned the value (e.g., Length Weighted Average, Mass per Unit Area) of the sample point that formed it.

11) MPA

In all plates an appendices, MPA stands for PCB Mass per Unit Area in g/m^2.

12) Alternatives

The specific alternatives are not numbered in this FS. Rather, they are identified by shorthand nomenclature which identifies the components of each alternative. The alternative identification system is described below.

The first set of characters describes the alternative category, of which there are four.
- NA designates "No Action"
- MNA designates "Monitored Natural Attenuation"
- CAP designates containment by capping in conjunction with dredging
- REM designates Removal (without capping)

For alternatives which include capping or removal (*i.e.*, CAP or REM) as a component, the extent of remediation (*i.e.*, remediation target areas) is specified by river section, as described above and the extent of remediation within each river section, listed sequentially from River Section 1 to River Section 3. The remediation designations are:

0	Full-section remediation or target areas with PCB mass per unit area (MPA) of 0 g/m^2; in other words, the remediation of all contaminated sediments within the river section
3	Expanded Hot Spot remediation or target areas with PCB MPA of 3 g/m^2 or greater
10	Hot Spot remediation or target areas with PCB MPA of 10 g/m^2 or greater
MNA	No target areas; monitored natural attenuation only in this section.

LIST OF PLATES

Warren County

Saratoga County

Washington County

Rensselaer County

Albany County

GLENS FALLS

HUDSON FALLS

FORT EDWARD

SOUTH GLENS FALLS

GANSEVOORT

SCHUYLERVILLE

GREENWICH

STILLWATER

SCHAGHTICOKE

MECHANICVILLE

MELROSE

WATERFORD

COHOES

TROY

Sacandaga River

Champlain Canal

Rogers Island

Griffin Island

Thompson Island

Snook Kill

Dead Creek

Moses Kill

Fish Creek

Batten Kill

Hoosic River

Mohawk River

US Hwy 9

I87

State Hwy 29

State Hwy 50

US Hwy 4

State Hwy 7

State Hwy 2

190

180

170

160

Former Fort Edward Dam (RM 194.8)

Lock 7 (RM 193.7)

Thompson Island Dam (RM 188.5)

Fort Miller Dam (RM 186.2)

Lock 6 (RM 186.2)

Northumberland Dam (RM 183.4)

Lock 5 (RM 182.6)

Lock 4/Stillwater Dam (RM 168.2)

Lock 3 (RM 166.0)

Lock 2 (RM 163.5)

Lock 1 (RM 159.4)

Federal Dam (RM 153.9)

SECTION 1

SECTION 2

SECTION 3

Ontario

NY

PA

NJ

Hudson River PCBs Site

LEGEND

- Dam and Lock
- 192 River Mile Marker
- Shoreline at 8,471 cfs
- Major Road
- River Section Limits
- County Limits

N

W E

S

1 0 1 2 3

Scale in Miles

4 0 4

Scale in Kilometers

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Hudson River PCBs Reassessment Feasibility Study

Plate 1

Overview of Upper Hudson River
Glens Falls to Federal Dam

Sheet 1 of 1

RM 194.8 - 153.9

Warren County

Saratoga County

Washington County

Rensselaer County

Albany County

GLENS FALLS

HUDSON FALLS

FORT EDWARD

SOUTH GLENS FALLS

GANSEVOORT

SCHUYLERVILLE

GREENWICH

STILLWATER

SCHAGHTICOKE

MECHANICVILLE

MELROSE

WATERFORD

COHOES

TROY

Sacandaga River

Champlain Canal

Rogers Island

Griffin Island

Thompson Island

Snook Kill

Dead Creek

Moses Kill

Fish Creek

Batten Kill

Hoosic River

Mohawk River

US Hwy 9

I87

State Hwy 29

State Hwy 50

US Hwy 4

State Hwy 7

State Hwy 2

190

180

170

160

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Scale in Miles

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Plate 1

Overview of Upper Hudson River
Glens Falls to Federal Dam

Sheet 1 of 1

RM 194.8 - 153.9

Former Fort Edward Dam
(RM 194.8)

Lock 7 (RM 193.7)

Thompson Island Dam
(RM 188.5)

Match Line 1

Match Line 2

Snook Kill

Moses Kill

Rogers Island

Griffin Island

Old Moreau
Landfill

New Moreau
Landfill

US Hwy 4

195 194 193 192 191 190 189

197 27

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

KEY MAP

A B C D E F G H I J K L

LEGEND

Total PCB MPA (g/m²)
(From NYS DEC Sediment Survey, 1984
and Side Scan Sonar Sediment Classification, 1994)

- 0 - 3, Non-cohesive
- 0 - 3, Cohesive
- 3 - 10, Non-cohesive
- 3 - 10, Cohesive
- 10 - 33, Non-cohesive
- 10 - 33, Cohesive
- 33 - 100, Non-cohesive
- 33 - 100, Cohesive
- 100 - 330, Non-cohesive
- 100 - 330, Cohesive
- 330 - 1218, Cohesive
- NYS DEC *Hot Spot* (5)
- Dam and Lock
- 192 River Mile Marker
- Shoreline at 8,471 cfs
- Road
- Railroad/Siding

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N W E S

1000 0 1000
Scale in Feet

300 0 300
Scale in Meters

Hudson River PCBs
Reassessment
Feasibility Study

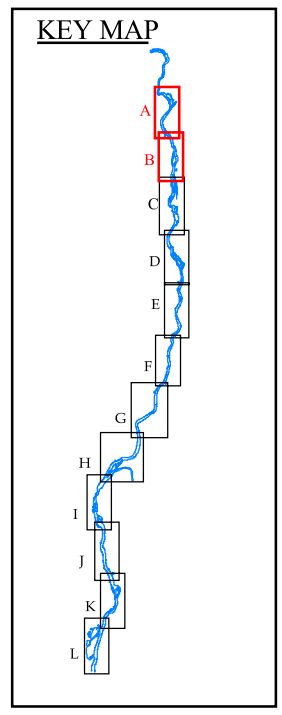
Plate 4-A

Sediment PCB Inventories in 1984
(Total PCB MPA)
Thompson Island Pool (River Section 1)

Sheet 1 of 1

RM 194.8 - 188.5

KEY MAP



Former Fort Edward Dam
(RM 194.8)

Lock 7 (RM 193.7)

Old Moreau Landfill

New Moreau Landfill

Roger's Island

Griffin Island

Snook Kill

Moses Kill

Match Line 1

Match Line 2

US Hwy 4

Thompson Island Dam
(RM 188.5)

195 194 193 192 191 190 189 197 27

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

LEGEND

Tri + PCB MPA (g/m²)
(From NYS DEC Sediment Survey, 1984
and Side Scan Sonar Sediment Classification, 1994)

- 0 - 3, Non-cohesive
- 0 - 3, Cohesive
- 3 - 10, Non-cohesive
- 3 - 10, Cohesive
- 10 - 33, Non-cohesive
- 10 - 33, Cohesive
- 33 - 100, Non-cohesive
- 33 - 100, Cohesive
- 100 - 330, Non-cohesive
- 100 - 330, Cohesive
- 330 - 1218, Cohesive
- NYS DEC *Hot Spot* (5)
- Dam and Lock
- 192 River Mile Marker
- Shoreline at 8,471 cfs
- Road
- Railroad/Siding

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N W E S

1000 0 1000
Scale in Feet

300 0 300
Scale in Meters

Hudson River PCBs
Reassessment
Feasibility Study

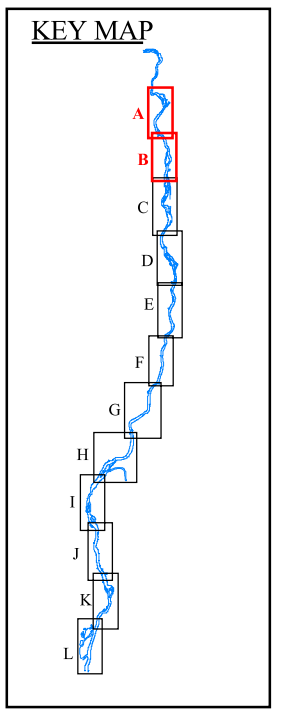
Plate 4-B

Sediment PCB Inventories in 1984
(Tri + PCB MPA)
Thompson Island Pool (River Section 1)

Sheet 1 of 1

RM 194.8 - 188.5

KEY MAP



Former Fort Edward Dam
(RM 194.8)

Lock 7 (RM 193.7)

Thompson Island Dam
(RM 188.5)

Match Line 1

Match Line 2

Snook Kill

Moses Kill

Old Moreau Landfill

New Moreau Landfill

Rogers Island

Griffin Island

Thompson Island

US Hwy 4

195 194 193 192 191 190 189

197 27

DF-1 DF-2

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

LEGEND

- Mound
- Rocky
- Cohesive
- Non-cohesive
- NYS DEC *Hot Spot* (5)
- Island
- Dam and Lock
- 192 River Mile Marker
- Shoreline at 8,471 cfs
- Road
- Railroad/Siding
- Full-Section Remediation Target Boundary (PCB MPA > 0 g/m²)

Approximate Water Depth (ft.) at 3,090 cfs.

- 6.5
- 12.5

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N W E S

1000 0 1000
Scale in Feet

300 0 300
Scale in Meters

Hudson River PCBs Reassessment Feasibility Study

Plate 9

Full-Section Remediation Target Boundaries
(PCB MPA > 0 g/m²)

Sheet 1 of 2

RM 194.8 - 188.5

Thompson Island Dam
(RM 188.5)

Match Line 2

DF-2

DF-3

DF-4

DBB-4

Thompson Island

Lock 6 (RM 186.2)

Lock 5
(RM 182.6)

Batten Kill

20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

188 187 186 185 184 183 182 181

KEY MAP

A B C D E F G H I J K L

LEGEND

- Mound
- Rocky
- Cohesive
- Non-cohesive
- NYS DEC *Hot Spot* (5)
- Island
- Dam and Lock
- 192 River Mile Marker
- Shoreline at 8,471 cfs
- Road
- Railroad/Siding
- Full-Section Remediation Target Boundary (PCB MPA > 0 g/m²)

Approximate Water Depth (ft.) at 3,090 cfs.

- 6.5 or 6 (Below Lock 5)
- 12.5 or 12 (Below Lock 5)

N W E S

1000 0 1000 Scale in Feet

300 0 300 Scale in Meters

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Hudson River PCBs Reassessment Feasibility Study	Plate 9 Full-Section Remediation Target Boundaries (PCB MPA > 0 g/m²)	Sheet 2 of 2 RM 188.5 - 181.0