DATABASE USER MANUAL FOR VERSION 3.0

HUDSON RIVER NATURAL RESOURCE DAMAGE ASSESSMENT

TURTLE EGG STUDY

HUDSON RIVER NATURAL RESOURCE TRUSTEES

STATE OF NEW YORK

U.S. DEPARTMENT OF COMMERCE

U.S. DEPARTMENT OF THE INTERIOR

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Turtle Egg Study

Prepared for:

State of New York
Department of Environmental Conservation

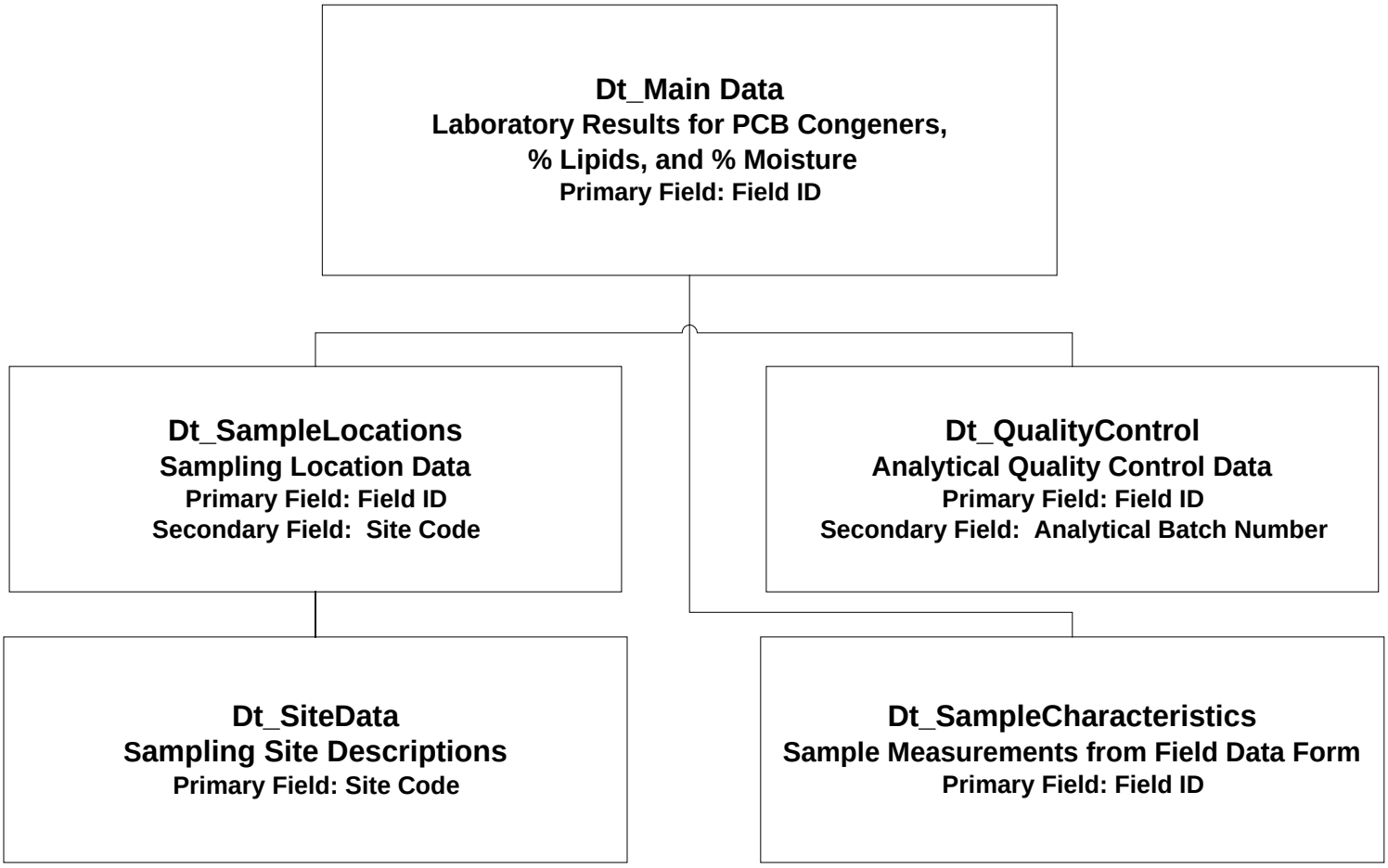
U.S. Department of Commerce
National Oceanic and Atmospheric Administration

U.S. Department of Interior
Fish and Wildlife Service

July 30, 2004

Hudson River NRDA
Turtle Egg Database
VERSION NO: 3.0
DATE: July 30, 2004

Turtle Egg Database Structure



The above figure represents the structure of the Hudson River NRDA Database for the Turtle Egg Study. Each box represents an individual table. The main data table contains the laboratory results from the analysis of egg samples. The quality control data table contains the related quality control results (e.g., duplicates, spikes, reference materials). Field location information and sample characteristics are also stored in separate tables. An additional table (Analytes) is included in the database to allow the analyte list to be sorted in a specified order during queries or data export.

The following pages list the fields contained within each of these tables. A list of valid values for select fields is also attached. There is an enforced one-to-many relationship from the Field ID in the Location Table to the Field ID in the other tables.

HUDSON RIVER NRDA DATABASE
Data User Manual

Table: DT_MainData

Field Name	Description	Type
STUDY	Study name (e.g. Turtle Egg Exposure Study)	Text
FIELD ID	Field ID of sample (see valid value list)	Text
SAMPLING DATE	Sampling date (mm/dd/yy format)	Date
LABORATORY ID	Laboratory identification number for sample (e.g. 0208031-01)	Text
ANALYTICAL BATCH NUMBER	Laboratory analytical batch (e.g. 0208031)	Text
ANALYTE	Analyte (e.g. Cl5-BZ #118, % lipids)	Text
VALUE	Analytical result (3 significant figures)	Number
LAB FLAG	Laboratory flag (see valid value list)	Text
DV QUALIFIER	Data validation qualifier (see valid value list)	Text
DVQUAL REASON CODE	Data validation qualifier reason code (see valid value list)	Text
INTERPRETIVE QUALIFIER	Combination of lab flag and DV qualifier (see valid value list)	Text
VALUE UNITS	Analytical result unit of measurement	Text
DETECTION LIMIT	Detection limit (3 significant figures)	Number
ANALYSIS GROUP	Analysis group (e.g. PCB congeners, %lipids, %moisture)	Text
ANALYTICAL METHOD	Analytical method (laboratory SOP number)	Text
MATRIX	Matter type (e.g. turtle egg contents)	Text
BASIS	Basis (wet or dry)	Text
EXTRACTION DATE	Sample extraction date (mm/dd/yy format)	Date
ANALYSIS DATE	Analysis date (mm/dd/yy format)	Date
DILUTION FACTOR	Dilution factor (3 significant figures)	Number
SAMPLE SIZE	Sample quantity (3 significant figures)	Number
SAMPLE SIZE UNITS	Sample quantity unit of measurement	Text

Table: Dt_QualityControl

Field Name	Description	Type
FIELD ID	Field ID of sample (see valid value list)	Text
LABORATORY ID	Laboratory identification number for sample (e.g. 0208031-01)	Text
ANALYTICAL BATCH NUMBER	Laboratory analytical batch (e.g. 0208031)	Text
ANALYTE	Analyte (e.g. Cl5-BZ #118, % lipids)	Text
VALUE	Analytical result (3 significant figures)	Number
LAB FLAG	Laboratory flag (see valid value list)	Text
DV QUALIFIER	Data validation qualifier (see valid value list)	Text
DVQUAL REASON CODE	Data validation qualifier reason code (see valid value list)	Text
INTERPRETIVE QUALIFIER	Combination of lab flag and DV qualifier (see valid value list)	Text
VALUE UNITS	Analytical result unit of measurement	Text
DETECTION LIMIT	Detection limit	Text
ANALYSIS GROUP	Analysis group (e.g. PCB congeners, %lipids, %moisture)	Text
BASIS	Basis (wet or dry)	Text
EXTRACTION DATE	Sample extraction date (mm/dd/yy format)	Date
ANALYSIS DATE	Analysis date (mm/dd/yy format)	Date
DILUTION FACTOR	Dilution factor (3 significant figures)	Number
SAMPLE SIZE	Sample quantity (3 significant figures)	Number
SAMPLE SIZE UNITS	Sample quantity unit of measurement	Text
QC TYPE	Type of quality control analysis (see valid value list)	Text
SURROGATE	Designates that the specified compound is a surrogate	Text
QC SPIKE QUANTITY	Spike amount added to sample	Number
RECOVERY	Percent of spike recovered	Number
RPD VALUE	Relative percent difference value (between replicates)	Number

Table: Dt_SampleLocations

Field Name	Description	Type
FIELD ID	Unique ID for each nest (e.g. ST-001)	Text
EASTING	Universal transverse Mercator (UTM) easting coordinates (meters)	Number
NORTHING	Universal transverse Mercator (UTM) northing coordinates (meters)	Number
COORD_SYSTEM	Projected UTM, Zone 18N	Text
DATUM	NAD83	Text
SITE CODE	Harvesting region number (1 - 5, or R) from the Snapping Turtle Egg Data Report	Text
GENERAL COMMENTS	Additional information or comments, if available	Memo

Table: Dt_SiteData

Field Name	Description	Type
SITE CODE	Harvesting region number (1 – 5, or R) from the Snapping Turtle Egg Data Report	Text
SITE NAME	Region name from the Snapping Turtle Egg Data Report	Text
SITE DESCRIPTION	Start and end points of each region	Text
GENERAL COMMENTS	Additional information or comments, if available	Memo

Table: Dt_SampleCharacteristics

Field Name	Definition	Type
FIELD ID	Field ID of sample (see valid value list)	Text
BIOTA TYPE	Describes broad category of sample (e.g. bird, fish, turtle)	Text
COMMON NAME	Common name of animal or plant (e.g. painted turtle, snapping turtle, etc.)	Text
COMPOSITE EGG CONTENTS WEIGHT (grams)	Total weight of all egg contents in the composite (in grams)	Number
COMPOSITE WHOLE EGG WEIGHT (grams)	Total weight of all whole eggs (including shell) in the composite (in grams)	Number
EGG VOLUME (cm^3)	N/A This information was not provided for the turtle eggs.	Number
EGGSHELL THICKNESS (mm)	N/A This information was not provided for the turtle eggs.	Number
FRESH WEIGHT (CALCULATED) (g/cm^3)	N/A This information was not provided for the turtle eggs.	Number
NOTES	Includes the number of eggs included in each composite sample (either 3, 4, or 5 eggs), and any other relevant notes.	Memo

DATABASE VALID VALUE LIST

MAIN DATA TABLE

Field ID

The field IDs were created using the following format:

CC- EEE

where CC is the code for the common name (e.g., ST is Snapping Turtle and PT is Painted Turtle) and EEE is the field ID number. For example, ST-001 indicates field ID number 001 associated with a Snapping Turtle.

Each field sample is actually a composite of several eggs from the same nest. Most composites include five eggs; however, due to egg breakage several composites are composed of only four eggs, and one composite (Sample ST-005) includes only three eggs. The number of eggs included in each composite sample is listed in the "Notes" section of the Sample Characteristics table.

Several field IDs include "BK2" as part of the field ID. This indicates that the information was recorded in 'field book 2', used by the second sampling team. This was necessary as both sampling teams used the same field ID nomenclature as described above, and the first 15 field IDs were identical for both teams until the "BK2" was added.

Analyte

For the PCB congeners, the analyte names are reported using the following format:

Clx-BZ#NNN

Where Clx refers to the chlorination level, BZ# refers to the Ballschmiter and Zell number, and NNN is the congener number. For example, PCB110 (a pentachlorinated biphenyl) is reported as Cl5-BZ#110.

The total concentration of all congeners within a chlorination level (including both target and non-target congeners) is represented by the chlorination level name. For example, the total of all pentachlorinated biphenyls is reported as Pentachlorobiphenyls.

Lab Flag

This field contains flags applied to the data by the laboratory. Typically, laboratory flags provide additional information about an analytical result, or denote a result that is associated

with a QC element that does not meet the specified DQO. Data validation qualifiers supercede laboratory flags, when present.

The following laboratory flags were applied to the turtle egg data:

U Analyte was not detected. The associated value represents the detection limit

J Analyte was detected at a concentration that is greater than the method detection limit, but less than the practical quantitation limit established by the lowest calibration standard.

DV Qualifier

This field contains qualifiers applied to the database after the data validation process. Data validation qualifiers were assigned to data points when associated QC sample results indicate the data does not meet the data quality objectives. The following definitions provide brief explanations of the qualifiers applied to the Hudson River NRDA data. Reasons for qualifications are explained further in the *Data Quality Assessment Report*.

J Estimated: The associated numerical value is an estimated quantity. The analyte was detected, but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

UJ Estimated/Not detected: An analysis was performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit may be inaccurate or imprecise. The associated numerical result is the detection limit.

NJ The analyte was tentatively identified and the associated numerical value is an estimated quantity.

R Rejected: Unreliable result. Data should not be used. The values associated with R qualifiers have been removed from the database.

DVQual Reason Code

This field contains codes that are associated with the data validation qualifier. These codes indicate why a qualifier was issued to a data point. The data can be sorted by data validation qualifier reason code to look for trends that may indicate systematic problems with the analysis. Note that multiple reason codes can be applied to a given data validation qualifier. The following definitions provide brief explanations of the reason codes applied to the Hudson River NRDA data. The *Data Quality Assessment Report* provides additional information.

8 Matrix spike recovery value is outside specified control limits.

9 Precision (relative percent difference value) is greater than the specified control limit.

10 Laboratory control sample recovery value is outside the specified control limits.

12 Reference material concentration is outside the specified control limits.

21 Potential false positive.

Interpretive Qualifier

The data user should use the qualifier in this field when interpreting the reported results. This field contains a combination/merge of the Lab Flag field and the DV Qualifier field. The fields were merged using the following logic:

- Data validation qualifiers always supercede laboratory flags
- If there is no data validation qualifier, the laboratory flag would be used
- If there is no data validation qualifier or laboratory flag, the field would be blank

The qualifiers are defined as follows:

U Analyte was not detected. The associated value represents the detection limit

J Estimated: The associated numerical value is an estimated quantity. The analyte was detected, but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data; or, that the reported result is within a range of elevated analytical uncertainty (greater than the method detection limit (MDL) value, but less than the practical quantitation limit (PQL) value).

UJ Estimated/Not detected: An analysis was performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit may be inaccurate or imprecise. The associated numerical result is the detection limit.

NJ The analyte was tentatively identified and the associated numerical value is an estimated quantity.

R Rejected: Unreliable result. Data should not be used. The values associated with R qualifiers have been removed from the database.

QUALITY CONTROL DATA TABLE

Field ID

The field IDs were created using the following format:

CC- EEE

where CC is the code for the common name (e.g., ST is Snapping Turtle) and EEE is the field ID number. For example, ST-001 indicates field ID number 001 associated with a Snapping Turtle

Each field sample is actually a composite of several eggs from the same nest. Most composites include five eggs; however, due to egg breakage several composites are composed of only four eggs, and one composite (Sample ST-005) includes only three eggs. The number of eggs included in each composite sample is listed in the "Notes" section of the Sample Characteristics table.

Several field IDs include "BK2" as part of the field ID. This indicates that the information was recorded in 'field book 2', used by the second sampling team. This was necessary as both sampling teams used the same field ID nomenclature as described above, and the first 15 field IDs were identical for both teams until the "BK2" was added.

Analyte

For the PCB congeners, the analyte names are reported using the following format:

Clx-BZ#NNN

Where Clx refers to the chlorination level, BZ# refers to the Ballschmiter and Zell number, and NNN is the congener number. For example, PCB110 (a pentachlorinated biphenyl) is reported as Cl5-BZ#110.

The total concentration of all congeners within a chlorination level (including both target and non-target congeners) is represented by the chlorination level name. For example, the total of all pentachlorinated biphenyls is reported as Pentachlorobiphenyls.

Lab Flag

This field contains flags applied to the data by the laboratory. Typically, laboratory flags provide additional information about an analytical result, or denote a result that is associated with a QC element that does not meet the specified DQO. Data validation qualifiers supercede laboratory flags, when present.

The following laboratory flags were applied to the turtle egg data:

U Analyte was not detected. The associated value represents the detection limit

J Analyte was detected at a concentration that is greater than the method detection limit, but less than the practical quantitation limit established by the lowest calibration standard.

S Reported concentration includes spiked analyte.

JS Analyte was detected at a concentration that is greater than the method detection limit, but less than the practical quantitation limit established by the lowest calibration standard. Reported concentration includes spiked analyte.

ES Analyte was detected at a concentration that is greater than the linear range of the instrument. Reported concentration includes spiked analyte.

US Analyte was not detected. The associated value represents the detection limit. Reported concentration includes spiked analyte.

DV Qualifier

This field contains qualifiers applied to the database after the data validation process. Data validation qualifiers were assigned to data points when associated QC sample results indicate the data does not meet the data quality objectives. The following definitions provide brief explanations of the qualifiers applied to the Hudson River NRDA data. Reasons for qualifications are explained further in the *Data Quality Assessment Report*.

UJ Estimated/Not detected: An analysis was performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit may be inaccurate or imprecise. The associated numerical result is the detection limit.

DVQual Reason Code

This field contains codes that are associated with the data validation qualifier. These codes indicate why a qualifier was issued to a data point. The data can be sorted by data validation qualifier reason code to look for trends that may indicate systematic problems with the analysis. Note that multiple reason codes can be applied to a given data validation qualifier. The following definitions provide brief explanations of the reason codes applied to the Hudson River NRDA data. The *Data Quality Assessment Report* provides additional information.

10 Laboratory control sample recovery value is outside the specified control limits.

Interpretive Qualifier

This field contains a combination/merge of the Lab Flag field and the DV Qualifier field. The fields were merged using the following logic:

- Data validation qualifiers always supercede laboratory flags
- If there is no data validation qualifier, the laboratory flag would be used
- If there is no data validation qualifier or laboratory flag, the field would be blank

The data user should use the qualifier in this field when interpreting the reported results. The qualifiers are defined as follows:

U Analyte was not detected. The associated value represents the detection limit

UJ Estimated/Not detected: An analysis was performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit may be inaccurate or imprecise. The associated numerical result is the detection limit.

J Analyte was detected at a concentration that is greater than the method detection limit, but less than the practical quantitation limit established by the low point of the initial calibration analysis.

S Reported concentration includes spiked analyte.

JS Analyte was detected at a concentration that is greater than the method detection limit, but less than the practical quantitation limit established by the low point of the initial calibration analysis. Reported concentration includes spiked analyte.

ES Analyte was detected at a concentration that is greater than the linear range of the instrument. Reported concentration includes spiked analyte.

US Analyte was not detected. The associated value represents the detection limit. Reported concentration includes spiked analyte.

QC Type

Used to indicate that the reported value is from a quality control sample collected in the field or prepared by the laboratory. Possible quality control types are:

DUP Laboratory Duplicate

LCS Laboratory Control Sample

MB Method Blank

MS Matrix Spike

RM Reference Material

SAMPLE LOCATIONS TABLE

Coordinates

This table provides specific location information for each field sample, and provides a link between the field sample and the site data table. The field GPS coordinates are presented as easting and northing values, in meters. All coordinates use the NAD83 (North American Datum) system, and are UTM (Universal Transverse Mercator) Zone 18N projections. If the field coordinates were received in a format other than the NAD83 UTM 18N coordinates, the field data are preserved in the general comments field and the coordinates were translated to easting and northing values.

This table links to the analytical data tables through the Field ID. The table also links to the Site Data table using the Site Code.

SITE DATA TABLE

Site Code

A unique reference code for each site. For the Turtle Egg study, the site code is the harvesting region number (1 – 5 or R) as specified in the Snapping Turtle Egg Collection Work Plan.

Site Name

A unique name for each site. For the Turtle Egg study, the site name is the harvesting region name as specified in the Snapping Turtle Egg Collection Work Plan.

Site Description

A description for each site. This field can include descriptions from the work plans, field samplers notes, habitat types, or other information to uniquely identify the site.

General Comments

Any other information from the field notes that pertains generally (but not specifically) to the site. For example, this field can include county names, sampling date ranges (verses specific sampling dates for an individual sample), etc.

SAMPLE CHARACTERISTICS TABLE

Turtle Eggs

This table includes information describing the field samples. This table is specific for each type of matrix. For the Turtle Egg study, this table includes information about the egg composite weights.

ANALYTES TABLE

This table is simply a list of all analytes with an associated number. The purpose of this table is to allow the analyte list to be sorted in a specified order during queries or data export.


U.S. DEPARTMENT OF THE INTERIOR
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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