September 1991

Chesapeake Bay Program Data Management Plan

Chesapeake Bay Program

Printed on Recycled Paper

Chesapeake Bay Program Data Management Plan

September 1991

Produced by
Computer Sciences Corporation
under contract to the U.S. Environmental Protection
Agency

Contract No. 68-WO-0043

CHESAPEAKE BAY PROGRAM DATA MANAGEMENT PLAN

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I: INTRODUCTION

Data management has long been recognized as an integral part of the Chesapeake Bay Program (CBP). The efforts of all CBP partner agencies to manage the resources of the Chesapeake Bay require an extensive data base of known quality. The data must be easily accessed for analytical and reporting purposes. A key to achieving these goals is to acquire or create common data attributes in similar, or translatable, formats. This Plan describes the data forms and procedures for the submission, storage, and retrieval of Chesapeake Bay data at the CBP.

In previous years, The CBP Office produced four separate documents to detail the various data collection programs and guidelines for submitting data to the CBP. These were the Water Quality Data Management Plan (DMP), the Living Resources Monitoring DMP, the Sediment Monitoring DMP, and the Data Submission Guidelines. As a result of continuing efforts to integrate diverse types of data into usable information, this document combines the four documents into one. In addition, Toxics and Historical Data Base descriptions have been added.

This data management plan describes the Chesapeake Bay Program procedures and standards to acquire, store, and access Chesapeake Bay data. This plan contains:

- Data submission procedures;
- Quality assurance practices for the data;
- Data verification and approval procedures;
- Data base summaries;
- Appendices, that include:
  - Data submission forms (w/completed examples);
  - Data quality assurance policies and definitions;
  - Data Dictionary and Code Tables.

CHAPTER II: DATA QUALITY ASSURANCE PROCEDURES

The overall quality assurance (QA) goal of Chesapeake Bay Program Computer Center (CBPCC) is to ensure that data submitted to the CBPCC are valid, complete, and of known quality. Listed below are examples of methods used by the CBP to help meet those goals. Refer to Appendix A and B for a quality assurance policy on incorporating historical and signed-off data into the CBPCC CHESSEE database.

A. QA PLANS

Agencies and institutions participating in EPA funded components of the CBP Monitoring Program are required to submit work/quality assurance project plans and to complete a Project Information Form (Appendix C) that documents the sampling methods and laboratory procedures used to obtain data that will be stored on the computer. In addition, any variance within each regular data submission must be documented using the Data Set Documentation Form (Appendix D) or the Data Documentation Form (Appendix E). This ensures that future users of the data base will have complete information on the quality of each data value and exactly what that value represents. Users can decide which data meet the criteria for their particular application. Other funding agencies are encouraged to pursue more formal documentation and involvement of quality assurance in their ongoing and planned data collection programs.

Agencies and institutions collecting data not funded by EPA use the Data Documentation Form in Appendix E. The Appendix E form is more general and does not require the specific information (such as cruise logs, checklist file names, SAS code, etc.) found in established monitoring program procedures.

B. DATA ENTRY

All data submitted to the CBPCC database via standard data entry methods must be key-verified by the data collection agency using the double-entry or comparable method. This entails keying all data twice to compare entries and correct any differences. This process helps to locate many of the errors that may occur during data entry.

C. SIGNIFICANT DIGITS

Data may be stored in the CBP data base with any level of significance, as long as accompanying documentation can qualify the validity of the data for a potential user. Levels of significance are derived for specific parameters by the CBP Monitoring Subcommittee for particular data applications. A general guideline used by some laboratories is to report results to one decimal place beyond the method detection limit (MDL): if the MDL is 0.1, they report results to 0.01 or two decimal places.

D. DATA SUBMISSION GUIDELINES

Various methods are used to submit data to the CBPCC. Given the variety of organizations that collect Chesapeake Bay data and the diversity of telecommunications capabilities, CBP has established guidelines for data submission. These procedures include everything from using appropriate data dictionary terms and codes (Appendix F and Appendix G) to electronic transmission of the data set. Detailed data submission procedures are presented in Chapter III.

E. DATA SET VERIFICATION

The CBPCC staff has developed procedures and programs that provide consistency within the data base and additional checks on the quality of data. These programs:

- o Perform checks to determine if data submissions comply with the minimum requirements of the scope of work, e.g., stations sampled, and parameters measured;
- o Perform checks to determine if numeric variables exceed established warning and critical limits;
- o Perform checks to verify valid character variables; and
- o Calculate parameters from raw data; e.g., calculate density from subsample counts, subsample volume and total sample volume; or chlorophyll from optical densities at specified wavelengths.

The process for incorporation of a submitted data set into the CBPCC database is depicted and discussed in Chapter IV.

F. QUALITY ASSURANCE DATA REQUIREMENTS

To assess the quality of a data set, there must be a way to evaluate the collection, preservation, and analytical methodologies for a specific application. The precision (the closeness of repeated measurements of the same sample to each other, with deviations caused by random error) and accuracy (the closeness of observed values to the true value, with deviations or bias caused by systematic error) of data values must be quantitative. For further information, refer to "Calculation of Precision, Bias, and Method Detection Limit for Chemical and Physical Measurements, Chapter 5," U.S. EPA, March 30, 1984.

Detailed documentation of methods and protocols and quantitative proof of measurement control are essential. The CBPCC provides a mechanism to store this information and to retrieve it with its associated data.

There are three main Quality Assurance (QA) parameters that are estimated for Chesapeake Bay Program data:

1. Intra-laboratory precision

Information about intra-laboratory precision of measurements can be obtained from replicated samples or aliquots of the same sample, usually from field or lab replicates (refer to Section G, Categories of QA Data, below), and is usually expressed as the standard deviation of the observations. In the data base, such duplicate or replicate measurements need to be identified explicitly using a replicate number and replicate type code in addition to the normally reported information that uniquely identify a specific value, such as cruise, date, time, station, depth, and parameter name.

2. Inter-laboratory precision

Inter-laboratory precision is usually determined by either field split samples or co-located samples (refer to Section G, below). Samples collected at the same time and place are sent to two or more laboratories for analysis, and their results are compared. Split sample data are usually submitted separately from other data.

3. Accuracy

Accuracy is typically estimated two ways: by measuring the deviation of the mean of a number of observations from a known, or "true," value, and by calculating percent recovery. Systematic departure from a true value can have a number of causes, including unrepresentative sampling, systematic variations in correlated phenomena, and biased calibration and standards. Known sources of potential bias should be specifically referenced in the data set documentation.

There are, however, alternative means of demonstrating accuracy that can improve confidence in a data set. For example, inter-laboratory accuracy is not measured directly by split sample testing, but it can be estimated indirectly by examining other QA data, such as agreement of replicates, agreement of results obtained by different methods, results from standard reference materials, and internal consistency of results.

G. CATEGORIES OF QUALITY ASSURANCE (QA) DATA

There are seven categories of primary quantitative QA data that are applicable to Chesapeake Bay Program data: 1) field duplicates, 2) field splits, 3) co-located samples, 4) laboratory duplicates, 5) laboratory spikes, 6) method comparisons, and 7) special studies. Each one quantifies different sources of variability in the measurement system.

1. Field Duplicates (Replicates)

Duplicate samples, collected at the same station and depth in close succession by the same field crew, and processed and analyzed by the same laboratory, provide an estimate of intra-laboratory precision of the measurement system from sample acquisition (including collection) through analysis. These results are usually included with the routine monitoring data, and should be distinguished by the value 'FLD' (field) for the replicate type parameter. These resemble co-located samples (see section 3, below), except that the latter are collected by different field crews and often are analyzed by different laboratories.

2. Field Splits

Aliquots from a single sample or grab, split soon after collection and processed and analyzed by separate laboratories, are called field splits. The results can be used to estimate the inter-laboratory precision of the measurement system from sample acquisition (after collection) through analysis. These are being used in the Chesapeake Bay Coordinated Split Sample Program.

3. Co-Located Samples

Co-located samples are collected by different field crews at the same station, depth, and time, and usually are analyzed by different laboratories. Their results can be used to determine the inter-laboratory precision of the measurement system from sample collection through analysis.

4. Laboratory Duplicates (Replicates)

Typically, ten percent of samples subjected to laboratory analysis are required to be analyzed in duplicate. Duplicate counts and duplicate measurements may be generated both by the same or by different analysts. Most duplicate observations in the CBP monitoring data base are lab duplicates, with replicate type = 'LAB,' and represent an estimate of the intra-laboratory precision of sample preparation and analysis. In practice, when duplicates differ beyond some predefined amount, an error is indicated and a third analysis is done and the value in error is discarded. Duplicates maintained in the data base need to be identified explicitly using replicate number and replicate type codes, and documentation for the data set should clearly indicate what the replication is measuring.

5. Laboratory Spikes

These data directly measure the accuracy of particular laboratory techniques. Laboratory samples are spiked with a known quantity of material to determine the percent recovery or the extent to which an analytical measurement deviates from the known quantity. Data of this type could be generated in water chemistry and biochemical analyses, studies of primary productivity, or other kinds of rate and process studies that use radioactive labels to follow the fate and accumulation of specific products. Analysis of lab spikes requires:

a. measured sample background concentration, reported as the concentration for that parameter with REP_TYPE = 'SPK.'

b. amount of spike or standard added (reported as parametername_C; see below). The spike value should be 0.5 to 2.0 times the sample background concentration.

c. recovered (analyzed) value for the mixture of sample and spike (reported as parametername_SK; see below).

d. percent recovery, calculated using the formula given below.

6. Method Comparisons

Data values for a parameter may vary because of differences in the methods of sample collection, preservation, handling, or analysis. For example, some laboratories in the CBP monitoring program switched from measuring nitrogen via Kjeldahl whole and filtered nitrogen and nitrate/nitrite to using particulate organic and total dissolved nitrogen in late 1987. They reported both sets of parameters for the same samples for a few months, making a method comparison possible. Quantitative data of this kind are necessary to rate the accuracy and comparability of data obtained by different methods. The replicate type (REP_TYPE) = 'METH' must be used when these data are submitted, and the documentation should specify how to compare the results of the old and new methods.

7. Special Studies

Data from short-term studies conducted to test hypotheses or to estimate variability or point values are valuable contributions to the CBP data base and provide another standard against which users and contributors can evaluate the quality of data. They should be clearly identified and explained in the accompanying documentation.

Quality assurance data files are associated with the data via reference to the source, study, date, time, station location, sample depth, replicate number, replicate type, and any other parameters required to identify a sample uniquely. It is very important that QA data be flagged so that it can be used in special analyses for which it was collected.

B. QA VARIABLE NAMES AND NAMING CONVENTIONS

QA data that are included in observational data sets need to be identified in the Data Set Documentation Form (Appendix D) or the Data Documentation Form (Appendix E) under the 'Category Code' heading. The CBPCC assigns the codes from information provided by the data originator, and the CBP format conversion programs reference the codes to separate QA data from the main data base.

Some types of QA data are incompatible in format, structure, and purpose with the observational data. A cumulative record of replicates from a cruise which includes standard deviations or spike data should not be included in the main observational data base. Such data should be submitted as separate data sets and supported with separate documentation. For example, the results of the Chesapeake Bay Coordinated Split Sample Program should be submitted separately from the monitoring data, using the guidelines and forms provided for that program.

The relevant variables in the Data Dictionary (Appendix F), most of which are unique to QA data sets, should be used as follows:

1. Replicate type (REP_TYPE)

Replicate type must be used to distinguish the different types of QA data. Refer to Appendix F for the list of possible values.

2. **Replicate Number (REP_NUM)**

Replicate number should only be used if that replicate type in the data set does **not** include the _S and _N variables (defined below). If replicate number (REP_NUM) is used, it must be a single digit (1, 2, 3, etc.) when REP_TYPE = 'FLD' or 'LAB.' It must be two digits (11, 12, 21, 22, etc.) when REP_TYPE = 'FL,' where the first digit indicates the field replicate number, the second digit the lab replicate number.

3. **Parametername_S**

Parametername_S is the standard deviation of lab replicates. If it is used, the concentration of the parameter in that row of the data set must be the **mean** of the lab replicates used to calculate the standard deviation, and the following variable must also be included in the same row. The mean concentration is important, because precision sometimes varies with concentration.

4. **Parametername_N**

Parametername_N is the number of replicates used to calculate the standard deviation.

5. **Parametername_P**

Parametername_P is the percent recovery (REP_TYPE = 'SPK'). The same row in the data set should contain the background concentration, and the following two variables, for that parameter. Percent recovery should be calculated from these variables using the formula defined by EPA in 1984; other formulae that have been used in the past give different results:

Parametername_P = ((Parametername_SK - Parametername) / Parametername_C) * 100

6. **Parametername_C**

Parametername_C is the concentration of the spike that was added to the background sample. This and the following variable are necessary in the QA data set because percent recovery sometimes varies with concentration. If a correction for dilution is needed for this variable and the background concentration, it should be made before they are reported.

7. Parametername_SK

Parametername_SK is the measured value of the mixture of the spike with the background sample.

8. Parametername_A, Parametername_D, and Parametername_M

The parametername_A (analysis problem code), parametername_D (detection limit code), and parametername_M (method code) variables, although not unique to QA data sets, should always be included in them for each parameter. The detection limit code is especially important, because QA data often have to be treated differently when there are values below detection limits. The documentation should spell out how values below detection limits were handled:

a. whether the reported concentrations that were below detection limits were truncated to the Method Detection Limit (MDL), or replaced by zeroes or negative numbers,

b. whether values below the MDL were used to calculate any parametername_S values, and

c. whether values below the MDL were used to calculate any parametername_P values.

If data sets using any other QA variable names are submitted to the CBPCC, the accompanying documentation must define them in terms of the variables listed above, or specify how to calculate the variables above from the variables in the submitted data set. A sample QA data submission with the correct use of variable names is shown in Figure II-A.

FIGURE II-A
SAMPLE QA DATA SUBMISSION FORMAT

BS	DATE	TIME	SDEPTH	STATION	CRUISE	REP_TYPE	DOC	DOC_D	DOC_N	DOC_S	DOC_SK	DOC_C	DOC_P	DOC_A
1	07JAN91	12:22	0.5	MCB4.3C	BAY132	SPK	2.36		.	.	3.82	5	105.6	
2	07JAN91	12:22	13.0	MCB4.3C	BAY132	LAB	2.33		.	.	.	.	.	
3	07JAN91	12:22	25.0	MCB4.3C	BAY132	LAB	2.41		.	.	.	.	.	
4	07JAN91	12:22	25.0	MCB4.3C	BAY132	SPK	2.41		.	.	.	.	.	
5	07JAN91	11:08	0.5	MCB4.4	BAY132	LAB	2.52		.	.	.	.	.	
6	07JAN91	11:08	6.0	MCB4.4	BAY132	SPK	2.66		.	.	.	.	.	
7	07JAN91	11:08	25.0	MCB4.4	BAY132	LAB	2.78		.	.	.	.	.	
8	07JAN91	10:10	0.5	MCB5.1	BAY132	LAB	2.60		.	.	.	.	.	
9	07JAN91	10:10	9.0	MCB5.1	BAY132	SPK	2.62		.	.	.	.	.	
10	07JAN91	8:20	0.5	MCB5.2	BAY132	LAB	3.16		2	0.26	.	.	.	
11	07JAN91	8:20	7.0	MCB5.2	BAY132	LAB	2.54		.	.	.	.	.	
12	07JAN91	8:20	28.0	MCB5.2	BAY132	LAB	2.72		.	.	.	.	.	
13	08JAN91	13:05	0.5	MCB3.3C	BAY132	LAB	2.34		.	.	.	.	.	
14	08JAN91	13:05	20.0	MCB3.3C	BAY132	LAB	2.94		.	.	.	.	.	
15	08JAN91	13:05	20.0	MCB3.3C	BAY132	LAB	2.44		.	.	.	.	.	
16	08JAN91	13:05	20.0	MCB3.3C	BAY132	SPK	2.94		.	.	4.42	5	118.0	
17	08JAN91	13:05	20.0	MCB3.3C	BAY132	SPK	2.44		.	.	.	.	.	
18	08JAN91	11:50	0.5	MCB4.1C	BAY132	LAB	2.43		2	0.06	.	.	.	
19	08JAN91	11:50	0.5	MCB4.1C	BAY132	SPK	2.43		.	.	.	.	.	

BS	NH4	NH4_D	NH4_N	NH4_S	NH4_SK	NH4_C	NH4_P	NH4_A	NO2	NO2_D	NO2_N	NO2_S	NO2_SK
1	0.067		.	.	.	.	.		0.0103		.	.	.
2	0.041		.	.	.	.	.		0.0084		.	.	.
3	0.053		.	.	.	.	.		0.0084		.	.	.
4	0.053		.	.	0.092	0.127	103.150		0.0084		.	.	0.0182
5	0.020		.	.	.	.	.		0.0086		.	.	.
6	0.020		.	.	.	.	.		0.0085		.	.	.
7	0.041		.	.	.	.	.		0.0079		.	.	.
8	0.020		.	.	.	.	.		0.0079		.	.	.
9	0.014		.	.	.	.	.		0.0081		.	.	.
10	0.023		2	0.002	.	.	.		0.0088		2	0.0001	.
11	0.026		.	.	.	.	.		0.0097		.	.	.
12	0.030		.	.	.	.	.		0.0075		.	.	.
13	0.084		.	.	.	.	.		0.0116		.	.	.
14	0.060		.	.	.	.	.		0.0099		.	.	.
15	0.057		.	.	.	.	.		0.0101		.	.	.
16	0.060		.	.	.	.	.		0.0099		.	.	.
17	0.057		.	.	.	.	.		0.0101		.	.	.
18	0.099		.	.	.	.	.		0.0116		.	.	.
19	0.099		.	.	.	.	.		0.0116		.	.	.

CHAPTER III: DATA SUBMISSION PROCEDURES

Every file stored in the CBP Environmental Data Base must be accompanied by a related file documenting where the data came from, who may be contacted to obtain additional information about it, what organizations sponsored and collected the data, the reasons for collecting the data, published documents or reports associated with the data, and other items. Documentation on data base files is essential for drawing meaningful interpretations of data contained in the data base. In addition, data base management is dependent upon structured, easy-to-use documentation.

A. DATA BASE STRUCTURE

Almost all data files stored in the CBP Environmental Data Base are stored in the form of SAS data sets. Since SAS data sets are stored in a compressed format, they cannot be viewed on a terminal without first running a SAS program to convert the data into a readable format. Documentation, however, is stored on-line as text files for all users to view through CHESSEE. In CHESSEE, three types of documentation are stored for every data set:

- o Structured, textual description file;
- o Contents (labeled variables) of the SAS data set;
- o Number, mean, minimum, and maximum values for the data set variables.

Computer center staff prepare the SAS contents and means files once data sets are in SAS format. These two files are useful to CHESSEE users to locate particular data parameters and to programmers writing SAS jobs that access the data base files. The main source of information about the data, however, is the data description file. The Data Documentation Form (Appendix E) is used to document data files received from a variety of sources, and is more general than the Data Set Documentation Form (Appendix D). The Data Set Documentation Form is used by established CBP Monitoring Programs and is filled in with program specific information not required of other data submitters. All other data submitters should use the Data Documentation Form (Appendix E).

To retrieve information from CHESSEE, the CITIZEN account has been set up on the CBP computer. Users with computer communications capabilities can dial up the CBP Computer Center, and by using the menu-driven CHESSEE, find a vast amount of information without having to make a formal data request.

To find out more about how to use CHESSEE, call the Computer Center:

(301) 267-0061 (Annapolis)
(800) 523-2281 (other areas)
FTS 691-6873

Retrieving actual data from any of these data bases must be done through the CBP Data Management Coordinator. A Data Processing Request Form and an Operations Request Form can be found in Appendix H of this document. These Forms are also in CHESSEE. They can be printed from CHESSEE and will be mailed by the Computer Center if the CHESSEE sign-on address prompts are completed.

B. COMPLETING A DATA DESCRIPTION FILE

The Data Documentation Form or Data Set Documentation Form must be filled out for every data set submitted to the CBP.

The Data Documentation Form is divided into 25 sections or fields. This form is structured to document a wide variety of data such as water quality, sediment, biological, and physical (meteorological, tidal, flow, current data, etc.) data. All of the information needed for data management and interpretation should be contained in the documentation file, if completed properly.

CBP documentation is stored in a standardized and versatile format structured to resemble the format of files in NOAA's National Environmental Data Referral Service (NEDRES). With this compatible format, the CBP can easily transfer its data documentation files to NEDRES to keep NEDRES updated with information on Chesapeake Bay data. This format also provides for efficient computerized searching of the documentation. The format is versatile because any field in the description file can be expanded or collapsed as needed to facilitate entry of all the necessary information.

Whenever possible, the data description file should be submitted on the same magnetic tape or diskette which contains the related data, so that the data and documentation are never separated. A notable exception to this is when data are submitted on magnetic tape in SAS transport format.

Guidelines are presented in Appendix D and E for filling in the necessary information for each field of the Data Set Documentation Form and the Data Documentation Form.

C. DATA SUBMISSION

Submission of machine-readable data is required of all organizations submitting data to the CBP data base. The CBP offers several options for transferring data files:

- o Transferred on 9 track magnetic tape, either 1600 or 6250 bits per inch (BPI).
- o Transferred directly through a computer communication network with error-checking capability, such as KERMIT.
- o Transferred on an IBM-PC compatible floppy diskette.
- o Entered interactively onto the CBP VAX 8600 computer either in Annapolis or from a remote terminal.
- o Transferred on a Macintosh 3 1/2 inch disk.

The CBP stores most of its data base files in the form of SAS data sets. For those organizations who also maintain data sets in SAS format, the CBP prefers to receive data in this form. For all data not in SAS data sets, the CBP requires column-formatted data in fixed length records.

1. Magnetic Tape Transfer

There are three categories of magnetic tape transfer:

- o Data from other VAX computers;
- o Data from other computers in SAS format; and
- o Data from other computers in column-formatted sequential files.

Data tapes should be mailed to:

Computer Sciences Corporation
EPA/Chesapeake Bay Program
410 Severn Avenue, Suite 112
Annapolis, Maryland 21403

a. Data From Other VAX Computers

There are two ways that data can be written to tape on other VAXes using either the COPY or BACKUP command. For

SAS data sets, the BACKUP command must be used. In all other cases, the BACKUP command is preferred over the COPY command because it is more reliable. In addition, the following tape specifications are required:

1) Tape density must be 1600 or 6250 bits-per-inch (BPI)

2) Tape must be initialized and properly mounted before writing data onto the tape

3) Tape must have a sticker indicating:

   aa) The command used to create the tape (COPY or BACKUP)
   bb) The tape's label, if COPY were used; or the Save-set name(s) if BACKUP were used
   cc) The creation date
   dd) The organization and telephone number
   ee) The investigator or data processing contact
   ff) A brief description of contents

b. Data From Other Computers In SAS Format

SAS data sets can be transferred solely or in groups of files, called SAS "libraries," using either the SAS PROC XCOPY or PROC COPY depending on the operating system. The SAS User's Guide provides instructions in using these procedures. PROC COPY is used on the VAX at the CBP Computer Center to transfer single or multiple SAS data sets to and from a SAS Transport tape. In addition, the following tape specifications are required:

1. Tape density must be 1600 or 6250 bits-per-inch

2. Tape must be initialized and properly mounted before writing data onto the tape

3. Tape must have a sticker indicating:

   aa) That the file is a SAS transport tape
   bb) The tape density
   cc) The creation date
   dd) The organization and telephone number
   ee) The investigator or data processing contact
   ff) A brief description of contents

4. A printout of the SAS job's log file showing the commands used to create the transport tape.

c. Data From Other Computers With Column-Formatted Sequential Files

For data sets that are not in SAS format, column formatted data sets, written in fixed length records are required. The tape specifications must be as follows:

1. The tape must be a 9-track, unlabeled tape

2. The tape must be initialized and properly mounted before writing data onto the tape

   aa) The tape must be 1600 or 6250 BPI
   bb) Record length of 80-132 is preferable, but it may be longer
   cc) Fixed record length is required
   dd) Block size must be less than 16,000
   ee) Block size must be a multiple of the record length
   ff) Tape must be written in either ASCII or EBCDIC format

3. Tape must have a sticker indicating:

   aa) The density and format (ASCII or EBCDIC)
   bb) The record length and block size
   cc) The creation date
   dd) The organization and telephone number
   ee) The investigator or data processing contact
   ff) Brief description of contents

A description of the data format must accompany tapes containing column-formatted data. The format documentation should include a sequential listing of the names of the files on tape and a detailed listing of all fields (column headings) in each file. This information must be submitted in addition to the required documentation detailed in the appendices.

2. Data Files Transferred Directly Through a Computer Communication Network with Error Checking Capability

Data files can be transferred to the CBP VAX from other large computers or personal computers with communication capabilities. The CBP VAX is equipped with 1200/2400 baud ASCII, and KERMIT-32 communications. For KERMIT-32, the host computer (data source) should not be set in server mode. This status requires additional user commands which can be found within a KERMIT Help file (once logged in to the VAX, use the command, HELP KERMIT). In addition, the CBP VAX computer is connected to the EPA network which links VAX and IBM computers.

The actual data transfer procedure will depend on the type of computer used and the type of communication software. The protocol for communicating with the VAX from a remote computer is explained in Section 4, below. After logging on, it is necessary to use the communications program on the user's computer to send a file to the VAX. The procedure for sending or dumping a file varies with the computer and communications package.

A description of the data format must also be transferred to the VAX or mailed in hard copy form. The format documentation should include a sequential listing of all files transmitted and a description of the location of all fields (column headings). This information must be submitted in addition to the required documentation detailed in the appendices.

3. Data Files Transferred on an IBM PC Floppy Diskette

Data may be transferred to the CBP on an IBM PC/AT compatible, 5-inch, floppy diskette. The data must be written on a single or double-sided, 360K, 48-track, soft-sector diskette.

Data files must be written in standard columnar format as an ASCII text file.

All diskettes must be labeled in the following manner:

a. Creation date

b. Organization and telephone number

c. Investigator or data processing contact

d. Number of data files

e. Brief description of the contents of each file

A description of the data format must accompany the diskette. The format documentation must include a sequential listing of the names of the files and a description of the content and location of all fields (column headings). It is helpful if this documentation is entered on the VAX as a text file. This information must be submitted in addition to the required documentation detailed in the appendices.

4. Data Files Entered Interactively onto the VAX 8600 Computer in Annapolis, Maryland, or from a Remote Terminal

Data may be entered directly into a column-formatted file on the VAX via an interactive terminal. This type of submission requires a user account on the CBP computer and access to a terminal, either at the CBP or from a remote location, with a modem capable of communicating with the VAX.

Data entered directly must be column-formatted. Data records (lines) may be of any length, but those 132 characters or less in length are the easiest to enter and edit using the VAX full-screen editor. If data are entered using the VAX editor, there is a physical limit of 255 characters per record, delineated by a carriage return; however, multiple 80 or 132-character lines may be entered to form logical records longer than 255 characters.

A description of the data format must also be entered onto the VAX or submitted in hard copy form. The format documentation should include a sequential listing of the names of the files and a description of the content and location of all fields (column headings) for each file created. It is helpful if this documentation is entered on the VAX as a text file. This information must be submitted in addition to the required documentation detailed in the appendices.

User account applications can be obtained by calling Computer Sciences Corporation at 800-523-2281 or the contacts listed below. The account applications should be filled out and given to one of the account screeners listed below:

NAME	TELEPHONE	TYPE OF AGENCY
Robert Magnien	301-631-3680	Maryland Agencies and Universities
Cynthia Stenger	301-974-3767	Maryland Agencies and Universities
Vera Pollock	804-367-0066	Virginia Agencies and Universities
C.S. Spooner	301-267-0061	Federal Agencies
Cliff Jarman	202-767-7370	D.C. Agencies and Universities
Jim Hively	717-657-4657	PA. Agencies and Universities

For users with remote terminals, the 1200 or 2400-baud dial-in telephone numbers of the CBP computer are:

301-841-5264 (Annapolis/Baltimore exchange)
202-234-6628 (Washington, D.C., exchange)
800-445-2795 toll free, but see 800 Access, below

Terminals that emulate Digital Equipment Corporation VT100, VT200, or VT300 series terminals will be able to fully utilize features of the VAX 8600 command language and full screen editor for entering data sets. Other terminals may work, but may have to use the VAX line editor which is not as easy to use as the full screen editor.

The required terminal characteristics for access on the 301-841-5264 and the 202-234-6628 numbers are listed below:

a. No parity;

b. 7 or 8 bits per character;

c. Multiple baud rates are allowed, depending on user's equipment (Note: The VAX will support 1200 or 2400-baud dial-in modems);

d. ASCII format; and

e. 1 stop-bit.

The required terminal characteristics for access on the 800 number are listed below:

a. Even parity;

b. 1200 Baud only;

c. 7 data bits;

d. 1 stop bit;

e. A menu will appear with a prompt to enter a selection. Although it may not appear as a valid selection on the menu, enter **X25**.

f. A message "Connected" will appear. Enter the following to connect to the CBPO VAX: **C 31060050025501**

g. Enter user name and password.

5. Data Transferred on a MacIntosh Diskette

Data may be transferred to the CBP on Macintosh (3 1/2 inch) micro floppy disks. Data may be on either single-sided (400k) or double-sided (800k) disks.

Data must be submitted in ASCII format. Communications software is available to transfer Macintosh data files to or from the VAX.

CHAPTER IV: DATA APPROVAL PROCESS

An overview of the data approval process for Water Quality Monitoring data is depicted in Figure IV-A.

FIGURE IV-A
Simulation of Data Flow to the CBP Data Base

Field Data and Sample Collection

Samples

Laboratory Analysis/ Identification/ Enumeration

data and collection report

data and analytical report

QA/QC Officer Review

Data Management Coordinator

data errors corrected & resubmitted

data entry data submission

Received at the CBP

data set accepted- verification listings sent

data quality assurance checks verification report

data set not accepted-problem listing sent

Notify CBP Monitoring Coordinator

EPA Tracking Responsibility

EPA Signoff as Acceptable

Data Available to CBP Agencies

Data Available to Public

Data in the CBP data base are generated by an originator. The originator may be an individual, or part of a public or private organization. The originator may be involved in a one-time or ongoing data collection program in any of the waters within the Chesapeake Bay basin.

Data originators are responsible for the overall quality of data submitted to the CBP. That quality is maintained by following proven sampling and laboratory analysis procedures. If the originator is under contract with the EPA CBP directly or through a grant, EPA quality assurance procedures, data submission format, and timeliness conditions are requirements of the funding. These EPA grant conditions are used only as a model in this approval process for all other Chesapeake Bay data not directly funded by EPA.

The following is required grant/contract deliverable language for use by funding agencies in requiring submission of collected data to the CBPCC data base:

> All data collected under this SCOPE OF WORK/GRANT/CONTRACT will be submitted to the CHESAPEAKE BAY PROGRAM COMPUTER CENTER AND/OR [SPECIFIED AGENCY] as a verified, electronic data file WITHIN [SPECIFIED TIME PERIOD]/UPON COMPLETION OF THE CONTRACT/GRANT AND NOT TO EXCEED [SPECIFIC TIME PERIOD]. The data will be submitted in accordance with the format, documentation requirements, data dictionary standards, and procedures described in the most recent version of the Chesapeake Bay Program Data Management Plan. Prior to submission, data must be evaluated using the established Chesapeake Bay Program Computer Center quality assurance range checks available through the Chesapeake Bay Program Computer Center AND [SPECIFIED AGENCY] in accordance with the appropriate Chesapeake Bay Program Data Management Plan.

<u>Notes</u>: Capitalized words are word choices to be made by the agency on an individual basis to fit the type of financial award agreement.

Capitalized words enclosed with brackets are to prompt agencies to include specific references to an individual agency or specific time period.

The originator submits data to the CBP Computer Center (CBPCC) by any of the previously mentioned methods. Data must be submitted in VAX-compatible format. The preferred format is SAS transport file format with all parameters adequately labeled and defined as in the Data Submission Guidelines chapter.

If the data are supplied to the CBPCC in tabular column format, the submitting agency should attempt to translate the data to a SAS data set format meeting the above specifications. When this is not possible, the CBPCC staff will reformat the data.

The next two paragraphs apply to established Water Quality Monitoring Programs only.

Once the data are in SAS data set format, the CBPCC processes the data set against verification programs. The verification programs generate data reports to aid the originator in reviewing the data to correct errors. The error and warning report is particularly important and lists the entries that do not meet warning and/or critical ranges established for each parameter. These ranges must be provided to the CBPCC by each submitting agency and updated as ranges are narrowed for location and season. The verification listing is returned to the data originator within 10 working days of the data submission. In the future, it will be required that originators verify the data with range and character checks before the data is submitted to the CBP, eliminating this step. A SAS PROC MEANS for submitted SAS data sets is now required to verify that no errors came into the data set during transfer.

The originator is then responsible for reviewing the verification listings. If any errors are found, or questions arise, the originator submits corrections to the CBPCC. A time limit of ten working days is set for returning corrections. This submission, verification, and corrections cycle will continue until the data set is error free.

The next step in the data approval process is acceptance of the data and associated documentation by EPA. The step can be a formal signing by the originator and the CBP Monitoring Coordinator if the data are part of an EPA funded program. Sign-off in this case is based on the condition that the data originator agrees to make any necessary corrections that arise within a period of two years following formal acceptance of the data.

CHAPTER V: DATA BASE SUMMARIES

Chesapeake Bay data collection and analysis are performed by a variety of state, federal, university, and private agencies. Ongoing monitoring programs sample established locations throughout the 64,000 square mile Bay watershed including the fresh water tributaries, the mainstem, and the Atlantic Ocean at the mouth of the Chesapeake Bay. Other special studies may occur anywhere in the watershed and these are also included in the Chesapeake Bay data bases.

This chapter addresses issues relevant to five major types of data at the Chesapeake Bay Program Computer Center: Water Quality, Living Resource, Sediment, Historical, and Toxics data. Of the five, only Water Quality and Toxics data have been fitted to a consistent, uniform data structure throughout the data base. Efforts are underway at the CBPCC to standardize the remaining data structures. Due to the variety of data sources and types, the large volume of data being collected, and the overlap of one data type with another (for example, toxics in fish tissue) standardization and data integration is expected to be an ongoing process.

A. WATER QUALITY DATA BASE

The Chesapeake Bay Program water quality data base is a compilation of data from Chesapeake Bay Agreement monitoring programs since 1984. It includes mainstem, tributary, and fall line monitoring data.

Water quality data are usually the reference to which all other types of aquatic data are compared. Extensive efforts have therefore been made to standardize and quality assure the water quality monitoring data base. Procedures are in place from data collection to data storage and retrieval to make data availability as smooth and timely a process as possible. Analysis of these procedures for improvement is an ongoing process.

"Known quality" is the goal for all data placed in the water quality data base and to that end a variety of software tools have been, and are being, applied to the data base. A careful accounting of changes in methods and detection limits over time has been made for all parameters. Water quality and nutrient data collected before 1984 are described in Section D, below.

Sources of Data:

Alliance for the Chesapeake Bay
D.C. Department of Consumer and Regulatory Affairs
Maryland Department of Health & Mental Hygiene Laboratory
Maryland Department of the Environment
Univ. of Maryland Chesapeake Biological Laboratory
Metropolitan Washington Council of Governments
Occoquan Watershed Monitoring Laboratory
Old Dominion University
Pennsylvania Department of Environmental Resources
Susquehanna River Basin Commission
U.S. EPA Central Regional Laboratory
U.S. Geological Survey
Virginia Division of Consolidated Laboratory Services
Virginia Institute of Marine Sciences
Virginia State Water Control Board

B. LIVING RESOURCE DATA BASE

Living resource monitoring attempts to track the abundance and distribution of living resources and the quality of their habitat over time so that correlations and relationships with water quality may be examined. Management of living resource populations and governance of the overall Bay restoration effort require monitoring of living resources.

The living resource data base contains over 100 data sets that detail finfish and shellfish abundance, juvenile indices for selected species, submerged aquatic vegetation (SAV) species and extent, commercial catch landings, habitat characterization, and benthic community surveys, etc. The compendium of data sets currently in the living resource data base may be obtained via CHESSEE. A list of data sets scheduled for acquisition may be obtained by contacting the CBPO.

The data base is maintained in SAS and geographic information system (GIS) formats. Despite the uniqueness and commonality of living resources data, there is still a variability of data formats and methodologies among data sets. Data retrieval, at this time, is accomplished on a data set by data set basis due to this variability. Efforts are underway to integrate these data sets and thereby improve data availability.

Each SAS data set is fully documented in CHESSEE to enable appropriate retrieval and analysis. The documentation (for these and all CHESSEE data sets) includes: an abstract; data submitter/data contact; parameter list; parameter ranges; related data sets; and, results, if any, of quality assurance checks. Refer to Appendix D for an annotated description of all data set summary documentation fields. The data user is here reminded that reasonable quality assurance checks have been applied to every CHESSEE data set (see Chapter II) but it is the data user's responsibility, ultimately, for use of and conclusions from the data.

Sources of Data:
Maryland Department of Natural Resources
Maryland Geological Survey
National Marine Fisheries Commission
National Oceanic and Atmospheric Administration
Univ. of Maryland Center for Environmental & Estuarine Studies
Univ. of Maryland Marine Advisory Program
U.S. Fish and Wildlife Service
Virginia Institute of Marine Sciences
Virginia Marine Resources Commission

C. SEDIMENT DATA BASE

Many organizations have undertaken sediment data collection programs in the Bay. Data collection efforts cover a wide range of subjects, including measuring sediment flux, sediment-oxygen demand, sediment nutrient regeneration, determining sedimentation rates, and characterizing toxics in sediments. Non-CBP funded sediment data collection programs are asked to follow the policies and procedures of this plan as closely as possible.

Sources of Data:
Academy of Natural Sciences of Philadelphia
Virginia Water Control Board
D.C. Department of Consumer and Regulatory Affairs
Johns Hopkins University
National Oceanic and Atmospheric Administration
Old Dominion University
Maryland Department of the Environment
Maryland Department of Natural Resources
University of Maryland
Virginia Institute of Marine Sciences

D. HISTORICAL CHESAPEAKE BAY DATA

The Chesapeake Bay Program (CBP) maintains and updates environmental data bases containing well over a hundred million data elements. The historical data base (approximately 1/3 of the total) is defined as the data sets which contain data collected during the research phase of the CBP, current water quality, biological, and sediment monitoring data, and data collected prior to 1984. Historical data does NOT include geographic information system (GIS) data in digitized form.

Historical data may be grouped into eight categories. The living resource data base is discussed in section B, above, the sediment data base in section C, above, and the toxics data base in section E, below. The other categories are: physical; culture; discharge (point and non-point source), flow, and nutrient (current programs discussed in Section A, above). Each of these is discussed below.

1. Physical Data Base

The physical data base contains climate, tide, and water-current data collected from approximately 1950 to 1987. The climate data includes wind patterns, rainfall, air temperatures, solar radiation, and daily weather summaries. Hourly tidal height data for 16 stations in the Bay is included, usually for the complete period of record at a given station. Water-current measurements were collected during special studies in 1980 and 1981-1983.

Sources of Data:

National Oceanic and Atmospheric Administration
National Weather Service
National Ocean Service
National Climatic Data Center
National Oceanographic Data Center

2. Culture Data Base

The culture data base includes population statistics and land use/land cover data for the Chesapeake Bay watershed. The data is identified by county.

Sources of Data:

Delaware Office of Management, Budget, and Planning
Maryland Department of State Planning

New York Department of Environmental Conservation
Pennsylvania Department of Environmental Resources
U.S. Bureau of the Census
U.S. Forest Service
U.S. Department of Commerce
Virginia Department of Planning and Budget
West Virginia Department of Economic and Community Development

3. Discharge Data Base

The discharge data base contains estimates of the amount of nutrients and toxic contaminants entering Chesapeake Bay waters from both point and non-point sources. A Point Source Atlas of the Bay watershed for baseline year 1985 has been compiled for municipal and industrial sources.

Sources of Data:

Northern Virginia Planning District Commission
Maryland Department of Health and Mental Hygiene
Maryland Department of the Environment
Pennsylvania Department of Environmental Resources
U.S. Environmental Protection Agency
Virginia State Water Control Board

4. Flow Data Base

The flow data base contains daily metered measurements of the flow of water from the Chesapeake Bay tributaries into the Bay. The stations selected for inclusion into the CBP data base are intended to measure fresh water flow at the tributary fall line.

Source of Data:

U.S. Geological Survey

5. Nutrients Data Base

The nutrients data base contains nutrient and water quality data collected by CBP and non-CBP researchers who conducted important nutrient surveys in the past. These data cover the entire Chesapeake Bay and tidal tributaries during the period 1907 - 1990. A corollary data base, Segments, contains the same data as the Nutrients data base but aggregated by CBP segment instead of study/researcher. This data base has not been as stringently quality assured as the Water Quality data base (see Section A).

Sources of Data:

American University, Department of Biology
Johns Hopkins University, Chesapeake Bay Institute
Maryland Department of Health and Mental Hygiene
Univ. of Maryland Natural Resources Institute
Univ. of Maryland Center for Environmental & Estuarine Studies
U.S. Department of the Interior
U.S. EPA, Region III, Central Regional Laboratory
U.S. Geological Survey
Virginia Institute of Marine Sciences

E. TOXICS DATA BASE

The Chesapeake Bay Program Toxics Data Base project was undertaken to provide scientists, the regulatory community, and policy makers with a comprehensive data base containing ambient, loading, physical/chemical property, toxicity, and other data regarding toxic substances in the Bay Watershed. The data base will be comprised of data taken from the studies conducted by the various participants in the Chesapeake Bay Program. This collection of data, from diverse sources and different time periods, has been organized into a standardized set of related tables. The structure of these tables has been shaped by both the content of the expected output products and the format of the input data provided by the collecting organizations. This is a Structured Query Language (SQL) data base created using Statistical Analysis System (SAS) software.

One data base table consists of the concentration values for ambient measurements, and the actual or estimated release/loading/-application values for both point and non-point sources, along with date/time/sample identification information. Each value in this table also has pointers to associated details stored in the other data base tables which cover source documentation, chemical and location information, and species information as appropriate. This storage structure allows the data from all studies to be mixed together without losing the identity of individual observations.

Complete summary documentation on each of the individual contributing datasets is stored in the CHESSEE portion of the CBP data base. The Chesapeake Bay Program Computer Center is not responsible for inaccurate data which may exist in data sets or data base tables. Reasonable care has been taken to correct or delete inaccurate data. The quality assurance section of a dataset's summary documentation will contain details identifying problematic data, if any.

quantitative results may be obtained with a specified degree of confidence. Confidence in the apparent analyte concentration increases as the analyte signal increases above the LOD. Ten times the standard deviation is recommended for the LOD, corresponding to an uncertainty of ±30% in the measured value at the 99% confidence level. LOQ is more frequently used for organic compounds.

6. Undocumented Detection Limit (UDL)

In many historical data sets, the detection limit has not been identified, such as the MDL or LOQ, nor has the means with which the detection limit was calculated. The user of the data is left without knowing what factors (e.g., sample preparation, instrumentation, methodology, matrix) were included in the detection limit value or what level of confidence is associated with the detection limit value. For these cases, the responsibility of how the data are used is left to the requestor of the data and they are identified as "Unknown" in the database.

7. Example of Detection Limit Calculation

The following detection limit calculations are based on measurements from seven appropriate samples, where the $t_{.99}$ = 3.143 for n-1 = 6 degrees of freedom. If more samples are used to determine the detection limits, then the student's t value will change. The standard deviation (S.D.) is given for each example.

IDL = 3.143 X STANDARD DEVIATION of replicate injections

Example: 100 ppb pentachlorophenol standard
If: S.D. = 5 ppb
Then: IDL = 3 X 5 = 15 ppb

MDL = 3.143 X STANDARD DEVIATION of replicate analyses (extraction and injection)

Example: 100 ppb pentachlorophenol spiked in sample producing average measured concentration of 50 ppb (not all analyte is recovered or 77 measured)
If: S.D. = 18 ppb
Then: IDL = 3 X 18 = 57 ppb

SQL = **MDL** corrected for sample parameters

Example: 100 ppb pentachlorophenol producing MDL of 57 ppb
If: Dilution factor = 10 (sample is diluted due to matrix interference or high concentrations of other analytes)
Then: SQL = 10 X 57 = 570 ppb

PLEASE NOTE THE NEW ITEM 00 1991 REEVALUATION. PLEASE PUT ANYTHING THAT HAS TO DO WITH ANALYSIS, GRAPHICS, TECHNICAL WRITING ETC FOR ANY OF THE 91 REEVALUATION STUFF IN THIS CATEGORY. ALSO, CHARGE THE HOURS TO 1991 ON THE ACTIVITY SHEET.

PLEASE NOTE THE NEW ITEMS 0. TECHNOLOGY TRANSFER. PUT ANYTHING UNDER HERE THAT INVOLVES TECHNOLOGY TRANSFER WITH ANYONE ELSE... OTHER EPA SITES, OTHER CSC SITES, ANYONE ELSE IN THE UNIVERSE, ETC....

!!
REMEMBER to use the request number format: (Request #XXX, X hrs) or (x hrs).

WEEKLY REPORT FOR WEEK ENDING:

0. TECHNOLOGY TRANSFER:

00. 1991 REEVALUATION:

1. COMPUTER CENTER HARDWARE, FACILITIES AND SYSTEM MANAGEMENT:

2. USER SUPPORT AND DATA REQUESTS:

3. ROUTINE MONITORING DATA PROCESSING:

4. MONITORING DATA ANALYSIS:

5. MONITORING PROGRAM SUPPORT:

6. LIVING RESOURCE DATA PROCESSING:

7. LIVING RESOURCE DATA ANALYSIS:

8. LIVING RESOURCE PROGRAM SUPPORT:

9. TOXICS DATA PROCESSING:

10. TOXICS DATA ANALYSIS:

11. TOXICS PROGRAM SUPPORT:

12. NPS MODELING SUPPORT AND TRACKING DATA ANALYSIS:

13. NPS GIS SUPPORT:

14. COEEP

15. THE THREE-DIMENSIONAL TIME VARIABLE MODEL DEVELOPMENT (3-D):

16. THE HYDROLOGICAL SIMULATION PROGRAM-FORTRAN (HSPF) MODEL DEVELOPMENT:

17. THE POINT SOURCE PROGRAM:

18. DATA BASE DEVELOPMENT:

19. TECHNICAL WRITING:

20. BAY BAROMETER:

21. CITIZEN MONITORING:

22. GIS DEVELOPMENT:

23. GIS ANALYSIS:

24. ITEMS OF INTEREST WERE PERFORMED:

WEEKLY REPORT FOR WEEK ENDING: September 27, 1991

19. TECHNICAL WRITING:

SusanP met with Maggie, KimB, and Lacy to discuss the progress and development of the 1991 Phosphorus Trends Report. She also worked on developing and editing text and graphics for the report, meeting with JohnP several times to develop data sets and meeting with Peter to discuss changes to the Appendices and graphics. (Request # , 39 hrs)

WEEKLY REPORT FOR WEEK ENDING: September 27, 1991

0. TECHNOLOGY TRANSFER:

Scott worked with Jim Haller of the Office of the Inspector General to transfer large data files from 8 millimeter tape to 9-track tape. (4 hrs)

1. COMPUTER CENTER HARDWARE, FACILITIES AND SYSTEM MANAGEMENT:

Scott performed system management and hardware and software troubleshooting for the VAX and Macintosh computers. He delegated PC tasks to Rodney. He controlled the priorities of VAX runs for the retreat. (23 hrs)

Scott began phasing out the 9-track backup tapes. At this point the 8 millimeter tapes are being used for nightly and full backups and the 9-track tapes are used for weekly backups. Full backups are still being performed with 9-track tapes as backup to the 8 millimeter tapes. (8 hrs)

Scott worked on installing the Vaccelerator board in the VAX. (1 hr)

Scott worked with BrianF on the installation of the Sun workstation. (4 hrs)

Rich Kelley

PLEASE NOTE THE NEW ITEM 6, 1991 REEVALUATION. PLEASE PUT ANYTHING THAT HAS TO DO WITH ANALYSIS, GRAPHICS, TECHNICAL WRITING ETC FOR ANY OF THE 91 REEVALUATION STUFF IN THIS CATEGORY. ALSO, CHARGE THE HOURS TO 1991 ON THE ACTIVITY SHEET.

PLEASE NOTE THE NEW ITEMS 0. TECHNOLOGY TRANSFER AND 00. 1991 REEVALUATION. PUT ANYTHING UNDER HERE THAT INVOLVES TECHNOLOGY TRANSFER WITH ANYONE ELSE... OTHER EPA SITES, OTHER CSC SITES, ANYONE ELSE IN THE UNIVERSE, ETC....

!!
REMEMBER to use the request number format: (Request #XXX, X hrs) or (x hrs).

WEEKLY REPORT FOR WEEK ENDING: September 27, 1991

15. THE THREE-DIMENSIONAL TIME VARIABLE MODEL DEVELOPMENT (3-D):

Rich worked on graphics for the retreat scheduled 30 Sep - 1 Oct. (Request #M052, 20 hours.)

Rich started drafting a response to a letter from the Atmospheric Research and Exposure Laboratory (AREAL) in RTP. The letter requested information about the 3D model. (Request #M055, 7 hrs)

Rich executed DCL and FORTRAN code which processes model data as produced by the Corps of Engineers (COE). He generated seasonal and annual average files for the existing, forest, and 40% reduction in N and P scenarios. (Request #M030, 10 hrs)

Rich spoke with Sharon LeDuc (RTP) about precipitation data which was received for the Chesapeake Bay Watershed from EPA at RTP. He also started the analysis of this data. (Request #M054, .5 hrs)

At Ed Stigall's request, Rich started an analysis of the mass of TP in the interpolated portion of the Bay. A string plot was made showing the time varying mass for three scenarios and for the five years starting in January 1984. The three scenarios were existing conditions, all forest, and 40% reduction in N and P. (Request #M053, 8 hours.)

WEEKLY REPORT FOR WEEK ENDING: September 27, 1991

MPS

JohnP continued work on a systems design document for a PC based data entry program. The data dictionary was updated with revisions recommended by the data analysis workgroup. The software product GENIFER was reviewed for possible application to the project. (Request #I034, 20 hrs)

1991

JohnP create several data files for SusanP. These will be included in the Phosphorous Trend Report. (8 hrs)

JohnP created XY graphs with the average concentrations of Total Phosphorous (TP), Total Dissolved Phosphorous (TDP), Orthophosphate (PO4F), and Particulate Phosphorous (PHOSP) plotted against time. (Request #I034, 8 hrs)

WEEKLY REPORT FOR WEEK ENDING: 27 SEP 1991

19. TECHNICAL WRITING:

MaggieM met with KimB, SusanP, and LacyW to discuss priorities and organize jobs. MaggieM worked on the regression plots and the MD/VA maps for the Phosphorus Report. She then assimilated the complete document and produced the PageMaker final draft for approval. (Request #W018, 27.5 hrs.)

20. BAY BAROMETER:

MaggieM assembled the September Bay Barometer and delivered the copy to ScottM for labeling and mailing. (Request #W023, 2 hrs.)

NAME: maggiem W/E 9/27/91

ACTIVITY	S	S	M	T	W	TH	F	TOTAL
MAN. GEN. MNGT.								
SS SECRETARIAL SUPPORT								
OP. COMPUTER OPERATIONS								
SYS. SYSTEM MANAGEMENT								
USER SUPPORT								
DATAR. DATA REQUESTS								
MONDP. MONITORING DATA PROCESSING								
MDA. MONITORING DATA ANALYSIS								
1991 1991 REEVALUATION SUPPORT								
MPS. MONITORING PROGRAM SUPPORT								
LRDP. LIVING RES. DATA PROCESSING								
LRDA. LIVING RES. DATA ANALYSIS								
LRPS. LIVING RESOURCES PROGRAM SUPPORT								
TOXDP. TOXICS DATA PROCESSING								
TOXDA. TOXICS DATA ANALYSIS								
TOXPS. TOXICS PROGRAM SUPPORT								
ROUND TO NEAREST 1/2 HR.								

ACTIVITY	S	S	M	T	W	TH	F	TOTAL
NPS. NPS MOD. & TRCK.								
NPGIS. NPS GIS SUPPORT								
COPA. COEEP ENH. (PA)								
COEPA. COEEP MTN. (EPA)								
HSPF. HSPF REC. SUPPORT								
3-D. 3-D MOD. SUPPORT								
POINT. GEN. PNT. SRC. SUP.								
DBASE. CPB DATA BASE DEV.								
TW. TECHNICAL WRITING			3	6	6	6	7.5	28.5
BB. BAY BAROMETER			2					2
CITMO. CITZEN MONT.								
POP. POPULAT. DATA								
PA. PUBLIC AC. PRG.								
HOLIDAY								
SICK								
VACATION								
LWOP								
TOTAL			5	6	6	6	7.5	30.5

* INCLUDE ANY EXTRA HOURS WORKED.

NAME: Scott McDiarmid W/E September 27, 1991

ACTIVITY	S	S	M	T	W	TH	F	TOTAL
MAN. GEN. MNGT.								
SS SECRETARIAL SUPPORT								
OP. COMPUTER OPERATIONS								
SYS. SYSTEM MANAGEMENT			8	7	9	8	8	40
USER SUPPORT								
DATAR. DATA REQUESTS								
MONDP. MONITORING DATA PROCESSING								
MDA. MONITORING DATA ANALYSIS								
1991 1991 REEVALUATION SUPPORT								
MPS. MONITORING PROGRAM SUPPORT								
LRDP. LIVING RES. DATA PROCESSING								
LRDA. LIVING RES. DATA ANALYSIS								
LRPS. LIVING RESOURCES PROGRAM SUPPORT								
TOXDP. TOXICS DATA PROCESSING								
TOXDA. TOXICS DATA ANALYSIS								
TOXPS. TOXICS PROGRAM SUPPORT								
ROUND TO NEAREST 1/2 HR.								

ACTIVITY	S	S	M	T	W	TH	F	TOTAL
NPS. NPS MOD. & TRCK.								
NPGIS. NPS GIS SUPPORT								
COPA. COEEP ENH. (PA)								
COEPA. COEEP MTN. (EPA)								
HSPF. HSPF REC. SUPPORT								
3-D. 3-D MOD. SUPPORT								
POINT. GEN. PNT. SRC. SUP.								
DBASE. CPB DATA BASE DEV.								
TW. TECHNICAL WRITING								
BB. BAY BAROMETER								
CITMO. CITZEN MONT.								
POP. POPULAT. DATA								
PA. PUBLIC AC. PRG.								
HOLIDAY								
SICK								
VACATION								
LWOP								
TOTAL			8	7	9	8	8	40
* INCLUDE ANY EXTRA HOURS WORKED.								

WEEKLY REPORT FOR WEEK ENDING: Sept. 27'91
19. TECHNICAL WRITING:

Kimberly proofed, edited, and created graphics for the Total Phosphorus Trends Report. (Request #W018, 21 hrs)

WEEKLY REPORT FOR WEEK ENDING: September 27, 1991

15. THE THREE-DIMENSIONAL TIME VARIABLE MODEL DEVELOPMENT (3-D):

Bob performed extensive modifications to the FORTRAN 3D model processing and mapping program MODMAP for the living resources criteria analysis. These modifications included refinements to the pie chart creation and plotting routine and the subroutine for generating ARC/INFO compatible plot files. (Request #M052, 31.5 hrs)

Bob computed and plotted seasonal mass totals of Total Phosphorous for the three 3D model scenarios of (1) Existing Conditions, (2) 40% Reduction of Total Phosphorous and Total Nitrogen and (3) Forest Conditions. (Request #M053, 3 hrs)

Bob up-loaded to the VAX and reformatted using Word Perfect all 32 rainfall files sent to us from Research Triangle Park (RTP). (Request #M054, 3 hrs)

WEEKLY REPORT FOR WEEK ENDING: 09/27/91

1. COMPUTER CENTER HARDWARE, FACILITIES AND SYSTEM MANAGEMENT:
Brianf performed system backup, restored lost files, install files to system and perform other tape requests.
40 hours.

PLEASE NOTE THE NEW ITEM 00 1991 REEVALUATION. PLEASE PUT ANYTHING THAT HAS TO DO WITH ANALYSIS, GRAPHICS, TECHNICAL WRITING ETC FOR ANY OF THE 91 REEVALUATION STUFF IN THIS CATEGORY. ALSO, CHARGE THE HOURS TO 1991 ON THE ACTIVITY SHEET.

PLEASE NOTE THE NEW ITEMS 0. TECHNOLOGY TRANSFER. PUT ANYTHING UNDER HERE THAT INVOLVES TECHNOLOGY TRANSFER WITH ANYONE ELSE... OTHER EPA SITES, OTHER CSC SITES, ANYONE ELSE IN THE UNIVERSE, ETC....

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
REMEMBER to use the request number format: (Request #XXX, X hrs) or (x hrs).

WEEKLY REPORT FOR WEEK ENDING:

0. TECHNOLOGY TRANSFER:

00. 1991 REEVALUATION:

1. COMPUTER CENTER HARDWARE, FACILITIES AND SYSTEM MANAGEMENT:

2. USER SUPPORT AND DATA REQUESTS:

3. ROUTINE MONITORING DATA PROCESSING:

4. MONITORING DATA ANALYSIS:

5. MONITORING PROGRAM SUPPORT:

6. LIVING RESOURCE DATA PROCESSING:

7. LIVING RESOURCE DATA ANALYSIS:

8. LIVING RESOURCE PROGRAM SUPPORT:

9. TOXICS DATA PROCESSING:

10. TOXICS DATA ANALYSIS:

11. TOXICS PROGRAM SUPPORT:

12. NPS MODELING SUPPORT AND TRACKING DATA ANALYSIS:

13. NPS GIS SUPPORT:

14. COEEP

15. THE THREE-DIMENSIONAL TIME VARIABLE MODEL DEVELOPMENT (3-D):

16. THE HYDROLOGICAL SIMULATION PROGRAM-FORTRAN (HSPF) MODEL DEVELOPMENT:

17. THE POINT SOURCE PROGRAM:

18. DATA BASE DEVELOPMENT:

19. TECHNICAL WRITING:

20. BAY BAROMETER:

21. CITIZEN MONITORING:

22. GIS DEVELOPMENT:

23. GIS ANALYSIS:

24. ITEMS OF INTEREST WERE PERFORMED:

APPENDIX A:

QUALITY ASSURANCE POLICY FOR INCORPORATION OF DATA INTO THE CHESAPEAKE BAY PROGRAM COMPUTER CENTER DATA BASE

APPENDIX A: Quality Assurance Policy for Incorporation of Data into the Chesapeake Bay Program Computer Center Data Base

A. EXECUTIVE SUMMARY

This appendix outlines the quality assurance policy and procedures for incorporation of historical and future data into the Chesapeake Bay Program Computer Center data base. Quality assurance (QA) software will be used to screen incoming data. Computer Center staff will make every effort to correct inaccurate data and, failing that, eliminate it. Anomalous (true) and questionable data will be handled on a case-by-case basis. Changes to the original data and QA failures will be documented in the Summary documentation. In all cases, the original data will be available. Increased levels of effort will be necessary for Computer Center staff to adequately identify and document problematic data.

B. BACKGROUND

Many different types of historical data have been and are being submitted to the Chesapeake Bay Program Computer Center (CBPCC) by institutions and investigators in a variety of formats. Documentation that accompanies these data comes to the CBPCC in various stages of completeness. Using the data, the documentation, and any other relevant resources, the CBPCC staff creates a meaningful set of CHESSEE documentation. CHESSEE documentation includes a Summary file (containing administrative information about the source of the data, methods, an abstract, and links to other data sets), a SAS Contents file, a SAS Means file, and a Station List (containing station latitudes and longitudes).

In the past, historical data sets submitted to the CBPCC were minimally processed and little, if any, range checks were applied to the data (a notable exception was the Chesapeake Bay Institute's water quality and nutrient data, which was extensively checked and cross-checked). Besides obvious keypunch errors, little or no corrections were made to the data unless specifically directed to do so by the data submitter. It has generally been assumed that the organization submitting the data would have performed the required quality assurance checks on the data.

CBPCC staff has taken steps to improve data quality and provide an easy to use and reliable data base. Currently, historical (pre-1984) water quality and nutrient data sets are being reorganized. Variable names and reported measurement units are being standardized as described in the Data Management Plans for Living Resources, Sediment, and Water Quality data. Summary documentation files now contain more method descriptions and remarks about problematic data.

C. QA POLICY AND PROCEDURES

1. Policy

It is the policy of the Chesapeake Bay Program Computer Center that all submitted data sets must pass through established quality assurance checks where all problematic data (defined below) are flagged and documented prior to incorporation into the CBPCC data base. In order to provide data in its most accurate and complete (with respect to the original version) form, the CBPCC staff will employ algorithms that identify problematic data and make all reasonable attempts to correct and/or document the occurrences. Bona fide bad data, in the form of documented analytical problems/ accidents, etc., will be eliminated. Questionable and anomalous data are kept on the basis that retaining significant information is of utmost importance. Summary documentation will be attached to each file delineating all such cases of questionable and anomalous data to inform and aid the user in making the most qualified decisions on the validity of certain data. The original file is maintained and available if needed.

2. Procedures

In order to identify the three types of problematic data, all data will be run through range checks (ranges are provided by the submitter), dependency checks (with other related data, e.g., NO23=NO2+NO3), and statistical measures. Data identified as problematic via these methods are treated on a case-by-case basis for correction and/or documentation.

Inaccurate data may be corrected with confidence on the advice of the source agency/PI, the information in the accompanying documentation, or the experience of the data set processor in correcting non-standard units, etc. Examples of inaccurate data include non-standard units, shifted decimals, physical impossibilities (pH of 17, salinity of 400), incorrectly labeled columns, and incorrect numbers submitted by the PI that fall into the range checks, etc., thereby eluding detection. Every attempt shall be made to correct inaccurate data. Corrections made by the data set processor will be documented in the summary file for the data base. The original file is maintained.

Data that are anomalous or questionable are indicated as such in the summary file for the data base. This gives the user the opportunity to analyze data in context, a more appropriate way to establish validity than simply viewing single values. The SAS program that converts the original submitted data file into an on-line data base is also maintained in order to document all reformatting and changes made to the original data in the process.

D. PROBLEMATIC DATA: DEFINITION

For the purposes of this document, problematic data are defined as those data which show a divergence, either an error or a true occurrence, from the typical contents of the data set. Because this divergence can be the result of a true or false condition in the data set, three categories of problematic data can be described:

1. Inaccuracies

These data are obviously false. Examples of inaccurate data would include a salinity recording (ppt) of 322.0, water temperature (deg. C) of 209.0, and BOD levels noted by the principal investigator to be the result of improper lab analysis.

2. Anomalies

Anomalies are true data which depart from the "typical" and therefore fall outside acceptable limits of defined range checks. In some cases, the anomaly may be understood in combination with data recorded in another data set. Examples of anomalous data are an extremely high measurement of algae at a particular station and date (the result of a sewage spill in the area) or an atypical secchi measurement due to flood or heavy rains.

3. Questionable data

These data appear to be inaccurate data in the context of the data set, but could just as well be true because the inaccuracy cannot be verified. This grey area between inaccurate and anomalous data is caused by time constraints, economical constraints, lack of documentation and/or contacts, or other conditions which make it impossible to determine the true or false nature of the data.

E. THE CURRENT PROBLEM

Problems still exist within the CBP data base, including data submitted with inadequate documentation and questionable data values. At present, problematic data are sometimes made available to users without notification of questionable or inaccurate values.

In addition, data within the data base may also be duplicated because of multiple submissions to CBPCC.

Ideally, effective data management action would be to remove, correct, and/or flag data which are inaccurate or false, while retaining any true fluctuations or variances in the data. However, true fluctuations and variances are often due to factors which are beyond the scope of the data set, and could be incorrectly flagged or altered as errors. In order to minimize the risk of this occurring, new data sets will be processed according to the above policy.

F. BUDGET

The cost to run QA checks on all incoming data will be substantially higher than previous data base efforts. Currently, limited QA checks supplied by the data submitter are run on the federally funded water quality monitoring data (mainly range checks). QA checks on Living Resources data beyond those in the Living Resources Data Management Plan have yet to be developed.

The data that is already in the historical data base will be very costly to convert to the proposed standard. Currently, there is no effort budgeted for data base development during FY92. Data that requires QA checks will need to have associated funding by the subcommittee requesting the work.

APPENDIX B:

QUALITY ASSURANCE DEFINITIONS

APPENDIX B:

QUALITY ASSURANCE DEFINITIONS

The following definitions are included here to assist the reader in organizing quality assurance terminology and issues. They are current working definitions at the Chesapeake Bay Program Office.

A. BLANK DEFINITIONS

The purpose is to standardize working definitions of blanks generated in the field and laboratory, and to have equivalent terms used in the Toxics database. These terms should also be reflected in any working Quality Assurance document (e.g., Quality Assurance Project Plans or Sampling and Analysis Plans) for a particular research project to ensure consistency.

The primary purpose of blanks is to trace routes of contamination. A number of blank types are routinely used in the field and laboratory. Each type traces a different source of contamination.

1. Field Blanks

Field blanks are generated at the time of sampling. These blanks provide an evaluation of contamination from the sampling process through the analytical scheme. Field blanks include Field Matrix Blanks, Sampling Equipment Blanks, and Trip Blanks.

a. Field Matrix Blanks

Field matrix blanks are composed of analyte free materials which resemble the matrix to be sampled. Field matrix blanks are generated at the time of sampling, are transported to the field, and are exposed to the same conditions as field samples. The cap is removed, and the blank preserved as the sample and recapped. The field matrix blank is a tool for assessing contamination from all field and laboratory sources, including the total sampling effort, sample preparation, and measurement process.

b. Sampling Equipment Blanks

Sampling equipment blanks are samples generated from the sampling equipment in use. Analyte free water is passed over equipment before or after sampling. Equipment includes implements used to remove samples and filtering apparatus. These blanks provide information on contamination as a result of carryover in equipment.

c. Trip Blanks

Trip blanks allow the evaluation of contamination generated from sample containers, sample storage, and changes, both chemical and container, occurring during the shipping process. Trip blanks are not exposed to field conditions. These are typically associated with the analysis of volatile organic compounds.

2. Laboratory Blanks

Laboratory blanks identify contamination encountered only during the analytical process. These blanks provide information on potential sample contamination encountered at various points during analysis.

a. Method Blanks

Method blanks encompass contamination encountered during the sample preparation (digestion, extraction, or leaching) and measurement process. Analyte free water is handled in the same manner as an environmental sample. According to the method, they are prepared at the beginning of the process and carried through all steps of sample preparation and analysis. This blank contains the most analytical sources of error.

b. Reagent Blanks

Reagent blanks are prepared using method specific reagents, filter media, or other materials used for sample preparation. These blanks are not digested or extracted like a sample, but represent only reagents used in the sample preparation process. They are indicative of contaminants present in the reagents or analytical system.

c. Holding Blanks

Holding blanks are usually composed of laboratory pure water and stored with a sample set in the same kind of sample container. These blanks are analyzed at the end of sample storage. Analytical data provides information on cross contamination occurring in sample storage. Generally, holding blanks are analyzed only for volatile organic compounds.

d. Instrument Blanks

Instrument blanks measure the presence or absence of instrument artifacts. These blanks, without reagents, are introduced into the instrument as it cycles through the measurement sequence to evaluate contamination from the measurement system only. These are usually associated with chromatographic analyses, spectral analyses, or mass spectrometry.

e. Calibration Blanks

Calibration blanks are prepared from the same reagents matrix used in standard preparation. These blanks are used to zero the instrument's response to background levels of analytes in the reagent matrix. These are periodically measured during the analysis to monitor any baseline shifts.

B. CHEMICAL SPECIES/PHYSICAL FRACTION DEFINITIONS

To eliminate any confusion associated with the reason for analysis, definitions are provided for the different types of fractions that the sample can be physically divided into and the toxically important species frequently analyzed.

The form that each sample was analyzed for must be indicated with the sample concentration, either on the basis of physical fraction or on the basis of the chemical form or species. Only the valid codes listed below will be accepted for entry of chemical species into the Chesapeake Bay Toxics Database based on the definitions provided. The "CHEMSPEC" file will accept an 8-digit code to define the chemical species associated with a sample concentration value.

1. Dissolved

The fraction of the sample that is in solution rather than absorbed to the particles. Passes through 0.45u filter. The sample is filtered and then the filtrate is digested and analyzed.

2. Particulate

The fraction of the sample which is out of solution, in particles, filters (0.45u) out. The sample is filtered and then the filter is digested and analyzed.

3. Total

Following a rigorous digestion, the concentration present in the entire sample or the sum of the dissolved and particulate fractions, representing the total analyte present in the sample.

4. Total Recoverable

After a mild digestion procedure, the concentration present.

5. Acid-Soluble

The fraction of the sample in solution and loosely bound to the particles. The sample is acidified, filtered, then digested and analyzed.

C. INSTRUMENT TYPES

The objective of this field, "INSTRMT," in the Toxics database is to provide the user of the data with a general idea of the type of chemical analysis performed on the environmental samples. This will be accomplished by reporting the instrument type along with the associated data set (results). The user of the data will then know quickly if the data are generally field screening-type data, laboratory-type data, or, for instance, data with second column confirmation. In addition, by knowing the type of instrument employed, the data user will have an indication of what physical form or chemical species were measured in the sample and at what range of concentration the analyses were performed. Detailed information associated with each data set--e.g., the method, sample preparation, and QC information (field and lab)--is located in other fields or is described in the data summary files.

Chemical analyses are considered to include any type of test, whether performed in a fixed laboratory facility or hand-carried to the field sampling location. To assist individuals, the following general terms have been defined to distinguish between different types of instrumentation based on where and how the instrument is operated.

o **Portable**

Instrument that an individual can carry with their hands or on their back and conduct the analyses.

o **Fieldable**

Instrument that requires a van to transport the equipment. Usually the instrument needs a portable generator.

o **Mobile**

These instruments are set-up in a mobile laboratory facility, with specific operational criteria (e.g., power, atmosphere, sample preparation).

Only the following codes will be accepted for entry into the Chesapeake Bay Toxics Database of instrument types utilized in chemical analyses. The "INSTRMT" file will accept an 8-digit code to define the instrument type associated with a data set. The laboratory performing the analyses must specify the instrument utilized according to the codes for the instrument groupings listed below. Only valid codes will be accepted. Instruments which do not fall into one of the categories must have a code designated. This can be achieved by calling the CBPCC at (800) 523-2281. Either the staff will assist you in identifying the appropriate code from the list or a new code will be established for the instrument if necessary.

CODES	INSTRUMENTATION DESCRIPTION
AACHE	Atomic Absorption, Chelation Extraction Technique
AACV	Atomic Absorption, Cold Vapor Technique
AAFLAM	Atomic Absorption, Direct Aspiration Technique
AAGF	Atomic Absorption, Graphite Furnace Technique
AAHYD	Atomic Absorption, Gaseous Hydride Technique
AUTOA	Auto-Analyzer (e.g., Technicon)
COLOR	Ultraviolet/Visible Spectrophotometer
FLUOR	Fluorometer
GC	Gas Chromatograph
GC/PID	Gas Chromatograph with Photoionization Detection
GC/HECD	Gas Chromatograph with Hall Electrodyte Conduction
GC/ECD	Gas Chromatograph with Electron Capture Detection
GC/FID	Gas Chromatograph with Flame Ionization Detection
GC/EC	Gas Chromatograph with Electron Capture Detection
GC/MS	Gas Chromatograph with Mass Spectrometer
GRAV	Gravimetric
HPLC/EC	High Performance Liquid Chromatograph/Electrochemical
HPLC/FL	High Performance Liquid Chromatograph/Fluorescence
HPLC/UV	High Performance Liquid Chromatograph/Ultraviolet
IC	Ion Chromatograph
ICP	Inductively Coupled Plasma Atomic Emission Spec.
ICP/MS	Inductively Coupled Plasma/Mass Spectrophotometer
IR	Infrared Detection
ISE	Ion Selective Electrode
KITS	Field Kits (e.g., Hach or CHEMetrics' or PCB commercial field kits)
PHMETER	PH Meter
POA/FID	Portable Organic Analyzer, Flame Ionization (e.g., Foxboro OVA)
POA/PID	Portable Organic Analyzer, Photoionization (e.g., HNU, Photovac)
SCINT	Scintillation Counter
TEM	Transmission Electron Microscope
TITRA	Titration
XRF/L	X-Ray Fluorescence, Laboratory Scale Model
XRF/F	X-Ray Fluorescence, Field Portable or Transportable
WET	Analysis by Classical Wet Method

D. EXAMPLES OF METHOD REFERENCES

To provide a means of identifying the type of sample preparation, type of analysis conducted, and compound or element measured, methods used in the analyses are to be reported with the data set.

1. Government Agencies

For federal agencies, the code should cite the reference document followed by the method number.

CODES	METHOD TITLE
EPA SW846 METHOD 8020	Aromatic Volatile Organics
EPA SW846 METHOD 7131	Cadmium (Atomic Absorption, Furnace Tech.)
EPA CLPSOW METHOD INO	Statement of Work for Inorganic Analysis
EPA CLPSOW METHOD QTM	Statement of Work, Quick Turnaround Method
EPA MCAWW METHOD 245.5	Mercury in Sediment (Manual Cold Vapor Tech)
EPA AIR METHOD TO-14	The Determination of Volatile Organic Compounds in Ambient Air Using Summa Passivated Canister Sampling and Gas Chromatographic Analysis
EPA ITD METHOD 1625	Semivolatile Organic Compounds by Isotope Dilution GCMS
EPA SMEWW METHOD 3120B	Inductively Coupled Plasma Method
EPA DW METHOD 508	Determination of Chlorinated Pesti-cides in Water by Gas Chromatography with an Electron Capture Detector

2. Literature Reference

For these sources of information, the method cited should be documented in the following fashion:

Journal, volume, number, year, first page number (e.g., Analytical Chemistry, Volume 55, Number 7, June 1983, page 712A). This citation would be coded as follows: An Chem, 55,7,83,712A.

References

CLPSOW: Contract Laboratory Program Statement of Work

MCAWW: Methods for Chemical Analyses of Water and Wastes (EPA 200 and 300 Methods). Environmental Monitoring Services Laboratory. EPA/600/4-79/020.

MOCAMIW: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA 600 Methods) as presented in 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants under the Clean Water Act.

SW846: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Office of Solid Waste.

EPA AIR: Sampling and Analysis of Toxic Organics in the Atmosphere. ASTM Symposium. American Society for Testing and Materials. Philadelphia, PA.

EPA DW: Methods for the Determination of Organic Compounds in Drinking Water (EPA 500 Methods). Environmental Monitoring Services Laboratory. Las Vegas, NV. EPA/600/4-88/039.

ITD: Industrial Technology Division

SMEWW: Standard Methods For the Evaluation of Waste and Wastewater, American Public Health Association, Washington, DC.

AOAC: Official Methods of Analysis of the Association of Official Analytical Chemist. Association of Official Analytical Chemists. Washington, DC.

E. DETECTION LIMIT TYPES

The term detection limit is frequently used without qualification. However, there are several methods for calculating detection limits. Detection limits can be calculated for the instrument used for measurement, for the analytical method, or as a sample-specific quantitation limit. The term detection limit should be considered generic unless the specific type is defined, which occurs many times with historical data. The practice of using the symbols "T" or "tr" for amounts and the term "trace" for similar statements of relative concentration should be avoided because of the relative nature of such terminology, the confusion surrounding it, and the danger of its misuse.

The following definitions are intended to provide producers of the data and users of the data with an understanding of the various methods for calculating detection limits, the terms used to describe specific detection limits, and the limitations associated with identification and quantitation of chemicals of potential concern at concentrations near specified detection limits. Understanding the different terms used to describe detection limits helps avoid reporting problems resulting from the confusion during their use.

1. Limit of Detection (LOD)

The limit of detection (LOD) is defined as the lowest concentration level that can be determined to be statistically different from a blank. Additional concepts related to the LOD include the method detection limit (MDL), the instrument detection limit (IDL), and the sample quantitation limit (SQL). The recommended value for the LOD is three times the standard deviation of these measurements. The MDL, the IDL, and the SQL are various types of LODs, based on three times the standard deviation, but include different sources of variation (instrument, method, or sample-specific). Although they have the same level of variation, the three types of detection limits are not the same, but can become the same as various factors drop out of the calculation. Detailed definitions for the detection limits are provided below.

2. Instrument Detection Limit (IDL)

The instrument detection limit (IDL) includes only the instrument portion of detection, not sample preparation, concentration/dilution factors, or method-specific parameters. The IDL is operationally defined as three times the standard deviation of seven replicate analyses at the lowest concentration level that is statistically different from a blank. This represents 99% confidence that the signal identified is the result of the presence of the analyte, not random noise. Although not the same as the method detection limit, the IDL is often the quantity reported for inorganic analyses.

3. Method Detection Limit (MDL)

The method detection limit (MDL) is the minimum amount of an analyte that can be identified by using a specific method and sample matrix type. The MDL assessment is based upon the performance of the entire measurement system. MDLs are operationally determined as three times the standard deviation of seven replicate spiked samples run according to the complete method and reported with 99% confidence. Since this estimate includes sample preparation effects, the procedure is more accurate than reported IDLs and is typically greater than the IDL. However, the evaluation is routinely completed on reagent water, potentially not addressing significant matrix interferences that decrease analyte recoveries. This estimate of detection limit may be biased low because recovery is frequently less than 100%. The MDL can be calculated from the IDL by use of sample size, concentration factors, and assuming 100% analyte recovery.

4. Sample Quantitation Limit (SQL)

An individual sample may require adjustments in preparation or analyses, such as dilution or use of a smaller sample aliquot for analysis due to matrix effects or the high concentration of some analytes. The reported sample quantitation limit (SQL) is adjusted to reflect the sample-specific action. Therefore, SQLs will be the detection limit of interest for most samples.

In fact, for the same chemical, the SQL in one sample maybe higher than, lower than, or equal to SQL values for other samples. In addition, preparation or analytical adjustments, such as dilution of the sample for quantitation of an extremely high level of one chemical, could result in non-detects for other chemicals included in the analysis even though these chemicals may have been present in very low concentrations in the undiluted sample. The reported SQLs will take into account sample characteristics, sample preparation, and analytical adjustments, so the SQLs are the most relevant detection limit for evaluating non-detected chemicals.

5. Limit of Quantitation (LOQ)

The limit of quantitation (LOQ) is defined as the level above which quantitative results may be obtained with a specified degree of confidence. Confidence in the apparent analyte concentration increases as the analyte signal increases above the LOD. Ten times the standard deviation is recommended for the LOD, corresponding to an uncertainty of ±30% in the measured value at the 99% confidence level. LOQ is more frequently used for organic compounds.

6. Undocumented Detection Limit (UDL)

In many historical data sets, the detection limit has not been identified, such as the MDL or LOQ, nor has the means with which the detection limit was calculated. The user of the data is left without knowing what factors (e.g., sample preparation, instrumentation, methodology, matrix) were included in the detection limit value or what level of confidence is associated with the detection limit value. For these cases, the responsibility of how the data are used is left to the requestor of the data and they are identified as "Unknown" in the database.

7. Example of Detection Limit Calculation

The following detection limit calculations are based on measurements from seven appropriate samples, where the $t_{.99}$ = 3.143 for n-1 = 6 degrees of freedom. If more samples are used to determine the detection limits, then the student's t value will change. The standard deviation (S.D.) is given for each example.

IDL = 3.143 X STANDARD DEVIATION of replicate injections

Example: 100 ppb pentachlorophenol standard
If: S.D. = 5 ppb
Then: IDL = 3 X 5 = 15 ppb

MDL = 3.143 X STANDARD DEVIATION of replicate analyses (extraction and injection)

Example: 100 ppb pentachlorophenol spiked in sample producing average measured concentration of 50 ppb (not all analyte is recovered or 77 measured)
If: S.D. = 18 ppb
Then: IDL = 3 X 18 = 57 ppb

SQL = **MDL** corrected for sample parameters

Example: 100 ppb pentachlorophenol producing MDL of 57 ppb
If: Dilution factor = 10 (sample is diluted due to matrix interference or high concentrations of other analytes)
Then: SQL = 10 X 57 = 570 ppb

8. Codes for Use in the CBP Toxics Database

Only the following valid codes will be accepted into the Chesapeake Bay Toxics Database for entry of detection limit types as defined above. The "DET_TYPE" file will accept a one-letter code to define the type of detection limit associated with a sample concentration value. If there is difficulty in determining the type of detection limit when submitting data, the individual should first contact the laboratory performing the analyses and ask them to indicate the type based on the CBP definitions and then, if necessary, contact CSC at (800) 523-2281 for assistance.

DETECTION LIMIT TYPE	CODE
Instrument Detection Limit (IDL)	I
Method Detection Limit (MDL)	M
Sample Quantitation Limit (SQL)	S
Limit of Quantitation (LOQ)	Q
Undocumented Detection Limit (UDL)	U

F. METHOD DETECTION LIMIT AND LIMIT OF QUANTIFICATION

The Analytical Methods and Quality Assurance Workgroup (AMQAW) recommends that the Monitoring Subcommittee adopt a baywide working definition of method detection limit (MDL) and limit of quantification (LOQ) for the programs supplying data to the Chesapeake Bay Program database. It is proposed that the MDL be defined as three times the standard deviation of the lowest samples encountered by the subject laboratory for each parameter. The limit of quantification would be defined as ten times the standard deviation of the lowest samples encountered by the subject laboratory for each parameter.

1. Background

The scientific community as a whole has an unresolved wide variety of opinions with respect to the calculation and interpretation of MDLs and LOQs. Each approach has its champion with a vigorous statistical justification for the selection of a specific protocol. Individual organizations can justify different approaches. However, when multiple institutions are supporting a single data base, the interpretation of their low level data and therefore the meaning of their detection limit statements become critical. Without a prevailing or compelling best choice among the definitions or methods of calculation for MDL and LOQ, the AMQAW has selected a feasible approach for those organizations providing data to the CBP data base so that data comparisons will be facilitated.

2. Recommendation

The AMQAW recommends that the Monitoring Subcommittee adopt the working definitions of MDL and LOQ as follows:

a. MDL: Three times the standard deviation of the lowest samples encountered by the subject laboratory for each parameter.

b. LOQ: Ten times the standard deviation of the lowest samples encountered by the subject laboratory for each parameter.

c. MDL and LOQ values are to be determined by the running of seven replicates of said lowest samples.

d. MDLs are to be verified by each laboratory for each parameter at a minimum annual frequency or whenever a change is made in the analytical methodology. More frequent determinations of the MDLs are encouraged.

e. MDLs and their method of calculation are to be reported in the data documentation provided to the Chesapeake Bay Program Computer Center with each data set.

3. Decision

The Monitoring Subcommittee voted to accept the proposed definitions and methods of calculation for the Method Detection Limit and Limit of Quantification for data submitted to the Chesapeake Bay Program data base.

APPENDIX C:

PROJECT INFORMATION FORM

APPENDIX C: PROJECT INFORMATION FORM

```
*****************************************************************
*                                                               *
*                  PROJECT INFORMATION FORM                     *
*                                                               *
*                         June 1989                             *
*                                                               *
*****************************************************************
```

NOTE: THE FORMATS SUPPLIED BELOW CAN BE USED TO PROVIDE THE PROJECT INFORMATION FORM TO THE CBPCC AS A DATA FILE, EITHER ON TAPE OR AS A FILE ON THE VAX 8650 COMPUTER.

To obtain a copy of this document, enter the following in your account: CHESSEE, MANAGEMENT, FORMS, PROJECT, PRINT or COPY.

PROJECT INFORMATION

#GENERAL INFORMATION

>PROJECT TITLE:

>PRINCIPAL INVESTIGATOR:

>FUNDING AGENCY(IES):

>PROJECT COST:

>PROJECT BEGIN DATE:

>PROJECT END DATE:

>EPA PROJECT NUMBER (if applicable):

>EPA PROJECT OFFICER (if applicable):

>EPA QA/QC OFFICER (if applicable):

>ADMINISTRATIVE ORGANIZATION:

>PROJECT MANAGER:

>QA/QC MANAGER:

>DATA MANAGER:

```
>COLLECTING ORGANIZATION(S) AND CONTACT:
  (Indicate research vessels, if known)

>ANALYTICAL LABORATORY(IES) AND CONTACT:

>PROJECT SUMMARY:

>PARAMETER LIST:

#STATION TABLE 1:
* (RIVER KILOMETER is optional; please complete if known)
*
*CBP       USER
*STATION   STATION     LAT           LONG          CORRECTED      RIVER
*NAME      NAME(S)     DD MIN SEC    DD MIN SEC    (from Loran)   KILOM
*--------  --------    ----------    ----------    ------------   -----

#STATION TABLE1:  -  END

#STATION TABLE2:
*
*  CBP
*STATION    GENERAL DESCRIPTION
*--------   -----------------------------------------------------
*
*
#STATION TABLE2:  -  END

#STATION TABLE3 -
* GENERAL DESCRIPTION OF SAMPLING DESIGN AND RATIONALE:
*  (Include types of samples, replication)
*
*
*  STATION SAMPLING SCHEME:
*
*  CBP
*  STATION    LAYER/     SAMPLE NUMBER
*  NAME       DEPTH      OR PROFILE       PARAMETER
*  --------   --------   -------------    ---------
*
*
#STATION TABLE3:  -  END

>ANNUAL SAMPLING SCHEDULE (DATES-MMDDYY):

>HAS A MAP DEPICTING THE LOCATION OF STATIONS BEEN SUBMITTED
```

(YES,NO):
(If yes, indicate date, to whom, or in what document)

>HAS THE LABORATORY CHAIN OF CUSTODY BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

>HAVE FIELD AND LABORATORY DATA SHEET EXAMPLES BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

>HAVE MONITORING SAMPLING DESIGN, COLLECTION AND ANALYTICAL METHODS, AND QA/QC PLAN BEEN SUBMITTED? (YES,NO):
(If yes, indicate date, to whom, or in what document)

#DATA ENTRY AND VERIFICATION PROCEDURES

>ANTICIPATED METHOD OF DATA KEYPUNCHING:

>METHOD OF VERIFICATION OF THE DATA (e.g., double entry, visual, or software verification):

>NAME OF THIS FILE:
(The CBPCC will complete this section)

>CBPCC DIRECTORY ADDRESS AND NAMING CONVENTION OF ASSOCIATED DATA FILES:
(The CBPCC will complete this section)

#END OF PROJECT INFORMATION FILE

```
*****************************************************************
*                                                               *
*                                                               *
*              SAMPLE PROJECT INFORMATION FORM                  *
*                                                               *
*                         June 1989                             *
*                                                               *
*****************************************************************
```

PROJECT INFORMATION

#GENERAL INFORMATION

>PROJECT TITLE: Sample Environmental Project

>PRINCIPAL INVESTIGATOR: Mr. PI

>FUNDING AGENCY: CBP Member Agency

>PROJECT COST: $1,000,000/year

>PROJECT BEGIN DATE: 01/01/90

>PROJECT END DATE: 12/31/90

>EPA PROJECT OFFICER (if applicable):

>EPA QA/QC OFFICER (if applicable):

>ADMINISTRATIVE ORGANIZATION: Sample Organization

>PROJECT MANAGER: Mr. P. Manager

>QA/QC MANAGER: Mr. Q. A. Manager

>DATA MANAGER: Mr. D. Manager

>COLLECTING ORGANIZATION(S) AND CONTACT:
(Indicate research vessels, if known)

Mr. Contact
Sample University
101 Bay Street
Oyster, MD 20555
R.V. Conchita

>ANALYTICAL LABORATORY(IES) AND CONTACT:

Sample Chemists Inc.
102 Measurement Road
Washington, DC 20016

>PROJECT SUMMARY:

Sample Samplers University has two stations, sampled on the first of every month. The stations were picked for their proximity to commercial fisheries.

>PARAMETER LIST:

The following parameters are measured at the Station in one meter increments unless otherwise specified:

Temperature
Conductivity
Dissolved Oxygen
Secchi Depth   ** only reported on Surface record

```
#STATION TABLE1
*
* USER      CBP
*STATION  STATION     LATITUDE      LONGITUDE    CORRECTED
* NAME      NAME      DD MM SS      DD MM SS      ( Y, N )
*-------- --------  ------------  ------------  ----------
*
    1      XX9.9    36 59 48      76 18 20          Y
    4      ZZ8.8    36 59 36      76 00 30          Y

#STATION TABLE1 -  END

#STATION TABLE2
*
*  CBP
*STATION   GENERAL DESCRIPTION
*--------  -------------------
*
  XX9.9     Mouth of the Sample River

  ZZ8.8     Sample River, off of Sample Point

#STATION TABLE2 -  END

#STATION TABLE3 -
*  GENERAL DESCRIPTION OF SAMPLING DESIGN AND RATIONALE:
```

```
*   (Include types of samples, replication)
*
*  CBP
*STATION    DEPTH       FREQUENCY OF        JUSTIFICATION OF THE
*  NAME     (METERS)       SAMPLING         STATION FOR SAMPLING
*--------   --------    ------------        --------------------
  XX9.9       20.0        once/month        Proximity to commercial
                                            fisheries
  ZZ8.8       20.0        once/month        Proximity to commercial
                                            fisheries

#STATION TABLE3 -  END
```

>ANNUAL SAMPLING SCHEDULE (DATES-MMDDYY):

010190
020190
030190
040190
050190
060190
070190
080190
090190
100190
110190
120190

>HAS A MAP DEPICTING THE LOCATION OF STATIONS BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

Not requested, but available.

>HAS THE LABORATORY CHAIN OF CUSTODY BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

Not requested, but approved by EPA QA/QC officer during site visit.

>HAVE FIELD AND LABORATORY DATA SHEET EXAMPLES BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

Not requested, but approved by EPA QA/QC officer during site visit.

>HAVE MONITORING SAMPLING DESIGN, COLLECTION AND ANALYTICAL METHODS, AND QA/QC PLAN BEEN SUBMITTED (YES,NO):
(If yes, indicate date, to whom, or in what document)

Not requested, but approved by EPA QA/QC officer during site visit.

#DATA ENTRY AND VERIFICATION PROCEDURES

>ANTICIPATED METHOD OF DATA KEYPUNCHING:

Contract with Sample Keypunchers Inc.

>METHOD OF VERIFICATION OF THE DATA (e.g., double entry, visual or software verification):

Double entry keypunching. Program that checks for invalid characters in character fields and performs range checks and statistical analyses on numeric fields.

>NAME OF THIS FILE:

(The CBPCC will complete this section.)

>CBPCC DIRECTORY ADDRESS AND NAMING CONVENTION OF ASSOCIATED DATA FILES:

(The CBPCC will complete this section.)

#END OF PROJECT INFORMATION FILE

APPENDIX D:

DATA SET DOCUMENTATION FORM

APPENDIX D: DATA SET DOCUMENTATION FORM

```
*****************************************************************
*                                                               *
*                 DATA SET DOCUMENTATION FORM                   *
*                                                               *
*                          June 1989                            *
*                                                               *
*****************************************************************
```

NOTE: THE FORMATS SUPPLIED BELOW CAN BE USED TO PROVIDE THE DATA SET INFORMATION TO THE CBPCC AS A DATA FILE, EITHER ON TAPE OR AS A FILE ON THE VAX 8650 COMPUTER.

To obtain a computer copy, enter the following: CHESSEE, MANAGEMENT, FORMS, DATASET, PRINT or COPY.

DATA SET INFORMATION

#CHANGES MADE SINCE LAST SUBMISSION

#GENERAL INFORMATION

>PROJECT TITLE:

>DATA MANAGER OR CONTACT PERSON FOR THIS DATA SET:

>NAME OF THIS DATA SET DOCUMENTATION FILE:

>NAME OF THE ASSOCIATED DATA FILE(S):

>DATA SET FORMAT (RAW,SAS,ETC.):

>NAME OF THE DATA SET CHECKLIST FILE(S):
(The CBPCC will complete this section)

>NAME OF THE PROJECT DOCUMENTATION FILE:
(The CBPCC will complete this section)

>CATEGORY CODE:
(The CBPCC will complete this section)

>DATA FILE SUMMARY:

>CRUISE # (if applicable):

>SAMPLING DATES:

```
>NUMBER OF OBSERVATIONS BY PARAMETER, STATION, AND CRUISE
 (if applicable):

>NOTES FROM CRUISE AND LABORATORY LOGS (important deviations from
 sampling or analytical protocols, observations of natural
 phenomena, etc.):

#METHODOLOGY (for each new or parameter, method, or detection
*limit not previously documented):
*
*
* LAB ANALYSIS/FIELD METHOD:
*            EFFECTIVE DATE:
*            METHOD SUMMARY:
*       METHOD MODIFICATION:
*                 REFERENCE:
*            REPORTED UNITS:
*          DETECTION LIMITS:
*                    SOURCE:
*
* TEMPORARY OR PERMANENT NAME CODE IN THE METHODS TABLE BELOW:

#PARAMETER METHODS TABLE:
*
*  USER         CBP      ANALYT  FIELD     DESCRIPTION OF
*PARAMETER  PARAMETER   METHOD  METHOD  METHODS, UNITS, AND
*  NAME        NAME      CODE    CODE    DETECTION LIMITS
*---------  ---------   ------  ------  ------------------
*
#PARAMETER METHODS TABLE:  - END

#SAS PROGRAM TO CHANGE USER DATA TO CBP FORMAT:


#SAS PROGRAM - END
#OUTPUT FROM CBPCC VERIFICATION PROGRAMS
*
*
#END DATA SET INFORMATION
```

```
******************************************************************
*                                                                *
*               SAMPLE DATA SET DOCUMENTATION FORM               *
*                                                                *
*                           June 1989                            *
*                                                                *
******************************************************************
```

DATA SET INFORMATION

#CHANGES MADE SINCE LAST SUBMISSION:

WTEMP UPPER QUALITY CONTROL LIMIT CHANGED FROM 29.0 TO 30.0 DEC C.

#GENERAL INFORMATION

>PROJECT TITLE: Sample Environmental Sampling Project

>DATA MANAGER OR CONTACT PERSON FOR THIS DATA SET: Mr. D. Manager

>NAME OF THIS DATA SET DOCUMENTATION FILE: Sample91.DOC

>NAME OF THE ASSOCIATED DATA FILE(S): Sample91.SSD

>DATA SET FORMAT (RAW,SAS,ETC.): SAS

>NAME OF THE DATA SETS CHECKLIST FILE(S):
(The CBPCC will complete this section)

SYS$MONITOR:[Sample.CHECK]Sample91.CHK

>NAME OF THE PROJECT DOCUMENTATION FILE:
(The CBPCC will complete this section)

SYS$MONITOR:[Sample.PROJDOC]Sample91.DOC

>CATEGORY CODE:
(The CBPCC will complete this section)

>DATA FILE SUMMARY:

>CRUISE # (if applicable):

>SAMPLING DATES (MMDDYY):

010190
020190
030190
040190
050190
060190
070190
080190
090190
100190
110190
120190

>NUMBER OF OBSERVATIONS BY PARAMETER, STATION, AND CRUISE (if applicable):
(note 480 = 12 months * 20 samples per station * 2 stations)

BY PARAMETER

DISSOLVED OXYGEN	480
SALINITY	480
SECCHI	24
TEMPERATURE	480

BY STATION

XX9.9	240
ZZ8.8	240

BY CRUISE

BAY110	40
BAY111	40
BAY112	40
BAY113	40
BAY114	0
BAY115	40
BAY116	0
BAY117	40
BAY118	0
BAY119	40
BAY120	0
BAY121	40
BAY122	0
BAY123	40
BAY124	0
BAY125	40
BAY126	40
BAY127	40

>NOTES FROM CRUISE AND LABORATORY LOGS (important deviations from sampling or analytical protocols, observations of natural phenomena, etc.):

010190	SECCHI MISSING DUE TO ROUGH SEAS
020190	DISSOLVED 02 METER REQUIRED NEW MEMBRANE AFTER 6.0 M SAMPLE
030190	TEMPERATURE AT 4.0 M IS SUSPECT BUT PRESENT IN THE DATA SET
040190	R.V. BACKUP WAS USED (R.V. CONCHITA IN DRY DOCK)
050190	STATIONS LOCATED VISUALLY (LORAN MALFUNCTION)
060190	SAMPLED ONE DAY AFTER LARGE STORM EVENT

#METHODOLOGY (for each new or parameter, method, or detection limit not previously documented):

LAB ANALYSIS/FIELD METHOD:
EFFECTIVE DATE:
METHOD SUMMARY:
METHOD MODIFICATION:
REFERENCE:
REPORTED UNITS:
DETECTION LIMITS:
SOURCE:

* TEMPORARY OR PERMANENT NAME CODE IN THE METHODS TABLE BELOW:
>METHODOLOGY DETECTION LIMITS:
* CBP

* PARAMETER * NAME	LOWER	UPPER	UNITS
DISOXY	0.0	17.0	mg/l
SALIN	0.0	36.0	ppt
SECCHI	0.0	25.0	meters
WTEMP	-30.0	100.0	deg C

*
>METHODOLOGY QUALITY CONTROL LIMITS:
* CBP

* PARAMETER * NAME	LOWER	UPPER	UNITS	STATION	MONTH
DISOXY	1.0	17.0	mg/l	ALL	ALL
SALIN	1.0	36.0	ppt	ALL	ALL
SECCHI	0.0	5.0	meters	ALL	ALL
WTEMP	-1.0	30.0	deg C	ALL	ALL

*
#PARAMETER METHODS TABLE:

```
*
*   USER         CBP       ANALYT  FIELD
* PARAMETER  PARAMETER  METHOD  METHOD   DESCRIPTION OF
*   NAME        NAME      CODE    CODE    METHODS, UNITS
* ---------  ---------  ------  ------   --------------
*
  DISOXY     DISOXY     F01G             Dissolved Oxygen, mg/l
  SALIN      SALIN      F01C             Salinity, ppt
  SECCHI     SECCHI     .                Secchi, meters
                                         30-cm disk with black and
                                         white quadrants is lowered
                                         into the water and the
                                         depth at which the quad-
                                         rants can no longer be
                                         distinguished is averaged
                                         with the depth at which
                                         the quadrants again can
                                         be distinguished.
  WTEMP      WTEMP      104              Water temperature, deg C

#PARAMETER METHODS TABLE :  - END

#SAS PROGRAM TO CHANGE USER DATA TO CBP FORMAT:

#SAS PROGRAM - END
#OUTPUT FROM CBPCC VERIFICATION PROGRAMS
*
*
#END DATA SET INFORMATION
```

APPENDIX E:

DATA DOCUMENTATION FORM

APPENDIX E: DATA DOCUMENTATION FORM

```
*****************************************************************
*                                                               *
*                    Data Documentation Form                    *
*                                                               *
*****************************************************************

-----------------------------------------------------------------
DS*| DATA SET NAME
-----------------------------------------------------------------
   |
   |
   |
-----------------------------------------------------------------
TI*| PROJECT TITLE
-----------------------------------------------------------------
   |
   |
   |
-----------------------------------------------------------------
PI*| PRINCIPAL INVESTIGATOR(S)
-----------------------------------------------------------------
   |
   |
   |
-----------------------------------------------------------------
PO*| COLLECTING OR PROCESSING ORGANIZATION (address, telephone
   | number, and contact, if different from principal investigator)
-----------------------------------------------------------------
   |
   |
   |
   |
-----------------------------------------------------------------
PR*| PROGRAM SPONSOR, CONTRACT, PROJECT, OR EXPERIMENT NAME
   | (include project officer, address, and telephone number, if
   | applicable)
-----------------------------------------------------------------
   |
   |
   |
   |
   |
-----------------------------------------------------------------
```

* These items must be filled in.

PC	PROJECT COST AND DATES WHEN STUDY WAS CONDUCTED
	Cost: Study Dates:
AB*	ABSTRACT (Description of project, including purpose, objectives, hypotheses, results, and conclusions)
DC	DATA COLLECTION DESCRIPTION (see Data Submissions Guidelines)
	Observing station or vessel name: Data collection type: Number of stations or sites: Number of observations:
PE*	PERIOD OF RECORD

	YEAR	MONTH	DAY	HOUR
Earliest Date:				
Latest Date:				

LR*	LENGTH OF RECORD (Include information about gaps in the record)

GE*	GEOGRAPHIC PLACE NAMES (See Data Submissions Guidelines)
	North Atlantic Ocean, Coast, Mid-Atlantic Bight, Chesapeake Bay, USA.

GC	GEOGRAPHIC CODES (Assigned by CBPCC)

GL*	GRID LOCATORS

UPPER LEFT COORDINATES		LOWER RIGHT COORDINATES	
LATITUDE	LONGITUDE	LATITUDE	LONGITUDE
(N) DegMinSec	(W) DegMinSec	(N) DegMinSec	(W) DegMinSec

```
-------------------------------------------------------------------
SS | SAMPLING SCHEDULE
-------------------------------------------------------------------
   | SAMPLED      TIMES PER           AT          STATIONS
   |         ----          ----------      --------
   | FOR THE PERIOD FROM                 TO                    .
   |                    ---------------     ----------------
   | (Add more specific details below, if necessary.)
   |
   |
   |
   |
   |
-------------------------------------------------------------------
ST*| STATION ID, DESCRIPTION, AND GRID LOCATORS
-------------------------------------------------------------------
   | STATION    LATITUDE      LONGITUDE     RIVER    LOCATION
   |   ID     DEG MIN SEC   DEG MIN SEC    KM.    DESCRIPTION
   |----------------------------------------------------------------
   |
   |>
   |
   |
   |>
   |
   |
   |>
   |
   |
   |>
   |
   |
   |>
   |
   |
   |>
   |
   |
-------------------------------------------------------------------
PA*| PARAMETER NAMES and METHOD CODES (see ME field below)
-------------------------------------------------------------------
   |                                                 COLLECTION
   | PARAMETER                            UNIT OF   OR ANALYTICAL
   |   NAME     LABEL                  MEASUREMENT  METHOD CODES
   |----------------------------------------------------------------
   |
   |>
```

|
|>
|
|>
|
|>
|
|>
|
|>
|
|>
|
|

ME | METHOD CODE DESCRIPTIONS (associated with codes in
| parameter table; see Data Submissions Guidelines to
| complete properly)

| PARAMETER NAME: METHOD CODE:
|
| METHOD NAME:
|
| METHOD SUMMARY (include sample preservation and storage,
| equipment, calibration procedures, filter pore size,
| reagents, equations, method reference, etc.):
|
|
|
|
| UNITS OF MEASUREMENT: DETECTION LIMIT:
|
| QUALITY ASSURANCE (include precision, accuracy, replicate
| sampling, and any other QA/QC accounting information):
|
|
|
|

ME | METHOD CODE DESCRIPTIONS (associated with codes in
| parameter table; see Data Submissions Guidelines to
| complete properly)

| PARAMETER NAME: METHOD CODE:
|
| METHOD NAME:

METHOD SUMMARY (include sample preservation and storage, equipment, calibration procedures, filter pore size, reagents, equations, method reference, etc.):

UNITS OF MEASUREMENT: DETECTION LIMIT:

QUALITY ASSURANCE (include precision, accuracy, replicate sampling, and any other QA/QC accounting information):

ME **METHOD CODE DESCRIPTIONS** (associated with codes in parameter table; see Data Submissions Guidelines to complete properly.)

PARAMETER NAME: METHOD CODE:

METHOD NAME:

METHOD SUMMARY (include sample preservation and storage, equipment, calibration procedures, filter pore size, reagents, equations, method reference, etc.):

UNITS OF MEASUREMENT: DETECTION LIMIT:

QUALITY ASSURANCE (include precision, accuracy, replicate sampling, and any other QA/QC accounting information):

ME | METHOD CODE DESCRIPTIONS (associated with codes in parameter table; see Data Submissions Guidelines to complete properly.)

PARAMETER NAME: METHOD CODE:

METHOD NAME:

METHOD SUMMARY (include sample preservation and storage, equipment, calibration procedures, filter pore size, reagents, equations, method reference, etc.):

UNITS OF MEASUREMENT: DETECTION LIMIT:

QUALITY ASSURANCE (include precision, accuracy, replicate sampling, and any other QA/QC accounting information):

DE | DESCRIPTORS (Biological taxonomic names and codes, chemical compounds and CAS codes, general keywords not used elsewhere)

DD* | QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES USED BY COLLECTING ORGANIZATION AND CBP-COMPUTER CENTER

Collecting Organization:

CBP-Computer Center:

Data in this data set have been subjected to reasonable quality assurance checks. The CBP-CC reminds the data user that use of and conclusions from the data are ultimately the user's responsibility.

CO | AVAILABILITY ADDRESS (Assigned by CBP-CC)

CBP Computer Center
EPA Chesapeake Bay Program
410 Severn Avenue, Suite 112
Annapolis, Maryland 21403
(301) 267-0061 (FTS) 691-6873

AV | AVAILABILITY CONDITIONS (Assigned by CBP-CC)

Copies of summary information are available on request. Data can be requested from the CBP Computer Center by letter or telephone. Requests which require more than two hours of staff time to complete must be approved by the EPA Chesapeake Bay Program Director. Requests requiring less than two hours are completed typically in 6-8 weeks; requests requiring more staff time may take 2-6 months, depending upon the nature of the request.

User accounts may be set up for those needing access to the CBP-CC data base if the proposed work is included in the CBP Restoration and Protection Plan. Accounts must be approved by the CBP Data Management Subcommittee, which meets monthly.

PU | SOURCE PUBLICATIONS AND RELATED DOCUMENTATION

RR | RELATED CBP-CC DATA SETS (Assigned by CBP-CC)

```
    |
    |
    |
    |
    |
------------------------------------------------------------------
DT  | ACCESSION DATE AND DATES OF DATA SET UPDATES
    | (Assigned by CBP-CC)
------------------------------------------------------------------
    |                         Year     Month     Day
    |                       ------------------------
    | Accession Date:
    |
    | Data Set Updates:
    |
------------------------------------------------------------------
CC  | CATEGORY CODES, RECORD TYPES, CORPORATE CODES
    | (Assigned by CBP-CC)
------------------------------------------------------------------
    | Category Codes:
    |
    | Record Type:
    |
    | Corporate Codes:
    |
------------------------------------------------------------------
```

A. GLOSSARY OF DATA DOCUMENTATION FIELDS

1. Data Set Name (DS)

Enter the commonly-used data set name or other terms that best describe the collection of data. Keep it brief.

2. Project Title (TI)

Include the name of the project or study through which the data were collected.

3. Principal Investigator (PI)

The name(s) of the individual(s) responsible for the data collection and/or project should be entered. Do NOT add the PI's affiliation or address. (See next field.)

4. Collecting or Processing Organization (PO)

Enter the name, address, and telephone number of the organization responsible for data collection and analysis. You may include more than one organization if several were responsible. Please explain their specific duties in the project in the Abstract (AB) field. Include the name of a contact in the organization if the principal investigator is not the primary contact.

5. Program Sponsor, Contract, Project Name (PR)

Enter the name, address, and telephone number of the sponsoring organization and the project officer or chief contact. Please include the grant, contract, or cooperative agreement name and number if different from the project title given in the Title (TI) field above.

6. Project Cost and Duration (PC)

Enter the total cost of the project and the study's duration.

7. Abstract (AB)

This field should include typical abstract information such as the purpose of the data collection, and the hypotheses, results, and conclusions, if available. The field also is designed to capture all other documentation that cannot be placed in other fields. For example:

a. Key equations used to generate reported values;

b. Assumptions used in the computations;

c. Assumptions that data base users must make when working with the data; and

d. Notes on the data set that do not belong in any other field.

8. Data Collection Description (DC)

Include the type of observing station (buoy, pier, land, boat, or ship). If boat or ship, include the vessel name. Choose the medium from which data were collected, i.e., water column, sediment, benthos, etc. Include the number of stations or sites in the data set and the number of observations.

9. Period of Record (PE)

Place the date (year/month/day) and hour (if applicable) of the first and last observation.

10. Length of Record (LR)

This field should be used to describe gaps in the data. If significant, please specify when measurements were added or dropped.

11. Geographic Place Names (GE)

This field should ALWAYS contain at least the following place names: North Atlantic, Coast, Mid-Atlantic Bight, Chesapeake Bay, USA. Add specific tributary names if the mainstem Chesapeake was not the only part of the study. Also, add the state(s) in which data were collected.

12. Geographic Codes (GC)

These will be assigned by the CBP Computer Center staff. They include the Eco-Region codes, United States Geographic Survey (USGS) codes, Hydrologic unit codes, and state and county FIPS codes.

13. Grid Locators (GL)

This field should contain the latitude/longitude coordinates of the study area. Two sets of coordinates (one line on the form) must be provided, indicating the lower right and upper left-hand corners of a rectangle if drawn around the study area. For data sets containing bay-wide stations, the following coordinates can be used: N364500 W753000 / N394500 W773000.

14. Sampling Schedule (SS)

This field applies primarily to data collected with regular frequency. It will not be applicable to all projects. Please enter the number of times samples were collected and the collecting frequency. Fill in the total number of stations. Indicate whether some stations were sampled more frequently than others and if so, why. Also, enter when sampling frequencies changed during the course of the project and the revised sampling schedules during each period.

15. Station ID, Description, and Grid Locators (ST)

This field is one of the most important in the data description file. Include the station names, latitude/ longitude coordinates, river kilometers (measured from the mouth), if applicable, and a brief description of the station location.

If there are more than 17 stations, additional copies of this page should be made and completed.

16. Parameter Names and Method Codes (PA)

Every parameter stored in the CBP SAS data set must be referenced in this field, including the date, station ID, and station latitude/longitude. These parameters are included in each observation of a SAS data set, since there are no header records.

In addition to the parameter name, include a brief label and unit of measurement where applicable. Since there are sometimes many ways of collecting and analyzing a particular parameter, the documentation form contains a Method (ME) field for method descriptions. The parameter table in this field contains a column into which a code may be inserted to cross-reference methods described in the ME field's entries. Alphabetic or numeric codes beginning with A or 1 should be entered for each method used. Repeat parameter descriptions when more than one method was used so that users can choose to separate or combine data for related methods.

17. Method Code Descriptions (ME)

As indicated in the PA field above, the methods used to collect and analyze samples for individual parameters are described in this field. In some cases, information on methods is not available or is very limited. The purpose of this field is to document as much as is available on methods.

Enter the parameter name and method code, as shown in the PA field, followed by the common description of the method. The method summary can be as long or as short as necessary to document handling of samples, lab procedures, calculations, and a reference for a published account of the method used. Make sure to include units of measurement and detection limits. If information on precision accuracy, replicate sampling, a split sampling, and analysis between two labs is available, please include this information.

18. Descriptions (DE)

This field is designed for all terms, species names, chemical names, codes, and key words that are not used elsewhere in this document. The NODC taxonomic code should be used for biological data and the CAS codes (modified by NOAA) for chemical data. You can call the CBP Computer Center if you need assistance in adding codes.

19. Quality Assurance/Quality Control (DD)

Any special quality assurance and quality control (QA/QC) procedures used during data collection, analysis, and/or key-punching should be placed in this field.

20. Availability Address (CO)

This field will always contain the CBP Computer Center address. Other contacts should be in the PI, PO, or PR fields discussed above. The CBPCC will complete this field.

21. Availability Conditions (AV)

The CBP Computer Center staff will fill out this field for every documentation file. Generally, availability of data depends on the request and the nature of the data. These conditions may change periodically to reflect CBP Computer Center policy.

22. Source Publications and Related Documentation (PU)

If a final report is written on the study for which the data were collected, it must be entered into this field as a full literature citation. Any other publications that are related to the study or to similar research efforts and which would be useful to users of the data set also should be included in this field.

23. Related CBP Data Sets (RR)

The CBP Computer Center staff will complete this field.

24. Accession Date and Date of Data Set Updates (DT)

The CBP Computer Center staff will complete this field.

25. Category Codes, Record Types, Corporate Codes (CC)

The CBP Computer Center staff will complete this field.

```
*****************************************************************
*                                                               *
*              Example Data Documentation Form                  *
*           (James River Nutrient Flux Dome Study)              *
*                                                               *
*****************************************************************
```

```
________________________________________________________________
DS*| DATA SET NAME
----------------------------------------------------------------
   |
   | DOMESUM.SSD
   |
----------------------------------------------------------------
TI*| PROJECT TITLE
----------------------------------------------------------------
   |
   | JAMES RIVER NUTRIENT FLUX DOME STUDY
   |
----------------------------------------------------------------
PI*| PRINCIPAL INVESTIGATOR(S)
----------------------------------------------------------------
   |
   | DR. CARL CERCO
   |
----------------------------------------------------------------
PO*| COLLECTING OR PROCESSING ORGANIZATION (address, telephone
   | number, and contact, if different from principal
   | investigator)
----------------------------------------------------------------
   |
   | VIRGINIA INSTITUTE OF MARINE SCIENCES
   | GLOUCESTER POINT, VIRGINIA 23062
   | (804) 642-7000
   |
   | KEVIN CURLING, FRANKLIN HALL (DATA PROCESSING SPECIALIST)
   |
----------------------------------------------------------------
PR*| PROGRAM SPONSOR, CONTRACT, PROJECT, OR EXPERIMENT NAME
   | (include project officer, address, and telephone number, if
   | applicable)
----------------------------------------------------------------
   | RICHMOND REGIONAL PLANNING DISTRICT COMMISSION
   | 2201 WEST BROAD STREET
   | RICHMOND, VIRGINIA 23200
   | ATTN: DONNA WATERMAN  (804) 358-3684
----------------------------------------------------------------
* These items must be filled in.
```

PC	PROJECT COST AND DATES WHEN STUDY WAS CONDUCTED
	Cost: Study Dates: AUGUST 1983 - OCTOBER 1984

AB* | ABSTRACT (Description of project, including purpose, objectives, hypotheses, results, and conclusions)

Fluxes between the sediments and overlying water of ammonium, nitrate, total phosphorus, ortho-phosphorus, and dissolved oxygen have been measured in the tidal James and Appomattox Rivers, VA. A total of 68 nutrient flux measures and 18 control measures were collected in the summer months, 1983 and 1984.

Ammonium is predominantly released from the sediments at a mean rate of 9.82 mg/sq.m./hr. Nitrate is predominantly taken up by the sediments at a mean rate of 1.53 mg/sq.m. /hr. Total phosphorus is taken up by the sediments at a mean rate of 1.67 mg/sq.m./hr. Ortho-phosphorus may be taken up or released. Mean flux is an uptake of 0.75 mg/sq.m./hr. Dissolved oxygen is taken up at a mean rate of 44 mg/sq.m./hr.

NOTE: NEGATIVE FLUXES INDICATE SEDIMENT UPTAKE
TOTAL FLUX IS COMBINED SEDIMENT FLUX AND WATER COLUMN TRANSFORMATION
NET FLUX IS SEDIMENT FLUX AFTER CORRECTION FOR WATER COLUMN TRANSFORMATION

DC | DATA COLLECTION DESCRIPTION (see Data Submissions Guidelines)

Observing station or vessel name:
Data collection type:
Number of stations or sites: 23 stations
Number of observations: 86 measurements

PE* | PERIOD OF RECORD

	YEAR	MONTH	DAY	HOUR
Earliest Date:	1983	08	16	
Latest Date:	1984	10	11	

LR* | LENGTH OF RECORD (Include information about gaps in the record)

AUGUST 1983 - OCTOBER 1983
JULY 1984 - OCTOBER 1984

(LATE SUMMER ONLY)

GE* | GEOGRAPHIC PLACE NAMES (See Data Submissions Guidelines)

North Atlantic, Coast, Mid-Atlantic Bight, Chesapeake Bay, James River, Chickahominy River, Appomattox River, Virginia, USA.

GC | GEOGRAPHIC CODES (Assigned by CBPCC)

US51. WRO2. ERO030, ER2320.

GL* | GRID LOCATORS

LATITUDE (North) Deg Min Sec	LONGITUDE (West) Deg Min Sec	LATITUDE (North) Deg Min Sec	LONGITUDE (West) Deg Min Sec
N364500	W0761500	N372500	W0773000

SS | SAMPLING SCHEDULE

SAMPLED ____ TIMES PER __________ AT ________ STATIONS
FOR THE PERIOD FROM ______________ TO ______________.

(Add more specific details below, if necessary.)

Each measure lasted seven hours.
1 - 2 measures per day; and 1 - 13 measures per station.
Nutrient fluxes measured only at Stations 3-4, 6-7, 10-14, 19, 20, 21, and 21B.

ST*| STATION ID, DESCRIPTION, AND GRID LOCATORS

STATION ID	LATITUDE DEG MIN SEC	LONGITUDE DEG MIN SEC	RIVER KM.	LOCATION DESCRIPTION
JAMES RIVER SAMPLE STATIONS				
> 3	37 30 00	77 25 30	177	RICHMOND 1-95 CROSSING
> 4	37 29 00	77 25 30	172	BUOY 168, BELOW GOODE CK
> 5	37 27 30	77 25 30	168	BUOY 166, BELOW DEEPWATER TERMINAL
> 6	37 26 30	77 26 00	166	BUOY 165, AT FALLING CK
> 7	37 26 30	77 24 00	165	BUOY 163, BELOW FALLING CK
> 8	37 24 00	77 23 00	160	BUOY 157, BELOW KINGSLAND CK
> 9	37 24 30	77 22 00	157	BUOY 155, BELOW PROCTOR'S CK
>10	37 22 30	77 18 30	140	BUOY 137, AT CURLES NECK
>11	37 21 30	77 15 30	126	BUOY 120, CONFLUENCE WITH APPOMATTOX RIVER
>12	37 19 00	77 17 00	125	CITY POINT
>13	37 19 30	77 15 00	121	BUOY 107, BELOW HOPEWELL STP
>14	37 19 00	77 14 00	120	JORDAN POINT
>15	37 22 00	77 09 00	110	BUOY 91, NEAR HERRING CK
>16	37 19 30	77 05 30	108	WINDMILL POINT
>17	37 17 30	77 59 30	90	BUOY 74, NEAR BRANDON POINT
>18	37 14 30	77 55 00	84	CLAREMONT
>19	37 12 00	76 42 00	69	SWANN'S PT, BELOW CHICKAHOMINY RIVER
APPOMATTOX RIVER SAMPLE STATIONS				
>20	37 18 30	77 22 00	11.8	N. CHANNEL, AT END OF CONDUIT ROAD

```
|>21       37 15 15    77 22 20    15.5  N. CHANNEL, AT
|                                        CONVEYOR CROSSING &
|                                        BELOW STP
|>21B      37 15 15    77 22 30    15.5  S. CHANNEL, AT
|                                        CONVEYOR CROSSING
|>22       37 15 45    77 24 00    17.5  N. CHANNEL, ABOVE STP
|
|>23       37 15 45    77 25 00    19.7  ABOVE ROUTE 301 BRIDGE
|
|      CHICKAHOMINY RIVER SAMPLE STATIONS
|>25       37 20 30    76 53 00    13.4  SHIPYARD LANDING
|
-----------------------------------------------------------------
PA*| PARAMETER NAMES and METHOD CODES (see ME field below)
-----------------------------------------------------------------
|                                                COLLECTION
| PARAMETER                          UNIT OF    OR ANALYTICAL
|   NAME     LABEL                 MEASUREMENT  METHOD CODES
|--------------------------------------------------------------
|
|>STATION   SAMPLING STATION ID      CODE          N/A
|
|>LOCATION  DESCRIPTION OF STATION   N/A           N/A
|
|>RIVKM     RIVER KILOMETER          KM            N/A
|
|>LAT_DEG   LATITUDE (DEGREES)       DEGREES       N/A
|
|>LAT_MIN   LATITUDE (MINUTES)       MINUTES       N/A
|
|>LAT_SEC   LATITUDE (SECONDS)       SECONDS       N/A
|
|>LNG_DEG   LONGITUDE (DEGREES)      DEGREES       N/A
|
|>LNG_MIN   LONGITUDE (MINUTES)      MINUTES       N/A
|
|>LNG_SEC   LONGITUDE (SECONDS)      SECONDS       N/A
|
|>YEAR      YEAR                     N/A           N/A
|
|>MONTH     MONTH                    N/A           N/A
|
|>DAY       DAY                      N/A           N/A
|
|>DATE      SAS DATE                 N/A           N/A
|
|
```

>DEPTH	TOTAL WATER DEPTH	M	N/A
>S_DEPTH	SAMPLING DEPTH (TOP OF DOME)	M	N/A
>WTEMP	WATER TEMPERATURE	DEG. C	101A
>NH4	AMMONIA	MG/L	102A
>NO23	NITRITE+NITRATE	MG/L	103A
>PO4	ORTHOPHOSPHATE	MG/L	104A
>TP	TOTAL PHOSPHORUS	MG/L	105A
>DISOXY	DISSOLVED OXYGEN	MG/L	106A
>NH4FLUXT	TOTAL NH4 FLUX RATE	MG/SQ.M/HR	200
>NO23FLXT	TOTAL NO23 FLUX RATE	MG/SQ.M/HR	200
>PO4FLUXT	TOTAL PO4 FLUX RATE	MG/SQ.M/HR	200
>TPFLUXT	TOTAL TP FLUX RATE	MG/SQ.M/HR	200
>DOFLUXT	TOTAL DO FLUX RATE	MG/SQ.M/HR	200
>NH4FLUXN	NET NH4 FLUX RATE	MG/SQ.M/HR	200
>NO23FLXN	NET NO23 FLUX RATE	MG/SQ.M/HR	200
>PO4FLUXN	NET PO4 FLUX RATE	MG/SQ.M/HR	200
>TPFLUXN	NET TP FLUX RATE	MG/SQ.M/HR	200
>DOFLUXN	NET DO FLUX RATE	MG/SQ.M/HR	200

ME | METHOD CODE DESCRIPTIONS (associated with codes in parameter table; see Data Submissions Guidelines to complete properly.)

PARAMETER NAME: WTEMP METHOD CODE: 101A

METHOD NAME: YSI MODEL 5379 DO AND TEMPERATURE PROBE

METHOD SUMMARY:

| UNITS OF MEASUREMENT: DEGREES C | DETECTION LIMIT:

| QUALITY ASSURANCE:

ME | METHOD CODE DESCRIPTIONS (associated with codes in parameter table; see Data Submissions Guidelines to complete properly.)

| PARAMETER NAME: NH4 METHOD CODE: 102A

| METHOD NAME: AUTOMATED-PHENATE DISSOLVED AMMONIA METHOD

| METHOD SUMMARY:
| Alkaline phenol and hypochlorite react with ammonia to form idophenol blue which is intensified with sodium nitroprusside and measured colorimetrically.

| US EPA. 1979. Methods for chemical analysis of water and wastes, Method 350.1.
| Standard methods for the Examination of Water and Wastewater, 14th Edition, p. 616, Method 604. (1975).

| UNITS OF MEASUREMENT: MG/L | DETECTION LIMIT:

| QUALITY ASSURANCE:

| Precision: standard deviation in the range of 0.01-0.4 MG N/L is (+ or -) 0.02 MG/L.
| Accuracy: recovery of 0.2 MG N/L is 106%.

DE | DESCRIPTORS (Biological taxonomic names and codes, chemical compounds and CAS codes, general keywords not used elsewhere)

| Sediments, nutrients, sediment flux, sediment oxygen demand, estuarine, tidal, benthos, geochemistry.

DD* | QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES USED BY COLLECTING ORGANIZATION AND CBP COMPUTER CENTER

| COLLECTING ORGANIZATION:
|
| All nutrient and oxygen analyses were run according to Standard Methods for the Examination of Water and Wastewater. Sample storage and preservation according to 'Required Containers, preservation techniques and holding times' Final Draft Amendment to 40 CFR Part 136. US EPA. Region 3. 1981.
|
| CBP COMPUTER CENTER:
|
| Verification by principal investigator.
|

CO | AVAILABILITY ADDRESS (Assigned by CBPCC)

| CBP Computer Center
| EPA Chesapeake Bay Program
| 410 Severn Avenue, Suite 112
| Annapolis, Maryland 21403
| (301) 267-0061 (FTS) 691-6873

AV | AVAILABILITY CONDITIONS (Assigned by CBPCC)

| Copies of summary information are available on request. Data can be requested from the CBP computer center by letter or telephone. Requests which require more than two hours of staff time to complete must be approved by the EPA Chesapeake Bay Program Director. Requests requiring less than two hours are completed typically in 6-8 weeks; requests requiring more staff time may take 2-6 months, depending upon the nature of the request.
|
| User accounts may be set up for those needing access to the CBPCC data base if the proposed work is included in the CBP Restoration and Protection Plan. Accounts must be approved by the CBP Data Management Subcommittee, which meets monthly.

PU | SOURCE PUBLICATIONS AND RELATED DOCUMENTATION

| Cerco, Carl F. March 1985. Sediment-water column exchanges of nutrients and oxygen in the tidal James and

Appomattox Rivers. Virginia Institute of Marine Science, School of Marine Science, College of William and Mary, Gloucester Point, Virginia.

RR | RELATED CBPCC DATA SETS (Assigned by CBPCC)

None

DT | ACCESSION DATE AND DATES OF DATA SET UPDATES (Assigned by CBPCC)

	Year	Month	Day
Accession Date:	1985	DEC	24
Data Set Updates:			

CC | CATEGORY CODES, RECORD TYPES, CORPORATE CODES (Assigned by CBPCC)

Category Codes: CC-22. CC-34. CC-63.

Record Type: RT-1. RT-3.

Corporate Codes: US-VIRGIINSTIMARINSCIEN.

APPENDIX F:

DATA DICTIONARY

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: MEAN LOW WATER, METERS ABOVE

PARAMETER NAME: ABOVEMLW

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: METERS

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Acres Applied

PARAMETER NAME: ACREAPPL

DESCRIPTION: The number of acres to which the pesticide was applied.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: acres

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLE ACTIVITY
PARAMETER NAME:	ACTIV_ML
DESCRIPTION:	C14 activity in sample
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	uCi/ml
CATEGORIES:	lr
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SILVER, TOTAL
PARAMETER NAME:	AG
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/G
CATEGORIES:	LR, TOXIC, SED
RELATED PARAMETERS:	AG_D
RANGE:	Minimum = 0.0 Maximum = 7.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	AIR BLADDER
PARAMETER NAME:	AIRBLD_B
DESCRIPTION:	Presence or absence of an air bladder.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	0 = absence 1 = presence

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	ALKALINITY, TOTAL as CaCO3
PARAMETER NAME:	ALK
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	ALK_M
RANGE:	Minimum = 0.0 Maximum = 300.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: AROMATIC RETENTION INDEX

PARAMETER NAME: ARI

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: TOXIC,HIST,WQ

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: ARSENIC

PARAMETER NAME: ARSENIC

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MICROGRAMS/LITER

CATEGORIES: TOX,HIST

RELATED PARAMETERS: AS_A,AS_C,AS_D,AS_M,AS_N,AS_O,AS_P,AS_S,AS_SK

RANGE: Minimum = -0.5
Maximum = 3.3

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	AIR TEMPERATURE
PARAMETER NAME:	ATEMP
DESCRIPTION:	Dry or Wet Bulb - see ATEMP_M
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	DEGREES CELCIUS
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	ATEMP_M
RANGE:	Minimum = 0.3 Maximum = 40.6

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Author(s) - Line 1
PARAMETER NAME:	AUTHOR1
DESCRIPTION:	The author(s) of the reference document.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	AUTHOR2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Authors(s) - Line 2
PARAMETER NAME:	AUTHOR2
DESCRIPTION:	Continuation line for authors.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	AUTHOR1
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	BASIN NAME
PARAMETER NAME:	BASIN
DESCRIPTION:	The name of the major river basin in which the observation is located. The CBP-CC staff can assign this value using GIS when LATDD/LONGDD are provided.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 15
UNITS:	N/A
CATEGORIES:	WQ,HIST,TOXIC,LR
RELATED PARAMETERS:	
RANGE:	'CHESAPEAKE_BAY ' 'EASTERN_SHORE ' 'ELIZABETH ' 'JAMES ' 'PATUXENT ' 'POTOMAC ' 'RAPPAHANNOCK ' 'SUSQUEHANNA ' 'WEST_CHESAPEAKE' 'YORK '

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Bay Species Flag

PARAMETER NAME: BAYSPEC

DESCRIPTION: Flag indicating if the species is found in the Chesapeake Bay.

KEYFIELD: N

DATATYPE: CHAR 1

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE: Y = yes
N = no

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: FIVE DAY BIOLOGICAL OXYGEN DEMAND

PARAMETER NAME: BOD

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ, HIST

RELATED PARAMETERS: BOD_D, BOD_M

RANGE: Minimum = 0.0
Maximum = 652.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM SEDIMENT CHARACTERIZATION, PRIMARY

PARAMETER NAME: BOTTYPE1

DESCRIPTION:

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 2

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: BOTTYPE2

RANGE:
'CL' = clay
'GR' = gravel
'MD' = mud
'RK' = rocks
'SN' = sand
'SH' = shell
'SL' = silt
'RB' = rubble
'UN' = unknown

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM SEDIMENT CHARACTERIZATION, SECONDARY

PARAMETER NAME: BOTTYPE2

DESCRIPTION:

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 2

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: BOTTYPE1

RANGE:
'CL' = clay
'GR' = gravel
'MD' = mud
'RK' = rocks
'SN' = sand
'SH' = shell
'SL' = silt
'RB' = rubble
'UN' = unknown

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM CONDUCTIVITY

PARAMETER NAME: B_COND

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: UMHOS

CATEGORIES: LR

RELATED PARAMETERS: B_COND_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM DISSOLVED OXYGEN

PARAMETER NAME: B_DO

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES:

RELATED PARAMETERS: B_DO_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM pH

PARAMETER NAME: B_PH

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: Standard Units

CATEGORIES: LR

RELATED PARAMETERS: B_PH_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: BOTTOM SALINITY

PARAMETER NAME: B_SAL

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: Parts Per Thousand (PPT)

CATEGORIES: LR

RELATED PARAMETERS: B_SAL_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	BOTTOM TEMPERATURE
PARAMETER NAME:	B_TEMP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Degrees Celcius
CATEGORIES:	LR
RELATED PARAMETERS:	B_TEMP_M
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBONATE CONTENT
PARAMETER NAME:	CARBONAT
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Percent Dry Weight, Carbon Content
PARAMETER NAME:	CARBON_P
DESCRIPTION:	The percentage of carbon in the sample, dry weight.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	decimal percent
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON CONTENT (CHN ANALYZER)
PARAMETER NAME:	CARB_CHN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	LR
RELATED PARAMETERS:	CARB_IGN, CARB_WET
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON CONTENT (IGNITION)
PARAMETER NAME:	CARB_IGN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	LR
RELATED PARAMETERS:	CARB_CHN, CARB_WET
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON CONTENT (WET OXIDATION)
PARAMETER NAME:	CARB_WET
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	LR
RELATED PARAMETERS:	CARB_IGN, CARB_CHN
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Chemical Abstract Service (CAS) Number - VALUE
PARAMETER NAME:	CASVAFK
DESCRIPTION:	The CAS number as identified in the Merck Index or U.S. EPA documents pertaining to toxic substances and pesticides. CBP-CC staff may assign a dummy CAS number, with the prefix "CAS", when a real one is not available. VALUE Table foreign key.
KEYFIELD:	Y
DATATYPE:	CHAR 9, Right justified/leading zero's
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	CAS_PK
RANGE:	Current values available by request from CBP-CC.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Chemical Abstract Service (CAS) Number - CHEMICAL
PARAMETER NAME:	CAS_PK
DESCRIPTION:	The CAS number as identified in the Merck Index or U.S. EPA documents pertaining to toxic substances and pesticides. CBP-CC staff may assign a dummy CAS number, with the prefix "CAS", when a real one is not available. CHEMICAL Table primary key.
KEYFIELD:	Y
DATATYPE:	CHAR 9, Right justified/leading zero's
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	CASVAFK
RANGE:	Current values available by request from CBP-CC. See Table 2 for examples.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CADMIUM
PARAMETER NAME:	CD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	TOXIC,HIST
RELATED PARAMETERS:	CD_A,CD_C,CD_D,CD_M,CD_N,CD_O,CD_P,CD_S,CD_SK
RANGE:	Minimum = -0.01 Maximum = 3200.00

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CORE DEPTH
PARAMETER NAME:	CDEPTH
DESCRIPTION:	Total depth of sediment core sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	CM
CATEGORIES:	SEDIMENT, TOXIC
RELATED PARAMETERS:	CS_DEPTH (core slice depth)
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, NORMALIZED

PARAMETER NAME: CNT_LM2

DESCRIPTION: Normalized count per square meter of a given length.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_VOL CNT_AL,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, MALES

PARAMETER NAME: CNT_MA

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_VOL CNT_LM2,CNT_AL,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, PROFILE

PARAMETER NAME: CNT_PROF

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT, CNT_DE, CNT_FE, CNT_IM, CNT_L, CNT_TOT, CNT_VOL CNT_LM2, CNT_MA, CNT_AL, CNT_SP, CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, SPECIES

PARAMETER NAME: CNT_SP

DESCRIPTION: Number of different species in sample.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT, CNT_DE, CNT_FE, CNT_IM, CNT_L, CNT_TOT, CNT_VOL CNT_LM2, CNT_MA, CNT_PROF, CNT_AL, CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, SUBSAMPLE

PARAMETER NAME: CNT_SUB

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_VOL
CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_AL

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, TOTAL

PARAMETER NAME: CNT_TOT

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_AL,CNT_VOL
CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPECIES VOLUME
PARAMETER NAME:	CNT_VOL
DESCRIPTION:	Volume of a particular species (esp. jellyfish, Ctenophore)
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	CNT,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_AL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CHEMICAL OXYGEN DEMAND
PARAMETER NAME:	COD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	COD_D,COD_M
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	COLLECTION TYPE
PARAMETER NAME:	COLTYPE
DESCRIPTION:	Composite sample or discrete measurement. Sample collection method code
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 1
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	'C' = composite 'D' = discrete

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species Common Name
PARAMETER NAME:	COMMON
DESCRIPTION:	The CBP-CC common name of the species.
KEYFIELD:	N
DATATYPE:	CHAR 40, UPPERCASE
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	Current values available by request from CBP-CC.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CONCENTRATION
PARAMETER NAME:	CONC
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	CONC_D, CONC_M, CONC_N, CONC_S
RANGE:	Minimum = 0.0 Maximum = 960.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CONDUCTIVITY, SPECIFIC
PARAMETER NAME:	COND
DESCRIPTION:	The specific conductivity of the water sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MICROMHOS/CM
CATEGORIES:	WQ, HIST, TOXIC
RELATED PARAMETERS:	COND_M
RANGE:	Minimum = 0.0 Maximum = 94000.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CONVERSION FACTOR

PARAMETER NAME: CONVFACT

DESCRIPTION: Number used to convert a number in a sample to a normalized count.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CORE SAMPLE VOLUME

PARAMETER NAME: CORE_VOL

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML

CATEGORIES: SED

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: County Name

PARAMETER NAME: COUNTYNM

DESCRIPTION: The name of the County or Incorporated City.

KEYFIELD: N

DATATYPE: CHAR 17, UPPERCASE

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CHROMIUM, TOTAL

PARAMETER NAME: CR

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: UG/L

CATEGORIES: WQ,HIST,TOXIC,SED,LR

RELATED PARAMETERS: CR_A,CR_C,CR_D,CR_M,CR_N,CR_O
CR_P,CR_S,CR_SK

RANGE: Minimum = -0.5
Maximum = 17000.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Crop Name
PARAMETER NAME:	CROPNAME
DESCRIPTION:	Identifies the crop to which the pesticide was applied.
KEYFIELD:	N
DATATYPE:	CHAR 20
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CRUISE IDENTIFIER
PARAMETER NAME:	CRUISE
DESCRIPTION:	Cruise identification is usefule for grouping data collected over a range of sampling dates, but which are cosidered data for a specific sampling period.
KEYFIELD:	N
DATATYPE:	ALPHANUMERIC, LENGTH 6 ???
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	SEE TABLE 5

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DEPTH OF CORE SLICE
PARAMETER NAME:	CS_DEPTH
DESCRIPTION:	Depth in core from which sample was taken for analysis.
KEYFIELD:	Y
DATATYPE:	NUMERIC
UNITS:	CM
CATEGORIES:	SEDIMENT,TOXIC
RELATED PARAMETERS:	CDEPTH
RANGE:	Minimum = 0.0 Maximum = 1889.8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	COPPER, TOTAL
PARAMETER NAME:	CU
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ,HIST,TOXIC,SED,LR
RELATED PARAMETERS:	CU_A,CU_C,CU_D,CU_M,CU_N,CU_O,CU_P, CU_S,CU_SK
RANGE:	Minimum = -0.5 Maximum = 37790.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CUMULATIVE PERCENT BY WEIGHT

PARAMETER NAME: CUMPHIxx

DESCRIPTION: From -2.00 phi to 14.0 phi.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: %

CATEGORIES: SED

RELATED PARAMETERS:

RANGE: XX = 2 through 14
Minimum = 0
Maximum = 100

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Clean Water Act, Section 304L Flag

PARAMETER NAME: CWA304L

DESCRIPTION: Flag indicating if the discharge facility has been listed by the state under the requirements of section 304L of the Clean Water Act.

KEYFIELD: N

DATATYPE: CHAR 1

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE: Y = yes
N = no

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CARBON PRODUCTION PER DAY

PARAMETER NAME: C_PRO_D

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: mgC per liter per day

CATEGORIES: LR

RELATED PARAMETERS: C_PRO_H

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CARBON PRODUCTION PER HOUR

PARAMETER NAME: C_PRO_H

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: mgC per liter per hour

CATEGORIES: LR

RELATED PARAMETERS: C_PRO_D

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CHESSEE Dataset Name

PARAMETER NAME: DATASET

DESCRIPTION: The CHESSEE name given to the original dataset. This can be used to retrieve summary documentation from the CHESSEE System.

KEYFIELD: N

DATATYPE: CHAR 8

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DATE OF SAMPLE COLLECTION

PARAMETER NAME: DATE

DESCRIPTION: SAS date. In SAS reckoning, the numeric value in DATE corresponds to the number of days, plus or minus, from January 1, 1960.
The date on which the ambient sample was taken or the release/loading/application took place.

KEYFIELD: Y

DATATYPE: NUMERIC, SAS DATE FORMAT

UNITS: N/A

CATEGORIES: WQ,HIST,SED,LR,TOXIC

RELATED PARAMETERS:

RANGE: Some Chesapeake Bay Program period-of-record data sets begin in 1900. The Monitoring Program is recent and ongoing.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DENSITY PER 100 LITERS

PARAMETER NAME: DEN_1001

DESCRIPTION: Number per 100 liters.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DEN_HM3,DEN_L,DEN_ML,DEN_M2,DEN_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DENSITY PER HUNDRED CUBIC METERS

PARAMETER NAME: DEN_HM3

DESCRIPTION: Number per hundred cubic meters.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DEN_1001,DEN_L,DEN_ML,DEN_M2,DEN_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DENSITY PER LITER

PARAMETER NAME: DEN_L

DESCRIPTION: Number per liter.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DEN_HM3,DEN_1001,DEN_ML,DEN_M2,DEN_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DENSITY PER SQUARE METER

PARAMETER NAME: DEN_M2

DESCRIPTION: Number per square meter.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DEN_HM3,DEN_L,DEN_ML,DEN_1001,DEN_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DENSITY PER CUBIC METER
PARAMETER NAME:	DEN_M3
DESCRIPTION:	Number per cubic meter.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	DEN_HM3,DEN_L,DEN_ML,DEN_M2,DEN_1001
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DENSITY PER MILLILITER
PARAMETER NAME:	DEN_ML
DESCRIPTION:	Number per milliliter.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	DEN_HM3,DEN_L,DEN_1001,DEN_M2,DEN_M3
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DETECTOR CODE

PARAMETER NAME: DETECTOR

DESCRIPTION: Detector used for gamma analysis.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 1

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS:

RANGE:
'1' = Ge(Li) detector (15% efficiency)
'2' = Ge(Li) detector (13% efficiency)
'3' = Ge(Li) detector (16% efficiency)
'4' = Intrinsic detector (25% efficiency)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DETECTION LEVEL

PARAMETER NAME: DETECT_L

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Detection Limit
PARAMETER NAME:	DETLIM
DESCRIPTION:	The concentration level considered to be the limit of detection for this sample, possibly clarified by the values in DET_TYPE, INSTRMT, and METHOD.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	See M_UNITS
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Detection Limit Type
PARAMETER NAME:	DET_TYPE
DESCRIPTION:	Code which identifies which form of detection limit calculation was used while performing the analysis for this sample.
KEYFIELD:	N
DATATYPE:	CHAR 1
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	I = Instrument Detection Limit (IDL) M = Method Detection Limit (MDL) S = Sample Quantitation Limit (SQL) Q = Limit of Quantitation (LOQ) U = Undocumented Detection Limit (UDL)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, DISSOLVED INORGANIC
PARAMETER NAME:	DIN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	DIN_A,DIN_D,DIN_M,DIN_N,DIN_O,DIN_P,DIN_S
RANGE:	Minimum = 0.3 Maximum = 4.6

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHOSPHORUS, DISSOLVED INORGANIC
PARAMETER NAME:	DIP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	DIP_A,DIP_D,DIP_M,DIP_N,DIP_O,DIP_P,DIP_S
RANGE:	Minimum = 0.0 Maximum = 141.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DISTANCE OFF SHORE

PARAMETER NAME: DISOFFS

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: METERS

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DISSOLVED OXYGEN, TOTAL

PARAMETER NAME: DISOXY

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ,HIST

RELATED PARAMETERS: DISOXY_M

RANGE: Minimum = 0.0
Maximum = 27.8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Discharge Type
PARAMETER NAME:	DISTYPE
DESCRIPTION:	Code which identifies the discharge facility type.
KEYFIELD:	N
DATATYPE:	CHAR 3
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	IND = industrial MUN = municipal

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON, DISSOLVED ORGANIC (FILTERED)
PARAMETER NAME:	DOC
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	DOC_A,DOC_C,DOC_D,DOC_M,DOC_N,DOC_O, DOC_P,DOC_S,DOC_SK
RANGE:	Minimum = 0.0 Maximum = 24.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DOCUMENT IDENTIFICATION NUMBER

PARAMETER NAME: DOC_ID

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES:

RELATED PARAMETERS:

RANGE: Arbitrary, sequential numbers.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DISSOLVED OXYGEN, DARK

PARAMETER NAME: DODEL_DK

DESCRIPTION: Final dissolved oxygen minus initial dissolved oxygen (dark)

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: LR

RELATED PARAMETERS: DODEL_LT, DO_DK, DO_LI

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DISSOLVED OXYGEN, LIGHT
PARAMETER NAME:	DODEL_LT
DESCRIPTION:	Final dissolved oxygen minus initial dissolved oxygen (light)
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	LR
RELATED PARAMETERS:	DODEL_DK,DO_DK,DO_LI
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, DISSOLVED ORGANIC (FILTERED)
PARAMETER NAME:	DON
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	DON_A,DON_C,DON_D,DON_M,DON_N,DON_O, DON_P,DON_S,DON_SK
RANGE:	Minimum = 0.0 Maximum = 3.3

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHOSPHORUS, DISSOLVED ORGANIC (FILTERED)
PARAMETER NAME:	DOP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ, HIST
RELATED PARAMETERS:	DOP_A, DOP_C, DOP_D, DOP_M, DOP_N, DOP_O, DOP_P, DOP_S, DOP_SK
RANGE:	Minimum = 0.0 Maximum = 3.3

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DISSOLVED OXYGEN, DARK BOTTLE
PARAMETER NAME:	DO_DK
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	LR
RELATED PARAMETERS:	DODEL_DK, DODEL_LT, DO_LI
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DISSOLVED OXYGEN, GROSS PRODUCTIVITY
PARAMETER NAME:	DO_GROPR
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	mgC per liter per hour
CATEGORIES:	LR
RELATED PARAMETERS:	DO_NETPR
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DISSOLVED OXYGEN, LIGHT BOTTLE
PARAMETER NAME:	DO_LT
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	LR
RELATED PARAMETERS:	DODEL_DK,DODEL_LT,DO_DK
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DISSOLVED OXYGEN, NET PRODUCTIVITY
PARAMETER NAME:	DO_NETPR
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	mgC per liter per hour
CATEGORIES:	LR
RELATED PARAMETERS:	DO_GROPR
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OXYGEN PRODUCTION CHANGE - DAY
PARAMETER NAME:	DO_PRO_D
DESCRIPTION:	Oxygen production rate of change per day.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	DO_PRO_H, DO_RES_D, DO_RES_H
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OXYGEN PRODUCTION CHANGE - HOUR

PARAMETER NAME: DO_PRO_H

DESCRIPTION: Oxygen production rate of change per hour.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DO_PRO_D,DO_RES_D,DO_RES_H

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OXYGEN RESPIRATION CHANGE - DAY

PARAMETER NAME: DO_RES_D

DESCRIPTION: Oxygen respiration rate of change per day.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DO_PRO_H,DO_PRO_D,DO_RES_H

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OXYGEN RESPIRATION CHANGE - HOUR

PARAMETER NAME: DO_RES_H

DESCRIPTION: Oxygen respiration rate of change per hour.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: DO_PRO_H,DO_RES_D,DO_PRO_D

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: DILUTION VOLUME

PARAMETER NAME: DVOL_L

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: LITERS

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: EPIFAUNAL CODE

PARAMETER NAME: EPIFAUNA

DESCRIPTION: Classification of organisms as associated with the surface (epifaunal) or benthic (infaunal) for use in species diversity calculations. (ODU Benthic Ecology Laboratory system)

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS:

RANGE: 0 = not epifaunal
1 = often epifaunal
2 = epifaunal

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Eastern Shore Basin

PARAMETER NAME: ESHORE

DESCRIPTION: The percent of the county in the Eastern Shore Basin.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: EUPHOTIC DEPTH

PARAMETER NAME: EUDEPTH

DESCRIPTION: Depth of 1% light transmission.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: METERS

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CHLOROPHYLL EXTRACT VOLUME

PARAMETER NAME: EXVOL_ML

DESCRIPTION: Volume of sample used in chlorophyll analysis.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML

CATEGORIES: WQ, HIST, LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Facility Name

PARAMETER NAME: FACNAME

DESCRIPTION: The name of the discharge facility.

KEYFIELD: N

DATATYPE: CHAR 40

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CBP Facility Key - FACILITY Table

PARAMETER NAME: FAC_PK

DESCRIPTION: The primary key to the FACILITY Table. This number is the TRI ID for facilities listed in the TRI, others are assigned by CBP-CC.

KEYFIELD: Y

DATATYPE: CHAR 15

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: FACPSFK

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Above/Below Fall Line Indicator

PARAMETER NAME: FALLINE

DESCRIPTION: The relation of the observation's location to the fall line. The CBP-CC staff can assign this value using GIS when LATDD/LONGDD are provided.

KEYFIELD: N

DATATYPE: CHAR 3, UPPERCASE

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE: AFL = above the fall line
BFL = Below the fall line

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: COLIFORM, FECAL

PARAMETER NAME: FCOLI

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: Most Probable Number

CATEGORIES: WQ

RELATED PARAMETERS: FCOLI_D,FCOLI_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	IRON, TOTAL
PARAMETER NAME:	FE
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ,HIST,SED
RELATED PARAMETERS:	FE_A,FE_C,FE_D,FE_M,FE_N,FE_O,FE_P, FE_S,FE_SK
RANGE:	Minimum = 0.0 Maximum = 69,000.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	FIELD SAMPLING METHOD CODE
PARAMETER NAME:	FIELD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	ALPHANUMERIC, LENGTH 4
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: State/County FIPS Code - FIPSNAME Table

PARAMETER NAME: FIPS_PK

DESCRIPTION: The combined state and county FIPS Code. This is the FIPSNAME Table primary key.

KEYFIELD: Y

DATATYPE: CHAR 5

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: FIPSLOFK

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: FLOW

PARAMETER NAME: FLOW

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: CFS

CATEGORIES:

RELATED PARAMETERS:

RANGE: Minimum = 13.29
Maximum = 447999.94

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: INCLUSIVE GRAPHIC STANDARD DEVIATION (FOLK METHOD)

PARAMETER NAME: FOLKISTD

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS: FOLKKURT,FOLKMEAN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: KURTOSIS (FOLK METHOD)

PARAMETER NAME: FOLKKURT

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS: FOLKISTD,FOLKMEAN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MEAN DIAMETER (FOLK METHOD)
PARAMETER NAME:	FOLKMEAN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	FOLKKURT, FOLKISTD
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SOLIDS, FIXED SUSPENDED
PARAMETER NAME:	FSS
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	FSS_A, FSS_C, FSS_D, FSS_M, FSS_N, FSS_O, FSS_P, FSS_S, FSS_SK
RANGE:	Minimum = 20.0 Maximum = 12920.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: FILTERED VOLUME, LITERS

PARAMETER NAME: FVOL_L

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: LITERS

CATEGORIES: LR

RELATED PARAMETERS: FVOL_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: FILTERED VOLUME, CUBIC METERS

PARAMETER NAME: FVOL_M3

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: LITERS

CATEGORIES: LR

RELATED PARAMETERS: FVOL_L

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CHEMICAL NAME
PARAMETER NAME:	CHEMNAME
DESCRIPTION:	8th or 9th Collective Index Name (depending on reference source). Many of the chemical names were obtained from the Toxic Substances Control Act (TSCA) list.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 30
UNITS:	N/A
CATEGORIES:	TOXIC,HIST
RELATED PARAMETERS:	
RANGE:	Current values available on request from the CBP-CC.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Chemical Species Type/Physical Fraction
PARAMETER NAME:	CHEMSPEC
DESCRIPTION:	The form of the chemical undergoing analysis, either on the basis of chemical species or on the basis of physical fraction, or both. A CBP-CC assigned code.
KEYFIELD:	N
DATATYPE:	CHAR 8
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MONOCHROMATIC ACTIVE CHLOROPHYLL A
PARAMETER NAME:	CHLA
DESCRIPTION:	Corrected for pheophytin and turbidity.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	CHLA_A, CHLA_C, CHLA_D, CHLA_M, CHLA_N CHLA_O, CHLA_P, CHLA_S, CHLA_SK
RANGE:	Minimum = 0.0 Maximum = 866.1

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CHLOROPHYLL A FLUX
PARAMETER NAME:	CHLAFLUX
DESCRIPTION:	Calculated flux of chlorophyll A to the sediment surface.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	PHOSFLUX, POCFLUX, PONFLUX, SESFLUX, SPECFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MONOCHROMATIC TOTAL CHLOROPHYLL A
PARAMETER NAME:	CHLAM
DESCRIPTION:	Uncorrected for pheophytin.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	CHLAM_A,CHLAM_C,CHLAM_D,CHLAM_M,CHLAM_N CHLAM_O,CHLAM_P,CHLAM_S,CHLAM_SK
RANGE:	Minimum = 0.0 Maximum = 7540.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TRICHROMATIC CHLOROPHYLL A
PARAMETER NAME:	CHL_A
DESCRIPTION:	Corrected for Turbidity
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	HIST
RELATED PARAMETERS:	CHL_A_A,CHL_A_C,CHL_A_D,CHL_A_M,CHL_A_N,CHL_A_O, CHL_A_P,CHL_A_S,CHL_A_SK
RANGE:	Minimum = 0.0 Maximum = 741.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TRICHROMATIC CHLOROPHYLL B
PARAMETER NAME:	CHL_B
DESCRIPTION:	Corrected for turbidity.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	CHL_B_A,CHL_B_C,CHL_B_D,CHL_B_M,CHL_B_N CHL_B_O,CHL_B_P,CHL_B_S,CHL_B_SK
RANGE:	Minimum = 0.0 Maximum = 26.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TRICHROMATIC CHLOROPHYLL C
PARAMETER NAME:	CHL_C
DESCRIPTION:	Corrected for turbidity.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	CHL_C_A,CHL_C_C,CHL_C_D,CHL_C_M,CHL_C_N CHL_C_O,CHL_C_P,CHL_C_S,CHL_C_SK
RANGE:	Minimum = 0.0 Maximum = 29.8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	FLUOROMETRIC CHLOROPHYLL A
PARAMETER NAME:	CHL_F
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	CHL_F_A,CHL_F_C,CHL_F_D,CHL_F_M,CHL_F_N CHL_F_O,CHL_F_P,CHL_F_S,CHL_F_SK
RANGE:	Minimum = 0.0 Maximum = 210.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	City Name
PARAMETER NAME:	CITYNM
DESCRIPTION:	The city in which the discharge facility is located.
KEYFIELD:	N
DATATYPE:	CHAR 25
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: COCKTAIL VOLUME

PARAMETER NAME: CKTL_VOL

DESCRIPTION: C14 Production.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CLAY

PARAMETER NAME: CLAY_MG

DESCRIPTION: Clay dry weight

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG PER SAMPLE

CATEGORIES: SED

RELATED PARAMETERS: CLAY_P

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUMBER IN SAMPLE
PARAMETER NAME:	CNT
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR,TOXIC
RELATED PARAMETERS:	CNT_AL,CNT_DE,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_VOL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB
RANGE:	Minimum = 1.0 Maximum = 8.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPECIES, CUMULATIVE NUMBER
PARAMETER NAME:	CNTCMSPx
DESCRIPTION:	Cumulative number of species through division X.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	CNTCUM_x
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CLAY PERCENT
PARAMETER NAME:	CLAY_P
DESCRIPTION:	Percent dry weight clay.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	SEDIMENT, TOXIC
RELATED PARAMETERS:	CLAY_MG
RANGE:	Minimum = 0.0 Maximum = 98.8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CLOUD COVER
PARAMETER NAME:	CLOUD
DESCRIPTION:	Describes the amount of cloud cover at a particular sampling site.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 1
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	N/A
RANGE:	' ' = not recorded '0' = clear (0 to 10%) '1' = scattered to partly cloudy (10 to 50%) '2' = partly to broken (50 to 90%) '3' = overcast (GT 90%) '4' = foggy '5' = hazy '6' = clouds (no % given)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: INDIVIDUALS, CUMULATIVE NUMBER

PARAMETER NAME: CNTCUM_x

DESCRIPTION: Cumulative number of individuals through division X.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNTCMSPx

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE ALIVE

PARAMETER NAME: CNT_AL

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT, CNT_DE, CNT_FE, CNT_IM, CNT_L, CNT_TOT, CNT_VOL CNT_LM2, CNT_MA, CNT_PROF, CNT_SP, CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE DEAD

PARAMETER NAME: CNT_DE

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_AL,CNT_FE,CNT_IM,CNT_L,CNT_TOT,CNT_VOL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE FEMALES

PARAMETER NAME: CNT_FE

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_AL,CNT_IM,CNT_L,CNT_TOT,CNT_VOL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE IMMATURE

PARAMETER NAME: CNT_IM

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_AL,CNT_L,CNT_TOT,CNT_VOL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER IN SAMPLE, RAW COUNT

PARAMETER NAME: CNT_L

DESCRIPTION: Raw count per sample of a given length.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: CNT,CNT_DE,CNT_FE,CNT_IM,CNT_AL,CNT_TOT,CNT_VOL CNT_LM2,CNT_MA,CNT_PROF,CNT_SP,CNT_SUB

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLING GEAR CODE
PARAMETER NAME:	GEAR
DESCRIPTION:	Code describing the gear used to collect the sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR,TOXIC,HIST
RELATED PARAMETERS:	
RANGE:	SEE TABLE 8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	GONAD WEIGHT
PARAMETER NAME:	GONAD_G
DESCRIPTION:	Gonad weight of individual.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	LR
RELATED PARAMETERS:	GONAD_I
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: GONADAL INDEX

PARAMETER NAME: GONAD_I

DESCRIPTION: Mean population gonadal index for bivalves. Used to ensure non-spawning bivalves are collected for lipophilic organic contaminant analysis. (Batelle) Index = (# organisms in each stage times numerical rank of each stage) divided by total # in sample.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: GONAD_G

RANGE:
Stage 0 = Resting/spent/inactive/neuter/virgin
Stage 1 = Developing-no ripe gametes observed (or) Spawning-residual gametes/some cytolysis
Stage 2 = Developing-ripe gametes-1/3 final size Spawning-reduction with follicles
Stage 3 = Developing-equal halves ripe/developing Spawning-half empty
Stage 4 = Developing-follicles mainly ripe gametes Spawning-active emission has begun
Stage 5 = Ripe gonad-distended follicles

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Median Grain Size

PARAMETER NAME: GRAIN_MD

DESCRIPTION: The median grain size of the sample.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: millimeters

CATEGORIES: TOX

RELATED PARAMETERS: GRAIN_MN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	GRAIN SIZE, MEDIAN
PARAMETER NAME:	GRAIN_MD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	GRAIN_MN
RANGE:	Minimum = 1.7 Maximum = 290.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	GRAIN SIZE, MEAN
PARAMETER NAME:	GRAIN_MN
DESCRIPTION:	The mean grain size of the sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SEDIMENT,TOXIC
RELATED PARAMETERS:	GRAIN_MD
RANGE:	Minimum = 0.2 Maximum = 205.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	GRAVEL
PARAMETER NAME:	GRAV_MG
DESCRIPTION:	Gravel dry weight.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SAMPLE
CATEGORIES:	SED
RELATED PARAMETERS:	GRAV_P
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	GRAVEL PERCENT
PARAMETER NAME:	GRAV_P
DESCRIPTION:	Gravel percent dry weight.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	SEDIMENT,TOXIC
RELATED PARAMETERS:	GRAV_MG
RANGE:	Minimum = 0.0 Maximum = 76.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUMBER OF CLADOCERANS
PARAMETER NAME:	GUT_CLAD
DESCRIPTION:	Number of cladocerans found in gut.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	GUT_COPE, GUT_MISC
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUMBER OF COPEPODS
PARAMETER NAME:	GUT_COPE
DESCRIPTION:	Number of copepods found in gut.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	GUT_CLAD, GUT_MISC
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER OF MISCELLANEOUS ITEMS

PARAMETER NAME: GUT_MISC

DESCRIPTION: Number of miscellaneous items found in gut.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: GUT_COPE,GUT_CLAD

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: MOISTURE

PARAMETER NAME: H2O_MG

DESCRIPTION: Moisture weight.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG PER SAMPLE

CATEGORIES: SED

RELATED PARAMETERS: H2O_P

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: MOISTURE PERCENT

PARAMETER NAME: H2O_P

DESCRIPTION: Percent moisture.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: %

CATEGORIES: SEDIMENT,TOXIC

RELATED PARAMETERS: H2O_MG

RANGE: Minimum = 0.0
Maximum = 83.6

TITLE: HARDNESS, AS CaCO3

PARAMETER NAME: HARD

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ,HIST

RELATED PARAMETERS: 11.0

RANGE: Minimum = 20.0
Maximum = 5200.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MERCURY, TOTAL
PARAMETER NAME:	HG
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ,HIST,TOXIC,SED,LR
RELATED PARAMETERS:	HG_A,HG_C,HG_D,HG_M,HG_N,HG_O,HG_P, HG_S,HG_SK
RANGE:	Minimum = -0.001 Maximum = 1050.000

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	USGS Hydrologic Unit Code
PARAMETER NAME:	HUC
DESCRIPTION:	The U.S. Geological Survey's Hydrologic Unit Code (HUC) in which the observation is located. The CBP-CC staff can assign this value using GIS when LATDD/LONGDD are provided.
KEYFIELD:	N
DATATYPE:	CHAR 8
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Instrument used for measuring M_VALUE

PARAMETER NAME: INSTRMT

DESCRIPTION: Provides the data user with a general idea of the type of chemical analysis performed for this sample.

KEYFIELD: N

DATATYPE: CHAR 7

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: ISOTOPE CODE

PARAMETER NAME: ISOTP_CD

DESCRIPTION: Isotope code for C14 production.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	James River Basin
PARAMETER NAME:	JAMES
DESCRIPTION:	The percent of the county in the James River Basin.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	decimal percent
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LATITUDE
PARAMETER NAME:	LAT
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC 6.4
UNITS:	Decimal Degrees
CATEGORIES:	ALL
RELATED PARAMETERS:	LONGITUDE
RANGE:	Minimum = 36.0 Maximum = 43.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species Latin Name
PARAMETER NAME:	LATIN
DESCRIPTION:	The CBP-CC latin name of the species.
KEYFIELD:	N
DATATYPE:	CHAR 40, UPPERCASE
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	Current values available by request from CBP-CC.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLE LAYER
PARAMETER NAME:	LAYER
DESCRIPTION:	Code describing the water stratum being sampled.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 2
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	'S ' = surface 'AP' = above pycnocline 'M ' = middle 'BP' = below pycnocline 'B ' = bottom 'AT' = above thermocline 'SE' = sediment 'BT' = below thermocline 'SW' = sed/water 'AE' = above euphotic zone interface 'BE' = below euphotic zone 'MI' = microlayer

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Length of Individual

PARAMETER NAME: LENGTH

DESCRIPTION: The length of the individual for this sample.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: centimeters

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LENGTH OF INDIVIDUAL - CM

PARAMETER NAME: LEN_CM

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: CM

CATEGORIES: LR

RELATED PARAMETERS: LEN_MM, LEN_MAX, LEN_MEN, LEN_MENO, LEN_MENM, LEN_MIN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LENGTH OF INDIVIDUAL - MAXIMUM

PARAMETER NAME: LEN_MAX

DESCRIPTION: Maximum length of individual per sample.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MM

CATEGORIES: LR

RELATED PARAMETERS: LEN_CM, LEN_MM, LEN_MEN, LEN_MENO, LEN_MENM, LEN_MIN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LENGTH OF INDIVIDUAL - MEAN

PARAMETER NAME: LEN_MEN

DESCRIPTION: Mean length of individual per sample.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MM

CATEGORIES: LR

RELATED PARAMETERS: LEN_CM, LEN_MAX, LEN_MM, LEN_MENO, LEN_MENM, LEN_MIN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LENGTH OF INDIVIDUAL - METALS
PARAMETER NAME:	LEN_MENM
DESCRIPTION:	Mean length of individual used in metals analysis.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MM
CATEGORIES:	LR
RELATED PARAMETERS:	LEN_CM,LEN_MAX,LEN_MEN,LEN_MM, LEN_MENO,LEN_MIN
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LENGTH OF INDIVIDUAL - ORGANIC
PARAMETER NAME:	LEN_MENO
DESCRIPTION:	Mean length of individual used in organic analysis.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MM
CATEGORIES:	LR
RELATED PARAMETERS:	LEN_CM,LEN_MAX,LEN_MEN,LEN_MM, LEN_MENM,LEN_MIN
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LENGTH OF INDIVIDUAL - MINIMUM
PARAMETER NAME:	LEN_MIN
DESCRIPTION:	Minimum length of individual per sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MM
CATEGORIES:	LR
RELATED PARAMETERS:	LEN_CM, LEN_MAX, LEN_MEN, LEN_MM, LEN_MENO, LEN_MM
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LENGTH OF INDIVIDUAL - MM
PARAMETER NAME:	LEN_MM
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MM
CATEGORIES:	LR
RELATED PARAMETERS:	LEN_CM, LEN_MAX, LEN_MEN, LEN_MENO, LEN_MENM, LEN_MIN
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LIFE STAGE
PARAMETER NAME:	LIFE_STG
DESCRIPTION:	Life stage of individual. Code for biological monitoring of fish and zooplankton.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 2
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	SEE TABLE 9

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LIGHT - LANGLEYS
PARAMETER NAME:	LIGHT_L
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	g/cl/cm2
CATEGORIES:	LR
RELATED PARAMETERS:	LIGHT_E,LIGHT_P,LIGHT_P,LIGHT_Q, LIGHT_T
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LIGHT - PHOTONS
PARAMETER NAME:	LIGHT_P
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	LIGHT_L,LIGHT_E,LIGHT_P,LIGHT_Q, LIGHT_T
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LIGHT - QUANTA
PARAMETER NAME:	LIGHT_Q
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	
CATEGORIES:	LR
RELATED PARAMETERS:	LIGHT_L,LIGHT_P,LIGHT_P,LIGHT_E, LIGHT_T
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LIGHT - TRANSMISSION
PARAMETER NAME:	LIGHT_T
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	LR
RELATED PARAMETERS:	LIGHT_L,LIGHT_P,LIGHT_P,LIGHT_Q, LIGHT_E
RANGE:	Minimum = 0.1 Maximum = 99.9

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CHLOROPHYLL LIGHT PATH
PARAMETER NAME:	LIPAT_CM
DESCRIPTION:	Length of chlorophyll light path.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Centimeters
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LIPID CONTENT

PARAMETER NAME: LIPID_G

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS LIPID PER GRAM

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Percent Wet Weight, Lipid

PARAMETER NAME: LIPID_P

DESCRIPTION: The percentage of lipids in the sample, wet weight.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE: Minimum = 0 %
Maximum = 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Date, Data Base Entry
PARAMETER NAME:	LOADDATE
DESCRIPTION:	The date that the data was first installed in the CBP Data Base. Will be assigned by the CBP-CC staff.
KEYFIELD:	N
DATATYPE:	NUM 8
UNITS:	SAS Date
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	LONGITUDE
PARAMETER NAME:	LONG
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC 6.4
UNITS:	Decimal Degrees
CATEGORIES:	ALL
RELATED PARAMETERS:	LATITUDE
RANGE:	Minimum = 74.7 Maximum = 80.4

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MAXIMUM SAMPLE DEPTH
PARAMETER NAME:	MAXDEPTH
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	LR
RELATED PARAMETERS:	SDEPTH,TDEPTH,MINDEPTH
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MINIMUM DETECTABLE CONCENTRATION
PARAMETER NAME:	MDC
DESCRIPTION:	2 Sigma counting uncertainty associated with a reported nuclide concentration.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MDC_D,NUCLD_CD
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: MEDIAN DIAMETER

PARAMETER NAME: MEDDIAM

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: PHI

CATEGORIES: LR, SED

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Medium from which M_VALUE is taken

PARAMETER NAME: MEDIUM

DESCRIPTION: Indicates the sampling or loading medium from which the value reported in M_VALUE is taken.

KEYFIELD: N

DATATYPE: CHAR 8

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE: See Table 13

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Analytical Method Reference
PARAMETER NAME:	METHOD
DESCRIPTION:	Identifies the type of sample preparation, type of analysis conducted and class of compound or element searched for in the sample.
KEYFIELD:	N
DATATYPE:	CHAR 20
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	See Table 4

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MINIMUM SAMPLE DEPTH
PARAMETER NAME:	MINDEPTH
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	LR
RELATED PARAMETERS:	MAXDEPTH, SDEPTH, TDEPTH
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MANGANESE, TOTAL
PARAMETER NAME:	MN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	ALL
RELATED PARAMETERS:	MN_A, MN_C, MN_D, MN_M, MN_N, MN_O, MN_P, MN_S, MN_SK
RANGE:	Minimum = 0.0 Maximum = 6900.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CBP Model Segment
PARAMETER NAME:	MODELSEG
DESCRIPTION:	The identifier for the CBP Model segment in which the observation is located. The CBP-CC staff can assign this value using GIS when LATDD/LONGDD are provided.
KEYFIELD:	N
DATATYPE:	CHAR 15
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	See Table 14 and 15

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	KURTOSIS (MOM)
PARAMETER NAME:	MOMCKURT
DESCRIPTION:	Method of Moments ref. McBride in Carver,71
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCSKEW,MOMEAN_1,MOMTKURT,MOMTSKEW, MOSTD_2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SKEWNESS (MOM)
PARAMETER NAME:	MOMCSKEW
DESCRIPTION:	Method of Moments ref. McBride in Carver,71
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCKURT,MOMEAN_1,MOMTKURT,MOMTSKEW, MOSTD_2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	MEAN DIAMETER (MOM)
PARAMETER NAME:	MOMEAN_1
DESCRIPTION:	Method of Moments
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCSKEW,MOMCKURT,MOMTKURT,MOMTSKEW, MOSTD_2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	KURTOSIS (MOM TABLES)
PARAMETER NAME:	MOMTKURT
DESCRIPTION:	Method of Moments ref. Math Tables Handbook
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCSKEW,MOMEAN_1,MOMCKURT,MOMTSKEW, MOSTD_2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	KURTOSIS (MOM TABLES)
PARAMETER NAME:	MOMTKURT
DESCRIPTION:	Method of Moments ref. Math Tables Handbook
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCSKEW,MOMEAN_1,MOMTKURT,MOMCKURT, MOSTD_2
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	STANDARD DEVIATION (MOM)
PARAMETER NAME:	MOSTD_2
DESCRIPTION:	Method of Moments ref. McBride in Carver,71
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MOMCSKEW,MOMEAN_1,MOMTKURT,MOMTSKEW, MOMCKURT
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Units of Measurement

PARAMETER NAME: M_UNITS

DESCRIPTION: The units of measurement associated with the values in M_VALUE and DETLIM.

KEYFIELD: N

DATATYPE: CHAR 8

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Measured Value

PARAMETER NAME: M_VALUE

DESCRIPTION: The ambient concentration measured or the reported release/loading/application data.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: See M_UNITS

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SCREEN MESH WIDTH
PARAMETER NAME:	NETMESH
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MM
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, AMMONIA (FILTERED)
PARAMETER NAME:	NH4
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	NH4_A,NH4_C,NH4_D,NH4_M,NH4_N,NH4_O, NH4_P,NH4_S,NH4_SK
RANGE:	Minimum = 0.0 Maximum = 0.6

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, AMMONIA (WHOLE WATER)
PARAMETER NAME:	NH4W
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	NH4W_A,NH4W_C,NH4W_D,NH4W_M,NH4W_N, NH4W_O,NH4W_P,NH4W_S,NH4W_SK
RANGE:	Minimum = 0.0 Maximum = 6.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species - National Marine Fisheries Service Code
PARAMETER NAME:	NMFSCODE
DESCRIPTION:	The code used by the National Marine Fisheries Service to identify the species.
KEYFIELD:	N
DATATYPE:	CHAR 4
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, NITRITE (FILTERED)
PARAMETER NAME:	NO2
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	NO2_A,NO2_C,NO2_D,NO2_M,NO2_N,NO2_O, NO2_P,NO2_S,NO2_SK
RANGE:	Minimum = 0.002 Maximum = 0.265

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, NITRITE + NITRATE (FILTERED)
PARAMETER NAME:	NO23
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	NO23_A,NO23_C,NO23_D,NO23_M,NO23_N,NO23_O, NO23_P,NO23_S,NO23_SK
RANGE:	Minimum = 0.0006 Maximum = 2.4200

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NITROGEN, NITRITE + NITRATE (WHOLE WATER)

PARAMETER NAME: NO23W

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ,HIST

RELATED PARAMETERS: NO23W_A,NO23W_C,NO23W_D,NO23W_M,NO23W_N,NO23W_O,
NO23W_P,NO23W_S,NO23W_SK

RANGE: Minimum = 0.0
Maximum = 9.18

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NITROGEN, NITRATE (FILTERED)

PARAMETER NAME: NO3

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ,HIST

RELATED PARAMETERS: NO3_A,NO3_C,NO3_D,NO3_M,NO3_N,NO3_O,
NO3_P,NO3_S,NO3_SK

RANGE: Minimum = -0.09
Maximum = 2.41

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species - National Oceanographic Data Center Code
PARAMETER NAME:	NODCCODE
DESCRIPTION:	The code used by the National Oceanographic Data Center to identify the species.
KEYFIELD:	N
DATATYPE:	CHAR 12
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	See Table 10

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NPDES Permit Number
PARAMETER NAME:	NPDES
DESCRIPTION:	The National Pollutant Discharge Elimination System Permit Number for this discharge.
KEYFIELD:	N
DATATYPE:	CHAR 9
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUMBER OF SAMPLES
PARAMETER NAME:	NSAMP
DESCRIPTION:	Number of samples taken.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR,WQ
RELATED PARAMETERS:	NUMSUB
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUCLIDE IDENTIFICATION CODE
PARAMETER NAME:	NUCLD_CD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	ALPHANUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	MDC,MDC_D
RANGE:	Codes currently in use are:

Ra-226	Pb-212	Pb-214	Ti-208	Bi-214
Bi-212	Ac-228	K-40	Be-7	Cr-51
Mn-54	Co-57	Co-58	Fe-59	Co-60
Zn-65	Nb-95	Zr-95	Mo-99	Tc-99M
Ru-103	Ru-106	Ag-110M	Sn-113	Sb-125
I-131	I-132	Te-132	Xe-133	Xe-133M
I-133	Cs-134	Cs-136	Cs-137	Ba-140
La-140	Ce-141	Ce-143	Ce-144	Nd-147
Np-239				

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NUMBER OF SUBSAMPLES
PARAMETER NAME:	NUMSUB
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	NSAMP
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 480
PARAMETER NAME:	OD480B
DESCRIPTION:	Optical density of sample at 480 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD510B,OD630B,OD645B,OD647B,OD663B,OD664B, OD665A,OD750A,OD750B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 510
PARAMETER NAME:	OD510B
DESCRIPTION:	Optical density of sample at 510 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD480B,OD630B,OD645B,OD647B,OD663B,OD664B, OD665A,OD750A,OD750B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 630
PARAMETER NAME:	OD630B
DESCRIPTION:	Optical density of sample at 630 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD510B,OD480B,OD645B,OD647B,OD663B,OD664B, OD665A,OD750A,OD750B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OPTICAL DENSITY - 645

PARAMETER NAME: OD645B

DESCRIPTION: Optical density of sample at 645 nanometers, before acid.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: OD510B,OD630B,OD480B,OD647B,OD663B,OD664B, OD665A,OD750A,OD750B

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OPTICAL DENSITY - 647

PARAMETER NAME: OD647B

DESCRIPTION: Optical density of sample at 647 nanometers, before acid.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: OD510B,OD630B,OD645B,OD480B,OD663B,OD664B, OD665A,OD750A,OD750B

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 663
PARAMETER NAME:	OD663B
DESCRIPTION:	Optical density of sample at 663 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD510B,OD630B,OD645B,OD647B,OD480B,OD664B, OD665A,OD750A,OD750B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 664
PARAMETER NAME:	OD664B
DESCRIPTION:	Optical density of sample at 664 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD510B,OD630B,OD645B,OD647B,OD663B,OD480B, OD665A,OD750A,OD750B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OPTICAL DENSITY - 665

PARAMETER NAME: OD665B

DESCRIPTION: Optical density of sample at 665 nanometers, after acid.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: OD510B,OD630B,OD645B,OD647B,OD663B,OD664B, OD480B,OD750A,OD750B

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: OPTICAL DENSITY - 750A

PARAMETER NAME: OD750A

DESCRIPTION: Optical density of sample at 750 nanometers, after acid.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: OD510B,OD630B,OD645B,OD647B,OD663B,OD664B, OD665A,OD480B,OD750B

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OPTICAL DENSITY - 750B
PARAMETER NAME:	OD750B
DESCRIPTION:	Optical density of sample at 750 nanometers, before acid.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	OD510B,OD630B,OD645B,OD647B,OD663B,OD664B, OD665A,OD750A,OD480B
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species - Old Dominion University Code
PARAMETER NAME:	ODUCODE
DESCRIPTION:	The code used by Old Dominion University to identify the species.
KEYFIELD:	N
DATATYPE:	CHAR 10
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OIL AND GREASE
PARAMETER NAME:	OILGR_MG
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SAMPLE
CATEGORIES:	SED
RELATED PARAMETERS:	OILGR_P
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OIL AND GREASE PERCENT
PARAMETER NAME:	OILGR_P
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	SED
RELATED PARAMETERS:	OILGR_MG
RANGE:	0 to 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	OXIDATION REDUCTION POTENTIAL
PARAMETER NAME:	ORP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	mV per cm
CATEGORIES:	
RELATED PARAMETERS:	ORP_M
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PARTICLE CLASSIFICATION
PARAMETER NAME:	PART_CLS
DESCRIPTION:	Classification used for particle size distribution, Shepard's, or phi class.
KEYFIELD:	N
DATATYPE:	ALPHANUMERIC, LENGTH 4
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Patuxent River Basin

PARAMETER NAME: PATUXENT

DESCRIPTION: The percent of the county in the Patuxent River Basin.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LEAD, TOTAL

PARAMETER NAME: PB

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: UG/L

CATEGORIES: WQ,HIST,TOXIC,SED,LR

RELATED PARAMETERS: PB_A,PB_C,PB_D,PB_M,PB_N,PB_O,PB_P, PB_S,PB_SK

RANGE: Minimum = 0.0
Maximum = 13890.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PYCNOCLINE, LOWER DEPTH
PARAMETER NAME:	PDEPTHL
DESCRIPTION:	Lower extent of pycnocline, if extant.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	WQ
RELATED PARAMETERS:	PDEPTHU
RANGE:	Minimum = 0.0 Maximum = 30.5

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PYCNOCLINE, UPPER DEPTH
PARAMETER NAME:	PDEPTHU
DESCRIPTION:	Upper extent of pycnocline, if extant.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	WQ
RELATED PARAMETERS:	PDEPTHL
RANGE:	Minimum = 0.0 Maximum = 21.5

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	pH
PARAMETER NAME:	PH
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Standard Units
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	PH_M
RANGE:	Minimum = 1.73 Maximum = 11.25

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHEOPHYTIN A, MONOCHROMATIC
PARAMETER NAME:	PHEA
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	PHEA_A,PHEA_C,PHEA_D,PHEA_M,PHEA_N, PHEA_O,PHEA_P,PHEA_S,PHEA_SK
RANGE:	Minimum = 0.0 Maximum = 48.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHOSPHORUS SEDIMENT FLUX
PARAMETER NAME:	PHOSFLUX
DESCRIPTION:	Daily calculated flux of particulate organic phosphorus to the sediment surface.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	CHLAFLUX,POCFLUX,PONFLUX,SESFLUX,SPECFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHOSPHORUS, PARTICULATE
PARAMETER NAME:	PHOSP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	PHOSP_A,PHOSP_C,PHOSP_D,PHOSP_M,PHOSP_N, PHOSP_O,PHOSP_P,PHOSP_S,PHOSP_SK
RANGE:	Minimum = -0.2 Maximum = 0.4

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON, PARTICULATE ORGANIC
PARAMETER NAME:	POC
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	POC_A,POC_C,POC_D,POC_M,POC_N,POC_O, POC_P,POC_S,POC_SK
RANGE:	Minimum = -7.6 Maximum = 27.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON SEDIMENT FLUX
PARAMETER NAME:	POCFLUX
DESCRIPTION:	Daily calculated flux of particulate organic carbon to the sediment surface.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	CHLAFLUX,PHOSFLUX,PONFLUX,SESFLUX,SPECFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, PARTICULATE ORGANIC
PARAMETER NAME:	PON
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	PON_A,PON_C,PON_D,PON_M,PON_N,PON_O, PON_P,PON_S,PON_SK
RANGE:	Minimum = -0.5 Maximum = 6.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN SEDIMENT FLUX
PARAMETER NAME:	PONFLUX
DESCRIPTION:	Daily calculated flux of particulate organic nitrogen to the sediment surface.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	CHLAFLUX,POCFLUX,PHOSFLUX,SESFLUX,SPECFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Potomac River Basin
PARAMETER NAME:	POTOMAC
DESCRIPTION:	The percent of the county in the Potomac River Basin.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	decimal percent
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	POTW City
PARAMETER NAME:	POTWCITY
DESCRIPTION:	The city in which the Publicly Owned Treatment Works is located.
KEYFIELD:	N
DATATYPE:	CHAR 25
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: POTW County

PARAMETER NAME: POTWCNTY

DESCRIPTION: The county in which the Publicly Owned Treatment Works is located.

KEYFIELD: N

DATATYPE: CHAR 25

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: POTW Name

PARAMETER NAME: POTWNM

DESCRIPTION: The name of the Publicly Owned Treatment Works.

KEYFIELD: N

DATATYPE: CHAR 40

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	**PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (FILTERED)**
PARAMETER NAME:	**PO4F**
DESCRIPTION:	
KEYFIELD:	**N**
DATATYPE:	**NUMERIC**
UNITS:	**MG/L**
CATEGORIES:	**WQ,HIST**
RELATED PARAMETERS:	**PO4F_A,PO4F_C,PO4F_D,PO4F_M,PO4F_N, PO4F_O,PO4F_P,PO4F_S,PO4F_SK**
RANGE:	Minimum = 0.001 Maximum = 0.131

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	**PHOSPHORUS, TOTAL ORTHOPHOSPHATE (WHOLE WATER)**
PARAMETER NAME:	**PO4W**
DESCRIPTION:	
KEYFIELD:	**N**
DATATYPE:	**NUMERIC**
UNITS:	**MG/L**
CATEGORIES:	**WQ,HIST**
RELATED PARAMETERS:	**PO4W_A,PO4W_C,PO4W_D,PO4W_M,PO4W_N, PO4W_O,PO4W_P,PO4W_S,PO4W_SK**
RANGE:	Minimum = 0.0 Maximum = 3.035

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	POTW State Abbreviation
PARAMETER NAME:	POTWST
DESCRIPTION:	The state in which the Publicly Owned Treatment Works is located.
KEYFIELD:	N
DATATYPE:	CHAR 2
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	POTW Zip Code
PARAMETER NAME:	POTWZIP
DESCRIPTION:	The zip code in which the Publicly Owned Treatment Works is located.
KEYFIELD:	N
DATATYPE:	CHAR 9
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CBP POTW Key - POTW Table

PARAMETER NAME: POTW_PK

DESCRIPTION: The primary key that uniquely identifies the Publicly Owned Treatment Works in the POTW Table. This number is the POTW-TRI ID as listed in the TRI.

KEYFIELD: Y

DATATYPE: CHAR 15

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: POTWPSFK

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Species - Maryland Power Plant Siting Program Code

PARAMETER NAME: PPSPCODE

DESCRIPTION: The code used by the Maryland Power Plant Siting Program to identify the species.

KEYFIELD: N

DATATYPE: CHAR 4

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	KIND OF PRECIPITATION
PARAMETER NAME:	PRECIP_K
DESCRIPTION:	Describes weather conditions encountered when sample was taken.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 2
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	' ' = not recorded '10' = none '11' = drizzle '12' = rain '13' = rain, heavy '14' = squall '15' = frozen precipitation '16' = rain or snow

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Priority Discharger Flag
PARAMETER NAME:	PRIDISCH
DESCRIPTION:	Flag indicating if the discharge facility has been listed as a known releaser of Priority Pollutants.
KEYFIELD:	N
DATATYPE:	CHAR 1
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	Y = yes N = no

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Priority Pollutant Flag
PARAMETER NAME:	PRIPOLL
DESCRIPTION:	A flag indicating if the chemical is on the U.S. EPA's Priority Pollutant List.
KEYFIELD:	N
DATATYPE:	CHAR 1
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	Y = yes N = no

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Analysis Problem Code
PARAMETER NAME:	PROBLEM
DESCRIPTION:	This code describes the problem associated with a questionable entry in M_VALUE.
KEYFIELD:	N
DATATYPE:	CHAR 3
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	See Table 3

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Processing Organization
PARAMETER NAME:	PROC_ORG
DESCRIPTION:	A code indicating the name of the processing organization responsible for the original dataset.
KEYFIELD:	N
DATATYPE:	CHAR 8
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	EPA = U.S. EPA MDDEPTAG = Maryland Department of Agriculture MDE = Maryland Department of the Environment ODU = Old Dominion University USCG = U.S. Coast Guard VADEPTAG = Virginia Department of Agriculture VIMS = Virginia Institute of Marine Science

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PRODUCTION EFFICIENCY
PARAMETER NAME:	PROEFF
DESCRIPTION:	Fixation rate.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	C/chl
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Publishing Information - Line 1
PARAMETER NAME:	PUBLISH1
DESCRIPTION:	Publishing information for the reference document.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	PUBLISH2, PUBLISH3
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Publishing Information - Line 2
PARAMETER NAME:	PUBLISH2
DESCRIPTION:	Continuation line for publishing information.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	PUBLISH1, PUBLISH3
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Publishing Information - Line 3

PARAMETER NAME: PUBLISH3

DESCRIPTION: Continuation line for publishing information.

KEYFIELD: N

DATATYPE: CHAR 75, mixed case

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: PUBLISH1, PUBLISH2

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: QUARTILE DEVIATION

PARAMETER NAME: QUARTDEV

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Rappahannock River Basin

PARAMETER NAME: RAPP

DESCRIPTION: The percent of the county in the Rappahannock River Basin.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: National Wildlife Refuge Name

PARAMETER NAME: REFUGE

DESCRIPTION: The name of the National Wildlife Refuge in which the pesticide was used.

KEYFIELD: N

DATATYPE: CHAR 20

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	REPLICATE NUMBER
PARAMETER NAME:	REP_NUM
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	Minimum = 1.0 Maximum = 3.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	REPLICATE TYPE
PARAMETER NAME:	REP_TYPE
DESCRIPTION:	Identifies sample types, and kinds and levels of sample replication. Usually used in conjunction with REP_NUM (replicate number).
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 4
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	'CTRL' = control sample 'FLD ' = field replicate 'LAB ' = laboratory replicate 'FL ' = field and lab reps. in data set 'METH' = method comparison 'SPK ' = spike sample 'SPLT' = field split sample

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	RIVER CODE
PARAMETER NAME:	RIVER
DESCRIPTION:	River, creek, or other water body code that identifies where the sample was collected.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 16
UNITS:	N/A
CATEGORIES:	WQ, TOXIC
RELATED PARAMETERS:	
RANGE:	SEE TABLE 6

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SALINITY
PARAMETER NAME:	SALIN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	PARTS PER THOUSAND
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	SALIN_M
RANGE:	Minimum = 0.0 Maximum = 35.1

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SALINITY ZONE

PARAMETER NAME: SALZONE

DESCRIPTION:

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 1

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE:

'F' = freshwater
'O' = oligohaline (0.5 - 5.0 ppt)
'M' = mesohaline (5.0 - 18.0 ppt)
'P' = polyhaline (18.0 - 32.0 ppt)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SAMPLE IDENTIFICATION NUMBER

PARAMETER NAME: SAMPLEID

DESCRIPTION: A number used to differentiate between multiple observations with the same DATE and TIME. May be assigned by the CBP-CC staff.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ, TOXIC

RELATED PARAMETERS:

RANGE: Arbitrary Number

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SAMPLE VOLUME

PARAMETER NAME: SAMVOL_L

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: LITERS

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SAMPLE GEOMETRY

PARAMETER NAME: SAM_GEO

DESCRIPTION: Sample geometry when oriented on detector cap.

KEYFIELD: N

DATATYPE: ALPHANUMERIC, LENGTH 8

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS:

RANGE:

```
'BLANK   ' = no geometry recorded
'0.5LMAR ' = 0.5 liter Marinelli
'1LMAR   ' = 1 liter Marinelli
'2LMAR   ' = 2 liter Marinelli
'PETRI   ' = Petri dish
'SOURCE  ' = calibrated source
'.075LCOR' = sediment core
```

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SAMPLE MEDIA DESCRIPTION

PARAMETER NAME: SAM_MED

DESCRIPTION: Used for specific sample identification in gamma analysis.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS:

RANGE: SEE TABLE 11

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Percent Dry Weight, Sand

PARAMETER NAME: SAND_P

DESCRIPTION: The percentage of sand in the sample, dry weight.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOXIC, SEDIMENT

RELATED PARAMETERS:

RANGE: 0 to 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SUBMERGED AQUATIC VEGETATION - NATURAL
PARAMETER NAME:	SAVPRES
DESCRIPTION:	Code that identifies whether SAV bed is natural or transplanted.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 7
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	SAV_B, SAV_P
RANGE:	'NATURAL' = natural 'TRANSPL' = transplanted

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SUBMERGED AQUATIC VEGETATION - PRESENCE
PARAMETER NAME:	SAV_B
DESCRIPTION:	Code that identifies presence or absence of SAV at a site.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 1
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	SAVPRES, SAV_P
RANGE:	'0' = absence '1' = presence

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SUBMERGED AQUATIC VEGETATION - PERCENT

PARAMETER NAME: SAV_P

DESCRIPTION: Maximum percent of area covered by SAV.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: %

CATEGORIES: LR

RELATED PARAMETERS: SAV_B,SAV_PRES

RANGE: 1 - 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SIZE CLASS - 200 UM

PARAMETER NAME: SC200

DESCRIPTION: Number in sample in size class 200 um.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS: SC300,SC600,SC850,SC2000

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SIZE CLASS - 2000 UM
PARAMETER NAME:	SC2000
DESCRIPTION:	Number in sample in size class 2000 um.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	SC300,SC600,SC850,SC200
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SIZE CLASS - 300 UM
PARAMETER NAME:	SC300
DESCRIPTION:	Number in sample in size class 300 um.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	SED
RELATED PARAMETERS:	SC200,SC600,SC850,SC2000
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SIZE CLASS - 600 UM

PARAMETER NAME: SC600

DESCRIPTION: Number in sample in size class 600 um.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS: SC300,SC200,SC850,SC2000

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SIZE CLASS - 850 UM

PARAMETER NAME: SC850

DESCRIPTION: Number in sample in size class 850 um.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: SED

RELATED PARAMETERS: SC300,SC600,SC200,SC2000

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLE DEPTH
PARAMETER NAME:	SDEPTH
DESCRIPTION:	Depth from surface at which sample was taken.
KEYFIELD:	Y
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	TDEPTH
RANGE:	Minimum = 0.0 Maximum = 37.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SELENIUM, TOTAL
PARAMETER NAME:	SE
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ,HIST,TOXIC,SED,LR
RELATED PARAMETERS:	SE_A,SE_C,SE_D,SE_M,SE_N,SE_N,SE_O, SE_P,SE_S,SE_SK
RANGE:	Minimum = 0.0 Maximum = 1.2

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SECCHI DEPTH
PARAMETER NAME:	SECCHI
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	SECCHI_M
RANGE:	Minimum = 0.1 Maximum = 11.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CHESAPEAKE BAY PROGRAM SEGMENT DESIGNATION
PARAMETER NAME:	SEGMENT
DESCRIPTION:	The code for the CBP segment in which the observation is located. The CBP-CC staff can assign this value using GIS when LATDD/LONGDD are provided.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 5
UNITS:	N/A
CATEGORIES:	WQ,HIST,LR,TOXIC,SED
RELATED PARAMETERS:	
RANGE:	SEE TABLE 7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SESTON SEDIMENT FLUX
PARAMETER NAME:	SESFLUX
DESCRIPTION:	Daily calculated flux of seston (total particulates) to the sediment surface.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	CHLAFLUX,POCFLUX,PONFLUX,PHOSFLUX,SPECFLUX, SES_MG
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SESTON WEIGHT
PARAMETER NAME:	SES_MG
DESCRIPTION:	Dry weight of total particulates (seston).
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	SED
RELATED PARAMETERS:	SESFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SETTLED VOLUME - NORMALIZED

PARAMETER NAME: SEVL_ML3

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML PER CUBIC METER

CATEGORIES: LR

RELATED PARAMETERS: SEVL_MLS,SEVZ_ML3,SEVZ_MLS

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SETTLED VOLUME - SAMPLE

PARAMETER NAME: SEVL_MLS

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML PER SAMPLE

CATEGORIES: LR

RELATED PARAMETERS: SEVL_ML3,SEVZ_ML3,SEVZ_MLS

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SETTLED VOLUME - NORMALIZED ZOO.

PARAMETER NAME: SEVZ_ML3

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML PER CUBIC METER

CATEGORIES: LR

RELATED PARAMETERS: SEVL_MLS,SEVL_ML3,SEVZ_MLS

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SETTLED VOLUME - ZOO. SAMPLE

PARAMETER NAME: SEVZ_MLS

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML PER CUBIC METER

CATEGORIES: LR

RELATED PARAMETERS: SEVL_MLS,SEVZ_ML3,SEVL_ML3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SEX OF INDIVIDUAL
PARAMETER NAME:	SEX
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 1
UNITS:	N/A
CATEGORIES:	LR,TOXIC
RELATED PARAMETERS:	
RANGE:	'M' = male 'F' = female 'U' = unknown

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SILICA, TOTAL
PARAMETER NAME:	SI
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	SI_A,SI_C,SI_D,SI_M,SI_N,SI_O, SI_P,SI_S,SI_SK
RANGE:	Minimum = 0.01 Maximum = 3.80

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Standard Industrial Classification Code, Primary

PARAMETER NAME: SIC

DESCRIPTION: The SIC code that identifies the primary type industrial activity for the discharge facility.

KEYFIELD: N

DATATYPE: CHAR 4

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: SIC2

RANGE: Refer to SIC Handbook.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Standard Industrial Classification Code, Secondary

PARAMETER NAME: SIC2

DESCRIPTION: The SIC code that identifies the secondary type industrial activity for the discharge facility.

KEYFIELD: N

DATATYPE: CHAR 4

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: SIC

RANGE: Refer to SIC Handbook.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPECIFIC GRAVITY
PARAMETER NAME:	SIG_T
DESCRIPTION:	Specific gravity of water in a sample, calculated from other parameters (*$$$$$$$$$$*)
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SILT
PARAMETER NAME:	SILT_MG
DESCRIPTION:	Dry weight silt.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SAMPLE
CATEGORIES:	SED
RELATED PARAMETERS:	SILT_P
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SILT PERCENT
PARAMETER NAME:	SILT_P
DESCRIPTION:	Percent dry weight silt.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	SEDIMENT,TOXIC
RELATED PARAMETERS:	SILT
RANGE:	0 to 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SILICIOUS ACID
PARAMETER NAME:	SIOH4
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	SED
RELATED PARAMETERS:	SIOH4_A,SIOH4_D,SIOH4_M,SIOH4_N,SIOH4_O,SIOH4_P,SIOH4_S
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SITE CODE
PARAMETER NAME:	SITE
DESCRIPTION:	Collecting agency site code.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 8
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	SITENO
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SITE NUMBER
PARAMETER NAME:	SITENO
DESCRIPTION:	Collecting agency site number.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	SITE
RANGE:	Arbitrary Number

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SKEWNESS (PHI QUARTILE)

PARAMETER NAME: SKEW

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES:

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SULFITE

PARAMETER NAME: SO3

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: UG/G

CATEGORIES: SED

RELATED PARAMETERS: SO3_A, SO3_D, SO3_M, SO3_N, SO3_O, SO3_P, SO3_S

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SULFATE
PARAMETER NAME:	SO4
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/G
CATEGORIES:	SED
RELATED PARAMETERS:	SO4_A,SO4_D,SO4_M,SO4_N,SO4_O, SO4_P,SO4_S
RANGE:	Minimum = 0.0 Maximum = 7570.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SEDIMENT OXYGEN DEMAND
PARAMETER NAME:	SOD
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SOURCE AGENCY
PARAMETER NAME:	SOURCE
DESCRIPTION:	Source data collection agency.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 8
UNITS:	N/A
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	
RANGE:	'MD/MDE' = MD. DEPT. OF THE ENVIRONMENT 'MD/DNR' = MD. DEPT. OF NATURAL RESOURCES 'VA/WCB' = VA. STATE WATER CONTROL BOARD 'VA/ODU' = OLD DOMINION UNIVERSITY 'VA/VIMS' = VA. INSTITUTE OF MARINE SCIENCES 'DC/DCRA' = D.C.DEPT. CONSUMER AND REG. AFFAIRS 'PA/SRBC' = SUSQUEHANNA RIVER BASIN COMMISSION 'PA/DER' = PA. DEPT. OF ENVIRONMENTAL RESOURCES 'UM/CBL' = CHESAPEAKE BIOLOGICAL LABORATORY 'UM/HPEL' = HORN POINT ENVIRONMENTAL LABORATORY

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPECIES SEDIMENT FLUX
PARAMETER NAME:	SPECFLUX
DESCRIPTION:	Daily calculated flux used to characterize a particular species.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG PER SQUARE METER PER DAY
CATEGORIES:	SED
RELATED PARAMETERS:	CHLAFLUX,POCFLUX,PONFLUX,PHOSFLUX,PHOSFLUX
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SPECIFIC ACTIVITY

PARAMETER NAME: SPEC_ACT

DESCRIPTION: Specific activity of label (DPM).

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: uCi per ml

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SPECIES CODE

PARAMETER NAME: SPEC_COD

DESCRIPTION: NOAA/NODC species code.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS:

RANGE: SEE TABLE 10

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SPIKE TIME

PARAMETER NAME: SPIKETIM

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: HHMM

CATEGORIES:

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SUBSAMPLE VOLUME

PARAMETER NAME: SSVOL_ML

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ML

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	State Abbreviation
PARAMETER NAME:	STATE
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	CHAR 2, UPPERCASE
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	DE = Delaware MD = Maryland NY = New York PA = Pennsylvania VA = Virginia WV = West Virginia

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLING STATION IDENTIFIER
PARAMETER NAME:	STATION
DESCRIPTION:	Name of the location where the sample was taken. This field must be supported by documentation that includes latitude and longitude.
KEYFIELD:	Y
DATATYPE:	CHARACTER, LENGTH 8
UNITS:	N/A
CATEGORIES:	WQ,HIST,TOXIC,SED
RELATED PARAMETERS:	LATITUDE,LONGITUDE,BASIN,SEGMENT
RANGE:	Refer to the latest edition of the "Chesapeake Bay Monitoring Program Atlas" for descriptions of stations and monitoring programs.

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SEDIMENT TEMPERATURE
PARAMETER NAME:	STEMP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Degrees Celcius
CATEGORIES:	SED,LR
RELATED PARAMETERS:	WTEMP,ATEMP
RANGE:	Minimum = 4.5 Maximum = 32.5

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Susquehanna River Basin
PARAMETER NAME:	SUSQ
DESCRIPTION:	The percent of the county in the Susquehanna River Basin.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	decimal percent
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: COLIFORM, TOTAL

PARAMETER NAME: TCOLI

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MPN/100

CATEGORIES: WQ

RELATED PARAMETERS: TCOLI_D,TCOLI_M

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TOTAL NUMBER PER LITER

PARAMETER NAME: TDEN_L

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: LR

RELATED PARAMETERS: TDEN_M3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TOTAL DENSITY
PARAMETER NAME:	TDEN_M3
DESCRIPTION:	Total density per cubic meter.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	LR
RELATED PARAMETERS:	TDEN_L
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	DEPTH, TOTAL
PARAMETER NAME:	TDEPTH
DESCRIPTION:	Total depth, in meters, at the sampling site.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	METERS
CATEGORIES:	WQ,HIST,SED,TOXIC
RELATED PARAMETERS:	
RANGE:	Minimum = 2.6 Maximum = 41.8

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, DISSOLVED (FILTERED)
PARAMETER NAME:	TDN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TDN_A,TDN_C,TDN_D,TDN_M,TDN_N,TDN_O, TDN_P,TDN_S,TDN_SK
RANGE:	Minimum = 0.05 Maximum = 8.47

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PHOSPHORUS, DISSOLVED (FILTERED)
PARAMETER NAME:	TDP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TDP_A,TDP_C,TDP_D,TDP_M,TDP_N,TDP_O, TDP_P,TDP_S,TDP_SK
RANGE:	Minimum = 0.001 Maximum = 0.811

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: CARBON, TOTAL INORGANIC DRY

PARAMETER NAME: TICD

DESCRIPTION: Total inorganic carbon, dry weight.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: ug/g

CATEGORIES: WQ,SED

RELATED PARAMETERS: TICD_D

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Tidal Stage

PARAMETER NAME: TIDAL

DESCRIPTION: Code that describes the tidal stage during the sampling period.

KEYFIELD: N

DATATYPE: CHAR 1

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:
E = ebb tide
F = flood tide
L = low slack
H = high slack
''= unspecified

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TIDAL STAGE

PARAMETER NAME: TIDE

DESCRIPTION: Stage of tide when this sample was taken.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 1

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: TDEPTH (may vary at a specific station)

RANGE: ' ' = NOT RECORDED OR NOT APPLICABLE
'E' = EBB TIDE
'F' = FLOOD TIDE
'L' = LOW SLACK TIDE
'H' = HIGH SLACK TIDE

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: INCUBATION PERIOD

PARAMETER NAME: TIMDUR_H

DESCRIPTION: Duration of incubation period.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: HHMM

CATEGORIES: LR

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SAMPLING TIME
PARAMETER NAME:	TIME
DESCRIPTION:	Time sampling was begun, Eastern Standard Time using 2400 clock.
KEYFIELD:	Y
DATATYPE:	NUMERIC
UNITS:	HHMM
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	DATE
RANGE:	0001 (12:01 A.M.) to 2400 (Midnight)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	BEGINNING TIME
PARAMETER NAME:	TIME_BEG
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	HHMM
CATEGORIES:	LR
RELATED PARAMETERS:	TIME_END
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: ENDING TIME

PARAMETER NAME: TIME_END

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: HHMM

CATEGORIES: LR

RELATED PARAMETERS: TIME_BEG

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TIME, TOTAL ELAPSED

PARAMETER NAME: TIME_SUM

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: HHMMSS

CATEGORIES:

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TIME COUNTED
PARAMETER NAME:	TIM_CNT
DESCRIPTION:	Time counted - C14 Production
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Decimal minutes
CATEGORIES:	LR
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Tissue Code
PARAMETER NAME:	TISSUE
DESCRIPTION:	Code that identifies the specific portion of the individual used for this sample.
KEYFIELD:	N
DATATYPE:	CHAR 2
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	59 = whole organism 86 = fillet 87 = edible portion

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Document Title - Line 1
PARAMETER NAME:	TITLE1
DESCRIPTION:	The title of the reference document.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	TITLE2, TITLE3, TITLE4
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Document Title - Line 2
PARAMETER NAME:	TITLE2
DESCRIPTION:	Continuation line for the title of the reference document.
KEYFIELD:	N
DATATYPE:	CHAR 75, mixed case
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	TITLE1, TITLE3, TITLE4
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Document Title - Line 3

PARAMETER NAME: TITLE3

DESCRIPTION: Continuation line for the title of the reference document.

KEYFIELD: N

DATATYPE: CHAR 75, mixed case

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: TITLE1, TITLE2, TITLE4

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Document Title - Line 4

PARAMETER NAME: TITLE4

DESCRIPTION: Continuation line for the title of the reference document.

KEYFIELD: N

DATATYPE: CHAR 75, mixed case

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS: TITLE1, TITLE2, TITLE3

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, TOTAL DISSOLVED KJEHDAHL (FILTERED)
PARAMETER NAME:	TKNF
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TKNF_A,TKNF_C,TKNF_D,TKNF_M,TKNF_N, TKNF_O,TKNF_P,TKNF_S,TKNF_SK
RANGE:	Minimum = -0.21 Maximum = 8.46

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, TOTAL KJEHDAHL (WHOLE WATER)
PARAMETER NAME:	TKNW
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TKNW_A,TKNW_C,TKNW_D,TKNW_M,TKNW_N, TKNW_O,TKNW_P,TKNW_S,TKNW_SK
RANGE:	Minimum = 0.01 Maximum = 8.52

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, TOTAL (WHOLE WATER)
PARAMETER NAME:	TN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TN_A,TN_C,TN_D,TN_M,TN_N,TN_O, TN_P,TN_S,TN_SK
RANGE:	Minimum = 0.11 Maximum = 8.52

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON, TOTAL ORGANIC
PARAMETER NAME:	TOC
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TOC_A,TOC_C,TOC_D,TOC_M,TOC_N,TOC_O, TOC_P,TOC_S,TOC_SK
RANGE:	Minimum = 1.0 Maximum = 33.7

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	CARBON, TOTAL ORGANIC, DRY
PARAMETER NAME:	TOCD
DESCRIPTION:	Total organic carbon - dry weight.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/G
CATEGORIES:	LR,WQ
RELATED PARAMETERS:	TOCD_D
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	NITROGEN, TOTAL ORGANIC
PARAMETER NAME:	TON
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TON_A,TON_C,TON_D,TON_M,TON_N,TON_O, TON_P,TON_S,TON_SK
RANGE:	Minimum = -0.2 Maximum = 8.4

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TOWING DURATION

PARAMETER NAME: TOW_DUR

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: HHMMSS

CATEGORIES: LR

RELATED PARAMETERS: TOW_LEN,TOW_SPD

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TOWING LENGTH

PARAMETER NAME: TOW_LEN

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: METERS

CATEGORIES: LR

RELATED PARAMETERS: TOW_DUR,TOW_SPD

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TOWING SPEED

PARAMETER NAME: TOW_SPD

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: METERS PER SECOND

CATEGORIES: LR

RELATED PARAMETERS: TOW_DUR,TOW_LEN

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: PHOSPHORUS, TOTAL (WHOLE WATER)

PARAMETER NAME: TP

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES: WQ,HIST

RELATED PARAMETERS: TP_A,TP_C,TP_D,TP_M,TP_N,TP_O, TP_P,TP_S,TP_SK

RANGE: Minimum = 0.01
Maximum = 0.84

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	**Trade Name of Pesticide**
PARAMETER NAME:	**TRADENM**
DESCRIPTION:	**The trade name of the pesticide.**
KEYFIELD:	**N**
DATATYPE:	**CHAR 15**
UNITS:	
CATEGORIES:	**TOX**
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	**TREATMENT CODE - PHYTOPLANKTON PRODUCTIVITY**
PARAMETER NAME:	**TREATMT**
DESCRIPTION:	**C14 or oxygen treatment for phytoplankton productivity.**
KEYFIELD:	**N**
DATATYPE:	**CHARACTER, LENGTH 1**
UNITS:	**N/A**
CATEGORIES:	**WQ**
RELATED PARAMETERS:	
RANGE:	**'C' = C14 production** **'O' = Oxygen production**

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TRI Zip Code
PARAMETER NAME:	TRIZIP
DESCRIPTION:	The zip code in which the TRI discharge facility is located.
KEYFIELD:	N
DATATYPE:	CHAR 9
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SOLIDS, TOTAL SUSPENDED
PARAMETER NAME:	TSS
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	MG/L
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TSS_A,TSS_C,TSS_D,TSS_M,TSS_N, TSS_O,TSS_P,TSS_S,TSS_SK
RANGE:	Minimum = 0.2 Maximum = 1166.6

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TURBIDITY JTU
PARAMETER NAME:	TURB_JTU
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Jackson Turbidity Units (JTU)
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TURB_NTU
RANGE:	Minimum = 1.0 Maximum = 150.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TURBIDITY NTU
PARAMETER NAME:	TURB_NTU
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Nephelometric Turbidity Units (NTU)
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	TURB_JTU
RANGE:	Minimum = 1.3 Maximum = 130.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: SOLIDS, TOTAL VOLATILE

PARAMETER NAME: TVS

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: MG/L

CATEGORIES:

RELATED PARAMETERS: TVS_D,TVS_M

RANGE: Minimum = 30.0
Maximum = 8000.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TOTAL VOLATILE SOLIDS, PERCENT

PARAMETER NAME: TVS_P

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: %

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE: 0 to 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: TAXONOMIC CODE

PARAMETER NAME: TXCODE

DESCRIPTION: Collecting agency taxonomic code.

KEYFIELD: n

DATATYPE: alphnumeric

UNITS:

CATEGORIES:

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Species - VERSAR Code

PARAMETER NAME: VERSCODE

DESCRIPTION: The code used VERSAR to identify the species.

KEYFIELD: N

DATATYPE: CHAR 4

UNITS:

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	Species - VA Institute of Marine Sciences Code
PARAMETER NAME:	VIMSCODE
DESCRIPTION:	The code used by the Virginia Institute of Marine Sciences to identify the species.
KEYFIELD:	N
DATATYPE:	CHAR 10
UNITS:	
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WAVE HEIGHT
PARAMETER NAME:	WAVHGT
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	CHARACTER LENGTH 1
UNITS:	N/A
CATEGORIES:	WQ,HIST
RELATED PARAMETERS:	WINDSPD,WINDIR
RANGE:	' ' = not recorded '0' = 0 to 0.1 meters - calm '1' = 0.1 to 0.3 meters '2' = 0.3 to 0.6 meters '3' = 0.6 to 1.0 meters '4' = 1.0 to 1.3 meters '5' = GT 1.3 meters

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: West Chesapeake Basin

PARAMETER NAME: WCHESAP

DESCRIPTION: The percent of the county in the West Chesapeake Basin.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: decimal percent

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: Wet Weight of Individual

PARAMETER NAME: WEIGHT

DESCRIPTION: The wet weight of the individual for this sample.

KEYFIELD: N

DATATYPE: NUM 4

UNITS: grams

CATEGORIES: TOX

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WIND DIRECTION

PARAMETER NAME: WINDIR

DESCRIPTION: Describes the predominant direction of the wind during the sampling event.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 3

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS: WINDSPD,WAVHGT

RANGE:

'N ' = from 0 degrees	'S ' = from 180 degrees
'NNE' = from 22 degrees	'SSW' = from 202 degrees
'NE ' = from 45 degrees	'SW ' = from 225 degrees
'ENE' = from 67 degrees	'WSW' = from 247 degrees
'E ' = from 90 degrees	'W ' = from 270 degrees
'ESE' = from 112 degrees	'WNW' = from 292 degrees
'SE ' = from 135 degrees	'NW ' = from 315 degrees
'SSE' = from 157 degrees	'NNW' = from 337 degrees
' ' = not recorded	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WIND SPEED

PARAMETER NAME: WINDSPD

DESCRIPTION: Describes the predominant wind speed during a sampling event.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 1

UNITS: N/A

CATEGORIES: WQ,HIST

RELATED PARAMETERS: WAVHGT,WINDIR

RANGE:

' ' = not recorded
'0' = 0 knots to 1 knot - calm
'1' = greater than 1 knots to 10 knots
'2' = greater than 10 knots to 20 knots
'3' = greater than 20 knots to 30 knots
'4' = greater than 30 knots to 40 knots
'5' = greater than 40 knots

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, NON-BIVALVE

PARAMETER NAME: WTAFN_G

DESCRIPTION: Ash-free dry weight of non-bivalve species.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTAF_G,WT_G,WTAFPROF,WTAFT_G,WTAS_G

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, PROFILE

PARAMETER NAME: WTAFPROF

DESCRIPTION: Ash free dry weight of profile sample.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTAF_G,WTAFN_G,WT_G,WTAFT_G,WTAS_G

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, TOTAL

PARAMETER NAME: WTAFT_G

DESCRIPTION: Total ash free dry weight.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTAF_G,WTAFN_G,WTAFPROF,WT_G,WTAS_G

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, ASH FREE DRY

PARAMETER NAME: WTAF_G

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WT_G,WTAFN_G,WTAFPROF,WTAFT_G,WTAS_G

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WEIGHT, ASH
PARAMETER NAME:	WTAS_G
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	LR
RELATED PARAMETERS:	WTAF_G,WTAFN_G,WTAFPROF,WTAFT_G,WT_G
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WEIGHT, PAH DRY
PARAMETER NAME:	WTDYPAHG
DESCRIPTION:	Dry weight of sample used in PAH analysis.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	LR
RELATED PARAMETERS:	WTWTPAHG
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	TEMPERATURE, WATER
PARAMETER NAME:	WTEMP
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	Degrees Celsius
CATEGORIES:	WQ,HIST,TOXIC
RELATED PARAMETERS:	WTEMP_M
RANGE:	Minimum = -2.0 Maximum = 32.2

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WEIGHT, SEDIMENT
PARAMETER NAME:	WTSED_G
DESCRIPTION:	Weight of sediment per sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	SED
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, PCB DRY

PARAMETER NAME: WTDYPCBG

DESCRIPTION: Dry weight of sample used in PCB analysis.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTWTPCBG

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, PEST DRY

PARAMETER NAME: WTDYPESG

DESCRIPTION: Dry weight of sample used in pesticide analysis.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTWTPESG

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WEIGHT, PAH WET
PARAMETER NAME:	WTWTPAHG
DESCRIPTION:	Wet weight of sample used in PAH analysis.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	LR
RELATED PARAMETERS:	WTDYPAHG
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	WEIGHT, PCB WET
PARAMETER NAME:	WTWTPCBG
DESCRIPTION:	Wet weight of sample used in PCB analysis.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	GRAMS
CATEGORIES:	LR
RELATED PARAMETERS:	WTDYPCBG
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT, PEST WET

PARAMETER NAME: WTWTPESG

DESCRIPTION: Wet weight of sample used in pesticide analysis.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTDYPESG

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: WEIGHT

PARAMETER NAME: WT_G

DESCRIPTION:

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: GRAMS

CATEGORIES: LR

RELATED PARAMETERS: WTAF_G,WTAFN_G,WTAFPROF,WTAFT_G,WTAS_G

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	York River Basin
PARAMETER NAME:	YORK
DESCRIPTION:	The percent of the county in the York River Basin.
KEYFIELD:	N
DATATYPE:	NUM 4
UNITS:	decimal percent
CATEGORIES:	TOX
RELATED PARAMETERS:	
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	ZINC, TOTAL
PARAMETER NAME:	ZN
DESCRIPTION:	
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ,HIST,TOXIC,SED,LR
RELATED PARAMETERS:	ZN_A,ZN_C,ZN_D,ZN_M,ZN_N,ZN_O, ZN_P,,ZN_S,ZN_SK
RANGE:	Minimum = 0.0 Maximum = 19900.0

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	ANALYSIS PROBLEM CODE
PARAMETER NAME:	parametername_A
DESCRIPTION:	Code for data submitters to report anomalies encountered collecting or processing a sample. Out of range values may be acceptable depending on sampling or analysis conditions reported here.
KEYFIELD:	N
DATATYPE:	CHARACTER, LENGTH 2
UNITS:	N/A
CATEGORIES:	WQ,LR,TOXIC
RELATED PARAMETERS:	N/A
RANGE:	SEE TABLE 3

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPIKE CONCENTRATION
PARAMETER NAME:	parametername_C
DESCRIPTION:	Concentration of the spike added to the background sample. If a correction for dilution is needed, i should be made before reporting the data. Spike concentration should be 0.5 to 2.0 times the sampl background concentration.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	parametername_SK, REP_TYPE = 'SPK'
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: METHOD DETECTION LIMIT (MDL)

PARAMETER NAME: parametername_D

DESCRIPTION: Values reported as below the detection limit in the Monitoring Program data are stored as the detection limit. If MDL was used to calculate a parameter, the calculated parameter XX_M field (Method Code) begins with a 'C'.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 1

UNITS: N/A

CATEGORIES: WQ,HIST

RELATED PARAMETERS: parametername_M

RANGE:

'<' = less than detection limit of the method
' ' = parameter value acceptable for method
'#' = trace
'J' = estimated value
'N' = not detected
'C' = calculated using another parameter at MDL
'I' = instrument detection limit (IDL)
'M' = method detection limit (MDL)
'S' = sample quantification limit (SQL)
'Q' = limit of quantification (LOQ)

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: METHOD CODE

PARAMETER NAME: parametername_M

DESCRIPTION: Code for method of collection or analysis. Methods are described in detail in CHESSEE. May refer to field or laboratory methods.

KEYFIELD: N

DATATYPE: ALPHANUMERIC, LENGTH 4

UNITS: N/A

CATEGORIES: WQ,LR,TOXIC,HIST

RELATED PARAMETERS: parametername_D

RANGE: SEE TABLE 4

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: NUMBER OF VALUES FOR STANDARD DEVIATION

PARAMETER NAME: parametername_N

DESCRIPTION: Number of replicates used to calculate the standard deviation.

KEYFIELD: N

DATATYPE: NUMERIC

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE: LABORATORY ANALYSIS SIGN-OFF

PARAMETER NAME: parametername_O

DESCRIPTION: Initials of laboratory person who reviewed and signed-off on the parameter.

KEYFIELD: N

DATATYPE: CHARACTER, LENGTH 2

UNITS: N/A

CATEGORIES: WQ

RELATED PARAMETERS:

RANGE:

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	PERCENT RECOVERY
PARAMETER NAME:	parametername_P
DESCRIPTION:	Percent recovery should be calculated using the formula in EPA (1984): XX_P = ((XX_SK - XX) / XX_C) * 100 where XX = parametername.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	%
CATEGORIES:	WQ
RELATED PARAMETERS:	parametername_SK,parametername_C, REP_TYPE = 'SPK'
RANGE:	0 TO 100 %

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	STANDARD DEVIATION OF LABORATORY REPLICATES
PARAMETER NAME:	parametername_S
DESCRIPTION:	If used, the concentration of (parametername) must be the MEAN of the lab replicates used to calculate the standard deviation. MEAN is important, since precision may vary with concentration. parametername_N is required, also.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	N/A
CATEGORIES:	WQ
RELATED PARAMETERS:	parametername_N
RANGE:	

CHESAPEAKE BAY PROGRAM DATA DICTIONARY

TITLE:	SPIKE CONCENTRATION AND MEASURED BACKGROUND
PARAMETER NAME:	parametername_SK
DESCRIPTION:	Measured value of the mixture of the spike with the background sample.
KEYFIELD:	N
DATATYPE:	NUMERIC
UNITS:	UG/L
CATEGORIES:	WQ
RELATED PARAMETERS:	parametername_C, parametername_P
RANGE:	

APPENDIX G:

DATA DICTIONARY TABLES

TABLE 1:

FLUX/SEDIMENTATION CALCULATIONS

```
CHLA_FXD = CHLA * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

PHOS_FXD = PHOS * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

POC_FXD  = POC * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

PON_FXD  = PON * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

SES_FXD  = SES_MG * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

SPEC_FXD = CNT * (DVOL_ML / EXVOL_ML) / TIME_SUM * 219.3 *
           (TDEPTH / SDEPTH)
```

TABLE 2

CAS NUMBERING CODE AND CAS LABEL (CAS_PK)

For the user's convenience, a representative sample of CAS numbers is included here.

007429905	ALUMINUM
000056553	BENZ[A]ANTHRACENE
007440439	CADMIUM
007440508	COPPER
007439896	IRON
000206440	FLUORANTHENE
007439976	MERCURY
000005889	LINDANE
000091203	NAPTHALENE
007439921	LEAD
000085018	PHENANTHRENE
000129000	PYRENE
007440315	TIN
007440566	ZINC

TABLE 3

ANALYSIS PROBLEM CODES

The following letter codes describe the problem associated with a questionable parameter value. The valid entries for this field are as follows:

'A'	=	Laboratory accident
'B'	=	Interference
'C'	=	Mechanical/materials failure
'D'	=	Insufficient sample
'E'	=	Sample received too late
'F'	=	Sample too old when received
'H'	=	Analysis run by another lab
'J'	=	Wrong type sample (e.g., filtered sample requesting TSS)
'K'	=	Sample frozen when received (results questionable)
'M'	=	Sample received warm
'N'	=	Sample lost
'P'	=	Lost results
'R'	=	Sample contaminated
'S'	=	Sample container broken during analysis
'T'	=	No phaeophytin in sample
'U'	=	Matrix problem resulting from the interrelationship between variables such as pH and ammonia
'V'	=	Sample results rejected due to QA/QC criteria
'W'	=	Duplicate results for all parameters
'X'	=	Sample not preserved properly
'Y'	=	Analyzed in duplicate, results below detection limit
'Z'	=	Analyzed by method of standard additions
'AA'	=	Sample thawed when received
'BB'	=	Torn filter pad
'CC'	=	Pad unfolded in foil pouch
'DD'	=	Assumed sample size (sample size not reported)
'EE'	=	Foil pouch very wet when received from field, therefore poor replication between pads, mean reported
'FF'	=	Poor replication between pads, mean reported
'GG'	=	Sample received after holding time, therefore results are questionable
'HH'	=	Sample not taken
'JJ'	=	Amount filtered not recorded (therefore calculation could not be done)
'KK'	=	Parameter test not required for study
'LL'	=	Mislabeled
'MM'	=	Over 20% of sample adhered to pouch and outside of pad

'NI' = Data for this variable are considered non-interpretable

'NN' = Particulates found in filtered sample

'PP' = Assumed sample volume (pouch volume differed from data sheet volume pouch volume used)

'QQ' = Although value exceeds a theoretically equivalent or greater value (e.g., PO4F>TDP), the excess is within precision of analytical techniques and therefore not statistically significant

'RR' = No sample received

'SS' = Sample rejected due to unusually high suspended sediment concentration

'TT' = Instrument failure on board research vessel

'UU' = Analysis discontinued

'VV' = Station was not sampled due to bad weather conditions, research vessel mechanical failure, or failure of state highway bridges to open or close

'WW' = High turbidity/high optical density (GT .1) at 750 nanometers; actual value recorded; may be acceptable if high CHLA

'XX' = Sampling for this variable not included in the monitoring program at this time or was not monitored during a specific cruise

TABLE 4:

METHOD CODES

Descriptions of each method may be found under Documentation; Methods in CHESSEE.

ALK101	ALK102	ALKF01	ALKF02	BOD5101
BOD5F01	CHLA101	CHAL102	CHLAF01	CHLAF02
CHLAF03	CHLAF04	CHLAF05	CHLAF06	CHLAF07
CHLAF08	CONDF01	DIN101	DIN102	DISOXY101
DISOXYF01	DISOXYF02	DOC101	DOC102	DOCF01
DOCF02	DOCF03	DOCF04	DON101	DON102
DOP101	FCOLI101	FCOLI102	FCOLIF01	FCOLIF02
FSS101	FSSF01	NH4101	NH4102	NH4103
NH4104	NH4F01	NH4F02	NH4F03	NH4F04
NH4F05	NH4F06	NH4F07	NO2101	NO2102
NO2103	NO2F01	NO2F02	NO2F03	NO2F04
NO2F05	NO3101	NO3102	NO3103	NO3104
NO3105	NO3F01	NO3F02	NO3F03	NO3F04
NO3F05	NO3F06	PHEA101	PHEA102	PHEAF01
PHEAF02	PHEAF03	PHEAF04	PHEAF05	PHEAF06
PHEAF07	PHEAF08	PHF01	PHF02	PHOSP101
PO4F101	PO4F102	PO4F103	PO4F104	PO4FF01
PO4FF02	PO4FF03	PO4FF04	PO4FF05	PO4FF06
PO4FF07	POC101	POC102	POCF01	PON101
PON102	PONF01	SALINF01	SECCHIF01	SI101

SI102	SI103	SI104	SI105	SIF01
SIF02	SIF03	SIF04	SIF05	SOE101
TCOLI101	TCOLIF01	TCOLIF02	TCOLIF03	TDN101
TDN102	TDN103	TDNF01	TDP101	TDP102
TDP103	TDP104	TDPF01	TDPF02	TDPF03
TDPF04	TDPF05	TDPF06	TDPF07	TKNF101
TKNF102	TKNF103	TKNF104	TKNFF01	TKNFF02
TKNFF03	TKNFF04	TKNFF05	TKNFF06	TKNW101
TKNW102	TKNW103	TKNW104	TKNWF01	TKNWF02
TKNWF03	TKNWF04	TKNWF05	TN101	TN102
TN103	TOC101	TOC102	TOCF01	TOCF02
TOCF03	TOCF04	TOCF05	TP101	TP102
TP103	TP104	TP105	TP106	TPF01
TPF02	TPF03	TPF04	TPF05	TPF06
TPF07	TSS101	TSSF01	TSSF02	TSSF03
TSSF04	TSSF05	TSSF06	TVS101	WTEMPF01

TABLE 5:

CRUISE NUMBER AND DATES

This alpha-numeric code identifies the cruise to which the data observation belongs. Cruise identification is useful for grouping data that are collected over a range of sample dates, but which are considered data for a specific sampling period. The current values for this field are as follows:

CRUISE		BEGINNING DATE		ENDING DATE
BAY001	=	15JUN84	-	30JUN84
BAY002	=	01JUL84	-	15JUL84
.		.		.
.		.		.
BAY092	=	01JAN89	-	31JAN89
BAY093	=	01FEB89	-	28FEB89
BAY094	=	01MAR89	-	15MAR89
BAY095	=	16MAR89	-	31MAR89
BAY096	=	01APR89	-	15APR89
BAY097	=	16APR89	-	30APR89
BAY098	=	01MAY89	-	14MAY89
BAY099	=	15MAY89	-	31MAY89
BAY100	=	01JUN89	-	15JUN89
BAY101	=	16JUN89	-	30JUN89
BAY102	=	01JUL89	-	15JUL89
BAY103	=	16JUL89	-	31JUL89
BAY104	=	01AUG89	-	16AUG89
BAY105	=	17AUG89	-	31AUG89
BAY106	=	01SEP89	-	15SEP89
BAY107	=	16SEP89	-	30SEP89
BAY108	=	01OCT89	-	15OCT89
BAY109	=	16OCT89	-	31OCT89
BAY110	=	01NOV89	-	30NOV89
BAY111	=	01DEC89	-	31DEC89
BAY112	=	01JAN90	-	31JAN90
BAY113	=	01FEB90	-	28FEB90
BAY114	=	01MAR90	-	15MAR90
BAY115	=	16MAR90	-	31MAR90
BAY116	=	01APR90	-	15APR90
BAY117	=	16APR90	-	30APR90
BAY118	=	01MAY90	-	15MAY90
BAY119	=	16MAY90	-	31MAY90
BAY120	=	01JUN90		15JUN90

BAY121	=	16JUN90	-	30JUN90
BAY122	=	01JUL90	-	15JUL90
BAY123	=	16JUL90	-	31JUL90
BAY124	=	01AUG90	-	16AUG90
BAY125	=	17AUG90	-	31AUG90
BAY126	=	01SEP90	-	15SEP90
BAY127	=	16SEP90	-	30SEP90
BAY128	=	01OCT90	-	15OCT90
BAY129	=	16OCT90	-	31OCT90
BAY130	=	01NOV90	-	30NOV90
BAY131	=	01DEC90	-	31DEC90

TABLE 6:

CHESAPEAKE BAY RIVER CODES

The following is a list of values for river codes in the Chesapeake Bay.

```
'CHESAPEAKE BAY '
'MOBJACK_BAY    '
'BIG_ANNEMESSEX '
'BOHEMIA        '
'CHESTER        '
'CHOPTANK       '
'EAST_BAY       '
'ELK            '
'MANOKIN        '
'NANTICOKE      '
'NORTHEAST      '
'POCOMOKE       '
'SASSAFRAS      '
'TANGIER        '
'TANGIER_S      '
'WICOMICO       '
'JAMES          '
'PATUXENT       '
'ANACOSTIA      '
'ANTIETAM_CR    '
'CATOCTIN_CR    '
'MONOCACY       '
'POTOMAC        '
'ROCK_CREEK     '
'YOUGHIOGHENY   '
'CORROTOMAN     '
'RAPPAHANNOCK   '
'CHICKIES_CR    '
'CODORUS        '
'CONESTOGA      '
'CONEWAGO       '
'CONOCOCHEAGUE  '
'CONODOGUINET   '
'JUNIATA        '
'MAHANOY        '
'MAHANTANG      '
'MILL           '
'NORTH_BRANCH   '
'PAXTON         '
```

```
'PENNS          '
'PEQUEA         '
'SHAMOKIN       '
'SHERMANS       '
'STONY          '
'SUSQUEHANNA    '
'SWATARA        '
'WEST_BRANCH    '
'YELLOW_BREECHES'
'YOUNG_WOMANS   '
'BACK           '
'BUSH           '
'GUNPOWDER      '
'MAGOTHY        '
'MIDDLE         '
'PATAPSCO       '
'RHODE          '
'SEVERN         '
'SOUTH          '
'MATTAPONI      '
'PAMUNKEY       '
'YORK           '
```

TABLE 7:

CHESAPEAKE BAY PROGRAM SEGMENT DESIGNATION

The following codes identify the Chesapeake Bay segment from which the sample was taken. The acceptable codes are:

Code		Description
'CB1'	=	Susquehanna Flats
'CB2'	=	Upper portion of the Chesapeake Bay mainstem
'CB3'	=	Upper-most estuarine zone in mainstem of the Chesapeake Bay
'CB4'	=	Upper portion of the central Chesapeake Bay mainstem
'CB5'	=	Central portion of the mainstem of the Chesapeake Bay
'CB6'	=	Lower west-central mainstem of the Chesapeake Bay
'CB7'	=	Lower east-central mainstem of the Chesapeake Bay
'CB8'	=	Southern-most segment of the Chesapeake Bay
'ET1'	=	Northeast River
'ET2'	=	Elk River and Bohemia River
'ET3'	=	Sassafras River
'ET4'	=	Chester River
'ET5'	=	Choptank River
'ET6'	=	Nanticoke River
'ET7'	=	Wicomico River
'ET8'	=	Manokin River
'ET9'	=	Big Annemessex River
'ET10'	=	Pocomoke River
'EE1'	=	Eastern Bay, Miles River, and Wye River
'EE2'	=	Choptank River, west of Castle Haven, including Tred Avon River, Broad Creek, Harris Creek, and the Little Choptank
'EE3'	=	Tangler and Pocomoke Sounds
'LE1'	=	Patuxent River - Lower estuarine segment
'LE2'	=	Potomac River - Lower estuarine segment
'LE3'	=	Rappahannock River - Lower estuarine segment
'LE4'	=	York River - Lower estuarine segment
'LE5'	=	James River - Lower estuarine segment
'RET1'	=	Patuxent River - Riverine-estuarine transition zone
'RET2'	=	Potomac River - Riverine-estuarine transition zone
'RET3'	=	Rappahannock River - Riverine-estuarine transition zone
'RET4'	=	York River - Riverine-estuarine transition zone
'RET5'	=	James River - Riverine-estuarine transition

zone

'TF1'	= Patuxent River	- Tidal freshwater segment
'TF2'	= Potomac River	- Tidal freshwater segment
'TF3'	= Rappahannock River	- Tidal freshwater segment
'TF4'	= York River	- Tidal freshwater segment
'TF5'	= James River	- Tidal freshwater segment
'WT1'	= Bush River	
'WT2'	= Gunpowder River	
'WT3'	= Middle River and Seneca Creek	
'WT4'	= Back River	
'WT5'	= Patapsco River	
'WT6'	= Magothy River	
'WT7'	= Severn River	
'WT8'	= South, Rhode, and West Rivers	
'WE4'	= Mobjack Bay	

TABLE 8:

SAMPLING GEAR

Sampling gear collection code.

1 = Hand Collection
2 = Dredge
3 = Artificial Substrate (Unspecified)
4 = Diatometer Slides
5 = Clarke-Bumpus Sampler
6 = Plankton Trap (Unspecified)
7 = Plankton Pump (Unspecified)
8 = Plankton Net (Unspecified)
9 = Plankton Net (500 micron mesh)
10 = Plankton Net (No. 20 size-80 micron mesh)
11 = Plankton Net (10 micron mesh)
12 = Beam plankton line
13 = Anchor Dredge
14 = Hydraulic Grab (1200 square centimeters)
15 = Hand Core (45 square centimeters)
16 = Post-Hole Digger (200 square centimeters)
17 = Ponar Grab (200 square centimeters)
18 = Ponar Grab (1000 square centimeters)
19 = Ponar Grab (50 square centimeters, .005 **2)
20 = Box Corer Grab (.018 m**2)
21 = Van Veen Grab (.07 m**2)
22 = Shipek Grab (.04 m**2)
23 = Seine Haul (unspecified)
24 = Smith-Macintire Grab (1000 square centimeters)
25 = Seine Net (15 ft, 1/8 inch stretch mesh)
26 = Seine Net (50 ft, 1/2 inch stretch mesh)
27 = Seine Net (50 ft, 1/4 inch stretch mesh)
28 = Seine Net (200 ft, 1/2 inch stretch mesh - net 200 x 20)
29 = Seine Net (10 ft, 1/4 inch stretch mesh - net 10 x 4)
30 = Trawl (unspecified)
31 = Trawl (6 ft otter trawl, 1 inch stretch mesh with 1/2 inch cod end inner liner)
32 = Trawl (25 ft otter trawl, 1 1/4 inch stretch mesh with 1/2 inch cod end inner liner)
33 = Trawl (15 ft semi-balloon)
34 = Tucker Trawl (2 mm mesh 1 square meter)
36 = Otter Trawl (16 ft, 1/2 inch mesh, semi-balloon)
37 = Trawl (10 ft otter trawl, 1/4 inch - 6.4 mm - mesh with 500 um cod end liner)
38 = Trawl (5 ft midwater trawl, 1/4 inch - 6.4 mm - mesh with

500 um cod end liner)
39 = Reserved for Trawl Sample
40 = Trap Net (3 ft x 6 ft, 1/2 inch mesh, 50 ft lead)
42 = Eckman Dredge
43 = Cage
44 = Catfish Trap
45 = Crayfish Trap
46 = Crab Trap
47 = Animal Trap
48 = Hook and Line Fishing
49 = Dip Net
50 = Diver
54 = Pound Net
55 = Epifauna Panels
56-59 = Reserved
60 = Endico Current Meter
61 = Braincon Current Meter
62 = Sediment Trap Array (6 3" x 30" cups, W.R. Boynton, CBL)
63 = Seine Net (50ft, 1/4 inch mesh - net 100 x 4ft)
64 = Bongo Net (unspecified)
65 = Purse Seine
66 = Fyke and Hoop Nets
67 = Pots
68 = Box Trap
69 = Push Net
70 = Great Lakes Shoal 1- 2 inch
71 = Great Lakes Shoal 2- 4 inch
72 = Great Lakes Shoal 4- 7 inch
73 = Great Lakes Shoal 7-14 inch
74 = Beam Trawl
75-77 = Reserved
78 = Slat Traps
79 = Reserved
80 = Gill Nets
81-84 = Reserved
85 = Mid-Water Trawl (unspecified)
86 = Drift Gill Net Brails
87 = Drift Gill Net Flop
88 = Drift Gill Net Jugs
89 = Electrofishing
90 = Shore
91 = Pick
92 = Drift Gill Net (unspecfied)
93 = Set Gill Net
94 = Bottom Trawl (unspecifed)
95 = Fish House
96 = Van Veen Grab (0.1 square meters)

TABLE 9:

LIFE STAGE

Life stage codes for biological monitoring of fish and zooplankton.

00 Egg (viable; for non-viable eggs use '90')
01 Yolk Sac
02 Fin Fold
03 Post Fin Fold (full development of second dorsal fin)
04 Young of the Year -- year class 0
05 Specimens in Year Class 1 or Older
06 Juveniles and Adults
07 Larvae, Juveniles, and Adults
08 Larvae and Juveniles
09 Reserved for Future Use
10 Nauplii or Copepodites
11 Nauplii
12 Copepodite
13 Orthonauplii Stage 1-3
14 Metanauplii Stage 4-6
15 Copepodite Stage 1-3
16 Copepodite Stage 4-6
17 Cypris Larvae
18 Reserved for Future Use
19 Copepod Eggs
20 Nymph
21 Pupae
22 Pharate
23 Instar
24 Naiad
25-29 Reserved for Future Use
30 Prezoea
31 Zoea
32 Metazoea
33 Megalops
34-39 Reserved for Future Use
40 Nauplii Stage 1

TABLE 10:

NOAA SPECIES CODE

Reference the NOAA-NODC taxonomic code document #15 published in August 1984. For the user's convenience, a subset of that code is provided here.

LATIN NAME	**COMMON NAME**	**NODC TAXONOMIC CODE**
Vallisneria americana	Wildcelery	3305010301
Potamogeton pectinatus	Sago pondweed	3306050105
Potamogeton perfoliatus	Redhead grass	3306050106
Ruppia maritima	Widgeongrass	3306060101
Zostera marina	Eelgrass	3306080201
Stylochus ellipticus	Oyster flatworm	3906030101
Micrura leidyi	Red ribbon worm	4303020505
Malacobdella grossa	Leech ribbon worm	4308010101
Nereis succinea	Common clamworm	5001240410
Polydora ligni	Whip mud worm	5001430411
Scolecolepides viridis	Red-gilled mud worm	5001430602
Heteromastus filiformis	Capitellid thread worm	5001600201
Hydroides dianthus	Limy tube worm	5001730901
Crassostrea virginica	American oyster	5510020102
Mercenaria mercenaria	Hard shell clam	5515471201
Mya arenaria	Soft shell clam	5517010201
Balanus improvisus	Bay barnacle	6134020114
Neomysis americana	Bay opossum shrimp	6153011508
Cyathura polita	Slender isopod	6160010201
Lironeca ovalis	Fish-gill isopod	6161060301

TABLE 11:

COMPREHENSIVE SAMPLE MEDIA

This table is used for specific sample identification in gamma analysis.

Water	000
Fresh (less than 1 ppt.)	001
Salt (greater than 1 ppt.)	002
Radwaste	003
EPA mixed gamma crosscheck	004
EPA mixed gamma and beta crosscheck	005
EPA iodine - 131 crosscheck	006
Rainwater	007
Point Source/Effluent	008
Sediment	100
Predominately clay (particle size greater than 600)	101
Predominately sand (particle size less than 500)	102
Clayey sand (particle size between 500 and 550)	103
Sandy clay (particle size between 550 and 600)	104
Particulates	105

TABLE 12:

PARTICLE SIZE CLASSIFICATION

Particle size classification can be designated for both Shepard's class and PHI class using the following codes.

'S0 '	Shepards class 0
'S1 '	Shepards class 1
'S2 '	Shepards class 2
'S3 '	Shepards class 3
'S4 '	Shepards class 4
'S5 '	Shepards class 5
'S6 '	Shepards class 6
'S7 '	Shepards class 7
'S8 '	Shepards class 8
'S9 '	Shepards class 9
'P-2 '	PHI class -2
'P-1 '	PHI class -1
'P0 '	PHI class 0
'P1.5'	PHI class 1.5
'P2 '	PHI class 2
'P2.5'	PHI class 2.5
'P3 '	PHI class 3
'P3.5'	PHI class 3.5
'P4 '	PHI class 4
'P4.5'	PHI class 4.5
'P5 '	PHI class 5
'P6 '	PHI class 6
'P7 '	PHI class 7
'P8 '	PHI class 8
'P9 '	PHI class 9
'P10 '	PHI class 10

TABLE 13:

MEDIUM CODES

ATMOSDEP = atmospheric deposition
GRNDH2O = groundwater
LANDAPPL = pesticide land application
MICROL = microlayer
RUNOFF = urban runoff
SEDCOR = sediment, core sample
SEDSAM = sediment, bottom surface
SEDTRP = sediment trap
SPECIES = a living resource sample; refer to SPECVAFK
SPILL = shipping spills
STINDEFF = State surface water effluent
STMUNEFF = State municipal surface water effluent
TRIFUG = Toxic Release Inventory (TRI) fugitive air
TRINDEFF = TRI surface water effluent
TRIOFFOT = TRI off-site to other entity
TRIOFFPW = TRI off-site to publicly owned treatment works (POTW)
TRIONSTE = TRI on-site land
TRISTACK = TRI stack air
TRIUIC = TRI underground injection
WATCOL = water column

TABLE 14:

MODELSEG TABLE (part of)
Above Fall Line WSM Segments

Description	Segment Number						
Appomattox	300	310					
James	265	270	280	290			
Patuxent	330	340					
Potomac	160	170	175	180	190	200	210	220
Rappahannock	230						
Susquehanna	10	20	30	40	50	60	70	80
	90	100	110	120	140			
York	235	249	250	260			

TABLE 15:

MODELSEG TABLE (part of)
Below Fall Line WSM Segments

Description	Segment Name		Segment Number	
Eastern Shore MD+PA	Coastal_1	Coastal_11	360	450
	Bohemia	Chester	370	380
	Choptank	Wye	400	390
	Nanticoke	Wicomico	410	420
	Pocomoke		430	
Eastern Shore VA	Coastal_4		440	
James	Chickahominy	James	610	600
	Nansemond	Elizabeth	620	630
	Coastal_9		640	
Patuxent	Patuxent		500	
Potomac	Low_Potomac	Anacostia	530	540
	Occoquan		550	
Rappahannock	Rappahannock	Gt_Wicomico	560	580
	Coastal_8		570	
Western Shore MD	Coastal_5	Coastal_6	520	460
	Gunpowder	Balt_Harbor	470	480
	Patapsco	Severn	490	510
York	York		590	

APPENDIX H:

DATA PROCESSING REQUEST FORM

REQUEST NO : ______________

FY92 CSC DATA REQUEST FORM
(VERSION 7)

PART 1 (Completed by Requestor or CSC staff)

REQUEST DATE: ____________ DATE REQUIRED: ____________ ORGANIZATION: ____________

REQUESTOR: ______________________________ ADDRESS: ______________________________

TELEPHONE #: ______________________________ ______________________________

REQUEST TYPE (ASSIGNED BY ED STIGALL OR SUBCOMMITTEE COORDINATOR)

I. INTERNAL SUPPORT

_____ COMPUTER OPERATIONS
_____ SYSTEM MANAGEMENT
_____ USER SUPPORT
_____ DATA REQUEST
_____ EPA STATISTICAL WORK
_____ EPA GIS SUPPORT
_____ EPA TECHNICAL WRITING

II. MODELING SUBCOMMITTEE SUPPORT

_____ WATERSHED MODEL SUPPORT
_____ 3-D MODEL SUPPORT
_____ MODEL POINT SOURCE SUPPORT
_____ GENERAL POINT SOURCE SUPPORT
_____ MODELING GIS SUPPORT
_____ MODELING TECHNICAL WRITING

III. TOXICS SUBCOMMITTEE SUPPORT

_____ TOXICS DATA ACQUISITION
_____ TOXICS PROGRAM SUPPORT
_____ TOXICS DATA ANALYSIS
_____ TOXICS GIS SUPPORT
_____ TOXICS TECHNICAL WRITING

IV. MONITORING SUBC. SUPPORT

_____ MONITORING DATA PROCESSING
_____ MONITORING PROG. SUPPORT
_____ MONITORING DATA ANALYSIS
_____ CITIZEN MONITORING
_____ HISTORICAL DATA ACQUISITION
_____ MONITORING GIS SUPPORT
_____ MONITORING TECHNICAL WRITING

V. LIVING RESOURCE SUBC. SUPPORT

_____ LR 91 REEVALUATION WORKGROUP
_____ LR MONITORING WORKGROUP
_____ SAV WORKGROUP
_____ WATERFOWL MANAGEMENT WORKGROUP
_____ ECOLOGICAL VALUABLE SPEC W/G
_____ FISH PASSAGE WORKGROUP
_____ LR TECHNICAL WRITING

VI. NPS SUBCOMMITTEE SUPPORT

_____ NPS MODELING SUPPORT
_____ COEEP MAINTENANCE
_____ NPS GIS SUPPORT
_____ NPS TECHNICAL WRITING

VII. CSTC SUPPORT

_____ BAY BAROMETER
_____ OTHER CSTC SUPPORT

_____ DATA BASE DEVELOPMENT

DESCRIPTION OF WORK TO BE PERFORMED

____

____

____

____

____

____

PART 2 (COMPLETED BY CSC STAFF)

DATE RECEIVED: ____________________ REFERRED TO: ________________________

ESTIMATED RESOURCES/MATERIALS:

______ Hours of Technical Work ______ No of Transparencies

______ Hours of Operations Work ______ Plotter Pens/ Ink etc

______ Hours of Data Entry ______ Number of Plots

______ Pages of Printouts: ______ Other

DATA LOCATION: ____

STRATEGY/ACTION: ____

____

____

____

____

____

____

____

____

PART 3 (COMPLETED BY EPA)

EPA APPROVAL: ____________________________________ DATE: ______________________

EPA APPROVAL FOR DATA RELEASE: ___________________ DATE: ______________________

PART 4 (COMPLETED BY CSC)

ACTUAL RESOURCES/MATERIALS:

______ Hours of Technical Work Number of Tapes/Diskettes: _______________
______ Hours of Operations Work Source of Tapes/Diskettes: CBP ________
______ Hours of Data Entry Others ________
______ Other Pages of Printouts: ______
Number of Plots: ______

______ TOTAL

DATE COMPLETED: ____________________ REVIEWED BY: _____________________________

OPERATIONS REQUEST FORM FEBRUARY 1991 (VERSION 8)	FOR CSC ACCOUNTING ONLY: Agency Code: ____________ Total Hours: ____________ Completed By: ____________ Date Completed: ____________

PART I: MANDATORY INFORMATION

A. DATE REQUESTED: ____________ B. DATE NEEDED: ____________

C. REQUESTED BY: ____________ D. ORGANIZATION: ____________

E. TELEPHONE #: ____________ F. ADDRESS: ____________

____

PART II: SELECT ONE OF THE FOLLOWING TYPES OF REQUESTS AND COMPLETE THE INFORMATION IN THE SPECIFIED SECTIONS

A. ________ CREATE A TAPE (COMPLETE PARTS III AND IV)

B. ________ ADD TO EXISTING TMS TAPE (COMPLETE PARTS III AND IV)

C. ________ READ IN A TAPE (COMPLETE PARTS III AND IV)

D. ________ RESTORE LOST FILES (COMPLETE PART V)

PART III: FORMAT INFORMATION - SELECT ONE OF THE FOLLOWING AND COMPLETE REQUESTED INFORMATION

A. ________ VAX BACKUP
Save Set Name**: ____________
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

B. ________ SAS TRANSPORT
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

C. ________ FOREIGN TAPE
Record Length: ________ Block Size: ________
Format: ________ EBCDIC ________ ASCII
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

D. ________ VAX COPY TAPE
Tape Label: ____________
Density: ________ 1600 BPI ________ 6250 BPI

E. ________ PC DISKETTE
Disk Density: ________ 360K ________ 1.2 MB
Software used to write/read disk:
____________ Version #: ________

**A SAVE SET NAME is required to identify a group of files written to tape. The extension must be .BCK with a length, excluding the extension, of no more than 13 characters.

PART IV: INFORMATION REQUIRED FOR READING AND WRITING TAPES

A. DIRECTORY DATA IS TO COPIED TO OR FROM: ______________________

B. FILE NAMES TO BE COPIED TO OR FROM DIRECTORY SPECIFIED ABOVE:

______________ ______________ ______________

______________ ______________ ______________

C. DOCUMENTATION TO DESCRIBE DATA WRITTEN TO TAPE:

____

____

D. TAPE WILL/SHOULD BE:

PICKED UP: ______ BY: ______________________

MAILED BACK: ______ TO: ______________________

____

ARCHIVED: ______ CATEGORY: ______ DATA (T) ______ DATA REQUEST (R)

______ SYSTEM (System Software) (S)

______ USER (U) ______ OTHER

PART V: INFORMATION REQUIRED FOR RESTORING LOST FILES FROM SYSTEM BACKUPS

A. FILE NAME TO BE RESTORED: ______________________

B. DIRECTORY NAME WHERE FILE WAS LOCATED: ______________________

C. APPROXIMATE DATE FILE WAS CREATED OR LAST MODIFIED: ______________

D. DIRECTORY NAME WHERE FILE IS TO BE PLACED: ______________________

PART VI: PLEASE LIST ANY ADDITIONAL INFORMATION THAT WOULD HELP TO PERFORM YOUR REQUEST

____

____

PART VII: OPERATOR NOTES (TO BE COMPLETED BY CBP OPERATOR)

____

____

APPENDIX G:

DATA DICTIONARY TABLES

TABLE 1:

FLUX/SEDIMENTATION CALCULATIONS

```
CHLA_FXD = CHLA * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

PHOS_FXD = PHOS * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

POC_FXD  = POC * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

PON_FXD  = PON * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

SES_FXD  = SES_MG * SAMVOL_L * (219.3 (cm**2/m**2)) / TIME_SUM *
           TDEPTH / SDEPTH

SPEC_FXD = CNT * (DVOL_ML / EXVOL_ML) / TIME_SUM * 219.3 *
           (TDEPTH / SDEPTH)
```

TABLE 2

CAS NUMBERING CODE AND CAS LABEL (CAS_PK)

For the user's convenience, a representative sample of CAS numbers is included here.

007429905	ALUMINUM
000056553	BENZ[A]ANTHRACENE
007440439	CADMIUM
007440508	COPPER
007439896	IRON
000206440	FLUORANTHENE
007439976	MERCURY
000005889	LINDANE
000091203	NAPTHALENE
007439921	LEAD
000085018	PHENANTHRENE
000129000	PYRENE
007440315	TIN
007440566	ZINC

TABLE 3

ANALYSIS PROBLEM CODES

The following letter codes describe the problem associated with a questionable parameter value. The valid entries for this field are as follows:

'A' = Laboratory accident
'B' = Interference
'C' = Mechanical/materials failure
'D' = Insufficient sample
'E' = Sample received too late
'F' = Sample too old when received
'H' = Analysis run by another lab
'J' = Wrong type sample (e.g., filtered sample requesting TSS)
'K' = Sample frozen when received (results questionable)
'M' = Sample received warm
'N' = Sample lost
'P' = Lost results
'R' = Sample contaminated
'S' = Sample container broken during analysis
'T' = No phaeophytin in sample
'U' = Matrix problem resulting from the interrelationship between variables such as pH and ammonia
'V' = Sample results rejected due to QA/QC criteria
'W' = Duplicate results for all parameters
'X' = Sample not preserved properly
'Y' = Analyzed in duplicate, results below detection limit
'Z' = Analyzed by method of standard additions
'AA' = Sample thawed when received
'BB' = Torn filter pad
'CC' = Pad unfolded in foil pouch
'DD' = Assumed sample size (sample size not reported)
'EE' = Foil pouch very wet when received from field, therefore poor replication between pads, mean reported
'FF' = Poor replication between pads, mean reported
'GG' = Sample received after holding time, therefore results are questionable
'HH' = Sample not taken
'JJ' = Amount filtered not recorded (therefore calculation could not be done)
'KK' = Parameter test not required for study
'LL' = Mislabeled
'MM' = Over 20% of sample adhered to pouch and outside of pad

'NI' = Data for this variable are considered non-interpretable
'NN' = Particulates found in filtered sample
'PP' = Assumed sample volume (pouch volume differed from data sheet volume pouch volume used)
'QQ' = Although value exceeds a theoretically equivalent or greater value (e.g., PO4F>TDP), the excess is within precision of analytical techniques and therefore not statistically significant
'RR' = No sample received
'SS' = Sample rejected due to unusually high suspended sediment concentration
'TT' = Instrument failure on board research vessel
'UU' = Analysis discontinued
'VV' = Station was not sampled due to bad weather conditions, research vessel mechanical failure, or failure of state highway bridges to open or close
'WW' = High turbidity/high optical density (GT .1) at 750 nanometers; actual value recorded; may be acceptable if high CHLA
'XX' = Sampling for this variable not included in the monitoring program at this time or was not monitored during a specific cruise

TABLE 4:

METHOD CODES

Descriptions of each method may be found under Documentation; Methods in CHESSEE.

ALK101	ALK102	ALKF01	ALKF02	BOD5101
BOD5F01	CHLA101	CHAL102	CHLAF01	CHLAF02
CHLAF03	CHLAF04	CHLAF05	CHLAF06	CHLAF07
CHLAF08	CONDF01	DIN101	DIN102	DISOXY101
DISOXYF01	DISOXYF02	DOC101	DOC102	DOCF01
DOCF02	DOCF03	DOCF04	DON101	DON102
DOP101	FCOLI101	FCOLI102	FCOLIF01	FCOLIF02
FSS101	FSSF01	NH4101	NH4102	NH4103
NH4104	NH4F01	NH4F02	NH4F03	NH4F04
NH4F05	NH4F06	NH4F07	NO2101	NO2102
NO2103	NO2F01	NO2F02	NO2F03	NO2F04
NO2F05	NO3101	NO3102	NO3103	NO3104
NO3105	NO3F01	NO3F02	NO3F03	NO3F04
NO3F05	NO3F06	PHEA101	PHEA102	PHEAF01
PHEAF02	PHEAF03	PHEAF04	PHEAF05	PHEAF06
PHEAF07	PHEAF08	PHF01	PHF02	PHOSP101
PO4F101	PO4F102	PO4F103	PO4F104	PO4FF01
PO4FF02	PO4FF03	PO4FF04	PO4FF05	PO4FF06
PO4FF07	POC101	POC102	POCF01	PON101
PON102	PONF01	SALINF01	SECCHIF01	SI101

SI102	SI103	SI104	SI105	SIF01
SIF02	SIF03	SIF04	SIF05	SOE101
TCOLI101	TCOLIF01	TCOLIF02	TCOLIF03	TDN101
TDN102	TDN103	TDNF01	TDP101	TDP102
TDP103	TDP104	TDPF01	TDPF02	TDPF03
TDPF04	TDPF05	TDPF06	TDPF07	TKNF101
TKNF102	TKNF103	TKNF104	TKNFF01	TKNFF02
TKNFF03	TKNFF04	TKNFF05	TKNFF06	TKNW101
TKNW102	TKNW103	TKNW104	TKNWF01	TKNWF02
TKNWF03	TKNWF04	TKNWF05	TN101	TN102
TN103	TOC101	TOC102	TOCF01	TOCF02
TOCF03	TOCF04	TOCF05	TP101	TP102
TP103	TP104	TP105	TP106	TPF01
TPF02	TPF03	TPF04	TPF05	TPF06
TPF07	TSS101	TSSF01	TSSF02	TSSF03
TSSF04	TSSF05	TSSF06	TVS101	WTEMPF01

TABLE 5:

CRUISE NUMBER AND DATES

This alpha-numeric code identifies the cruise to which the data observation belongs. Cruise identification is useful for grouping data that are collected over a range of sample dates, but which are considered data for a specific sampling period. The current values for this field are as follows:

CRUISE		BEGINNING DATE		ENDING DATE
BAY001	=	15JUN84	-	30JUN84
BAY002	=	01JUL84	-	15JUL84
.		.		.
.		.		.
BAY092	=	01JAN89	-	31JAN89
BAY093	=	01FEB89	-	28FEB89
BAY094	=	01MAR89	-	15MAR89
BAY095	=	16MAR89	-	31MAR89
BAY096	=	01APR89	-	15APR89
BAY097	=	16APR89	-	30APR89
BAY098	=	01MAY89	-	14MAY89
BAY099	=	15MAY89	-	31MAY89
BAY100	=	01JUN89	-	15JUN89
BAY101	=	16JUN89	-	30JUN89
BAY102	=	01JUL89	-	15JUL89
BAY103	=	16JUL89	-	31JUL89
BAY104	=	01AUG89	-	16AUG89
BAY105	=	17AUG89	-	31AUG89
BAY106	=	01SEP89	-	15SEP89
BAY107	=	16SEP89	-	30SEP89
BAY108	=	01OCT89	-	15OCT89
BAY109	=	16OCT89	-	31OCT89
BAY110	=	01NOV89	-	30NOV89
BAY111	=	01DEC89	-	31DEC89
BAY112	=	01JAN90	-	31JAN90
BAY113	=	01FEB90	-	28FEB90
BAY114	=	01MAR90	-	15MAR90
BAY115	=	16MAR90	-	31MAR90
BAY116	=	01APR90	-	15APR90
BAY117	=	16APR90	-	30APR90
BAY118	=	01MAY90	-	15MAY90
BAY119	=	16MAY90	-	31MAY90
BAY120	=	01JUN90	-	15JUN90

BAY121	=	16JUN90	-	30JUN90
BAY122	=	01JUL90	-	15JUL90
BAY123	=	16JUL90	-	31JUL90
BAY124	=	01AUG90	-	16AUG90
BAY125	=	17AUG90	-	31AUG90
BAY126	=	01SEP90	-	15SEP90
BAY127	=	16SEP90	-	30SEP90
BAY128	=	01OCT90	-	15OCT90
BAY129	=	16OCT90	-	31OCT90
BAY130	=	01NOV90	-	30NOV90
BAY131	=	01DEC90	-	31DEC90

TABLE 6:

CHESAPEAKE BAY RIVER CODES

The following is a list of values for river codes in the Chesapeake Bay.

```
'CHESAPEAKE BAY '
'MOBJACK_BAY    '
'BIG_ANNEMESSEX '
'BOHEMIA        '
'CHESTER        '
'CHOPTANK       '
'EAST_BAY       '
'ELK            '
'MANOKIN        '
'NANTICOKE      '
'NORTHEAST      '
'POCOMOKE       '
'SASSAFRAS      '
'TANGIER        '
'TANGIER_S      '
'WICOMICO       '
'JAMES          '
'PATUXENT       '
'ANACOSTIA      '
'ANTIETAM_CR    '
'CATOCTIN_CR    '
'MONOCACY       '
'POTOMAC        '
'ROCK_CREEK     '
'YOUGHIOGHENY   '
'CORROTOMAN     '
'RAPPAHANNOCK   '
'CHICKIES_CR    '
'CODORUS        '
'CONESTOGA      '
'CONEWAGO       '
'CONOCOCHEAGUE  '
'CONODOGUINET   '
'JUNIATA        '
'MAHANOY        '
'MAHANTANG      '
'MILL           '
'NORTH_BRANCH   '
'PAXTON         '
```

```
'PENNS           '
'PEQUEA          '
'SHAMOKIN        '
'SHERMANS        '
'STONY           '
'SUSQUEHANNA     '
'SWATARA         '
'WEST_BRANCH     '
'YELLOW_BREECHES'
'YOUNG_WOMANS    '
'BACK            '
'BUSH            '
'GUNPOWDER       '
'MAGOTHY         '
'MIDDLE          '
'PATAPSCO        '
'RHODE           '
'SEVERN          '
'SOUTH           '
'MATTAPONI       '
'PAMUNKEY        '
'YORK            '
```

TABLE 7:

CHESAPEAKE BAY PROGRAM SEGMENT DESIGNATION

The following codes identify the Chesapeake Bay segment from which the sample was taken. The acceptable codes are:

'CB1'	=	Susquehanna Flats	
'CB2'	=	Upper portion of the Chesapeake Bay mainstem	
'CB3'	=	Upper-most estuarine zone in mainstem of the Chesapeake Bay	
'CB4'	=	Upper portion of the central Chesapeake Bay mainstem	
'CB5'	=	Central portion of the mainstem of the Chesapeake Bay	
'CB6'	=	Lower west-central mainstem of the Chesapeake Bay	
'CB7'	=	Lower east-central mainstem of the Chesapeake Bay	
'CB8'	=	Southern-most segment of the Chesapeake Bay	
'ET1'	=	Northeast River	
'ET2'	=	Elk River and Bohemia River	
'ET3'	=	Sassafras River	
'ET4'	=	Chester River	
'ET5'	=	Choptank River	
'ET6'	=	Nanticoke River	
'ET7'	=	Wicomico River	
'ET8'	=	Manokin River	
'ET9'	=	Big Annemessex River	
'ET10'	=	Pocomoke River	
'EE1'	=	Eastern Bay, Miles River, and Wye River	
'EE2'	=	Choptank River, west of Castle Haven, including Tred Avon River, Broad Creek, Harris Creek, and the Little Choptank	
'EE3'	=	Tangler and Pocomoke Sounds	
'LE1'	=	Patuxent River	- Lower estuarine segment
'LE2'	=	Potomac River	- Lower estuarine segment
'LE3'	=	Rappahannock River	- Lower estuarine segment
'LE4'	=	York River	- Lower estuarine segment
'LE5'	=	James River	- Lower estuarine segment
'RET1'	=	Patuxent River	- Riverine-estuarine transition zone
'RET2'	=	Potomac River	- Riverine-estuarine transition zone
'RET3'	=	Rappahannock River	- Riverine-estuarine transition zone
'RET4'	=	York River	- Riverine-estuarine transition zone
'RET5'	=	James River	- Riverine-estuarine transition

zone

```
'TF1'  = Patuxent River     - Tidal freshwater segment
'TF2'  = Potomac River      - Tidal freshwater segment
'TF3'  = Rappahannock River - Tidal freshwater segment
'TF4'  = York River         - Tidal freshwater segment
'TF5'  = James River        - Tidal freshwater segment
'WT1'  = Bush River
'WT2'  = Gunpowder River
'WT3'  = Middle River and Seneca Creek
'WT4'  = Back River
'WT5'  = Patapsco River
'WT6'  = Magothy River
'WT7'  = Severn River
'WT8'  = South, Rhode, and West Rivers
'WE4'  = Mobjack Bay
```

TABLE 8:

SAMPLING GEAR

Sampling gear collection code.

1 = Hand Collection
2 = Dredge
3 = Artificial Substrate (Unspecified)
4 = Diatometer Slides
5 = Clarke-Bumpus Sampler
6 = Plankton Trap (Unspecified)
7 = Plankton Pump (Unspecified)
8 = Plankton Net (Unspecified)
9 = Plankton Net (500 micron mesh)
10 = Plankton Net (No. 20 size-80 micron mesh)
11 = Plankton Net (10 micron mesh)
12 = Beam plankton line
13 = Anchor Dredge
14 = Hydraulic Grab (1200 square centimeters)
15 = Hand Core (45 square centimeters)
16 = Post-Hole Digger (200 square centimeters)
17 = Ponar Grab (200 square centimeters)
18 = Ponar Grab (1000 square centimeters)
19 = Ponar Grab (50 square centimeters, .005 **2)
20 = Box Corer Grab (.018 m**2)
21 = Van Veen Grab (.07 m**2)
22 = Shipek Grab (.04 m**2)
23 = Seine Haul (unspecified)
24 = Smith-Macintire Grab (1000 square centimeters)
25 = Seine Net (15 ft, 1/8 inch stretch mesh)
26 = Seine Net (50 ft, 1/2 inch stretch mesh)
27 = Seine Net (50 ft, 1/4 inch stretch mesh)
28 = Seine Net (200 ft, 1/2 inch stretch mesh - net 200 x 20)
29 = Seine Net (10 ft, 1/4 inch stretch mesh - net 10 x 4)
30 = Trawl (unspecified)
31 = Trawl (6 ft otter trawl, 1 inch stretch mesh with 1/2 inch cod end inner liner)
32 = Trawl (25 ft otter trawl, 1 1/4 inch stretch mesh with 1/2 inch cod end inner liner)
33 = Trawl (15 ft semi-balloon)
34 = Tucker Trawl (2 mm mesh 1 square meter)
36 = Otter Trawl (16 ft, 1/2 inch mesh, semi-balloon)
37 = Trawl (10 ft otter trawl, 1/4 inch - 6.4 mm - mesh with 500 um cod end liner)
38 = Trawl (5 ft midwater trawl, 1/4 inch - 6.4 mm - mesh with

500 um cod end liner)
39 = Reserved for Trawl Sample
40 = Trap Net (3 ft x 6 ft, 1/2 inch mesh, 50 ft lead)
42 = Eckman Dredge
43 = Cage
44 = Catfish Trap
45 = Crayfish Trap
46 = Crab Trap
47 = Animal Trap
48 = Hook and Line Fishing
49 = Dip Net
50 = Diver
54 = Pound Net
55 = Epifauna Panels
56-59 = Reserved
60 = Endico Current Meter
61 = Braincon Current Meter
62 = Sediment Trap Array (6 3" x 30" cups, W.R. Boynton, CBL)
63 = Seine Net (50ft, 1/4 inch mesh - net 100 x 4ft)
64 = Bongo Net (unspecified)
65 = Purse Seine
66 = Fyke and Hoop Nets
67 = Pots
68 = Box Trap
69 = Push Net
70 = Great Lakes Shoal 1- 2 inch
71 = Great Lakes Shoal 2- 4 inch
72 = Great Lakes Shoal 4- 7 inch
73 = Great Lakes Shoal 7-14 inch
74 = Beam Trawl
75-77 = Reserved
78 = Slat Traps
79 = Reserved
80 = Gill Nets
81-84 = Reserved
85 = Mid-Water Trawl (unspecified)
86 = Drift Gill Net Brails
87 = Drift Gill Net Flop
88 = Drift Gill Net Jugs
89 = Electrofishing
90 = Shore
91 = Pick
92 = Drift Gill Net (unspecfied)
93 = Set Gill Net
94 = Bottom Trawl (unspecifed)
95 = Fish House
96 = Van Veen Grab (0.1 square meters)

TABLE 9:

LIFE STAGE

Life stage codes for biological monitoring of fish and zooplankton.

00 Egg (viable; for non-viable eggs use '90')
01 Yolk Sac
02 Fin Fold
03 Post Fin Fold (full development of second dorsal fin)
04 Young of the Year -- year class 0
05 Specimens in Year Class 1 or Older
06 Juveniles and Adults
07 Larvae, Juveniles, and Adults
08 Larvae and Juveniles
09 Reserved for Future Use
10 Nauplii or Copepodites
11 Nauplii
12 Copepodite
13 Orthonauplii Stage 1-3
14 Metanauplii Stage 4-6
15 Copepodite Stage 1-3
16 Copepodite Stage 4-6
17 Cypris Larvae
18 Reserved for Future Use
19 Copepod Eggs
20 Nymph
21 Pupae
22 Pharate
23 Instar
24 Naiad
25-29 Reserved for Future Use
30 Prezoea
31 Zoea
32 Metazoea
33 Megalops
34-39 Reserved for Future Use
40 Nauplii Stage 1

TABLE 10:

NOAA SPECIES CODE

Reference the NOAA-NODC taxonomic code document #15 published in August 1984. For the user's convenience, a subset of that code is provided here.

LATIN NAME	COMMON NAME	NODC TAXONOMIC CODE
Vallisneria americana	Wildcelery	3305010301
Potamogeton pectinatus	Sago pondweed	3306050105
Potamogeton perfoliatus	Redhead grass	3306050106
Ruppia maritima	Widgeongrass	3306060101
Zostera marina	Eelgrass	3306080201
Stylochus ellipticus	Oyster flatworm	3906030101
Micrura leidyi	Red ribbon worm	4303020505
Malacobdella grossa	Leech ribbon worm	4308010101
Nereis succinea	Common clamworm	5001240410
Polydora ligni	Whip mud worm	5001430411
Scolecolepides viridis	Red-gilled mud worm	5001430602
Heteromastus filiformis	Capitellid thread worm	5001600201
Hydroides dianthus	Limy tube worm	5001730901
Crassostrea virginica	American oyster	5510020102
Mercenaria mercenaria	Hard shell clam	5515471201
Mya arenaria	Soft shell clam	5517010201
Balanus improvisus	Bay barnacle	6134020114
Neomysis americana	Bay opossum shrimp	6153011508
Cyathura polita	Slender isopod	6160010201
Lironeca ovalis	Fish-gill isopod	6161060301

TABLE 11:

COMPREHENSIVE SAMPLE MEDIA

This table is used for specific sample identification in gamma analysis.

Water	000
Fresh (less than 1 ppt.)	001
Salt (greater than 1 ppt.)	002
Radwaste	003
EPA mixed gamma crosscheck	004
EPA mixed gamma and beta crosscheck	005
EPA iodine - 131 crosscheck	006
Rainwater	007
Point Source/Effluent	008
Sediment	100
Predominately clay (particle size greater than 600)	101
Predominately sand (particle size less than 500)	102
Clayey sand (particle size between 500 and 550)	103
Sandy clay (particle size between 550 and 600)	104
Particulates	105

TABLE 12:

PARTICLE SIZE CLASSIFICATION

Particle size classification can be designated for both Shepard's class and PHI class using the following codes.

'S0 '	Shepards class 0
'S1 '	Shepards class 1
'S2 '	Shepards class 2
'S3 '	Shepards class 3
'S4 '	Shepards class 4
'S5 '	Shepards class 5
'S6 '	Shepards class 6
'S7 '	Shepards class 7
'S8 '	Shepards class 8
'S9 '	Shepards class 9
'P-2 '	PHI class -2
'P-1 '	PHI class -1
'P0 '	PHI class 0
'P1.5'	PHI class 1.5
'P2 '	PHI class 2
'P2.5'	PHI class 2.5
'P3 '	PHI class 3
'P3.5'	PHI class 3.5
'P4 '	PHI class 4
'P4.5'	PHI class 4.5
'P5 '	PHI class 5
'P6 '	PHI class 6
'P7 '	PHI class 7
'P8 '	PHI class 8
'P9 '	PHI class 9
'P10 '	PHI class 10

TABLE 13:

MEDIUM CODES

ATMOSDEP = atmospheric deposition
GRNDH2O = groundwater
LANDAPPL = pesticide land application
MICROL = microlayer
RUNOFF = urban runoff
SEDCOR = sediment, core sample
SEDSAM = sediment, bottom surface
SEDTRP = sediment trap
SPECIES = a living resource sample; refer to SPECVAFK
SPILL = shipping spills
STINDEFF = State surface water effluent
STMUNEFF = State municipal surface water effluent
TRIFUG = Toxic Release Inventory (TRI) fugitive air
TRINDEFF = TRI surface water effluent
TRIOFFOT = TRI off-site to other entity
TRIOFFPW = TRI off-site to publicly owned treatment works (POTW)
TRIONSTE = TRI on-site land
TRISTACK = TRI stack air
TRIUIC = TRI underground injection
WATCOL = water column

TABLE 14:

MODELSEG TABLE (part of)
Above Fall Line WSM Segments

Description	Segment Number							
Appomattox	300	310						
James	265	270	280	290				
Patuxent	330	340						
Potomac	160	170	175	180	190	200	210	220
Rappahannock	230							
Susquehanna	10	20	30	40	50	60	70	80
	90	100	110	120	140			
York	235	249	250	260				

TABLE 15:

MODELSEG TABLE (part of)
Below Fall Line WSM Segments

Description	Segment Name		Segment Number	
Eastern Shore MD+PA	Coastal_1	Coastal_11	360	450
	Bohemia	Chester	370	380
	Choptank	Wye	400	390
	Nanticoke	Wicomico	410	420
	Pocomoke		430	
Eastern Shore VA	Coastal_4		440	
James	Chickahominy	James	610	600
	Nansemond	Elizabeth	620	630
	Coastal_9		640	
Patuxent	Patuxent		500	
Potomac	Low_Potomac	Anacostia	530	540
	Occoquan		550	
Rappahannock	Rappahannock	Gt_Wicomico	560	580
	Coastal_8		570	
Western Shore MD	Coastal_5	Coastal_6	520	460
	Gunpowder	Balt_Harbor	470	480
	Patapsco	Severn	490	510
York	York		590	

APPENDIX H:

DATA PROCESSING REQUEST FORM

REQUEST NO : ____________

FY92 CSC DATA REQUEST FORM
(VERSION 7)

PART 1 (Completed by Requestor or CSC staff)

REQUEST DATE: ____________ DATE REQUIRED: ____________ ORGANIZATION: ____________

REQUESTOR: ______________________________ ADDRESS: ______________________________

TELEPHONE #: ______________________________ ______________________________

REQUEST TYPE (ASSIGNED BY ED STIGALL OR SUBCOMMITTEE COORDINATOR)

I. INTERNAL SUPPORT

_____ COMPUTER OPERATIONS
_____ SYSTEM MANAGEMENT
_____ USER SUPPORT
_____ DATA REQUEST
_____ EPA STATISTICAL WORK
_____ EPA GIS SUPPORT
_____ EPA TECHNICAL WRITING

II. MODELING SUBCOMMITTEE SUPPORT

_____ WATERSHED MODEL SUPPORT
_____ 3-D MODEL SUPPORT
_____ MODEL POINT SOURCE SUPPORT
_____ GENERAL POINT SOURCE SUPPORT
_____ MODELING GIS SUPPORT
_____ MODELING TECHNICAL WRITING

III. TOXICS SUBCOMMITTEE SUPPORT

_____ TOXICS DATA ACQUISITION
_____ TOXICS PROGRAM SUPPORT
_____ TOXICS DATA ANALYSIS
_____ TOXICS GIS SUPPORT
_____ TOXICS TECHNICAL WRITING

IV. MONITORING SUBC. SUPPORT

_____ MONITORING DATA PROCESSING
_____ MONITORING PROG. SUPPORT
_____ MONITORING DATA ANALYSIS
_____ CITIZEN MONITORING
_____ HISTORICAL DATA ACQUISITION
_____ MONITORING GIS SUPPORT
_____ MONITORING TECHNICAL WRITING

V. LIVING RESOURCE SUBC. SUPPORT

_____ LR 91 REEVALUATION WORKGROUP
_____ LR MONITORING WORKGROUP
_____ SAV WORKGROUP
_____ WATERFOWL MANAGEMENT WORKGROUP
_____ ECOLOGICAL VALUABLE SPEC W/G
_____ FISH PASSAGE WORKGROUP
_____ LR TECHNICAL WRITING

VI. NPS SUBCOMMITTEE SUPPORT

_____ NPS MODELING SUPPORT
_____ COEEP MAINTENANCE
_____ NPS GIS SUPPORT
_____ NPS TECHNICAL WRITING

VII. CSTC SUPPORT

_____ BAY BAROMETER
_____ OTHER CSTC SUPPORT

_____ DATA BASE DEVELOPMENT

DESCRIPTION OF WORK TO BE PERFORMED

____

____

____

____

____

____

PART 2 (COMPLETED BY CSC STAFF)

DATE RECEIVED: ______________________ REFERRED TO: ___________________________

ESTIMATED RESOURCES/MATERIALS:

______ Hours of Technical Work ______ No of Transparencies

______ Hours of Operations Work ______ Plotter Pens/ Ink etc

______ Hours of Data Entry ______ Number of Plots

______ Pages of Printouts: ______ Other

DATA LOCATION: ____

STRATEGY/ACTION: ____

____

____

____

____

____

____

____

____

PART 3 (COMPLETED BY EPA)

EPA APPROVAL: ____ DATE: ________________________

EPA APPROVAL FOR DATA RELEASE: _____________________ DATE: ________________________

PART 4 (COMPLETED BY CSC)

ACTUAL RESOURCES/MATERIALS:

______ Hours of Technical Work
______ Hours of Operations Work
______ Hours of Data Entry
______ Other

______ TOTAL

Number of Tapes/Diskettes: ________________
Source of Tapes/Diskettes: CBP ________
Others ________
Pages of Printouts: ______
Number of Plots: ______

DATE COMPLETED: ______________________ REVIEWED BY: ________________________________

OPERATIONS REQUEST FORM FEBRUARY 1991 (VERSION 8)	FOR CSC ACCOUNTING ONLY: Agency Code: ____ Total Hours: ____ Completed By: ____ Date Completed: ____

PART I: MANDATORY INFORMATION

A. DATE REQUESTED: ____________ B. DATE NEEDED: ____________

C. REQUESTED BY: ____________ D. ORGANIZATION: ____________

E. TELEPHONE #: ____________ F. ADDRESS: ____________

____

PART II: SELECT ONE OF THE FOLLOWING TYPES OF REQUESTS AND COMPLETE THE INFORMATION IN THE SPECIFIED SECTIONS

A. ________ CREATE A TAPE (COMPLETE PARTS III AND IV)

B. ________ ADD TO EXISTING TMS TAPE (COMPLETE PARTS III AND IV)

C. ________ READ IN A TAPE (COMPLETE PARTS III AND IV)

D. ________ RESTORE LOST FILES (COMPLETE PART V)

PART III: FORMAT INFORMATION - SELECT ONE OF THE FOLLOWING AND COMPLETE REQUESTED INFORMATION

A. ________ VAX BACKUP
Save Set Name**: ____________
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

B. ________ SAS TRANSPORT
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

C. ________ FOREIGN TAPE
Record Length: ________ Block Size: ________
Format: ________ EBCDIC ________ ASCII
Density: ________ 1600 BPI ________ 6250 BPI
TMS Tape # (if existing tape): ____________

D. ________ VAX COPY TAPE
Tape Label: ____________
Density: ________ 1600 BPI ________ 6250 BPI

E. ________ PC DISKETTE
Disk Density: ________ 360K ________ 1.2 MB
Software used to write/read disk:
____________ Version #: ______

**A SAVE SET NAME is required to identify a group of files written to tape. The extension must be .BCK with a length, excluding the extension, of no more than 13 characters.

PART IV: INFORMATION REQUIRED FOR READING AND WRITING TAPES

A. DIRECTORY DATA IS TO COPIED TO OR FROM: ____________________

B. FILE NAMES TO BE COPIED TO OR FROM DIRECTORY SPECIFIED ABOVE:

____________ ____________ ____________

____________ ____________ ____________

C. DOCUMENTATION TO DESCRIBE DATA WRITTEN TO TAPE:

____

____

D. TAPE WILL/SHOULD BE:

PICKED UP: ______ BY: ____________________

MAILED BACK: ______ TO: ____________________

____

ARCHIVED: ______ CATEGORY: ______ DATA (T) ______ DATA REQUEST (R)

______ SYSTEM (System Software) (S)

______ USER (U) ______ OTHER

PART V: INFORMATION REQUIRED FOR RESTORING LOST FILES FROM SYSTEM BACKUPS

A. FILE NAME TO BE RESTORED: ____________________

B. DIRECTORY NAME WHERE FILE WAS LOCATED: ____________________

C. APPROXIMATE DATE FILE WAS CREATED OR LAST MODIFIED: ____________________

D. DIRECTORY NAME WHERE FILE IS TO BE PLACED: ____________________

PART VI: PLEASE LIST ANY ADDITIONAL INFORMATION THAT WOULD HELP TO PERFORM YOUR REQUEST

____

____

PART VII: OPERATOR NOTES (TO BE COMPLETED BY CBP OPERATOR)

____

____