

**BIOCHEM Database Application System**

**Archival Account Database Dictionary**

Prepared for

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## Introduction

The BioChem System version 6 is made up of following the two subsystems:

BioChem Archival/Edits system version 4.0  
BioChem Query System version 3.0.

The BioChem Archival System is comprised of one or more Oracle 8I data manager accounts and an Oracle Forms 6I application. The Application is used to validate and edit the data in the data manager account. Once the data is valid then it may be archived to another Oracle 8I account called the BioChem archive account.

The BioChem Query System is comprised of an Oracle 8I query account and an Oracle Form 6I application. The application is used to create and execute query definitions that are based on data archived in another Oracle 8I account called the BioChem archive account.

The common component of the two BioChem subsystems above is the BioChem archive account. The BioChem Archival/Edits System adds data to the BioChem archive via the data manager accounts, while the BioChem Query System creates and executes queries based on the data stored in the BioChem archive.

This document will focus on the Oracle 8I database objects required by the two subsystems.

For ease of use this document will make reference only to those objects implemented in this Version of the system..

## BIOCHEM Database Objects

### ***Description of the BIOCHEM Account Objects***

The BIOCHEM database objects (tables, sequences, indexes, etc.) are separated into three separate accounts.

- The first Oracle database account is known as the Data Manager Account (or the Edit Account). This account contains all of the tables used to load the initial “raw” data, validate and correct the errors in the data and tables used to temporarily store the data until all data is processed for a given “batch”. For further information on the Oracle database objects within this account please see the document *BCEDITS\_data\_dictionary\_v4.0*.
- The second database account is known as the query account (BCQRY). This account contains all the tables used to create and execute queries based on the data contained in the data. For further information on the Oracle database objects within this account please see the document *BCQRY\_data\_dictionary\_v3.0*.
- The third Oracle database account is known as the BIOCHEM Archival Account. This account contains the following logical table grouping:
  - Archival tables - store the validated discrete and plankton data that is queried upon by all users.
  - Audit Trail table - tracks the changes to the archived data via the data manager EDIT tables.
  - Lookup Tables (also known as code tables) - store the commonly referenced codes, which are used by the data tables in the Data Manager Account(s), query definition tables, the Archival tables, and the Deleted Database Tables.
  - Deleted Database Tables -store the data that a Data Manager has deleted from the Archival database tables in the BIOCHEM account using the Archival/Edits application ver 4.0.

## **Entity Relationship Diagrams (ERD)**

The Entity Relationship Diagram(s) displayed in this section depict the BIOCHEM database as distinctly separate areas of functionality. This is somewhat true since different types of data are being accommodated and saved in the tables. Here is a list of the separate ERD diagrams that have been included in this section:

- Archival Data Tables (Common, Discrete and Plankton)
- Archival Deletes Tables (Common, Discrete and Plankton)
- Archival Audit Table
- Archival Lookup(Code) Tables

The ERD diagrams separate the Archival Data Tables by "areas of functionality", which refers to a logical collection of tables in the diagram in order to focus on the relationships of the tables for one type of data. Diagrams are given for both the Plankton functional area and the Discrete functional area.

These diagrams are rather small in size as well. Please increase the "Zoom" (if viewing this document using MS Word 97 or greater) to 200% or greater in order to make the details of the diagrams legible.

# ARCHIVAL DATA TABLES

These tables store the data records that were archived using the BioChem Archival/Edits Application.

## BCMISSIONS

MISSION_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
NAME: String NULL
DESCRIPTOR: String NOT NULL
LEADER: String NULL
START_DATE: Datetime NULL
END_DATE: Datetime NULL
INSTITUTE: String NULL
PLATFORM: String NULL
PROTOCOL: String NULL
GEOGRAPHIC_REGION: String NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
MORE_COMMENT: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCLOCKEDMISSIONS

MISSION_SEQ: Number NULL
MISSION_NAME: String NULL
DESCRIPTOR: String NULL
DATA_POINTER_CODE: String NULL
DOWNLOADED_BY: String NULL
DOWNLOADED_DATE: Datetime NULL

## BCEVENTS

EVENT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
MISSION_SEQ: Number NOT NULL (FK)
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
MIN_LAT: Number NOT NULL
MAX_LAT: Number NULL
MIN_LON: Number NOT NULL
MAX_LON: Number NULL
COLLECTOR_STATION_NAME: String NULL
COLLECTOR_EVENT_ID: String NOT NULL
UTC_OFFSET: Number NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
MORE_COMMENT: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCACTIVITIES

ACTIVITY_SEQ: Number NOT NULL
EVENT_SEQ: Number NOT NULL (FK)
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_POINTER_CODE: String NOT NULL (FK)

## BCCOMMENTS

COMMENT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
MISSION_SEQ: Number NULL (FK)
EVENT_SEQ: Number NULL (FK)
EDIT_COMMENT: String NOT NULL
COMMENT_NUM: Number NOT NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCDISCRETEHDRS

DISCRETE_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
EVENT_SEQ: Number NOT NULL (FK)
ACTIVITY_SEQ: Number NOT NULL (FK)
GEAR_SEQ: Number NOT NULL (FK)
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
TIME_QC_CODE: String NOT NULL (FK)
START_LAT: Number NOT NULL
END_LAT: Number NULL
START_LON: Number NOT NULL
END_LON: Number NULL
POSITION_QC_CODE: String NOT NULL (FK)
START_DEPTH: Number NOT NULL
END_DEPTH: Number NOT NULL
SOUNDING: Number NULL
COLLECTOR_DEPLOYMENT_ID: String NULL
COLLECTOR_SAMPLE_ID: String NOT NULL
COLLECTOR: String NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
RESPONSIBLE_GROUP: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
SHARED_DATA: String NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCPLANKTINHEDRS

PLANKTON_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
EVENT_SEQ: Number NOT NULL (FK)
ACTIVITY_SEQ: Number NOT NULL (FK)
GEAR_SEQ: Number NOT NULL (FK)
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
PHASE_OF_DAYLIGHT: String NULL
START_LAT: Number NOT NULL
END_LAT: Number NULL
START_LON: Number NOT NULL
END_LON: Number NULL
TIME_QC_CODE: String NOT NULL (FK)
POSITION_QC_CODE: String NOT NULL (FK)
START_DEPTH: Number NOT NULL
END_DEPTH: Number NOT NULL
SOUNDING: Number NULL
VOLUME: Number NULL
VOLUME_METHOD_SEQ: Number NOT NULL (FK)
LARGE_PLANKTON_REMOVED: String NULL
MESH_SIZE: Number NULL
COLLECTION_METHOD_SEQ: Number NOT NULL (FK)
COLLECTOR_DEPLOYMENT_ID: String NULL
COLLECTOR_SAMPLE_ID: String NULL
PROCEDURE_SEQ: Number NOT NULL (FK)
PRESERVATION_SEQ: Number NOT NULL (FK)
STORAGE_SEQ: Number NOT NULL (FK)
COLLECTOR: String NULL
COLLECTOR_COMMENT: String NULL
METERS_SQD_FLAG: String NULL
DATA_MANAGER_COMMENT: String NULL
RESPONSIBLE_GROUP: String NULL
SHARED_DATA: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCDISCRETETALES

DISCRETE_DETAIL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_TYPE_SEQ: Number NOT NULL (FK)
DISCRETE_SEQ: Number NOT NULL (FK)
DATA_VALUE: Number NOT NULL
AVERAGED_DATA: String NOT NULL
DATA_QC_CODE: String NOT NULL (FK)
DETECTION_LIMIT: Number NULL
DETAIL_COLLECTOR: String NULL
COLLECTOR_SAMPLE_ID: String NOT NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCDISCRETEREPLICATES

DISCRETE_REPLICATE_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_TYPE_SEQ: Number NOT NULL (FK)
DISCRETE_DETAIL_SEQ: Number NOT NULL (FK)
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL (FK)
DETECTION_LIMIT: Number NULL
DETAIL_COLLECTOR: String NULL
COLLECTOR_SAMPLE_ID: String NOT NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCPLANKTNFREQS

PLANKTON_FREQUENCY_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_TYPE_SEQ: Number NOT NULL (FK)
PLANKTON_GENERAL_SEQ: Number NOT NULL (FK)
UPPER_BIN_SIZE: Number NOT NULL
LOWER_BIN_SIZE: Number NOT NULL
BUG_COUNT: Number NOT NULL
BUG_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL (FK)
DETAIL_COLLECTOR: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCPLANKTNGENERALS

PLANKTON_GENERAL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
PLANKTON_SEQ: Number NOT NULL (FK)
NATIONAL_TAXONOMIC_SEQ: Number NOT NULL (FK)
COLLECTOR_TAXONOMIC_ID: String NULL
LIFE_HISTORY_SEQ: Number NOT NULL (FK)
TROPHIC_SEQ: Number NOT NULL (FK)
MIN_SIEVE: Number NULL
MAX_SIEVE: Number NULL
SPLIT_FRACTION: Number NULL
SEX_SEQ: Number NOT NULL (FK)
COUNTS: Number NULL
COUNT_PCT: Number NULL
WET_WEIGHT: Number NULL
DRY_WEIGHT: Number NULL
BIO_VOLUME: Number NULL
PRESENCE: String NULL
COLLECTOR_COMMENT: String NULL
SOURCE: String NOT NULL
DATA_MANAGER_COMMENT: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCPLANKTNDTAILS

PLANKTON_DETAIL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_TYPE_SEQ: Number NOT NULL (FK)
PLANKTON_GENERAL_SEQ: Number NOT NULL (FK)
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL (FK)
DETAIL_COLLECTOR: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## BCPLANKTNINDVIDLS

PLANKTON_INDIVIDUAL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
DATA_TYPE_SEQ: Number NOT NULL (FK)
PLANKTON_GENERAL_SEQ: Number NOT NULL (FK)
BUG_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL (FK)
DATA_COLLECTOR: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL

## ARCHIVAL DELETES TABLES

These tables store the records that were deleted from the archive using the BioChem Archival/Edits Application.

### BCMISSIONSDEL

MISSION_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
NAME: String NULL
DESCRIPTOR: String NOT NULL
LEADER: String NULL
START_DATE: Datetime NULL
END_DATE: Datetime NULL
INSTITUTE: String NULL
PLATFORM: String NULL
PROTOCOL: String NULL
GEOGRAPHIC_REGION: String NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
MORE_COMMENT: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCEVENTSDEL

EVENT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
MISSION_SEQ: Number NOT NULL
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
MIN_LAT: Number NOT NULL
MAX_LAT: Number NULL
MIN_LON: Number NOT NULL
MAX_LON: Number NULL
COLLECTOR_STATION_NAME: String NULL
COLLECTOR_EVENT_ID: String NOT NULL
UTC_OFFSET: Number NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
MORE_COMMENT: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCACTIVITIESDEL

ACTIVITY_SEQ: Number NOT NULL
EVENT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_POINTER_CODE: String NOT NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCCOMMENTSDEL

COMMENT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
MISSION_SEQ: Number NULL
EVENT_SEQ: Number NULL
EDIT_COMMENT: String NOT NULL
COMMENT_NUM: Number NOT NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCDISCRETEHEADSDEL

DISCRETE_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
EVENT_SEQ: Number NOT NULL
ACTIVITY_SEQ: Number NOT NULL
GEAR_SEQ: Number NOT NULL
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
TIME_QC_CODE: String NOT NULL
START_LAT: Number NOT NULL
END_LAT: Number NULL
START_LON: Number NOT NULL
END_LON: Number NULL
POSITION_QC_CODE: String NOT NULL
START_DEPTH: Number NOT NULL
END_DEPTH: Number NOT NULL
SOUNDING: Number NULL
COLLECTOR_DEPLOYMENT_ID: String NULL
COLLECTOR_SAMPLE_ID: String NULL
COLLECTOR: String NULL
COLLECTOR_COMMENT: String NULL
DATA_MANAGER_COMMENT: String NULL
RESPONSIBLE_GROUP: String NULL
SHARED_DATA: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCPLANKTNHEADSDEL

PLANKTON_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
EVENT_SEQ: Number NOT NULL
ACTIVITY_SEQ: Number NOT NULL
GEAR_SEQ: Number NOT NULL
START_DATE: Datetime NOT NULL
END_DATE: Datetime NULL
START_TIME: Number NULL
END_TIME: Number NULL
PHASE_OF_DAYLIGHT: String NULL
START_LAT: Number NOT NULL
END_LAT: Number NULL
START_LON: Number NOT NULL
END_LON: Number NULL
TIME_QC_CODE: String NOT NULL
POSITION_QC_CODE: String NOT NULL
START_DEPTH: Number NOT NULL
END_DEPTH: Number NOT NULL
SOUNDING: Number NULL
VOLUME: Number NULL
VOLUME_METHOD_SEQ: Number NOT NULL
LARGE_PLANKTON_REMOVED: String NULL
MESH_SIZE: Number NULL
COLLECTION_METHOD_SEQ: Number NOT NULL
COLLECTOR_DEPLOYMENT_ID: String NULL
COLLECTOR_SAMPLE_ID: String NULL
PROCEDURE_SEQ: Number NOT NULL
PRESERVATION_SEQ: Number NOT NULL
STORAGE_SEQ: Number NOT NULL
COLLECTOR: String NULL
COLLECTOR_COMMENT: String NULL
METERS_SQD_FLAG: String NULL
DATA_MANAGER_COMMENT: String NULL
RESPONSIBLE_GROUP: String NULL
SHARED_DATA: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCDISCRETETAILEDDEL

DISCRETE_DETAIL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_TYPE_SEQ: Number NOT NULL
DISCRETE_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
AVERAGED_DATA: String NOT NULL
DATA_QC_CODE: String NOT NULL
DETECTION_LIMIT: Number NULL
DETAIL_COLLECTOR: String NULL
COLLECTOR_SAMPLE_ID: String NOT NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCDISCRETEREPLICTSDEL

DISCRETE_REPLICATE_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_TYPE_SEQ: Number NOT NULL
DISCRETE_DETAIL_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL
DETECTION_LIMIT: Number NULL
DETAIL_COLLECTOR: String NULL
COLLECTOR_SAMPLE_ID: String NOT NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCPLANKTNFREQSDEL

PLANKTON_FREQUENCY_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_TYPE_SEQ: Number NOT NULL
PLANKTON_GENERAL_SEQ: Number NOT NULL
UPPER_BIN_SIZE: Number NOT NULL
LOWER_BIN_SIZE: Number NOT NULL
BUG_COUNT: Number NOT NULL
BUG_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL
DETAIL_COLLECTOR: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCPLANKTNGENRISDEL

PLANKTON_GENERAL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
PLANKTON_SEQ: Number NOT NULL
NATIONAL_TAXONOMIC_SEQ: Number NOT NULL
COLLECTOR_TAXONOMIC_ID: String NULL
LIFE_HISTORY_SEQ: Number NOT NULL
TROPHIC_SEQ: Number NOT NULL
MIN_SIEVE: Number NULL
MAX_SIEVE: Number NULL
SPLIT_FRACTION: Number NULL
SEX_SEQ: Number NOT NULL
COUNTS: Number NULL
COUNT_PCT: Number NULL
WET_WEIGHT: Number NULL
DRY_WEIGHT: Number NULL
BIO_VOLUME: Number NULL
PRESENCE: String NULL
COLLECTOR_COMMENT: String NULL
SOURCE: String NOT NULL
DATA_MANAGER_COMMENT: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCPLANKTNDTAILSDEL

PLANKTON_DETAIL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_TYPE_SEQ: Number NOT NULL
PLANKTON_GENERAL_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL
DETAIL_COLLECTOR: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

### BCPLANKTNINDIVLSDEL

PLANKTON_INDIVIDUAL_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL
DATA_TYPE_SEQ: Number NOT NULL
PLANKTON_GENERAL_SEQ: Number NOT NULL
BUG_SEQ: Number NOT NULL
DATA_VALUE: Number NOT NULL
DATA_QC_CODE: String NOT NULL
DATA_COLLECTOR: String NULL
CREATED_DATE: Datetime NULL
CREATED_BY: String NULL
PROD_CREATED_DATE: Datetime NOT NULL
PROD_CREATED_BY: String NULL
DELETED_DATE: Datetime NOT NULL
DELETED_BY: String NOT NULL

Note: There are no foreign key constraints on the DELETES tables.

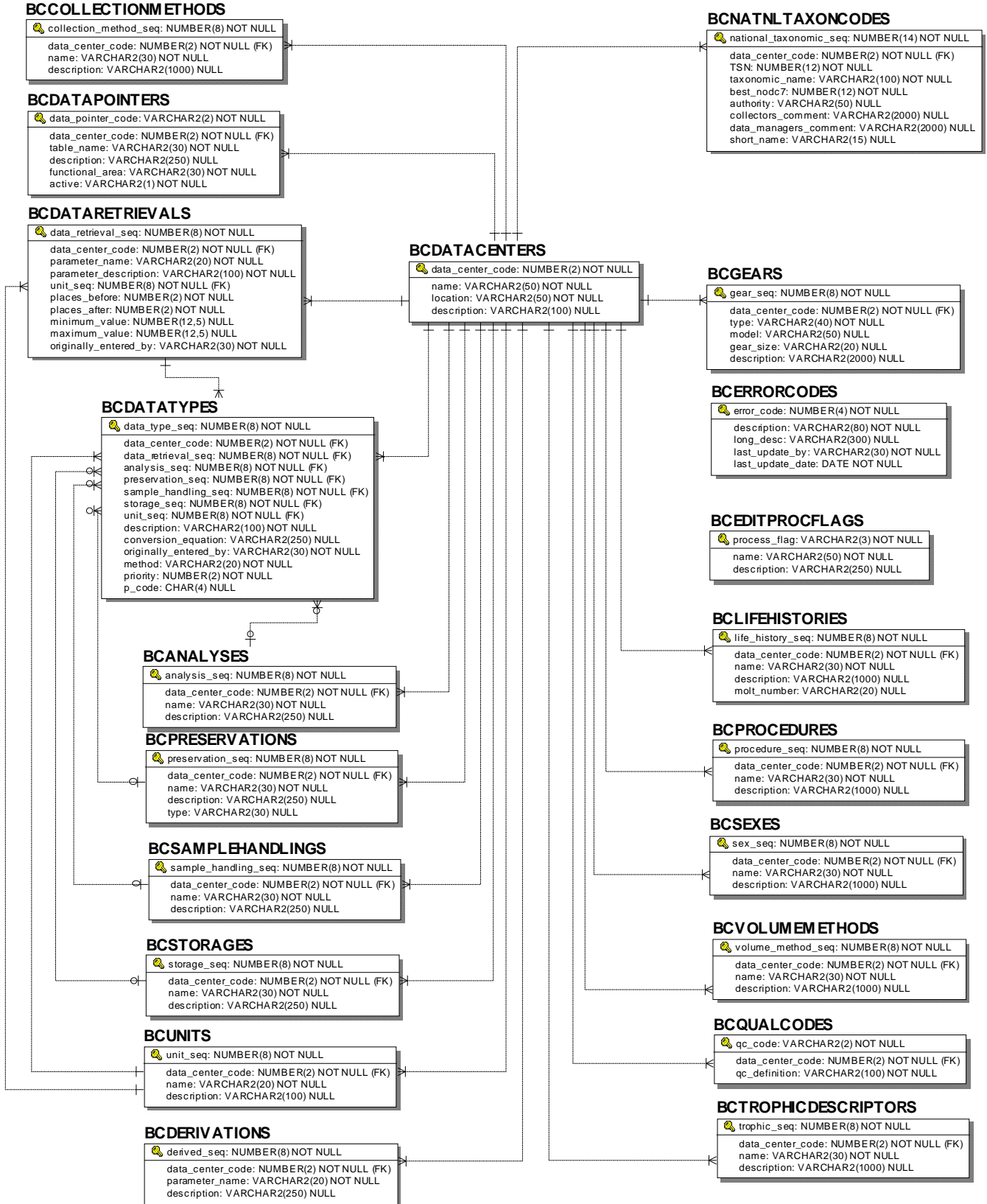
## ARCHIVAL AUDIT TABLE

This table stores a record for each archival data item changed using the BioChem Archival/Edits Application.

### BCAUDITTRAILS

AUDIT_SEQ: Number NOT NULL
DATA_CENTER_CODE: Number NOT NULL (FK)
AUDIT_DATE: Datetime NOT NULL
TABLE_NAME: String NOT NULL
COLUMN_NAME: String NOT NULL
SEQUENCE_NAME: String NOT NULL
SEQUENCE_NUMBER: Number NOT NULL
USER_NAME: String NOT NULL
OLD_VALUE: String NOT NULL
NEW_VALUE: String NOT NULL

# ARCHIVAL LOOKUP TABLES



The following sections identify the various tables that are created in the BIOCHEM Archival Account.

### Table Names and Table Comments (BIOCHEM Account)

Decide whether to write “table stores” or just “stores” below...Plus “stores information” or “stores description”

Table Stores is poor but not worth the effort to change

Pierre – need to check null vs not null and format for tables...

Foreign key references or reference???

<b>Table Name</b>	<b>Table Comment</b>
Archival Data Tables	
<a href="#">BCMISSIONS</a>	Contains information on missions (cruises or Datasets).
<a href="#">BCEVENTS</a>	Contains information on events.
<a href="#">BCCOMMENTS</a>	Contains extra text information that is too long to fit in the comment fields of the Mission and Event tables.
<a href="#">BCACTIVITIES</a>	Table identifies data at the Header level as it related to either functional area (plankton, discrete etc) .
<a href="#">BCDISCRETEHEDRS</a>	Contains metadata describing each individual DISCRETE sample.
<a href="#">BCDISCRETETALES</a>	Contains DISCRETE sample analysis results and associated information including code table references (eg. Quality, detection limits, etc.) where applicable.
<a href="#">BCDISCRETEREPLICATES</a>	Similar to BCDISCRETETALES table, but there may be more than one entry in this table for a given sample and data type. All "same sample" data types are averaged and the averaged value is stored in the BCDISCRETETALES table.
<a href="#">BCPLANKTNHEDRS</a>	Contains information on individual PLANKTON samples.
<a href="#">BCPLANKTNGENERALS</a>	Contains PLANKTON sample analysis results and associated information including sub-sampling conversion factors.
<a href="#">BCPLANKTNFREQS</a>	Contains data types such as length, weight, width measurements associated with a PLANKTNGENERALS record.
<a href="#">BCPLANKTNDTALES</a>	Contains additional plankton measurements not included in the other plankton tables associated with a PLANKTNGENERALS record.
<a href="#">BCPLANKTNINDIVIDLS</a>	Contains individual specific measurements associated with a PLANKTNGENERALS record
Archival Deletes Tables	
<a href="#">BCMISSIONSDEL</a>	Contains the deleted records from the BCMISSIONS table in the Archival database tables.
<a href="#">BCEVENTSDEL</a>	Contains the deleted records from the BCEVENTS table in the Archival database tables.
<a href="#">BCCOMMENTSDEL</a>	Contains the deleted records from the BCCOMMENTS table in the Archival database tables.
<a href="#">BCACTIVITIESDEL</a>	Contains the deleted records from the BCACTIVITIES table in the Archival database tables.
<a href="#">BCDISCRETEHEDRSDEL</a>	Contains the deleted records from the BCDISCRETEHEDRS table in the Archival database tables.
<a href="#">BCDISCRETETALESDEL</a>	Contains the deleted records from the BCDISCRETETALES table in the Archival database tables.
<a href="#">BCDISCRETEREPLICTSDEL</a>	Contains the deleted records from the BCDISCRETEREPLICATES table in the Archival database tables.
<a href="#">BCPLANKTNHEDRSDEL</a>	Contains the deleted records from the BC_PLANKTON_HEADER table in the Archival database tables.
<a href="#">BCPLANKTNGENRLSDEL</a>	Contains the deleted records from the BCPLANKTNGENRLS table in the Archival database tables.



<a href="#">BCPLANKTNFREQSDEL</a>	Contains the deleted records from the BCPLANKTNFREQS table in the Archival database tables.
<a href="#">BCPLANKTNDTAILSDEL</a>	Contains the deleted records from the BC_PLANKTON_DETAIL table in the Archival database tables.
<a href="#">BCPLANKTNINDIVDLSDEL</a>	Contains the deleted records from the BCPLANKTNINDIVDLS table in the Archival database tables.
Archival Audit Table	
<a href="#">BCAUDITTRAILS</a>	Tracks all of the updates to any data from any of the Archival database tables. The table will store the table name, column name, old and new data values for the column as well as the user name of the individual who altered the data and the date of the change.
Archival Lookup(Code) Tables	
<a href="#">BCANALYSES</a>	Contains brief descriptions of the analytical methods used during sample analysis.
<a href="#">BCCOLLECTIONMETHODS</a>	Contains information pertaining to the method of plankton sample collection: oblique tow, horizontal tow, vertical tow, unknown.
<a href="#">BCDATACENTERS</a>	Contains a list the regional Data Centers defining ownership or origin of data and some codes.
<a href="#">BCDATAPOINTERS</a>	An application table used to reference functional area that data are part of (See BCLOCKEDMISSIONS)
<a href="#">BCDATARETRIEVALS</a>	Contains a list of parameters or groupings of like DataTypes. Only one entry is allowed for each parameter. Associated data type data values are stored and reported in the units specified in this table.
<a href="#">BCDATATYPES</a>	Contains description of each data type in the database. Data in detail tables reference BCDATATYPES to identify the nature of the measurement. Multiple entries for data types within the same parameter will exist in this table whenever the methods of analysis, preservation, sample_handling, storage differ significantly, or the original analytical units differ. N.B.: Units referenced by entries in this table identify the data's analysis units; actual results stored in the database are always in the units referenced by the corresponding entry in BCDATARETRIEVALS.
<a href="#">BCDERIVATIONS</a>	Contains the derived parameter names of to be calculated parameters.
<a href="#">BCEDITPROCFLAGS</a>	An application table that stores the processing flags (and their descriptions) that are to be assigned to the records as the records in the Edit table system are being validated and duplicate checked. The processing flag codes are those that reflect the status of the validation process as the records are being validated and as the records are being duplicate checked.
<a href="#">BCERRORCODES</a>	An application table that stores the possible error codes (and error messages) that are to be referenced during the validation processing.
<a href="#">BCGEARS</a>	Contains information on the equipment used to collect samples or measure properties <i>in situ</i> .
<a href="#">BCLIFEHISTORIES</a>	Contains information on the life history stage of the PLANKTON taxon associated with the PLANKTNGENERALS record
<a href="#">BCLOCKEDMISSIONS</a>	An application table which references missions that have been downloaded but not re- archived or deleted. The table contains the downloaded date, mission, user, and data pointer code associated with the lock.
<a href="#">BCNATNLTAXONCODES</a>	Contains information on the taxa or group of organisms associated with the PLANKTNGENERALS record.
<a href="#">BCPRESERVATIONS</a>	Contains information on how a sample is preserved.
<a href="#">BCPROCEDURES</a>	Contains information on the status of the sample analysis.

<a href="#">BCQUALCODES</a>	Contains data Quality Codes and descriptions.
<a href="#">BCSAMPLEHANDLINGS</a>	Contains information on how a sample has been processed after collection (eg filtration, centrifuging etc) prior to analysis.
<a href="#">BCSEXES</a>	Contains information on the sex of the taxa or group of organisms associated with the PLANKTNGENERALS record.
<a href="#">BCSTORAGES</a>	Table contains information on how a sample was stored between collection and analysis.
<a href="#">BCTROPHICDESCRIPTORS</a>	Contains the description of an organisms' position in the food chain.
<a href="#">BCUNITS</a>	Contains description of units associated with data types and/or parameters.
<a href="#">BCUSERS</a>	Contains the user name, data center to which they belong and the account type to which they have access (either the Data Manager role or a general read only user role).
<a href="#">BCVOLUMEMETHODS</a>	Contains the description of the method used for the calculation of PLANKTON sample volumes.

### Table Column Descriptions (BIOCHEM Account)

N.B: **Shaded fields** denotes that these fields are filled in when a record is saved through the Edits/Archive application

#### [BCMISSIONS](#)

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
Mission_seq	NUMBER(14)	N	Primary key generated from the BCMISSIONS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key reference to a data center in the BCDATACENTERS table.
Name	VARCHAR2(50)	Y	Originator's mission descriptor and/or common name(s) for the mission
descriptor	VARCHAR2(50)	N	BioChem's standardized mission descriptor (MEDS assigned mission id)
leader	VARCHAR2(50)	Y	The person responsible for the mission; a contact person for information concerning the mission details. On a cruise this would be the chief scientist.
start_date	DATE	Y	The start date for the mission. DD/MM/YYYY.
end_date	DATE	Y	The end date for the mission. DD/MM/YYYY.
institute	VARCHAR2(50)	Y	The institute responsible for the mission, cruise or data.
platform	VARCHAR2(50)	Y	The name of the platform(s) from which sampling was done,
protocol	VARCHAR2(50)	Y	A citation for standard protocols used during the mission. The use of non-standard protocols should be noted with further details provided in the BCCOLLECTOR_COMMENT field.
geographic_region	VARCHAR2(100)	Y	A text record of the general geographic region covered by the mission.
collector_comment	VARCHAR2(2000)	Y	Comments from the collector that are pertinent to the entire mission. Generally referring to data collection, analysis, publication, etc.
data_manager_comment	VARCHAR2(2000)	Y	Comments from the data manager that are pertinent to the entire mission. Generally referring to data management history (processing steps, edits, etc).
more_comment	CHAR(1)	N	A flag to indicate that more comments exist in the COMMENT table that relate to this record. (Yes(Y) or No(N))
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.

## BCEVENTS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
event_seq	NUMBER(14)	N	Primary key generated from the BCEVENTS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key reference to a data center in the BCDATACENTERS table.
mission_seq	NUMBER(14)	N	Foreign Key reference to a mission in the BCMISSIONS table.
start_date	DATE	N	Start date for event (UTC). DD/MM/YYYY
end_date	DATE	Y	End date for event (UTC). DD/MM/YYYY.
start_time	NUMBER(4)	Y	Start time for event (UTC).4 digit integer-- HHMM
end_time	NUMBER(4)	Y	End time for event (UTC).4 digit integer-- HHMM
utc_offset	NUMBER(4,1)	Y	Time zone offset of event region (decimal hours).
min_lat	NUMBER(8,5)	N	Min latitude for event (decimal degrees +ve North).
max_lat	NUMBER(8,5)	Y	Max latitude for event (decimal degree +ve North).
min_lon	NUMBER(9,5)	N	Min longitude for event (decimal degrees +ve East)
max_lon	NUMBER(9,5)	Y	Max longitude for event (decimal degrees +ve East)
collector_station_name	VARCHAR2(50)	Y	Descriptive name of event, generally a location name (e.g. stn27, HL2)
collector_event_id	VARCHAR2(50)	N	Number or character string assigned to identify the event during data collection.
collector_comment	VARCHAR2(2000)	Y	Comments from the collector referring to the event. Example CTD001.
data_manager_comment	VARCHAR2(2000)	Y	Comments from the data manager/data centre. Generally referring to data management history (processing steps, edits, etc).
more_comment	CHAR(1)	Y	A flag to indicate that more comments exist in the COMMENT table that relate to this record. Y or N (Yes or No)
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

## BCCOMMENTS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
comment_seq	NUMBER(14)	N	Primary key generated from the BCCOMMENTS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key reference to a data center in the BCDATACENTERS table.
mission_seq	NUMBER(14)	Y	Foreign Key references to a mission in the BCMISSIONS table.
event_seq	NUMBER(14)	Y	Foreign Key references to an event in the BCEVENTS table.
edit_comment	VARCHAR2(2000)	N	Extra comment information that will not fit in either the BCMISSIONS or the BCEVENTS tables' comment columns. These comments further describe and clarify the Mission and/or the Event during a Mission.
comment_num	NUMBER(10)	N	The sequential comment number to link segments of multiple comments that refer to a single comment.
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

**BCACTIVITIES**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
activity_seq	NUMBER(14)	N	Primary key generated from the BCACTIVITIES_SEQ sequence.
event_seq	NUMBER(14)	N	Foreign Key references to an event in the BCEVENTS table.
data_center_code	NUMBER(2)	N	Foreign Key references to a data center in the BCDATACENTERS table.
data_pointer_code	VARCHAR2(2)	N	Foreign Key references to a data pointer code in the BCDATAPOINTERS table.

**BCDISCRETEHEDRS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
discrete_seq	NUMBER(14)	N	Primary key generated from the BCDISCRETEHEDRS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references to a data center in the BCDATACENTERS table.
event_seq	NUMBER(14)	N	Foreign Key references to an event in the BCEVENTS table.
activity_seq	NUMBER(14)	N	Foreign Key references to an activity in the BCACTIVITIES table.
gear_seq	NUMBER(8)	N	Foreign Key references to a gear in the BCGEARS table.
start_date	DATE	N	Specific start date of collection (UTC). DD/MM/YYYY.
end_date	DATE	Y	Specific end date of collection (UTC). DD/MM/YYYY.
start_time	NUMBER(4)	Y	Specific start time of collection (UTC).4 digit integer-- HHMM
end_time	NUMBER(4)	Y	Specific end time of collection (UTC).4 digit integer-- HHMM.
time_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES table.
start_lat	NUMBER(8,5)	N	Specific start latitude of collection. (decimal degrees +ve North)
end_lat	NUMBER(8,5)	Y	Specific end latitude of collection. (decimal degrees +ve North)
start_lon	NUMBER(9,5)	N	Specific start longitude of collection. (decimal degrees +ve East)
end_lon	NUMBER(9,5)	Y	Specific end longitude of collection. (decimal degrees +ve East)
position_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES table.
start_depth	NUMBER(7,2)	N	The start depth(m) during sample collection.
end_depth	NUMBER(7,2)	N	The end depth(m) during sample collection.
sounding	NUMBER(5)	Y	Sounding or water depth(m) at location during sample collection.
collector_deployment_id	VARCHAR2(50)	Y	Collector's identifier for group of samples collected during common gear deployment.
collector_sample_id	VARCHAR2(50)	N	Collector's unique identifier for sample, if none provided use Negative numbers.
collector	VARCHAR2(50)	Y	The person responsible for the collection of the samle; a contact person for information concerning the sample details. Generally this would be the person who manages the logbooks.
responsible_group	VARCHAR2(50)	Y	The COLLECTOR'S group or organization. (government department/division, university, etc)
collector_comment	VARCHAR2(2000)	Y	Comments from the collector/group referring to the sample collection.
data_manager_comment	VARCHAR2(2000)	Y	Comments from the data manager/data centre. Generally referring to data management history (processing steps, edits, etc).
shared_data	VARCHAR2(50)	Y	Flag to identify data exchange with MEDS.
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

**BCDISCRETEDTAILS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
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discrete_detail_seq	NUMBER(14)	N	Primary key generated from the BCDISCRETEDTAILS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references to a data center in the BCDATACENTERS table.
data_type_seq	NUMBER(8)	N	Foreign Key references a data method in the BCDATATYPES table.
discrete_seq	NUMBER(14)	N	Foreign Key references a discrete header in the BCDISCRETEHEDRS table.
data_value	NUMBER(10,5)	N	Data value.
averaged_data	CHAR(1)	N	Denotes if the data value is a calculated value. (I.e. average value of the replicate detail data values for a specified data type from the same sample.)
data_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES table.
detection_limit	NUMBER(11,5)	Y	Detection limit of the observed data value during this run of analysis
detail_collector	VARCHAR2(50)	Y	The person responsible for the collection of the 'data value'; a contact person for information concerning the analysis details.
collector_sample_id	VARCHAR2(50)	N	Collector's unique identifier for sample. See BCDISCRETEHEDRS
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

### BCDISCRETEREPLICATES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL ?</b>	<b>Column Comment</b>
discrete_replicate_seq	NUMBER(14)	N	Primary key generated from the BCDISCRETEREPLICATES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references to a data center in the BCDATACENTERS table.
data_type_seq	NUMBER(8)	N	Foreign Key references a data center in the BCDATATYPES table.
discrete_detail_seq	NUMBER(14)	N	Foreign Key references a discrete detail in the BCDISCRETEDTAILS table.
data_value	NUMBER(10,5)	N	Data value.
data_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES table.
detection_limit	NUMBER(11,5)	Y	Detection limit of the observed data value during this run of analysis
detail_collector	VARCHAR2(50)	Y	The person responsible for the collection of the 'data type'; a contact person for information concerning the analysis details.
collector_sample_id	VARCHAR2(50)	N	Collector's unique identifier for sample. See BCDISCRETEHEDRS
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

### BCPLANKTNHEDRS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
plankton_seq	NUMBER(14)	N	Primary key generated from the BCPLANKTNHEDRS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS table.
event_seq	NUMBER(14)	N	Foreign Key references an event in the BCEVENTS table.
activity_seq	NUMBER(14)	N	Foreign Key references an activity in the BCACTIVITIES table.
gear_seq	NUMBER(8)	N	Foreign Key references a gear in the BCGEARS table.
Start_date	DATE	N	Specific start date of collection (UTC). DD/MM/YYYY.
End_date	DATE	Y	Specific end date of collection (UTC). DD/MM/YYYY.
Start_time	NUMBER(4)	Y	Specific start time of collection (UTC).4 digit integer-- HHMM.

End_time	NUMBER(4)	Y	Specific end time of collection (UTC).4 digit integer-- HHMM.
time_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES Lookup table.
phase_of_daylight	VARCHAR2(15)	Y	Used to identify the state or phase of the day (i.e. day, night, twilight, etc.)
Start_lat	NUMBER(8,5)	N	Specific start latitude of collection.
End_lat	NUMBER(8,5)	Y	Specific end latitude of collection.
Start_lon	NUMBER(9,5)	N	Specific start longitude of collection.
End_lon	NUMBER(9,5)	Y	Specific end longitude of collection.
position_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES Lookup table.
start_depth	NUMBER(7,2)	N	The start depth(m) during sample collection.
end_depth	NUMBER(7,2)	N	The end depth(m) during sample collection.
sounding	NUMBER(5)	Y	Sounding or water depth(m) at location during sample collection
volume	NUMBER(7,3)	Y	Volume of water filtered through net (cubic meters).
volume_method_seq	NUMBER(8)	N	Foreign Key references a volume method in the BCVOLUMEMETHODS Lookup table.
large_plankton_removed	CHAR(1)	Y	Procedure included removal of large organisms ie. Jellyfish prior to plankton sample analysis
mesh_size	NUMBER(6)	Y	Mesh size (microns) of plankton sampling gear.
collection_method_seq	NUMBER(8)	N	Foreign Key reference to a collection method from the BCCOLLECTIONMETHODS lookup table.
collector_deployment_id	VARCHAR2(50)	Y	Collector's identifier for group of samples collected during common gear deployment.
collector_sample_id	VARCHAR2(50)	Y	Collector's unique identifier for sample.
procedure_seq	NUMBER(8)	N	Foreign Key references a procedure from the BCPROCEDURES lookup table.
preservation_seq	NUMBER(8)	N	Foreign Key references a preservation from the BCPRESERVATIONS lookup table.
storage_seq	NUMBER(8)	N	Foreign Key references a storage from the BCSTORAGES lookup table.
collector	VARCHAR2(50)	Y	The person responsible for the collection of the same; a contact person for information concerning the sample details. Generally this would be the person who manages the logbooks.
collector_comment	VARCHAR2(2000)	Y	Comments from the collector referring to the sample collection.
meters_sqd_flag	CHAR(1)	Y	Meters squared flag [Y or N] indicates that this sample should be included in water column integration calculations.
data_manager_comment	VARCHAR2(2000)	Y	Comments from the data manager/data centre. Generally referring to data management history (processing steps, edits, etc).
responsible_group	VARCHAR2(50)	Y	The COLLECTOR'S group or organization. (government department/division, university, etc)
shared_data	VARCHAR2(50)	Y	The name of the source for which data may be sent to (i.e. Data may be sent to MEDS).
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

**BCPLANKTNGENERALS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
plankton_general_seq	NUMBER(14)	N	Primary key generated from the BCPLANKTNGENERLS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS table.
plankton_seq	NUMBER(14)	N	Foreign Key to a plankton header in the BCPLANKTNHEDREDITS table.
national_taxonomic_seq	NUMBER(14)	N	Foreign Key to a taxon in the BCNATNTAXONCODES lookup table.
collector_taxonomic_id	VARCHAR2(20)	Y	Reference to originator's taxonomic code.
life_history_seq	NUMBER(8)	N	Foreign Key references a life history stage from the BCLIFEHISTORIES lookup table.
trophic_seq	NUMBER(8)	N	Foreign Key references a trophic descriptor from the BCTROPHICDESCRIPTORS lookup table.
min_sieve	NUMBER(8,4)	Y	Retention filter/sieve size (microns).
max_sieve	NUMBER(8,4)	Y	Largest filter/sieve used (microns).
modifier	text	Y	Non standard taxonomic descriptions such as sp. Or spp or ca.500u, etc
split_fraction	NUMBER(5,4)	Y	Fraction of sample analysed (range of 0.0-1.0)
Sex_seq	NUMBER(8)	N	Foreign Key references a sex from the BCSEXES lookup table.
counts	NUMBER(9,3)	Y	Number of organisms counted.
count_pct	NUMBER(6,3)	Y	Percentage of entire sample represented by organisms.
wet_weight	NUMBER(9,4)	Y	Wet weight of organisms (grams).
dry_weight	NUMBER(9,4)	Y	Dry weight of organisms (grams).
bio_volume	NUMBER(8,3)	Y	Volume of organisms (ml).
presense	CHAR(1)	Y	Indicates presence or absence of organism(s) (Yes(Y) or No(N)). Generally used to replace legacy non-numeric values such as few, many, etc
collector_comment	VARCHAR2(2000)	Y	Comments from the collector referring to the sample analysis.
source	VARCHAR2(30)	N	Tracks the name of the individual or source of the analysed data. Critical field when sample has been reanalyzed and both results are to be archived
data_manager_comment	VARCHAR2(2000)	Y	Comments from the data manager/data centre. Generally referring to data management history (processing steps, edits, etc).
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

**BCPLANKTNFREQS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
plankton_frequency_seq	NUMBER(14)	N	Primary key generated from the BCPLANKTNFREQS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS table.
plankton_general_seq	NUMBER(14)	N	Foreign Key references a plankton general in the BCPLANKTNGENERALS table.
bug_seq	NUMBER(6)	N	identifier to track frequency bin.
data_type_seq	NUMBER(8)	N	Foreign Key references a data type the BCDATATYPES lookup table.
upper_bin_size	NUMBER(6,3)	Y	Upper size fractional bin size.
lower_bin_size	NUMBER(6,3)	Y	Lower size fractional bin size.
data_value	NUMBER(10,5)	N	Data value (within upper and lower bin size limits).
bug_count	NUMBER(6)	N	Number of individuals in bin.
data_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES Lookup table.
detail_collector	VARCHAR2(50)	Y	Name of the collector (individual) for the frequency data.



prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

### BCPLANKTNDTAILS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
plankton_detail_seq	NUMBER(14)	N	Primary key generated from the BCPLANKTNDTAILS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS table.
plankton_general_seq	NUMBER(14)	N	Foreign Key references a plankton general in the BCPLANKTNGENERALS table.
data_type_seq	NUMBER(8)	N	Foreign Key references a data type the BCDATATYPES lookup table.
data_value	NUMBER(10,5)	N	Data value.
data_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES Lookup table.
detail_collector	VARCHAR2(50)	Y	Name of the collector (individual) for the detail data.
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.

### BCPLANKTNINDIVIDLS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
plankton_individual_seq	NUMBER(14)	N	Primary key generated from the BCPLANKTNINDIVIDLS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
plankton_general_seq	NUMBER(14)	N	Foreign Key references a plankton general in the BCPLANKTNGENERALS table.
data_type_seq	NUMBER(8)	N	Foreign Key references a data type the BCDATATYPES lookup table.
bug_seq	NUMBER(6)	N	Identifier to track individual taxon.
data_value	NUMBER(10,5)	N	Data value.
data_qc_code	VARCHAR2(2)	N	Foreign Key references a quality code in the BCQUALCODES Lookup table.
data_collector	VARCHAR2(50)	Y	Name of the collector (individual) for the individual data.
prod_created_date	DATE	N	The date the record was last archived into the production database table.
prod_created_by	VARCHAR2(10)	Y	The data manager account name that was last used to archive the record into the production database table.
created_date	DATE	Y	The date the record was originally created.
created_by	VARCHAR2(30)	Y	The name of the person or data manager account that originally created the data record.



[DEL Tables](#)

The following DEL or “delete” tables are exact replicates of the route table with the addition of 2 fields described below. All field entries in these tables are automatically filled in when a dataset is deleted through the Edits/Archive application.

[BCMISSIONSDEL](#)

[BCEVENTSDEL](#)

[BCCOMMENTSDEL](#)

[BCACTIVITIESDEL](#)

[BCDISCRETEHEDRSDEL](#)

[BCDISCRETEDETAILSDEL](#)

[BCDISCRETEREPLICTSDEL](#)

[BCPLANKTNHEDRSDEL](#)

[BCPLANKTNGENRLSDEL](#)

[BCPLANKTNFREQSDEL](#)

[BCPLANKTNDTAILSDEL](#)

[BCPLANKTNINDIVIDLSDEL](#)

deleted_date	DATE	N	The date the record was deleted from the archival data table.
deleted_by	VARCHAR2(10)	N	The data manager account name that was used to delete the record from the production database table.

[BCAUDITTRAILS](#)

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
audit_seq	NUMBER(14)	N	Primary key generated from the BCAUDITTRAILS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
audit_date	DATE	N	Date and time of data modification using the Edits/Archival application.
table_name	VARCHAR2(30)	N	Table name in which data has been modified using the Edits/Archival application.
column_name	VARCHAR2(30)	N	Column name in which data has been modified.
sequence_name	VARCHAR2(30)	N	Name of the Primary Key column in a table where data has been modified.
sequence_number	NUMBER(14)	N	Record number in which data has been modified. (Typically the value of the primary key column of modified data record).
user_name	VARCHAR2(30)	N	The data manager account name that was used to modify the record.
old_value	VARCHAR2(100)	N	Old data value.
new_value	VARCHAR2(100)	N	New data value.

[BCANALYSES](#)

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
analysis_seq	NUMBER(8)	N	Primary key generated from the BCANALYSES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the analysis method.
Description	VARCHAR2(250)	Y	Description of the analysis method.

[BCCOLLECTIONMETHODS](#)

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
collection_method_seq	NUMBER(8)	N	Primary key generated from the BCCOLLECTIONMETHODS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.

Name	VARCHAR2(30)	N	Name of the collection method or type of PLANKTON tow (i.e. oblique, horizontal, vertical, etc).
description	VARCHAR2(1000)	Y	Description of the collection method.

### BCDATACENTERS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
data_center_code	NUMBER(2)	N	Code value to represent the organization that is responsible for record archival
Name	VARCHAR2(50)	N	Name of the data center.
Location	VARCHAR2(50)	N	Geographic location of the data center.
Description	VARCHAR2(100)	Y	Description of the data center (if necessary).

### BCDATAPOINTERS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
data_pointer_code	VARCHAR2(2)	N	Identifies the general data type: i.e. plankton, discrete, continuous, etc. via the following notation: 'BL' BCBLOBS 'CH' BCCONTINUOUSHEDRS 'DH' BCDISCRETEHEDRS 'EH' BCENVIRONMNTLHEDRS 'PH' BCPROFILEHEDRS 'PL' BCPLANKTNHEDRS.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
table_name	VARCHAR2(30)	N	Table name that references the activity functional area.
Description	VARCHAR2(250)	Y	Description of the data pointer (if necessary).
functional_area	VARCHAR2(30)	N	Thirty-character meaningful name that references the functional area that stores data (used to populate a list of values).
Active	CHAR(1)	N	Designates if the functional area currently contains data and may be queried (used by the application).

### BCDATARETRIEVALS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
data_retrieval_seq	NUMBER(8)	N	Primary key generated from the BCDATARETRIEVALS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
parameter_name	VARCHAR2(20)	N	Short name for parameter.
parameter_description	VARCHAR2(100)	N	Parameter description.
unit_seq	NUMBER(8)	N	Foreign Key references a Unit code in the BCUNITS table. All data for data types associated with this parameter will be archived in these units. Plus, units for data output.
places_before	NUMBER(2)	N	Maximum digits before the decimal point for data output.
places_after	NUMBER(2)	N	Digits after the decimal point for data output.
minimum_value	NUMBER(12,5)	Y	Minimum expected value for the parameter (FPMINM). Validation check during data loading procedure.
maximum_value	NUMBER(12,5)	Y	Maximum expected value for the parameter (FPMAXM). Validation check during data loading procedure.
originally_entered_by	VARCHAR2(30)	N	The name of the person or data manager account that originally entered the parameter.

## BCDATATYPES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
data_type_seq	NUMBER(8)	N	Primary key generated from the BCDATATYPES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
data_retrieval_seq	NUMBER(8)	N	Foreign Key references a data retrieval in the BCDATARETRIEVALS lookup table.
analysis_seq	NUMBER(8)	N	Foreign Key references an analysis method in the BCANALYSIS lookup table.
preservation_seq	NUMBER(8)	N	Foreign Key references a preservation method in the BCPRESERVATIONS lookup table.
sample_handling_seq	NUMBER(8)	N	Foreign Key references a sample handling method in the BCSAMPLEHANDLINGS table.
storage_seq	NUMBER(8)	N	Foreign Key references a storage method in the BCSTORAGES lookup table.
unit_seq	NUMBER(8)	N	Foreign Key references a Unit code in the BCUNITS table. NOTE: these units refer to the units of the original analysis.
Description	VARCHAR2(100)	N	Description of data type.
conversion_equation	VARCHAR2(250)	Y	A specified formula for the conversion of analysed units to archival/retrieval units for this data type.
originally_entered_by	VARCHAR2(30)	N	The name of the person or data manager account that originally entered the data type.
Method	VARCHAR2(20)	N	Short name for Data Type (typically will reference a method of obtaining a data value for a given parameter).
Priority	NUMBER(2)	N	BioChem Table Manager assigned value to identify the priority of the Data Types based on the same Data Retrieval value (i.e. parameter).
p_code	CHAR(4)	Y	MEDS and/or other national/ international standardized exchange code

## BCDERIVATIONS

### Restricted to DBA

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
derived_seq	NUMBER(8)	N	Primary key generated from the BCDERIVATIONS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
parameter_name	VARCHAR2(20)	N	Name of the derived parameter.
Description	VARCHAR2(250)	Y	Description of the derived parameter.

## BCEDITPROCFLAGS

### Restricted to DBA

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
process_flag	VARCHAR2(3)	N	Value (code) of the processing flag.
Name	VARCHAR2(50)	N	Name of the processing flag.
Description	VARCHAR2(250)	Y	Description of the processing flag to describe how the records are to be processed based on the assignment of a specified flag.

## BCERRORCODES

### Restricted to DBA

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
error_code	NUMBER(4)	N	Code that specifies the validation error in the Edit table system.
Description	VARCHAR2(80)	N	Description of the validation error.
long_desc	VARCHAR2(300)	Y	Detailed description of the validation error.
last_update_by	VARCHAR2(30)	N	The name of the person or data manager account that last updated the record.
last_update_date	DATE	N	The date the record was last updated.

### BCGEARS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
gear_seq	NUMBER(8)	N	Primary key generated from the BCGEARS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Type	VARCHAR2(40)	N	Type of gear (i.e. Net, Bottle, Pump, etc).
Model	VARCHAR2(50)	Y	Model of the specified gear type (i.e. for.type of Bottle - the model may be Nisken, Knudsen, Go-Flo, etc.) used to <b>collect</b> the sample. NOTE: this is not the gear used to <b>analyse</b> the sample.
gear_size	VARCHAR2(20)	Y	Size of the specified gear.
Description	VARCHAR2(2000)	Y	Description of the specified gear including the manufacturer or any other necessary information. Mission/data centre specific information such as calibration, etc does not belong in this table.

### BCLIFEHISTORIES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
life_history_seq	NUMBER(8)	N	Primary key generated from the BCLIFEHISTORIES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the development stage.
Description	VARCHAR2(1000)	Y	Description of the development stage.
molt_number	VARCHAR2(20)	Y	Accepted numeric standard to represent the molt stage.

### BCLOCKEDMISSIONS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
mission_seq	NUMBER(14)	Y	A mission seq from the BCMISSIONS lookup table.
mission_name	VARCHAR2(50)	Y	BCMISSIONS.name.
Descriptor	VARCHAR2(50)	Y	BCMISSIONS.descriptor (Note – you are not locking the entire mission – just the one associated with this mission_seq)
data_pointer_code	VARCHAR2(2)	Y	The functional area of the switchboard that was used to download the mission.
downloaded_by	VARCHAR2(10)	Y	Account name of the data manager account that has downloaded the mission.
downloaded_date	DATE	Y	The date the mission was downloaded

### BCNATNL TAXONCODES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
national_taxonomic_seq	NUMBER(14)	N	Primary key generated from the BCNATNL TAXONCODES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Tsn	NUMBER(12)	N	If +ve this value represent an ITIS TSN value. If this value is –ve then it represents a BioChem assigned TSN value
taxonomic_name	VARCHAR2(100)	N	Name of taxon or group of taxa.
best_nodc7	NUMBER(12)	N	10 digit taxonomic reference number.
Authority	VARCHAR2(50)	Y	Author's name plus year reference to the accepted description of the taxon.
Collectors_comment	VARCHAR2(2000)	Y	Comments from the collector referring to the taxon. Generally a reference to the material used to identify the taxon
data_managers_comment	VARCHAR2(2000)	Y	Comments from the data manager/data centre. Generally referring to the data collection identifier which first contained this taxon.
short_name	VARCHAR2(15)	Y	Short name representing taxonomic name.

### BCPRESERVATIONS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
preservation_seq	NUMBER(8)	N	Primary key generated from the BCPRESERVATIONS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the preservation method used immediately after sample collection
Description	VARCHAR2(250)	Y	Description of the preservation method.
Type	VARCHAR2(30)	Y	Type of preservation. (i.e. frozen, refrigerated, formaldehyde, lugols).

### BCPROCEDURES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
procedure_seq	NUMBER(8)	N	Primary key generated from the BCPROCEDURES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of procedure or state of analysis for PLANKTON samples.
Description	VARCHAR2(1000)	Y	Description of procedure.

### BCQUALCODES

#### Restricted to DBA

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
qc_code	VARCHAR2(2)	N	Quality control code.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
qc_definition	VARCHAR2(100)	N	Quality control code definition.

### BCSAMPLEHANDLINGS

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
sample_handling_seq	NUMBER(8)	N	Primary key generated from the BCSAMPLEHANDLINGS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the sample handling method used prior to sample analysis.
Description	VARCHAR2(250)	Y	Description of the sample handling method.

### BCSEXES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
sex_seq	NUMBER(8)	N	Primary key generated from BCSEXES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of sex.
Description	VARCHAR2(250)	Y	Description of the sex.

### BCSTORAGES

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
storage_seq	NUMBER(8)	N	Primary key generated from BCSTORAGES_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the storage method used after sample preservation and prior to sample analysis.
Description	VARCHAR2(250)	Y	Description of the storage method.

**BCTROPHICDESCRIPTORS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
trophic_seq	NUMBER(8)	N	Primary key generated from BCTROPHICDESCRIPTORS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(30)	N	Name of the trophic level.
Description	VARCHAR2(1000)	Y	Description of the trophic level.

**BCUNITS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
unit_seq	NUMBER(8)	N	Primary key generated from BCUNITS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
Name	VARCHAR2(20)	N	Name for the unit of measure.
Description	VARCHAR2(100)	Y	Description of the unit of measurement.

**BCUSERS**

**Restricted to DBA**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
Username	VARCHAR2(30)	N	User account name assigned by DBA, table Primary Key.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
account_type	VARCHAR2(20)	N	The type of account that is assigned to a user. The account types are Data Manager (a user who has Select, Insert, Update, and Delete access privileges on the Bio-Chem database) and Query User (a user who has Select access privilege on the Bio-Chem database).
responsible_group	VARCHAR2(50)	N	The User's group or organization. (government department/division, university, etc)

**BCVOLUMEMETHODS**

<b>Column Name</b>	<b>Column Data Type</b>	<b>NULL</b>	<b>Column Comment</b>
volume_method_seq	NUMBER(8)	N	Primary key generated from BCVOLUMEMETHODS_SEQ sequence.
data_center_code	NUMBER(2)	N	Foreign Key references a data center in the BCDATACENTERS lookup table.
name	VARCHAR2(30)	N	Name of the volume method. This method will indicate how the volume of water filtered to collect the PLANKTON sample was calculated
description	VARCHAR2(1000)	Y	Description of the method.

## Sequences (BIOCHEM Account)

These sequences reside in the BIOCHEM Oracle account. The Data Manager accounts have access to these sequences via grants and reference them via synonyms created in the individual Data Manager accounts. For further information please see the *BCEDITS\_data\_dictionary\_v3.2* document.

<i>Sequence Name</i>
BCMISSIONS_SEQ
BCEVENTS_SEQ
BCCOMMENTS_SEQ
BCACTIVITIES_SEQ
BCDISCRETEHEDRS_SEQ
BCDISCRETETALES_SEQ
BCDISCRETEREPLICATES_SEQ
BCPLANKTNHEDRS_SEQ
BCPLANKTNGENERLS_SEQ
BCPLANKTNFREQS_SEQ
BCPLANKTNDTAILS_SEQ
BCPLANKTNINDIVDLS_SEQ
BCAUDITTRAILS_SEQ
BCANALYSES_SEQ
BCCOLLECTIONMETHODS_SEQ
BCDATARETRIEVALS_SEQ
BCDATATYPES_SEQ
BCDERIVATIONS_SEQ
BCGEARS_SEQ
BCLIFEHISTORIES_SEQ
BCNATNLAXONCODES_SEQ
BCPRESERVATIONS_SEQ
BCPROCEDURES_SEQ
BCSAMPLEHANDLINGS_SEQ
BCSEXES_SEQ
BCSTORAGES_SEQ
BCTROPHICDESCRIPTORS_SEQ
BCUNITS_SEQ
BCVOLUMEMETHODS_SEQ

## Primary Key and Foreign Key Constraints (BIOCHEM Account)

Table Name	Constraint Name	Constr. Type	Constrained Column(s)	Primary Key That Foreign Key References
BCMISSIONS	BCMISSIONS_PK	Primary	MISSION_SEQ	
	DATA_CNTR_MISSION_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCEVENTS	BCEVENTS_PK	Primary	EVENT_SEQ	
	DATA_CNTR_EVENT_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	MISSION_EVENT_FK	Reference	MISSION_SEQ	BCMISSIONS_PK
BCCOMMENTS	BCCOMMENTS_PK	Primary	COMMENT_SEQ	
	DATA_CNTR_COMMNTS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK

	EVENTS_COMMNTS_FK	Reference	EVENT_SEQ	BCEVENTS_PK
	MISSION_CMMNTS_FK	Reference	MISSION_SEQ	BCMISSIONS_PK
BCACTIVITIES	BCACTIVITIES_PK	Primary	ACTIVITY_SEQ	
	DATA_CNTR_ACTVTY_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATAPNTR_ACTVTY_FK	Reference	DATA_POINTER_CODE	BCDATAPPOINTERS_PK
	EVENTS_ACTVTY_FK	Reference	EVENT_SEQ	BCEVENTS_PK
BCDISCRETEHEDRS	BCDISCRETEHEDRS_PK	Primary	DISCRETE_SEQ	
	DATA_CNTR_DISHDR_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	ACTIVITY_DISHDR_FK	Reference	ACTIVITY_SEQ, EVENT_SEQ	BCACTIVITIES_PK, BCEVENTS_PK
	GEARS_DISHDR_FK	Reference	GEAR_SEQ	BCGEARS_PK
	QUALCOD_DISHDR1_FK	Reference	TIME_QC_CODE	BCQUALCODES_PK
	QUALCOD_DISHDR_FK	Reference	POSITION_QC_CODE	BCQUALCODES_PK
BCDISCRETETALES	BCDISCRETETALES_PK	Primary	DISCRETE_DETAIL_SEQ	
	DATA_CNTR_DISDTLS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATATYP_DISDTLS_FK	Reference	DATA_TYPE_SEQ	BCDATATYPES_PK
	DISHDR_DISDTL_FK	Reference	DISCRETE_SEQ	BCDISCRETEHEDRS_PK
	QUALCOD_DISDTLS_FK	Reference	DATA_QC_CODE	BCQUALCODES_PK
BCDISCRETEREPLICATES	BCDISCRETEREPLICATES_PK	Primary	DISCRETE_REPLICATE_SEQ	
	DATA_CNTR_DISREPL_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATATYP_DISREPL_FK	Reference	DATA_TYPE_SEQ	BCDATATYPES_PK
	DISDTL_DISREPL_FK	Reference	DISCRETE_DETAIL_SEQ	BCDISCRETETALES_PK
	QUALCOD_DISREPL_FK	Reference	DATA_QC_CODE	BCQUALCODES_PK
BCPLANKTNHEDRS	BCPLANKTNHEDRS_PK	Primary	PLANKTON_SEQ	
	ACTIVITY_PLNKNHDR_FK	Reference	ACTIVITY_SEQ, EVENT_SEQ	BCACTIVITIES_PK, BCEVENTS_PK
	COLMETH_PLNKNHDR_FK	Reference	COLLECTION_METHOD_SEQ	BCCOLLECTIONMETHODS_PK
	DATA_CNTR_PLNKNHDR_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	GEARS_PLNKNHDR_FK	Reference	GEAR_SEQ	BCGEARS_PK
	PRESERV_PLNKNHDR_FK	Reference	PRESERVATION_SEQ	BCPRESERVATIONS_PK
	PROCDRS_PLNKNHDR_FK	Reference	PROCEDURE_SEQ	BCPROCEDURES_PK
	QUALCOD_PLNKNHDR1_FK	Reference	POSITION_QC_CODE	BCQUALCODES_PK
	QUALCOD_PLNKNHDR_FK	Reference	TIME_QC_CODE	BCQUALCODES_PK
	STORAGE_PLNKNHDR_FK	Reference	STORAGE_SEQ	BCSTORAGES_PK
BCPLANKTNGENERALS	BCPLANKTNGENERALS_PK	Primary	PLANKTON_GENERAL_SEQ	
	DATA_CNTR_PLNKGEN_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	LFHIST_PLNKGEN_FK	Reference	LIFE_HISTORY_SEQ	BCLIFEHISTORIES_PK
	NTTXCOD_PLNKGEN_FK	Reference	NATIONAL_TAXONOMIC_SEQ	BCNATNL TAXONCODES_PK
	PLNKNHDR_PLNKGEN_FK	Reference	PLANKTON_SEQ	BCPLANKTNHEDRS_PK
	SEXES_PLNKGEN_FK	Reference	SEX_SEQ	BCSEXES_PK
BCPLANKTNFREQS	BCPLANKTNFREQS_PK	Primary	PLANKTON_FREQUENCY_SEQ	
	DATA_CNTR_PLNKFRQ_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATATYP_PLNKFRQ_FK	Reference	DATA_TYPE_SEQ	BCDATATYPES_PK
	PLNKGEN_PLNKFRQ_FK	Reference	PLANKTON_GENERAL_SEQ	BCPLANKTNGENERALS_PK
	QUALCOD_PLNKFRQ_FK	Reference	DATA_QC_CODE	BCQUALCODES_PK
BCPLANKTNDTAILS	BCPLANKTNDTAILS_PK	Primary	PLANKTON_DETAIL_SEQ	
	DATA_CNTR_PLNKDTLS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATATYP_PLNKDTL_FK	Reference	DATA_TYPE_SEQ	BCDATATYPES_PK
	PLNKGEN_PLNKDTL_FK	Reference	PLANKTON_GENERAL_SEQ	BCPLANKTNGENERALS_PK
	QUALCOD_PLNKDTL_FK	Reference	DATA_QC_CODE	BCQUALCODES_PK



BCPLANKTNINDIVIDLS	BCPLANKTNINDIVIDLS_PK	Primary	PLANKTON_INDIVIDUAL_SEQ	
	DATA_CNTR_PLNKIND_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATATYP_PLNKIND_FK	Reference	DATA_TYPE_SEQ	BCDATATYPES_PK
	PLNKGEN_PLNKIND_FK	Reference	PLANKTON_GENERAL_SEQ	BCPLANKTNGENERALS_PK
	QUALCOD_PLNKIND_FK	Reference	DATA_QC_CODE	BCQUALCODES_PK
BCAUDITTRAILS	BCAUDITTRAILS_PK	Primary	AUDIT_SEQ	
	DATA_CNTR_AUDTRL_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCMISSIONSDEL	BCMISSIONSDEL_PK	Primary	MISSION_SEQ	
BCEVENTSDEL	BCEVENTSDEL_PK	Primary	EVENT_SEQ	
BCCOMMENTSDEL	BCCOMMENTSDEL_PK	Primary	COMMENT_SEQ	
BCACTIVITIESDEL	BCACTIVITIESDEL_PK	Primary	ACTIVITY_SEQ	
BCDISCRETEHEDRSDEL	BCDISCRETEHEDRSDEL_PK	Primary	DISCRETE_SEQ	
BCDISCRETETAILED	BCDISCRETETAILED_PK	Primary	DISCRETE_DETAIL_SEQ	
BCDISCRETEREPLICTSDEL	BCDISCRETEREPLICTSDEL_PK	Primary	DISCRETE_REPLICATE_SEQ	
BCPLANKTNHEDRSDEL	BCPLANKTNHEDRSDEL_PK	Primary	PLANKTON_SEQ	
BCPLANKTNGENRLSDEL	BCPLANKTNGENRLSDEL_PK	Primary	PLANKTON_GENERAL_SEQ	
BCPLANKTNFREQSDEL	BCPLANKTNFREQSDEL_PK	Primary	PLANKTON_FREQUENCY_SEQ	
BCPLANKTNDTAILSDEL	BCPLANKTNDTAILSDEL_PK	Primary	PLANKTON_DETAIL_SEQ	
BCPLANKTNINDIVLSDEL	BCPLANKTNINDIVLSDEL_PK	Primary	PLANKTON_INDIVIDUAL	
BCANALYSES	BCANALYSES_PK	Primary	ANALYSIS_SEQ	
	DATA_CNTR_ANALYS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCCOLLECTIONMETHODS	BCCOLLECTIONMETHODS_PK	Primary	COLLECTION_METHOD_SEQ	
	DATA_CNTR_COLMETH_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCDATACENTERS	BCDATACENTERS_PK	Primary	DATA_CENTER_CODE	
BCDATAPOINTERS	BCDATAPOINTERS_PK	Primary		
	DATA_CNTR_DATAPNTR_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCDATARETRIEVALS	BCDATARETRIEVALS_PK	Primary		
	DATA_CNTR_DATARTVLS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	UNITS_DATARTVL_FK	Reference		BCUNITS_PK
BCDATATYPES	BCDATATYPES_PK	Primary		
	ANL_DATATYPS_FK	Reference	ANALYSIS_SEQ	BCANALYSES_PK
	DATA_CNTR_DATATYP_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
	DATARTVL_DATATYP_FK	Reference	DATA_RETRIEVAL_SEQ	BCDATARETRIEVALS_PK
	PRESERV_DATATYP_FK	Reference	PRESERVATION_SEQ	BCPRESERVATIONS_PK
	SMPLHND_DATATYP_FK	Reference	SAMPLE_HANDLING_SEQ	BCSAMPLEHANDLINGS_PK
	STORAGE_DATATYP_FK	Reference	STORAGE_SEQ	BCSTORAGES_PK
	UNITS_DATATYP_FK	Reference	UNIT_SEQ	BCUNITS_PK
BCDERIVATIONS	BCDERIVATIONS_PK	Primary	DERIVATION_SEQ	
	DATA_CNTR_DERIVTN_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCEDITPROCFLAGS	BCEDITPROCFLAGS_PK	Primary	PROCESS_FLAG	
BCERRORCODES	BCERRORCODES_PK	Primary	ERROR_CODE	
BCGEARS	BCGEARS_PK	Primary	GEAR_SEQ	
	DATA_CNTR_GEAR_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCLIFEHISTORIES	BCLIFEHISTORIES_PK	Primary	LIFE_HISTORY_SEQ	
	DATA_CNTR_LFEHIST_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCNATNL TAXONCODES	BCNATNL TAXONCODES_PK	Primary	NATIONAL_TAXONOMIC_SEQ	
	DATA_CNTR_NTNLTXCD_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCPRESERVATIONS	BCPRESERVATIONS_PK	Primary		
	DATA_CNTR_PRESERV_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK

BCPROCEDURES	BCPROCEDURES_PK	Primary		
	DATA_CNTR_PROCDR_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCQUALCODES	BCQUALCODES_PK	Primary		
	DATA_CNTR_QUALCOD_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCSAMPLEHANDLINGS	BCSAMPLEHANDLINGS_PK	Primary		
	DATA_CNTR_SMPLHAND_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCSEXES	BCSEXES_PK	Primary	SEX_SEQ	
	DATA_CNTR_SMPLHAND_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCSTORAGES	BCSTORAGES_PK	Primary	STORAGE_SEQ	
	DATA_CNTR_STORAGE_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCTROPHICDESCRIPTORS	BCTROPHICDESCRIPTORS_PK	Primary	TROPHIC_SEQ	
	DATA_CNTR_TRPHDES_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCUNITS	BCUNITS_PK	Primary	UNIT_SEQ	
	DATA_CNTR_UNITS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCUSERS	BCUSERS_PK	Primary	USERNAME	
	DATA_CNTR_USERS_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK
BCVOLUMEMETHODS	BCVOLUMEMETHODS_PK	Primary	VOLUME_METHOD_SEQ	
	DATA_CNTR_VOLMETH_FK	Reference	DATA_CENTER_CODE	BCDATACENTERS_PK

### View Definitions (BIOCHEM Account)

No views currently exist in the BIOCHEM Oracle Account.

### Synonyms (BIOCHEM Account)

No synonyms currently exist in the BIOCHEM Oracle Account.

### Stored Program Units (BIOCHEM account)

The table below lists the database stored packages, procedures, and functions that reside in the BIOCHEM archival account. The table lists the name of the program unit, the type, and a description of what it does.

<i>Program Unit Name</i>	<i>Program Unit Type</i>	<i>Arguments</i>	<i>Description</i>
ITEM_VALIDATION	Package		This package contains functions used to validate all the fields in the data manager EDIT tables that are not a code (Lookup) table field or that represent a foreign key field.

### Lookup Table Data

The following table outlines the SQL\*Loader file, and corresponding data file (CSV file) used to populate the various Code tables required to assist in maintaining the data integrity of the system. For further information on populating these Oracle tables please see the document, [BCARCHIVE installation guide v4.0](#).

<b>Table Name</b>	<b>SQL*Loader Control File Name</b>	<b>CSV File Name</b>
BCANALYSES	load_bcanalyses.ctl	bcanalyses.csv
BCCOLLECTIONMETHODS	load_bccollectionmethods.ctl	bccollectionmethods.csv
BCDATACENTERS	load_bcdatacenters.ctl	bcdatacenters.csv
BCDATAPOINTERS	load_bcdatapointers.ctl	bcdatapointers.csv
BCDATARETRIEVALS	load_bcdatatretrievals.ctl	bcdatatretrievals.csv
BCDATATYPES	load_bcdatatypes.ctl	bcdatatypes.csv
BCDERIVATIONS	load_bcderivations.ctl	bcderivations.csv

BCEDITPROCFLAGS	load_bcreditprocflags.ctl	bcreditprocflags.csv
BCERRORCODES	load_bcerrorcodes.ctl	bcerrorcodes.csv
BCGEARS	load_bcgears.ctl	bcgears.csv
BCPRESERVATIONS	load_bcpreservations.ctl	bcpreservations.csv
BCPROCEDURES	load_bcprocedures.ctl	bcprocedures.csv
BCQUALCODES	load_bcqualcodes.ctl	bcqualcodes.csv
BCSAMPLEHANDLINGS	load_bcsamplehandlings.ctl	bcsamplehandlings.csv
BCSTORAGES	load_bcstorages.ctl	bcstorages.csv
BCUNITS	load_bcunits.ctl	bcunits.csv
BCUSERS	load_bcusers.ctl	bcusers.csv

## APPENDIX A (Table Name Translation/Clarification)

BIOCHEM Account and Data Manager Account Table Name Translation/Clarification

<b>Current Table Name</b>	<b>Current Table Name Translation/Clarification</b>
BCACTIVITIES	BC_ACTIVITY
BCACTIVITIESDEL	BC_ACTIVITY_DELETED
BCACTIVITYEDITS	BC_ACTIVITY_EDIT
BCANALYSES	BC_ANALYSIS
BCAUDITTRAILS	BC_AUDIT_TRAIL
BCCOLLECTIONMETHODS	BC_COLLECTION_METHOD
BCCOMMENTS	BC_COMMENT
BCCOMMENTSDEL	BC_COMMENT_DELETED
BCCOMMENTEDITS	BC_COMMENT_EDIT
BCDATACENTERS	BC_DATA_CENTER
BCDATAPOINTERS	BC_DATA_POINTER
BCDATARETRIEVALS	BC_DATA_RETRIEVAL
BCDATATYPES	BC_DATA_TYPE
BCDISCRETETAILEDITS	BC_DIS_DETAIL_EDIT
BCDISCRETETAILEDITS	BC_DIS_DETAIL_RECORD_DELETED
BCDISREPLICATEDITS	BC_DIS_REPLICATE_DETAIL_EDIT
BCDISCRETEDATAEDITS	BC_DISCRETE_DATA_EDIT
BCDISCRETETAILEDITS	BC_DISCRETE_DETAIL
BCDISCRETETAILEDITSDEL	BC_DISCRETE_DETAIL_DELETED
BCDISCRETEHEDRS	BC_DISCRETE_HEADER
BCDISCRETEHEDRSDEL	BC_DISCRETE_HEADER_DELETED
BCDISCRETEHEDREDITITS	BC_DISCRETE_HEADER_EDIT
BCDISCRETEREPLICATEDITSDEL	BC_DISCRETE_REPLICATE_DELETED
BCDISCRETEREPLICATEDITS	BC_DISCRETE_REPLICATE_DETAIL
BCDISCRETESTATNEDITS	BC_DISCRETE_STATION_EDIT
BCEDITPROCFLAGS	BC_EDIT_PROCESS_FLAG
BCERRORS	BC_ERROR
BCERRORCODES	BC_ERROR_CODE
BCEVENTS	BC_EVENT
BCEVENTSDEL	BC_EVENT_DELETED
BCEVENTEDITS	BC_EVENT_EDIT
BCGEARS	BC_GEAR
BCMEDSEDITS	BC_MEDS_EDIT
BCMISSIONS	BC_MISSION
BCMISSIONSDEL	BC_MISSION_DELETED
BCMISSIONEDITS	BC_MISSION_EDIT
BCPRESERVATIONS	BC_PRESERVATION
BCPROCEDURES	BC_PROCEDURE
BCQUALCODES	BC_QC
BCSAMPLEHANDLINGS	BC_SAMPLE_HANDLING

BCSTATNDATAERRORS	BC_STATION_DATA_ERRORS
BCSTORAGES	BC_STORAGE
BCUNITS	BC_UNIT
BCUSERS	BC_USERS
BCBATCHES	BCBATCH
BCDERIVATIONS	BCDERIVATIONS

## Appendix B (BIOCHEM Document Catalogue)

The following outlines reference documentation created regarding the BIOCHEM database and BIOCHEM Database Edit Application System:

<b>DOCUMENT NAME</b>	<b>INTENDED AUDIENCE</b>	<b>DESCRIPTION</b>
<a href="#">BCARCHIVE_data_dictionary_v4.0</a>	Informatics Analysts	Information on all Oracle objects developed to date for the system. Including objects not yet implemented and information on Stored Procedures.
<a href="#">BCEDITS_data_dictionary_v4.0</a>	Users	Information on all Data Manager Oracle database objects implemented in Version 4.0. Recommended for all Data Managers.
<a href="#">BCEDITS_installation_guide_v4.0</a>	Users	Instructions to create the BIOCHEM Data Manager schema.
<a href="#">BCARCHIVE_installation_guide_v4.0</a>	Users	Super user document containing instructions to create the BIOCHEM Archival schema and granting access to the Data Manager account(s).
<a href="#">BCQUERY_data_dictionary_v3.0</a>	Informatics Analysts	Technical information on all database objects related to the BCQRY query database.
<a href="#">BCQUERY_installation_guide_v3.0</a>	Informatics Analysts	Instructions to create the BCQRY schema.
<a href="#">BIOCHEM_User_guide_v4.0</a>	Users	Descriptions of all functional aspects of Version 4.0.
<a href="#">BCQUERY_User_guide_v3.0</a>	Users	Descriptions of all functional aspects of the web version of the application.