CIMS DATA UPLOAD & QUALITY ASSURANCE TOOL

USER'S GUIDE

Prepared For:
US Environmental Protection Agency
Region III
Chesapeake Bay Program Office

Prepared By:
Mark Lane
Veridyne, Inc.

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Background

The CIMS Data Upload and Quality Assurance Tool (DUQAT) allows data submitters to upload Access 97 databases files to CIMS. This new tool replaces the current process of uploading files via ftp and having the CIMS Water Quality Data Manager (WQDM) manually load the files into QAT. After uploading, a file is placed in a queue for the quality assurance processing that occurs overnight. The report file generated by the quality assurance checks will be available WQDM and the data submitters. Files that pass quality assurance checks must be approved or rejected by the WQDM. Files that are accepted will be imported into the CIMS Water Quality Database. Files that have been rejected, or that did not pass quality assurance checks, should be corrected by the data submitter and re-uploaded using DUQAT.

Water quality submission files should follow the standard format outlined in the Data Format Options Section.

A flow chart depicting how the data submission process works using DUQAT is included in Data Submission Process section.

Using the Data Submitter's Interface

People who submit data to the Chesapeake Bay Program Office are called data submitters. These people can access the interface to DUQAT at the following address: http://cobia.chesapeakebay.net/qat/

After logging into the DUQAT, data submitters will be able to upload data submissions, check up the status of data submissions and view the quality assurance reports

Logging In

The address for the tool is http://cobia.chesapeakebay.net/qat. The user will be prompted to enter their user name and password. Usernames and passwords can be requested from the data manager who will review the files uploaded by the data submitter.

Retrieving a Forgotten Password or Username

Entering the account's email address into the login form will cause a message containing the lost username and password to be sent to the email address associated with the account. The email address will be checked against the database to ensure that the correct email address has been entered before the message is sent.

Main Menu Options

Data submitters can upload a new data submission, re-upload an existing data submission, upload a replacement data submission, view the status of the upload files, look up database codes, view the current data submission format and update their account information.

Upload a new data submission

Click the Upload a New Water Quality Data Submission link from the main menu. The next form will allow you to browse your system for the database file that you want to upload to CIMS. The database file should follow the standard that is outlined Data Format Requirements section of this document. When you have selected the file that you want to upload click on Submit. The database file will be uploaded and the file name, size, date of upload and status will be displayed on the bottom of the page.

Re-Upload New Water Quality Data Submission

File that did not pass the quality assurance checks, or were rejected by the WQDM should be re-uploaded. Click the Re-Upload a New Water Quality Data Submission link from the main menu. The rest of the process is very similar to the steps for uploading a new data submission. You should call the file by the same name in order to overwrite the file that failed the quality assurance checks or was rejected by the WQDM. The database file should follow the standard that is outlined Data Format Requirements section of this document.

Upload a Replacement Water Quality Data

Use this option, if a data submission is meant to replace data that is already in the CIMS Water Quality Database. Click on the Upload a Replacement Water Quality Data link on the main menu. After you browse your system and submit the database that you want to upload you will have to define which data should be replaced in the CIMS Water Quality Database. The database file that is uploaded should follow the standard that is outlined Data Format Requirements section of this document. Currently, you will have to enter a starting date and time, ending date and time and select the SOURCE, PROGRAM, PROJECT and AGENCY of the data that you want to replace. Once this is defined the file will be placed in the queue for quality assurance checks.

View Status of Uploaded Files

This link allows you to see the current status of any file that has been uploaded by your organization. If you then click on the name of the file, then you see the entire processing history of the file.

View CIMS Water Quality Database Codes (pop up window)

This link will take you to the online version of the CIMS Water Quality Data Dictionary.

View Data Submitter's Guide

This link will open a pdf version of the CIMS Data Upload and Quality Assurance Tool User's Guide, which includes the data submission format.

Using the Data Manager's Interface

The people who manage what data goes into CIMS databases are called Data Managers. They are responsible for approving data to be loaded into the CIMS databases. Data Managers can use the interface located on the Chesapeake Bay Program Intranet under the tools tab to approve or reject those files that have passed the fatal error checks that are part of the quality assurance report.

Main Menu Options

The main menu has two main options. The file names that are listed first in the main menu have passed the initial quality assurance checks without any fatal errors and have not been rejected or accepted. If no files fit this category there will not be any listed in the main menu. The other options are to view file status and add edit a data submitter.

Listed Files

Files that have passed the fatal errors section of the quality assurance report, but have not yet been rejected or accepted, are listed in the main menu. Clicking on the file name will open the file history section of the tool, from which the data managers can view the quality assurance report and accept or reject the data submission.

View File Status

This option displays a list of all of the data files that have been uploaded through DUQAT. Each file name is linked to a history page for each file where the processing history and quality assurance reports can be viewed.

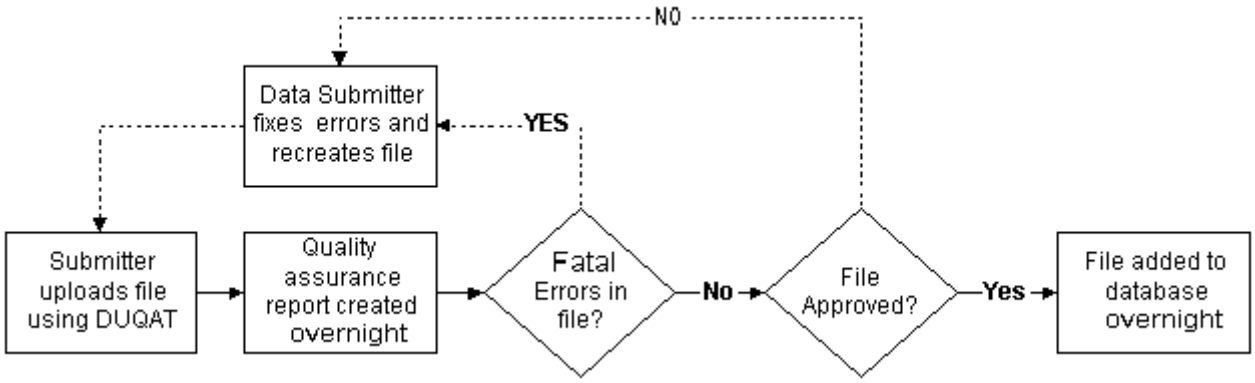
Add/Edit Data Submitter

This option is not active. It will be completed after the main contacts database is migrated to SQL Server. Until this option is active, data managers should fill out the support request form on the intranet requesting that a new data submitter be added to QAT. Include the email address, first name, last name, and agency of the data submitter in the request.

Data Submission Process

The new data submission process replaces the processed where submitters upload data files using file transfer protocol. Using DUQAT a data submitters can upload data, view file status and check the quality assurance reports that are run automatically overnight for all files that they have submitted.

Figure 1: Flow chart of the quality assurance process used in conjunction with DUQAT.



Data Format Requirements

The CIMS Data Upload and Quality Assurance tool can only process Access 97 database files. These files should be repaired and then compacted to reduce size and upload time. The options to repair and compact database files are located under Database Utilities under the Tools Menu when the main database window is active in Access 97.

All seven tables are not required. Tables that are not listed in Table 1 will be ignored by DUQAT and should not be included to in the data submission to reduce file size. Tables are required to have the same name and same fields as defined in the following sections.

Table 1: Tables will be checked during the quality assurance checks.

Table Name	Description
WQ_CHLOROPHYLL	Contains information about the optical densities that are used to calculate chlorophyll and related concentrations.
WQ_CRUISES	Contains information about the cruises that were conducted in order to collect the data contained in the data submission.
WQ_DATA	Contains the depth dependent data and secchi depth collected during each monitoring event that occurred during each cruise.
WQ_DATA_BMDL	Contains the actual measurement that was below the method detection limits for a parameter.
WQ_EVENT	Contains information about each monitoring event that was conducted during the cruises.
WQ_KD	Contains light attenuation records
WQ_QAQC	Contains quality assurance / quality control records.

WQ_CHLOROPHYLL

The WQ_CHLOROPHYLL table contains all of the optical density and spectrophotometric data used to calculate chlorophyll a and related parameters

FIELD	DESCRIPTION	TYPE	LENGTH
PROJECT	Code identifying the project under which the monitoring was conducted.	text	10
SOURCE	Code identifying the organization that collected the water sample and/or field measurement.	text	10
STATION	Code identifying the monitoring station where the sample was collected.	text	15
SAMPLE_DATE	The date that the sample was obtained.	Date/Time	
SAMPLE_TIME	The time that the sample was obtained		
SAMPLE_TYPE	Code identifying the how the sample was collected.	text	10
SAMPLE_ID	Code identifying each sample when multiple samples are	text	10

	collected or a water sample is split into multiple samples.		
DEPTH	The depth (in meters) where the water sample was obtained.	single	
LAYER	Code identifying the water column layer where the sample or measurement was obtained.	text	2
SAMPLE_VOLUME	The volume (in liters) of the water sample collected.	single	
EXTRACT_VOLUME	The volume (in milliliters) of the amount of sample extracted from the original sample.	single	
LIGHT_PATH	The light path length (in centimeters) used in the analysis of the sample.	single	
OD480B	Optical density (in UE/m**2/s) before acidification at 480 nm.	single	
OD510B	Optical density (in UE/m**2/s) before acidification at 510 nm.	single	
OD630B	Optical density (in UE/m**2/s) before acidification at 630 nm.	single	
OD645B	Optical density (in UE/m**2/s) before acidification at 645 nm.	single	
OD647B	Optical density (in UE/m**2/s) before acidification at 647 nm.	single	
OD663A	Optical density (in UE/m**2/s) after acidification at 663 nm.	single	
OD663B	Optical density (in UE/m**2/s) before acidification at 663 nm.	single	
OD664B	Optical density (in UE/m**2/s) before acidification at 664 nm.	single	
OD665A	Optical density (in UE/m**2/s) after acidification at 665 nm.	single	
OD750A	Optical density (in UE/m**2/s) after acidification at 750 nm.	single	
OD750B	Optical density (in UE/m**2/s) before acidification at 750 nm.	single	
LAB	Code identifying the lab where the sample was analyzed.	text	10
PROBLEM	Code identifying any sample analysis problems.	text	2
METHOD	Code identifying the field/laboratory test procedure used	text	5
COMMENTS	Additional information about the data record.	Memo	

WQ_CRUISES

The WQ_CRUISES table contains cruise level data. Cruises are used to link monitoring events that occurred during the same time period.

FIELD	DESCRIPTION	TYPE	LENGTH
CRUISE	CBP cruise number (BAY###).	Text	10
CRUISE_ID	The optional cruise number (YYYYMMA).	Text	7
SOURCE	Code identifying the lead organization responsible for data collection.	Text	10
AGENCY	Code identifying the lead organization responsible for submitting/serving the data.	Text	10
PROGRAM	Code identifying the lead program under which the cruise was conducted.	Text	10
PROJECT	Code identifying the lead project under which the cruise was conducted.	Text	10
START_DATE	Starting date of cruise.	Date/Time	
END_DATE	Ending date of cruise.	Date/Time	
COMMENTS	Additional information related to the cruise (e.g., stations not sampled).	Memo	

WQ_DATA

The WQ_DATA table contains all of the processed depth dependent data (water column profile data) collected during a monitoring event and submitted to the Chesapeake Bay Program Office. Secchi Depth is also included in this table at the request of the Data Management and Quality Assurance Workgroup.

FIELD	DESCRIPTION	TYPE	LENGTH
PROJECT	Code identifying the project under which the monitoring was conducted.	text	4
SOURCE	Code identifying the source that collected the water sample and/or the field measurement.	text	10
STATION	Code identifying the monitoring station where the data was obtained.	text	15
SAMPLE_DATE	The date that the sample or measurement was obtained.	Date/Time	
SAMPLE_TIME	The time that the sample or measurement was obtained.	Date/Time	
DEPTH	The depth (in meters) where the water sample or measurement was obtained.	single	
LAYER	Code identifying the water column layer where the sample or measurement was obtained.	text	5

SAMPLE_TYPE	Code identifying the how the sample or measurement was obtained.	text	5
SAMPLE_ID	Code identifying each sample when multiple samples/measurements are collected or a water sample is split into multiple samples.	text	7
PARAMETER	Code identifying the parameter name.	text	15
QUALIFIER	Code that identifies if the reported value was outside of the method detection limit.	text	5
VALUE	The reported value of the parameter.	single	
UNITS	Code identifying the units of measurement in which a parameter is reported.	text	10
METHOD	Code identifying the field/laboratory test procedure used to measure the parameter value.	text	5
LAB	Code identifying the lab where the sample was analyzed.	text	10
PROBLEM	Code identifying any sample analysis problems.	text	2
COMMENTS	Additional information about the data record.	Memo	

WQ_DATA_BMDL

The WQ_DATA_BMDL table contains the below method detection limit value measured for records in the WQ_DATA table that were below detection limit. This information is used only by AMQAW approved analysts.

FIELD	DESCRIPTION	TYPE	LENGTH
PROJECT	Code identifying the project under which the monitoring was conducted.	text	10
SOURCE	Code identifying the source that collected the water sample and/or the field measurement.	text	10
STATION	Code identifying the monitoring station where the data was obtained.	text	15
SAMPLE_DATE	The date that the sample or measurement was obtained.	Date/Time	
SAMPLE_TIME	The time that the sample or measurement was obtained.	Date/Time	
DEPTH	The depth (in meters) where the water sample or measurement was obtained.	single	
LAYER	Code identifying the water column layer where the sample or measurement was obtained.	text	5
SAMPLE_TYPE	Code identifying the how the sample or measurement was obtained.	text	10
SAMPLE_ID	Code identifying each sample when multiple samples/measurements are collected or a water sample is split into multiple samples.	text	10
PARAMETER	Code identifying the parameter name.	text	15
VALUE	The measured parameter value that is below the method detection limit.	single	
UNITS	Code identifying the units of measurement in which a parameter is reported.	text	10
METHOD	Code identifying the field/laboratory test procedure used to measure the parameter value.	text	5
LAB	Code identifying the lab where the sample was analyzed.	text	10
PROBLEM	Code identifying any sample analysis problems.	text	2
COMMENTS	Additional information about the data record.	Memo	

WQ_EVENT

The WQ_EVENT table contains all of the processed depth independent data (e.g. weather codes), with the exception of SECCHI DEPTH, collected during a monitoring event.

FIELD	DESCRIPTION	TYPE	LENGTH
CRUISE	The CBP cruise on which the monitoring event occurred.	text	6
SOURCE	Code identifying the organization that collected the water sample and/or field measurement.	text	10
AGENCY	Code identifying the organization responsible for submitting the data record to the CBP.	text	10
PROJECT	Code identifying the project under which the monitoring was conducted.	text	4
PROGRAM	Code identifying the program under which the monitoring was conducted.	text	4
STATION	Code identifying the monitoring station where the data was obtained.	text	15
SAMPLE_DATE	The starting date of the monitoring event.	Date/Time	
SAMPLE_TIME	The starting time of the monitoring event	Date/Time	
TOTAL_DEPTH	The station's total depth (in meters) at the start of the sampling event.	single	
LOWER_PYCNOCLINE	The depth (in meters) of the bottom of the pycnocline.	single	
UPPER_PYCNOCLINE	The depth (in meters) of the top of the pycnocline.	single	
TIDE_STAGE	Code identifying the tide stage observed at the start of the monitoring event.	text	2
WAVE_HEIGHT	Code identifying the estimated wave height at the start of the monitoring event.	text	2
AIR_TEMP	The air temperature (in Celsius) measured at the beginning of the monitoring event.	single	
WIND_DIRECTION	Code identifying the prevailing wind direction at the start of the monitoring event.	text	3
WIND_SPEED	Code identifying the estimated wind speed at the start of the monitoring event.	text	2
PRECIP_TYPE	Code identifying the precipitation type observed at the start of the monitoring event.	text	2
CLOUD_COVER	Code identifying the estimated cloud cover at the start of the monitoring event.	text	2
GAGE_HEIGHT	The gage height (in feet) measured at the start of the monitoring event.	single	
PRESSURE	The barometric pressure (in millimeters mercury) recorded at the start of the monitoring event.	single	
COMMENTS	Additional information about the sampling event (e.g. parameters not measured).	Memo	

WQ_KD

The WQ_KD table contains all of the PAR (Photosynthetically Active Radiation) readings and associated data necessary to calculate light attenuation (kd) for a monitoring event.

FIELD	DESCRIPTION	TYPE	LENGTH
SOURCE	Code identifying the organization that collected the water sample and/or field measurement.	text	10
AGENCY	Code identifying the organization responsible for submitting the data record to the CBP.	text	10
PROJECT	Code identifying the project under which the monitoring was conducted.	text	10
STATION	Code identifying the monitoring station where the data was obtained.	text	15
SAMPLE_DATE	The date that the measurement was obtained.	Date/Time	
SAMPLE_TIME	The time that the measurement was obtained.	Date/Time	
SAMPLE_ID	Code identifying each sample when multiple samples/measurements are collected or a water sample is split into multiple samples.	text	7
DEPTH	The depth (in meters) where the measurement was obtained.	single	
EPAR_S	The photosynthetically active radiation (PAR) reading at the surface sensor of the licor meter.	single	
EPARU_Z	The photosynthetically active radiation (PAR) reading at depth using the up sensor in a licor meter.	single	
EPARD_Z	The photosynthetically active radiation (PAR) reading at depth using the down sensor in a licor meter.	single	
PROBLEM	The CIMS problem code associated with the light attenuation record	text	2
UNITS	Code identifying the units of measurement in which a parameter is reported.	text	10
METHOD	Code identifying the field/laboratory test procedure used to measure the parameter value.	text	4
COMMENTS	Additional information about the data record.	Memo	

WQ_QAQC

The WQ_QAQC table contains the quality assurance/quality control data run by each lab when analyzing MAIN or TRIB project data.

FIELD	DESCRIPTION	TYPE	LENGTH
PROJECT	Code identifying the project under which the monitoring was conducted.	text	10
SOURCE	Code identifying the organization that collected the water sample and/or field measurement.	text	10
STATION	Code identifying the monitoring station where the sample was collected.	text	15
SAMPLE_DATE_TIME	The date and time the sample was obtained.	Date/Time	
DEPTH	The depth (in meters) where the water sample was obtained.	single	
LAYER	Code identifying the water column layer where the sample or measurement was obtained.	text	2
SAMPLE_REPLICATE_TYPE	Code identifying each sample when multiple samples are collected or a water sample is split into multiple samples.	text	7
PARAMETER	Code identifying the parameter name.	text	15
QUALIFIER	Code that identifies if the reported value was outside of the method detection limit.	text	1
REPORTED_VALUE	The reported value of the parameter.	single	
UNITS	Code identifying the units of measurement in which a parameter is reported.	text	10
SPKCONC	The concentration of the spike that was added to the background sample	single	
REPS_STDDEV	Code identifying the lab where the sample was analyzed.	text	10
PERCENT_REC	Code identifying any sample analysis problems.	text	2
STDDEV	The number of replicates used to calculate the standard deviation.	tinyint	
SAMP_SPK	The measured value of the mixture of the spike with the background sample.	single	
PROBLEM	Code identifying any sample analysis problems.	text	2
LAB	Code identifying the lab where the sample was analyzed.	text	10
METHOD	Code identifying the field/laboratory test procedure used to measure the parameter value.	text	5
DETAILS	Additional information about the data record.	memo	
AGENCY	Code identifying the organization responsible for submitting the data record to the CBP.	text	10
PROGRAM	Code identifying the program under which the monitoring was conducted.	text	10
CRUISE	The CBP cruise.	text	10