# WQX Web V.2.0 Tutorial 3

# Importing Monitoring Locations

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# WQX Web Tutorial 3: Importing Monitoring Locations

*It is important to note that in WQX Web, you must load your Project and Monitoring Location information prior to loading any Results data. The Project and Monitoring Location information will only need to be entered once, unless you need to add additional ones or modify the information associated with ones that you have previously loaded.*

## Overview

This tutorial provides guidance in uploading Monitoring Location data into WQX Web and submitting them to CDX.

## Water Quality Exchange (WQX) and STORET

The Water Quality Exchange (WQX) is a mechanism for transferring data to, and extracting data from the U.S. Environmental Protection Agency's (EPA's) STOrage and RETrieval (STORET) Data Warehouse. WQX uses computers as connection points or *nodes* to communicate through EPA's National Environmental Information Exchange Network (NEIEN). Monitoring data files must be formatted in Extensible Markup Language (XML), to be submitted through WQX. XML encompasses a flexible text format for organizing and creating structured computer documents. Prior to import to the WQX/ STORET data warehouse, data files must pass through the Central Data exchange (CDX), a doorway which authorizes submissions. Setting up an NEIEN node to submit XML files can be financially unfeasible and technically challenging for smaller groups.  Organizations that are unable to generate XML script on their own can still submit data to CDX with the assistance of WQX Web, a tool that converts formatted text files into XML script (**Figure 1**).

The design of WQX Web allows users to monitor the status of their data files throughout the submission process. Upon import, WQX Web performs an inquiry of submitted data files, checks their formatting and organization against the established WQX structure, or schema. The WQX Web inquiry assesses inconsistencies between the submitted data and established domain values in the STORET system producing a dataset summary page, detailing errors and successful submissions of files.
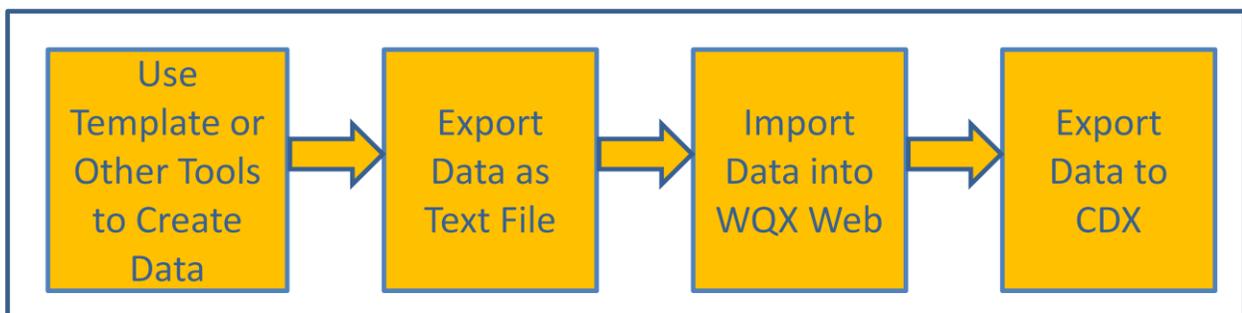


**Figure 1. Flow chart outlining the general process for using WQX Web to submit data to the STORET Data Warehouse**

**WQX Web performs the following functions:**

- ▪ Converts text files created by an organization's in-house water quality monitoring data storage system, into XML script.
- ▪ Submits generated XML file to the WQX Database via the Central Data Exchange (CDX), EPA's electronic reporting system.

## *Tutorial System Requirements*

1. Internet access and a Web browser, such as Microsoft Internet Explorer 7 (IE7) or Firefox
2. Pop-up blockers turned off for this site
3. CDX account

*It is important to note that WQX Web will only work with the IE7, IE 8, Safari or Firefox web browser. WQX Web is not compatible with IE6.*

# Getting Started With WQX Web

Monitoring data submitted through WQX Web to the STORET Warehouse requires specific fields and formatting for parameters such as Monitoring Locations, methods and project identification (for a brief overview of using WQX Web, view the WQX Web cheat sheet accessible at the following URL: http://www.epa.gov/storet/wqx/products/WQX%20Web%20Cheat%20Sheet_030210.pdf).

**The WQX Web tool may be used in a 'Demo' mode, which allows users to practice submitting data to an assigned test organization. The WQX Web Demo environment is purely for training, and any data submitted within this environment is not placed in the STORET Warehouse. New users to WQX Web can contact the STORET Helpdesk (Storet@epa.gov) to obtain a username and password for the WQX Web Demo environment. Users also contact the STORET Helpdesk to obtain a real username and password for submitting data all the way to the STORET Warehouse.**

**Open up your web browser and enter in the URL**
*http://www.epa.gov/storet/wqx/wqxweb_downloads.html. Download the WQX Web Excel (.xls) data template, and provided data files by selecting the link labeled* **WQX Web Tutorials and Example Data Files**. *When using Microsoft Excel 2007, or a later version of Microsoft Excel, files will need to be saved in a macro enabled workbook format (.xlsm). The downloaded materials are for users to start with in importing actual monitoring data into WQX Web*.

To access the CDX Website, open your web browser and enter in the URL
https://cdx.epa.gov/SSL/cdx/login.asp. Enter your training user name (i.e. wqxwebtraining1) and
password into the "User Name" and "Password" fields (for information on registering for CDX/ WQX
Web enter the following URL into your web browser  http://www.epa.gov/storet/wqx/wqxweb.html).



# *Viewing a Sample Monitoring Location Text File*

On your hard drive, locate where you saved the **WQX Web Tutorials and Example Data Files** package
and open the text file labeled, WQXWeb_ MonLocs.txt. *Please refer to the following URL for additional
guidance in using the WQX Web Template for submitting monitoring data:
http://www.epa.gov/storet/wqx/products/WQX_Web_template_user_guide.pdf).*

The WQXWeb _MonLocs.txt file was created using the WQX Web template, and exported in a form that can be submitted to WQX Web. The provided text file is tab delimited, and contains a Monitoring Location ID, Monitoring Location Name, Monitoring Location Type, and other information such as Longitude and Latitude. Note that this file has a header row, or title columns signifying the content of each column.
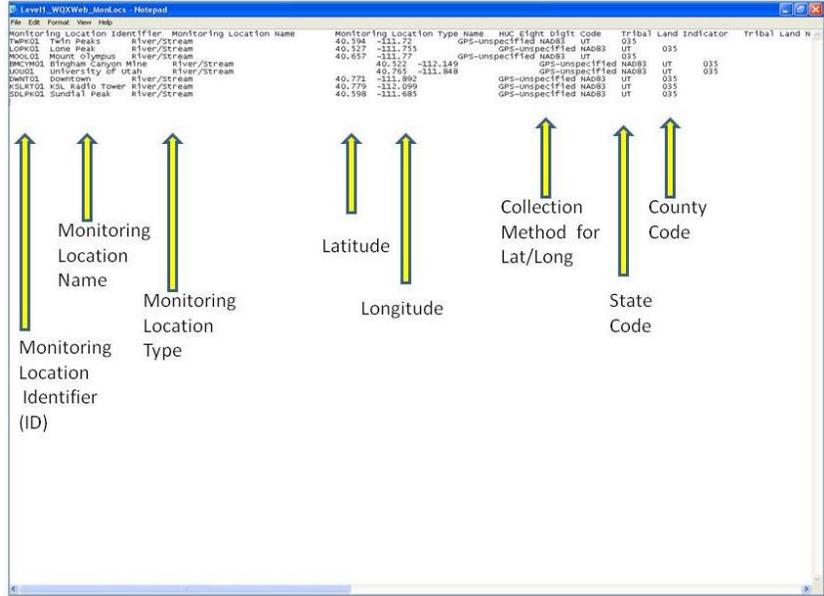


Data submissions are required to be in a specific format to be accepted by the STORET database.   Notice the county names are listed by numeric codes in the sample data file which is the appropriate coded format to be submitted to WQX. After thoroughly examining your data file, close the Monitoring Location text file.
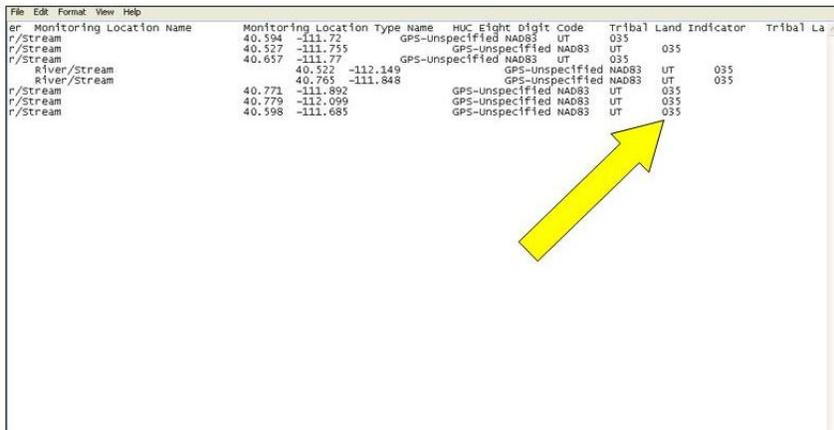
# Working with Import Configurations to Import Monitoring Locations into WQX Web

1. Select "Import Configurations" on the WQX Web homepage. An Import Configuration acts as a blueprint, communicating to WQX the layout or structure of your data file.
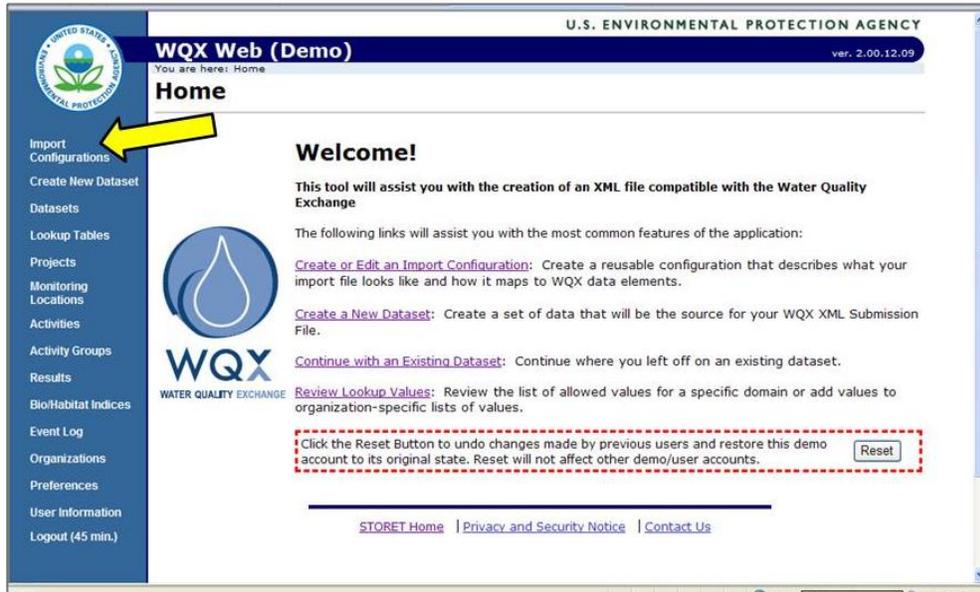


2. Notice the several Import Configurations already loaded on the page. The Import Configuration associated with this Monitoring Location data file is named IMPORT MONITORING LOCATION. Click on the ID link next to the data file name view this Import Configuration.

**3.** Notice how the Import Configuration outlines the layout of the location of data columns within the sample data file. Additionally, the Import Configuration indicates the format of Data Elements such as Latitude and Longitude. For more support on working with Import Configurations, please refer to the WQX Web Tutorial 4. Select "Return" twice at the bottom of the page to return to the home page.
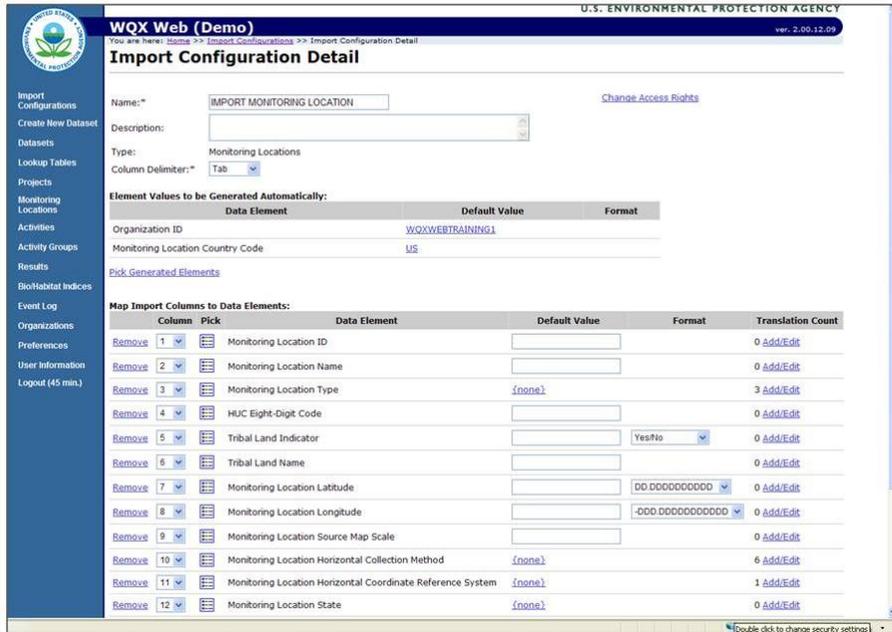


# *Loading Monitoring Location Files into WQX Web*

1. Select the "*Create New Dataset*" link on the left side of the page, to load Monitoring Location data.
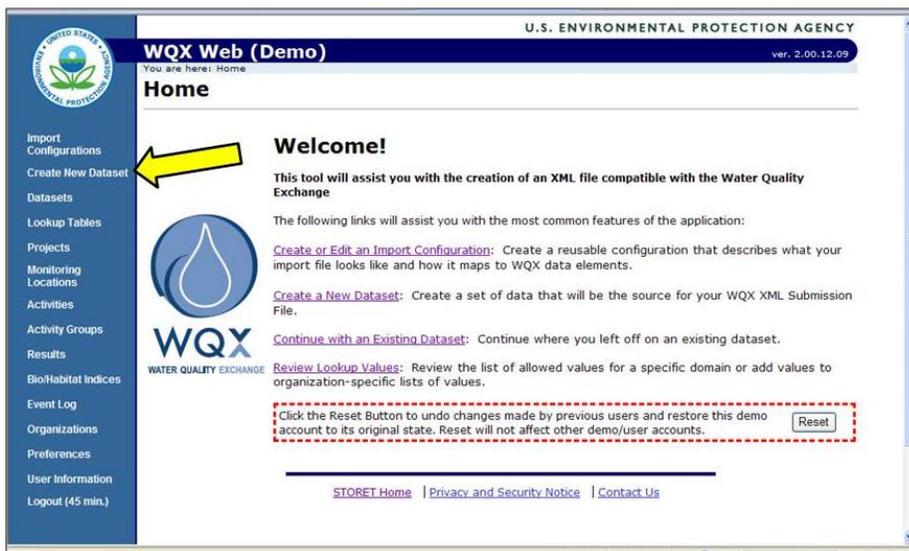
2. Select the hyperlink labeled "*Import a File of Monitoring Locations*."



3. Select the "*Import Configuration"* dropdown box, "*Import File*" field, and the correct *Delimiter* dropdown box to complete this import.

4.  Select the Import Configuration "*IMPORT MONITORING LOCATION"* that corresponds with this tutorial from the "*Import Configuration"* dropdown menu.  Note that the preferences for Import Configurations can be automatically set by selecting the "Preferences" link on the left side of the page.
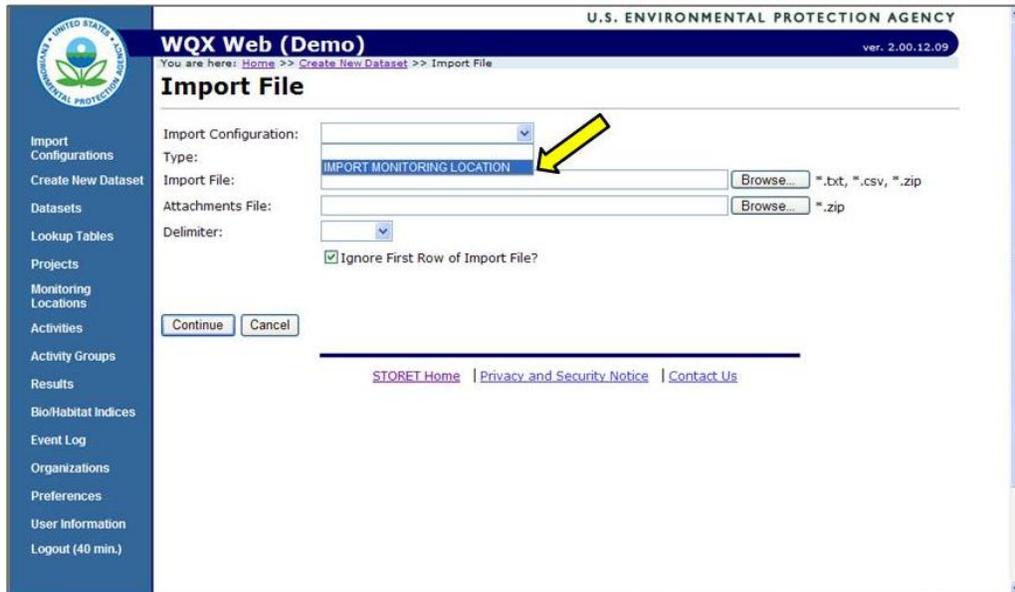


5.  Select the "*Browse"* button to select your import file. Navigate on your hard drive to the file called "WQX Web_MonLocs.txt" and select the "*Open"* button.

6. Also recall that there was a header row in the sample Monitoring Location data file; therefore, to submit the data file successfully, select the "*Ignore First Row of Import File?*" box.



7. Specify the Organization ID associated with the data file by clicking on the link under Default Value labeled WQXWEBTRAINING1. Note that this tutorial will continue to use WQXWEBTRAINING1 for demonstration purposes.

8. Click the "*Continue"* button to import the file.



9. A message box will appear stating "*The first row of your import file will be ignored.*" The first row of the import file contains column titles. Select "OK."

10. Note the status of the dataset summary says "*Imported*," indicating that the imported Monitoring Location file did not have any errors during the import. Errors and invalid monitoring locations are items that must be fixed before the file may be submitted to CDX. Note the number of total "*Errors/Warnings*" and "*Invalid*" monitoring locations in the file is displayed as 0. Select the "View Log" link for a summary of the processes and errors that occurred during the file import. Submit your file by clicking on the "Export/Submit File(s)" button.
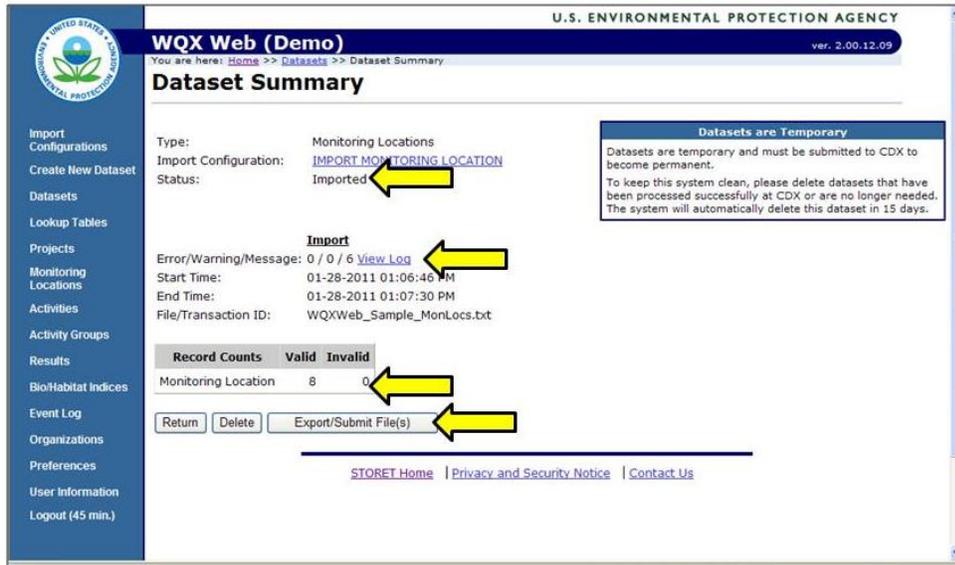


11. Under the WQX XML File heading, click the "Export and Submit to CDX" radio button. Make sure corresponding information is filled in for "Author", "Organization" and "Contact Info" (email address). Click the "Continue" button on the left side of the screen.
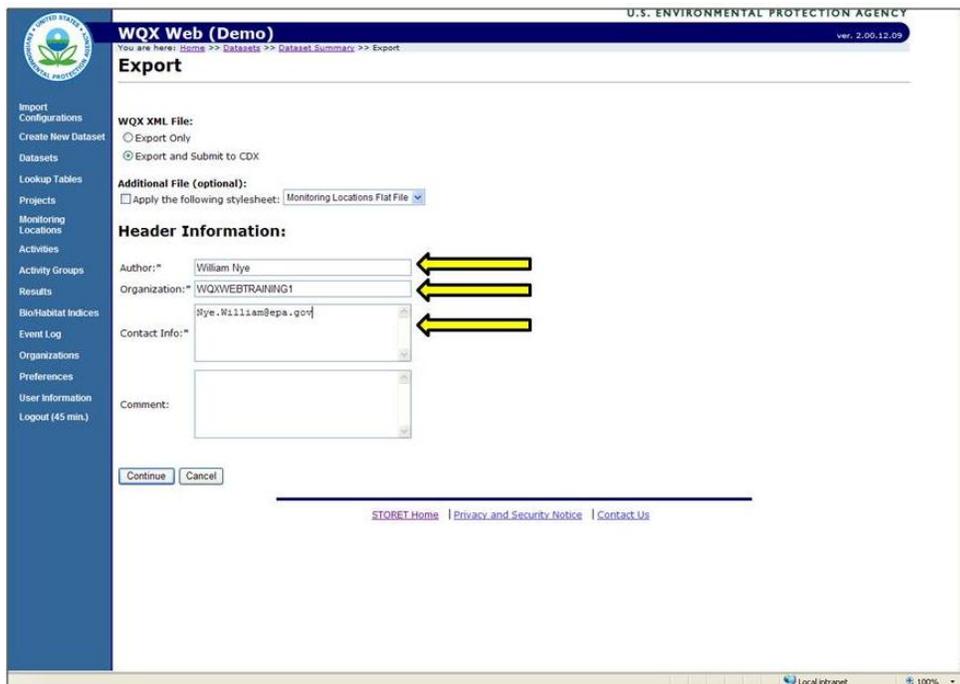
12. Notice that the page automatically refreshes, however, click on your web browser's refresh button after a few seconds if you want to update the status of your uploaded file faster and to see if there are any errors or warnings.



13. Note the "*Submission Completed!*" box and the status of the dataset summary says "*Completed at CDX,*" indicating that the imported project file did not have any errors during the import. Locate the CDX "*Documents (available for download)*" box on the bottom left side of the page for the following four reports: "*WQX Submission*", "*Validation Results*", "*Notify*", and "*Processing Report*". Click on the "View in Browser" link next to the "ProcessingReport.zip" file. The "View in Browser" link opens the report in your browser window. After reviewing the *Processing Report* select the back button of your web browser to return to WQX Web.



Note: Users can go in and see their Monitoring Locations by clicking Monitoring Locations on the left side of the screen.

**If you receive the error "connection was forcibly closed by the remote host." Submit your data again after a few moments. This error often comes due to high amounts of traffic.**

14. To save this XML file to your hard drive, select the "WQXSubmissions_1058_Update.zip" file, unzip the file, open the report itself, and then save it to the computer's hard drive. After receiving the "Completed at CDX" status, select the Delete button to remove this submission from the WQX Web.



*Note: excessive traffic in the site from multiple organizations uploading simultaneously sometimes may affect the success of your upload.*

## Summary

This tutorial has shown the basics of using WQX Web to submit a Monitoring Location data file to the STORET Data Warehouse. Please refer to the additional tutorials for guidance on Importing project, or results data and working with import configurations. For a more detailed description on using WQX Web, please refer to the WQX Web user guide accessible at the following URL http://www.epa.gov/storet/wqx/products/WQX_Web_User_Guide_v2.0.pdf.