

**OKLAHOMA**

**Water Resources Board**

**Water Data and Analysis Tools**

*Getting Started Guide*

Oklahoma Water Resources Board, August 2023

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## Overview

The OWRB Water Data and Analysis Tools (WDAT) dashboard is a web-based landing page with links to the continuous and discrete databases used by the OWRB Water Assessment, Trends, and Environmental Research (WATER) Division. These two databases are Aquarius WebPortal, which houses the WATER division's continuous data and serves as a platform for the WDAT dashboard, and The Ambient Water Quality Monitoring System (AWQMS), which houses OWRB's discrete data.

The three continuous data links on the WDAT dashboard will open the Aquarius WebPortal map viewer in a new web browser tab, where users can access OWRB WATER Division continuous datasets. The four discrete data links on the WDAT dashboard will open AWQMS in a new web browser tab, where users can access OWRB WATER Division discrete datasets. Below the data links is a banner which will lead to the OWRB's main web page, and below the banner are helpful links to additional external data sources.

The WDAT dashboard was built into Aquarius WebPortal. Tools linked on the left side-bar will navigate to Aquarius WebPortal pages and give users access to OWRB WATER Division continuous data. The OWRB logo in the top left corner will return users to the WDAT dashboard.

## Using this Guide

The sections below provide users with quick tips on navigating both databases. These are not comprehensive user guides, but rather short guides to help users get started on accessing OWRB WATER Division continuous and discrete data. At the end of each section are helpful links to full user guides from both Gold Systems and Aquatic Informatics on using AWQMS and Aquarius WebPortal, respectively.

If you have questions, comments, suggestions, or concerns please [use this form](#). A link to the form is also located at the bottom of the WDAT dashboard under "Resources."

## AWQMS Getting Started Guide

OWRB collects discrete and continuous water quality and quantity data from lakes, streams, and groundwater across the state and these data are available through the links below. Discrete data is collected for physical, chemical, and biological parameters for many state and federal projects. Continuous data includes water levels of wells and stream gages—these data are collected using data loggers reporting readings in near real-time intervals.

The Ambient Water Quality Monitoring System (AWQMS) is a comprehensive, web-based data management system utilized by OWRB to manage and store discrete water quality data from our lakes, streams, biological, and groundwater monitoring programs. Aquarius is a web-based data management platform utilized by OWRB to manage and store continuous water quality data. Click below to access monitoring data and analysis tools.

OWRB has created some saved searches in AWQMS specific to certain waterbodies, common parameters, timeframes, project areas, etc. to facilitate the creation of data exports, interactive maps, reports, and graphs for data analysis. Hover over the type of export, analysis tool or map to see the various options.

### Types of Data

There are several different data types that OWRB collects; they are described below. When you are refining your search criteria, you may indicate the data type with the check boxes pictured below, which can be found on the “Other Search Criteria” tab of any type of data export or analysis tool.

#### Types of Data

Discrete Results  Biological Results  Continuous Results  Metrics  Indexes

#### Discrete Results

Data collected at one specific time at a site location and includes chemical, physical, and habitat parameters such as phosphorus, dissolved oxygen, temperature, canopy layer etc.

#### Biological Results

Specific discrete results for biological parameters such as, fish species and macroinvertebrate collections. Currently, our fish species and macroinvertebrate species collection data are available and are only collected in streams.

## Continuous Results

Continuous monitoring data are collected using water quality and quantity sensors at regular time intervals. This continuous data is housed in Aquarius rather than this database (AWQMS). To view this data return to the WDAT page and click the type of waterbody under the continuous data header.

Currently, metrics and indexes are not available here yet, but will be in the future.

## AWQMS General Terms:

**Organization** – Generally, a state, tribe, volunteer monitoring group, or other public/private organization that collects water quality monitoring data and stores it in AWQMS. However, a physical organization in the real world may have multiple Organization records in AWQMS; for instance, OWRB stores its collected data in three organizations, or divisions, based on waterbody type – lakes, streams, and groundwater — which you are directed to by clicking into the icons on the landing page.

**Project** - A project is an entity created to group monitoring data for a variety of reasons; it may represent an actual monitoring project, a source of funding (or program), or a department or group within the organization who is interested in a specific set of data.

**Monitoring Location** - Also known as a site or station. This is the location where samples or field measurements and observations are collected. Examples: Tenkiller Lake; Arkansas River, SH 104, Haskell; or GARWELL-025.

**Activity** - A general term for a sampling or observation event that produces one or more results or metrics. In AWQMS, an Activity tracks the location, date, and time of the sample or field measurement, as well as the equipment and methods used to collect, transport, and store the sample.

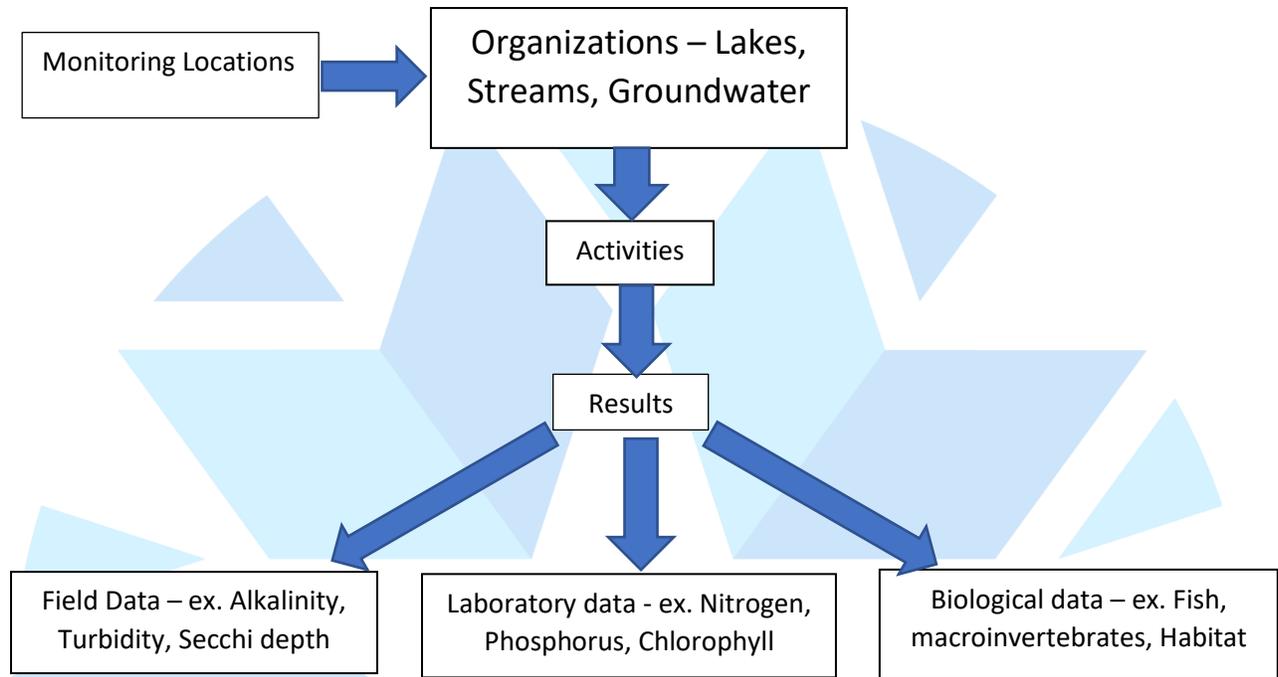
**Result Value** - Describes the results of a field measurement, observation, or laboratory analysis.

**Characteristic** - Also known as an analyte or parameter; examples: Total Phosphorus, Dissolved Oxygen, Turbidity, etc.

**Result Comment** - Any comment whose content applies to only that individual result within the activity. Some comments may aid in data interpretation, help explain possible issues, or inform samplers and data managers. Examples: "Results confirmed by repeat analysis", "Small spill occurred", "Result unable to be verified," etc.

**Result Qualifier** - Also known as a result flag. This section is used to warn the data user about anything that could impact that individual result value and the data analysis. AWQMS exports

these in a coded form. Examples: H -> Holding time exceeded; MTRX -> Possible matrix interference, estimated value



### Full User Guide

A full user guide for AWQMS can be found [here](#).

## Aquarius Web Portal Getting Started Guide

OWRB collects discrete and continuous water quality and quantity data from lakes, streams, and groundwater across the state and these data are available through the links below. Discrete data is collected for physical, chemical, and biological parameters for many state and federal projects. Continuous data includes water levels of wells and stream gages—these data are collected using data loggers reporting readings in near real-time intervals.

Continuous data, including water well level, stream stage, or discharge, are collected using data loggers that report readings in real-time intervals. Aquarius Time-Series is a web-based data management platform utilized by the OWRB to manage and store continuous water quality and quantity data. Currently, continuous data are only available for rivers/streams and groundwater.

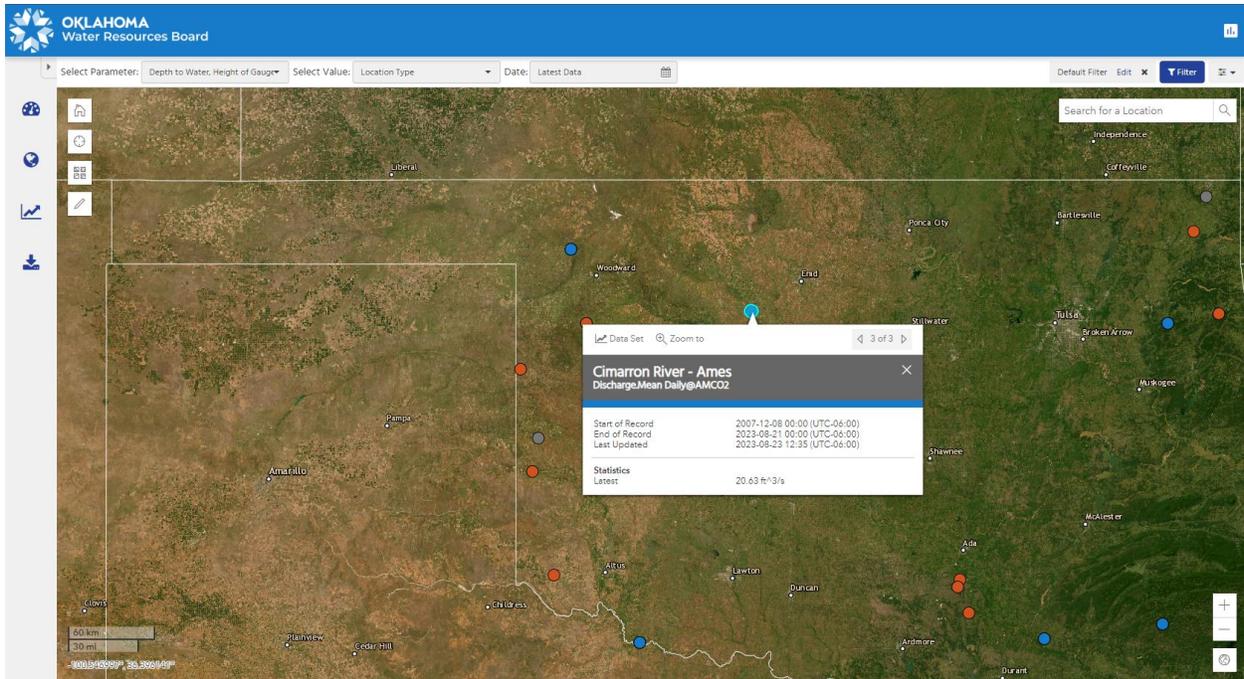
### Navigating Aquarius WebPortal

Monitoring locations may be selected using the Map tool or the Data Set tool, both of which are located on the left sidebar of Aquarius WebPortal.

#### Map Tool

The Aquarius WebPortal Map tool may be selected using either the map icon on the left sidebar, or by selected one of the three continuous data links on the WDAT dashboard. From the Map tool, users may select individual monitoring locations, change view by selecting parameters, or adding a filter.

Selecting a monitoring location on the map will activate a pop-up with all datasets based on selected parameters. From this pop-up, users can view the length of record for each available time-series and can view the dataset using the “Data Set” button. Use the screenshot below for reference on the Map tool and pop-ups.

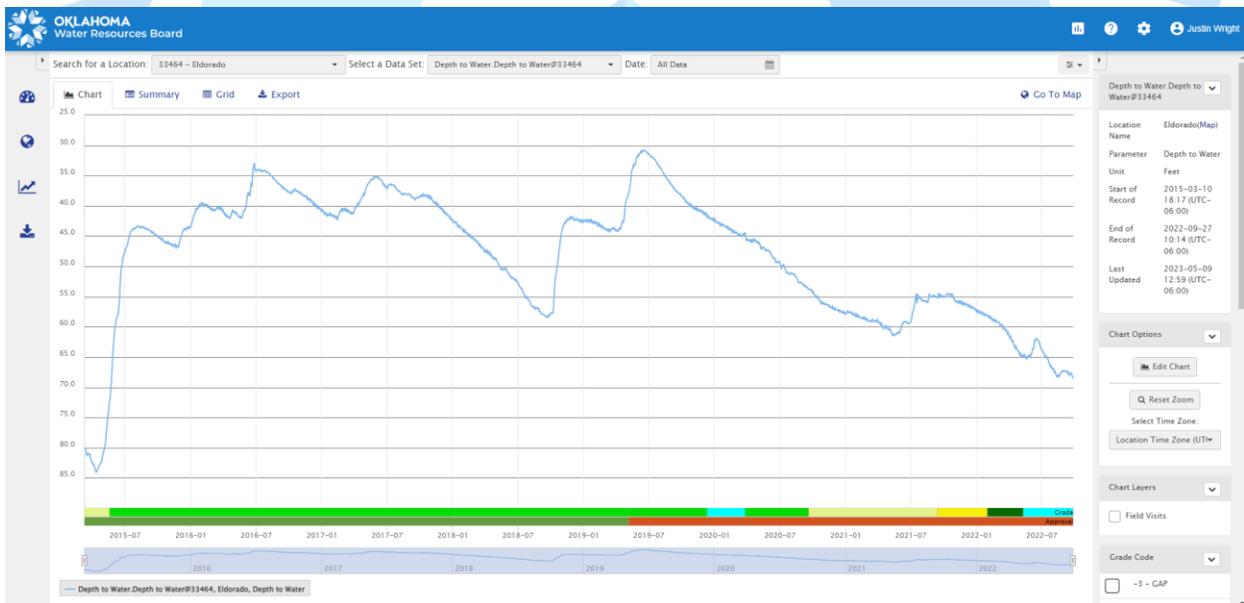


## Data Set Tool



The Data Set tool allows users to view charts of data sets, view location summary data, and export site data. This tab will automatically be selected when a user chooses to view datasets from the map tool. See below for a reference on the Data Set Tool.

*Note: When accessing data it is recommended to select a site from the Map Tool rather than searching for a location in the Data Set tool.*



## Export Tool



The Export tool allows users to export data from Aquarius WebPortal and access API URLs for consistent and automatic exporting. This tool is helpful for exporting data from multiple sites, while the Data Set tool as noted above only allows for site-by-site exports. Using the “Add Data Set” button users may select one or multiple data sets to be exported. An example set-up for exporting a CSV is included below.

**Export Data**  
The Export tab is used for bulk exporting many Data Sets as a time-aligned file with data aggregated to a common interval. For exporting a single Data Set, the Data Set > Export tab can be used.

Prefill from Template:

Date Range: Custom

Custom Range: 2023-01-01 00:00 to 2023-08-30 00:00

Time Zone: First Data Set's Time Zone

Interval/Points: Points as recorded

Export Format: CSV

Single/Multi File:  Single Time-Aligned File  One File Per Data Set

Rounding:  Full Precision  Round Data to Default Specification

Include Grade Codes?:  Yes  No

Include Interpolation Types?:  Yes  No

Include Approval Levels?:  Yes  No

**Data Sets**  
The Export tab is used for bulk exporting many Data Sets as a time-aligned file with data aggregated to a common interval. For exporting a single Data Set, the Data Set > Export tab can be used.

+ Add Data Set

Entire Period of Record: 2005-03-02 14:00 (UTC-06:00) - 2023-08-23 12:00 (UTC-06:00)  
Overlapping Period of Record: 2006-08-16 12:45 (UTC-06:00) - 2023-08-18 12:00 (UTC-06:00)

Location	Data Set	Conversion Option
CCWO2 - Washita River - Cordell Period of Record: 2005-03-02 14:00 - 2023-08-23 12:00 (UTC-06:00)	Stage.Instantaneous@CCWO2	Value in Feet
CLYO2 - Little River - Cloudy Period of Record: 2006-08-16 12:45 - 2023-08-18 12:00 (UTC-06:00)	Stage.Instantaneous@CLYO2	Value in Feet

Export URL: <https://data-owrb.aquaticinformatics.net/Export/BulkExport?DateRange=Custom&StartTime=2023-01-01%2000%3A00&EndTime=2023-08-31>

This URL can be copied and used to download the data directly for easier automatic exporting.

**DATA DOWNLOAD DISCLAIMER:** 1. ACCURACY AND UTILITY. The OWRB makes every effort to provide and maintain accurate, complete, usable, and timely information. However, some data, including any data without an approval level of "Final", and information may be preliminary in nature and are provided with the understanding that they are not guaranteed to be permanent, correct, or complete. Data may be updated routinely; therefore, updates to the information provided by the OWRB must be obtained by an additional request. Conclusions drawn from or actions undertaken on the basis of such data and information are the sole responsibility of the Interested Party. Although these data have been processed successfully on a computer system at the OWRB, they are provided with the understanding that accuracy or utility of the data on any other system or for general or scientific purposes is not guaranteed. It is also strongly recommended that careful attention be paid to the contents of the metadata file associated with these data to evaluate data set limitations, restrictions, or intended use. The OWRB shall not be held liable for improper or incorrect use of the data described and/or contained herein. 2. WARRANTIES AND LIABILITY. These materials, provided by the State of Oklahoma, any agency or division thereof, and/or any of their employees, contractors, or subcontractors, including the OWRB, are provided (a) WITHOUT ANY WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES FITNESS FOR A PARTICULAR PURPOSE, (b) without assuming any legal liability or responsibility for the accuracy, completeness usefulness of any information, apparatus, product, or process disclosed, and (c) with no representation that its use would not infringe on privately owned rights. Use of these materials constitutes acceptance of this disclaimer of liability. 3. By downloading data the user accepts the above terms and conditions for data usage.

## Full User Guide

A full user guide for Aquarius WebPortal can be found [here](#).