



COLORADO

Department of Public
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

WQCD GUIDE TO INTERPRETING RESULTS FROM AQUATIC ANALYSIS FOR PESTICIDES

Since June of 2013, the Water Quality Control Division has been conducting sampling analyses of Colorado streams for the presence of pesticides. The division has carried out 11 sampling events through December 2016 and each trip collected samples from approximately 20 sites, with two sample vials filled per site. Samples are analyzed at the lab operated by the Colorado Department of Agriculture. This document provides guidance to the results presented in the accompanying spreadsheet titled, “Summary of All Hits.”

Each tab in the spreadsheet is labeled with the stream name and sampling date(s). In addition to CDA’s standard analyte list, the division is proactive in asking for analysis of trending chemicals such as glyphosate and bifenthrin. These appear separately on each tab and are labeled as such.

The results provided in the spreadsheet are summary data. Only analytes that returned a positive result for an active ingredient in a pesticide being evaluated are noted. A full list of analytes is provided on the “Analyte List” tab in the spreadsheet.

All original CDA bench sheets (quantifying all findings) are included separately on the web page and are named by: event number, stream name, analyte and date (e.g. 1_S Platte_Glyphosate_0613). It was from these bench sheets that the cells in the “Summary of All Hits,” document were populated.

The division is conducting these analyses to establish a baseline data set for pesticides in each of the major Colorado watersheds. What is presented in this document are the results obtained so far in pursuit of that goal. Currently, the division does three sampling trips per year. The sampling type used in the division’s collection efforts is called synoptic sampling. It refers to the idea of sampling over a large area in a short period of time to obtain a “snapshot” view of the conditions present at that time in that place. The division’s goal is to obtain samples that go from as close to a given headwater as possible, to as far downstream as the state line; again where possible. The division is working towards constructing a dataset that will reflect snapshots of current conditions during the spring, summer and fall in each major Colorado watershed. This will provide a general overview of conditions in each particular watershed during one or two days of each calendar season when pesticide applications are: ramping up towards bloom (in spring), used for maintenance (in summer) and used as pre-emergents (in fall). The division hopes that by acquiring these data points, a picture will emerge with regard to problem spots in the state that can then be further evaluated over time, with a goal of continuing public education and reducing overall concentrations of pesticides in streams. The division’s sampling strategy is reviewed annually and may be revised based on new information, needs, or goals.

The spreadsheet’s columns are mostly self-explanatory but are summarized here:

(Note that each sheet is not exactly like the previous. Certain data elements have been included/removed as the process of reporting has evolved).

Sample Number: Refers to the cumulative total number of samples taken

WQCD Site: Refers to a site previously used and numbered by the Water Quality Control Division

Site Description: Provides a narrative location for a given site

Active Ingredient: Refers to any of the analytes being tested for. In this document, if it’s listed, it’s likely to have been detected (see “J” and “Q” data below).



Result ug/l: This is the reported concentration value detected in the sample, in micrograms per liter.

Qualifier: You may see a “J” or a “Q” in this column. A “J” indicates that the identification of the analyte is acceptable but that the quantitation value is estimated. A “Q” indicates that the identification of the analyte is based on professional judgement.

STD: This column contains the most stringent standard found in Regulation 31 for all analytes that have standards. Most often, this is a Water Supply standard and is indicated by “WS”.

CDA Lab Sample Number: Refers to the sample number assigned to each sample at the Colorado Department of Agriculture’s lab.

