

Read Me:

**Model Name:** TC-14\_1D River\_Test\_Case

**Objective:** Use EFDC+ Explorer (EE) and EFDC+ to simulate the test case built based on a steady state problem from Thomann & Mueller (1987) “Principles of Surface Water Quality Modeling and Control” Sample Problem 6.10 (which was itself adapted from Driscoll et al., 1981).

**Model Grid:** 39 horizontal grid cells and 1 vertical layers.

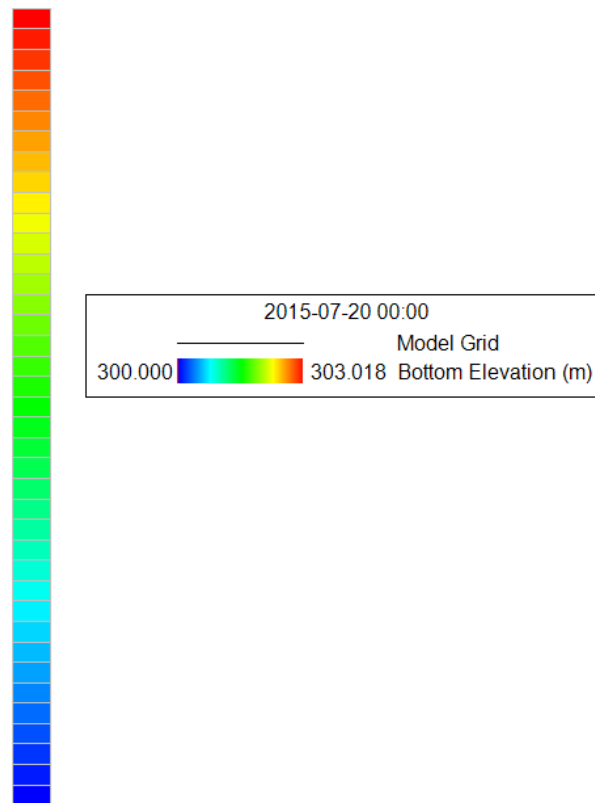


Figure 1 Model Domain of TC-14\_1D River.

**Folder Structure:**

**Data:** This folder contains data that can be used with the model. These data can be measured data or output from model or derived from analytical equations.

**Model:** EFDC model that can be loaded in EE to pre- and post-process.

**Test\_record file:** This file is just a record file that informs which EFDC+ executable was used to run the model.

**Modules Activated:** hydrodynamics, dye.

**Description:**

**Disclaimer:** The model is provided to our users to demonstrate that EFDC\_Explorer and EFDC+ can be used to better understand how to build this kind of model. The model is running as expected; however, shouldn't be considered final as the model can be modified / refined to obtain improved results.

**Citation for the paper:**

Thomann, R. V., & Mueller, J. A. (1987). *Principles of surface water quality modeling and control*.

**Files in Data Folder:**

- 1DRiverLabels.dat
- 1DRiverStations.dat
- DyeCX\_T218\_readMe.dat
- DyeTSRIV01.dat
- DyeTSRIV01.dat
- DyeTSRIV03.dat
- River1D-Analytical Solution.dat
- River1D-Analytical Solution.xlsx

### Model results:

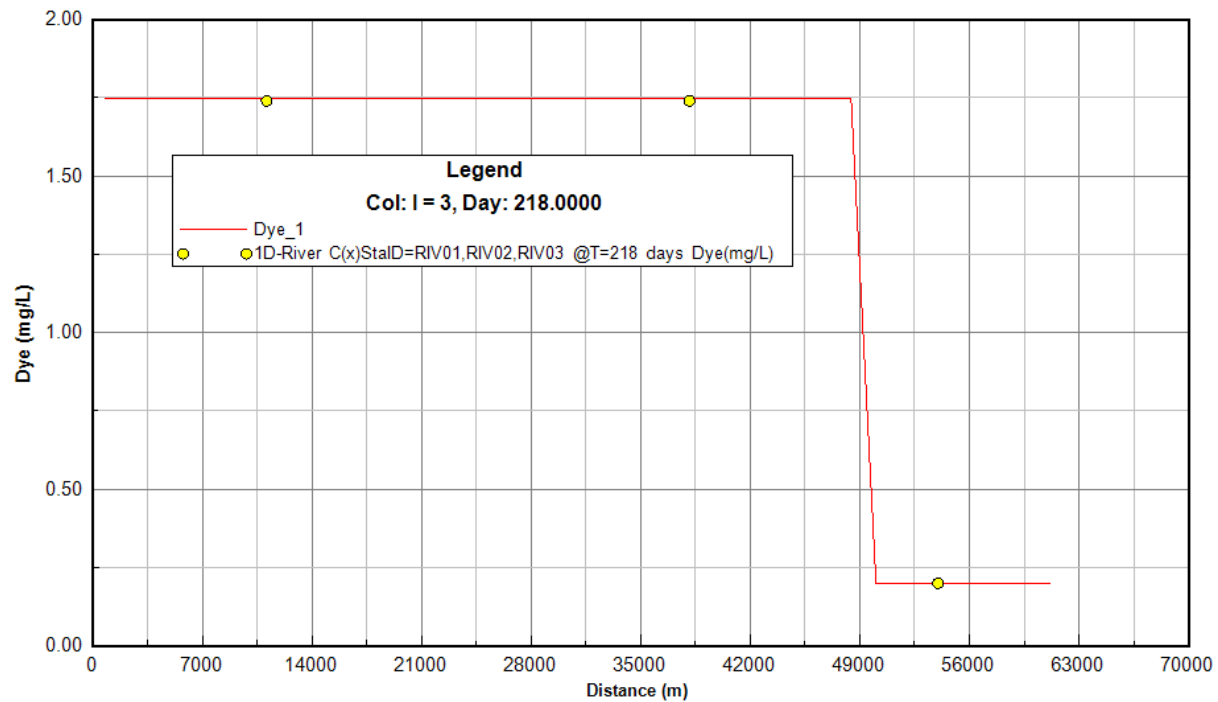


Figure 2 Dye longitudinal profile compared with measured data at Time = 218 for conservative dye case

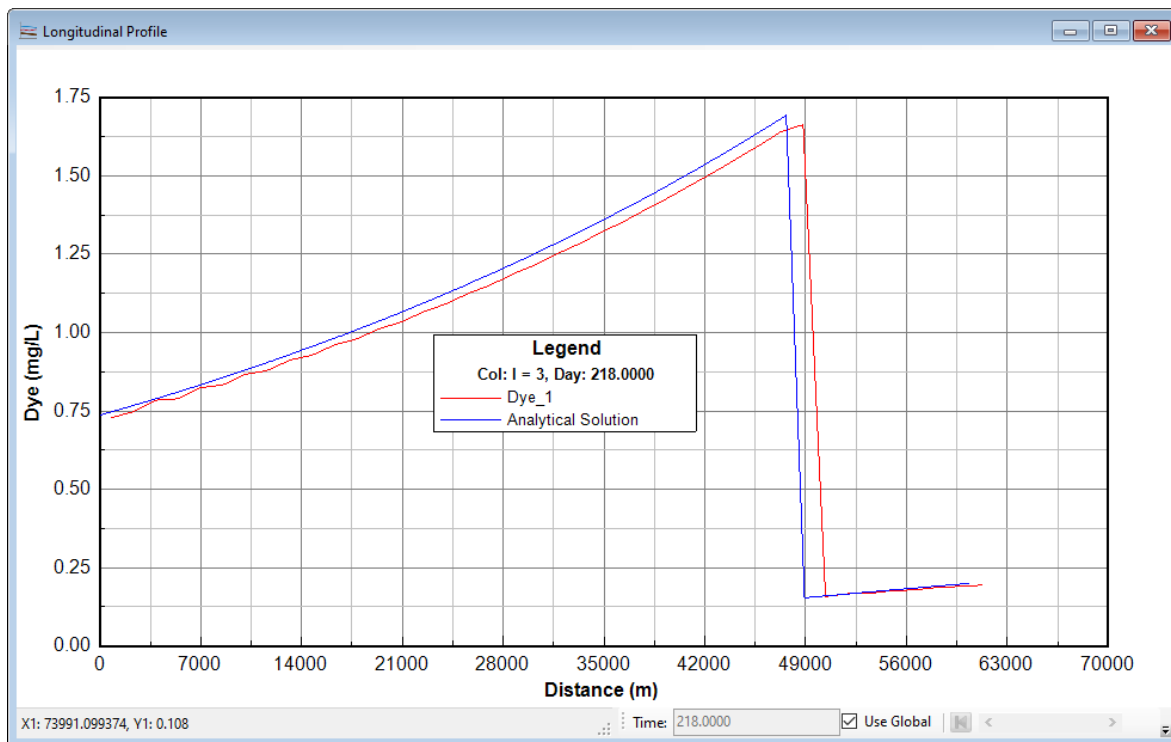


Figure 3 Dye longitudinal profile compared with measured data at Time = 218 for Non-conservative dye case

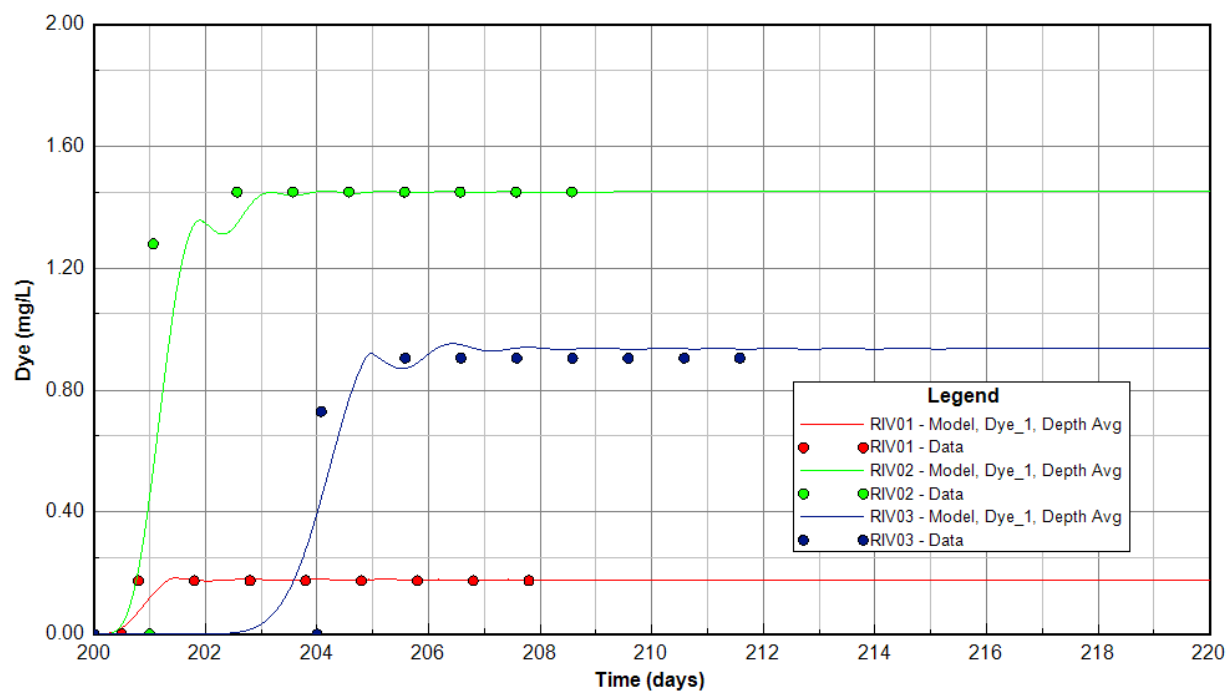


Figure 4 Comparison of data and modeled dye time series for Non-conservative dye case.