



Fact Sheet

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Coastal and Hydraulics Laboratory □ 3909 Halls Ferry Road □ Vicksburg, MS 39180-6199 □ (601) 634-2504 □ <http://www.erdc.usace.army.mil>

Project Title: SELECT

SPONSOR: Coastal and Hydraulics Laboratory, ERDC

PI: Michael L. Schneider or Laurin Yates, CHL
541-298-6872; 601-634-3792, email: Michael.L.Schneider@usace.army.mil or laurin.i.yates@usace.army.mil

SELECT is a one-dimensional (1-D) numerical model that predicts the vertical extent and distribution of withdrawal from a reservoir of known density (usually temperature driven) and quality distribution for a given discharge from a specified elevation. Using this prediction for the withdrawal zone, SELECT computes the quality of the release for user-specified parameters (such as temperature, dissolved oxygen (DO), turbidity or iron). These release constituents are assumed conservative through the selective withdrawal structure because the retention time in the structure is short compared with the time required for the constituents to physically or chemically change. For example, there would be insufficient time for the water temperature to change significantly. However, chemical oxidation may occur, but is not included as a process in the SELECT model. Oxygen transfer can also occur, but SELECT can predict the improvement in DO that would occur due either to natural reaeration, as flow passes through gated-conduit outlet works, or due to turbine venting at a hydropower project.

SELECT version 1.33 is an executable Fortran program that can be run on most computers with a Windows-based operating system. The complete documentation of this program can be found in the US Army Engineer Waterways Experiment Station Instruction Report E-87-2 entitled *SELECT: A Numerical One-Dimensional Model for Selective Withdrawal*. Revisions to this document were published in July 1992.

SELECT was developed based on the philosophy that the field office users require a tool to compute the withdrawal and release quality characteristics of a structure for given values of density stratification, outlet geometry, and discharge. SELECT is that tool. SELECT is not a water quality or thermal simulation model. It does not consider all the hydrodynamic and biochemical processes ongoing in a reservoir. Its purpose is to estimate withdrawal and release quality characteristics.

[Download SELECT](#)

Corresponding documentation: [Waterways Experiment Station Instruction Report E-87-2](#) and [Addendum](#).