DW 101

● ○ ○ Foundation 45 hours 3 modules · 20 lessons

Regulations, Source Water & Clarification

Virginia licensing and the regulatory framework, source water and wells, and the coagulation–flocculation–sedimentation steps that start every surface-water plant.

45	3	20	1,335	102	9	1,167
HOURS OF TRAINING	MODULES	LESSONS	STUDY CARDS	SCENARIOS	3D SIMULATORS	EXAM QUESTIONS

COURSE OBJECTIVES

By the end of this course you will be able to:

1. Describe Virginia operator licensing, experience and renewal requirements and the roles of DPOR and VDH.
2. Explain the Safe Drinking Water Act, MCLs, monitoring and reporting at a working level.
3. Characterize source waters (surface, groundwater, reservoirs) and describe source-water protection and wellhead protection.
4. Explain well construction, drawdown and cone of depression.
5. Perform jar tests and select coagulant type and dose; explain alkalinity, pH and charge neutralization.
6. Calculate flocculation G-values, detention time and sedimentation overflow rate.
7. Troubleshoot floc carry-over, short-circuiting and sludge handling problems.

WHAT YOU WILL LEARN

Licensing & regulations
Classes, requirements, MORs, public notification and records.

Source water
Wells, reservoirs, turnover, intakes and protection planning.

Coagulation & flocculation
Chemistry, mixing energy, jar testing and dose control.

Sedimentation
Basins, loading rates, sludge and troubleshooting.

Operator math
Detention time, loading and dose in real problems.

Exam readiness
Practice questions and timed WPI-style mock exams by class.

MAJOR TOPICS COVERED

Module 1	Virginia Licensing, Regulations & Utility Management	7 lessons
Module 2	Source Water Characteristics, Wells & Source Protection	6 lessons
Module 3	Coagulation, Flocculation & Sedimentation	7 lessons

COURSE HIGHLIGHTS

- **45 hours** of structured, self-paced instruction with active-time tracking.
- **9 interactive 3D simulators** — rotate, explode and cut away real equipment, then change the controls and watch the numbers respond.
- **102 field scenarios** with background, decision points and worked answers.
- **1,335 study cards**, 20 printable checklists and hands-on calculators.
- **1,167 practice questions** with timed, exam-style mock tests.

WHO IT'S FOR

New and entry-level waterworks operators, operators-in-training and maintenance staff who need operator fundamentals; supports preparation for the Virginia Waterworks Operator exams (Classes 4–1).

BEFORE YOU START

None. Take this course first in the Drinking Water track.

WHERE TO NEXT

DW 102 — Filtration, Disinfection & Specialty Treatment

Start learning Create a free account at tryetech.com, open **Drinking Water (Waterworks) Operator Prep** and begin with Module 1.