**Inter Tribal Council of Arizona, Inc.**
**NATIONAL TRIBAL WATER AND WASTEWATER OPERATOR CERTIFICATION PROGRAM**

*Established to strengthen Tribal governance and promote Tribal sovereignty.*

# NEED-TO-KNOW CRITERIA

## FEDERAL REGULATIONS EXAM MODULE FOR DRINKING WATER TREATMENT OPERATOR CERTIFICATION

**revised March 2023**

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## SUMMARY OVERVIEW

The public depends on reliable water service that is safe to drink. Thus, drinking water treatment facility operators are public health professionals who are on the front lines of protecting public health. The safe drinking water rules and regulations are established and enforced to ensure public safety. In addition, certification or licensure designates a person as meeting the minimum competencies set by the industry for the Water Treatment Operator profession. The Federal Regulations Exam Module for Drinking Water Treatment Operator Certification ("FedReg-WT") measures your knowledge of and your ability to use the federal minimum baseline safe drinking water rules and regulations.

The FedReg-WT Exam Module was developed to balance industry changes in operator certification with local self-determination goals. The exam module was designed to be used in unison with the industry-wide standardized Water Treatment Operator certification exam. The objectives of the FedReg-WT Exam Module are to:

- Protect public health by assessing operator knowledge of federal minimum baseline safe drinking water laws and regulations that pertain to the operation and maintenance of water treatment facilities,
- Maximize potential for reciprocity of operator certification, and
- Improve water utility regulatory compliance.

This document describes what is covered on the FedReg-WT Exam Module and what operators should study to prepare for the examination. The FedReg-WT Exam Module consists of 40 multiple-choice questions. The exam blueprint shown on the next page lists the percentage of questions on the exam that fall under each job function area. This one exam module corresponds with all grades or levels of Water Treatment Operator certification. The exam is intended to be proctored as an open-book test using only the approved reference documents that are listed in this document.

## Exam Blueprint for the FedReg-Water Treatment Exam Module

**A. Conduct Monitoring to Ensure Water Treatment Compliance**
approximately **7 questions (17.50% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Identify monitoring locations |
| 2. | Use proper sampling techniques |
| 3. | Submit samples to an approved certified lab |
| 4. | Comply with monitoring schedule |
| 5. | Report monitoring results to primacy agency |

**B. Implement Ground Water Treatment Techniques**
approximately **7 questions (17.50% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Conduct source water monitoring (identify contaminant source) |
| 2. | Conduct entry-point water monitoring (identify contaminate source) |
| 3. | Participate in sanitary survey (e.g., significant deficiencies, awareness of frequency) |
| 4. | Comply with disinfection requirements (corrective and/or preventative) |

**C. Implement Surface Water and GWUDI Treatment Techniques**
approximately **8 questions (20% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Maintain minimum residual (e.g., monitoring, reporting, notification of low residual) |
| 2. | Achieve minimum removal and inactivation rates (e.g., CT, log removal) |
| 3. | Manage turbidity (e.g., monitoring, reporting, notification of high turbidity, triggered filter assessments) |
| 4. | Manage total organic carbon (e.g., removal, monitoring, reporting) |
| 5. | Participate in a sanitary survey (e.g., significant deficiencies, awareness of frequency) |

**D. Optimize Treatment for Distribution Compliance**
approximately **4 questions (10% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Correct sanitary defects based on Level 1 and Level 2 assessments |
| 2. | Conduct a corrosion control study for LCR |
| 3. | Monitor and adjust treatment for DBP precursors |

**E. Define Primary and Secondary Standard**
approximately **4 questions (10% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Identify primary standards (e.g., microbiological, radiological, VOC, SOC, IOC) |
| 2. | Identify secondary standards (e.g., sodium, fluoride, iron, manganese, TDS) |
| 3. | Differentiate between acute and chronic standards (e.g., MCLs, MRDLs, TT, AL) |

**F. Maintain Mandatory Records**
approximately **5 questions (12.50% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Maintain monitoring records |
| 2. | Maintain assessment records (e.g., profiles, CPE, RTCR) |
| 3. | Maintain records of consumer notices (e.g., CCRs, public notifications, and lead consumer notification) |
| 4. | Maintain sanitary survey and corrective action records |

**G. Identify Requirements for Public Notification and Reporting**
approximately **5 questions (12.50% of Exam)** covering the following Job Tasks

| | |
|---|---|
| 1. | Notify public of violations or situations (e.g., Tier 1, 2, 3 public notices) |
| 2. | Publish and distribute the Consumer Confidence Report (CCR) |
| 3. | Disclose lead results and provide public education |
| 4. | Report notifications to primacy agency |

## FREQUENTLY ASKED QUESTIONS

### ➢ *Who is this exam for?*

The FedReg-WT Exam Module is specifically designed for individuals who operate drinking water treatment facilities that are located on federal trust lands (for example, American Indian reservations) or locations at which only the federal minimum baseline safe drinking water rules and regulations are enforced.

### ➢ *Why should I take this exam?*

Answer: To demonstrate that you know how to protect public health. A Water Treatment Operator certification or license that is earned through examination using both the FedReg-WT Exam Module and the industry-wide standardized certification exam is a credential that designates the operator as meeting all the competencies that are needed for the job. By passing the FedReg-WT Exam Module in combination with passing the industrywide standardized certification exam, the operator:

- Meets the core competencies for operating water treatment facilities,
- Demonstrates competency with the federal drinking rules and regulations,
- Is likely to achieve reciprocity certification with other jurisdictions, and
- Has enhanced professional standing that could help with job promotion and career fast tracking.

### ➢ *Am I required to take this exam?*

No, but it is highly recommended because it demonstrates your knowledge and use of the federal safe drinking water regulations. Ramifications of not taking the FedReg-WT Exam Module may include: not meeting primacy agency credentialing requirements for a particular water facility/system, reduced confidence others may have in the operator, possible harm to the operator's professional standing, and possible harm to operator's ability in obtaining certification or licensure through reciprocity with another jurisdiction. Other credentialing agencies require that an operator's knowledge of the applicable safe drinking water rules and regulations be measured by assessment examination (some examples include California and New Mexico). The Inter Tribal Council of Arizona (ITCA) uses both the industrywide standardized operator certification exam and the FedReg-WT Exam Module.

### ➢ *What is on the exam?*

The FedReg-WT Exam Module covers federal minimum baseline rules and regulations of the Safe Drinking Water Act as implemented by the U.S. Environmental Protection Agency (USEPA). The FedReg-WT Exam Module does not contain any state-specific rules or regulations. The FedReg-WT Exam Module consists of questions that pertain to seven (7) job function areas. The exam weighting or number of questions for each area and a listing of the specific job tasks are provided in the **Exam Blueprint** Table on page 3.

### ➢ *How many questions are on the exam?*

The FedReg-WT Exam Module contains a total for 40 multiple-choice questions.

### ➢ *How long is the examination?*

The FedReg-WT Exam Module shall be proctored over a time duration of two (2) hours.

- ***What does "Open-Book" exam mean?***

When the FedReg-WT Exam Module is proctored, a specific set of authorized reference documents shall be made available electronically to each candidate for looking up regulatory information. For computer-based testing, the specific authorized reference documents shall be available electronically within or alongside the computer-based testing services delivery platform. For paper-booklet testing, the specific authorized reference documents shall be available to the candidate at the examination by the credentialing agency. At examination sessions conducted by or on behalf of the Inter Tribal Council of Arizona, Inc. (ITCA), the specific authorized reference documents will be provided through electronic tablets that will be loaned to the candidate for the duration of the exam session. No hardcopy documents or electronic devices will be allowed to be brought into the exam session by the candidate. The specific authorized reference documents are listed on page 6 of this document.

**CAUTION**: The examination is limited to just 2 hours, which is not enough time for relying solely on looking everything up in the open-book reference documents that are provided. **It is highly recommended that candidates study prior to taking the exam.**

- ***What should I bring to the examination?***

Candidates should bring a form of identification that includes a photograph, such as a valid driver's license, and eligibility authorization documentation from the credentialing agency for entry into the examination. Everything that a candidate might need for the examination (with the possible exception of reading glasses) will be provided to the candidate (e.g., pencils, erasers, scratch paper, non-programmable calculators, and authorized open-book reference documents) at the examination. Hardcopy reference documents and electronic devices (e.g., cell phones, tablets, calculators, and laptop computers) will not be allowed to be brought into the examination by the candidate.

- ***Is there math on the exam?***

One of the job tasks covered by the FedReg-WT Exam Module is "Achieve minimum removal and inactivate rates (e.g., CT, log removal)". Non-programmable calculators will be made available at the examination. Math formula and unit conversions will not be provided at examination.

- ***What is the passing score?***

The FedReg-WT Exam Module is currently being pilot tested to statistically determine the passing score. Once the passing score is determined, this document will be updated and the candidates will be informed of their performance on the exam.

- ***How should I study/prepare for the exam?***

Candidates are strongly encouraged to: (1) know and to study the federal minimum baseline rules and regulations of the Safe Drinking Water Act prior to taking the exam, (2) have on-the-job experience working with the rules and regulations of the Safe Drinking Water Act, and (3) be familiar with using the specific approved reference documents to look up details in the rules and regulations.

## RECOMMENDED REFERENCES

Numerous materials concerning the rules and regulations of the federal Safe Drinking Water Act (SDWA) can be found on the U.S. Environmental Protection Agency (USEPA) website: www.epa.gov/sdwa.

## RESOURCES PROVIDED WITH THE OPEN-BOOK EXAM

For your convenience, the following is a list of Authorized Reference Documents that will be available electronically during proctoring of the FedReg-WT Exam Module. All of these reference documents can be found on the USEPA website listed above. Please Note: Some of these reference documents may or may not apply to your testing subject (e.g., water treatment, versus water distribution).

**Regulations (3 documents)**
CFR Title 40 Part 141 – National Primary Drinking Water Regulations, 456 pages
CFR Title 40 Part 142 – National Primary Drinking Water Regulations Implementation, 83 pages
CFR Title 40 Part 143 – National Secondary Drinking Water Regulations, 12 pages

**Tables (1 document)**
National Primary Drinking Water Regulations (table), EPA 816-F-09-004, 2009, 7 pages

**Quick Reference Guides (30 documents)**
Arsenic and Clarifications to Compliance and New Source Monitoring Rule: A Quick Reference Guide, EPA 816-F-01-004, 2001, 2 pages
Comprehensive Disinfectants and Disinfection Byproducts Rules (Stage 1 and Stage 2): Quick Reference Guide, EPA 816-F-10-080, 2010, 4 pages
Comprehensive Surface Water Treatment Rules Quick Reference Guide: Systems Using Conventional or Direct Filtration, EPA 816-F-04-003, 2004, 4 pages
Comprehensive Surface Water Treatment Rules Quick Reference Guide: Systems Using Slow Sand, Diatomaceous Earth, or Alternative Filtration, EPA 816-F-04-002, 2004, 4 pages
Comprehensive Surface Water Treatment Rules Quick Reference Guide: Unfiltered Systems, EPA 816-F-04-001, 2004, 4 pages
Consumer Confidence Report Rule: A Quick Reference Guide, EPA 816-F-09-009, 2009, 2 pages
Filter Backwash Recycling Rule: A Quick Reference Guide, EPA 816-F-01-019, 2001, 2 pages
Ground Water Rule: A Quick Reference Guide, EPA 816-F-08-029, 2008, 2 pages
Ground Water Rule Compliance Monitoring: A Quick Reference Guide, EPA 815-F-08-008, 2008, 2 pages
Ground Water Rule Sample Collection and Transport: A Quick Reference Guide, EPA 815-F-08-007, 2008, 3 pages
Ground Water Rule Triggered and Representative Monitoring: A Quick Reference Guide, EPA 815-F-08-004, 2008, 4 pages
Interim Enhanced Surface Water Treatment Rule: A Quick Reference Guide, EPA 816-F-01-011, 2001, 2 pages
Lead and Copper Rule: A Quick Reference Guide, EPA 816-F-08-018, 2008, 2 pages
Lead and Copper Rule: A Quick Reference Guide for Schools and Child Care Facilities that are Regulated Under the Safe Drinking Water Act, EPA 816-F-05-030, 2005, 5 pages
Long Term 1 Enhanced Surface Water Treatment Rule: A Quick Reference Guide, EPA 816-F-02-001, 2002, 2 pages

Quick Reference Guides, continued

Long Term 2 Enhanced Surface Water Treatment Rule: A Quick Reference Guide for Schedule 1 Systems, EPA 816-F-06-005, 2006, 2 pages
Long Term 2 Enhanced Surface Water Treatment Rule: A Quick Reference Guide for Schedule 2 Systems, EPA 816-F-06-006, 2006, 2 pages
Long Term 2 Enhanced Surface Water Treatment Rule: A Quick Reference Guide for Schedule 3 Systems, EPA 816-F-06-007, 2006, 2 pages
Long Term 2 Enhanced Surface Water Treatment Rule: A Quick Reference Guide for Schedule 4 Systems, EPA 816-F-06-008, 2006, 2 pages
Public Notification Rule: A Quick Reference Guide, EPA 816-F-09-010, 2009, 4 pages
Radionuclides Rule: A Quick Reference Guide, EPA 816-F-01-003, 2001, 2 pages
Record Keeping Rules: A Quick Reference Guide, EPA 816-F-06-033, 2006, 4 pages
Revised Total Coliform Rule: A Quick Reference Guide, EPA 815-B-13-001, 2013, 3 pages
Stage 2 Disinfectants and Disinfection Byproducts Rule: A Quick Reference Guide for Schedule 1 Systems, EPA 816-F-06-001, 2006, 2 pages
Stage 2 Disinfectants and Disinfection Byproducts Rule: A Quick Reference Guide for Schedule 2 Systems, EPA 816-F-06-002, 2006, 2 pages
Stage 2 Disinfectants and Disinfection Byproducts Rule: A Quick Reference Guide for Schedule 3 Systems, EPA 816-F-06-003, 2006, 2 pages
Stage 2 Disinfectants and Disinfection Byproducts Rule: A Quick Reference Guide for Schedule 4 Systems, EPA 816-F-06-004, 2006, 2 pages
Standardized Monitoring Framework: A Quick Reference Guide, EPA 816-F-04-010, 2004, 3 pages
Total Coliform Rule: A Quick Reference Guide, EPA 816-F-01-035, 2 pages
Variances and Exemptions: A Quick Reference Guide, EPA 816-F-04-005, 2004, 4 pages

**Fact Sheets (16 documents)**

Drinking Water Standard for Arsenic (factsheet), EPA 815-F-00-015, 2001, 2 pages
Technical Fact Sheet: Final Rule for Arsenic in Drinking Water, EPA 815-F-00-016, 2001, 6 pages
Best Practices Factsheet: Consumer Confidence Report, EPA 816-F-15-002, 2015, 16 pages
Fact Sheet – Long Term 2 Enhanced Surface Water Treatment Rule, EPA 815-F-05-009, 2005, 4 pages
LT2ESWTR Data Collection and Tracking System Factsheet, EPA 816-F-06-019, 2006, 2 pages
LT2ESWTR Laboratory Factsheet, EPA 816-F-06-020, 2006, 2 pages
LT2ESWTR Source Water Monitoring for Systems Serving At Least 10,000 People Factsheet, EPA 816-F-06-017, 2006, 4 pages
LT2ESWTR Source Water Monitoring for Systems Serving Less Than 10,000 People Factsheet, EPA 816-F-06-018, 2006, 4 pages
Stage 1 Disinfectants and Disinfection Byproducts Rule (factsheet), EPA 816-F-01-014, 2001, 4 pages
Fact Sheet: Stage 2 Disinfectants and Disinfection Byproducts Rule, EPA 815-F-05-003, 2005, 4 pages
The Fourth Unregulated Contaminant Monitoring Rule (UCMR 4) General Information (factsheet), EPA 815-F-16-007, 2016, 2 pages
The Fourth Unregulated Contaminant Monitoring Rule (UCMR 4) Cyanotoxins – Fact Sheet for Assessment Monitoring, EPA 815-F-16-008, 2016, 3 pages
The Fourth Unregulated Contaminant Monitoring Rule (UCMR 4) HAA Groups – Fact Sheet for Assessment Monitoring, EPA 815-F-16-006, 2016, 3 pages
The Fourth Unregulated Contaminant Monitoring Rule (UCMR 4) Metals, Pesticides, Alcohols, SVOCs – Fact Sheet for Assessment Monitoring, EPA 815-F-16-009, 2016, 3 pages

Understanding the Lead and Copper Rule (factsheet), EPA, 2019, 2 pages
Understanding the Safe Drinking Water Act (factsheet), EPA 816-F-04-030, 2004, 4 pages

**Guides (16 documents)**

Complying with the Ground Water Rule: Small Entity Compliance Guide (STEP), EPA 815-R-07-018, 2007, 50 pages
Complying with the Long Term 2 Enhanced Surface Water Treatment Rule: Small Entity Compliance Guide (STEP), EPA 815-R-07-015, 2009, 45 pages
Complying with the Revised Drinking Water Standard for Arsenic: Small Entity Compliance Guide (STEP), EPA 816-R-02-008A, 2002, 58 pages
Complying with the Stage 1 Disinfectants and Disinfection Byproducts Rule: Basic Guide (STEP), EPA 816-B-05-004, 2006, 77 pages
Complying with the Stage 2 Disinfectant and Disinfection Byproducts Rule: Small Entity Compliance Guide (STEP), EPA 815-R-07-014, 2007, 57 pages
Filter Backwash Recycling Rule: A Rule Summary for Systems, EPA 816-R-02-013, 2020, 10 pages
How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products, EPA 600-F-13-153c, 2015, 11 pages
LT2 Rule Cryptosporidium & E. coli Sample Collection Recommendations: A Pocket Guide, EPA 817-K-06-002, 2006, 2 pages
Radionuclides in Drinking Water: A Small Entity Compliance Guide (STEP), EPA 815-R-02-001, 2002, 33 pages
Removing Multiple Contaminants from Drinking Water: Issues to Consider, EPA 816-H-07-004, 2007, 1 page
Small Systems Guide to Safe Drinking Water Act Regulations (STEP), EPA 816-R-03-017, 2003, 35 pages
Surface Water Treatment Rules Monitoring Requirements (SWTR/LT1ESWTR) Systems Serving <10,000 People Using Conventional or Direct Filtration (placard), EPA 816-F-08-001, 2008, 1 page
Surface Water Treatment Rules Monitoring Requirements (SWTR/LT1ESWTR) Systems Serving <10,000 People Using Slow Sand, Diatomaceous Earth, or Alternative Filtration (placard), EPA 816-F-08-002, 2008, 1 page
Surface Water Treatment Rules Monitoring Requirements (SWTR/LT1ESWTR) Unfiltered Systems Serving <10,000 People (placard), EPA 816-F-08-003, 2008, 1 page
Talking To Your Customers about Chronic Contaminants In Drinking Water-A Best Practices Guide, EPA 816-F-07-022, 2007, 2 pages
Total Coliform Rule: A Handbook for Small Noncommunity Water Systems Serving Less Than 3,300 Persons (STEP), EPA 816-B-06-001, 2006, 52 pages

## SAMPLE TEST QUESTIONS

The following sample questions are representative of the types of test questions that appear on the FedReg-WT Exam Module. The correct answers to these sample questions are designated with a check mark.

1. VOCs monitoring results need to be retained by water systems for
   A. 1 year.
   B. 3 years.
   C. 5 years.
   ✓ D. 10 years.

2. What water quality parameter MUST be analyzed in the field?
   ✓ A. pH
   B. hardness
   C. total dissolved solids (TDS)
   D. alkalinity

3. Where must samples be collected for groundwater triggered source monitoring?
   A. at the first customer
   B. in the distribution system
   ✓ C. before treatment
   D. after treatment

4. Upon discovering that a waterborne disease outbreak occurred from the drinking water system, it must be reported to the EPA as soon as possible but no later than
   ✓ A. end of the next business day.
   B. 5 days.
   C. 10 days.
   D. 30 days.

5. What is the recommended pH range for finished drinking water at the entry point (EP) to the distribution system?
   A. 6.5 to 9.5
   B. 6.0 to 9.0
   C. 6.0 to 7.5
   ✓ D. 6.5 to 8.5

## BACKGROUND ABOUT THE FEDERAL REGULATIONS EXAM MODULE

Numerous workforce sectors have undergone efforts to standardize the ways in which worker competencies are measured, documented, and verified. For some sectors, these efforts have resulted in standardized credentialing exams that focus on a job at an industry-wide common competencies level so that the exam is applicable most everywhere. These efforts promote workforce mobility and enhance the supply of skilled workers to meet the demand of an industry as a whole.

These standardized credentialing efforts are sometimes supplemented at the local/regional level with additional layers of competency testing. This is to ensure that an individual has the knowledge, skills, and abilities for specific local circumstances such as local requirements, laws or codes. These local/regional competency assessments are sometimes referred to as *jurisprudence* credentialing exams. Jurisprudence credentialing exams enable local authorities to ensure a job candidate meets the industry-wide common competencies and the local-/regional-specific competencies as well.

In 2017, many in the water utilities industry took a similar path for credentialing. An industry-wide effort characterized the competencies that are necessary for drinking water treatment facility operators. That work resulted in a standardized water treatment facility operator certification exam that measures the industry-wide common level competencies of drinking water treatment operators. However, the industry-wide standardized certification exams do not cover safe drinking water laws and regulations because such laws and regulations widely vary at the local/regional level. In response to the new industry-wide standardized water operator certification exams, some credentialing agencies are requiring assessment of an individual's knowledge of the applicable safe drinking water rules and regulations as a required condition for earning operator certification.

The U.S. Environmental Protection Agency (USEPA) delegates the primary enforcement responsibility ("primacy") of the federal Safe Drinking Water Act (SDWA) to local jurisdictions such as states and tribes. Some states have adopted safe drinking water laws and regulations that are more stringent than the federal minimum baseline SDWA rules and regulations. With rare exception, the USEPA is the primacy agency on federal trust lands (such as American Indian reservations), where the federal minimum baseline rules and regulations are enforced.

The National Tribal Water and Wastewater Operator Certification Program at the Inter Tribal Council of Arizona has developed baseline **Federal Regulations (FedReg) Exam Modules** to balance these industry changes with local self-determination goals. The FedReg Exam Modules are designed to supplement the industry-wide standardized water operator certification exams and serve as *jurisprudence* credentialing assessments of operators working on federal trust lands or locations at which only the federal minimum baseline safe drinking water rules and regulations are enforced. The goals of the FedReg Exam Modules are to:

- Assess operator knowledge of federal minimum baseline safe drinking water laws and regulations,
- Maximize potential for reciprocity of operator certification, and
- Improve water utility regulatory compliance.

## HOW THE EXAM WAS DEVELOPED

To ensure the Water Treatment Operator Certification FedReg Exam Module is scientifically valid and legally defensible, ITCA enlisted the technical guidance of Psychometricians from Professional Testing Inc. to facilitate the development process of the new exam module. There were several steps involved in the development process that required direct input from experienced drinking water industry professionals that volunteered as subject-matter experts and represented three groups—Water Treatment Operators, regulatory primacy agencies, and technical assistance providers. During the exam development process, the COVID-19 pandemic occurred, which made it necessary for the exam development process to be completed through virtual meetings via the internet. These steps included the following events.

- Job-Task Analysis Meeting, March 6-8, 2019, in Denver, Colorado
- Job-Task Analysis Validation Survey, May 20, 2019, to July 12, 2019, via the internet
- Job-Task Analysis Validation Webinar, May 10, 2021, via the internet
- Item Writing Orientation, June 17, 2021, virtual meeting via the internet
- Item Writing Assignments & Check-in Virtual Meetings, June 22-July 14, 2021, via the internet
- Item Review Virtual Meetings, July 7-21, 2021, via the internet
- Form Review and Approval, August 4, 2021, virtual meeting via the internet
- Standards Setting Workshop, 2023 (TBD)
- Pilot Testing, 2023 (TBD)

> "*Job/Task Analysis is the process by which the tasks performed by individuals in a particular job are identified, and the importance of those tasks is determined. Additionally, job/task analysis helps to establish the knowledge, skills, abilities, and other characteristics necessary for the effective performance of a job incumbent.*"
> −Professional Testing, Inc.

On March 6-8, 2019, ITCA convened a panel of 16 subject-matter experts and conducted a Job Task Analysis Workshop in Denver, Colorado. The Workshop focused on defining the job of Water Treatment Facility Operators and delineating the role of federal minimum baseline safe drinking water regulations in the job. In other words, the Workshop identified the Water Treatment Operator job tasks specific to the domain or content area of Maintaining Compliance with Federal Minimum Baseline Safe Drinking Water Regulations. The panel then identified all the job tasks performed within each overarching job areas. Both areas and tasks were written in a structured format, common for job/task analysis.

**Validation Study**

ITCA and Professional Testing, Inc. compiled the results of the Job/Task Analysis Workshop and developed a survey for a larger population base of water industry professionals for the purpose of validating the results of the Job/Task Analysis. The survey used rating scales for job task frequency and job task importance. In addition, the survey included key demographic questions to ensure representativeness and validity. The survey was deployed over a two-month time period (May 2019 – June 2019) using an internet survey service and was distributed by email to over 1,300 water industry professionals located throughout the country. Over 165 individuals participated in the survey, representing all ten (10) USEPA geographic regions: 9.1% from Region 10, 42.7% from Region 9, 11.8% from Region 8, 3.6% from Region 7, 10.4% from Region 6, 6.8% from Region 5, 6.4% from Region 4, 3.6% from Region 3, 3.2% from Region 2, and 2.3% from Region 1. The validation survey participants reported association with the following job categories: 40.5% as water operators, 16.3% as water utility managers, 13.7% as regulatory primacy agency, 11.9% as technical assistance providers, 10.1% as other positions within water utility, 5.3% as water resources management, and 2.2% as Engineers. Sixty-seven percent (67.3%) of the validation survey participants reported having drinking water operator certification and 77.6% of the validation survey participants reported working in Indian Country. Fifty-three percent (53%) of the validation survey participants reported that the USEPA enforces the SDWA where they work.

This created strong argument for the content validity of the exam. Following the validation study, the panel then finalized the examination blueprint (specifications) based on a weighting in the job analysis results so that they reflect the criticality of tasks performed on the job.