

New Mexico Environment Department  
Utility Operator Certification Program

**WATER DISTRIBUTION SYSTEM – LEVEL 1 (DS1)**

**Operator Guidebook with Need to Know Criteria**

March 2026<sup>1</sup>

The New Mexico Environment Department (NMED) administers the Utility Operator Certification Program to implement and enforce the rules of 20.7.4 NMAC (New Mexico Administrative Code) pursuant to the Utility Operators Certification Act [Chapter 61, Article 33 NMSA 1978].

**Water Distribution System – Level 1 (DS1)**

According to Subsection B of 20.7.4.12 NMAC, the Water Distribution System – Level 1 (DS1) certification is required to operate the various types of distribution systems at public water supply systems as listed below.

Type of Distribution Systems	Population Served				
	25 to 500	501 to 5,000	5,001 to 10,000	10,001 to 20,000	20,000+
Distribution of unchlorinated groundwater	←	<b>DS1</b>	---	---	---

(“←” signifies DS1 also covers lower categories)

**Certification Eligibility**

To be eligible to take the Water Distribution System – Level 1 exam, an applicant must meet the following criteria. However, some criteria substitutions may be allowed as listed in the table provided on the next page. [References: 20.7.4.21 NMAC, and 20.7.4.22 NMAC]

- Submit a complete application through the NMED Utility Operator Certification Program online platform and pay the nonrefundable examination application fee.
- Be at least 18 years of age.
- Have a High School diploma or general equivalency diploma.
- Have a minimum of one year of experience\*.

“**Experience**” means actual work experience, full or part-time, as an operator in the fields of public water supply or public wastewater treatment; work experience in a related field may be accepted at the discretion of the NMED.

[Reference: Subsection K of 20.7.4.7 NMAC]

- Complete a minimum of ten (10) training credits covering the topics listed in the need-to-know criteria of this document.

<sup>1</sup> This Guidebook was reviewed by the New Mexico Utility Operators Certification Advisory Board in January and February 2026.

<b>DS1 Eligibility Criteria</b>		<b>Allowable Substitutions</b> as set forth in Subsection B of 20.7.4.22 NMAC
<b>Application</b>	Completed application	No substitutions
<b>Fee</b>	Payment of examination application fee	No substitutions
<b>Age</b>	Evidence of Age of Majority (18 years of age)	No substitutions
<b>Education</b>	High School or general equivalency diploma	1. In no case shall the actual experience be less than one year for any level except as in Subparagraph (d) of Paragraph (2) listed below.  2. Education may be substituted for the basic requirements or used for training credits as follows. In no case may the same education serve both as a substitute for experience and as training credits except as provided in the following paragraphs.  a) One (1) year of additional experience may be substituted for the high school graduation or general equivalency diploma requirement. b) No more than one year (30 semester hours) of successfully completed college education in a non-related field may be substituted for any additional six months of the required experience. c) One year of an approved vocational school in the water and/or wastewater field may be substituted for only one additional year of the required experience. d) An associate’s degree for a two-year program in an approved school in the water and/or wastewater field and six months of actual experience in that field (which may be accrued before, during, or after the school program) may be substituted for the requirements of any level up to and including level 2. e) Completion of at least three years of actual experience in the water and/or wastewater field plus high school diploma or equivalent, plus 15 semester hours of successfully completed college education directly related to the water or wastewater field may be substituted for any level up to and including level 3. f) A bachelor's degree for a major directly related to the water or wastewater field plus two years of actual experience in that field may be substituted for any level up to and including level 3.  3. Full time water and wastewater laboratory experience may be substituted for operator experience in a respective field at a rate of 25 percent of the actual experience held.
<b>Experience*</b>	One (1) year	
<b>Training</b>	Ten (10) hours of approved training credits	
<b>Exam</b>	Pass the DS1 exam	No substitutions

\* “Experience definition provided on previous page (page 1 of this document)

A supplemental **DS1 Application Scenarios Pamphlet** may be available from NMED to help explain allowable substitution pathways.

Renewal Training Credits

DS1 operator certification must be renewed at three-year intervals. Certification renewal requires the holder obtain thirty (30) training credits for approved training during the three-year period preceding the date on which the renewal application is due. The thirty training credits must be in support of the DS1 operator's job and must include at least ten (10) training credits for approved training specifically in the operations and maintenance of public drinking water distribution systems. NMED Utility Operator Certification Program approval of training credits will be based on alignment with the topics listed in the need-to-know criteria of this document.

Exam Content

NMED and a panel of subject-matter experts developed the **Water Distribution System – Level 1 (DS1)** operator certification exam. The DS1 certification exam consists of 100 multiple-choice questions that cover the 10 main content areas listed below. This need-to-know criteria document provides a breakdown of the topics and subtopics within each main content area. A list of suggested study references is provided at the end of this document. The minimum passing score on the DS1 exam is 70% (70/100).

Main Content Areas		Number of Exam Questions
1	5 MSDS LT	1
2	Cross Connections	6
3	Disinfection	4
4	Distribution	15
5	General	16
6	Mechanical Systems	28
7	Regulations	7
8	Safety	11
9	Storage	5
10	Water Characteristics	7

Total: 100 questions on exam

**NEED-TO-KNOW CRITERIA FOR  
WATER DISTRIBUTION SYSTEM – LEVEL 1 (WD1)**

Content Area and Topics	Number of Exam Questions
<b>1. <u>5 MSDS LT</u></b>	<b>1</b>
Chemical hazard communication Safety Data Sheets	

Content Area and Topics	Number of Exam Questions
<b>2. <u>Cross-Connection Control</u></b>	<b>6</b>
Applications General Types of devices	

Content Area and Topics	Number of Exam Questions
<b>3. <u>Disinfection</u></b>	<b>4</b>
Gas chlorination Safety Hypochlorination Equipment used Safety Storage & handling Process description Dosage Factors affecting disinfection Purpose Reactions of chlorine Typical pathogens Residual	

Content Area and Topics	Number of Exam Questions
<b>4. <u>Distribution</u></b>	<b>15</b>
<ul style="list-style-type: none"> <li>Customer service</li> <li>Hydrants <ul style="list-style-type: none"> <li>Components</li> <li>Installation</li> <li>Maintenance &amp; flushing</li> <li>Purpose</li> </ul> </li> <li>Hydraulics <ul style="list-style-type: none"> <li>System pressure</li> </ul> </li> <li>Maps</li> <li>Meters <ul style="list-style-type: none"> <li>Accountability</li> <li>Types</li> </ul> </li> <li>Piping &amp; joints <ul style="list-style-type: none"> <li>Hydraulics</li> <li>Installation</li> <li>Materials</li> <li>Operations &amp; maintenance</li> <li>Thrust</li> </ul> </li> <li>Valves <ul style="list-style-type: none"> <li>Operation &amp; maintenance</li> <li>Purpose</li> <li>Types</li> </ul> </li> <li>Water quality</li> </ul>	

Content Area and Topics	Number of Exam Questions
<b>5. <u>General</u></b>	<b>16</b>
<ul style="list-style-type: none"> <li>Basic chemistry <ul style="list-style-type: none"> <li>pH</li> <li>Symbol identification</li> </ul> </li> <li>Calculation (generally under specific topics) <ul style="list-style-type: none"> <li>Dosage</li> <li>Efficiency</li> <li>Flow</li> <li>Hydraulics</li> <li>Pressure</li> <li>Volume</li> </ul> </li> <li>Measurement Units</li> <li>Purpose</li> <li>Terms</li> </ul>	

Content Area and Topics	Number of Exam Questions
<b>6. <u>Mechanical Systems</u></b>	<b>28</b>
Chemical feeders Calibration Operation & maintenance Types General maintenance Instrumentation Metering equipment Operation & maintenance Motors Components Controls & wiring Coupling alignment & maintenance Maintenance-general Operation Pumps Components Hydraulics Maintenance Operation Troubleshooting Types Valves Characteristics Operations & maintenance Types	

Content Area and Topics	Number of Exam Questions
<b>7. <u>Regulations</u></b>	<b>7</b>
EPA SDWA Regulations NM Utility Operator Certification Regulations NM Drinking Water Regulations	

Content Area and Topics	Number of Exam Questions
<b>8. <u>Safety</u></b>	<b>11</b>
Chemical handling Confined space entry Electrical Emergency Action Plan Excavation & shoring Facility Security Fire First aid Hazardous gases Job Safety Hazard Analysis Ozone Safety Personal Rotating machinery Safety Data Sheets Working in streets	

Content Area and Topics	Number of Exam Questions
<b>9. <u>Storage</u></b>	<b>5</b>
Operations & maintenance Corrosion control Disinfection Inspection Process description Components Purpose Types	

Content Area and Topics	Number of Exam Questions
<b>10. <u>Water Characteristics</u></b>	<b>7</b>
Chemical Microbiological Physical Terms	

## SUGGESTED STUDY RESOURCES

The following is a non-inclusive, non-endorsement listing of reference sources that can be reviewed to help prepare for the New Mexico **Water Distribution System – Level 1 (DS1)** operator certification exam.

### Small Water System Operations and Maintenance

- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Small Water System Operations and Maintenance*, (latest edition)

### Drinking Water Distribution

- American Water Works Association (AWWA), Water System Operations (WSO), *Water Distribution, Grades 1 & 2*, (latest edition)
- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Water Distribution System Operation and Maintenance*, (latest edition)

### Mathematics

- American Water Works Association (AWWA), *Math for Distribution System Operators: Practice Problems to Prepare for Distribution System Operator Certification Exams*
- *Basic Math Concepts for Water and Wastewater Plant Operators*, by Joanne Kirkpatrick Price, (latest edition)

### Regulations

- Safe Drinking Water Act, <https://www.epa.gov/sdwa>, and U.S. Code of Federal Regulations, Title 40, Part 141
- U.S. Environmental Protection Agency, Drinking Water Rule Quick Reference Guides, <https://www.epa.gov/dwreginfo/drinking-water-rule-quick-reference-guides>
- New Mexico Administrative Code, Title 20, Chapter 7, Part 10, Drinking Water (20.7.10 NMAC)
- New Mexico Administrative Code, Title 20, Chapter 7, Part 4, Utility Operator Certification (20.7.4 NMAC)

### Worker Safety

- American Water Works Association (AWWA), *Let's Talk Safety: 52 Talks on Common Utility Safety Practices for Water Professionals*, (latest edition)

### Additional Study Aids

- American Water Works Association (AWWA), *Water Operator Certification Exam Prep*
- American Water Works Association (AWWA), *Water Operator Certification Exam Prep App*