

New Mexico Environment Department
Utility Operator Certification Program

PUBLIC WASTEWATER FACILITY – LEVEL 3 (WW3)

Operator Guidebook with Need-to-Know Criteria

March 2026¹

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].

Public Wastewater Facility – Level 3 (WW3)

According to Subsection A of 20.7.4.13 NMAC, the Public Wastewater Facility – Level 3 (WW3) certification is required to operate the various types of treatment processes at public wastewater facilities as listed below.

Type of Treatment Process	Population Served				
	25 to 500	501 to 5,000	5,001 to 10,000	10,001 to 20,000	20,000+
Secondary treatment, trickling filter	←	←	WW3	WW3	---
Secondary treatment, aeration	←	WW3	WW3	---	---
Physical-chemical treatment processes	←	WW3	WW3	WW3	---
Advanced waste treatment process	←	WW3	---	---	---
Phosphorous and nitrogen removal	←	WW3	WW3	---	---

(“←” signifies WW3 also covers lower categories)

According to Subsection I of 20.7.4.14 NMAC, an operator holding a Public Wastewater Facility – Level 3 certification is also certified to perform any activity or function or make any process control or system integrity decision which requires:

- ✓ Small Wastewater (SWW) certification,
- ✓ Small Wastewater Advances (SWWA) certification,
- ✓ Public Wastewater Facility – Level 1 (WW1) certification,
- ✓ Public Wastewater Facility – Level 2 (WW2) certification,
- ✓ Wastewater Laboratory Technician – Level 2 (WWLT2) certification,
- ✓ Wastewater Collection System – Level 1 (CS1) certification, and
- ✓ Wastewater Collection System – Level 2 (CS2) certification.

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

According to Subsection C of 20.7.4.13 NMAC, an operator holding a Public Wastewater Facility – Level 3 certification is also certified to perform wastewater analysis for regulatory compliance at public wastewater facilities as listed below.

Level of Certification Needed	Type of Methodology Performed
SWW , SWWA, WW1, WW2, WW3 , WW4, WWLT1, WWLT2 or WWLT3	Total Residual Chlorine (TRC) by the N-diethyl-p-phenylene-diamine (DPD) method, pH, Temperature, and Dissolved Oxygen (DO) by probe.

Certification Eligibility

To be eligible to take the Public Wastewater Facility – Level 3 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 four years 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 fifty (50) training credits covering the topics listed in the need-to-know criteria of this document.

WW3 Eligibility Criteria		Allowable Substitutions as set forth in Subsection B of 20.7.4.22 NMAC
Application	Completed application	No substitutions
Fee	Payment of examination application fee	No substitutions
Age	Evidence of Age of Majority (18 years of age)	No substitutions
Education	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 twelve 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 a level 3. 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.
Experience*	Four (4) years	
Training	Fifty (50) hours of approved training credits	
Exam	Pass the WW3 exam	No substitutions

* “Experience” definition provided on previous page (page 2 of this document)

A supplemental **WW3 Application Scenarios Pamphlet** may be available from NMED to help explain allowable substitution pathways.

Renewal Training Credits

WW3 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 WW3 operator's job and must include at least ten (10) training credits for approved training specifically in the operations and maintenance of public wastewater facilities. 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 **Public Wastewater Facility – Level 3 (WW3)** operator certification exam. The WW3 certification exam consists of 120 multiple-choice questions that cover the 19 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 WW3 exam is 70% (84/120).

Main Content Areas		Number of Exam Questions
1	Activated Sludge	33
2	Administration	4
3	Collection Systems	4
4	Cross-Connection Control	2
5	Dechlorination	3
6	Disinfection	5
7	Effluent Polishing	4
8	General	5
9	Laboratory Procedures	5
10	Mechanical Systems	7
11	Plant Pretreatment	4
12	Rotating Biological Contractors	7
13	Regulations	4
14	Safety	7
15	Sampling & Reporting	6
16	Sedimentation	4
17	Sludge Thickening	3
18	Solids Digestion & Handling	7
19	Trickling Filters	6

Total: 120 questions on exam

**NEED-TO-KNOW CRITERIA FOR
PUBLIC WASTEWATER FACILITY – LEVEL 3 (WW3)**

Content Area and Topics	Number of Exam Questions
1. <u>Activated Sludge</u>	33
<ul style="list-style-type: none"> Loading rates & efficiency <ul style="list-style-type: none"> Hydraulic Organics Solids Operating characteristics <ul style="list-style-type: none"> Conventional AS Extended aeration Oxidation ditch Sequencing batch reactors Operation & maintenance <ul style="list-style-type: none"> Aeration & mixing Normal & abnormal conditions Records Solids wasting & return Troubleshooting Process control Process description <ul style="list-style-type: none"> Components Purpose Variations 	

Content Area and Topics	Number of Exam Questions
2. <u>Administration</u>	4
<ul style="list-style-type: none"> Finance Personnel <ul style="list-style-type: none"> Supervision Records 	

Content Area and Topics	Number of Exam Questions
3. <u>Collection Systems</u>	4
<ul style="list-style-type: none"> Cleaning & maintenance <ul style="list-style-type: none"> Hydraulic cleaning Preventative maintenance Rodding Stoppages Lift stations <ul style="list-style-type: none"> Components Maintenance Operation Typical layout Manholes <ul style="list-style-type: none"> Components Location & types Maps Piping & joints <ul style="list-style-type: none"> Bedding & backfill Components Installation Materials Operation Problems & repairs Service connections 	

Content Area and Topics	Number of Exam Questions
4. <u>Cross-Connection Control</u>	2
<ul style="list-style-type: none"> Application General Maintenance Types of devices 	

Content Area and Topics	Number of Exam Questions
5. <u>Dechlorination</u>	3
<ul style="list-style-type: none"> Gas dichlorination <ul style="list-style-type: none"> Changing cylinders Equipment used Leaks Maintenance Operation Reactions of SO₂ w/chlorine Safety Storage & handling Troubleshooting Process description <ul style="list-style-type: none"> Components Contact time Dosage 	
Content Area and Topics	Number of Exam Questions
6. <u>Disinfection</u>	5
<ul style="list-style-type: none"> Gas chlorination <ul style="list-style-type: none"> Changing cylinders Components Equipment used Leaks Maintenance Operation Safety Storage & handling Troubleshooting Hypochlorination <ul style="list-style-type: none"> Equipment used Maintenance Operation Safety Storage & handling Process description <ul style="list-style-type: none"> Components Contact time Dosage Factors affecting disinfection Purpose Reactions of chlorine Typical pathogens Residual <ul style="list-style-type: none"> Sampling for fecal coliforms Ultraviolet light 	

Content Area and Topics	Number of Exam Questions
7. <u>Effluent Polishing</u>	4
<ul style="list-style-type: none"> Operating characteristics Land application of effluent Sand filters Wetlands (constructed) 	

Content Area and Topics	Number of Exam Questions
8. <u>General</u>	5
<ul style="list-style-type: none"> Basic chemistry <ul style="list-style-type: none"> Formulas pH Calculation (generally under specific topics) <ul style="list-style-type: none"> Dosage Efficiency Flow Hydraulics Power (efficiency) Solids Temperature Volume Measurement Units Pollution removal <ul style="list-style-type: none"> Effluent limits Removal efficiencies Wastewater characteristics <ul style="list-style-type: none"> BOD Chemical Microbiological Physical Prohibited substances Solids Terms 	

Content Area and Topics	Number of Exam Questions
9. <u>Laboratory Procedures</u>	5
<ul style="list-style-type: none"> Laboratory safety Tests (some lab tests on lower levels) <ul style="list-style-type: none"> BOD Fecal coliforms pH Residual chlorine Suspended solids 	

Content Area and Topics	Number of Exam Questions
10. Mechanical Systems	7
<ul style="list-style-type: none"> Chemical feeders <ul style="list-style-type: none"> Calibration Operation & maintenance Types Instrumentation General maintenance <ul style="list-style-type: none"> Measurements Metering equipment Motors <ul style="list-style-type: none"> Components Maintenance Operation Pumps <ul style="list-style-type: none"> Components Hydraulics Maintenance Operation Power (efficiency) Troubleshooting Types Valves <ul style="list-style-type: none"> Characteristics Operations & maintenance 	

Content Area and Topics	Number of Exam Questions
11. Plant Pretreatment	4
<ul style="list-style-type: none"> Communitor <ul style="list-style-type: none"> Operating characteristics Operation & maintenance Grit removal <ul style="list-style-type: none"> Characteristics Grit channels <ul style="list-style-type: none"> Operating characteristics Operations & maintenance Screening/grit disposal Screens & racks <ul style="list-style-type: none"> Operating characteristics Operations & maintenance 	

Content Area and Topics	Number of Exam Questions
12. Rotating Biological Contractors	7
Loading rates & efficiencies Hydraulic Organic Operating characteristics Operation & maintenance Maintenance Normal & abnormal conditions Troubleshooting Process control Process description Components Purpose	

Content Area and Topics	Number of Exam Questions
13. Regulations	4
EPA sec. 503 sludge regs NM Utility Operator Certification Regs (20.7.4 NMAC) NM ground water regulations (20.6.2 NMAC) NPDES permit requirements	

Content Area and Topics	Number of Exam Questions
14. Safety	7
Chemical handling Confined space entry Electrical Excavation & shoring Fire First aid Hazardous gases Safety Data Sheets (SDS) Personal Protective Equipment Programs Rotating machinery Working in streets	

Content Area and Topics	Number of Exam Questions
15. <u>Sampling & Reporting</u>	6
<ul style="list-style-type: none"> Non-compliance reporting NPDES sampling Records Reporting requirements Sampling procedure <ul style="list-style-type: none"> Preservation Representative sampling Testing <ul style="list-style-type: none"> BOD DO Solids pH 	

Content Area and Topics	Number of Exam Questions
16. <u>Sedimentation</u>	4
<ul style="list-style-type: none"> Loading rates & efficiency <ul style="list-style-type: none"> Hydraulic Removal efficiency Solids Weirs Operating Characteristics <ul style="list-style-type: none"> Primary clarifier Secondary clarifier Operation & maintenance <ul style="list-style-type: none"> Maintenance Normal & abnormal conditions Problems & corrections Troubleshooting Process control <ul style="list-style-type: none"> Detention time Process description <ul style="list-style-type: none"> Components Purpose 	

Content Area and Topics	Number of Exam Questions
17. <u>Sludge Thickening & Dewatering</u>	3
<ul style="list-style-type: none"> Operating characteristics <ul style="list-style-type: none"> Aerobic digestion Sand drying bed 	

Content Area and Topics	Number of Exam Questions
18. Solids Digestion & Handling	7
<ul style="list-style-type: none"> Loading rates & efficiency <ul style="list-style-type: none"> Hydraulic Solids Operating characteristics <ul style="list-style-type: none"> Aerobic Anaerobic Anaerobic-two-stage ClariGESTER & Imhof tanks Operation & maintenance <ul style="list-style-type: none"> Gas systems Mixers Normal & abnormal conditions Operation Tank & cover Troubleshooting Process control <ul style="list-style-type: none"> Aerobic Anaerobic Process description <ul style="list-style-type: none"> Components Purpose Solids handling <ul style="list-style-type: none"> Characteristics Drying beds Land disposal Sampling & testing Sludge draw-off 	
Content Area and Topics	Number of Exam Questions
19. Trickling Filters	6
<ul style="list-style-type: none"> Loading rates & efficiency <ul style="list-style-type: none"> Hydraulic Organic Operating characteristics Operation & maintenance <ul style="list-style-type: none"> Maintenance Normal & abnormal conditions Operation Troubleshooting Process control Process description <ul style="list-style-type: none"> Components Purpose Types 	

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 **Public Wastewater Facility – Level 3 (WW3)** operator certification exam.

Wastewater Collection

- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Operation and Maintenance of Wastewater Collection Systems, Volume 1 and Volume 2*, (latest edition)

Wastewater Treatment

- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Operation of Wastewater Treatment Plants, Volume 1 and Volume 2*, (latest edition)
- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Operation of Wastewater Treatment Plants, Volume 3*, (latest edition)
- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals I – Liquid Treatment* (latest edition)
- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals II – Solids Handling and Support Systems* (latest edition)
- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals III – Advanced Treatment* (latest edition)
- Water Environment Federation (WEF), *Activated Sludge and Nutrient Removal, Manual of Practice, OM-9*, (latest edition)

Utility Management

- American Water Works Association (AWWA), *Utility Management for Water and Wastewater Operations*
- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Utility Management*, (latest edition)
- California State University, Sacramento (CSUS) Foundation, Office of Water Programs, *Manage for Success: Effective Utility Leadership Practices*, (latest edition)

Mathematics

- American Water Works Association (AWWA), *Math for Wastewater Treatment Operators, Grades 3 and 4* (latest edition)
- *Applied Math for Wastewater Plant Operators*, by Joann Kirkpatrick Price, (latest edition)

Laboratory Procedures

- American Water Works Association, American Public Health Association, and Water Environment Federation, *Standard Methods for the Examination of Water and Wastewater* (latest edition)
- CRC Handbook of Laboratory Safety, (latest edition)
- Water Environment Federation (WEF), *Basic Laboratory Procedures for the Operator—Analyst*, (latest edition)
- Water Environment Federation (WEF), *Water and Wastewater Laboratory Techniques*, (latest edition)

Regulations

- Clean Water Act, <https://www.epa.gov/laws-regulations/summary-clean-water-act>, and U.S. Code of Federal Regulations, Title 40
- U.S. Environmental Protection Agency, National Pollutant Discharge Elimination System (NPDES), <https://www.epa.gov/npdes>
- U.S. Environmental Protection Agency, Sewage Sludge Laws and Regulations, <https://www.epa.gov/biosolids/sewage-sludge-laws-and-regulations>, and U.S. Code of Federal Regulations, Title 40, Part 503.
- New Mexico Administrative Code, Title 20, Chapter 6, Part 2, Ground and Surface Water Protection (20.6.2 NMAC)
- New Mexico Administrative Code, Title 20, Chapter 6, Part 8, Ground and Surface Water Protection – Supplemental Requirements for Water Reuse (20.6.8 NMAC)
- New Mexico Administrative Code, Title 20, Chapter 7, Part 4, Utility Operator Certification (20.7.4 NMAC)

Safety and Security

- Water Environment Federation (WEF), *Safety, Health, and security Standards for Water Resource Recovery, Manual of Practice 1* (latest edition)

Wastewater Sampling

- American Water Works Association, American Public Health Association, and Water Environment Federation, *Standard Methods for the Examination of Water and Wastewater* (latest edition)
- U.S. Environmental Protection Agency, *NPDES Compliance Inspection Manual, EPA 300-B-94-014, Chapter 5 – Sampling*, (latest edition)
- U.S. Environmental Protection Agency, *Wastewater Sampling Operating Procedures*, (latest edition)

Additional Study Aids

- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals I – Liquid Treatment Operator Certification Study Questions* (latest edition)
- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals II – Solids Handling and Support Systems Operator Certification Study Questions* (latest edition)
- Water Environment Federation (WEF), *Wastewater Treatment Fundamentals III – Advanced Treatment Operator Certification Study Questions* (latest edition)
- Water Environment Federation (WEF), *Wastewater Operator’s Guide to Preparing for the Certification Examination* (latest edition)
- Water Environment Federation (WEF), *Wastewater Laboratory Analysts’ Guide to Preparing for the Certification Examination*, (latest edition)