



Rules of
Department of Natural Resources
Division 20—Clean Water Commission
Chapter 9—Treatment Plant Operations

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**Title 10—DEPARTMENT OF
NATURAL RESOURCES**

**Division 20—Clean Water Commission
Chapter 9—Treatment Plant Operations**

**10 CSR 20-9.010 Wastewater Treatment
Systems Operation Scope Monitoring**

PURPOSE: This regulation sets forth the minimum requirements for laboratory testing to ensure adequate wastewater treatment systems operation.

(1) Definitions. Definitions as set forth in the Missouri Clean Water Law and 10 CSR 20-2.010 apply to the terms to be used in this rule, unless the context clearly requires otherwise.

(2) Operational laboratory tests and related monitoring for wastewater treatment systems control are a supplement to the Missouri State Operating Permit (MSOP) requirements. These operational monitoring reports shall be submitted to the department along with the MSOP discharge monitoring reports.

(3) The department may modify monitoring frequency required in this rule based upon the department’s judgement of monitoring needs for process control at a specified facility.

(4) These requirements for laboratory tests shall apply to all wastewater treatment systems owned or operated by or for municipalities, public sewer districts, or other local government entities, private sewer companies regulated by the Public Service Commission, and the state agencies or any subdivision of them, with a population equivalent, as defined in 10 CSR 20-9.020, greater than two hundred (200). All other systems are exempt.

(5) Minimum monitoring requirements to ensure adequate wastewater treatment systems in-plant operational control are as follows:

(A) Lagoons

1. Discharging - Two (2)/Week Frequency.

Precipitation	
Flow	Influent or Effluent
pH	Primary Cell
D.O.	Primary Cell

2. Non-Discharging - Two (2)/Month Frequency.

Precipitation	
Flow	Influent or Effluent
pH	Primary Cell
D.O.	Primary Cell

(B) Mechanical Plants.

1. All types—daily (Monday – Friday) frequency.

Precipitation	
Flow	Influent or Effluent
pH	Influent
Temperature	Aeration basin

2. Additional laboratory test requirements for wastewater activated sludge processes and modifications:

	<u>Influent</u>	<u>Mixed Liquor</u>
TSS	1/week	1/week
Settleability		Daily (Monday – Friday) (sample contact and re-aeration basins for contact stabilization)
D.O.		Daily (Monday – Friday) (sample contact and re-aeration basins for contact stabilization)
Temperature		Daily (Monday – Friday) (sample contact and re-aeration basins for contact stabilization)

3. Additional tests for facilities having digesters:

	<u>Anaerobic</u>	<u>Aerobic</u>
pH	Daily (Monday – Friday)	—
Temperature	Daily (Monday – Friday)	—
D.O.	—	Daily (Monday – Friday)

(C) Recirculating filter media beds:

Pressure 2/year by measuring squirt height in each zone at the orifice furthest from the pump. Use each pump independently during the monitoring to ensure each pump is functioning.

(D) Facilities which chlorinate for disinfection shall perform total chlorine residual analyses of the effluent on a daily (Monday – Friday) basis during those periods when chlorination facilities are in use.

(E) Facilities employing disinfection technology other than chlorine shall have disinfection process control testing parameters and frequency determined by the department on a case-by-case basis.

(6) Laboratory procedures shall be performed in accordance with 10 CSR 20-7.015.

(7) A copy of all reports required by this rule shall be retained by the facility for a minimum of three (3) years.

*AUTHORITY: section 644.026, RSMo 2016. *Original rule filed July 15, 1976, effective July 1, 1977. Amended: Filed Nov. 1, 1983, effective July 1, 1984. Amended: Filed July 29, 1994, effective March 30, 1995. Amend-*

ed: Filed Nov. 3, 1997, effective July 30, 1998. Amended: Filed June 13, 2018, effective Feb. 28, 2019.

**Original authority: 644.026, RSMo 1972, amended 1973, 1987, 1993, 1995, 2000, 2012, 2014.*

10 CSR 20-9.020 Classification of Wastewater Treatment Systems

PURPOSE: This rule outlines the requirements for wastewater systems regarding certified personnel.

(1) Definitions. Definitions as set forth in the Missouri Clean Water Law and 10 CSR 20-2.010 shall apply to those terms when used in this rule, unless the context clearly requires otherwise or as noted in the subsections of this rule.

(A) Wastewater treatment systems. Interrelated or interconnected facilities, equipment, machinery, sewers, piping, valves, land, tanks, basins, ponds, lagoons, and any other device, method and process used to reduce or eliminate the contaminants in domestic wastewater and similar organic water-borne wastes.

(B) Operator. Any individual who operates or determines the method of operating a wastewater treatment system, either directly or by order.

(C) Chief operator. An operator who directs or who has the authority to direct other individuals, or an operator in direct responsible charge for the operation of a wastewater treatment system.

(D) Population equivalent (P.E.). The calculated population which normally contributes the same amount of biochemical oxygen demand (BOD₅) per day. The common base is 0.17 pounds of five- (5-) day BOD₅ per capita per day. The calculated population which normally contributes the same amount of flow per day. The common base is one hundred (100) gallons per capita per day.

(E) Wastewater Collection System. Any series of pipes and lift stations to collect, convey, and equalize wastewater flow to the wastewater treatment system.

(2) Wastewater Treatment Systems Requirements.

(A) Requirements for operation by certified personnel shall apply to all wastewater treatment systems, with a population equivalent greater than two hundred (200), owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and the state or federal agencies. All other systems



are exempt from this rule unless the department determines that certified personnel are necessary to protect the waters of the state.

(B) Owners or other persons legally responsible for the operation of wastewater treatment systems subject to this rule shall be responsible for assuring that operators and chief operators of wastewater treatment systems comply with certification requirements as set forth in this rule.

(C) All operators of wastewater treatment systems included in subsection (2)(A) of this rule shall possess, as a minimum, a level D certificate of competency issued by the department. New employees that are not yet certified wastewater treatment operators cannot make process control decisions and will be directly supervised by a certified operator or chief operator.

(D) Minimum certification of competency classification requirements for chief operators of wastewater treatment systems shall be determined by the department using the following point system as a guide. Wastewater treatment systems will remain classified at the level determined prior to the effective date of this rule until the facility's MSOP is renewed, at which time, the MSOP will include the facility classification.



CLASSIFICATION OF WASTEWATER TREATMENT PLANTS

Certification Level	D	C	B	A
Points	25 and Less	26-50	51-70	71 and Greater

Assign points for every item that applies:

Size/Item	Points
Maximum population equivalent (P.E.) served, peak day	1 pt. per 10,000 P.E. or major fraction thereof (maximum 10 pts.)
Design flow (avg. day) or peak month's flow, (avg. day) whichever is larger	1 pt. per MGD or major fraction thereof (maximum 10 pts.)

Effluent Discharge

Missouri or Mississippi River	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1
Discharge to lake or reservoir outside of designated whole body contact recreational area	2
Discharge to losing stream, lake or reservoir area supporting whole body contact recreation	3
Direct reuse or recycle of effluent	6

Land Application/Irrigation

Drip irrigation	3
Land application/irrigation	5
Overland flow	4

Variation in Raw Wastes (highest level only)

Variations do not exceed those normally or typically expected	0
Recurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2
Recurring deviations or excessive variations of more than 200 percent in strength and/or flow	4
Department-approved pre-treatment program	6

Preliminary Treatment

STEP systems (operated by the permittee)	3
Screening and/or comminution	3
Grit removal	3
Plant pumping of main flow	3
Flow equalization	5

Primary Treatment

Primary clarifiers	5
Chemical addition (except chlorine, enzymes)	4

Secondary Treatment

Trickling filter and other fixed film media with or without secondary clarifiers	10
Activated sludge (including extended aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15
Stabilization ponds without aeration	5
Aerated lagoon	8
Advanced Lagoon Treatment - Aerobic cells, anaerobic cells, covers, or fixed film	10
Biological, physical, or chemical	12
Carbon regeneration	4



Solids Handling

Sludge holding	5
Anaerobic digestion	10
Aerobic digestion	6
Evaporative sludge drying	2
Mechanical dewatering	8
Solids reduction (incineration, wet oxidation)	12
Land application	6

Disinfection

Chlorination or comparable	5
On-site generation of disinfectant (except ultraviolet light)	5
Dechlorination	2
Ultraviolet light	4

Required Laboratory Control Performed by Plant Personnel (highest level only)

Lab work done outside the plant	0
Push-button or visual methods for simple tests such as pH, settleable solids	3
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5
More advanced determinations such as BOD seeding procedure, fecal coliform, nutrients, total oils, phenols, etc.	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10

TOTAL*

*If unique treatment plant conditions distort the point total, the department may adjust the facility classification.

(E) The owner will notify the department of any change in the identity of the chief operator within fifteen (15) calendar days.

(F) In the event the chief operator is no longer available to serve, the owner of the wastewater treatment system will notify the department of the vacancy within fifteen (15) calendar days and appoint an interim operator. The interim operator will be considered the certified chief operator for the purposes of complying with 10 CSR 20-9.010 and 10 CSR 20-9.020 on a temporary basis until a properly certified chief operator is hired. Following consultation with the wastewater system owner, the department will establish a schedule of activities and a timeline for the system to have a certified chief operator who has met all applicable certification requirements.

(G) No person, firm, corporation, municipal corporation or other governmental subdivision or agency may operate a wastewater system unless the operator of the facility is duly certified by the department as provided in 10 CSR 20-9.030 or 10 CSR 20-9.020(F) except during periods of emergency or disaster.

*AUTHORITY: section 644.026, RSMo 2016. * Original rule filed July 15, 1976, effective March 1, 1977. Rescinded and readopted: Filed Nov. 1, 1983, effective July 1, 1984. Rescinded and readopted: Filed July 15,*

1991, effective March 1, 1992. Amended: Filed June 13, 2018, effective Feb. 28, 2019.

**Original authority: 644.026, RSMo 1972, amended 1973, 1987, 1993, 1995, 2000, 2012, 2014.*

10 CSR 20-9.030 Certification of Wastewater Operators

PURPOSE: This rule sets out the requirements that a person must meet to obtain a wastewater operator certificate.

(1) Definitions. Definitions as set forth in the Missouri Clean Water Law and 10 CSR 20-2.010 apply to those terms when used in this rule, unless the context clearly requires otherwise or as noted in the subsections of this rule.

(A) Certificate of Competency. A document issued by the department stating that the recipient named on the certificate has satisfied the requirements for the certification level specified pursuant to this rule.

(2) Administration.

(A) The department shall serve as the certifying agency for wastewater treatment system personnel.

(B) Any applicant whose certification is denied, suspended, or revoked may appeal to the Administrative Hearing Commission as provided in section 621.250, RSMo.

(3) Certification of Competency.

(A) Certificates issued by the department, and valid on March 1, 1992, are valid as certifications of competency in the equivalent class and shall be governed by the provisions of this rule. Initial renewal of the certificates shall be as outlined in section (4) of this rule.

(B) Certifications at the appropriate level shall be issued to individuals successfully passing the certification examination and fulfilling experience requirements of subsection (3)(I) of this rule. The expiration date of the certifications shall coincide with renewal requirements as provided in subsection (4)(B) of this rule. An examination score of seventy percent (70%) correct shall be considered a passing grade.

(C) All certification examinations pursuant to this rule shall be administered through the department. Examination shall be available at a frequency of not less than four (4) times annually. Examination application forms and information, including examination dates and locations, shall be available through the department.

(D) A completed application form for examination must be submitted to the department no later than thirty (30) days before the scheduled examination session. An application fee of twenty dollars (\$20) and a certification fee of twenty-five dollars (\$25) for a total of forty-five dollars (\$45) shall accompany each



application.

(E) Exams shall contain, but not necessarily be limited to, questions pertaining to the Missouri wastewater regulations, general wastewater systems knowledge, water quality, applied mathematics, chemistry, laboratory testing procedures as applied to wastewater treatment, hydraulics, pumps and operation.

(F) Any examinee who fails to receive a passing grade may not repeat that level examination for a period of not less than sixty (60) days. The applicant must submit a new application for each repeat examination.

(G) Any examinee who fails a certification examination three (3) times and has not successfully completed a department-approved multi-day training course approved for wastewater treatment within the previous twelve (12) months must do so prior to any further reexamination at that level.

(H) An individual applying to take the examination will be allowed to reschedule twice within one year of the application date. After that, s/he must reapply as required in subsection (3)(D) of this rule.

(I) Approval of applicant eligibility for certification of competency shall be the responsibility of the department. In order to be eligible for a certificate, the applicant will have accumulated actual or equivalent operational experience in accordance with Table 1.

1. Actual wastewater treatment operating experience means the skills and knowledge acquired from making or acting upon day-to-day process control/system integrity decisions rather than from textbook study or supervisory observation. It means the applicant has actually operated a wastewater treatment system. In addition, the applicant should have experience in some combination of wastewater treatment system operational tasks such as: sample collection, routine operational monitoring, interpretation of test results, calculation of chemical dosages and subsequent adjustment of chemical feeders, flow rate and pumping adjustments, disinfection, and completion of operational reports.

2. Equivalent wastewater treatment operating experience means skills and knowledge acquired from education as described in this rule or work experience that has a substantial relationship to wastewater treatment.

Certification Level	In-Plant Actual Operating Experience Required
A	5 1/2 years (2 years of which may be equivalent)
B	3 1/2 years (1 year of which may be equivalent)
C	1 1/2 years (1 year of which may be equivalent)
D	6 months (all of which may be equivalent)

(J) Years of equivalent experience shall be computed from the following criteria.

Graduation from approved one (1)-year certificate program in water/wastewater technology	1 year
College level courses in biological/ environmental sciences (grade C or better required)—maximum credit of six (6) months	1 month per 3 semester hours
Two (2)-year associate degree in allied field (for example, environmental health/science, biology, chemistry)	1 1/2 years
Four (4)-year college degree in allied fields (for example environmental sciences, biology, chemistry and engineering)	2 years
Approved multi-week entry level, advanced or correspondence courses—maximum credit of one (1) year	1/2 year

1. Operation of potable water treatment facilities and wastewater collection systems will be given equivalent credit of actual calendar years of operation.

2. General vocational training or work experience in related areas will be considered by the department on a case-by-case basis and limited to a maximum of six (6) months' equivalent experience.

3. Documentation submitted for equivalent experience credit that does not fit the previously mentioned criteria will be evaluated by the department on a case-by-case basis.

(K) Any person not possessing the necessary operational experience may take the examination.

1. Upon successful completion of the examination, the individual will have to obtain the necessary operational experience within eighteen months. If the necessary experience is not obtained with the eighteen-month limit, the individual must reexamine to be certified at that level of competency.

(L) The minimum age for certification shall be eighteen (18) years.

(M) Education Requirement.

1. The minimum education requirement for certification is fulfilled by meeting any one (1) of the following conditions: a high school diploma; a general equivalency diploma (GED); successful completion of special department-approved training appropriate to wastewater treatment; or six (6) months of experience.

2. Training or experience used to meet the education requirement will not be counted as equivalent experience credit. Training or experience used to meet the education requirement is not included in the maximum limit on equivalent experience in subsection (3)(J).

(4) Certificate Renewal.

(A) All certificates issued by the department shall be renewed at least every three (3) years, unless prorated by the department to some other time frame. All applicants for renewal shall meet the training requirements set forth in subsection (4)(B) prior to the expiration date stated on each individual's

certificate.

(B) Before a certificate will be renewed, the applicant must submit suitable documentation that s/he has obtained not less than thirty (30) hours of approved renewal training. Only training approved by the department will be accepted. Each certified operator is responsible for documenting his/her training.

(C) The department shall send notification of certification expiration to the certificate holder at the last known address at least sixty (60) days prior to the certificate's expiration date. Failure of the department to notify the certificate holder of certification expiration does not relieve the certificate holder of the responsibility for renewal.

(D) Any certificate not renewed within sixty (60) days of the expiration date will be considered lapsed. Any person with a lapsed certification will have to reexamine as provided in section (3) of this rule.

(E) Provided the department has received a timely and complete application for certification renewal, possesses sufficient renewal training and through no fault of the certificate holder the department is unable to issue a new certification before the expiration date of the previous certification, automatically the validity of the expired certification shall continue until the department acts on the renewal application.

(F) Certification renewal fee is forty-five dollars (\$45) and shall accompany the certificate holder's application for renewal. Application for renewal must be made on the form provided by the department.

(G) A late fee of ten dollars (\$10) per month, up to a total of twenty dollars (\$20) shall be assessed for any certification renewed after the expiration date.

(5) Reciprocity.

(A) Certificates may be issued, without examination, to any person who holds a valid certificate obtained by examination in any state, territory, country, or any other certifying authority, if the requirements for certification of operators under which the person's certificate was issued do not conflict with the provisions of this rule, are at least as stringent as this rule, and provide the applicant—

1. Has working experience with a wastewater treatment system in the state or other authorized area which supplied the certification for which reciprocity is requested;

2. Obtains employment with a Missouri wastewater treatment system; and

3. Makes application for reciprocity within one hundred eighty (180) days after beginning that employment. The form described in subsection (12)(C) must be submitted along



with the application fee of forty dollars (\$40).

(B) The fee for a certificate issued under the provisions of this section is twenty-five dollars (\$25).

(C) The level of certification issued will be determined by the state of origin's minimum requirements for the level of certification held in that state.

(D) If the applicant is not employed in a Missouri wastewater facility, but meets all other requirements for reciprocal certification, the department will issue a letter of intent to issue certification which will be valid for one hundred eighty (180) days. Upon employment in a Missouri wastewater facility, and provided all other requirements are met, the applicant may apply for a certificate. If the applicant does not obtain Missouri employment before the expiration date of the letter, s/he will have to reapply for reciprocal certification.

(6) Denial, Suspension or Revocation.

(A) The department may deny, suspend or revoke any certification for any of the following reasons: fraud or deceit in obtaining certification; negligence, incompetence or willful malpractice in the holder's action in operating a wastewater treatment facility or appurtenances, or falsification of facility operating records or reports required by 10 CSR 20, or willful violation of 10 CSR 20.

(B) Notice of suspension or revocation action shall be issued by the commission's director of staff with service by hand delivery or through certified mail to the certificate holder at that individual's last known address. That notice shall state the reason(s) for revocation, the effective date of the revocation and the action(s) the certificate holder may take to contest the revocation.

(C) Application for certification examination by the holder of a revoked certificate may not be made sooner than one (1) year from the effective date of revocation. Acceptance of any such application shall be at the discretion of the department. Certification by reciprocity shall not be available for a certificate holder whose certification has been revoked.

(D) Any revoked certificate shall be returned to the department.

(7) The certificate holder shall notify the department of any change in status including, but not limited to, change of name, change of address and change of employer.

(8) All fees are nonrefundable and nontransferable.

AUTHORITY: section 644.026, RSMo 2016. Original rule filed July 15, 1991, effective*

*March 1, 1992. Amended: Filed June 13, 2018, effective Feb. 28, 2019. ***

**Original authority: 644.026, RSMo 1972, amended 1973, 1987, 1993, 1995, 2000, 2012, 2014.*

***Pursuant to Executive Orders 20-04 and 20-10, 10 CSR 20-9.030, subsection (4)(B) was suspended from April 30, 2020 through June 15, 2020.*

10 CSR 20-9.040 Renewal Training

PURPOSE: This rule establishes criteria for approval of renewal training courses.

(1) Only training approved by the department will be creditable towards meeting the renewal training requirements.

(2) All organizations sponsoring renewal training for wastewater operators, shall submit the following to the department approval. This information should be submitted to the department at least thirty (30) days prior to the training:

- (A) Date and location of the training;
- (B) Name, address and telephone number of person to contact regarding the training;
- (C) Course outline showing the topic(s) to be presented and time allotted for each (including beginning and ending times);
- (D) Name(s) of instructor(s) and his/her qualifications (not just title or company name);
- (E) List of any audiovisual materials to be used such as videotapes, slides, slide/tape presentations, films and overheads; and
- (F) Handouts.

(3) Renewal credit is based upon actual contact time in the training. All breaks and meal times must be noted on the agenda and will not count toward contact time. Excessive time allotted for introductions or welcomes will not count toward contact time.

(4) No credit will be given prior to the completion of any training course. The completion date of a multi-day course is the last day of the course.

(5) Renewal credit will be issued in increments of one-half (0.5) hour. The minimum credit issued will be one-half (0.5) hour. Any approved training issued continuing education units (CEUs) by an organization meeting the criteria of the Council on the Continuing Education Unit will be given credit at the rate of ten (10.0) hours per one (1.0) CEU.

(6) Once the information for a course required in section (2) has been approved, it need not be resubmitted for subsequent sessions of that course. However, any change in

the course content, time allotted, instructor or material used must be submitted to the department for approval. The department should be notified thirty (30) days in advance of any subsequent session(s) of an approved course.

(7) Training provided by the national offices of organizations involved in water supply, wastewater treatment, backflow prevention and other related fields or other out-of-state entities will be reviewed for renewal credit on an individual basis. The operator must provide documentation.

(8) All approvals will be by written correspondence. The approval will include a course attendance roster form that will show the course name, coordinator, date, location, course identification number and amount of renewal credit.

(9) Advertisement of any training shall not state that the program has been approved for renewal credit until the department has issued its formal approval and assigned a course identification number and amount of renewal credit. Any advertisement that states that the training is approved must include the course identification number and amount of renewal credit.

(10) Each organization providing training should provide certificates of completion to the attendees. The certificate should include the following:

- (A) Attendee's name;
- (B) Name of the course;
- (C) Renewal credit;
- (D) Course identification number;
- (E) Date that the course was held;
- (F) Location of the course; and
- (G) Name of the course coordinator or instructor.

(11) Training providers shall submit the course attendance roster to the department within fifteen (15) working days of the completion of the course. Information on the roster shall include:

- (A) Name of the course;
- (B) Renewal credit;
- (C) Course identification number;
- (D) Date that the course was held;
- (E) Location of the course;
- (F) Name of the course coordinator or instructor;
- (G) Names of all attendees; and
- (H) Certificate number of all attendees, if applicable.



(12) The department shall make known by a public means which courses, seminars, etc., will be approved for renewal purposes.

(13) Renewal credit shall be valid only for the renewal period in which it was earned. Renewal credit in excess of the required hours for the renewal period may not be carried over into any subsequent renewal training period.

AUTHORITY: section 644.026, RSMo 1994.
Original rule filed July 15, 1991, effective March 1, 1992.*

**Original authority 1972, amended 1973, 1987, 1993.*