

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

REGULATION NO. 84 - RECLAIMED WATER CONTROL REGULATION

5 CCR 1002-84

84.1 AUTHORITY AND MATERIALS INCORPORATED BY REFERENCE

(A) This regulation is promulgated pursuant to the Colorado Water Quality Control Act (CWQCA) section 25-8-101 through 25-8-703, C.R.S. In particular, it is promulgated under sections 25-8-202, 25-8-205, and 25-8-205.8, C.R.S.

~~(B) Materials incorporated by reference are available for public inspection during normal business hours, or copies may be obtained at reasonable cost, from the Administrator, Water Quality Control Commission, 4300 Cherry Creek Drive South, Denver, Colorado 80246. Unless expressly stated otherwise, materials incorporated by reference are those editions dated as referenced by date in the regulation or in existence as Incorporated by Reference~~

~~(1) Date of the date this regulation is Incorporation~~

~~(i) Throughout these regulations, requirements promulgated or revised by the Water Quality Control Commission U.S. Food and Drug Administration have been adopted and incorporated by reference. The federal references do not cited herein include only those versions that were in effect as of October 7, 2019, and not later amendments to or editions of the incorporated material.~~

~~(ii) All other materials incorporated by reference in the Colorado Reclaimed Water Control Regulation 84 include only those versions cited and not later amendments to incorporated material.~~

~~(2) The requirements promulgated by the U.S. Food and Drug Administration incorporated by reference are available, at no cost, in the online edition of the Code of Federal Regulations (CFR) hosted by the United States Government Printing Office, online at www.govinfo.gov.~~

~~(3) Any state statute incorporated by reference is available at no cost online in the Colorado Revised Statutes (CRS) at <https://leg.colorado.gov/agencies/office-legislative-legal-services/colorado-revised-statutes>~~

~~(3) All other materials incorporated by reference may be examined at any state publications depository library or the Department at:~~

~~Colorado Department of Public Health and Environment Water Quality Control Division 4300 Cherry Creek Drive South Denver, Colorado 80246-1530 (303) 692-3500.~~

84.2 PURPOSE

The purpose of this regulation is to establish requirements, prohibitions, standards and concentration limits for the use of reclaimed water to protect public health and the environment while encouraging the use of reclaimed water.

84.3 SEVERABILITY

The provisions of this regulation are severable, and if any provisions or the application of the provisions to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this regulation shall not be affected thereby.

84.4 APPLICABILITY

This regulation applies to the use of reclaimed water treated by centralized reclaimed water treatment systems and localized reclaimed water treatment systems for landscape irrigation, agricultural irrigation, ~~(including crops not grown for human consumption, Non-Commercial Food Crop Growing Operation, Commercial Food Crop Growing Operation and Edible and Non-Edible Hemp)~~, fire protection, industrial, commercial, and toilet and urinal flushing uses identified in section 84.9 of this regulation. This regulation does not apply to wastewater that has been treated and released to state waters prior to subsequent use or to wastewater that has been treated and used at a domestic wastewater treatment plant site for landscape irrigation or process uses. This regulation applies to individual treaters and users, as defined below, ~~upon the issuance of a notice of authorization pursuant to section 84.6(C) herein by the Water Quality Control Division.~~

84.5 DEFINITIONS

The following definitions shall apply:

- (1) Agricultural Irrigation means use of reclaimed water for ~~the~~ irrigation of crops and trees, ~~excluding~~including crops ~~produced~~not grown for ~~direct~~ human consumption, ~~crops where lactating dairy animals forage,~~Non-Commercial Food Crop Growing Operation, Commercial Food Crop Growing Operation and ~~trees that produce nuts or fruit intended~~Edible and Non-Edible hemp for human consumption.
- (2) Agricultural Irrigation User means the entity or person legally responsible for a site ~~legally responsible entities or person who uses(s) that uses~~ reclaimed water for the purpose of agricultural irrigation.
- (3) Agronomic Rate means the rate of application of reclaimed water and associated nutrients to plants that is necessary to satisfy the plants' nutritional and watering requirements while strictly minimizing the amount of nutrients that run off to surface waters or which pass below the root zone of the plants.
- (4) Approved Cross Connection Control Device or Method has the same meaning as control device as defined in section 11.37(1)(c) of Regulation 5 CCR 1002-11 (Regulation #11).
- (5) Automated Vehicle Washing means the cleaning of vehicles and associated equipment, such as trailers, where automated equipment is used to apply spray water, cleaning products, and/or rinse water, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (6) Bag Filters means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.
- (7) Cartridge Filters means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as

- rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.
- (8) Centralized reclaimed water treatment system or Centralized System means a domestic wastewater treatment works that receives domestic wastewater from a diverse service area for treatment to produce reclaimed water for beneficial use where the service area has meaningful inputs from industrial or other diluting sources.
- (9) Certified Cross-Connection Control Technician has the same meaning as the term “certified cross-connection control technician” as defined in section 11.39(2)(h) of 5 CCR 1002-11 (Regulation #11).
- (10) Certified Operator has the same meaning as the term “certified operator” as defined in section 100.2(3) of Regulation 5 CCR 1003-2 (Regulation #100).
- ~~(11)~~(11) Commercial Growing Food Crop Operation means a “covered farm” operations growing commercially processed edible crops that are considered “covered produce” under the Food Safety Modernization Act, Produce Safety Rule. 21 CFR 112.4.
- (12) Commercial Laundry means a facility that uses water to clean clothing and other textile products where only laundry workers operate the washing machines and cleaning equipment, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- ~~(13)~~(12) Commercial User means a person who uses reclaimed water in the operation of a business listed in Table A of section 84.8.
- ~~(14)~~(13) Conventional Filtration means a series of processes including coagulation, flocculation, sedimentation (or equivalent form of clarification), and granular media filtration.
- ~~(14)~~(15) Cultivator means any individual or individuals that are regularly working with irrigated edible crops, irrigation and/or soils that are irrigated with reclaimed water.
- (16) Direct Filtration means a series of processes including coagulation and granular media filtration but excluding sedimentation.
- ~~(15)~~(17) Division means the Water Quality Control Division of the Colorado Department of Public Health and Environment.
- ~~(16)~~(18) Edible Hemp means industrial hemp seeds, oils, flowers and other hemp materials used to make edible products, dermal products, and internal use products for human and animal consumption.
- (19) Evaporative Industrial Processes means the use of water in an industrial process where the benefit of such use requires the evaporation of water, requiring additional make-up water, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- ~~(17)~~(20) Fire Protection – Nonresidential means firefighting activities where water is made available at fire hydrants located in areas other than residential, from fire trucks, and in fire sprinkler and interior standpipe systems in buildings in commercial/industrial areas.
- ~~(18)~~(21) Fire Protection – Residential means firefighting activities where water is made available at fire hydrants in residential areas, from fire trucks, and in fire sprinkler and interior standpipe systems

at any structure where the occupants do not have access to the plumbing for maintenance and repair.

~~(19)(22)~~ Flood and Sheet Irrigation means irrigation whereby water is delivered to a field by ditch, pipe or some other means and flows over the ground through the crop.

(23) Industrial Hemp means a plant of the genus cannabis and any part of the plant, whether growing or not, containing delta-9 tetrahydrocannabinol concentration of no more than three-tenths of one percent on a dry weight basis (HB-35-61-101(7)17).

(24) Industrial User means a person who uses reclaimed water for industrial processes or in the construction process. Approved industrial uses are listed in Table A of section 84.9.

~~(2025)~~ Irrigation System means the facilities, piping and other equipment used by a Landscape Irrigation User or an Agricultural Irrigation User.

~~(2426)~~ Landscape Irrigation means irrigation of areas of grass, trees, and other vegetation that are accessible to the public, including, but not limited to, parks, greenbelts, golf courses, and common areas at apartments, townhouses, commercial/business parks, and other similar complexes.

~~(2227)~~ Landscape Irrigation User means a person who uses reclaimed water for the purpose of landscape irrigation.

~~(2328)~~ Localized Reclaimed Water Treatment System or Localized System means a domestic wastewater treatment works that receives domestic wastewater from a single building, multiple buildings within a single property or area bounded by dedicated streets or ways, or a district designated by a City or County for treatment to produce reclaimed water for beneficial use where the source water does not have meaningful inputs from industrial or other diluting sources.

~~(24)(29)~~ Management User means the legally responsible entity that manages a Resident-Controlled Food Crop Irrigation site that is responsible for educating residents, and, to the maximum extent practicable, ensuring that residents attain and maintain compliance with Regulation 84. The Management User has legal ability (regulation, ordinance, contract, or other acceptable mechanism) to have reclaimed water service terminated to a resident if the resident fails to comply with Regulation 84. A Management User can be a Treater.

(30) Manual Non-Public Vehicle Washing means the cleaning of vehicles and associated equipment, such as trailers, where any or all of the following are applied manually in the cleaning process: spray water, cleaning products, and/or rinse water; where there is no public access to the vehicle washing facility and only limited and controlled contact with reclaimed water by trained workers.

~~(2531)~~ Membrane Filtration means a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

~~(26)(32)~~ Non-Commercial Food Crop Growing Operation means any operations growing food crops that are not considered a "covered farm-produce" under the Food Safety Modernization Act, Produce Safety Rule, 21 CFR 112.4.

- (33) Non-Discharging Construction and Road Maintenance means the use of reclaimed water for nonpotable applications where water is required for cooling, wetting, dust suppression, or other construction and road maintenance activities, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (2734) Non-Evaporative Industrial Processes means the use of water in an industrial process where water is not evaporated in the process and is used within a contained system, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- ~~(28)~~(35) Non-edible Hemp means hemp that is used for cover crop, fiber and other products that are not for human consumption.
- (36) Person means an individual, corporation, partnership, association, state or political subdivision thereof, federal agency, state agency, municipality, commission, or interstate body.
- (2937) Point of Compliance means a point identified by the treater in the reclaimed water treatment or transmission system after all treatment has been completed and prior to dilution and blending of water has occurred. -If reclaimed water is used for indoor nonpotable uses within a building where plumbing fixtures are accessible by the general public, the “point of compliance” for disinfection residual is at the location where water is delivered to the occupied premises.
- (3038) Potable Water has the same meaning as “Finished Water” as defined in section 11.3(32) of the Colorado Primary Drinking Water Regulations, 5 CCR 1002-11.
- (3439) Reclaimed Water is domestic wastewater that has received secondary treatment by a domestic wastewater treatment works (centralized system or a localized system) and such additional treatment as to enable the wastewater to meet the standards for approved uses.
- ~~(3240)~~ Resident-Controlled Landscape Irrigation means irrigation of areas of grass, trees, and other vegetation located on the property ~~of dedicated to a single family or other residential occupancy where property (e.g., the occupant is the User and is responsible yard for the maintenance and/or operation of the a single residence such as a house, row home or duplex).~~
- ~~(41)~~ Resident-Controlled Food Crop Irrigation means irrigation ~~system of vegetables, fruits and other food crops located on the property dedicated to a single residential property (e.g. the garden for a single residence such as a house, row home or duplex).~~
- ~~(3342)~~ Restricted Access means controlled and limited access to the areas where reclaimed water meeting Category 1 standards, as defined in section 84.7, is used.
- (343) Secondary Treatment means the biological treatment of wastewater to meet BOD₅, total suspended solids (“TSS”); CBOD₅; and Oil and Grease numeric limitations in section 62.4 of Regulation #62.
- ~~(35)~~(44) Site means any location using reclaimed water per the approved Uses in Table A of section 84.9 and is subject to the Additional Conditions Required 84.9(A).
- (45) Site Manager means an individual or individuals who are the representative(s) of the User responsible for educating other site users, visitors and cultivators, and, to the maximum extent practicable, ensuring that other site users, visitors and cultivators attain and maintain compliance with Regulation 84. Site managers must be fully trained, educated and well versed in Regulation 84 to ensure safe onsite practices amongst other site users, visitors and cultivators. The Site

Management has legal ability to enforce for non-compliance, and have the Treater terminate service if violations continue for a period of time until corrective actions are taken.

- (46) Toilet and Urinal Flushing or Fixture Flushing means the use of reclaimed water to flush toilets and urinals only in multifamily residential structures or nonresidential structures where the toilet and urinal installations are conducted in accordance with and conform to Article 58 of Title 12 [Plumbers] and Rules promulgated to that Article.
- (3647) Trained Worker means a person employed at the site where reclaimed water is used, who has been provided with the information specific to the additional conditions specified in section 84.9 that are applicable to that site's approved use(s) of reclaimed water.
- (3748) Transmission System means the treater's facilities that transport treated reclaimed water between the treater and users.
- (3849) Treater means a person who treats reclaimed water using a centralized reclaimed water treatment system or localized reclaimed water treatment system and provides reclaimed water to a user for the purpose of uses identified in section 84.9. A ~~treater~~ Treater contracted inspector also falls under this definition, and the Treater may also be a user.
- (3950) Treatment Technique Requirement means a requirement that specifies a treatment technique(s) for a pathogen reduction target which results in a sufficient reduction in the level of the pathogen to comply with the requirements of Regulation #84.
- (4051) Unrestricted Access means uncontrolled access to the areas where reclaimed water meeting the Category 2 standards, as defined in section 84.7, is used.
- (4152) User means ~~the entity or person legally responsible for a site~~ the legally responsible entity and/or person who that uses reclaimed water for the purpose of uses identified in section 84.9. A ~~user~~ User may also be a treater.
- (4253) User Plan to Comply (UPC) means the information and documentation a user is required to submit to the treater under section 84.11 of this regulation. For Resident-Controlled Landscaping and Resident-Controlled Food Crop Irrigation, the UPC applies to the aggregate of residences managed by a Management User. For Non-Commercial Food Crop Irrigation, the UPC applies to the aggregate or irrigated areas being managed by a Site Manager.
- (4354) Visitor means anyone visiting a site where reclaimed water is used and approved in Table A of Section 84.9.
- (55) Washwater Applications means water used in washing of miscellaneous construction/ maintenance equipment, as well as concrete washout, mineral processing, and other similar uses where reclaimed water is used to remove material from equipment or a desired product, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.

84.6 ADMINISTRATION

- (A) Letter of Intent.

Treaters shall submit a letter of intent to the Division and to the local health authority, using a form established by the Division that shall include:

- (1) Treater information including name of entity; legally responsible person's name, address, telephone number, and email address; and for each facility owned and/or operated by the treater where domestic wastewater is treated for transmission, the facility contact person's name, address, telephone number, and email address (if different than legally responsible person).
- (2) Information demonstrating the treater's ability to comply with the applicable reclaimed water standards described in section 84.7 of this regulation and section 84.110 of this regulation (for localized reclaimed water treatment systems), including an 8.5" x 11" or 11" x 17" schematic of the treatment process showing the location of the proposed point(s) of compliance. Include the point of compliance for demonstration that secondary treatment has been attained which may be the same or different than the point where attainment of reclaimed water standards will be demonstrated. Include either: a copy of the site application approval letter and the approval letter for the reclaimed water treatment facility plans and specifications; or evidence of submittal of a site application and plans and specifications to the Division.
- (3) An analysis that demonstrates that reclaimed water used for landscape irrigation or agricultural irrigation will be applied at or below agronomic rates. Landscape irrigation and agricultural irrigation uses may also be subject to waste load allocations or limits as contained in a Total Maximum Daily Load (TMDL) or control regulation governing the watershed within which the irrigation occurs.
- (4) A reuse system management plan which includes: a description of the proposed reclaimed water treatment and transmission systems; a description of the treater's program to inform and educate users on the requirements of this regulation; a description of the treater's plan to oversee the use of reclaimed water by users to ensure, to the maximum extent practicable, that users attain and maintain compliance with this regulation; and evidence of the treater's legal ability (regulation, ordinance, contract, or other acceptable mechanism) to terminate service to a user if the user fails to comply with this regulation.
- (5) A certification statement as per section 84.4516 of this regulation.
- (6) For each user, a user plan to comply developed in cooperation with the treater and meeting the requirements of section 84.4412.
- (7) Affirmation that the reuse of this water by the treater will not materially injure water rights. For localized systems located within the service area of a water service provider, the letter of intent shall include an affirmation that the proposed installation of a localized system is allowed by the water service provider.
- (8) When reclaimed water is used for fire protection, the Letter of Intent shall also include a map indicating areas where reclaimed water is to be supplied for fire protection uses and identifying the fire protection authority(s) having jurisdiction. The Letter of Intent shall also include a letter from the fire protection authority(s) having jurisdiction indicating their approval of using reclaimed water for fire protection activities.
- (9) Where the land application of reclaimed water is subject to limitations on concentration and/or loading of nitrogen or phosphorus pursuant to a control regulation adopted by the Water Quality Control Commission, a statement as to whether the treater intends to have such limitations included in the notice of authorization issued under this regulation or under a permit issued pursuant to Regulation #61.

- (B) Field Verification and Commissioning Report and Inspection. For localized reclaimed water treatment systems, prior to supplying reclaimed water for use, the treater must verify that the system is operational and meets reliability requirements of the log removal targets in section 84.119(A)(2)(a) below. -Following completion of field verification and commissioning, the treater shall provide the Division a field verification and commissioning report and an operations and monitoring plan. The field verification and commissioning report will confirm that the treatment system has been installed and is operating in accordance with the approved design criteria in section 84.119(A)(2)(a) below. -The operations and monitoring plan will define the frequency and locations for monitoring, data storage, and reporting. The Division may conduct an inspection of the localized reclaimed water treatment system to confirm that the unit treatment processes have been installed in conformance with the approved design and are in operation in accordance with operations and monitoring plan.
- (C) Division Review. The Division will notify the treater in writing not more than thirty (30) calendar days after receipt of a letter of intent (for centralized reclaimed water treatment systems) or the letter of intent, field verification and commissioning report and operations and monitoring plan (for localized reclaimed water treatment systems), and if and in what respects, the letter of intent (for centralized reclaimed water treatment systems) or the letter of intent, field verification and commissioning report and operations and monitoring plan (for localized reclaimed water treatment systems) are incomplete. The review period may be extended by the Division. Where information provided by a user is incomplete, the treater may amend the Letter of Intent to address the deficiency or to remove that user from the letter of intent.
- (D) Issuance of Notices of Authorization. The Division shall either issue or deny the notice of authorization (NOA) within thirty (30) calendar days of its determination that the letter of intent (for centralized reclaimed water treatment systems) or the letter of intent, field verification and commissioning report, and operations and monitoring plan (for localized reclaimed water treatment systems) are complete. Upon the written agreement of the treater, the review period may be extended for a period mutually agreed to by the treater and the Division. The treater shall be notified in writing upon denial of the NOA of such action and the reason(s) for the denial. The Division shall issue a separate NOA to the treater and to each user. Treaters and users planning to use reclaimed water shall have or obtain a NOA from the Division prior to any use of reclaimed water.
- (E) Appeal of Issuance or Denial of NOA. The treater or user, or any other person potentially adversely affected or aggrieved by Division issuance or denial of a NOA, may submit a request, within thirty (30) days of the date of issuance or denial, to the Administrator of the Water Quality Control Commission ("Commission"), for a hearing.
- (1) Such hearing shall be conducted pursuant to the requirements of the Procedural Regulations for all Proceedings before the Commission and the Division, Regulation #21, 5 CCR 1002-21.
 - (2) The person requesting the hearing shall have the burden of proof in all hearings held pursuant to this section.
- (F) Terms and Conditions of NOAs. NOAs issued by the Division shall contain such terms, limitations, and conditions as are deemed necessary by the Division to ensure compliance with this regulation, except for those NOAs that contain a schedule of compliance as determined by the Division. At a minimum, all NOAs shall contain the following:
- (1) Treater information including name of entity; legally responsible person's name, address, telephone number, and email address; and for each facility owned and/or operated by the treater where domestic wastewater is treated for distribution, the facility contact person's

name, address, telephone number, and email address (if different than legally responsible person). For the treater NOA, a list of approved users and their associated uses shall be included;

- (2) Issuance date;
- (3) The approved uses as defined in Table A of section 84.9, including the category of reclaimed water, and additional conditions for each approved use in subsection 84.9, the associated numeric limit for each use, and requirements from sections 84.7; 84.8, and for localized systems, 84.4011;
- (4) For User NOAs, the location(s) of use, a description of the approved use(s), and best management practices that meet the requirements of subsection 84.4212, as applicable;
- (5) A requirement that the treater implement its reuse system management plan that meets the requirements of subsection 84.6(A)(4) to ensure user compliance with this regulation. For User NOAs, include a requirement that the user comply with the user plan to comply;
- (6) Where the treater has so requested in the Letter of Intent per Section 84.6(A)(9), conditions defining limitations for concentration and loading of nitrogen and/or phosphorus pursuant to a control regulation adopted by the Water Quality Control Commission.
- (7) A requirement to submit information to the Division requesting the amendment of a Letter of Intent prior to making any of the following significant changes:
 - (a) Adding an additional user or deleting a user;
 - (b) When a treater proposes any significant physical or operational changes;
 - (c) If reclaimed water is used for irrigation, when there is a significant change in the agronomic rate analysis; and
 - (d) When any user governed by an existing NOA significantly modifies or changes its physical or operational use of reclaimed water, including, but not limited to, the addition of landscape area to be irrigated that is not contiguous to an existing approved area, addition of areas where reclaimed water is to be used for fire protection, addition of a new user or use in a new commercial or industrial process, or use in a new location.

Said request for amending the Letter of Intent shall be made at least thirty days prior to implementing a change described in subsections (a) or (c), above, and at least sixty days prior to implementing a change described by subsections (b) or (d), above.

- (8) Terms for modification, revocation, or termination;
- (9) Required monitoring, as is reasonably necessary, to be performed by the user;
- (10) Reporting and record keeping requirements;
- (11) Public access restrictions, if applicable; and
- (12) A statement of applicable civil and criminal penalties.

84.7 RECLAIMED WATER CATEGORIES AND STANDARDS

- (A) Category 1 Standards: Reclaimed water, for uses where Category 1 water is required, shall, at a minimum, receive secondary treatment with disinfection. The following reclaimed water standards shall apply at the point of compliance:

<u>Parameter</u>	<u>Limit</u>
<i>E. coli</i> /100 ml	126/100 ml monthly geometric mean and 235/100 ml single sample maximum.
Total Suspended Solids	30 mg/L as a daily maximum.

- (B) Category 2 Standards: Reclaimed water, for uses where Category 2 water is required, shall, at a minimum, receive secondary treatment with filtration and disinfection. The following reclaimed water standards shall apply at the point of compliance:

<u>Parameter</u>	<u>Limit</u>
<i>E. coli</i> /100 ml	126/100 ml monthly geometric mean and 235/100 ml single sample maximum.
Turbidity, NTU	Not to exceed 3 NTU as a monthly average and not to exceed 5 NTU in more than 5 percent of the individual analytical results during any calendar month.

- (C) Category 3 Standards: Reclaimed water for uses where Category 3 water is required shall, at a minimum, receive secondary treatment with filtration and disinfection. The following reclaimed water standards shall apply at the point of compliance:

<u>Parameter</u>	<u>Limit</u>
<i>E. coli</i> /100 ml	None detected in at least 75% of samples in a calendar month and 126/100 ml single sample maximum.
Turbidity, NTU	Not to exceed 3 NTU as a monthly average and not to exceed 5 NTU in more than 5 percent of the individual analytical results during any calendar month.

84.8 ADDITIONAL FILTRATION AND DISINFECTION REQUIREMENTS FOR USE OF RECLAIMED WATER PRODUCED FROM CENTRALIZED SYSTEMS (CATEGORY 3 PLUS)

- (A) The treater must properly operate and maintain all required treatment systems when producing reclaimed water in accordance with this regulation, the NOA, and the site location and design approvals.
- (B) In addition to the factors to be considered and approved by the Division under Regulation #22, the following filtration and disinfection requirements apply to reclaimed water produced from centralized systems specifically for Category 3 uses of indoor toilet and urinal flushing-, Non-Commercial Food Crop Growing Operation, and Resident-Controlled Food Crop Irrigation sites. In the event of a conflict between Regulation #22 and the following filtration and disinfection requirements, the following requirements shall control over any conflicting filtration and disinfection requirements in Regulation #22:

- (1) In addition to the requirements listed in 84.7(C), the treater must properly operate filtration and disinfection of secondary treated wastewater while producing reclaimed water that reliably achieves all of the following:
- (a) Disinfection that provides a minimum of 99.999 (5-log) inactivation of enteric viruses by at least one of the following treatment techniques.
 - (i) For free chlorine or monochloramines, log inactivation of viruses to be determined as referenced in 5-CCR-1002-11 and defined by the USEPA for disinfection of surface water (Hepatitis A).
 - (ii) Minimum UV of 40 mJ/cm² using a validated reactor per the Ultraviolet Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule (November 2006).
 - (b) Filtration by any one of the following treatment techniques:
 - (i) Conventional or direct filtration.
 - (ii) Membrane filtration accepted for use by the division in accordance with section 11.8 of 5 CCR 1002-11.
 - ~~(iii)~~ Bag or cartridge filtration accepted for use by the division in accordance with section 11.8 of 5 CCR 1002-11.
 - (iv) Alternative filtration technologies accepted by the Division in accordance with Wastewater Design Criteria Alternative Technology Acceptance that is third party challenge tested to reliably remove 99.9% of challenge particles that are at most 3 micron diameter.
 - (c) The treater must return any recycled spent filter backwash water, thickener supernatant, or liquids from the dewatering process to a location within the treatment process that is before the filtration technology or an alternative Department-approved location.
 - (i) For conventional or direct filtration, the location of return must be prior to the coagulant feed location.
 - (ii) For all other filtration technologies, the location of return must be prior to the filtration process and approved by the Division.

84.9 AUTHORIZED RECLAIMED WATER USES

Table A: Approved Uses of Reclaimed Water

Approved Uses	Category 1	Category 2	Category 3	Additional Conditions Required 84.9(A)
INDUSTRIAL				
Evaporative Industrial Processes	Allowed	Allowed	Allowed	1, 3 ¹²
Washwater Applications	Not Allowed	Allowed	Allowed	2,3,7, 3 ¹²

Non-Discharging Construction and Road Maintenance	Allowed	Allowed	Allowed	3,7, 312
Non-Evaporative Industrial Processes	Allowed	Allowed	Allowed	7, 312
LANDSCAPE IRRIGATION				
Restricted Access	Allowed	Allowed	Allowed	
Unrestricted Access	Not Allowed	Allowed	Allowed	3,4, 312
Resident-Controlled	Not Allowed	Not Allowed	Allowed	3,4,5, 312
COMMERCIAL				
Zoo Operations	Allowed	Allowed	Allowed	312
Commercial Laundries	Not Allowed	Allowed	Allowed	7, 312
Automated Vehicle Washing	Not Allowed	Allowed	Allowed	3,8, 312
Manual Non-Public Vehicle Washing	Not Allowed	Allowed	Allowed	3,8, 312
FIRE PROTECTION				
Nonresidential Fire Protection	Not Allowed	Allowed	Allowed	6, 312
Residential Fire Protection	Not Allowed	Not Allowed	Allowed	6, 312
AGRICULTURAL IRRIGATION				
Non-Food-Crop Irrigation and Silviculture	Allowed	Allowed	Allowed	3, 312
<u>Commercial Food Crop Growing Operation</u>	<u>Not Allowed</u>	<u>Allowed</u>	<u>Allowed</u>	3,13,14,15,16,17, 201,212,223,256,2930,304,312
Resident-Controlled Food Crop Irrigation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	3, 5 , 13,14,15, 201,223,234,245,256,267,278,289,312,334,356
Non-Commercial Food Crop Growing Operation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	3,13,14,15,16,17,18,19, 20,204,223,256,312,323,334,345,367
Non-Edible Hemp Irrigation	Allowed	Allowed	Allowed	3,13,15,16,17, 204,212,256,304,312
Edible Hemp Irrigation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	3,13,15,16,17, 204,212,223,256,304,312

TOILET AND URINAL FLUSHING	Not Allowed	Not Allowed	Allowed <u>(Category 3 Plus)</u>	5,-9,-10,-11, 3 ¹²
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(A) Additional Conditions Required. In addition to the conditions for use of reclaimed water listed in section 84.9, the Division will include the following best management practices in the NOA for the associated uses listed in Table A:

- (1) If there is a significant likelihood for aerosols to drift to public or worker areas, adequate signage is required. Supplemental disinfection and disinfectant residual and/or public access restrictions are required.
- (2) Washing activities must be contained (e.g., flow to lined pit or approved concrete washout area, or within enclosed equipment), as to prevent any off-site runoff or discharge to ground water. Workers shall be trained on the proper use and washing procedures when using reclaimed water.
- (3) Application rates or other measures shall be employed to minimize ponding ~~or~~ runoff from the area approved for application or use and prevent irrigation in excess of agronomic rate.
- (4) No reclaimed water piping shall be extended to or supported from any residential structure and there shall be no accessible above grade outlets from the reclaimed water system at any residential structure. At least one exterior hose bib, supplied with potable water, shall be labeled and provided at each residential structure.
- (5) The treater shall develop and implement a public education program to inform residents, workers, plumbing contractors and inspectors who deal with the resident-controlled landscape irrigation systems, or toilet and urinal flushing systems about the need to: a) strictly prohibit cross-connections between the reclaimed water and potable water systems; b) clearly and distinctively identify the potable service lines and plumbing from the reclaimed water service lines and plumbing; and c) avoid contact with and strictly minimize ponding or runoff of the reclaimed water. The treater shall implement a cross-connection inspection program and shall have the authority to discontinue reclaimed water service to any resident or worker who flagrantly or repeatedly misuses reclaimed water in a manner inconsistent with this regulation. The treater shall maintain a map indicating all areas where reclaimed water is provided for resident-controlled landscape irrigation, or toilet and urinal flushing.
- (6) The user shall develop and implement a program, including notices in fire department newsletters and fire department preplans, to educate the public and firefighters that reclaimed water is used for fire protection. The user shall develop a program to educate plumbing and fire protection system contractors and inspectors expected to access the fire protection system about the need to confirm that cross-connections between the reclaimed water and potable water systems do not exist and about the requirement to clearly identify the potable and reclaimed water systems throughout the building. All personnel authorized to use the reclaimed water for fire protection shall be educated to avoid contact with and strictly minimize ponding or runoff of the reclaimed water during non-emergency testing or training. An annual cross-connection inspection shall be made at each structure to which reclaimed water piping is extended for fire protection to ensure that no cross-connection exists. The treater shall maintain a map indicating the location of all fire hydrants, sprinkler systems and standpipe systems provided with reclaimed water.

- (7) Where there is the reasonable potential for worker or public exposure to aerosols generated in the use, users of Category 1 Reclaimed Water (if allowed for the use per Table A) or Category 2 Reclaimed Water shall employ measures to prevent the frequent exposure of workers and the public to aerosols generated in the use of reclaimed water. Measures shall include at least one of the following: minimum setback distance of 100 feet between the nearest source of aerosol generation and areas where workers or the public are normally present; physical barriers between aerosol sources and humans; personal protective equipment to prevent aerosol inhalation; functionally equivalent measures approved by a qualified individual (e.g., a certified industrial hygienist); or other means approved by the Division. Given the higher level of treatment provided for Category 3 Reclaimed Water, additional measures to address exposure of workers or the public to aerosols are not required.
- (8) Where there is the potential for worker or public exposure to aerosols generated in the use, users of Category 2 Reclaimed Water shall employ measures to prevent the inhalation of aerosols from reclaimed water by workers and the public. Measures shall include at least one of the following: personal protective equipment documented to prevent aerosol inhalation; or functionally equivalent measures approved by a qualified individual (e.g., a certified industrial hygienist) and documented to prevent aerosol inhalation.
- (9) Reclaimed water may be used for indoor uses provided that the user adopts and follows best management practices (BMPs) to minimize growth of and worker exposure to *Legionella* and other premise plumbing opportunistic pathogens. BMPs shall be specified in a site-specific operation and maintenance plan as described in section 84.1112(C), and shall include at least one of the following:
- (a) Maintenance of a minimum 0.2 mg/L of free chlorine disinfectant or 0.5 mg/L of monochloramine residual if ammonia is present in premise plumbing. The disinfection residual shall be measured at a location at a distance of no greater than 50 feet from the location of use at the distal end or a location that represents the oldest water age within the reclaimed water premise plumbing system. This may require chlorine “boosting” at the point that reclaimed water enters a structure. The monitoring frequency will be no less frequent than once (grab samples) per week. If the disinfectant residual is not in compliance with this requirement, the system must perform operations and maintenance and return all premise plumbing to a minimum 0.2 mg/L disinfection residual for free chlorine or 0.5 mg/L disinfection residual for monochloramine within 24 hours. Exact monitoring locations, and other compliance terms, will be identified in the site-specific operation and maintenance plan submitted as part of the user plan to comply. -The system must maintain ~~record~~records of all sampling, locations, and corrective operations for review by the treater or ~~division~~Division upon request.
- (b) An alternative disinfection method as approved by the Division with equivalent protection against premise plumbing pathogens as set forth in section 84.9(A)(9)(a) above. The effectiveness of an alternative disinfection method may be verified by monitoring. The monitoring plan and any requirements for implementation of any Division approved alternative disinfection method must be included in the user plan to comply and the NOA.
- (c) Where reclaimed water is used for indoor nonpotable uses within a building where plumbing fixtures are accessible by the general public, a monitoring location for disinfection residual at a distance no greater than 50 feet from the location of use at the distal end or a location that represents the oldest water age

within the reclaimed water premise plumbing system may be used as an alternate point of compliance for disinfection residual.

- (10) To minimize risk of unintended cross connections, plumbing modifications and repairs shall only be conducted by licensed plumbers. Signage shall indicate that plumbing modifications can only be done by authorized personnel. Signage shall be located where plumbing is accessible.
- (11) Users receiving reclaimed water for use within an occupied premise, must include a backup potable water connection capable of supplying potable water to fixtures for flushing via an air gap should the localized reclaimed water treatment system fail or the reclaimed water is found to be non-compliant or insufficient in volume.
- (12) Users may use reclaimed water for toilet and urinal flushing in multifamily residential structures and in nonresidential structures, only if the toilet and urinal installations are conducted in accordance with article 58 of title 12 [concerning plumbers] and rules promulgated pursuant to that article. Any toilet or urinal installation must conform to article 58 of title 12 and rules promulgated pursuant to that article.

(13) All reclaimed water Users and Cultivators must undergo annual advanced training that at minimum provides the following information:

- Definition of reclaimed water and why it is not suitable for drinking.
- The best management practices that are required for applicable uses in 84.9(A).
- Produce and hand washing with potable water is required after harvesting produce, irrigating with reclaimed water and interacting with soils irrigated with reclaimed water. Hand sanitizing is not an equivalent to hand washing.

Advanced training shall be conducted by either the Treater, Site Manager or Management User. The Division can require additional advanced training requirements through the User NOA. Training provided must be adequate to result in individuals being knowledgeable of the requirements, and capable of implementation of the BMPs required by the User Plan to Comply and the User NOA. User or Cultivator signatures confirming that advanced training was received for Division and/or Treater review must be readily available for inspection on site.

- (14) On a quarterly basis, treaters must monitor for TDS, submit the results (using mg/L) to the Division through Discharge Monitoring Reports, and email or mail the results to all food crop irrigation users. These results can be provided within a larger report (like a Consumer Confidence Report).
- (15) If requested by a user, treaters must provide to its users reclaimed water monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations. Monitoring shall be conducted at the Point of Compliance or, if the discharge is of substantially the same quality as the effluent discharged to state waters under a CDPS permit, the point of compliance for that CDPS permit. Data will be provided within 60 days of a request. If the treater does provide this data to users, it will also provide it to the Division through its Annual Report.
- (16)- Signage must be placed throughout the site indicating that non-potable water is being used to irrigate crops. All signs must include a graphic that indicates that the water is not for drinking and, at a minimum, include the phrases "[Reclaimed or Recycled] Water" and "Do Not Drink."

- a) For sites under three acres, signs of at least 8.5 x 11" must be placed on portions of the perimeter within public view. For sites over three acres but smaller than 25 acres, signs of at least 8.5 x 11" must be placed at no greater than 500 feet apart on any portions of the perimeter within public view. Distance and locations of signage must be described via map or description in the User Plan to Comply and the NOA for the Site.
- b) A sign of at least 2 x 1' must be placed at the main point of entry to the site that also states that hands should be washed with potable water after coming into contact with irrigated crops or soils and/or irrigation of crops, and produce must be washed with potable water after harvest.
- c) All irrigation equipment must be labeled as reclaimed water and clearly distinguished as reclaimed water (e.g. purple in color and/or indicated in a language that is understandable for the User, Treater, Site Manager and Management User).
- (17) Potable water supply, or a supply of water with no detectable generic *E. Coli* and soap, or hand sanitizer **containing at least 60% alcohol** must be readily available for employees, visitors and cultivators to wash their hands. If a school, park or other facility is within a reasonable distance from potable sinks that employees, visitors and cultivators have access to at all times, this is sufficient. If not, a portable hand washing station or hand sanitizer is required. Wastewater from portable hand washing stations must be disposed of in an area whereby it will not come into contact with crops, soils or infiltrate into soils near crops. The disposal must not create an unpermitted point source discharge to a water of the state. The Site Manager is responsible for ensuring that the portable hand washing station contains potable water for hygiene. If a user is also regulated by the Produce Safety Rule and is thus required to provide hand washing facilities under that Rule, the user is required to provide a hand washing station, rather than hand sanitizer.
- (18) Hose bibs that supply reclaimed water must be locked (with a non-duplicative key for access) and/or only accessible by a key code that may not be shared with any individual who has not received advanced training as described in 84.9(A)(13).
- (19) Children in eighth grade or younger must be supervised by an adult at the garden. Minors who are in ninth grade and older who have not received advanced training as described in 84.9(A)(13) must also be supervised by an adult. Supervising adults must have received advanced training as described in 84.9(A)(13).**
- a) **For sites that use hoses for reclaimed water irrigation, one additional supervising adult must be present with children in eighth grade and younger to oversee the appropriate use for each active hose/hose spigot beyond the first. If a site is three acres or more, and the garden is divided into different sections that are clearly demarcated, children in eighth grade or younger can be on site if they are in a section where the water delivery mechanism in that section is disabled and the child is supervised.**
- b) **This condition will not apply to a site upon findings that monitoring for one irrigation season demonstrates that reclaimed water on-site meets the Category 3 water quality standards (no *E. coli* detected in at least 75% of samples in a calendar month and 126 cfu/100 ml single sample maximum). Monitoring shall occur at least every other month during the irrigation season. If the Division omits this condition from the NOA, the User must**

continue to monitor *E. coli* levels at the site at least every other month during the irrigation season. Results must be submitted to the division for approval before this condition is not applicable to the Site NOA. If *E. coli* levels are above 126 cfu/100 ml at the site, *E. coli* is detected in more than 25% of samples in a calendar month, the User fails to continue monitoring, or the Division or the Treater have found that the user is not consistently complying with this Regulation and all applicable requirements in the NOA and the User Plan to Comply, the Division may require compliance with this condition through an amended NOA.”

For sites that use hoses for reclaimed water irrigation, one supervising adult must be present with children in eighth grade and younger to oversee the appropriate use for each active hose/hose spigot. Supervising adults must have received advanced training as described in Section 84.9(A)(13). This BMP will not apply to a site upon findings that:

1. Monitoring for one irrigation season demonstrates that reclaimed water on-site meets the Category 3 water quality standards (none detected in at least 75% of samples in a calendar month and 126 cfu/100 ml single sample maximum). Monitoring shall occur at least every other month during the irrigation season. If the Division grants the site-specific NOA, the User must continue to monitor *E. coli* levels at the site at least every other month during the irrigation season. Results must be submitted to the division for approval before this BMP is not applicable to the Site NOA.

1. If *E. coli* levels are above 126 cfu/100 ml at the site, *E. coli* is detected in more than 25% of samples in a calendar month, the User fails to continue monitoring, or the Division or the Treater have found that the user is not consistently complying with this Regulation and all applicable requirements in the NOA and the User Plan to Comply, the Division may require compliance with this BMP through an amended NOA.

2. If a site is 3 acres or more, and the garden is divided into different sections that are clearly demarcated, children less than ten years of age can be on site if they are in a section where the water delivery mechanism in that section is disabled and the child is supervised.

(20) Children in eighth grade or younger must be supervised by an adult at the garden. Minors who are in ninth grade and older who have not received advanced training as described in 84.9(A)(13) must also be supervised by an adult, but no ratio applies to them. Supervising adults must have received advanced training as described in 84.9(A)(13). This BMP will not apply to a site upon findings that:

1. Monitoring for one irrigation season demonstrates that reclaimed water on-site meets Category 3 water quality standards (none detected in at least 75% of samples in a calendar month and 126 cfu/100 ml single sample maximum). Monitoring shall occur at least every other month during the irrigation season. If the Division grants the site-specific NOA, the User must continue to monitor *E. coli* levels at the site at least every other month during the irrigation season. Results must be submitted to the division for approval before this BMP is not applicable to the Site NOA.

2. If *E. coli* levels are above 126 cfu/100 ml at the site, *E. coli* is detected in more than 25% of samples in a calendar month, the User fails to continue monitoring, or the Division or the Treater have found that the user is not consistently complying with this

~~Regulation and all applicable requirements in the NOA and the User Plan to Comply, the Division may require compliance with this BMP through an amended NOA.~~

- (204) A manual or display must be onsite at all times that describe what reclaimed water is, the BMPs required by the User Plan to Comply and the User NOA, and irrigation practices that will prevent irrigation in excess of the agronomic rate and minimize ponding or runoff of reclaimed water. This must be accessible to all visitors, employees and site Users.
- (212) Harvesting of crops **and public access** in areas where irrigation is occurring and making the soil and/or plant wet is prohibited. **Public access in areas where irrigation is occurring and making the soil and/or plant wet is prohibited.**
- (223) Irrigation of sprouts is prohibited where the sprout is the food crop, including but not limited to bean sprouts, alfalfa sprouts, and hemp clones.
- (234) If the site is irrigated with an automatic irrigation system, the non-commercially processed crop site must be on a separate irrigation zone when using reclaimed water.
- (245) A potable water supply spigot must be available on the exterior of the residence.
- (256) Leaks in the irrigation system and/or hoses must be fixed immediately. If the leaks cannot be fixed immediately, the reclaimed water system must be disabled.
- (267) A Management User is required. Responsibilities and authority for Management Users are listed in 84.10.
- (278) All property owners and renters must be provided with an educational manual and verbally educated by the Management User as described below prior to **occupancy of the residence**. The education must include:
- That reclaimed water is non-potable;
 - Methods to use reclaimed water safely, and the required best management practices per the User Plan to Comply and the NOA;
 - Agronomic rate requirements and that ponding and runoff are a violation of this regulation.

Following the provision of the manual and verbal education, the property owner or renter must sign a document acknowledging that the education was received. The Management User must keep these signed documents in an accessible location.

If the property is rented or sold at a later date, the new occupants must be also be provided with this verbal education and manual, and sign the acknowledgement document prior to occupying the property. The site manager must also retain these documents in the same location. The Division may request this information at any point in time.

- (289) Each residence using reclaimed water must have at least one sign communicating that the water is not for drinking and that **ediblefood** crops should be washed with potable water.
- (2930) Commercial Growing Operation must comply with any applicable requirements of the Food Safety Modernization Act, Produce Safety Rule, 21 CFR Part 112 as implemented

by the State of Colorado. Compliance information with the Produce Safety Rule must be described in the Regulation 84 Annual Report provided by the Treater.

- (304)** Flood and sheet irrigation are prohibited.
- (312)** The Treater and the User shall furnish to the Division, within sixty days, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing the NOA, or to determine compliance with this regulation or the applicable NOA.
- (323)** Users shall allow the Division or its authorized representative to conduct inspection of the site at a reasonable time and in a reasonable manner, without prior notification, to assess compliance with this regulation and the NOA. This includes allowing access to area(s) where irrigation is occurring and allowing the Division or its authorized representative to interview any person(s) present at the site. Pursuant to CRS 25-8-306, the Division will provide the User with the credentials for any inspector that may conduct such inspections at a date prior to conducting any inspections and inspectors will present proper credentials to any User present at the site who requests them at the time of inspection.
- (334)** If *E. coli* or turbidity exceeds the required standards in Regulation 84, the Treater must notify the Legally Responsible Entity and the Legal Responsible Entity must notify all Site Managers.
- (345)** A Site Manager is required. Responsibilities and authority for Site Managers are listed in 84.10.
- (356)** Only drip, subsurface drip, button drip or other low to the ground irrigation systems are allowed and must cover a small distribution area.
- (367)** Irrigation equipment that is used with reclaimed water shall not be hooked up to potable spigots.

84.10 TREATER, MANAGEMENT USER AND SITE MANAGER RESPONSIBILITIES FOR NON-COMMERCIAL GROWING OPERATION, RESIDENT-CONTROLLED FOOD CROP IRRIGATION AND EDIBLE AND NON-EDIBLE HEMP.

(A) TREATER AND SITE MANAGER RESPONSIBILITIES FOR NON-COMMERCIAL GROWING OPERATION

(1) Treater Responsibilities

(a) General Responsibilities

(i) Ensure an accurate User Plan to Comply is onsite.

(ii) Maintain accurate records of all current Users.

(iii) Implement appropriate procedures and actions to minimize the occurrence of, and obtain compliance with, the requirements of the user NOA and UPC. Implement sanctions for recalcitrant violators that include, but are not limited to, terminating service of reclaimed water to the site if necessary to stop violations until corrective actions are completed.

(b) Inspections

- (i) Pre-Irrigation Inspection: Conduct one inspection prior to the first use of reclaimed water at a site each calendar year.
- (ii) Irrigation Season Inspection: Conduct a second inspection during the period when irrigation is occurring each year and at least 30 days from the initial inspection (unless irrigation only occurs for 45 days).
- (iii) The inspections must be completed with a Site Manager or User representative on site and include an interview with the site manager.
- (iv) Inspections must assess and document if all BMPs are being implemented, or are in place and ready to implement for the pre-irrigation inspection, as required by the User Plan to Comply and the User NOA, to prevent irrigation in excess of the agronomic rate, and to minimize ponding or runoff of reclaimed water.
- (v) Ensure the signage required by this regulation is intact at the appropriate locations and distances, is legible and presented in an understandable format to inform Users and Visitors that reclaimed water is being used and is not for drinking.
- (vi) If a site is in non-compliance, unless the non-compliance issue(s) are corrected during the inspection, re-inspect the site once the correction(s) are made and document and keep record(s) of the corrective actions. Treater are required to inform and communicate with the User about compliance plans and corrective actions. If hoses are being used, the Treater, Site Manager and/or the Division reserve the right to lock the hose bibs until corrective actions are complete.

(2) Site Manager Responsibilities. The user shall ensure that a Site Manager is designated that meets the following requirements:

(a) General Responsibilities

- (i) Ensure an accurate User Plan to Comply is onsite.
- (ii) Maintain accurate records of all current Cultivators.
- (iii) Ensure Cultivators are educated about reclaimed water per education requirements in Regulation 84.
- (iv) Ensure best management practices and requirements are implemented, and ready to implement for the pre-irrigation inspection, as required by the User Plan to Comply and the User NOA for all best management practices including prevention of excess irrigation of the agronomic rate, and to minimize ponding and runoff of reclaimed water.
- (v) Maintain accurate User Plan to Comply onsite, and submit modifications to the Treater to subsequently send to the Division to modify NOAs.

(vi) Implement appropriate procedures and actions to minimize the occurrence of, and obtain compliance with, the requirements of the user NOA and UPC. Implement sanctions for recalcitrant violators that includes but is not limited to denial of water use or banning from the site.

(b) Inspections

(i) An inspection is required prior to the first use of reclaimed water at a site each calendar year.

(ii) Routine inspections are required every 14 days and at least 5 days from the previous inspection. Inspections must include and document that all Best Management Practices and conditions in the User Plan to Comply and NOA are being met and available for the Division and/or Treater to review.

(iii) Ensure the signage required by this regulation is intact at the appropriate locations and distances, is legible and presented in an understandable format to inform Users and Visitors that reclaimed water is being used and is not for drinking.

(iv) Ensure hand washing station is adequately full, and wastewater is disposed of properly and away from produce and soils where produce is being cultivated.

(B) TREATER AND MANAGEMENT USER RESPONSIBILITIES FOR RESIDENT-CONTROLLED FOOD CROP IRRIGATION

(1) Treater Responsibilities. The Treater's Reuse System Management Plan shall address, and the Treater shall meet the following requirements that are in addition to those included in 84.6(A)(4):

(a) General Responsibilities

(i) Maintains accurate records of all current Users.

(ii) Ensure Management User is highly knowledgeable about Regulation 84 trained on an annual basis.

(iii) The NOA will include requirements for information required in the Annual report.

(iv) The Treater or the Management User is responsible for monitoring water usage in gallons at minimum on a monthly basis to ensure agronomic rate is not exceeded. The User Plan to Comply shall indicate whether the monitoring responsibility belongs to the Treater or the Management User.

(v) The agronomic rate analysis required per the User Plan to Comply. The division will not issue an NOA if this analysis demonstrates that given the nitrogen concentrations in the reclaimed water, that there is a reasonable potential that with the quality of irrigation water needed, the agronomic rate will be exceeded.

(vi) Implement appropriate procedures and actions to minimize the occurrence of, and obtain compliance with, the requirements of the

User NOA and UPC. Implement sanctions for recalcitrant violators that includes, but are not limited to, terminating service of reclaimed water to the site if necessary to stop violations.

(vii) During inspections by the Division, violations will be issued to the Management User and/or Legally Responsible Entity or Person listed in the NOA.

(b) Inspection Responsibilities

(i) Conduct, at minimum 10% representative site visits each year with a representative that uses the reclaimed water to irrigate to ensure requirements in this regulation are being met per the best management practices required by the User Plan to Comply and the User NOA; and that the user is minimizing ponding and runoff by irrigating at an agronomic rate; and that they are aware of the components in section 84.9 and that they are using reclaimed water for irrigation. Inspections may be completed by the Management User and/or the Treater.

(ii) If a site is in non-compliance, unless the non-compliance issues are corrected during the inspection, re-inspect the site once corrections are made and document and keep record(s) of the corrective actions. Treater and Management Users are required to inform and communicate with the user about compliance plans and corrective actions.

(iii) Implement sanctions for recalcitrant violators that include, but are not limited to, terminating service of reclaimed water to the site if necessary to stop violations.

(2) Management User Responsibilities. The user shall ensure that a Management User is in place that meets the following requirements:

(a) General Responsibilities

(i) Ensure each home buyer or renter is educated about Regulation 84 and ensure that the educational manual is provided prior to occupying the property, and a signature is required by the homeowner or renter that proves acknowledgement of understanding of the risks associated to using reclaimed water. The Management User must keep copies of signed documents onsite for Division and/or Treater review.

(ii) Maintain up to date maps/records of locations, number and acreage of sites where reclaimed water is used to irrigate edible crops and landscapes, and update treater on a biannual basis.

(iii) The Treater or the Management User is responsible for monitoring water usage in gallons at minimum on a monthly basis to ensure agronomic rate is not exceeded. The User Plan to Comply shall indicate whether the monitoring responsibility belongs to the Treater or the Management User.

(iv) Implement appropriate procedures and actions to minimize the occurrence of, and obtain compliance with, the requirements of the user NOA and UPC. Implement sanctions for recalcitrant violators.

Management User must notify the treater of recalcitrant violations and the Treater has authority to terminate service.

(v) Calculate the agronomic rate analysis for each site to ensure the agronomic rate will not be exceeded.

(b) Inspection Responsibilities

(i) Conduct, at minimum 10% representative site visits with a representative that uses the reclaimed water to irrigate to ensure requirements in this regulation are being met per the best management practices required by the User Plan to Comply and the User NOA; and that the user is minimizing ponding and runoff by irrigating at an agronomic rate; and that they are aware of the components in section 84.9 and that they are using reclaimed water for irrigation. Inspection may be completed by the Management User and/or the Treater.

(ii) Report violations to the treater and the Division and keep violations documented with the location information.

(C) TREATER AND SITE MANAGEMENT RESPONSIBILITIES FOR EDIBLE AND NON-EDIBLE HEMP SITES IRRIGATED WITH RECLAIMED WATER.

(1) Treater Responsibilities

(a) General Responsibilities

(i) Ensure an accurate User Plan to Comply is onsite.

(ii) Maintain accurate records of all current Users.

(iii) Ensure the signage required in this regulation is intact at the appropriate locations and distances, is legible and presented in an understandable format to inform Users and Visitors that reclaimed water is being used and is not for drinking.

(iv) Implement appropriate procedures and actions to minimize the of, and obtain compliance with, the requirements of the user NOA and UPC. Implement sanctions for recalcitrant violators that includes, but are not limited to, terminating service of reclaimed water to the site if necessary to stop violations until corrective actions are completed.

(b) Inspections

(i) Inspections must be completed with a Site Manager or User representative on site and include an interview with the site manager.

(ii) Inspections must assess and document if all BMPs are being implemented, as required by the User Plan to Comply and the User NOA, to ensure irrigation equipment and practices are in place to prevent irrigation in excess of the agronomic rate, and to minimize ponding or runoff of reclaimed water.

(iii) If a site is in non-compliance, unless the non-compliance issue(s) are corrected during the inspection, re-inspect the site once the correction(s) are made and document and keep record(s) of the corrective actions. Treater are required to inform and communicate with the User about compliance plans and corrective actions. If hoses are being used, the Treater, Site Manager and/or the Division reserve the right to lock the hose bibs until corrective actions are complete.

(2) Site Manager Responsibilities. The user shall ensure that a site manager is designated that meets the following requirements:

(a) General Responsibilities

(i) Ensure an accurate User Plan to Comply is onsite.

(ii) Ensure Cultivators are educated about reclaimed water per education requirements in Regulation 84.

(iii) Ensure best management practices and requirements are implemented, as required by the User Plan to Comply and the User NOA for all best management practices including prevention of excess irrigation of the agronomic rate, and to minimize ponding and runoff of reclaimed water.

(iv) Maintain accurate User Plan to Comply onsite, and submit modifications to the Treater to subsequently send to the Division to modify NOAs.

(v) Ensure the signage required by this regulation is intact at the appropriate locations and distances, is legible and presented in an understandable format to inform Users and Visitors that reclaimed water is being used and is not for drinking.

(vi) Implement appropriate procedures and actions to minimize the occurrence of, and obtain compliance with, the requirements of the user NOA and UPC. Implement sanctions for recalcitrant violators that includes, but are not limited to, terminating service of reclaimed water to the site if necessary to stop violations.

(b) Inspections

(i) An inspection is required prior to the first use of reclaimed water at a site each calendar year to ensure irrigation equipment and practices are in place to irrigate at the agronomic rate and prevent ponding and runoff.

(ii) Routine inspections are required at least once per month during the irrigation season. Inspections must include and document that all Best Management Practices and conditions in the User Plan to Comply and NOA are being met. The Division and/or Treater may request records at any time.

(iii) Report violations to the Treater and the Division and keep violations documented with the location information.

84.11 RECLAIMED WATER TREATMENT REQUIREMENTS FOR LOCALIZED RECLAIMED WATER TREATMENT SYSTEMS

- (A) Reclaimed water treated by localized reclaimed water treatment systems must comply with the standards and requirements in this section 84.4011.
- (B) The treater must properly operate and maintain all required treatment systems when producing reclaimed water in accordance with this regulation, the NOA, and the site location and design approvals. In addition to the factors to be considered and approved by the Division under Regulation #22, localized reclaimed water treatment systems are subject to the following additional design requirements for treatment.
- (1) The treater must properly operate a multi-barrier treatment approach using filtration and disinfection following secondary treatment while producing reclaimed water that reliably achieves all of the logarithmic (“log”) reduction targets for pathogens set forth in Table B below. If a treater conducts its own microbial risk assessment, the treater may request approval from the Division to use alternative log reduction targets based upon the treater’s microbial risk assessment.
- (a) Reclaimed water produced from localized systems for Category 1 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10^{-2} infections per person per year only for Enteric Viruses as set forth in Table B below.
- (b) Reclaimed water produced from localized systems for Category 2 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10^{-2} infections per person per year as set forth in Table B below.
- (c) Reclaimed water produced from localized systems for Category 3 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10^{-4} infections per person per year as set forth in Table B below.

Table B: Localized System Log Removal Targets for Treatment Design

	Enteric Viruses	Parasitic Protozoa	Enteric Bacteria
Log ₁₀ Reduction Target (10 ⁻²) Category 1	6.0	-	-
Log ₁₀ Reduction Target (10 ⁻²) Category 2	6.0	5.0	4.0
Log ₁₀ Reduction Target (10 ⁻⁴) Category 3	8.5	7.0	6.0

- (2) The Division will develop policy defining credits for the log reduction of pathogens through various treatment processes.
- (3) The localized system design requirements will be based on the assumption that the wastewater does not receive meaningful inputs from industrial or other diluting sources.
- (C) Localized System Monitoring Requirements:

- (1) Reclaimed water produced from localized systems must meet the standards for the category of reclaimed water in section 84.7 for the approved use. Compliance with the standards in section 84.7 shall be verified by the monitoring requirements in section 84.4011(C)(2) and (3) below.
- (2) Localized reclaimed water treatment systems must be continuously monitored for appropriate process control parameters to demonstrate that systems designed to comply with pathogenic microorganism control are functioning properly. The choice of the type of continuous monitoring technologies to be utilized will be tailored for an individual system and will be included in an operations and monitoring plan. Examples of acceptable forms of continuous monitoring for localized system process control are identified in Table C below:

Table C: Acceptable Surrogate Parameters for Localized Systems

Surrogate Parameter	Surrogate Monitoring Point	Purpose
Chlorine residual	Post-chlorination at a representative location for treatment	Confirm control of opportunistic pathogens
Continuous turbidity or particle size distribution	Post-filtration at a representative location for treatment	Confirm operation of filtration system; can be an indicator of pathogen breakthrough
Pressure decay test	Membrane filtration unit	Measures membrane integrity
Electrical conductivity or tracer spike test; total organic carbon or UV absorbance (254 nanometers)	Reverse osmosis or nanofiltration unit	Can be related to pathogen breakthrough
Continuous color, ultraviolet light absorbance (UVA) or transmittance (UVT), and/or pH	Prior to disinfection or ozonation	Can indicate conditions that inhibit pathogen removal in disinfection or ozonation steps
Residual ozone, or oxidation-reduction potential	Ozonated water	Can be correlated to pathogen removal
Continuous ultraviolet (UV) intensity	UV-treated water	Confirm sufficient dose of UV for pathogen inactivation

- (3) The Division shall adopt a policy identifying other acceptable monitoring technologies for localized system treatment processes and means to approve additional monitoring techniques. The operations and monitoring plan shall include a tailored quality assurance plan specific to the continuous monitoring equipment in place. The quality assurance plan may include analysis of periodic grab samples for additional quality assurance of data collected via continuous monitoring, with parameters measured being consistent with those measured via continuous monitoring.
- (D) The treater must return any recycled spent filter backwash water, thickener supernatant, or liquids from the dewatering process to a location within the treatment process that is before the filtration technology or an alternative Department-approved location.

- (1) For conventional or direct filtration, the location of return must be prior to the coagulant feed location.
 - (2) For all other filtration technologies, the location of return must be prior to the filtration process and approved by the Division.
- (E) Localized reclaimed water treatment systems shall include a flow meter on the localized reclaimed water treatment system and a flow meter on the potable make-up water pipeline to the distribution system.
- (F) Localized reclaimed water treatment systems must be equipped with features that result in a controlled and non-hazardous automatic shutdown of the process in the event of a malfunction. Localized reclaimed water treatment systems must maintain overflow connections to an approved and permitted domestic wastewater treatment works to allow for disposal of off-specification treated reclaimed water or to allow disposal of untreated wastewater during maintenance of the treatment system. Overflow connections will include an approved cross connection control device or method.
- (G) NOAs for use of reclaimed water from localized systems may include requirements for limitations on contributions from non-domestic sources as necessary to prevent pass through, interference, or impacts on public health or the environment from those sources.

84.1412 USER PLAN TO COMPLY REQUIREMENTS

- (A) Landscape irrigation users and agricultural irrigation users shall include the following in a user plan to comply:
- (1) User information including name of entity; legally responsible person's name; address; telephone number; email address; and site address where reclaimed water will be used;
 - (2) An 8.5" x 11" or an 11" x 17" map or schematic drawing indicating the specific area(s) where irrigation with reclaimed water will take place;
 - (3) A description of the best management practices the user intends to implement to ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the notice of authorization;
 - (4) Best management practices the user intends to employ to ensure that application rates shall be controlled to strictly minimize ponding and runoff and to minimize the amount of applied water and associated pollutants that pass through the root zone of the plants to be irrigated (e.g., rain shutoff devices, application at evapotranspiration rates adjusted for irrigation efficiency, daily inspections, or other means); and
 - (5) If applicable, information demonstrating how the user will restrict access to landscaped areas where Category 1 reclaimed water is to be applied either by:
 - (a) Irrigating only during periods approved in the notice of authorization so as to strictly minimize public contact with reclaimed water, or
 - (b) Installing barriers to prevent public access to the site, as approved in the NOA, restricting irrigation to times when the barriers are in place, and ceasing irrigation at least one hour prior to the barriers being totally or partially removed.

- (6) For resident-controlled landscape irrigation, unless a homeowners' association or other entity acceptable to the Division assumes responsibility, the treater shall be responsible for all information required in the user plan to comply and shall act as the users' legal representative for purposes of certification pursuant to section 84.4412(1F) below.
- (B) Commercial, industrial, and fire protection users shall include the following in a user plan to comply:
- (1) User information including name of entity; legally responsible person's name; address; telephone number; email address; and site address where reclaimed water will be used;
 - (2) A description of how reclaimed water is to be used;
 - (3) An 8.5" x 11" or 11" x 17' map or schematic showing where such use will occur;
 - (4) The potential for public contact with reclaimed water used in the commercial or industrial operation(s) or process(es);
 - (5) The fate of waste water streams from the commercial or industrial operation or process after use (e.g., discharge to sanitary sewer, lined evaporation/recovery pond, subsequent permitted discharge, or other location);
 - (6) Best management practices the user intends to implement to prevent or minimize direct and windblown spray and other pathways of human exposure to reclaimed water;
 - (7) If applicable, information demonstrating how the user will restrict access to commercial or industrial areas, operations or processes where Category 1 reclaimed water is to be used; and
 - (8) Where reclaimed water is used to supply a fire sprinkler or standpipe system, information describing the user's cross-connection control, prevention and identification program that the user will implement to prevent any cross-connection between the reclaimed water and potable water systems.
- (C) Toilet and urinal flushing users shall include the following in a user plan to comply:
- (1) User information including name of entity; legally responsible person's name; address; telephone number; email address; and site address where reclaimed water will be used.
 - (2) A description of how reclaimed water is to be used.
 - (3) An 8.5" x 11" or 11" x 17' map or schematic showing water system and where use of reclaimed water will occur.
 - (4) Provide description of water systems/flow diagrams, including the potable, non-potable water, and wastewater systems within the building.
 - (5) The user plan to comply shall include an operation and maintenance plan. The operation and maintenance plan shall reflect current conditions, be kept on site, and be available for review by the Division upon request.

- (6) Signage shall be located where plumbing is accessible, and state that plumbing modifications may only be conducted by licensed plumbers. Signage shall be no smaller than 8.5" x 11" or 11" x 17'.
- (7) Reclaimed water shall not be used for indoor fixture flushing, if it is stored in an outdoor storage facility exposed to the open atmosphere after treatment.
- (8) If the Division has approved an alternative disinfection approach as described in section 84.9(A)(9)(b), a user must include in the user plan to comply Division requirements under section 84.9(A)(9)(b) for implementation of alternative approaches for disinfection.

(D) Commercial Food Crop Growing Operations shall include the following information in their user plan to comply:

- (1) A description of training methods and verification that all employees and Site Managers will receive training prior to beginning work in areas using reclaimed water, and annual trainings are conducted.
- (2) A description of how visitors are educated prior to entering irrigated areas.
- (3) A map showing the location of signs throughout site.
- (4) A map showing the location(s) of potable and/or no detectible generic *E. coli* water supplies for hand washing and/or hand sanitation.
- (5) A description of how the list of best management practices are kept on site.
- (6) A description of irrigation schedules and how harvesting crops and public access in areas where irrigation is resulting in wet soils and/or plant is prohibited.

(E) Non-commercial Growing Operations users shall include the following information in their user plan to comply:

- (1) A description of the training methods and verification that cultivators and site managers will receive training prior to beginning work in areas using reclaimed water, and annual trainings are conducted;
- (2) A map showing the locations of signs.
- (3) A map showing the locations of potable water supplies for hand washing and/or hand sanitation;
- (4) Verification that hose bibs are locked at all times when not in use.
- (5) A description of how the list of best management practices are kept on site.
- (8) Any additional information necessary to identify the implementation and maintenance of BMPs to comply with 84.9 and to prevent irrigation in excess of the agronomic rate and to minimize ponding or runoff of reclaimed water. BMPs include any method used to protect public health and the environment. BMPs include, but are not limited to, schedules of activities, prohibitions of practices, maintenance procedures, and other management practices.

(F) Hemp users shall include the following information in their user plan to comply:

- (1) A description of the training methods and verification that all employees and site managers receive training prior to becoming a working employee, and annual trainings shall be conducted.
- (2) A description of how visitors are educated prior to entering the irrigated areas.
- (3) A map showing the locations of signs throughout the site.
- (4) A description of the use type for the hemp; non-edible or edible applications.
- (5) A description of how the list of best management practices are kept on site.

(G) Resident-Controlled Food Crop Irrigation Users that are irrigated shall include the following in their use plan to comply:

- (1) A description of how and when new home buyers will be educated about reclaimed water prior to using reclaimed water to comply with the requirements in Regulation 84;
- (2) A description of a plan to conduct periodic, representative inspections to ensure requirements are being met and to educate homeowners;
- (3) A description of sanctions that will be implemented for recalcitrant violators;
- (4) Description of how homeowners will differentiate reclaimed water equipment from standard potable irrigation equipment;
- (5) Description of how monthly water usage will be monitored to ensure irrigation is not exceeding agronomic rate.

(H) All users shall include information in their user plan to comply that demonstrates compliance with the following:

- (1) Use of reclaimed water shall be confined to the authorized use area, operation, or process.
- (2) Precautions shall be taken to ensure that reclaimed water will not be sprayed on any facility or area not designated for application such as occupied buildings, domestic drinking water facilities, or facilities where food is being prepared for human consumption.
- (3) Notification shall be provided to inform the public that reclaimed water is being used and is not safe for drinking. The notification shall include posting of signs of sufficient size to be clearly read in all use areas, around impoundments, and on tanks, tank trucks and other equipment used for storage or distribution of reclaimed water, with appropriate wording in the dominant language(s) expected to be spoken at the site.
- (4) All new, modified, or replaced piping, valves, controllers, outlets, and other appurtenances, including irrigation systems and any equipment used for fire protection or in a commercial or industrial operation or process, shall be marked to differentiate reclaimed water from potable water or other piping systems.

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- (5) An approved cross connection control device or method shall be provided at all potable water service connections to reclaimed water use areas.
 - (6) Operation of the reclaimed water distribution or irrigation system, including valves, outlets, couplers, and sprinkler heads, and residential, commercial or industrial facilities and equipment utilizing reclaimed water, shall be performed only by personnel authorized by the user and trained in accordance with subsection 84.1112(HE)(11).
 - (7) Supplementing reclaimed water with potable water by a user shall not be allowed except through an approved cross connection control device or method. Where an approved cross connection control device or method is used it must be tested on an annual basis by a Certified Cross-Connection Control Technician, unless there is a physical separation (e.g., removal of the connecting pipe, etc.) between the potable and reuse distribution systems. When potable water is used to supplement reclaimed water, the potable water provider must be notified.
 - (8) For indoor uses of reclaimed water, testing shall be completed to detect uncontrolled cross connections by a certified cross-connection control technician prior to initial operation of the system and at intervals thereafter as mandated in the NOA. The user must maintain a current diagram of the structure's potable, reclaimed water, and wastewater plumbing.
 - (9) Supplementing reclaimed water with other non-potable supplies shall not be allowed except through an approved cross connection control device or method. An approved cross connection device or method shall be provided at all service connections between reclaimed water and other non-potable water sources including but not limited to water from irrigation wells, industrial wells, or graywater.
 - (10) There shall be no impoundment or irrigation of reclaimed water within 100 feet of any well used for domestic supply unless:
 - (a) In the case of an impoundment, the impoundment is lined with a synthetic material with a permeability of 10⁻⁶ cm/sec or less; or
 - (b) In the case of irrigation, other precautions are implemented and included as a condition of the notice of authorization, to prevent contamination of the well.
 - (11) Workers shall be informed of the potential health hazards involved with contact or ingestion of reclaimed water and shall be educated regarding proper hygienic procedures to protect themselves.
 - (12) The additional conditions included in section 84.9, as applicable.
 - (13) For chlorine disinfection or alternative disinfection approaches approved under 84.9(A)(9), the user plan to comply shall identify the person responsible (e.g. user or treater) for monitoring disinfection at the point of compliance and operation and maintenance of the chlorine boosting system or the alternative disinfection method.
- (E) Users supplied by localized reclaimed water treatment systems shall include the following in a user plan to comply:
- (1) Protocol to switch to potable water and redirect reclaimed water to the sanitary sewer system no later than 12 hours after receipt of the results of any water quality test sample that does not meet the water quality requirements of the NOA or indication of a process
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malfunction based on continuous monitoring. Systems required to redirect reclaimed water to the sanitary sewer may resume normal operation after the Division receives a letter explaining why the performance was compromised and what actions were taken to prevent it from reoccurring, and three (3) consecutive days of data showing compliance, and the Division issues an approval to resume operations.

- (2) An affidavit by the user attesting to the employment of a certified operator or a service contract with a certified operator, who meets the requirements of Regulation 100.
- (3) An enforceable legal agreement defining the roles and responsibilities of the user and treater.
- (4) If required, the user shall identify the percentage contributions from each wastewater input to the localized system and the location of the input, and any limitations on contributions from non-domestic sources as necessary to prevent pass through, interference, or impacts on public health or the environment from those sources.
- (5) All other requirements in section 84.4112(A), (B), and (C) that apply to the use of reclaimed water from the localized system, as well as all requirements in 84.4112(HD).

(FJ) Each user plan to comply shall include a statement signed by the user, or a legal representative of the user, that certifies:

- (1) The user has been provided a copy of this regulation and agrees to comply with the applicable requirements of this regulation, in particular the Conditions for Use of Reclaimed Water described in sections 84.8, 84.9, 84.4011 and 84.4412, the NOA and user plan to comply, and, if applicable, the access restrictions when Category 1 reclaimed water is used. The user shall submit a certification statement per section 84.165 of this regulation with the information provided in this item; and
- (2) The user agrees to allow the treater or the Division reasonable access to the site to determine whether the user is in compliance with this regulation, the NOA and user plan to comply, and/or to perform monitoring and analysis as may be required in section 84.4011(A)(3) for localized systems, and section 84.12.
- (3) For indoor uses of reclaimed water, the user has had a certified cross-connection control technician complete a test to detect uncontrolled cross connections.

84.4213 MONITORING, RECORD KEEPING AND REPORTING

- (A) Treaters and users operating pursuant to a notice of authorization shall be subject to such monitoring, record keeping, and reporting requirements as may be reasonably required by the Division to ensure compliance with the requirements of this regulation, and the NOA, including, but not limited to the following:
- (1) For treaters: the quality of reclaimed water produced and delivered at the point(s) of compliance, inspections of a representative number and type of user sites to determine user compliance, and self-certifications submitted to the treater by users.
 - (2) For each user, the total volume of reclaimed water used per year. For Landscape Irrigation Users and Agricultural Irrigation Users, each location with the associated acreage where reclaimed water was applied.

- (3) For each user using Category 1 reclaimed water, confirmation that reclaimed water was used only during authorized use times (if applicable).
- (B) Treaters shall provide an annual report to the Division for the previous year, by March 31st, that includes the following:
- (1) Information demonstrating the treater's compliance with the reclaimed water standards, including applicable treatment requirements described in section 84.7, 84.8, 84.9 and for localized systems, 84.~~40~~11 of this regulation.
 - (2) Confirmation that the treater conducted inspections pursuant to section 84.~~42~~13(A)(1) above.
 - (3) Violations of this regulation by users pursuant to section 84.~~42~~13(C)(1), below.
 - (4) A certification statement by the treater as per section 84.~~45~~16 below regarding the information provided by the treater in subsections (1) and (2) above.
 - (5) Information supplied by users to the treater demonstrating compliance with the conditions applicable to each specific user included in the notice of authorization.
 - (6) Certification statements from each user as per section 84.~~45~~16 below regarding the information provided in subsection (5) above.
- (C) The treater and users shall report any violations as follows:
- (1) Violations of this regulation and/or notices of authorization at their respective facilities in writing to the Division, within thirty days of becoming aware of the violation. Where the treater finds violations by a user, the thirty day period for reporting is waived for a period of up to thirty additional days, if the treater is working with the user to resolve the violation. If the violation is resolved, no separate notice to the Division is required except that the violation is to be reported in the treater's annual report. If the violation is continuing after a total of sixty days from the time the treater became aware of the violation, the treater shall report the violation to the Division within five working days. Nothing in this section precludes a user from reporting violations by a treater to the Division.
 - (2) For more serious violations (including non-permitted discharges to surface waters, uncontrolled cross-connections, exceedances of the reclaimed water standards for ~~E.~~ E. coli, turbidity, secondary standards, continuous proper operations and maintenance of treatment systems while producing reclaimed water, the NOA, conditions of the site location and design approvals, or other violations posing an immediate threat to public health or the environment): orally to the Division within 24 hours of becoming aware of the violation, followed up by a written report within five working days. The written report shall contain a description of the noncompliance, including exact dates and times; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

84.~~13~~14 VARIANCES

The Division may grant a variance from any provision of this regulation, except that with respect to the E.coli standards in section 84.7, a variance may only be granted from the "235/100 ml single sample maximum" standard. The Division may grant a variance in a particular case where the treater or the user

demonstrates that the benefits to public health or the environment that will be created by compliance with the subject provision do not bear a reasonable relationship to the costs required to achieve compliance.

84.1415 ENFORCEMENT

Violations of this regulation by treaters and users shall be subject to enforcement by the Division pursuant to Part 6 of the CWQCA. A treater shall not be subject to enforcement for a violation by a user; a user shall be solely responsible for its compliance with the terms and conditions imposed upon users. However, if the treater was aware of a violation by a user and did not report it as required in subsection 84.4213(C), the treater may be subject to an enforcement action for failure to report the violation. A user shall not be subject to enforcement for a violation by a treater; a treater shall be solely responsible for its compliance with the terms and conditions imposed upon treaters. However, if a user was aware of the violation and did not report it as required in subsection 84.4213(C), the user may be subject to an enforcement action for failure to report the violation.

84.1516 CERTIFICATION

Persons who are required to make submittals pursuant to subsections 84.6(A)(5), 84.4412(F), and 84.4213(B)(6) of this regulation, shall include the following certification statement:

"I certify, under penalty of law, that the information I am providing in this submittal is true, accurate, and correct. This determination has been made under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

84.4617 - 84.2021 **Reserved**

84.27 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (OCTOBER 2019 RULEMAKING; EFFECTIVE.

The provisions of sections 25-8-202, 25-8-205(1), and 25-8-208.8, C.R.S., provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

During the 2018 Colorado legislative session, bills passed and became law regarding the use of reclaimed water for edible crop irrigation (House Bill-1093) and industrial hemp (Senate Bill 18-038).

House Bill 18-1093 establishes water quality standards for irrigation of food crops. House Bill-1093 also requires that **E. coli** standards are not to exceed the **E. coli** standards in the Food Safety Modernization Act ("FSMA"). It became effective on August 8, 2018. It states that "On or before December 31, 2019, the Commission may promulgate rules in accordance with the bills." Senate Bill 18-038 establishes water quality standards for Categories 1, 2 and 3 for irrigation of industrial hemp. It became effective on August 8, 2018. It states that "On or before December 31, 2019, the Commission may promulgate rules in accordance with the bills."

The Commission now adds four new categories of approved uses: Irrigation of Commercial Food Crop Growing Operation; Non-Commercial Food Crop Growing Operation; Resident Controlled Food Crop Irrigation; Non-Edible Hemp Irrigation; and Edible Hemp Irrigation, along with BMPs for each use, new inspection and compliance protocols for these uses, new NOA regulations, and new and revised definitions.

I. Definitions

The Commission modified definitions and adopted new definitions in Regulation 84. The following definitions were modified to increase clarity or to achieve consistency with other revisions: “Agricultural Irrigation”, “Resident-Controlled Landscape Irrigation”, “Treater” and “User.” The definition for “Agricultural Irrigation” was amended to include **food** crops and hemp. The definition of “Resident-Controlled Landscape Irrigation” was changed to be more specific about what a residence is, and to match the new definition of Resident-Controlled Food Crop Irrigation”. The definition of “Treater” was amended to include inspectors that work for Treaters to clarify that inspection requirements by the Treater could be completed by an employee of the Legally Responsible Person on the NOA.

The following definitions were added: “Commercial Food Crop Growing Operation”, “Covered Produce”, “Cultivator”, “Edible Hemp”, “Flood and Sheet Irrigation”, “Industrial Hemp”, “Management User”, “Non-Commercial Food Crop Growing Operation”, “Non-Edible Hemp”, “Resident-Controlled Food Crop Irrigation”, “Site”, “Site Manager” and “Visitor”. The new definitions were added to reflect references for the new requirements and approved agricultural uses in Regulation 84.

II. Food Crops

The Commission adopted separate definitions, treatment and best management practice requirements for Commercial Food Crop Growing Operations (e.g. large farms) and Non-Commercial Food Crop Growing Operations (e.g. community gardens, community supported agriculture, etc.). The Commission has relied upon the Food Safety Modernization Act, Produce Safety Rule (“PSR”) to differentiate between Commercial Food Crop Growing Operation and Non-Commercial Food Crop Growing Operations. Generally under the PSR, when a farm’s average annual monetary value of produce sold during the previous 3-year period is more than a certain inflation-adjusted number (currently \$26,999), the farm is covered by the PSR; if it is below that number, the farm is not regulated by the PSR.

The Commission adopted the same distinction to reduce uncertainty and overlapping requirements for farmers: if the PSR applies to a farm, it is a Commercial Food Crop Growing Operation under Regulation 84; if the PSR does not, it is a Non-Commercial Food Crop Growing Operation. Note, however, the PSR’s rules only apply to certain crops that the federal government has determined are most likely to be consumed raw. So a farm that grows wheat may be above the profit threshold, covered by the PSR, and be a Commercial Food Crop Growing Operation under Regulation 84, but none of the PSR’s rules would apply to that farm because it only grows wheat.

III. Commercial Food Crop Growing Operations

Colorado House Bill 18-1093, the food crop reclaimed water law, directs the Commission to allow Categories 2 and 3 reclaimed water for the irrigation of Commercial Food Crop Growing Operations.

Under the authority of the Food Safety Modernization Act, the U.S. Food and Drug Administration has established regulations known as the Produce Safety Rule (“PSR”), which establish food and worker safety rules, including for water quality and crops most likely to be eaten raw. Colorado House Bill 19-1114, which became law in 2019 authorizes the Colorado Commission of Agriculture to seek, accept and expend federal funds in order to implement the PSR in Colorado.

The Commission is requiring that Commercial Food Crop Growing Operations comply with the applicable portions of PSR, 21.C.F.R. Part 112 [84.9(A)(~~32904~~)], along with a number of additional conditions in 84.9(A) relating to signage, education, and public access. Under the PSR, reclaimed water would be treated like other non-potable water sources for covered produce under the PSR. The PSR has specific requirements for personnel qualifications and training, health and hygiene, water quality requirements and testing, growing, harvesting, packing and holding activities, compliance and enforcement provisions and equipment, tools, buildings and sanitation requirements. Additionally, the PSR does not allow irrigation of sprouts with water at the quality of Categories 2 or 3.

The Commission has determined that implementation of the PSR for Commercial Food Crop Growing Operation, rather than adoption of a fully separate regime for reclaimed water at these farms, will create no greater risk to public health or the environment than previously authorized uses if implemented properly and fully along with implementation of the requirements in Regulation 84. The Commission acknowledges that some crops are not considered to be eaten raw and are not covered under the PSR. These crops will still be required to implement the additional conditions in 84.9(A) described below for Non-Commercial Food Crop Growing Operations.

The Colorado Department of Agriculture is planning on conducting a rulemaking in the coming years to incorporate the federal PSR into its state regulations. **The Commission included the term “applicable” in 84.9(A)(2930) to convey that not all provisions of the PSR, as implemented by the State of Colorado, may be relevant to Regulation 84.** Once the Colorado Department of Agriculture adopts such regulations, the Division may request a written-only rulemaking to incorporate references to those new regulations into Regulation 84 to better align the state PSR with Regulation 84.

In addition to the PSR requirements, the Commission is requiring education and training for employees, cultivators and visitors for sites irrigating Commercial Food Crop Growing Operations with reclaimed water [(84.9(A)(13)]. Education and training include, at minimum, that non-potable reclaimed water is being used, it is not suitable for drinking, information about the best management practices and that produce should be washed with potable water and/or water with no detectable generic *E. coli* after harvesting produce and prior to consuming produce. **Additionally, a hand washing station and/or hand sanitizer containing at least 60% alcohol must be readily available at the Site, and education per 84.9(A)(13) must state that hands and produce should be washed with potable water as soon as it is accessible, and that hand sanitizer is not equivalent to washing hands and produce with potable water.** [84.9(A)(17)].

The Commission required that harvesting and public access shall be prohibited in areas where irrigation is occurring resulting in wet soils and/or crops [84.9(A)(212)]. These requirements will reduce the potential for ingestion, inhalation and dermal exposure to pathogens and will protect Users, Cultivators, employees and Visitors against potential illness.

IV. Non-Commercial Food Crop Growing Operations

The Commission adopted additional requirements for Non-Commercial Food Crop Growing Operations because there will be not be oversight under the PSR at these sites, and the general public is more likely to be interacting with irrigation water, soils and **food** crops at these sites. The Commission has determined that the level of reclaimed water treatment approved on November 6, 2018 for the use of toilet and urinal flushing (84.8, referred to here as “Category 3 Plus”) will also be required for Non-Commercial Food Crop Growing Operations and Resident- Controlled Food Crop Irrigation. Category 3 Plus reclaimed water **treatment** removes more pathogens and particulates than Categories 1, 2, and 3. In the 2018 toilet and urinal flushing rulemaking, the Commission adopted the more stringent Category 3 Plus treatment requirements to address the risk of a person accidentally ingesting up to 2 liters of the reclaimed water per year from cross connections within buildings. The Category 3 Plus treatment requirements are based off of, yet not identical to, California Title 22 Disinfected Tertiary reclaimed water whereby the treatment requirements were established through a microbial risk assessment (“MRA”). California’s Disinfected Tertiary reclaimed water is considered appropriate to irrigate **food** crops that are commercially processed and non-commercially processed.

Despite the additional treatment, the Commission recognizes that there is a risk of using Category 3 Plus reclaimed water for the use of **food** crop irrigation. Wastewater streams contain varying pathogen loads, and an MRA has not been conducted in Colorado. In addition, the Commission is not requiring any kind of disinfection residual or disinfection flushing in the reclaimed water distribution system, meaning that the pathogen load in the water at a Non-Commercial Food Crop Growing Operation site has the potential to be higher than it was at the treatment plant’s point of compliance. Nor is the Commission generally requiring **E. coli** monitoring at those Non-Commercial Food Crop Growing Operation sites (with the

exception of some BMPs, see below), meaning that the pathogen loading at those sites is likely to remain unknown. In sum, at this time, local data does not exist to accurately assess the risk of using Category 3 Plus reclaimed water to irrigate Non-Commercial Food Crop Growing Operation. Therefore, the Commission has worked to mitigate against some of these unknown risks through the imposition of BMPs.

The Commission adopted a BMP that **for sites that use hoses for reclaimed water irrigation, one supervising adult must be present with children in eighth grade and younger to oversee the appropriate use of reclaimed water use for each active hose/hose spigot. The Commission also required that children in eighth grade and younger must be supervised by an adult that has undergone training per 84.9(A)(13). Youths that are in ninth grade and older may be on a site without supervision only if they have received training per 84.9(A)(13). These requirements were established to ensure that children working in a garden will have adequate supervision. Supervision is needed to ensure that these children do not eat food directly out of the garden without washing it, follow handwashing or hand sanitizer protocols, and that children properly use hoses. The Commission determined that these requirements will help to minimize risk of potential illness for children.** This restriction contains allowances for large sites and would not apply at all if the reclaimed water at the site is shown to meet the Category 3 standard for a year (no *E. coli* detected in at least 75% of the samples within a month, no sample exceeds 126 cfu *E. coli* per 100 mL [84.9(A)(19)]).

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The Commission also adopted the PSR's restrictions on the irrigation of sprouts at Non- Commercial Food Crop Growing Operations [84.9(A)(223)]. The Commission adopted this restriction because the warm and humid conditions used for sprouting are uniquely ideal for the growth of bacteria, including Salmonella, Listeria, and *E. coli*.

The Commission required that potable water supplies and soap or hand sanitizer (if allowed by the PSR) be on or near a site using reclaimed water for Cultivators and Visitors to be able to wash their hands after harvesting crops and/or being present on the Site. This requirement is necessary to prevent hand to mouth ingestion of pathogens and is protective of public health. This requirement does not apply to Resident-Controlled Food Crop Irrigation because a residence must have a potable water spigot on the exterior of the residence [84.9(A)(1725)].

The Commission decided that if *E. coli* and/or turbidity standards exceed the required standards in Regulation 84 at Point of Compliance, Treaters shall notify the Legally Responsible Entity or person, and the Legal Responsible Entity or person must notify all Site Managers and Management Users [84.9(A)(334)]. Users should be informed that water quality standards are not being met to take proper precautions while continuing to use reclaimed water to irrigate.

The Commission adopted the provision that hose bibs must be inaccessible when they are not in use to prevent any person(s) that are not a trained user to potentially collect water for drinking purposes [84.9(A)(18)].

The Commission adopted more frequent inspection requirements for Non-Commercial Food Crop Growing Operations, as well as a new role (Site Manager) to ensure proper implementation and enforcement of Regulation 84 [(84.9(A)(345)]. The initial inspection by the Treater prior to beginning irrigation is to ensure that all of the proper best management practices are set up and in place for irrigation (e.g. appropriate signage, marked appurtenances, lock box for hose bibs, etc.) The second inspection that must occur after irrigation has started within 30 days of the first inspection is required to ensure that the practices and requirements that were verified in the initial inspection are being implemented. Site Manager inspections are required every two weeks to continue to ensure that best management practices and requirements are being met throughout the entire irrigation season. Both inspections by the Treater, and frequent inspections by the Site Manager help to ensure that implementation of the requirements in Regulation 84 are being met to protect public health and the environment.

Due to the fact that some Division inspections of Non-Commercial Food Crop Growing Operation Sites (like for community gardens) may take place when there is not a representative of the user or treater present at the site, the Commission added a provision to identify the process for an authorized representative from the Division to also submit inspector credentials before any inspection upon issuance of the NOA, as required by CRS 25-8-306, [84.9(A)(323)]. If persons are present at the site at the time of the inspection, the Division representative would also be required to present their inspector credentials at the time of the inspection.

V. Resident-Controlled Food Crop Irrigation

The Commission also adopted a number of unique requirements for Resident-Controlled Food Crop Irrigation, because of the specific management and compliance challenges of this structure.

The Commission required that a Management User must be designated to carry out responsibilities and conduct inspections. The Management User must be knowledgeable about the requirements in Regulation 84 in order to enforce the regulation and take action on violations of the regulation. The Management User could be a Homeowners Association representative, Condominium Association representative, landlord, etc. [84.9(A)(267)]. The Commission decided to require this to ensure the tiered oversight approach was applied to Resident-Controlled Food Crop Irrigation sites for protection of public health and the environment.

The Commission required that Management Users provide all property owners and renters with an educational manual and verbal education prior to a new **resident occupying the residence**. The education requirements are the same as those required in [84.9(A)(13)]. The property owner and/or renter must sign a document acknowledging that they received education, and the Management User must keep copies of the signed documents on site. If a property is sold or rented to another User, the new residents must receive the same education and sign the acknowledgement document [84.9(A)(278)]. The Commission felt that this was the most adequate way to ensure new tenants are aware that non-potable water is being used to irrigate, and to make them aware of the safety protocols to implement to minimize risk at residential sites.

The Commission required that a potable water supply spigot be available on the exterior of the residence so that potable water can be used should the Treater's reclaimed water not meet the water quality standards in Regulation 84 at any point in time [84.9(A)(245)].

The Commission adopted a provision that Management Users must maintain up to date maps and/or records of the locations, number and acreage of sites where reclaimed water is being used to irrigate food crops and landscapes, and update the Treater of this information annually [84.10(B)(2)(a)(ii)]. The Commission understands that the Division will work with Management

Users regarding how to calculate acreage and agronomic rates in a streamlined manner. Working with the Management User may include considerations of variances regarding these calculations.

VI. Hemp

The Division met with hemp workgroup stakeholders to discuss irrigation of edible and nonedible hemp and the hemp industry recommended the following: Category 1 reclaimed water only be used for rotational crops which are crops used to reduce soil erosion, increase soil fertility and increase crop yield for the next crop to be grown; Categories 2 and 3 reclaimed water to be allowed for irrigation of hemp to be used for fiber products; and Category 3 Plus to be allowed for irrigation of hemp to be used for edible and dermal products. Hemp stakeholders also recommended that clones not be irrigated with reclaimed water [84.9(A)(223)]. The Commission adopted these recommendations.

The Commission required that potable water supplies and soap or hand sanitizer be on or near a site using reclaimed water for Users and Visitors to be able to wash their hands after harvesting crops and/or being present on the Site. This requirement is necessary to prevent hand to mouth ingestion of pathogens and is protective of public health. The Commission also required that if the hand washing supply is a portable hand washing station, the used water must be disposed of in an area whereby it will not come into contact with the crops, soils or infiltration into soils near crops because this is a requirement in the PSR. Also, the portable hand washing station must stay adequately full of potable water for Users [84.9(A)(17)].

The Commission required that harvesting and public access shall be prohibited in areas where irrigation is occurring resulting in wet soils and/or crops [84.9(A)(212)]. The Commission also added a requirement that harvesting of produce not occur ~~during irrigation events~~ **where irrigation is occurring and making the soil and/or plant wet** [84.9(A)(213)]. These requirements will reduce the potential for ingestion, inhalation and dermal exposure to pathogens and will protect Cultivators, employees and Visitors against potential illness.

VII. Additional Discussion Applicable to Multiple New Uses

A. Application of Basic BMPs to All New Uses

The Commission applied a number of basic BMP similar to existing BMPs to all of the new uses, including the following: leaks in the irrigation system or hoses must be repaired immediately to avoid ponding and runoff and irrigation in excess of the agronomic rate [84.9(A)(256)]; a manual or display must be located at each of the reclaimed water sites; education and training must be conducted that is specific to each use; signage must be placed at specified distances throughout the site; all irrigation equipment and hoses must indicate that non-potable water is being used [84.9(A)(16), does not apply to resident-controlled]; and a ban on flood and sheet irrigation because it could result in an exceedance of irrigation at the agronomic rate [84.9(A)(304)].

B. Tiered Approach to Oversight for New Uses

The Commission adopted a tiered approach to oversight for Non-Commercial Food Crop Growing Operation **and** Resident-Controlled Food Crop Irrigation.

The Division, the Treater and the Site Manager or Management User (for Resident-Controlled) each have oversight, authority, general and inspection responsibilities. Each tier of oversight has the authority to lock/disconnect the hose bibs, or terminate service of reclaimed water when a User is in violation of Regulation 84 [84.10]. This tiered approach will help to ensure that best management practices are being implemented, and provide a blanket of protection for public health and the environment.

C. User Plan to Comply Requirements

The Commission adopted new User Plan to Comply Requirements for the new agricultural uses. The User Plans to Comply for the new uses require descriptions of how Users, Site Managers and Management Users intend to comply with the best management practices and adhere to

the responsibilities and inspections required in Regulation 84 [84.12(D-G)]. Adding the new User Plan to Comply requirements sets forth the expectations by the Division and the Commission for the new uses and binds users to the requirements in the User Plan to Comply and NOA to protect public health and the environment. Should a user violate the requirements in the User Plan to Comply and the NOA, enforcement action can be implemented by the Division.

D. Metals Reporting

Based on stakeholder concerns regarding metals uptake in hemp, the Commission adopted a BMP for all **food** crops and hemp that a User may request and receive from a treater reclaimed water monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations.

D. TDS

For all new uses except hemp, the Commission adopted a requirement for Treaters to monitor and report TDS data to the Division in their Discharge Monitoring Reports on a quarterly basis, and email this data to all users for the new Food Crop users [84.9(A)(14)]. The Commission finds that Users and Cultivators that are irrigating **food** crops with reclaimed water will benefit from this information to determine if they want to use reclaimed water to irrigate crops and/or to determine which crops to grow according to plant specific TDS sensitivity. **Reporting TDS or other pollutants through DMRs does not create any basis to imply that the use of reclaimed water is a discharge to state waters; rather the DMR system will be used for administrative purposes.**