



Boulder County, Colorado

ONSITE WASTEWATER TREATMENT SYSTEM (OWTS) REGULATIONS

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TABLE OF CONTENTS

Section 1.	Title and Authority	5
Section 2.	Scope and Purpose	5
2.1	Declaration	5
2.2	Purpose	5
2.3	Jurisdiction	5
2.5	Prohibition of OWTS Where Public Sewer Service is Available and Feasible	5
2.6	Applicability	5
2.7	Incorporation of Regulation 43	6
Section 3.	Definitions	6
Section 4.	Permits and Fees	16
4.1	Permit Required, Application Requirements and Procedures	16
4.2	Fees	17
4.3	Application and Permit Terms and Changes in Condition after Permit Issuance	17
4.4	Repair Permits for Noncompliant OWTS	18
4.5	Denial of Permits and Appealing Denial	18
4.6	Determination for Installation	19
4.7	Authorization to Enter Upon Property	19
4.8	Inspection Stages	19
4.9	Permit Final Approval Requirements	20
4.10	Division Authority to Administer and Enforce	21
4.11	Primary Enforcement Responsibility	21
4.13	Prohibition of OWTS in Unsuitable Areas	21
4.14	Variance Procedures	21
Section 5.	Regulation of Systems Contractors, Systems Cleaners, Systems Inspectors, and Systems Maintenance Providers	23
5.1	Systems Contractors	23
5.2	Systems Cleaners	24
5.3	Systems Inspectors	24
5.4	Systems Maintenance Providers	25
5.5	Revocation of Licenses	25

Section 6.	Permits for Continued Use of OWTS	25
6.1	Use Permit Applicability and Requirements	25
6.2	Operating Permit Penalties.....	27
Section 7.	Change of Use Permits.....	27
7.1	Purpose, Applicability, and Requirements.....	27
7.2	Change of Use Application Requirements	27
7.3	Enforcement and Penalties	28
Section 8.	Operation and Maintenance	28
8.1	Authority and Responsibility.....	28
	See 5 C.C.R. 1002-43:43.14.A. and C.	28
8.2	Maintenance and Cleaning	28
8.3	Termination of Use and Abandonment of an OWTS.....	29
Section 9.	Permitting and Oversight of Maintenance for Soil Treatment Area Reductions and Vertical and Horizontal Separation Distance Reductions Based on Use of Higher-Level Treatment	29
9.1	Purpose, Applicability and Requirements.....	29
9.2	Maintenance Requirements and Permit Term Limits.....	29
9.3	Maintenance Requirements and Permit Term Limits.....	30
9.4	Maintenance Permit Penalties	30
Section 10.	Property Transfer Inspections.....	30
10.1	Property Transfer Requirements	30
10.2	Additional requirements for non-residential systems.....	31
10.3	Exemptions from Property Transfer Requirements	32
10.4	Property Transfer Certificate application and inspection report	32
10.5	Term of Property Transfer Certificates.....	32
10.6	Revocation of Property Transfer Certificate	32
10.6	Penalties.....	33
Section 11.	Site and Soil Evaluation.....	33
11.1	Evaluation and marking of soil profile test pit excavations or percolation holes:	33
Section 12.	Wastewater Flow and Strength	33
12.1	Single-Family Residential Homes	33
Section 13.	Minimum Distances Between Components of OWTS and Physical Features	34

13.1	Property line setback reduction	34
Section 14.	Design Criteria: General	35
14.1	Floodplains and Floodways	35
Section 15.	Design Criteria: Components	36
15.1	Pipe Standards and Bedding Requirements	36
15.2	Effluent Filters	36
Section 16.	Design Criteria: Soil Treatment Area	36
16.1	General	36
16.2	Inspection Ports	36
16.3	Remediation Systems	37
Section 17.	Design Criteria: Other Systems	37
17.1	Evapotranspiration and Evapotranspiration/Absorption Systems	37
17.2	Vaults Other Than Vault Privies	37
17.3	Privies	38
17.4	Incinerating, Composting, and Chemical Toilets	38
Section 18.	Severability	40

Boulder County, Colorado

Onsite Wastewater Treatment System (OWTS) Regulations

Section 1. Title and Authority

- A. These Regulations are promulgated pursuant to the Onsite Wastewater Treatment System Act, Colorado Revised Statutes (C.R.S.) §25-10-101, et seq., hereinafter “OWTS Act.”
- B. These requirements shall be known as the “Boulder County Onsite Wastewater Treatment Systems Regulations.”
- C. These requirements have been adopted by the Boulder County Board of Health, acting as the board of health pursuant to and under authority contained in the Onsite Wastewater Treatment System Act, C.R.S. §25-10-101, et seq., and has designated Boulder County Public Health to implement these Regulations on behalf of the Boulder County Board of Health.

Section 2. Scope and Purpose

2.1 Declaration

- A. In order to preserve the environment; protect public health and water quality; eliminate and control causes of disease, infection, and aerosol contamination; and reduce and control pollution of the air, land, and water, it is declared to be in the public interest to establish minimum standards and regulations for onsite wastewater treatment systems (OWTS) in Boulder County and to provide the authority for the administration and enforcement of such minimum standards and regulations.
- B. These Regulations apply to all onsite wastewater treatment systems in Boulder County, Colorado, as defined in C.R.S. §25-10-103.

2.2 Purpose

- A. The purpose of this regulation as authorized by the OWTS Act is to establish minimum standards for the location, design, construction, performance, installation, alteration and use of OWTS within the state of Colorado, and establish the minimum requirements for regulations adopted by local boards of health including but not limited to permit application requirements; requirements for issuing permits; the inspection, testing, and supervision of installed systems; the maintenance and cleaning of systems; the disposal of waste material and the issuance of cease and desist orders.

2.3 Jurisdiction

- A. The jurisdiction of Boulder County Public Health (“BCPH”) extends over all unincorporated areas and over all municipal corporations within the territorial limits of Boulder County, Colorado, but not over the territory of any municipal corporation that maintains its own public health agency.

2.5 Prohibition of OWTS Where Public Sewer Service is Available and Feasible

An OWTS permit will not be issued to any person when the subject property is located within a municipality or special district that provides public sewer service, except where such sewer service to the property is not feasible in the determination of the municipality or special district, or the permit is otherwise authorized by the municipality or special district per 5 CCR-1002-43.4(B)(11).

2.6 Applicability

- A. Regulation Coverage

1. An OWTS with design capacity less than or equal to 2,000 gallons per day (gpd) must comply with these Regulations and the OWTS Act. These Regulations govern all aspects of OWTS permits, performance, location, construction, alteration, installation, and use.
2. An OWTS with design capacity greater than 2,000 gallons per day (gpd) must comply with CDPHE Regulation 43, site location and design approval in C.R.S. §25-8-702, and the discharge permit requirements in the Water Quality Control Act, C.R.S. §25-8-501, et seq.
 - a. Applicable Commission regulations include, but are not limited to, the following:
 - i. Regulation 22 - Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works (5 CCR 1002-22); and associated policies.
 - ii. Regulation 41 - The Basic Standards for Ground Water (5 CCR 1002-41).
 - iii. Regulation 42 - Site-Specific Water Quality Classifications and Standards for Ground Water (5 CCR 1002-42).
 - iv. Regulation 43 - On-Site Wastewater Treatment System Regulation (5 CCR-1002-43).
 - v. Regulation 61 - Colorado Discharge Permit System Regulations (5 CCR 1002-61).
 - v. Regulation 62 - Regulations for Effluent Limitations (5 CCR 1002-62).
 - b. The requirements for maintenance and standards of performance for systems greater than 2,000 gallons per day (gpd) must be determined by the site application approval and discharge permit.

B. In the interest of facilitating communication of Department concerns regarding a design being reviewed by the Division, the Department can provide comments to the Division for consideration during the Division's review of the proposed design and discharge permit application. Under such a coordinated process, the Division retains final authority for approval or denial of each domestic wastewater treatment works that is regulated under the site location approval and Colorado Discharge Permit System Regulations. Prior to approval or denial of each OWTS domestic wastewater treatment works, the Division must acknowledge and consider local OWTS regulations when they are more stringent and restrictive than Regulation 43.

2.7 Incorporation of Regulation 43

- A. The requirements of the Colorado Water Quality Control Commission's "On-site Wastewater Treatment System Regulation, Regulation 43, 5 CCR 1002-43, Effective date, June 15, 2025", are made a part of these Regulations and will apply except where these Regulations are more stringent than Regulation 43, 5 CCR 1002-43. All aspects of an On-site Wastewater Treatment System including, but not limited to, permits, design, performance, location, construction, alteration, inspection, maintenance and use must comply with Regulation 43 and any additional requirements contained in these Regulations.

Section 3. Definitions

The following definitions are used in these Regulations:

1. *Absorption System*: A leaching field and adjacent soils or other system for the treatment of sewage in an onsite wastewater treatment system by means of absorption into the ground. See "soil treatment area."
2. *Accessible*: Easily reached, attained, or entered by the necessary equipment or maintenance provider.

3. *Alteration* (Alter): to change in character or composition of the OWTS. A modification to something different in a small yet significant way.
4. *ANSI*: American National Standards Institute, which establishes national consensus standards and conformity assessment systems.
5. *Applicant*: An owner and/or occupant of a property who submits an application for a permit for an onsite wastewater treatment system.
6. *Auxiliary building*: means a non-residential structure, located on the same lot or parcel as the principal structure, and for an incidental use to the principal structure.
7. *Basal Area*: The effective surface area available to transmit the treated effluent from the filter media in a mound system into the in-situ receiving soils. The perimeter is measured at the interface of the imported fill material and in-situ soil. On sloping sites, only the area down-gradient from the up-slope edge of the distribution media may be included in this calculation.
8. *BCPH*: Refers to Boulder County Public Health.
9. *Bed*: A below-grade soil treatment area with a level sub-base, consisting of a shallow excavation greater than three feet wide containing distribution media and more than one lateral.
10. *Bedrock*: Continuous rock that underlies the soil or is exposed at the surface. Bedrock is generally considered impervious, but if fractured or deteriorated, it may allow effluent to pass through without adequate treatment.
11. *Bedroom*: A room with an egress window, a closet, and/or is intended for sleeping purposes; or as defined by the local board of health, as stated in the local OWTS regulation.
12. *Biochemical Oxygen Demand, Five-Day (BOD)*: Quantitative measure of the amount of oxygen consumed by bacteria while stabilizing, digesting, or treating biodegradable organic matter under aerobic conditions over a five-day incubation period; expressed in milligrams per liter (mg/L).
13. *Biochemical Oxygen Demand, Carbonaceous Five Day" (CBOD)*: Quantitative measure of the amount of oxygen consumed by bacteria while stabilizing, digesting, or treating the organic matter under aerobic conditions over a five-day incubation period while in the presence of a chemical inhibitor to block nitrification; expressed in milligrams per liter (mg/L).
14. *Board*: Refers to the Boulder County Board of Health.
15. *Building Sewer*: Piping that conveys wastewater to the first system component or the sewer main.
16. *Carbonaceous Biochemical Oxygen Demand*: See "biochemical oxygen demand, carbonaceous five day."
17. *CCR*: Rules and regulations of the Colorado Code of Regulations.
18. *CDPHE*: The Colorado Department of Public Health and Environment, which was created by C.R.S. §25-1-102.
19. *Cesspool*: An unlined or partially lined underground pit or underground perforated receptacle into which raw household wastewater is discharged and from which the liquid seeps into the surrounding soil. Cesspool does not include a septic tank.
20. *Chamber*: An arch-shaped structure providing an open-bottom soil interface with permeable sidewalls used for distribution of effluent in a soil absorption system.
21. *Cistern*: An enclosed unpressurized reservoir or tank for storing water as part of a potable water supply system.
22. *Cleaning*: The act of removing septage or other waste from a wastewater treatment system component or grease/waste from a grease interceptor.
23. *Colorado Plumbing Code*: Rules and Regulations of the Colorado State Plumbing Board (3 CCR 720-1).

24. *Commission*: The State of Colorado Water Quality Control Commission, which was created by C.R.S. §25-8-201.
25. *Competent Technician*: A person who has the appropriate expertise and is able to conduct and interpret the results of soil profile test pit excavations, percolation tests, and site evaluations. This individual has also met the required competencies for a “Competent Technician,” as defined in Section 9.8.
26. *Component*: A subsection of an onsite wastewater treatment system; a component may include multiple devices.
27. *Composting Toilet*: A self-contained waterless toilet designed to decompose non-water-carried human wastes through microbial action and to store the resulting matter for disposal.
28. *Consistence*: The degree and kind of cohesion and adhesion that soil exhibits and/or the resistance of soil to deformation or rupture under an applied stress to an extent that the soil density would restrict permeability. Aspects of consistency are used to determine if the horizon will have permeability lower than that of the defined soil type. Additional insight to consistence can be found in the USDA-NRCS* Field book for Describing and Sampling Soils; Version 3.0, Sept. 2012 (*-United States Department of Agriculture – National Resources Conservation Service).
29. *Crest*: The highest point on the side of a dry gulch or cut-bank.
30. *C.R.S.*: Rules and regulations of the Colorado Revised Statutes.
31. *CSA*: Canadian Standards Association, which provides product testing and certification services for a variety of products, including electrical, mechanical, plumbing, and gas products.
32. *Cut-bank*: A nearly vertical slope caused by erosion or construction that has exposed historic soil strata.
33. *Deep Gravel System*: A soil treatment area for repairs only where the trenches utilize a depth of gravel greater than six inches below the distribution pipe and sidewall area is allowed according to a formula specified in this regulation.
34. *Deficiency*: See “malfunction.”
35. *Department*: The Colorado Department of Public Health and Environment, created by C.R.S. §25-1-102.
36. *Design*: 1) the process of selecting, sizing, locating, specifying, and configuring treatment train components that match site characteristics and facility use, as well as creating the associated written documentation; and 2) written documentation of size, location, specification, and configuration of a system.
37. *Design Capacity*: See “flow, design.”
38. *Design Flow*: See “flow, design.”
39. *Designer, Onsite Wastewater Treatment System*: A practitioner who utilizes site evaluation and investigation information to select an appropriate OWTS and prepares a design document in conformance with this regulation.
40. *Disinfection*: means the process of destroying pathogenic microorganisms in sewage through the application of ultraviolet light, chlorination, or ozonation.
41. *Distribution*: The process of dispersing wastewater or effluent to one or more components, devices, or throughout a soil treatment area.
42. *Distribution Box*: A watertight component that receives effluent from a septic tank or other treatment unit and distributes effluent via gravity in approximately equal portions to two or more distribution laterals in the soil treatment area.
43. *Division*: The division of administration of the department of which the Colorado Water Quality Control Division is a part.
44. *Domestic Wastewater*: See “wastewater, domestic.”

45. *Domestic Wastewater Treatment Works*: A system or facility for treating, neutralizing, stabilizing, or disposing of domestic wastewater which system or facility has a designed capacity to receive more than 2,000 gallons of domestic wastewater per day. The term "domestic wastewater treatment works" also includes appurtenances to such system or facility, such as outfall sewers and pumping stations and equipment related to such appurtenances. The term "domestic wastewater treatment works" does not include industrial wastewater treatment plants or complexes whose primary function is the treatment of industrial wastes, notwithstanding the fact that human wastes generated incidentally to the industrial process are treated therein. C.R.S. §25-8-103(5).
46. *Dosing*: A high-rate periodic discharge into a soil treatment area.
47. *Dosing, Demand*: Configuration in which a specific volume of effluent is delivered to a component based upon patterns of wastewater generation from the source.
48. *Dosing, Pressure*: A uniform application of wastewater throughout the intended portion of the soil treatment area through small diameter pipes and orifices, under pressure. For this definition, the term "pressure" indicates that the system is capable of creating upward movement of effluent out of the distribution system piping.
49. *Dosing, Timed*: A configuration in which a specific volume of effluent is delivered to a component based upon a prescribed interval, regardless of facility water use.
50. *Dosing Siphon*: A device used for demand dosing effluent; which stores a predetermined volume of water and discharges it at a rapid rate from a tank at a given elevation to a component at a lower elevation. This is accomplished by means of atmospheric pressure and the suction created by the weight of the liquid in the conveying pipe.
51. *Dosing Tank*: A tank, compartment, or basin that provides for storage of effluent from a septic tank or other treatment unit intended to be delivered to a soil treatment area at a high-rate periodic discharge.
52. *Drainfield*: See "soil treatment area."
53. *Drop Box*: A device used for sequential distribution of effluent by gravity flow to a lateral of a soil treatment area.
54. *Dry Gulch*: See "gulch, dry."
55. *Drywell*: An unlined or partially lined underground pit (regardless of geometry) into which drainage from roofs, basement floors, water softeners, or other non-wastewater sources is discharged and from which the liquid seeps into the surrounding soil.
56. *Dwelling Unit*: One or more rooms designed to accommodate one household and containing only one kitchen plus living, sanitary, and sleeping facilities.
57. *Effective Size*: The size of granular media, such that 10% by weight of the media is finer than the size specified.
58. *Effluent*: The liquid flowing out of a component or device of an onsite wastewater treatment system.
59. *Effluent Filter*: a removeable, cleanable (or disposable) device installed on the outlet piping of a septic tank for the purposes of retaining solids larger than one-eighth (1/8) inch and/or modulating effluent flow rate. An effluent filter may be a component of pump installation. An effluent filter may also be installed following the septic tank but before higher level treatment components or a soil treatment area.
60. *Effluent Pipe*: Non-perforated pipe that conveys effluent from one onsite wastewater treatment system component to the next.
61. *Environmental Health Specialist*: A person trained in physical, biological, or sanitary science to carry out educational and inspectional duties in the field of environmental health.
62. *Evapotranspiration/Absorption System*: An unlined onsite wastewater treatment system component that uses evaporation, transpiration, and absorption for the dispersal of effluent.

63. *Evapotranspiration System*: An onsite wastewater treatment system component with a continuous, impermeable liner that uses evapotranspiration and transpiration for the dispersal of effluent.
64. *Failure*: A condition existing within any component of an OWTS that prevents the system from functioning, as intended, and which results in the discharge of untreated or partially treated wastewater onto the ground surface, into surface water or groundwater, or which results in the backup of sewage into the building sewer. Other conditions within a component that are deemed by BCPH to be a threat to public health and/or safety may also be deemed a failure.
65. *Field Performance Testing*: Data gathering on a system in actual use that is being proposed for Division acceptance.
66. *Flood Fringe*: The portion of the floodplain overlay district that are not in the floodway.
67. *Floodplain (100-year)*: An area of land susceptible to being inundated as a result of the occurrence of a one-hundred-year flood.
68. *Floodplain Overlay District*: is defined as the FEMA Floodplain combined with the Boulder County floodplain as defined in Section 4-403(A) of the Boulder County Land Use Code.
69. *Floodway*: The portions of the Floodplain Overlay District required for the passage or conveyance of the 1% annual-chance (100-year) flood in which waters will flow at significant depths or with significant velocities, including the channel of a river or other watercourse and any adjacent floodplain areas that must be kept free of development and other encroachments in order to protect the health and safety of the residents of and visitors to Boulder County, and to discharge the 100-year flood without cumulatively increasing the water surface elevation more than a designated height (also called 'surcharge' and described in Section 4-404.2(E)(3)).
70. *Flow, Daily*: The measured volume of wastewater generated from a facility in a 24-hour period expressed as gallons per day.
71. *Flow, Design*: The estimated volume of wastewater per unit of time for which a component or system is designed. Design flow may be given in the estimated volume per unit, such as person per unit time that must be multiplied by the maximum number of units that a facility can accommodate over that time.
72. *Flow Equalization*: A system configuration that includes sufficient effluent storage capacity to allow for regulated flow on a daily or multi-day basis to a subsequent component despite variable flow from the source.
73. *Flow Equalizer*: An adjustment device to evenly distribute flow between outlets in a distribution box or other device that may be out of level.
74. *Grease Interceptor Tank*: A watertight device located outside a facility designed to intercept, congeal, and retain or remove fats, oils, and grease from sources (e.g. commercial food service) that will generate high levels of fats, oils, and greases.
75. *Groundwater*: That part of the subsurface water that is at or below the saturated zone.
76. *Groundwater condition*: means a condition in the soil profile where a seasonal or current ground water surface has been identified, thus creating a vertical separation requirement to the infiltrative surface of a soil treatment area.
77. *Groundwater Surface*: The uppermost limit of an unconfined aquifer at atmospheric pressure.
78. *Guidelines*: Colorado State Board of Health Guidelines on Individual Sewage Disposal Systems, 5 CCR-1003-6 – predecessor of per Onsite Wastewater Treatment System Regulation, 5 CCR-1002-43.
79. *Gulch, Dry*: A deep, narrow ravine that receives discontinuous storm influenced flows, for a short duration, in direct response to a rain event and is not interconnected to a groundwater source.

80. *Health Officer*: The Executive Director (ED) of BCPH or otherwise appointed by the ED or the board of health.
81. *Higher-level Treatment*: Designated treatment levels other than Treatment Level 1 (see Table 6-3).
82. *HOA*: Hand/off/auto switch
83. *Holding Tank*: See “vault.”
84. *Infiltrative Surface*: Designated interface where effluent moves from distribution media or a distribution product into treatment media or original soil. In standard trench or bed systems, this will be the interface of the distribution media or product and in-situ soil. Two separate infiltrative surfaces will exist in a mound system and an unlined sand filter, one at the interface of the distribution media and fill sand, and the other at the interface of the fill sand and in-situ soil.
85. *Inspection Port*: An access point in a system component that enables inspection, operation, and/or maintenance.
86. *Invert*: Elevation of the bottom of the inside pipe wall or fitting.
87. *Lateral*: A pipe, chamber, or other component used to transport and distribute effluent.
88. *Leachfield*: See “soil treatment area.”
89. *Limiting Layer*: A horizon or condition in the soil profile that exhibits a limited capability for treatment of wastewater but will readily accept the effluent. This includes fractured bedrock and type R-0 soils (see Table 10-1A).
90. *Liner*: An impermeable synthetic or natural material used to prevent or restrict infiltration and/or exfiltration. For the purposes of this regulation, the minimum thickness of a liner must be 30 ml.
91. *Linear Loading Rate*: The amount of effluent applied per linear foot along the contour (gpd/linear ft.).
92. *Local Drainage System*: The storm drainage system that conveys the minor and major storm runoff to the Major Drainage System and serves only the property within the development in question.
93. *Long-term Acceptance Rate (LTAR)*: Design parameter expressing the rate that effluent enters the infiltrative surface of the soil treatment area at equilibrium, measured in volume per area per time (e.g. gallons per square foot per day).
94. *Major Drainage System*: The storm drainage system that conveys the minor and major storm runoff and serves areas both within and outside the development in question.
95. *Malfunction*: The condition in which a component is not performing as designed or installed and needs repair or modification to function as originally intended.
96. *Manufactured Media*: See “media, other manufactured.”
97. *Media*: Solid material that can be described by shape, dimensions, surface area, void space, and application.
98. *Media, Enhanced Manufactured*: An accepted proprietary manufactured distribution product that includes synthetic media contained within one or more external permeable outer layers that promote the movement of the effluent, and is placed on a specified sand base or media that does not mask the infiltrative surface of the in-situ soil.
99. *Media, Other Manufactured*: An accepted proprietary manufactured distribution product made of synthetic media for distribution of effluent that is placed directly on the in-situ soil.
100. *Media, Treatment*: Non- or slowly-degradable media used for physical, chemical, and/or biological treatment in an onsite wastewater treatment system component.
101. *Mound*: A soil treatment area whereby the infiltrative surface is at or above original grade at any point.

102. *Nitrogen Reduction*: A minimum 50% reduction of influent nitrogen strength, which is the minimum objective of NSF/ANSI Standard 245 – Wastewater Treatment Systems – Nitrogen Reduction.
103. *NRTL*: Nationally Recognized Testing Laboratory.
104. *NSF*: National Sanitation Foundation/, which sets public health standards and certification programs to protect the world’s food, water, consumer products and the environment.
105. *Onsite Wastewater Treatment System (“OWTS” or “system”)*: An absorption system of any size or flow or a system or facility for treating, neutralizing, stabilizing, or dispersing sewage generated in the vicinity, which system is not a part of or connected to a sewage treatment works.
106. *OWTS Act*: The Onsite Wastewater Treatment System Act, C.R.S. §25-10-101, et seq.
107. *Percolation Test*: A subsurface soil test at the depth of a proposed absorption system or similar component of an OWTS to determine the water absorption capability of the soil, the results of which are normally expressed as the rate at which one inch of water is absorbed. The rate is expressed in minutes per inch.
108. *Performance Standard*: Minimum performance criteria for water quality and operation and maintenance established by the regulatory authority to ensure compliance with the public health and environmental goals of the State or public health agency.
109. *Permeability*: The property of a material which permits movement of water through the material.
110. *Permit*: A permit for the construction or alteration, installation, and use or for the repair of an onsite wastewater treatment system.
111. *Person*: An individual, partnership, firm, corporation, association, or other legal entity and also the state, any political subdivision thereof, or other governmental entity.
112. *Pollutant*: As defined in C.R.S. § 25-8-103(15).
113. *Pressure Distribution*: See “dosing, pressure.”
114. *Privy*: An above-grade structure allowing for the disposal of excreta not transported by a sewer and which provides privacy and shelter and prevents access to the excreta by flies, rodents, or other vectors.
115. *Privy, Pit*: Privy over an unlined excavation.
116. *Privy, Vault*: Privy over a vault.
117. *Professional Engineer*: An engineer licensed in Colorado in accordance with C.R.S. §12-120-201, et seq., C.R.S. and practicing within their areas of expertise, consistent with 4 CCR 730-1.
118. *Professional Geologist*: A person who is a graduate of an institution of higher education that is accredited by a regional or national accrediting agency, with a minimum of 30 semester (45 quarter) hours of undergraduate or graduate work in a field of geology and whose post-baccalaureate training has been in the field of geology with a specific record of an additional five years of geological experience to include no more than two years of graduate work. C.R.S. §23-41-208.
119. *Property Owner*: Owner of the property served by the OWTS.
120. *Proprietary Product*: A manufactured component or other product that is produced by a private person. It may be protected by patent, trademark, or copyright.
121. *Public Domain Technology*: A system that is assembled on location from readily available components and is based on well-established design criteria and is not protected by patent, trademark, or copyright.
122. *Record Drawing*: Construction drawings provided to illustrate the progress or completion of the installation of an OWTS, or components of the OWTS; typically based on field inspections by the designer.

123. *Redoximorphic*: A soil property that results from the reduction and oxidation of iron and manganese compounds in the soil after saturation with water and subsequent desaturation.
124. *Remediation System*: A treatment system, chemical/biological additive, or physical process that is proposed to restore the soil treatment area of an OWTS to intended performance.
125. *Repair*: Restoration of functionality and/or treatment by reconstruction, relocation, or replacement of an Onsite Wastewater Treatment System or any component thereof in order to allow the system to function as intended.
126. *Replacement System*: See “repair.”
127. *Riser*: A watertight vertical cylinder and lid allowing access to an OWTS component for inspection, cleaning, maintenance, or sampling.
128. *Residential, other*: structures that provide lodging or housing for transient visitors or multiple families and are not occupied as a primary residence.
129. *Restrictive layer*: means a condition in the soil profile that restricts the vertical movement of the effluent. This may include impervious bedrock, glacial till, platy soils, sodic soils, or soils with a cementation class of “strongly cemented” or greater.
130. *Rock-Plant Filter*: A designed system which utilizes treatment media and various wetland plants to provide treatment of wastewater through biological, physical, and chemical processes; also called a “constructed wetland.”
131. *Sand Filter*: An engineer-designed OWTS that utilizes a layer of specified sand as filter and treatment media and incorporates pressure distribution.
132. *Sand Filter, Lined*: An engineer-designed OWTS that has an impervious liner and under-drain below the specified sand media. Lined sand filters may be intermittent/single pass where the effluent is distributed over the sand bed a single time before distribution to a soil treatment area, or re-circulating where part of the effluent is returned to an earlier component for additional treatment before distribution to a soil treatment area.
133. *Sand Filter, Unlined*: An engineer-designed OWTS that includes a layer of specified sand used as a treatment media without a liner between the sand and the existing soil on which it is placed.
134. *Seepage Pit*: An excavation deeper than it is wide that receives septic tank effluent and from which the effluent seeps from a structural internal void into the surrounding soil through the bottom and openings in the side of the pit.
135. *Septage*: A liquid or semisolid that includes normal household wastes, human excreta, and animal or vegetable matter in suspension or solution generated from a residential septic tank system. Septage may include such material issued from a commercial establishment if the commercial establishment can demonstrate to the Division that the material meets the definition for septage set forth in this subsection. Septage does not include chemical toilet residuals.
136. *Septic Tank*: A watertight, accessible, covered receptacle designed and constructed to receive sewage from a building sewer, settle solids from the liquid, digest organic matter, store digested solids through a period of retention, and allow the clarified liquids to discharge to other treatment units for final disposal.
137. *Serial Distribution*: A distribution method in which effluent is loaded into one trench and fills it to a predetermined level before passing through a relief pipe or device to the succeeding trench. The effluent passes through the distribution media before entering succeeding trenches which may be connected to provide a single uninterrupted flow path. This definition is retained for historical reference. Serial distribution is no longer permitted under current regulations.
138. *Sewage*: A combination of liquid wastes that may include chemicals, house wastes, human excreta, animal or vegetable matter in suspension or solution, and other solids in suspension

or solution, and that is discharged from a dwelling, building, or other establishment. See also “wastewater.”

139. *Sewage Treatment Works*: Same meaning as "domestic wastewater treatment works" under C.R.S. §25-8-103.
140. *Single Unit Dwelling*: This definition is incorporated by reference from Boulder County Community Planning and Permitting Land Use Code. This definition is applicable to the Single Family Residential terminology used in this regulation. This does not apply to uses meeting the definition of “residential, other”.
141. *Site Evaluation*: A comprehensive analysis of soil and site conditions for an OWTS.
142. *Site Evaluator*: A practitioner who conducts preconstruction site evaluations, including visiting a site and performing soil analysis, a site survey, or other activities necessary to determine the suitability of a site for an OWTS.
143. *Slit Trench Latrine*: A temporary shallow trench for use as disposal of non-water-carried human waste.
144. *Soil*: 1) unconsolidated mineral and/or organic material on the immediate surface of the earth that serves as a medium for the growth of plants and can potentially treat wastewater effluent; 2) unconsolidated mineral or organic matter on the surface of the earth that has been subjected to and shows effects of: a) pedogenic and environmental factors of climate (including water and temperature effects) and b) macro and microorganisms, conditioned by relief, acting on parent material over a period of time.
145. *Soil Evaluation*: A percolation test, soil profile, or other subsurface soil analysis at the depth of a proposed soil treatment area or similar component or system to determine the water absorption capability of the soil, the results of which are normally expressed as the rate at which one inch of water is absorbed or as an application rate of gallons per square foot per day.
146. *Soil Horizon*: Layers in the soil column differentiated by changes in texture, color, redoximorphic features, bedrock, structure, consistence, and any other characteristic that affects water movement or treatment of effluent.
147. *Soil Morphology*: 1) physical constitution of a soil profile, as exhibited by the kinds, thickness, and arrangement of the horizons in the profile, and by the texture, structure, consistence, and porosity of each horizon; and 2) visible characteristics of the soil or any of its parts.
148. *Soil Profile Test Pit Excavation*: A trench or other excavation used for access to evaluate the soil horizons for properties influencing effluent movement, bedrock, evidence of seasonal high ground water, and other information to be used in locating and designing an OWTS.
149. *Soil Structure*: The naturally occurring combination or arrangement of primary soil particles into secondary units or peds; secondary units are characterized on the basis of type, size class, and grade (degree of distinctness).
150. *Soil Texture*: Proportion by weight of sand, silt, and clay in a soil.
151. *Soil Treatment Area*: The physical location where final treatment and dispersal of effluent occurs. Soil treatment area includes drainfields, mounds, and drip fields.
152. *Soil Treatment Area, Alternating*: Final treatment and distribution component that is composed of two soil treatment areas that are independently dosed.
153. *Soil Treatment Area, Sequencing*: A soil treatment area having more than two sections that are dosed on a frequent rotating basis.
154. *State*: State of Colorado.
155. *State Waters*: Any and all surface and subsurface waters contained in or that flow in or through the state of Colorado; it does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

156. *Storm Drainage System*: Publicly owned facilities by which stormwater is collected and conveyed, including, but not limited to, any roads and drainage systems, streets, gutters, curbs, catch basins, inlets, piped storm drains, pumping facilities, retention and detention basins, and natural and manmade or altered drainage, ditches/culverts/channels/lakes/reservoirs, and other drainage structures.
157. *Strength, Wastewater*: The concentration of constituents of wastewater or effluent; usually expressed in mg/L.
158. *Suitable Soil*: A soil which will effectively treat and filter effluent by removal of organisms and suspended solids, which meets long-term acceptance rate requirements as defined in Table 10-1, and has the required vertical thickness below the infiltrative surface and above a limiting layer.
159. *System*: Onsite wastewater treatment system.
160. *Systems Cleaner*: A person engaged in and who holds himself or herself out as a specialist in the cleaning and pumping of OWTS and removal of the residues deposited in the operation thereof.
161. *Systems Contractor*: A person engaged in and who holds himself or herself out as a specialist in the installation, renovation, and repair of OWTS.
162. *Systems Maintenance Provider*: means a person engaged in and who holds himself or herself out as a specialist in routine or periodic actions taken to assure that the On-site Wastewater Treatment System is functioning as intended, and/or that the On-site Wastewater Treatment System is meeting performance requirements.
163. *Tiny home*: means a structure (a non-recreational vehicle) that has only one bedroom and has 400 sq.ft. or less of livable space, including lofts. In this instance, the OWTS may be sized for only one bedroom.
164. *Total Suspended Solids*: Measure of all suspended solids in a liquid; typically expressed in mg/L.
165. *Transfer of Title*: Change of ownership of a property.
166. *Transfer of Title Inspector*: means a person engaged in and who holds himself or herself out as a specialist in conducting evaluations and observations of an existing Onsite Wastewater Treatment System serving a structure that is proposed for property transfer, to assess if the system is functioning as intended.
167. *Treatment Level*: Defined concentrations of pollutants to be achieved by a component or series of components of an OWTS.
168. *Treatment Media*: See “media, treatment.”
169. *Treatment Unit*: A component or series of components where solids or pollutants are removed from wastewater or effluent from a preceding component.
170. *Trench*: 1) below-grade soil treatment area consisting of a shallow excavation with a width of three feet or less containing distribution media and one lateral; and 2) excavation for placement of piping or installation of electrical wire or conduit.
171. *UL*: Underwriters Laboratories, a safety consulting and certification company.
172. *Unapproved Wastewater Discharge*: refers to discharges with concentrations of pollutants that exceed the designated treatment level under Table 6.3, Table 10-1 and 10-1A in 5 CCR 1002-43:43.6 and 43.10 respectively. If there is inadequate documentation to determine the size, type, capacity, and/or good working order of relevant components necessary to establish compliance with these tables, the Minimum Criteria as set forth in 5 C.C.R. 1002-43:43.4.L.5 is not met and further investigation is required. A repair permit may be required to perform such investigation and correct any noncompliance.
173. *Uniformity Coefficient*: A value which is the ratio of D60 to D10, where D60 is the soil diameter of which 60% of the soil weight is finer and D10 is the corresponding value at 10% finer (a

soil having a uniformity coefficient smaller than four would be considered "uniform" for purposes of this regulation).

174. *Vault*: A watertight, covered receptacle, which is designed to receive and store excreta or wastes either from a building sewer or from a privy and is accessible for the periodic removal of its contents. If the vault is intended to serve a structure or structures that are projected to generate a domestic wastewater flow of greater than 2,000 gallons per day at full occupancy, the vault would be considered a domestic wastewater treatment works. Vaults are Onsite Wastewater Treatment Systems.
175. *Visual and Tactile Evaluation of Soil*: Determining the properties of soil by standardized tests of appearance and manipulation in the hand.
176. *Volume, Effective*: The amount of effluent contained in a tank under normal operating conditions; for a septic tank, effective volume is determined relative to the invert of the outlet. For a dosing tank, the effective volume under normal conditions is determined relative to the invert of the inlet and the control off level.
177. *Wastewater, Domestic*: Combination of liquid wastes (sewage), which may include chemicals, household wastes, human excreta, animal or vegetable matter in suspension or solution, or other solids in suspension or solution that are discharged from a dwelling, building, or other structure.
178. *Wastewater, High Strength*: 1) wastewater from a structure having BOD₅ greater than 300 mg/L; and/or total suspended solids (TSS) greater than 200 mg/L; and/or fats, oils, and grease greater than 50 mg/L; or 2) effluent from a septic tank or other pretreatment component (as defined by NSF/ANSI Standard 40 testing protocol) that has BOD₅ greater than 180 mg/L; and/or TSS greater than 80 mg/L; and/or fats, oils, and grease greater than 25 mg/L and is applied to an infiltrative surface.
179. *Wastewater Pond*: A designed pond that receives exclusively domestic wastewater from a septic tank, and which provides an additional degree of treatment.
180. *Watercourse*: a natural or artificial channel through which water flows, either continuously or intermittently, and exhibits a connection to an actual or elevated groundwater table. A watercourse includes the bed of a channel that flows only seasonally (e.g., creek, stream, irrigation ditch). Hollows, ravines, or roadside ditches that are normally dry are not considered a watercourse.
181. *Water Quality Control Commission*: See "Commission."
182. *Water Quality Control Division*: See "Division."
183. *Wetland, constructed*: See "rock-plant filter."
184. *Wetlands*: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Section 4. Permits and Fees

4.1 Permit Required, Application Requirements and Procedures

- A. Before installing, constructing, altering, or repairing an onsite wastewater treatment system (OWTS) in Boulder County, Colorado, an Applicant must obtain a permit from BCPH.
- B. The Applicant must submit a complete application to BCPH that is consistent with Section 4.1.C of these Regulations before installing, altering, or repairing the OWTS.
- C. Minimum OWTS permit application requirements include provision of the following:
 1. Owner name and contact information.
 2. Property address.

3. Property legal description.
4. Type of permit.
5. Report from site and soil evaluation.
6. System design with a legible and accurate site plan showing pertinent physical features on the subject property and adjacent properties, as noted in Table 7-1 in 5 C.C.R. 1002-43.
7. Any other information, data, plans, specifications, and tests required by BCPH, such as:
 - a) Additional hydrological, geological, engineering, or other information provided by a professional engineer or geologist, which may be required if specific evidence suggests undesirable soil conditions exist. Note: This requirement will not prejudice the right of BCPH to develop its own information from its own source at its own expense.
 - b) A completed current BCPH permit application to install, construct, alter, or repair an OWTS.
8. The issuance of a permit and specifications of terms and conditions therein will not constitute assumption of liability, nor create a presumption that BCPH or its employees may be liable for the failure or malfunctioning of any system. Permit issuance will not constitute a certification that the system, the equipment used in the system, or any component used for system operation will ensure continuous compliance with the provision of the OWTS Act, the regulations adopted thereunder, including these Regulations, or any terms and conditions of a permit.

4.2 Fees

A. Permit Fees:

1. The Board may set permit fees pursuant to C.R.S. §25-10-107.
2. Applicants must submit the applicable OWTS permit application fees with their completed OWTS permit applications, as permit fees are due and payable upon submission of the OWTS permit applications.

B. **Other Service Fees:** The Board may require additional fees for other services pursuant to C.R.S. §25-10-107.

C. **Additional Fees and Surcharges:** Additional fees and surcharge may be assessed pursuant to 5 CCR 102:102.1 et seq.

4.3 Application and Permit Terms and Changes in Condition after Permit Issuance

- A. Applications that have not had a permit issued will expire one year after the submission date.
 1. If new regulations have not been adopted since submittal, applications can be renewed for a renewal fee.
 2. If new regulations have been adopted since submittal, a new application and permit fee may be required.
- B. OWTS construction permits expire one year after date of issuance if construction has not yet commenced.
 1. OWTS permit renewals may be requested in writing prior to expiration of OWTS construction permits. Extensions can be granted for up to a total of 36 months for extenuating circumstances, including but not limited to site conditions preventing construction or new construction of dwelling or structures.
 2. Regulation revisions made before renewal requests are submitted may also be applicable to the renewal and may require submission of a revised OWTS design.
 3. Permit renewal fees may be applicable.

- C. OWTS construction permits expire three years after date of the last inspection if construction has commenced and is pending further inspections.
- D. OWTS construction permits with approval of final inspection(s) that are still pending documentation will expire one year after the last inspection.
- E. Any changes to OWTS plans or specifications after a permit is issued will invalidate the permit unless the permittee receives written approval from BCPH of the changes.

4.4 Repair Permits for Noncompliant OWTS

- A. An owner and/or occupant (“Applicant”) of a property that has a non-compliant OWTS must obtain a repair permit from BCPH. Within two business days of BCPH issuing a notice that an OWTS is not functioning in compliance with the OWTS Act or other applicable regulations or their OWTS constitutes a nuisance or hazard to public health or water quality, the Applicant must apply for a repair permit.
- B. The repair permit will provide a reasonable amount of time for the Applicant to make the necessary repairs. At the end of that period, BCPH must inspect the OWTS to ensure it is functioning properly. Concurrently with the issuance of a repair permit, BCPH may issue an emergency use (operating) permit to authorize continued use of the malfunctioning system on an emergency basis; however, the emergency use permit may not exceed the period stated in the repair permit. Emergency use (operating) permits may be extended, for good cause shown, if the repairs can’t be completed by the date noted on the repair permit through no fault of the Applicant and only if the Applicant continues making repairs to the OWTS.
- C. Change of use or expanded use:
A permit is required for a change of use or the expanded use of an OWTS where it has been determined that an existing OWTS is not sized to accommodate the expected additional hydraulic or organic load. The OWTS must be replaced or modified to handle such an increase unless it is determined that the existing system is adequately designed and constructed. 5 C.C.R. 1002-43:43.4.B.8.

4.5 Denial of Permits and Appealing Denial

- A. If BCPH denies an OWTS permit, BCPH will send by mail or electronic mail written notice to the Applicant that outlines details regarding why the permit was denied and requirements for reconsideration of the application.
- B. Any Applicant denied an OWTS permit may appeal to the BCPH health officer in accordance with the following:
 - 1. The appeal must be filed in writing with BCPH within 30 days after the denial was mailed as indicated by the postmark date or email sent date.
 - 2. If the health officer determines that BCPH erred in its decision to deny the permit, the health officer shall approve the permit.
 - 3. Upon a finding of undue hardship to the Applicant and upon further finding that non-compliance with these Regulations would not be injurious to public health or the environment, and so long as compliance with state regulations is maintained, the health officer may authorize issuance of a permit.
 - a) The burden of proof is upon the Applicant to show, among other things, that the system will not injure adjacent properties, will not conflict with the purposes of these Regulations, and will not adversely affect the health or the environment of the public or any individual person or property.
 - 4. The denial will become final upon expiration of the 30-day appeal timeframe without a timely appeal being filed or when final action is rendered by the hearing officer, whichever occurs first.

- C. In the event the health officer denies the appeal, the Applicant may request the Board to reconsider the health officer's denial. Such request for reconsideration must be submitted within 30 days after the decision of the health officer is rendered.

4.6 Determination for Installation

BCPH must determine if the information provided in the installation permit application, site and soil evaluations, assumptions and calculations, and design of the proposed OWTS are in compliance with the requirements of the OWTS Act and the regulations adopted pursuant thereto, including these Regulations. If the submittal is determined to be in compliance, authorization to begin installation may be given by BCPH.

4.7 Authorization to Enter Upon Property

For the purpose of inspecting and enforcing applicable regulations and the terms and conditions of all OWTS permits issued in Boulder County, and to appropriately investigate and respond to OWTS complaints, BCPH shall be authorized to enter upon private property at reasonable times and upon reasonable notice to the Property Owner or occupant. The Property Owners and occupants must allow BCPH officials to gain access to the property in order to conduct inspections, conduct required tests, collect samples, and monitor compliance to determine if the system is functioning in compliance with the OWTS Act and applicable regulations and permit requirements.

4.8 Inspection Stages

- A. **Site inspections:** BCPH will conduct site inspections for all OWTS permit applications to verify soil observations, determine presence of a limiting layer, identify physical features requiring setbacks, and assess other site-specific details required to evaluate any proposed OWTS design documents.
- B. **Open-hole inspections:** When required, BCPH will inspect the open hole for the soil treatment area to determine if there are any limiting conditions and to document the dimensions of the soil treatment area.
- C. **Final inspections:** Before a system is placed in use, the Applicant, Applicant's agent, or the systems contractor must provide BCPH and the engineer, if the OWTS is engineer-designed, with notice that the progress of the work has been sufficiently completed. BCPH will conduct an inspection to ensure that the work was performed satisfactorily in compliance with the OWTS Act, applicable OWTS regulations and permit requirements.
 - 1. **Standard systems:**
 - a) The system contractor must notify BCPH once construction of the OWTS is completed and before replacing soil over the system.
 - b) Once notified, BCPH will conduct a final inspection of the system as soon as it is practicable.
 - c) Upon final inspection, if BCPH finds that the OWTS was properly installed in accordance with applicable regulations and permit requirements, BCPH will issue final approval for the completed OWTS. The BCPH inspector will leave written notice at the site informing the Applicant or systems contractor that the installation was approved.
 - d) Such notice of approval shall be considered permission for the Applicant or systems contractor to replace the soil or fill over the inspected system components.
 - e) Final approval of the OWTS will be withheld until all components of the system, including building sewer and house connections, have been inspected and approved by BCPH.

2. Registered professional engineer (RPE)-designed systems:

- a) During construction of an OWTS designed by an RPE, the systems contractor must notify BCPH and the design engineer regarding all inspections specified in the permit and in the design.
- b) Once construction of an OWTS requiring engineer design has been completed and before replacing soil over the system, the systems contractor must notify both BCPH and the design engineer.
- c) Once notified, BCPH will conduct a final inspection of the system as soon as it is practicable.
- d) Upon final inspection, if BCPH finds that the OWTS was properly installed in accordance with applicable regulations and permit requirements, BCPH will issue final approval of the completed OWTS. The BCPH inspector will leave written notice at the site to inform the Applicant or systems contractor that the installation was approved.
- e) Permission to replace the soil or fill over the inspected system components will not be granted by BCPH until BCPH and the design engineer have both examined and declared the installation to be satisfactory.
- f) Final approval for the system will be withheld by BCPH until all components of the system, including building sewer and house connection, have been inspected and the design engineer or engineering firm provides written notice to BCPH that they have inspected and determined that the OWTS was installed in accordance with the approved design.
 - 1) Such written notice must include:
 - i. Date of inspection(s).
 - ii. Details of observations during inspection.
 - iii. Specifics verifying installed components and materials.
 - iv. Verification of the suitability of final cover soil when using manufactured media.

3. Failure to pass inspections: If any inspections by BCPH disclose significant departure from the description or design of the system outlined in the OWTS application or permit, or if any aspect of the system fails to comply with any applicable requirements, BCPH will withhold approval and:

- a) Leave written notice of the denial at the site that details the deficiencies responsible for the failed inspection.
- b) An additional inspection must be scheduled with BCPH after the deficiencies have been corrected and the system is brought into compliance with all applicable OWTS regulation requirements.
- c) Additional fees may apply.

4.9 Permit Final Approval Requirements

A. Final approval by BCPH of the OWTS under the permit requires, but is not limited to, the following:

- 1. If the OWTS was designed by an engineer, a letter from the engineer to certify that the OWTS was constructed per the approved design. The letter must include documentation of any modifications to the permitted and approved design, general observations noted during the inspection(s), and the corresponding dates of all inspections.
 - a) For designs that include a pressurized distribution system, a residual head test (squirt height), at the distal end of each lateral, must be conducted to determine the adequacy of system design and construction. Results from this inspection

must be included within both the engineer's certification and the final permit acceptance documents.

2. Receipt of record drawing, including but not limited to the following:
 - a) A scale drawing showing all components of the OWTS, including its location from known and findable points.
 - b) Dimensions and size.
 - c) Depths.
 - d) Tank size(s) and manufacturers' names and models.
 - e) Setbacks.
 - f) Other information related to locating and maintaining the OWTS components.
3. A final inspection by BCPH prior to backfilling the OWTS that confirms the OWTS was installed according to permit requirements and applicable regulations and regulation variances.
4. Identification of the system contractor.

4.10 Division Authority to Administer and Enforce

The Division retains its designated authority to administer and enforce the provisions of the OWTS Act and OWTS regulations where necessary to protect the public health and environment.

4.11 Primary Enforcement Responsibility

- A. The primary responsibility for enforcing the provisions of the OWTS Act and OWTS regulations lies with the Board and BCPH.
- B. In the event the Board and BCPH fail to administer and enforce the provisions of OWTS regulations and the OWTS Act, the Division may assume such functions of BCPH or the Board, as may be necessary to protect the public health, per C.R.S. §25-10-110.

4.13 Prohibition of OWTS in Unsuitable Areas

- A. The Board may conduct a public hearing – after posting public notice on the BCPH website at least 20 days prior to the hearing and making any other publications as may be required by law – to consider the prohibition of OWTS permits in defined areas that contain or are subdivided for a density of more than one dwelling unit per acre.
- B. The Board may order such prohibition upon a finding that the construction and use of additional OWTS within the defined area will constitute a hazard to the public health or the environment.
- C. For such public hearing, the Board may request affected Property Owners to submit engineering and geological reports concerning the defined area and provide a study of the economic feasibility of constructing a community sewage treatment system.

4.14 Variance Procedures

A. General variance requirements:

1. The Board is required to hear all OWTS variance cases in a public hearing, and approval of the variances requires a majority vote of the Board.
2. The Board may set fees for processing OWTS permits with variances in accordance with C.R.S. §25-10-107. Such permit fees may be the standard OWTS permit fee or they may be a separate fee based upon the cost of processing an OWTS permit with a variance.

B. Variance procedures:

1. Before rendering a decision on a variance request, a public hearing with the Board is required. The hearing must include the posting public notice on the BCPH website at least 20 days prior to date of the public hearing and making any other publications as may be required by law.

2. Variance requests must be accompanied by the following from the Applicant seeking the variance:
 - a) Site-specific request identifying the specific criteria for which the variance is being requested.
 - b) Technical justification from a professional engineer or professional geologist indicating what specific conditions exist and/or measures that will be taken to support the finding that the requested variance will not result in greater risk than what is associated with compliance with OWTS regulation requirements.
 - 1) Examples of such conditions or measures include, but are not limited to, the following:
 - i. Evidence of a natural or manmade physical barrier to the movement of effluent to or toward the feature from which the variance is requested;
 - ii. Placement of a manmade physical barrier to the movement of effluent to or toward the feature from which the variance is requested; and
 - iii. Soil replacement with sand filter media to reduce the infiltration rate of the effluent such that the travel time of the effluent from the absorption field to the physical feature is no less than the travel time through the native soils at the prescribed setback and higher-level treatment.
 - c) A description of alternatives considered in lieu of the requested variance.
 - d) Technical documentation for selected alternatives, which may include a testing program, which confirms that the variance does not increase the risk to public health and the environment.
 - e) A statement of the hardship creating the necessity for variance.
 3. The Applicant will have the burden of proof to demonstrate that the variance is justified and will pose no greater risk to public health and the environment than a system that would comply with OWTS regulations.
- A. **Site-specific variance requirements:** The Board has the authority to impose site-specific requirements and conditions on any variance granted.
- B. **Variance proceeding outcomes:**
1. The Applicant must be notified, in writing, of the Board's decision regarding the request for a variance.
 2. Any notice of denial of a variance must include the reasons that formed the basis for the denial.
 3. Any notice of approval of a variance must include the conditions of the variance approval.
 4. The variance, and any conditions thereof, must be recorded on the deed to the property, and any expenses associated with such recording will be the responsibility of the Applicant obtaining the variance.
- C. **Unaccepted variance requests:** No variance will be granted under the following circumstances:
1. When the property can accommodate a conforming OWTS.
 2. To mitigate an error in construction involving any element of property improvements.
 3. If solely for economic gain.
 4. If it results in a setback reduction to an offsite physical feature that does not conform to the minimum setbacks defined in Table 7-1 of this regulation without the Board considering any concerns of the owner of property containing said feature; property lines are

considered offsite features. BCPH will send notice to the Property Owner containing said features of the time and date of the public hearing.

5. If it reduces the separation to groundwater or bedrock based on the level of treatment in Table 7-2.
6. From the horizontal setback from a well unless it meets the variance requirements of the Board of Examiners of Water Well Construction and Pump Installation Contractors.

D. Variance for repair of failing OWTS:

1. When a proposed variance for an OWTS repair or upgrade would result in encroachment on minimum distances to physical features on neighboring properties required by the Division, the public hearing procedures outlined in this Section 4.14 must be followed.
2. For the repair of or upgrade to an existing OWTS where the existing system does not meet the required separation distances, and where the conditions other than lot size precludes adherence to the required distances, a variance to the separation distances may be requested. The repairs or upgrade must be no closer to features requiring setbacks than the existing facilities. Variances requesting setbacks no closer than existing setbacks do not have to provide technical justification from a professional engineer or professional geologist.

E. Variance decision appeals:

1. Any request to appeal the Board's decision to deny a variance request must be made within 60 days following denial by the Board of OWTS variance application.
2. The Applicant shall bear the burden of supplying the Board with sufficient evidence documenting that the system for which the variance was denied would:
 - a) Be constructed and used in a manner that would result in no greater risk than that associated with compliance with the requirements of all applicable OWTS regulations and requirements.
 - b) Comply with the declaration and intent of these Regulations.
 - c) Comply with all applicable state and local regulations and required OWTS permit terms and conditions.
3. Upon receiving such evidence, the Board may choose to re-hear the variance request for a second and final time or affirm its denial without further hearing.

Section 5. Regulation of Systems Contractors, Systems Cleaners, Systems Inspectors, and Systems Maintenance Providers

5.1 Systems Contractors

- A. No person may engage in business as a systems contractor without possessing a valid Boulder County systems contractor license:
 1. The initial fee for a systems contractor license is payable to BCPH and must be submitted at the time the systems contractor license application is submitted to BCPH.
 2. The license will be valid for two years and will expire on the license issuance anniversary date, at which time the renewal fee shall be due.
 3. A license that lapses because of failure to renew or because it is revoked will be subject to the fees established for new licenses upon reapplication.
 4. Employees of licensed systems contractors are not required to be individually licensed.
- B. The application for a systems contractor license or renewal must be made using forms supplied by BCPH. Prior to the issuance or renewal of such license, BCPH may require the license applicant to demonstrate adequate knowledge of OWTS regulations and experience installing OWTS.

1. Systems contractors must provide proof of adequate training and certification approved by BCPH.
2. A total of eight hours of ongoing refresher training and continuing education will be required for the renewal of licenses. BCPH may require certain training hours be acquired from a BCPH OWTS class.
3. In accepting a license, a systems contractor must agree that all work performed in the construction, installation, alteration, and repair of OWTS will be done in compliance with the OWTS Act and all applicable regulations and permit requirements.

5.2 Systems Cleaners

- A. No person may engage in business as a systems cleaner without possessing a valid Boulder County systems cleaner license.
 1. Systems cleaners must provide proof of adequate training and certification approved by BCPH.
 2. A total of eight hours of ongoing refresher training and continuing education will be required for the renewal of licenses. BCPH may require certain training hours be acquired from attending a BCPH OWTS class.
 3. The initial fee for a systems cleaner license is payable to BCPH and must be submitted at the time the systems cleaner license application is submitted to BCPH.
 4. The license will be valid for two years and will expire on the license issuance anniversary date, at which time the renewal fee shall be due.
 5. A license that lapses because of failure to renew or because it is revoked will be subject to the fees established for new licenses upon reapplication.
 6. Employees of a validly licensed systems cleaner business are not required to be individually licensed.
- B. All systems cleaners are required to dispose of septic tank waste at a site approved by BCPH for accepting or treating such wastes and in a manner that is not injurious to the public health or the environment.
 1. Systems cleaners must maintain their pumping and disposal records for a period of one year after creation and produce records at the request of BCPH.
- C. All systems cleaners are required to maintain their vehicles such that leakage and spillage does not occur. Discharge valves must be drip-tight.
- D. Systems cleaners' trucks must bear the business name and address with two-inch or larger letters in a color that contrasts with the truck color.
- E. In the event of a spill, septage must be immediately cleaned up by systems cleaners to the satisfaction of BCPH.

5.3 Systems Inspectors

- A. No person may engage in business as a systems inspector without possessing a valid Boulder County systems inspector license.
- B. Systems inspectors must be certified by National Association of Wastewater Technicians or an equivalent program approved by CDPHE and BCPH. Inspectors for higher level treatment systems must have training relevant to the specific system or certification by the equipment manufacturer. BCPH may require certain training hours be acquired from attending a BCPH OWTS class.

- C. The initial fee for a systems inspector license is payable to BCPH and must be submitted at the time the systems inspector license application is submitted to BCPH.
- D. The license will be valid for two years and will expire on the license issuance anniversary date, at which time the renewal fee shall be due.
- E. A license that lapses because of failure to renew or is revoked will be subject to the fees established for new licenses upon reapplication.

5.4 Systems Maintenance Providers

- A. No person may engage in business as a systems maintenance provider without possessing a valid Boulder County systems maintenance provider license.
- B. Systems maintenance providers must provide proof of adequate training and certification approved by BCPH. BCPH may require certain training hours be acquired from attending a BCPH OWTS class.
- C. The initial fee for a systems maintenance provider license is payable to BCPH and must be submitted at the time the systems maintenance provider license application is submitted to BCPH.
- D. The license will be valid for two years and will expire on the license issuance anniversary date, at which time the renewal fee shall be due.
- E. A license that lapses because of failure to renew or is revoked will be subject to the fees established for new licenses upon reapplication.
- F. Systems maintenance providers must comply with sections 8 and 9 of this regulation.

5.5 Revocation of Licenses

- A. Licenses for systems contractors, systems cleaners, systems inspectors, and systems maintenance providers may be revoked for failure to comply with these Regulations and other applicable OWTS regulations.
- B. Written notice of the proposed license revocation detailing the regulation violations will be sent by BCPH to the licensee by certified mail, return receipt requested.
- C. Revocation may take place following a hearing before the Board. The licensee shall be given not less than 20 days' notice of the public hearing and may be represented at the hearing by counsel.

Section 6. Permits for Continued Use of OWTS

6.1 Use Permit Applicability and Requirements

- A. Authority: See 5 C.C.R. 1002-43:43.4.M.
- B. Purposes:
 - 1. An "operating permit" as required by this Section 6 documents maintenance and inspection requirements on an OWTS at regular intervals as required by these Regulations.
 - 2. A "property transfer certificate" as required by this Section 6 documents an OWTS's functionality pursuant to a transfer of title inspection as required by these Regulations and consistent with 5 C.C.R. 1002-43:43.4.L.
- C. Continued use of OWTS requires a valid operating permit. As of the effective date of these Regulations, BCPH shall issue an operating permit for each OWTS that is properly installed pursuant to a BCPH-issued OWTS construction permit upon permit closure. A valid operating permit requires that the subject OWTS be maintained and inspected according to Section 8.4, Maintenance and Cleaning, of these Regulations.

1. For OWTS installed between May 24, 2018 and the effective date of these Regulations, a BCPH-issued “use permit” shall be treated as an operating permit under these Regulations.
2. For OWTS installed before May 24, 2018, documented BCPH approval of the OWTS shall be treated as an operating permit under these Regulations.
3. Any OWTS that a) was not constructed in compliance with a BCPH-issued OWTS construction permit, b) has never received from BCPH a “use permit” or “operating permit”, and 3) otherwise lacks documented BCPH approval does not have a valid operating permit as required by these Regulations and continued use of such OWTS is prohibited (hereinafter referred to as “Non-Compliant OWTS”).
 - i. The owner of a property served by a Non-Compliant OWTS must take steps to obtain an operating permit. Such person may need to replace the Non-Compliant OWTS or may be able to have the existing OWTS verified for compliance. Such person may consult with BCPH regarding methods for obtaining compliance.
 - ii. Process for verifying compliance:
 1. To obtain an operating permit for a Non-compliant OWTS without replacing the Non-Compliant OWTS, the following information must be provided to BCPH for review:
 - a. A document that sets forth:
 - i. Owner’s name and contact information
 - ii. Physical address of the property served by the OWTS
 - iii. Legal description of the property served by the OWTS
 - b. Completed inspection reports on BCPH forms from an approved systems inspector, as defined in Section 5
 - c. Inspection report must be completed on a BCPH report form.
 - d. Record drawing complying with requirements in 5 C.C.R. 1002-43.
 - e. An engineer evaluation of the existing presented in a design document that complies with requirements in 5 C.C.R. 1002-43. At a minimum the document must document analysis of soils, OWTS capacity, design flow for all structures connected to the OWTS, and all OWTS components and their applicable information.
 2. In lieu of any of the above required documentation, BCPH may consider, in its sole discretion, any historic documents for the OWTS held by the Property Owner or occupant to determine if they sufficiently satisfy any of the above requirements.
 3. Where any component is found to be in a state of malfunction, the Property Owner or occupant must obtain a repair permit from BCPH pursuant to Section 4 of these Regulations and other applicable OWTS regulations.

4. For an operating permit to remain valid, the OWTS must be inspected, maintained, and cleaned according to Section 8 of these Regulations. Property Owners must provide records of Section 8 compliance to BCPH upon request.
5. Operating permits are not valid for malfunctioning OWTS or OWTS in a state of failure. Where an OWTS is malfunctioning or failing, the Property Owner or occupant must obtain a repair permit pursuant to 5 CCR 1002-43 and Section 4.4 of these Regulations or may request an emergency operating permit pursuant to Section 4 and 5 CCR 1002-43.
6. Operating permits are not valid for OWTS that have experienced a change of use or expanded use requiring a change of use permit pursuant to Section 7 unless the Property Owner or occupant has obtained a change of use permit from BCPH pursuant to Section 7 and/or repair permit pursuant to Section 4.4.
7. An operating permit may be revoked for failure to comply with permit terms or these Regulations.

6.2 Operating Permit Penalties

- A. Continued use of an OWTS without an operating permit in violation of these Regulations will subject the Property Owner to a penalty assessed under C.R.S. 25-10-113.
- B. Ahead of imposing any penalty pursuant to C.R.S. 25-10-113, BCPH will issue a notice of violation (NOV) to the Property Owner providing 30 days to comply with the NOV or longer time period as BCPH may allow. Continued non-compliance may cause BCPH to convene a hearing before the Board pursuant to CRS 25-10-113. At such hearing, a penalty of up to \$50 for each day of violation may be assessed.

Section 7. Change of Use Permits

7.1 Purpose, Applicability, and Requirements

- A. A “change of use permit” is required for a change of use or the expanded use of an OWTS where it has been determined by BCPH that the existing OWTS is not sized to accommodate the expected additional hydraulic or organic load. The OWTS must be replaced or modified to handle such an increase unless it is determined by BCPH that the existing OWTS is adequately designed and constructed. 5 C.C.R. 1002-43:43.4.B.8.
 1. Where the OWTS is not adequately designed and constructed to handle such an increase, a repair permit for the replacement or modification of the OWTS must be obtained pursuant to Section 4.4 of these Regulations.

7.2 Change of Use Application Requirements

- A. The Applicant must submit the following items to BCPH when applying for a change of use permit:
 1. Completed application on form provided by BCPH that includes:
 - a) Owner’s name and contact information.
 - b) Physical address of property.
 - c) Legal description of property.
 - b) Proof of compliance with Section 8, Operation and Maintenance.

- c) An engineer evaluation of the OWTS regarding its ability to treat the additional hydraulic and organic load.
- d) All applicable, non-refundable fees as established by the Board. The fees shall be payable to BCPH and are due at the time of application.

7.3 Enforcement and Penalties

- A. Failure to obtain a change of use permit when required by this Section 7 invalidates an operating permit and may further result in revocation of the operating permit.

Section 8. Operation and Maintenance

8.1 Authority and Responsibility

See 5 C.C.R. 1002-43:43.14.A. and C.

8.2 Maintenance and Cleaning

- A. In order to ensure good working order, septic tanks must be inspected to ensure that they are structurally sound and that all components such as lids, baffles, tees, vents, etc. are present and in good condition. Septic tanks must be pumped and inspected at least every four years or at shorter intervals as determined by the design engineer.
- B. Effluent filter must be inspected and cleaned to ensure proper functioning at least every six months or at shorter intervals as determined by the design engineer.
- C. Each motor, pump and all associated accessories must be inspected to ensure that they are operating properly at least annually or at shorter intervals as determined by the design engineer. Internal electrical connections must be inspected at least annually or at shorter intervals as determined by the design engineer to ensure that they are not damaged or otherwise subject to corrosion or damage that could cause a failure or short electrical circuit.
- D. The pump control panel and its accessories must be inspected at least annually or at shorter intervals as determined by the design engineer to ensure that all components such as timers, event recorders or counters, audible and visual alarms, auto-dialers, etc. are functioning properly. Batteries must be checked at least annually or at shorter intervals as determined by the design engineer and replaced as needed.
- E. The soil treatment area (STA) must be inspected at least every five years or at shorter intervals as determined by the design engineer to verify that wastewater is not being discharged onto the surface of the ground and the STA it is not being impacted by erosion, runoff, excess or improper vegetation, or compaction. Property Owners should be observing for signs of failure or malfunction daily.
- F. BCPH may establish shorter intervals for any of the maintenance and cleaning requirements of this Section 8 as deemed necessary to protect the public health and environment and based on specific characteristics of the OWTS and/or property. BCPH will provide written notice of any alternative intervals to the Property Owner in writing.
- G. The system contractor, cleaner, inspector or maintenance provider must note any unusual or abnormal conditions such as excessive or strong odors, noise, improper

wastewater color and odor, etc. that may indicate an operational problem with the system.

- H. A detailed record of OWTS repairs, septic tank pumping dates, inspections, permits issued, and other maintenance and cleaning activities must be maintained by the Property Owner and provided to BCPH upon request.

8.3 Termination of Use and Abandonment of an OWTS

- A. The Property Owner must notify BCPH in writing when a tank, vault, seepage pit, or cesspool is abandoned and must include a pump receipt.
- B. The Property Owner must arrange for the contents of a septic tank, vault, seepage pit, or cesspool, the use of which has been terminated, to be removed and properly disposed of in accordance with applicable OWTS regulations.
- C. Abandonment of a tank is governed by 5 C.C.R. 1002-43:43.9.C.

Section 9. Permitting and Oversight of Maintenance for Soil Treatment Area Reductions and Vertical and Horizontal Separation Distance Reductions Based on Use of Higher-Level Treatment

9.1 Purpose, Applicability and Requirements

- A. Purpose: See 5 C.C.R. 1002-43:43.14.D
- B. BCPH has implemented and maintains an oversight program for inspection, maintenance, and repair of OWTS that receive approval for reductions in the size of soil treatment areas and horizontal and vertical separation distances based on higher level treatment of effluent.
- C. A maintenance permit is required for OWTS that have received from BCPH approval for reductions in the size of soil treatment areas and horizontal and vertical separation distances based on higher level treatment of effluent.
- D. Types of OWTS required to obtain Maintenance Permits include:
 - 1. OWTS with a reduced soil treatment area
 - 2. OWTS with a reduced vertical or horizontal separation distance
 - 3. OWTS with an NDDS installed
 - 4. OWTS with a disinfection component installed,
 - 5. Compost and incinerating toilets that have received a reduction in required size of the soil treatment area.
- E. The Board may set fees for maintenance permits pursuant to C.R.S. § 25-10-107.

9.2 Maintenance Requirements and Permit Term Limits

- A. Applications for issuance and renewal of maintenance permits must include:
 - 1. BCPH application form
 - 2. Maintenance reports from preceding five years
 - 3. Current service contract

4. Payment of applicable fees
- B. Maintenance permits must be renewed every five years or when a service contract expires, whichever occurs first.
- C. OWTS requiring a maintenance permit must be inspected and maintained on a schedule being the most frequent of:
 1. Manufacturer recommendations for proprietary systems or design criteria requirements for public domain technology;
 2. BCPH or Division requirements; or
 3. For higher-level treatment systems, two inspections at six-month intervals for the first year of operation, followed by annual inspections for the remaining life of the system.
 4. Only a service provider meeting all manufacturer's requirements may be utilized for providing operation and maintenance of any higher-level treatment systems.

9.3 Maintenance Requirements and Permit Term Limits

- A. BCPH will maintain accessible records that indicate the information contained in 5 C.C.R. 1002-43:43.14.D.4.a.
- B. Owners of OWTS requiring a maintenance permit must fulfill their responsibilities as set forth in 5 C.C.R. 1002-43:43.14.D.5.
- C. Maintenance providers of OWTS requiring a maintenance permit must fulfill their responsibilities as set forth in 5 C.C.R. 1002-43:43.14.D.6.

9.4 Maintenance Permit Penalties

- A. Failure to maintain an active maintenance permit as required by these Regulations may subject the Property Owner to penalties under C.R.S. § 25-10-113.
- B. BCPH will issue a notice of violation (NOV) to the Property Owner providing 30 days to comply with the NOV. If the permit has not been acquired after the 30 days have expired, a hearing for penalties will be convened per section CRS 25-10-113. The Property Owner can be assessed a penalty of up to \$50/day of violation. Accrual of penalties will cease once the Property Owner obtains a maintenance permit as required by these Regulations.

Section 10. Property Transfer Inspections

10.1 Property Transfer Requirements

- A. Prior to the sale or transfer or title of a property served by an OWTS, the Property Owner must have the OWTS inspected to demonstrate that the OWTS is functioning according to design. BCPH staff review the inspection report and, upon confirming that all minimum criteria set forth in 5 C.C.R. 1002-43:43.4.L.5 have been met, will issue an acceptance document, referred to as a property transfer certificate, pursuant to 5 C.C.R. 1002-43:43.4.L.6.a.
 1. In order for BCPH to review an inspection report, the inspection report must be provided on a form furnished or approved by BCPH and contain all information listed in 5 C.C.R. 1002-43:43.4.L.4.a-j.

2. As used in 5 C.C.R. 1002-43:43.4.L.5.a.6, “unapproved wastewater discharges” refers to discharges with concentrations of pollutants that exceed the designated treatment level under Table 6.3, Table 10-1 and 10-1A in 5 CCR 1002-43:43.6 and 43.10 respectively. If there is inadequate documentation to determine the size, type, capacity, and/or good working order of relevant components necessary to establish compliance with these tables, this Minimum Criteria is not met and further investigation is required. A repair permit may be required to perform such investigation and correct any noncompliance.
- B. If the OWTS fails to meet one or more of the minimum criteria in 5 C.C.R. 1002-43:43.4.L.5.a, the Property Owner must obtain an OWTS repair permit and correct the failures or obtain a conditional acceptance document pursuant to 5 C.C.R. 1002-43:43.4.L.9.a, referred to as a conditional property transfer certificate.
1. To obtain a conditional property transfer certificate, the Property Owner must submit to BCPH a property transfer application and a legally binding agreement signed with notarization by the transferee/buyer of the property that states the transferee/buyer agrees to one of the following:
 - i. Obtain a repair permit and complete all necessary repairs to the OWTS within one year of purchasing/receiving title to the property;
 1. A passing inspection report is required for all components of the OWTS that will not be replaced during the repair or replacement. For example, if only the tank will be replaced an inspection report documenting the soil treatment area passed inspection would be required.
 - ii. If appropriate, connect to a sanitation district within two years after purchasing/receiving title to the property; or
 - iii. Within 30 days of title transfer, properly abandon the OWTS and either (1) demolish all buildings served by the OWTS, or (2) permanently terminate all occupancy of all buildings served by the OWTS.
- B. The time periods set forth in this Section 10 may be extended by BCPH at its sole discretion upon good cause shown by the Property Owner or purchaser/transferee.
- C. If a property is being sold has an advanced treatment unit (ATU) requiring operation and maintenance, the licensed systems inspector must also be licensed as a systems maintenance provider as defined in Section 5.4.

10.2 Additional requirements for non-residential systems

- A. A title transfer inspection for all OWTS on the property is still required.
- B. Properties with uses that do not meet the definition of single unit dwelling, including commercial, residential - other, or other activities generating wastewater, must be operating in accordance with the operating permit. If uses or activities have changed the property may be required to obtain a change of use permit per Section 7.
- C. A signed affidavit certifying activities generating wastewater have not changed may be accepted in lieu of the change of use permit requirement. For example, a new tenant is occupying the property but they are performing the same activities with same number of occupants.

10.3 Exemptions from Property Transfer Requirements

- A. A property transfer certificate is not required under the following circumstances:
1. All components, excluding sewer line, of the OWTS serving the property were installed and given final BCPH approval less than five years before the property sale closing date or transfer of title date.
 2. The transfer of title is solely to include or exclude a spouse.
 3. The transfer of title is creating or ending joint ownership if at least one person is an existing owner of the property or the spouse of an existing Property Owner.
 4. The transfer of title is being made to a trust that is in the same name as the Property Owner.
 5. The title of transfer is to effect the foreclosure or forfeiture of real property. This exemption does not apply to subsequent sale of the property.
 6. The Property Owner is part of a community plan or management district for which their OWTS has received written approval from BCPH, and the OWTS(s) have been inspected, per plan requirements and applicable permit requirements.
 - a. If any component of the OWTS (e.g. tanks) are permitted individually, such component will be subject to property transfer inspection requirements in this section.

10.4 Property Transfer Certificate application and inspection report

- A. Applications for property transfer certificates must meet the following requirements:
1. Completed BCPH Property Transfer Application with the following information completed:
 - a. Name, address, and phone number of current owner;
 - b. Property street address;
 - c. Property legal description;
 - d. Inspection date and time;
 - e. Name of inspector, inspector's NAWT or other applicable certification number;
 - f. Number of bedrooms in the dwelling(s);
 - g. Statement of length of the vacancy if the property is unoccupied.
 2. Non-refundable property transfer certificate fee, as established by BCPH.
 3. Septic tank pumping receipt from a cleaner licensed by BCPH.
 4. Where required, copy of current maintenance contract if the OWTS contains any mechanical components, such as an aeration or secondary treatment system, and an inspection report from the service provider.
 - a. All ATUs must be inspected and cleaned by a technician certified to maintain that specific unit/brand.

10.5 Term of Property Transfer Certificates

- A. The property transfer certificate will remain valid until the date of real estate closing, or for a period of 12 months, whichever occurs first.

10.6 Revocation of Property Transfer Certificate

- A. A property transfer certificate will be revoked if BCPH determines that the OWTS is no longer functioning in accordance with 5 C.C.R. 1002-43:43.4.L or that false or misleading material statements were made on the application or inspection reports.

10.6 Penalties

- A. Failure to obtain a property transfer certificate for a covered transaction as required by these Regulations may subject the Property Owner to penalties assessed under section C.R.S. § 25-10-113.
- B. BCPH may pursue administrative penalties for failure to obtain a required property transfer certificate. If a Property Owner fails to obtain a property transfer certificate as required in these Regulations, BCPH will issue a notice of violation (NOV) providing 30 days' notice to comply. If a property transfer certificate has not been obtained after the 30 days have expired, BCPH may set this matter before the Board for consideration and assessment of administrative penalties.
- C. Upon a finding by the Board that a person is in violation of these Regulations, the Board may assess a penalty of up to \$50/day of violation.

Section 11. Site and Soil Evaluation

11.1 Evaluation and marking of soil profile test pit excavations or percolation holes:

- 1. The engineer or technician conducting the soil profile test pit excavations or percolation tests must, upon completion of the tests, adequately mark and identify each excavation or hole to allow easy location by others.
- 2. The objective of this regulation is to ensure a detailed and accurate identification of the soils on each site, while concurrently ensuring the safety of the practitioner, general public, and wildlife. In order to accomplish this, the following items are noted:
 - a. In order to address public safety concerns, the regulatory intent is to backfill all soil profile test pits promptly after the soil evaluation is complete.
 - b. The excavator must communicate their intent to backfill with BCPH prior to the date of the excavation.
 - i. If test pits are backfilled without inspection by BCPH, the installation of inspection ports is required to confirm that the elevation of an actual or seasonal water table (a groundwater condition) does not encroach on the vertical separation requirement to the proposed infiltrative surface of the soil treatment area.
 - c. BCPH may require a joint evaluation of the soils with the engineer or competent technician.
 - i. BCPH publishes a guidance document outlining criteria for when joint soil evaluation may be required.
 - d. BCPH may identify additional requirements as necessary to fulfill the stated objective in Section 11.1.2.

Section 12. Wastewater Flow and Strength

12.1 Single-Family Residential Homes

- A. Design flow per person must be 75 gallons per day (GPD).
- B. BCPH may increase the wastewater design flow per person to 100 gpd on a case-by-case basis, where justified.
- C. The minimum design flow for a new home must be for a two-bedroom house unless otherwise noted in this regulation. The minimum design flow for the repair or replacement of an OWTS of an existing one-bedroom home must, at a minimum, be for one bedroom unless bedrooms have been added.

- D. For homes up to and including three bedrooms, the assumed number of persons per bedroom is two for design purposes.
- E. For homes with more than three bedrooms, the assumed number of persons will be six persons (i.e. first three bedrooms x two persons per bedroom) plus one additional person for each bedroom in excess of three bedrooms.
- F. Table 6-1 summarizes the design flows for single-family residential homes up to six bedrooms.
- G. If a new home has unfinished areas, BCPH may increase the number of bedrooms used for the design of the OWTS by one or two bedrooms based on an assumption that 150 square feet of unfinished space can be converted into a bedroom, if the space can meet building code requirements for a bedroom.
- H. BCPH may increase design flows (GPD) pursuant to 5 C.C.R. 1002-43:43.6, including increasing the design flows per bedroom by 50 gallons per additional bed, where there are provisions for more than two occupants within a bedroom, such as bunk beds, etc. The intent of this section is to address short-term and vacation rental units and other similar uses.

Section 13. Minimum Distances Between Components of OWTS and Physical Features

13.1 Property line setback reduction

- A. BCPH may permit the installation of an OWTS at a reduced property line setback in accordance with the following criteria:
 - 1. If a property can accommodate the installation of an OWTS no closer than the required minimum 10-foot property line setback, it must do so. If the proposal complies with the requirements of this section and is deemed acceptable, BCPH may administratively allow a reduction to the setback.
 - 2. The property line setback must not be reduced to any less than 3 feet, unless a variance by the Board is provided.
 - 3. The property line setback encroachment must be proposed at the time of permit application and must include the following information:
 - a) A statement from the Applicant and/or design engineer providing the reason for the reduced property line setback request.
 - b) The Applicant must demonstrate that the allowance of encroachment of the property line setback will not inhibit the development of surrounding properties (i.e. by allowing the encroachment of the property line setback, a neighboring property would not be able to meet the minimum setback requirement between the subject OWTS and a proposed adjacent well).
 - c) The Applicant must demonstrate that all activities associated with the installation of the proposed OWTS will not encroach on a neighboring property, and/or provide written permission from the adjacent owner or property manager of said property allowing the encroachment of machinery or excavated materials in order to install the proposed OWTS.
 - d) The proposed OWTS must comply with all other required setbacks noted in Table 7-1 in 5 C.C.R. 1002-43. This approval is only applicable to the encroachment for the referenced property line setback.
 - e) The Applicant must submit a survey of the property line(s) that the proposed setback encroachment will impact. The survey must include:

- (1) A survey completed by a Colorado registered professional land surveyor in accordance with section 12-120-301 *et seq.*, C.R.S.
 - (2) A legal description and drawing of the subject property. Said drawing must also include the location of the proposed OWTS, onsite and adjacent wells.
 - (3) The surveyor must clearly mark the surveyed property line(s) in a manner that is clearly defined and will not degrade over time due to exposure to the elements. The markings must remain in place until after system construction and final approval by BCPH.
- f) Prohibitions
- (1) Approval of an encroachment of the property line setback must not be provided after installation of the OWTS. Any post-construction reduction will require a variance approved by the Board.
 - (2) A reduction in the setback to a property line may only be granted where a minimum separation of six feet between soil treatment areas on all adjacent properties is provided.
 - (3) The size of the soil treatment area must comply with section 5 C.C.R. 1002-43:43.10.C.
 - (4) Property line setback reductions are prohibited where multiple systems on the subject property are proposed and the combined capacity of the systems exceeds 2,000 GPD.
- B. Table 7-2 in 5 C.C.R. 1002-43 provides the required site evaluation, design, and treatment level considerations necessary to evaluate the site and to design and locate the soil treatment area component of an OWTS.
1. Items 1, 2, and 3 in Table 7-2 address the allowable horizontal setback distance between the soil treatment area and the following physical features:
 - a) Setback distance from the soil treatment area to the onsite well (Item 1).
 - b) Setback distance from the soil treatment area to water features (Item 2).
 - c) Setback distance from the soil treatment area to a dry gulch or cut bank (Item 3).
 2. Item 4 in Table 7-2 addresses the required vertical separation distance between the infiltrative surface of the soil treatment area and the limiting layer or the required depth of soil comprising the soil treatment area.
 3. The designer may select the level of treatment from Table 7-2 to be applied to the soil treatment area that is necessary to accommodate the site conditions, if higher-level treatment for that purpose is permitted by BCPH.

Section 14. Design Criteria: General

14.1 Floodplains and Floodways

- A. Installation, repair or replacement of an OWTS located in the Boulder County Floodplain Overlay District as defined in section 4-403 of the Boulder County Land Use Code must meet the requirements in section 4-405(G) of the Boulder County Land Use Code or other applicable municipal code. A floodplain development permit from Boulder County Community Planning and Permitting or another applicable jurisdiction will be required before an OWTS permit will be issued.
1. The OWTS must be designed by a registered professional engineer (RPE). The system, as approved by BCPH, must be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the system into the floodwaters.

2. No new or expanded OWTS may be installed in a floodway designated in a 100-year floodplain.

Section 15. Design Criteria: Components

15.1 Pipe Standards and Bedding Requirements

- A. Frost protection, such as 2" foam board, is required where sewer and effluent pipe are not installed below frost level. The standard frost level in Boulder County is 30-32" and may be deeper at higher elevations.

15.2 Effluent Filters

- A. Effluent filters must be installed in all septic tanks in new installations and repairs where the septic tank is replaced. This provision may be waived by BCPH for advanced treatment tanks that provide higher-level solid removal.
- B. The septic tank outlet, or the outlet of the last septic tank in series, must include an effluent filter that retains solids greater than 1/8 inch in size. Effluent filters must be certified to ANSI/NSF Standard 46 or be approved by the division. Effluent filters must be sized to meet the estimated daily design flow and waste strength.
- C. If a pump or dosing siphon is used to remove septic tank effluent from the final compartment of the septic tank, the effluent must be filtered prior to dispersal into the soil treatment area. An effluent filter, pump vault equipped with a filter cartridge, or a filter on the discharge pipe are all acceptable.
- D. The effluent filter must be cleaned at manufacturer-recommended intervals, or more often, if use patterns so indicate.
- E. An alarm may be installed on an effluent filter indicating need for maintenance. BCPH may require effluent filters to be equipped with alarms.
- F. Where an ejector pump, grinder pump, or non-clog pump is proposed for use prior to the septic tank, an effluent filter must be installed on the outlet of the septic tank.
- G. The handle of the effluent filter must extend within 12 inches of the top of the riser.

Section 16. Design Criteria: Soil Treatment Area

16.1 General

- A. Must meet the requirements of 5 C.C.R. 1002-43:43.9.D, as applicable.
- B. The maximum length of distribution lateral must not exceed 150 feet.
- C. Distribution laterals longer than 100 feet must be pressure-dosed or the application of the effluent must be at the center of the lateral through a distribution box.

16.2 Inspection Ports

A. Inspection ports:

1. A four-inch inspection port accessible from ground surface must be installed at the initial and terminal end of each lateral in a trench system and at each corner of a bed system. The bottom of the inspection port must extend to the infiltrative surface and not be connected to the end of the distribution lateral.
2. Inspection ports in chambers may be installed according to manufacturers' instructions if the infiltrative surface or can be observed from the inspection port.
3. Additional inspection ports connected to distribution laterals may be installed.
4. The top of the inspection ports may be terminated below the final grade if each is housed in a component, such as a valve box for a lawn irrigation system, and has a removable cover at the ground surface.

5. Perforations/slots in the inspection ports of a rock and pipe installation shall be provided from near the base of the pipe and extending to at least eight inches above the infiltrative surface. Multiple slots or orifices must be provided.

16.3 Remediation Systems

A. Remediation systems:

1. The intent of a remediation technology or process is to sufficiently increase the infiltration rate through the infiltrative surface at the bottom of an existing trench or bed and restore permeability to the soil below. Treatment levels as defined in Table 6-3 are not granted to remediation technologies.
2. BCPH may permit the use of remediation technologies or processes to address an existing failure or malfunction within a soil treatment area.
3. The use of remediation technology or process constitutes an alteration to the OWTS, and therefore the owner must obtain a permit for this work from BCPH.
4. Upon approval of BCPH, a Property Owner may choose to try a remediation technology or process to see if an existing problem with the soil treatment area will be resolved. The Property Owner bears the risk and cost of this attempt and is deemed aware that an additional repair may be required.
5. Remediation technologies and processes must not adversely affect groundwater, surface water, any existing components, the long-term effectiveness of the soil treatment area, or the environment.
6. If the remediation technology or process does not correct the problem with the system, a conforming OWTS must be installed per the requirements in this regulation within a time frame determined by BCPH.
7. BCPH may require monitoring and/or maintenance of the remediation technology or process as a stipulation of permit issuance.

Section 17. Design Criteria: Other Systems

17.1 Evapotranspiration and Evapotranspiration/Absorption Systems

A. Non-pressurized drip dispersal system (NDDS):

1. NDDS are permitted in Boulder County.
2. An NDDS is considered a type of evapotranspiration/absorption system; however, as specific design criteria are provided for an NDDS (See section 5 C.C.R. 1002 43:43.12.A.1.c and d), they are exempt from the additional requirements of pressure distribution and items within section 5 C.C.R. 1002 -43:43.12.A.2, 3 and 4.
3. New NDDS installations require operation and maintenance in accordance with section 7.
4. The design of the NDDS must follow the procedures stated in the document titled *Colorado Professionals in Onsite Wastewater Guidelines for the Design and Installation of Non-Pressurized Drip Dispersal Systems (NDDS)*, October 2024, is the procedural guideline in the design of an NDDS and must be followed when an NDDS is proposed. Available at www.cpow.net.
5. The width of an NDDS system may be wider than 12 feet.

17.2 Vaults Other Than Vault Privies

A. Vaults are prohibited where any of the following conditions exist:

1. Property can accommodate an OWTS with a soil treatment area.
2. Site cannot provide access for pumping and general system maintenance.

B. Vaults may be permitted where any of the following conditions exist:

1. Full-time use when an existing OWTS is in a state of failure and cannot be replaced.
 2. Full time or limited use occupancy on a property that cannot accommodate an OWTS with soil treatment area
 3. If the dwelling does not have running water
 4. If the facility is on land where the installation of an OWTS with soil treatment area is not permitted.
 5. For systems where some of the wastewater flows are separated (e.g. toilet wastes only, recreational vehicle dump station) into a vault. The portion not retained in the vault must be treated in an OWTS that is sized per the requirements of these Regulations.
- C. The Board may allow vaults for use at a permanent facility, except where section 17.3 of this regulation applies.
- D. Variances may be granted for specialized commercial uses.
- E. Design and Capacity Requirements
1. A vault must be accessible for routine pumping and maintenance.
 2. A vault must have a minimum 500-gallon effective volume or be capable of holding a minimum of the 48-hour design wastewater flow, whichever is larger.
 3. A vault must provide visual or an audible signal device or both, indicating filling to a maximum of 75 percent capacity, thus indicating when pumping is necessary.
 4. Concrete, fiberglass, and plastic tanks are allowed for use as a vault. All tanks must meet the structural design requirements of section per 5 CCR-1002-43.9.B.5 or 6 as applicable.
 5. Vaults must be watertight and meet the requirements of section per 5 CCR-1002-43.8.D and per 5 CCR-1002-43.9.A.1.a.
 6. Metal vaults are prohibited.

17.3 Privies

- A. Vault Privy:
1. The Board may prohibit the new construction of vault privies, depending on the site and intended use of the property.
 2. Vault privies that serve structures or dwellings without running water (e.g. bathroom facilities located at trailheads) will be allowed.
 3. The Board may prohibit the continued use of existing vault privies.
 4. Effective volume of the vault must be no less than 400 gallons, and it must be constructed of concrete, fiberglass, or plastic. Vaults for privies must meet the structural and watertight requirements of per 5 CCR-1002-43.9.B.5 or 6, as applicable.
 5. A vault privy must be built to include: fly- and rodent-tight construction, a superstructure affording complete privacy, an earth mound around the top of the vault and below floor level that slopes downward away from the superstructure base, a floor, and a riser of concrete or other impervious material with hinged seats and covers of easily cleanable, impervious material. All venting must be fly-proofed with No. 16 or tighter mesh screening.
- B. Pit Privy: New construction of pit privies and continued use of existing pit privies is prohibited.

17.4 Incinerating, Composting, and Chemical Toilets

- A. The Board may permit incinerating, composting, and chemical toilets.
- B. Chemical toilets are limited to situations defined in section 5 C.C.R. 1002-43: 43.12.E.7 below.
- C. The use of an incinerating, composting, or chemical toilet will not reduce the required size of the OWTS, as noted in section 5 C.C.R. 1002-43: 43.8.A, except under the following conditions:

1. Reductions in the size of soil treatment areas based on incinerating, or composting toilets, only if:
 - a. There is no flush toilet available in the structure(s),
 - b. The septic tank size must meet the requirements of Table 9-1 with no reductions allowed,
 - c. Transfer of Title inspection report and acceptance documents must include a notation of the alternative toilet system that is installed;
 - d. Must maintain a renewable use permit which may not be valid for greater than three years apart. Renewal inspections must confirm that no flush toilets have been installed and provide observations relative to general maintenance of the alternative fixtures.
 - e. The reduction in the soil treatment area will be calculated by reducing the estimated wastewater flows (as provided in 5 C.C.R. 1002-43:43.6) from the structure by no more than 25%, unless the structure has no water source or plumbing fixtures (e.g., remote access structure with composting toilet only).
- D. Permitting of incinerating or composting toilets may also be subject to the jurisdiction of a local agency regulating plumbing or the Colorado Plumbing Board, whichever has jurisdiction over plumbing in the location.
- E. An incinerating or composting toilet may be used for toilet waste where an OWTS is installed for treating wastewater remaining after removal of toilet waste. Subject to other applicable regulations or codes (e.g., Colorado Plumbing Code if a local code does not exist), the compartment may be located within a dwelling or building as long as the unit complies with the applicable requirements of these Regulations and provided that the installation will not result in conditions considered to be a health hazard, as determined by BCPH. Compartment and appurtenances related to the unit must include fly-tight and vector proof construction and exterior ventilation.
- F. Incinerating toilets acceptance requirements:
 1. Incinerating toilets must meet the requirements of the NSF Protocol P157 (April 28, 2022 version) and bear the seal of approval of the NSF or an equivalent testing and certification program.
 2. An approved incinerating toilet must be designed and installed in accordance with all applicable federal, state, and local air pollution requirements and manufacturers' instructions.
- G. Composting toilets:
 1. Composting toilets must meet the requirements of NSF/ANSI Standard 41 (2023 version) and bear the seal of approval of the NSF or an equivalent testing and certification program. An approved composting toilet must treat deposits of feces, urine, and readily decomposable household garbage that are not diluted with water or other fluids and are retained in a compartment in which aerobic composting will occur.
 2. The effective volume of the receptacle must be sufficient to accommodate the number of persons served in the design of the unit installed. The effective volume of the unit must include sufficient area for the use of composting materials, which must not be toxic to the process or hazardous to persons and which must be used in sufficient quantity to ensure proper decomposition.
 3. Residue from the composting toilet must be removed when it is filled to 75% of capacity. Residue from the unit must be properly disposed of by methods recommended by the manufacturer and acceptable to BCPH. Disposal methods must prevent contamination of water and not cause a public health nuisance. Disposal using solid waste practices is recommended.

4. If a system is to be installed where low temperature may be a factor, design and installation must address the effects of low temperatures.
 5. Composting toilets must be operated according to the manufacturer's specifications.
- H. Portable chemical toilets:
1. The use of portable chemical toilets in permanently occupied buildings is prohibited except during construction or under emergency circumstances, as determined by BCPH. Proper ventilation of a chemical toilet used inside must be required.
 2. Portable chemical toilets are not required to obtain a permit from BCPH.
 3. Portable chemical toilets must be maintained in good physical condition and in sanitary condition to reduce the potential for disease transmission or nuisance conditions.
 4. Portable chemical toilets must be staked or otherwise anchored or secured to prevent tipping over or spilling of contents.
 5. Contents must be held within the unit and disposed of at a facility approved by BCPH.

Section 18. Severability

The provisions of these Regulations are severable, and if any provisions or the application of the provisions to any circumstances are held invalid, the application of such provision to other circumstances and the remainder of these Regulations will not be affected thereby.