Title 14. Local Government

Chapter IV. Generally, Department of Health

Subchapter A. Generally

Part 21. Rule Pertaining to Onsite Wastewater Systems

Codification Notes. This part as promulgated prior to codification into the Code of Arkansas Rules provided as follows:

"Section 1.Authority and Purpose
The following RULES PERTAINING TO ONSITE WASTEWATER SYSTEMS are duly adopted and promulgated by the Arkansas State Board of Health pursuant to the authority expressly conferred by the laws of the State Arkansas including, without limitation, Act 96 of 1913 (A.C.A. 20-7-109), and Act 402 of 1977 (A.C.A. 14-236-101, et seq.)."

"Effective September 5, 2024"

"Section 19. Severability
If any provisions of these Rules, or the application thereof to any person is held invalid, such invalidity shall not affect other provisions or applications of these Rules which can affect without the invalid provisions of application, and to this end the provisions hereto are declared to be severable.

Section 20. Repeal
All Rules and parts of Rules in conflict herewith are hereby repealed.

Section 21. Certification
This will certify that the foregoing Rules Pertaining to Onsite Wastewater Systems were adopted by the Arkansas Department of Health at a regular session of the Board of Health on the 25th day of January, 2024."

Subpart 1. Generally

14 CAR § 21-101. Purpose.

To establish minimum standards for the design and construction of onsite wastewater systems in suitable soils for the renovation of wastewater and the return of the renovated wastewater into the hydrologic cycle.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-102. Definitions.

As used in this part:

(1) "Alternate system" means a nonstandard individual onsite wastewater treatment or collection system approved by the Department of Health in instances where a standard system is not suitable;

(2)(A) "Approved system" means an onsite wastewater system:

(i) Constructed and installed in accordance with the standards and requirements of this part; and

(ii) For which a permit for operation has been issued.

(B) "Approved system" does not imply that the system will perform satisfactorily for a specific period of time, only that the system has met the minimum requirements of this part;

(3) "Authorized agent" means the Environmental Health Specialist assigned to the county or business unit by the Department of Health;

(4)(A) "Bedrock" means consolidated rocks that are sufficiently coherent when moist to make hand digging with a spade impractical, although it may be chipped or scraped.

(B) The bedrock may contain cracks that generally are too few and too small to allow roots to penetrate at intervals of less than ten centimeters (10 cm).

(C) The cracks may be coated or filled with clay or other material;

(5) “Bedroom” means any room inside a residence intended for the purposes of sleeping quarters;

(6) “Benchmark” means a mark:

(A) Made on a stationary object of a determined position and elevation; and

(B) Used as a reference point;

(7) “Community wastewater system” means any system, whether public or privately owned, serving two (2) or more individual lots for the collection, treatment, and disposal of wastewater or industrial wastes of a liquid nature, including various devices for the treatment of such wastewater or industrial wastes;

(8) “Department” means the Department of Health;

(9)(A) “Designated representative (DR)” means a person certified by the Department of Health to make percolation tests, system designs, and inspections subject to the authorized agent’s final approval.

(B) Designated representatives shall:

(i) Be registered professional engineers, registered land surveyors, licensed master plumbers, registered sanitarians, or other similarly qualified individuals holding current certificates from the State of Arkansas; and

(ii) Demonstrate to the satisfaction of the authorized agent prior to their designation as a designated representative their competency to make percolation tests, designs, and final inspections for onsite wastewater systems:

(a) In accordance with this part; and

(b) When authorized by the authorized agent;

(10)(A) "Soil-qualified designated representative” means a designated representative who has successfully passed the soils portion of the designated representative testing procedure, as set forth by the Department of Health.

(B) These individuals are certified to size absorption areas based on depth to seasonal water tables;

(11) “Distribution box” means a watertight box that:

(A) Receives the discharge of effluent from the septic tank; and

(B) Distributes the flow of wastewater equally to each absorption trench;

(12) "Distribution device" means a device, approved by the Department of Health, used to distribute or alternate the effluent load between two (2) or more locations;

(13) "Domestic wastewater" means all wastes discharging from sanitary conveniences and plumbing fixtures of a domestic nature, exclusive of industrial and commercial wastes;

(14) "Dosing tank" means a tank constructed of concrete, plastic, fiberglass, or other authorized material that contains one (1) or more pumps or automatic siphons designed to deliver a specified volume of wastewater effluent to the distribution system;

(15)(A) "Dwelling unit" means a structure intended to be used as a residence.

(B) A single structure may contain more than one (1) dwelling unit, e.g., a duplex contains two (2) dwelling units;

(16) "Emergency repair" means the repair and/or replacement of any part of a malfunctioning onsite wastewater system, excluding the alteration of existing absorption trenches and/or the installation of additional absorption area that poses an immediate health hazard;

(17) "Engineering" means the Engineering Section of the Department of Health;

(18)(A) "Experimental system" means a sewage treatment system that is not classified as a standard or an alternate onsite wastewater system.

(B) Experimental systems may be:

(i) Approved on a case-by-case basis; and

(ii) Evaluated under the direction of the Department of Health to determine the effectiveness of the system;

(19) "High-strength wastewater" means wastewater which exceeds the following parameters:

(A) Biochemical oxygen demand (BOD5) of three hundred milligrams per liter (300 mg/L);

(B) Total suspended solids (TSS) of three hundred milligrams per liter (300 mg/L); and

(C) Fats, oils, and grease content of twenty-five milligrams per liter (25 mg/L);

(20) "High-use area" means any site accessible to the public for the purposes of:

(A) Entertainment;

(B) Recreation; or

(C) Gathering;

(21) "High-water mark" means:

(A) The established maximum flood elevation of lakes with constructed dams; or

(B) When not available, the line which the water impresses on the soil by covering it for sufficient periods of time to deprive it of nonaquatic vegetation;

(22) "Homeowner" means a person who owns and occupies a building as his or her home;

(23) "Hydraulic conductivity" means the proportionality factor in Darcy's law, as applied to the viscous flow of water in soil, that:

(A) Represents the ability of soil to conduct water; and

(B) Is equivalent to the flux of water per unit gradient of hydraulic potential;

(24) "Industrial wastes" means liquid wastes resulting from the processes employed in industrial and commercial establishments;

(25) "Installer" means any person, firm, corporation, association, municipality, or governmental agency licensed by the Department of Health, which constructs, installs, alters, or repairs onsite wastewater systems for others;

(26)(A) "Interceptor drain" means a subsurface drain line, usually constructed upgrade five to ten feet (5' – 10') from the absorption area to divert seasonal groundwater.

(B) A minimum of a four (4) mil plastic barrier shall be placed the entire

depth on the field line side of the trench.

(C) Interceptor drains shall be located between the absorption area and any upslope direction where subsurface flow could influence the drain field;

(27) "Lake" means a considerable body of inland water or an expanded portion of a river:

(A) Generally of appreciable size; and

(B) Too deep to permit vegetation, excluding subaqueous vegetation, to take root completely across the expanse of water;

(28) "Licensees" means an encompassing term used to refer to persons licensed by the state to perform on-site related services to include:

(A) Installers;

(B) Designated representatives;

(C) Certified monitoring personnel; and

(D) Septic tank manufacturers;

(29) "Monitoring person" means an individual certified by the Department of Health to conduct assessments under the Onsite Wastewater Systems Monitoring Program;

(30) "Municipality" means a city, town, county, district, or other public body created by or pursuant to state law, or any combination thereof, acting cooperatively or jointly;

(31) "Onsite wastewater system" means a single system of treatment tanks and/or renovation facilities used for the treatment of domestic wastewater, exclusive of industrial wastes, serving only:

(A) A single building;

(B) A commercial facility such as an office building; or

(C) An industrial plant or institution;

(32)(A) "Pedon" means the smallest volume for which one should describe and sample the soil to represent the nature and arrangement of its horizons and variability in the properties that are preserved in samples.

(B) In the usual situation, where all horizons are continuous and of nearly

uniform thickness and composition, the pedon has a horizontal area of about one square meter (1 m^2);

(33) "Perched water table" means a saturated zone, generally above the natural water table, as identified by redoximorphic features caused by a restrictive horizon;

(34) "Person" means any:

(A) Institution;

(B) Public or private corporation;

(C) Individual;

(D) Partnership; or

(E) Other entity;

(35)(A) "Piezometer" means a pipe placed in the soil, which gives the water pressure at depth.

(B) The reading is used to estimate the elevation of a water table;

(36) "Pond" means a body of water smaller than a lake, often artificially formed;

(37) "Potable water" means water free from impurities in amounts sufficient to cause disease or harmful physiological effects with the bacteriological and chemical quality conforming to applicable standards of the State Board of Health;

(38) "Primary absorption area" means the area approved by the Department of Health or its authorized agent for the installation of an onsite wastewater system for a specified tract of land;

(39) "Professional soil classifier (P.S.C.)" means a person who:

(A) By reason of their special knowledge of the physical, chemical, and biological sciences applicable to soils as natural bodies and of the methods and principles of soil classification as acquired by soils education and soil classification experience in the formation, morphology, description, and mapping of soils, is qualified to practice soil classifying; and

(B) Has been registered by the State Board of Registration for Professional Soil Classifiers;

(40) "Property owner" means a person who owns and may or may not occupy the property;

(41) "Property owners association" means an association:

(A) Created by and pursuant to state law; and

(B) Organized for the purpose of maintaining common facilities including onsite wastewater facilities in unincorporated subdivisions;

(42) "Redoximorphic features" means:

(A) Color patterns in a soil caused by loss (depletion) or gain (concentration) of pigment compared to the matrix color, formed by oxidation/reduction of iron (Fe) and/or manganese (Mn) coupled with their:

(i) Removal;

(ii) Translocation; or

(iii) Accrual; or

(B) A soil matrix color controlled by the presence of ferrous iron (Fe2+);

(43)(A) "Relic redoximorphic features" means soil morphological features that reflect past hydrologic conditions of saturation and anaerobiosis rather than contemporary hydrology.

(B) Redoximorphic features may not be considered relict unless they have been evaluated by a monitoring process as specified in 14 CAR § 21-604(d);

(44) "Residential strength effluent" means effluent that does not exceed the following parameters:

(A) Biochemical oxygen demand (BOD5) of three hundred milligrams per liter (300 mg/L);

(B) Total suspended solids (TSS) of three hundred milligrams per liter (300 mg/L); and

(C) Fats, oils, and grease content of twenty-five milligrams per liter (25 mg/L);

(45)(A) "Restrictive soil layer" means a soil layer that impedes the movement of:

(i) Water;

(ii) Air; or

(iii) Growth of plant roots.

(B) Examples of such layers or conditions are:

(i) Claypans;

(ii) Fragipans;

(iii) Pressure or induced pans; and

(iv) Bedrock.

(C) "Claypan" means a natural subsurface horizon with:

(i) Low hydraulic conductivity; and

(ii) At least twenty percent (20%) more clay than the overlying horizon.

(D)(i) "Fragipan" means a natural subsurface horizon with:

(a) Very low organic matter;

(b) High bulk density; and/or

(c) High mechanical strength relative to overlying and underlying horizons.

(ii) It has hard or very hard consistence when dry but showing a moderate to weak brittleness when moist.

(iii) The layer:

(a) Typically has redoximorphic features;

(b) Is slowly or very slowly permeable to water;

(c) Is considered to be root restricting; and

(d) Usually has few to many bleached, roughly vertical planes which are faces of coarse or very coarse polyhedrons or prisms.

(E)(i) "Pressure" or "induced pan" means a subsurface horizon or soil layer having a higher bulk density and a lower total porosity than the soil directly above or below it, as a result of pressure that has been applied by normal tillage operations or by other artificial means.

(ii) This term is frequently referred to as a plow pan, plow sole, or traffic pan;

(46) "Scum" means the accumulated floating material, including grease, oils, and other low-density solids in a septic tank;

(47) "Secondary absorption area" means a location indicated on a lot or plot plan showing where the absorption area is to be placed in the event of failure or necessary replacement of the system located on the primary absorption area;

(48)(A) "Seasonal water table (SWT)" means a zone of soil that becomes saturated for periods long enough to undergo reducing conditions during periods of climatic stress due to an underlying restrictive layer.

(B) The seasonal water table may be classified as brief, moderate, or long and may also be known as a perched water table;

(49)(A) "Septic tank" means a single tank or series of tanks that:

(i) Receive raw domestic wastewater; and

(ii) Serve as the primary treatment unit in an onsite wastewater system.

(B) The septic tank provides:

(i) Skimming and storage of scum, settling, and storage of the wastewater solids; and

(ii) The partial digestion of accumulated solids by anaerobic action.

(C) Clarified effluent then flows from the septic tank to the absorption area or for further treatment;

(50) "Septic tank manufacturer" means a person, firm, corporation, or association who manufactures septic tanks, package treatment units, or other components for onsite wastewater systems;

(51) "Similarly qualified individual" means an individual:

(A) With a bachelor's degree with thirty (30) hours of natural science, engineering, and/or math;

(B) With three (3) years' experience verified by the Department of Health in the design of onsite wastewater systems; or

(C) Who has completed a twenty-four-month training plan approved by the Department of Health with a licensed designated representative and obtained a

wastewater operator license class I and II with the Division of Environmental Quality;

(52) "Sludge" means the accumulated solids that have settled to the bottom of a septic tank;

(53) "Soil" means a natural body comprised of solids (minerals and organic matter), liquid, and gases that:

(A) Occurs on the land surface;

(B) Occupies space; and

(C) Is characterized by one (1) or both of the following:

(i) Horizons, or layers, that are distinguishable from the initial material as a result of additions, losses, transfers, and transformations of energy and matter; or

(ii) The ability to support rooted plants in a natural environment;

(54) "Soil absorption system" means:

(A) The system for the final renovation of the septic tank effluent; and

(B) Return of the renovated wastewater to the hydrologic cycle, including the:

(i) Lateral lines;

(ii) Perforated pipes;

(iii) Rock or other authorized conventional trench media products; and

(iv) Soil absorption trenches;

(55) "Soil horizon" means a layer approximately parallel to the surface of the soil distinguishable from adjacent layers by a distinctive set of properties produced by the soil forming process;

(56)(A) "Soil pit" means an onsite excavation.

(B) The excavation shall be of adequate size to observe depth to:

(i) Seasonal water tables;

(ii) Bedrock; or

(iii) Impervious layers.

(C) The soil pit is:

(i) A minimum of two feet (2') in width; and

(ii) Dug to provide ease of access such as steps or a moderate slope.

(D) The excavation shall:

(i) Be four feet (4') in depth, unless an impervious layer is encountered; and

(ii) Provide an exposed sidewall area of at least three feet (3') in length.

(E) It is used to observe those soil characteristics relevant in determining soil suitability for wastewater absorption and renovation;

(57)(A) "Soil qualified designated representative" means a designated representative who has successfully passed the soils portion of the designated representative testing procedure as set forth by the Department of Health.

(B) These individuals are certified to size absorption areas based on depth to seasonal water tables;

(58)(A) "Soil textural class" means the relative proportions by weight of the three (3) mineral fractions sand, silt, and clay as defined by the United States Department of Agriculture soil texture classifications.

(B) See Page 76 Soil Texture Triangle;

(59) "Standard systems" means a standard onsite wastewater system:

(A) Consisting of a field of perforated pipe surrounded by gravel or other conventional trench media product authorized by the Department of Health; and

(B) Installed in such a manner that the clarified effluent from the septic tank or pretreatment unit will be distributed with reasonable uniformity into the natural soil using loading rates found in Table 1;

(60) "Stream" means a year-round flowing stream as designated by the United States Geological Survey;

(61)(A) "Subdivision" means land divided or proposed to be divided for predominantly residential purposes into such parcels as required by local ordinances.

(B) In the absence of local ordinances, subdivision means any land which is divided or proposed to be divided by a common owner or owners for predominantly

residential purposes into three (3) or more lots or parcels, platted or unplatted units, any of which contains less than three (3) acres, as a part of a uniform plan of development;

(62) "Surface discharging system" means a system that applies secondary treated effluent directly to the soil surface from a single point of discharge;

(63) "True water table" means the upper surface of a saturated zone within the soil that is directly connected to a regional aquifer;

(64)(A) "Undisturbed soil" means soil which has:

(i) Developed by the actions of the soil forming processes; and

(ii) Not been disturbed or altered by the human activities.

(B) **Exception**. Plow layers less than seven inches (7") from the soil surface;

(65)(A) "Valid permit" means a permit for construction that is valid for a period of one (1) year from the date of approval.

(B) A permit may be deemed invalid by the authorized agent before construction if the:

(i) Site and/or soil conditions have changed after approval; or

(ii) Information on the permit is inaccurate.

(C) A permit may be revalidated; and

(66) "Wet season" means the period within one (1) year when:

(A) Rainfall normally exceeds evapotranspiration; and

(B) A seasonal water table can be expected to be at its highest level in the soil.

Authority. Arkansas Code § 14-236-107.

Subpart 2. Variances and Exemptions

14 CAR § 21-201. Variations.

Requested variations from this part will be considered and may be approved at the

sole discretion of the Department of Health.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-202. Submission of experimental systems.

(a)(1) Submission of proposed experimental onsite wastewater systems may be approved, disapproved, or approved on a trial basis for a specific period of time.

(2) Such approval or disapproval shall be at the sole discretion of the Department of Health.

(b) Submission of an experimental design shall include design data as to the efficiency of operation of the proposed experimental system.

(c) A monitoring plan shall be submitted for approval in addition to the system design.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-203. Good management practices.

(a) Good management practices are additions or modifications to systems which:

(1) Will make such systems more efficient; or

(2) Could make such systems acceptable in certain soil conditions.

(b) Where good management practices are proposed for inclusion in a soil absorption system, approval shall be at the discretion of the Department of Health or its authorized agent.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-204. Existing installation.

(a) No onsite wastewater system in existence on the effective date of this part, nor any onsite wastewater system installed after the effective date of this part in a subdivision wherein individual lots have been developed or sold for use with onsite

wastewater systems for which a plat has been filed on record prior to the effective date of this part shall be required to conform to more stringent specifications and requirements as to design, construction, density of improvements, lot size, and installation than those standards contained in any applicable duly adopted and published rules in effect at the time of platting of record of such subdivisions.

(b) No onsite wastewater system to be installed on a residential lot for which the Department of Health or its authorized agent has issued a construction permit on or before the effective date of this part shall be required to conform to the design, construction, and installation provisions of this part.

(c) In a subdivision for which a master plan has been approved by the department prior to the effective date of this part, or for which the department has otherwise previously issued its written approval for the installation of onsite wastewater systems and where individual lots have been developed or sold in reliance upon such prior written approval, onsite wastewater systems shall not be required to conform to more stringent specifications as to design, construction, and installation than those standards in effect at the time of, or referred to, in such prior written approval.

(d) However, it is provided that any onsite wastewater system which is determined by the department to be a health hazard or which constitutes a nuisance due to odor or unsightly appearance shall conform to the provisions of this part within thirty (30) working days after notification that such determination has been made.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-205. Waiver of initial licensure fee.

(a) Pursuant to Acts 2021, No. 725, an applicant may receive a waiver of the initial licensure fee, if eligible.

(b) Eligible applicants are applicants who:

(1) Are receiving assistance through the:

(A) Arkansas, or current state of residence equivalent, Medicaid Program;

(B) Supplemental Nutrition Assistance Program (SNAP);

(C) Special Supplemental Nutrition Program for Women, Infants, and Children (WIC);

(D) Temporary Assistance for Needy Families Program (TEA); or

(E) Lifeline Assistance Program (LAP);

(2) Were approved for unemployment within the last twelve (12) months; or

(3) Have an income that does not exceed two hundred percent (200%) of the federal poverty income guidelines.

(c)(1) Applicants shall provide documentation showing their receipt of benefits from the appropriate state agency.

(2) For Medicaid, SNAP, WIC, TEA, or LAP, documentation from the Department of Human Services or current state of residence equivalent agency.

(3) For unemployment benefits approval in the last twelve (12) months, the Division of Workforce Services or current state of residence equivalent agency.

(4) For proof of income, copies of all Internal Revenue Service forms indicating applicant's total personal income for the most recent tax year, e.g., W-2, 1099, etc.

(d) Applicants shall attest that the documentation provided is a true and correct copy and fraudulent or fraudulently obtained documentation shall be grounds for denial or revocation of license.

Authority. Arkansas Code § 14-236-107.

Subpart 3. Permitting Requirements

14 CAR § 21-301. Generally.

(a)(1) All premises shall be connected to a sanitary sewer when within three hundred feet (300') from the point where the sewer exits a building on the property owner's property and available to said premises when connection can be made without crossing another person's property.

(2) No privies, onsite wastewater systems, or other receptacles for human excreta shall be constructed, maintained, or used on the premises.

(3)(A) Plumbing shall be installed and maintained in accordance with the Arkansas Plumbing Code, 17 CAR pt. 65.

(B) See Arkansas Code § 17-38-101 et seq.

(b)(1) All lots, tracts, or parcels shall have suitable primary and secondary absorption areas that utilize standard onsite wastewater systems sized according to natural soil data.

(2) In no case shall a wastewater system utilizing subsurface renovation be approved regardless of lot size if soils are not suitable for subsurface renovation.

(c) A completed Onsite Wastewater System Permit Application and detailed plans and specifications following the requirements found in Appendix F for the collection, treatment, and/or renovation facilities for all wastes of a domestic nature, containing a predominance of human excreta and exclusive of industrial wastes shall be submitted to and receive the approval of the Department of Health or its authorized agent, prior to construction of a building or residence.

(d)(1) Onsite wastewater systems in subdivisions or in platted or unplatted lots or tracts of land as provided in Acts 1977, No. 402 (the Arkansas Sewage Disposal Systems Act, Arkansas Code § 14-236-101 et seq.), shall be planned, designed, and constructed in accordance with this part and the Rules Pertaining to General Sanitation, 20 CAR pt. 131, of the department.

(2) Permits for construction and operation of onsite wastewater systems shall be obtained in accordance with this part prior to the construction, installation, or modification of the onsite wastewater system.

(e) **Permit requirement.** It shall be unlawful for any person, firm, corporation, association, municipality, or governmental agency to begin construction, alteration, repair, or extension of any onsite wastewater system, owned by any other person, firm, corporation, association, municipality, or governmental agency until the owner first obtains a valid permit for construction issued by the department or its authorized agent.

(f) It shall be unlawful for any person, firm, corporation, association, municipality, or governmental agency to begin operation of any onsite wastewater system until:

(1) Such system has been inspected and approved by the department or its

authorized agent; and

(2) The owner has first obtained a permit for operation issued by the department or its authorized agent.

(g)(1) It shall be unlawful for any installer to begin construction, alteration, repair, or extension of any onsite wastewater system owned by any other person, firm, corporation, association, municipality, or governmental agency until the permit holder or installer first notifies the authorized agent a minimum of twenty-four (24) hours prior to the date he or she plans to begin work on said system.

(2) Emergency repairs may be undertaken without prior notification to the authorized agent provided a permit is obtained within ten (10) working days.

(h)(1) For those cities or counties with authorized agents, the authorized agent shall be the authorized agent of the department.

(2) In the event that an authorized agent has not been designated for a city or county, applications for onsite wastewater systems shall be made to the department.

(3) Application forms and instructions may be obtained from the authorized agent or from the department.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-302. Plan review fee.

(a)(1) A fee shall be levied for the review of each permit.

(2) Permit fees shall be made payable to the Department of Health.

(3) The review fee shall be paid before the issuance of Part 1 of the permit application.

(4) There shall be no refund of the fee or any part thereof due to failure to proceed under the permit application.

(5) Construction shall begin within one (1) year of issuance or the permit shall be revalidated by the original submitting designated representative or the department's authorized agent.

(b) A fee shall be levied for the review of individual onsite wastewater permit

applications as follows:

(1) For structures one thousand five hundred square feet (1,500 sq. ft.) or less, the fee to review a permit application is thirty dollars ($30.00);

(2) For structures more than one thousand five hundred square feet (1,500 sq. ft.) and up to two thousand square feet (2,000 sq. ft.), the fee to review a permit application is forty-five dollars ($45.00);

(3) For structures more than two thousand square feet (2,000 sq. ft.) and up to three thousand square feet (3,000 sq. ft.), the fee to review a permit application is ninety dollars ($90.00);

(4) For structures more than three thousand square feet (3,000 sq. ft.) and up to four thousand square feet (4,000 sq. ft.), the fee to review a permit application is one hundred twenty dollars ($120.00);

(5) For structures more than four thousand square feet (4,000 sq. ft.), the fee to review a permit application is one hundred fifty dollars ($150.00); and

(6) For the alteration, repair, or extension of any individual sewage disposal system, the fee to review a permit application is thirty dollars ($30.00).

(c)(1) In calculating the square footage of a residential structure for purposes of determining the applicable fee under this section, the square footage of all auxiliary areas of the residential structure shall not be considered.

(2) Auxiliary areas include garages, carports, porches, and other similar areas as determined by the Division of Environmental Health Protection of the Department of Health.

Authority. Arkansas Code §§ 14-236-107, 14-236-116.

14 CAR § 21-303. Permit Procedure.

(a)(1) Part I of the permit is the permit for construction.

(2) Part I of the permit application form shall be:

(A) Completed by a designated representative; and

(B) Approved by the Department of Health or its authorized agent prior to

initiating construction.

(3)(A) The information to be reported in this portion includes the results of the percolation test, soil determination results, lot dimensions, system design, system layout, and other information required by the department or its authorized agent.

(B) No changes or alterations may be made to the system prior to or during construction without prior approval of the authorized agent.

(b)(1) Part II of the permit application is the installation inspection.

(2)(A) An installation inspection may be made during the construction of any onsite wastewater system.

(B) The inspection may be made during any phase of the installation.

(3)(A) It shall be the duty of the installer to notify the authorized agent or designated representative when the installation is ready for inspection.

(B) It shall be the duty of the owner or occupant of the property to give the department, its authorized agent, or designated representative free access to the property at reasonable times for the purpose of making the installation inspection.

(C) Within five (5) days the installer shall submit the required documentation to the local health unit that the system has been installed pursuant to the approved permit.

(4) The inspection may be made by the:

(A) Authorized agent; or

(B) Designated representative at the approval of the authorized agent.

(5) Any person aggrieved by the disapproval of an onsite wastewater system installation shall be afforded review as provided in Acts 1967, No. 434, the Arkansas Administrative Procedure Act, Arkansas Code § 25-15-201 et seq.

(c)(1) Part III of the permit is the permit for operation.

(2) After approval of the inspection, the authorized agent will approve and issue a permit for operation.

(3) The system shall not be used until the permit for operation is issued.

(4) The authorized agent will retain the original and return the remaining copies to the owner.

(d) **Refusal of permit.** Except as provided in 14 CAR § 21-204, a permit for the construction, alteration, repair, extension, or operation of an onsite wastewater system or alternate/experimental system shall be refused where public sewer systems are reasonably available or economically feasible, or in instances where the issuance of such permit is in conflict with the other applicable laws and rules or where the issuance of such permit is in conflict with the public policy declared in Acts 1977, No. 402 (the Arkansas Sewage Disposal Systems Act, Arkansas Code § 14-236-101 et seq.), except that emergency repairs may be undertaken without prior issuance of a permit, provided a permit is subsequently obtained within ten (10) working days after the repairs are made.

Authority. Arkansas Code §§ 14-236-107, 14-236-107, 14-236-116, 14-236-116.

Subpart 4. Subdivisions

14 CAR § 21-402. Individual water well.

(a)(1) If an individual water well supply and an onsite wastewater system are proposed, the lot size shall be such that the well shall be located at least:

(2) Fifty feet (50') from any lot line; and

(3) One hundred feet (100') from any part of the onsite wastewater system proposed on the same lot and onsite wastewater systems proposed on any adjacent lots.

(b) Wells should be located up slope from wastewater systems if possible.

(c) Both primary and secondary onsite wastewater systems shall conform to all set back requirements established under 14 CAR § 21-502.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-403. Public water supply.

(a) If a public water supply is proposed and an onsite wastewater system is to be

used, the lot size shall be such that a primary absorption area and a secondary absorption area are present.

(b) Both absorption areas shall conform to the setback requirements outlined in 14 CAR § 21-502.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-404. Surface discharging systems.

No surface discharging systems shall be allowed in subdivisions for new construction until all requirements of the Division of Environmental Quality under the Department of Energy and Environment and the Department of Health are met.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-405. Subdivisions.

(a)(1) Primary and secondary absorption areas in a subdivision shall be sized according to natural soil conditions for standard onsite wastewater systems using loading rates found in Table 1.

(2) Capping fill systems may be used to overcome separation to bedrock.

(3) On lots less than three (3) acres in size proposed for subdivision development, all undisturbed soils shall have a minimum depth of:

(A) Thirteen inches (13″) or greater to a brief seasonal water table;

(B) Eighteen inches (18″) or greater to an adjusted moderate seasonal water table; or

(C) Twenty-four inches (24″) or greater to an adjusted long seasonal water table.

(4) Interceptor drains may be used for the purpose of determining minimum lot size when soils exhibiting a brief seasonal water table between the surface and eighteen inches (18″) of depth that an interceptor drain can effectively reduce the depth of the seasonal water table.

(5) Lots less than three (3) acres that require interceptor drains in subdivision approval shall include a complete permit submittal to establish siting of the primary and secondary areas, including the interceptor drain.

(6)(A) Drip dispersal design may be used in determining minimum lot size for subdivisions when the following criteria are met:

(i) Minimum depth to bedrock in 14 CAR § 21-602(b)(3);

(ii) Primary and secondary absorption areas are flagged on contour; and

(iii) Legal description of primary and secondary absorption areas included in the legal description of those lots.

(B) Lots using drip dispersal design for minimum lot size shall be five-tenths (0.5) of an acre or larger.

(b) Submission shall be made to the local health unit utilizing one (1) of the following approved methods.

(1) **Subdivision review and soil mapping.**

(A) When utilizing soil mapping for subdivision review, the soil map shall be submitted by a professional soil classifier.

(B) When soil mapping a subdivision for the purpose of designing standard onsite wastewater systems, a high intensity map is required.

(C) A high intensity map details the location and extent of the soils and landscape features sufficiently for site evaluation for subsurface wastewater renovation.

(D) The final report consists of a soils map and a soils report.

(2) **Field procedures for mapping subdivisions.**

(A) Soil maps for subdivisions are to be made from a maximum grid of one hundred feet (100').

(B) Grid points shall be accurately located and identified using flags or stakes.

(C) A soil pit shall be located at each grid point and identified with the corresponding flag or stake.

(D) The maximum distance allowed from a property line to an outside

perimeter grid line is fifty feet (50').

(E) The corners of both the proposed primary and secondary absorption areas shall be sized and flagged on each lot.

(F) A soil description shall be made from each soil pit in accordance with the standards established by the National Cooperative Soil Survey.

(3) **Soil map.**

(A) The soil map should be compiled at a scale of one inch (1") = one hundred feet (100') (1:1,200).

(B)(i)*(a)* The soil map shall show all map units.

(b) A map unit is a collection of similar soils defined and named the same in terms of their properties.

(c) Each map unit differs in some respect from all others and is uniquely identified on a soil map.

(ii)*(a)* Each individual area on the map is a delineation.

(b) Areas of similar soils consisting of six hundred twenty-five square feet (625 sq. ft.) or more shall be delineated.

(iii) Areas of contrasting soils consisting of less than six hundred twenty-five square feet (625 sq. ft.):

(a) Are inclusions; and

(b) Shall be identified in the map unit description.

(iv)*(a)* Soil map units are to be named by their numerical ranking with respect to the soil loading rates designated for each map unit.

(b) **Example.** The unit with the highest loading rate for subsurface wastewater renovation will be named Map Unit 1.

(C)(i) Soil properties critical for sizing of onsite system absorption areas within each map unit shall be given in tabular or narrative form on the soil map or in the soil report.

(ii) These properties include:

(a) Maximum slope;

(b) Depth to bedrock;

(c) Hydraulic conductivity within the depth zone extending six inches (6″) above and twelve inches (12″) below the planned depth of the base of the absorption trench;

(d) Minimum depth to the brief, moderate, and long seasonal water table, if present; and

(e) Minimum loading rate based on these properties.

(D)(i) When a soil pit is not located within the absorption areas, the primary and secondary absorption areas will be sized according to the limiting loading rate within the applicable map unit.

(ii) Within a map unit, the absorption areas can be moved outside the designated primary and secondary areas without additional soils information by utilizing the most limiting loading rate or further soil evaluation in the specific area being proposed shall be conducted.

(E) The map unit legend must identify all symbols used on the soil map.

(F) A signed statement shall be on the soil map certifying the map was made in accordance with the current National Cooperative Soil Survey Standards by a registered professional soil classifier licensed in Arkansas.

(G) The following statement shall be on all soil maps:

> Any modification such as cutting, filling, or compaction of the soil may change the nature of the soils, and may alter the suitability of the soils for the intended use and will therefore void the soil map.

(4) **Soil report.**

(A) The soil report is a separate document that shall be submitted as an attachment to the soil map.

(B) The report shall consist of the following:

(i)*(a)* Each map unit identified on the soil map shall have a typical pedon description.

(b) Terms used in the description shall be those used by the

National Cooperative Soil Survey;

(ii)*(a)* The range in characteristics for each soil map unit shall be given.

(b) The characteristics shall include but are not limited to color, texture, depth, and type of redoximorphic features, and depth to bedrock.

(c) Ranges should be narrow enough that interpretations will not be different for soils with the same typical pedon;

(iii)*(a)* Interpretations for each typical pedon shall be included in the soil report.

(b) The minimum interpretations required include seasonal water table duration, hydraulic conductivity classes, depth to bedrock, and the range of soil loading rate; and

(iv) A signed statement shall be on the soil report certifying the report was made in accordance with the current National Cooperative Soil Survey Standards by a registered professional soil classifier.

(c) Sizing is based on seasonal water tables loading rates without soil mapping.

(d)(1) Designated representatives utilizing soil morphology method shall be soil certified.

(2) The following information or items shall be included:

(A) A minimum of one (1) soil pit in both the primary absorption and secondary absorption area is required;

(B) Soil pit information shall include:

(i) Depth to bedrock;

(ii) Minimum hydraulic conductivity within the zone extending six inches (6") above and twelve inches (12") below the designed depth of the absorption trench;

(iii) Depth and type of restrictive soil layers; and

(iv) Depth to brief, moderate, and long seasonal water tables;

(C) Loading rates based on the soil properties used to size primary and secondary sites shall be given; and

(D) The corners of both the proposed primary and secondary absorption areas shall be sized and flagged on each lot.

(e) Construction of any type shall not begin upon any lot in the subdivision until final approval of the submission for utilization of onsite wastewater systems within the subdivision has been made by the Department of Health.

(f)(1) Property owners associations that construct and maintain or have constructed and maintained wastewater treatment facilities in accordance with standards and rules established by the department or the Division of Environmental Quality and that desire to exercise general supervision and authority over the treatment of wastewater within and for the subdivided area over which their authority extends, may request the department or in the case of onsite wastewater systems, or the Engineering Section of the Department of Health, in the case of community wastewater treatment systems, to delegate such parts of its authority as the property owners association wishes to exercise.

(2) The department may, at its discretion, delegate any of its authority in the administration of this part as it shall deem proper and in accordance with the following:

(A) In the event that such property owners association constructs and maintains all onsite wastewater systems within the subdivided area over which their authority extends, the department, after determining by the procedure set forth in 14 CAR § 21-401 et seq., that the use of the onsite wastewater systems within the subdivision is acceptable, may, at its discretion, delegate the property owners association general supervision and authority over the location, design, construction, installation, and operation of onsite wastewater systems subject, however, to:

(i) Compliance with this part;

(ii) The use of the permit forms established under this part; and

(iii) The final approval of each permit by the authorized agent of the department; and

(B) In the event that such property owners association constructs and maintains all community wastewater treatment systems within the subdivided area over which their authority extends, the Engineering Section of the Department of Health

may, at its discretion, delegate general supervision and authority over the location, design, construction, installation, and operation of such community wastewater treatment systems subject to:

(i) Compliance with applicable rules of the department and of the division; and

(ii) Final approval of designs and issuance of permits as required by said applicable rules.

(C) Such compliance shall be to the same degree and extent as would apply if the property owners association were a municipality.

Authority. Arkansas Code § 14-236-107.

Subpart 5. System Location

14 CAR § 21-501. System location — Generally.

(a) Minimum horizontal distances shall be used only where ideal conditions indicate them to be sufficient and greater distances shall be required where local conditions demand, as found in 14 CAR § 21-502.

(b) Waivers except with public water supplies involved shall be submitted to and approved by the Department of Health.

(c) Waivers affecting public water supplies shall be submitted to and approved by the Engineering Section of the Department of Health.

(d) Details pertaining to local water wells, such as depth, type of construction, and vertical zone of influence, together with data on the geological formations and porosity of subsoil strata, should be considered in determining the safe allowable distance between wells and onsite wastewater systems.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-502. Minimum horizontal distances.

Facilities used for the collection, treatment, and renovation of wastewater shall be at least:

(1) Three hundred feet (300') from the high-water mark of any body of water, if within one quarter (1/4) mile of a public water supply intake on that body of water;

(2) Three hundred feet (300') from any spring used as a public water supply;

(3) One hundred feet (100') from any source of domestic water supply;

(4) One hundred feet (100') from the high-water mark of any stream or lake;

(5)(A) Fifty feet (50') from any pond on the same property and at least one hundred feet (100') from any pond on adjacent properties, if in the pond watershed.

(B) In no case shall the minimum separation distance from any pond be less than fifty feet (50');

(6) Ten feet (10') from any dwelling or building;

(7) Ten feet (10') from all property lines;

(8)(A) Ten feet (10') from any water service line.

(B) See Arkansas Plumbing Code, 17 CAR pt. 65; and

(9) One hundred feet (100') from any sinkhole.

Authority. Arkansas Code § 14-236-107.

Subpart 6. Soil Criteria

14 CAR § 21-601. Soil suitability determination.

(a) The first step in the design of any onsite wastewater system is to determine the suitability of the soil.

(b) A minimum of two (2) soil pits is required to determine the suitability of a site.

(c) One (1) pit shall be in the area of the proposed:

(1) Primary absorption area; and

(2) Secondary absorption area.

(d) The soil pits shall be left open for use by the authorized agent.

(e) Depths to seasonal water tables, bedrock (if encountered), and the type and

depth of the various soil layers including both pervious and impervious strata and their relationship with the proposed soil absorption system's other impervious strata shall be reported.

(f) No soil absorption system shall be installed in fill material.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-602. Soil separation distances.

(a) The following are minimum separation distances from the bottom of the proposed absorption trench to the true water table (aquifer) and bedrock.

(b)(1) These conditions shall be met before the soil is considered suitable for subsurface renovation.

(2) **True water tables.** Minimum hydraulic conductivity in depth zone extending six inches (6") above and twelve inches (12") below planned depth to base of soil absorption trench:

Low or Moderate Hydraulic Conductivity	24 inches
High Hydraulic Conductivity	36 inches

(3) **Bedrock.** Minimum hydraulic conductivity in depth zone extending six inches (6") above and twelve inches (12") below planned depth to base of soil absorption trench:

Low or Moderate Hydraulic Conductivity with redoximorphic features indicating SWT of moderate duration or longer.	18 inches
Low or Moderate Hydraulic Conductivity with no redoximorphic features or redoximorphic features indicating a brief SWT.	24 inches
High Hydraulic Conductivity	36 inches

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-603. Hydraulic conductivity classes.

(a) Hydraulic conductivity class shall be assigned based on the soil horizon with the minimum hydraulic conductivity in depth zone extending six inches (6″) above and twelve inches (12″) below planned depth to base of soil absorption trench.

(b) The hydraulic conductivity class may be determined using the following:

(1) **High hydraulic conductivity.** Natural soil horizons which have not been compacted by human activities, especially vehicle traffic and tillage operations, and are in the following particle size classes:

(A)(i) Sandy.

(ii) The texture of the fine earth fraction (less than two millimeters (<2 mm) diameter particles) is sand or loamy sand but not loamy very fine sand.

(iii) Rock fragments comprise less than thirty-five percent (35%) of the horizon volume;

(B)(i) Fragmental.

(ii) Rock fragments (stones, cobbles, gravel, and very coarse sand particles) comprise ninety percent (90%) or more of the horizon volume.

(iii) Too little fine earth to fill some of the interstices larger than one millimeter (1 mm); and

(C)(i) Sandy-skeletal.

(ii) Rock fragments two millimeters (2 mm) in diameter or larger make up thirty-five percent (35%) or more but less than ninety percent (90%) of the horizon volume;

(iii) Enough fine earth to fill interstices larger than one millimeter (1 mm); and

(iv) The fine earth fraction is sandy as defined for the sandy particle size class;

(2) **Moderate hydraulic conductivity.**

(A) Natural soil horizons which clearly have some soil structure other than platy, which have not been compacted by human activities, especially vehicle traffic and tillage operations, and which have one (1) of the following textural classes:

(i) Sandy loam;

(ii) Loam;

(iii) Silt loam;

(iv) Silt;

(v) Sandy clay loam;

(vi) Clay loam;

(vii) Silty clay loam; or

(viii) Rock fragment content of less than ninety percent (90%).

(B)(i) Soils with sandy clay, clay, or silty clay texture and that are low shrink-swell will be considered to have moderate hydraulic conductivity.

(ii) These residual soils have a hue of 5YR or redder and have typically formed over limestone and chert parent materials associated with the Ozark Highlands in northern Arkansas.

(iii) Alluvial soils such as those deposited by the Arkansas and Red Rivers and red soils formed from other types of parent materials and/or in other parts of the state are not included in this exception.

(iv) See Appendix I for additional guidance for identification of soils meeting these criteria;

(3) **Low hydraulic conductivity — Forty percent to sixty percent (40% – 60%) clay.**

(A) Included are soil horizons which have platy structure or are massive and horizons which have been compacted by human activities, especially vehicle traffic and tillage operations.

(B) Also included are horizons with one (1) of the following textural classes:

(i) Sandy clay;

(ii) Clay;

(iii) Silty clay; and

(iv) Rock fragment content is less than ninety percent (90%);

(4) Red soil chart, see Appendix I; and

(5) No loading rates are available for low hydraulic conductivity soils with

greater than sixty percent (60%) clay.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-604. Seasonal water table (SWT) classes.

(a)(1) The depth to seasonal water tables of three (3) durations can be determined from the following guides.

(2) The guides are interpretations of the type of redoximorphic features present in a horizon.

(3) Each horizon should be placed in the most limiting SWT class for which the criteria are met.

(4) All colors are for moist conditions.

(b)(1) The placing of soil horizons into SWT classes based on redoximorphic features is an interpretation and requires some understanding of soil development processes.

(2) Redoximorphic features are not expected to occur unless the horizon has been both saturated and anoxic conditions have led to reduction of iron and manganese.

(3) Reduction of iron and manganese is not expected to occur until:

(A) After the horizon has been saturated for a few days or weeks; and

(B) The saturation has been periodic or continuous for a substantial period of time (decades or centuries).

(4) **Brief.** Soil horizons which have seasonal water tables of brief duration contain one (1) or more of the following:

(A) Concentrations or depletions with chroma greater than or equal to three (≥3);

(B) Less than twenty percent (20%) of the mass is chroma three (3) depletions; or

(C) Two percent (2%) or more black manganese (Mn) masses.

(5) **Moderate.** Soil horizons which have seasonal water tables of moderate

duration contain one (1) or more of the following:

(A) Depletions with chroma less than or equal to two (≤2) comprise less than fifty percent (50%) of the mass; or

(B) Chroma three (3) depletions comprise more than twenty percent (20%) of the mass.

(6) **Long.** Soil horizons which have seasonal water tables of long duration contain chroma less than or equal to two (≤2) in fifty percent (50%) or more of the mass.

(c)(1) Soil horizons that have chroma and value of less than or equal to three (≤3) due to high organic matter contents (A horizons) present problems for SWT interpretations.

(2) Also, with low chroma comprised of uncoated grains which result from prolonged leaching with organic acids (E horizons) are not considered to be an indication of an SWT.

(3) These horizons (A and E) shall be considered to contain SWTs only if they also contain identifiable redox concentrations and/or depletions.

(4) A plowed horizon (Ap), which has chroma of three (3) or less, shall not be considered to contain an SWT unless the first underlying horizon contains an SWT.

(5) The duration of the SWT in a plowed horizon (Ap) with chroma less than or equal to three (≤3) and in A and E horizons with chroma less than or equal to (≤3) and redox concentrations and/or depletions shall be the same as in the first underlying horizon.

(d) **Monitoring requirements.**

(1)(A) Some soils may exhibit redoximorphic features that are not indicative of current soil conditions.

(B) In such soils, monitoring wells or piezometers may be necessary to determine current soil wetness conditions.

(C) Monitoring shall be done during the wet season.

(2)(A) A property owner or their representative has the option to use observation wells and/or piezometers to demonstrate that redoximorphic features are

not an indication of zones of saturation.

(B) The following procedures for the use of observations wells/piezometers to evaluate the depth and duration of seasonal water tables shall be implemented.

(3) The property owner or their representative shall notify the Department of Health, in writing, of the intent to use observation wells and/or piezometers to evaluate depth and duration of seasonal water tables.

(4)(A) On individual lots, at least one (1) observation well and/or piezometer shall be installed and monitored on a site within both the proposed primary and secondary absorption areas.

(B) If, in the judgment of the department, more than one (1) is needed, the property owner or their representative shall be notified.

(C) For subdivision evaluation, at least one (1) observation well and/or piezometer shall be installed in each soil mapping unit.

(D) However, a minimum of one (1) observation well and/or piezometer per acre is required.

(5)(A) The wells and/or piezometers shall extend at least thirty-six inches (36”) into the natural soil.

(B) The department reserves the right to determine the depth of all wells and/or piezometers.

(C) In soils with a fragipan, the observation well and/or piezometer shall not be installed deeper than the top of the fragipan.

(6) All plans and specifications for observation wells/piezometers shall be submitted and installed under the supervision of a professional soil classifier.

(7) Monitoring of seasonal water tables shall be conducted by a professional soil classifier or designated representative.

(8) Under no circumstances will the property owner/developer be allowed to monitor the water levels.

(9)(A) The monitoring period shall be during the wet season (December 1 through May 15 of the following year) to verify the depth and duration of the seasonal

water tables.

(B) Monthly precipitation during the monitoring period should be near the long-term (thirty-year) average.

(C) The department may not accept data from the monitoring period if the deviation from average is substantial.

(D) Several methods are available to document deviation of monthly and seasonal precipitation from average conditions.

(E) Precipitation data used should be from the nearest weather station.

(F) The monitoring period shall be eight (8) consecutive weeks and two (2) nonconsecutive days per week.

(G) A minimum of sixteen (16) recorded observations shall be conducted.

(10) At its discretion, the department shall field check the monitoring periodically during the time of expected saturated soil conditions.

(11)(A) The department may, at any time during the observation period, verify the observed water depth by conducting a soil boring next to, and of equal depth with, any of the observation wells/piezometers.

(B) The well may be declared invalid by the department if the water level, after twenty-four (24) hours without precipitation, presents a discrepancy with the observed water level in the data collected.

(C) The owner will be notified by the department of such findings.

(12)(A) When monitoring determines that the site is suitable, the department will request that a new site evaluation be submitted.

(B) The monitoring information shall be incorporated into the new site evaluation.

(13)(A) Some soils have been extensively studied and have no contemporary seasonal water tables.

(B) These specific areas may be exempted from the soil redoximorphic features but shall be sized by hydraulic conductivity or percolation rates.

(e) **Lowering seasonal water tables.**

(1) **Interceptor drains.**

(A) Interceptor drains can be utilized to lower the brief seasonal water table to a maximum depth of eighteen inches (18″) in soils less than thirty percent (30%) clay on sites with three percent (3%) or more slope.

(B) No reduction is allowed in the moderate seasonal water table.

(2) **Capping fill.**

(A) The depth of the observed seasonal water table may be increased by a factor equal to half the depth of the settled fill up to a maximum adjustment of seven inches (7″).

(B) Capping fills are outlined in 14 CAR § 21-707.

(C) Systems incorporating capping fills shall be designed to load to the surface of the settled cap in order to utilize the adjustment credited for the applied cap.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "SWT" means seasonal water table.

14 CAR § 21-605. Lots less than three (3) acres.

On lots less than three (3) acres, prior to adjustment for capping fill, where the slope is less than or equal to twelve percent (12%), all undisturbed soils exhibiting a depth of thirteen inches (13″) or greater to a brief seasonal water table, and/or a depth of eighteen inches (18″) or greater to an adjusted moderate seasonal water table, and/or a depth of twenty-four inches (24″) or greater to an adjusted long seasonal water table shall utilize a standard onsite wastewater system as outlined in this part.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-606. Lots three acres or greater.

On lots of three (3) acres or greater, prior to adjustment for the capping fill, all undisturbed soils exhibiting a depth of twelve inches (12″) or greater to a brief seasonal water table, and/or a depth of sixteen inches (16″) or greater to an adjusted moderate

seasonal water table, and/or a depth of twenty inches (20") or greater to an adjusted long seasonal water table, shall utilize standard onsite wastewater systems as outlined in this part.

Authority. Arkansas Code § 14-236-107.

Subpart 7. Standard Systems

14 CAR § 21-701. Absorption trenches.

(a) A standard onsite wastewater system consists of a field of perforated pipe:

(1) Surrounded by gravel or other conventional trench media product authorized by the Department of Health; and

(2) Installed in such a manner that the clarified effluent from the septic tank or pretreatment unit will be distributed with reasonable uniformity into the natural soil.

(b) The individual absorption trench should not be more than one hundred feet (100') without mechanical dosing, and the trench bottom and perforated pipe or gravel substitute should be installed at a grade of zero to two inches (0" – 2") per one hundred feet (100').

(c) In all cases, line length shall not exceed one hundred fifty feet (150').

(d) In order to ensure even distribution of the effluent, all onsite wastewater systems utilizing a distribution box shall have absorption trenches of the same length.

(e) Onsite wastewater systems utilizing serial distribution of the effluent shall be provided with an authorized diversion device to allow drying of the most used absorption trenches.

(f) The most used absorption trench should be allowed to drain and dry out during the summer months.

(g) A minimum of two (2) absorption trenches is required to ensure that the absorption area will function even if one (1) absorption trench is disturbed.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-702. Trench depths.

(a) Soil absorption areas utilizing pipe and gravel provide for a trench twenty-four inches (24″) wide, with a standard trench depth of eighteen inches (18″) from the bottom of the trench to the finished settled grade.

(b) Systems designed with trench depths up to twenty-four inches (24″) may be utilized.

(c)(1) There shall be a minimum of:

(A) Six inches (6″) of gravel below the pipe; and

(B) Two inches (2″) of gravel above the pipe.

(2) A minimum of six inches (6″) of cover is required above the gravel bed or gravel substitute.

(d)(1) The trench depth may vary in those instances where the soil absorption area was designed to overcome limiting soil characteristics.

(2) Trench depths shall be:

(A) Specifically called for in the designated representative's design; and

(B) Approved by the authorized agent.

(e) The absorption area in square feet is twice the total length of the trenches.

(f) The minimum spacing between the trenches shall be six feet (6′) between the trenches and eight feet (8′) center to center.

(g) Increased separation between trenches is encouraged to enhance the effectiveness of the trenching system.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-703. Gravel substitutes.

(a) Gravel substitute products authorized by the Department of Health:

(1) Shall be a minimum of eight inches (8″) in height; and

(2) May not exceed twenty-four inches (24″) in width.

(b) The designated representative shall specify the product name and model to be

installed when utilizing a gravel substitute in the system design.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-704. Effluent strength.

(a)(1) Septic tank effluent when applied to the soil causes a clogging layer (biomat) to form.

(2) The biomat, while increasing treatment performance, reduces the infiltrative capacity of the soil.

(3) Septic tank effluent is considered high strength if the waste stream possesses an individual parameter outside of the levels established for residential strength wastewater (see definitions).

(4) The designated representative shall indicate the:

(A) Assumed strength of the wastewater entering the system; and

(B) Effluent values that the intended design is to achieve.

(5) Soil loading rate charts (Appendix A/Table 1) do not take into consideration the organic loading to the soil.

(6) Loading rates found in Appendix A/Table 1 can only be used when the wastewater strength has been reduced to residential strength levels.

(b)(1) Establishments or structures producing high levels of grease and oils, or high TSS or high BOD5 shall reduce wastewater strength prior to disposal.

(2) High-strength effluent-reducing systems shall be monitored by licensed certified monitoring personnel.

(3) The Department of Health may request sampling to verify wastewater parameters are met.

(c)(1) Design daily flow adjustments may be granted for RV parks engineered with wastewater strength reduction.

(2) Any design daily flow adjustment shall be accompanied by proposed treatment documentation.

(3) Sampled or projected wastewater characteristics are to be included with

requests for design flow adjustments.

(4) The flow per space shall not be less than sixty (60) gallons per day per space for RV parks with sewer and water at each site.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "BOD5" means biochemical oxygen demand.

"RV" means recreational vehicle.

"TSS" means total suspended solids.

14 CAR § 21-705. Sizing the absorption area.

(a) If the soil is acceptable for the installation of absorption trenches, a percolation test or a seasonal water table determination shall be made at points selected as typical of the area in which the absorption trenches will be located.

(b) Only a soil-qualified designated representative may design a standard onsite wastewater system based on seasonal water table data.

(c) **Sizing the system based on seasonal water table data.** When a seasonal water table of more than one (1) duration is present in a soil, the loading rate is determined as follows:

(1) Determine the depth of each seasonal water table;

(2) Adjusting the moderate seasonal water table:

(A) Subtract the depth to the brief SWT from the depth to the moderate SWT and divide by three (3); and

(B) Subtract the result from the depth to the moderate SWT to obtain the adjusted moderate SWT;

(3) Adjusting the long seasonal water table:

(A) Subtract the adjusted moderate SWT from the depth to the long SWT and divide by two (2); and

(B) Subtract the above number from the depth to the long SWT to obtain the adjusted long SWT;

(4) Adjusting the long seasonal water table where only brief and long seasonal water tables are encountered:

(A) Subtract the depth to the brief SWT from the long SWT and divide by six (6); and

(B) Subtract the above number from the depth to the long SWT to obtain the adjusted long SWT;

(5) Compare the loading rates for the brief, adjusted moderate, and adjusted long duration seasonal water table using the soil loading charts;

(6) Use the most restrictive loading rate to determine the size of the absorption area; and

(7) Soils that only have one (1) duration of seasonal water table are loaded by using the loading rate given in the soil loading charts for the duration of seasonal water table observed.

(d) **Sizing the soil absorption area based on percolation data.**

(1) **Procedures of percolation tests.**

(A) **Number and location of tests.**

(i) Three (3) or more test holes spaced uniformly over the primary absorption area and one (1) test hole in the secondary absorption area are required.

(ii) Percolation tests shall be performed at the depth of the proposed soil absorption system.

(B) **Type of test holes.**

(i) The depth of a standard percolation test hole is eighteen inches (18″) and the diameter shall be twelve inches (12″).

(ii) If soil and site characteristics indicate that a deeper or shallower system is desired, then the percolation test shall be run at the depth of the bottom of the proposed absorption trench.

(C) **Preparation of test holes.**

(i) Carefully scratch the bottom and sides of the holes with a knife

blade or sharp-pointed instrument, in order to:

(a) Remove any smeared soil surfaces; and

(b) Provide a natural soil interface into which water may percolate.

(ii) Remove all loose material from the holes.

(iii) Add two inches (2″) of coarse sand or fine gravel to protect the bottom from scouring and sediment.

(D) **Saturation and swelling of the soil.**

(i) It is important to distinguish between saturation and swelling.

(ii)*(a)* Saturation means that the void spaces between soil particles are full of water.

(b) This can be accomplished in a short period of time.

(iii)*(a)* Swelling is caused by intrusion of water into the individual soil particles.

(b) This is a slow process, especially in clay-type soil, and is the reason for requiring a prolonged soaking period.

(iv)*(a)* To conduct the test, carefully fill the holes with clear water to a minimum depth of twelve inches (12″) above the gravel and maintain at this level, preferably overnight, but no less than four (4) hours.

(b) This may be achieved by the use of an automatic siphon.

(c) This procedure is to ensure that the soil is given time to swell and to approach the condition it will be in during wet seasons of the year.

(E)(i) After the saturation period, adjust the depth of water in the holes to six inches (6″) above the gravel.

(ii) From a fixed reference point, measure the drop-in water level at the end of a thirty-minute period, refilling six inches (6″) above the gravel as necessary.

(iii) The drop of water level that occurs during the thirty-minute period is used to calculate the percolation rate.

(F)(i) Soils which the first six inches (6″) of water seeps away in less than thirty (30) minutes after the twenty-four (24) hours or greater saturation period, the

time interval between measurements shall be taken at ten (10) minutes and the test run for one (1) hour.

(ii) The drop that occurs during the final ten (10) minutes is used to calculate the percolation rate.

(2)(A) The size of the absorption area may be determined from the results of the percolation test and the data in Appendix A.

(B) As noted in Appendix A, soil in which the percolation rate is greater than seventy-five minutes per inch (75 mpi) is unsuitable for a standard onsite wastewater system.

(3) The size of the absorption area for a system sized using percolation rate data shall not be smaller than that required by seasonal water table data for the same site.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-706. Serial distribution.

(a)(1) Serial distribution may be used when lines of even length cannot be achieved.

(2) The overflow point of the tee or hillside box shall be at the top of the trench media for the line or lines served.

(b) Sizing for both primary and secondary absorption area shall be increased by twenty-five percent (25%).

(c) Serial distribution systems designed under percolation test shall not be smaller than required by seasonal water table data.

(d) Serial distribution systems shall not be approved for dosing situations.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-707. Capping fill systems.

(a)(1) Standard onsite wastewater systems shall not be installed in fill material.

(2) However, fill material may be used as a cap over the natural soil surface to increase the volume available for the storage of effluent.

(b) Where capping fill is incorporated in the design of a standard onsite wastewater system, the distribution system shall be capable of storing effluent to the top of the settled cap.

(c)(1) The absorption trenches on capping fill systems shall be designed and installed in natural soil.

(2) However, a variance as provided in 14 CAR §§ 21-201 and 21-202 can be requested to install the absorption trenches partially in the fill, no less than four inches (4″) into the natural soil, to overcome bedrock separation requirements.

(3) Systems utilizing capping fill shall have a minimum six inches (6″) of settled cover above the gravel bed or gravel substitute.

(d)(1) The slope of the absorption area cannot exceed twelve percent (12%).

(2) Submitted plans shall indicate both the original and the finished elevations referenced to a benchmark.

(e)(1) For absorption areas exhibiting slopes of six percent (6%) or less, the full depth of fill shall extend a minimum of ten feet (10′) beyond the edge of the absorption trench then graded at a three (3) to one (1) or less slope.

(2)(A) The fill area shall be seeded and watered regularly to prevent erosion.

(B) See Appendix G, Figures 4 and 5.

(f)(1) For absorption areas exhibiting slopes greater than six percent (6%) the full depth of fill shall extend:

(A) One foot (1′) beyond the absorption area on the uphill side;

(B) Ten feet (10′) on the sides of the absorption area;

(C) Twenty feet (20′) on the downhill side of the absorption area; and

(D) Then all sides graded to a three (3) to one (1) slope or less thereafter.

(2)(A) The fill area shall be seeded and watered regularly to prevent erosion.

(B) See Appendix G, Figures 6 and 7.

(g)(1) For absorption areas exhibiting slopes greater than six percent (6%), a berm and/or drainage ditch to divert surface water is required.

(2) The berm and/or drainage ditch shall be:

(A) Constructed no more than ten feet (10') up slope from the absorption area; and

(B) Extended a minimum ten feet (10') beyond the applied capping fill.

(h) On slopes of greater than twelve percent (12%), a variance for capping fill systems may be granted in accordance to 14 CAR §§ 21-201 and 21-202.

(i)(1) The fill material used shall be a:

(A) Uniform loamy soil with maximum clay content of twenty-seven percent (27%); and

(B) Maximum sand content of sixty percent (60%).

(2) The depth of fill above the original ground surface is measured after settling.

(3) Loamy soils can be expected to settle twenty-five percent (25%).

(j)(1) The absorption area shall be scarified to destroy and remove the vegetative material.

(2) The absorption area shall be tilled to a minimum depth of four inches (4").

(3) Stumps should be left in place at the absorption area to prevent extensive disruption of the soil.

(k) Where capping fill is incorporated into the design of a system, only track equipment may be utilized when applying the cap.

(l) The soil cap is a part of the standard onsite wastewater system and shall meet all the setbacks outlined in 14 CAR § 21-502.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-708. Dosing standard systems.

(a) All components and specifications of dosed systems shall be submitted for approval to the Department of Health or its authorized agent in accordance with the department's Guidelines for Submittal of Onsite Wastewater System Applications.

(b)(1) Where a pump or dosing siphon is used to dose an onsite wastewater

system, it shall have a capacity sufficient to deliver the required dose volume.

(2) Pump controls shall:

(A) Operate automatically; and

(B) Be sufficiently adjustable to deliver the required dose volume.

(c)(1) Only effluent quality pumps shall be utilized in dosing applications.

(2) Dewatering and grinder pumps are not approved for septic applications.

(d)(1) Dosing systems that incorporate a reduction in the transport piping diameter at the final point of dispersal or the use of flow reduction orifices shall require an authorized effluent filter device or method.

(2) Effluent shall be dosed to the absorption area at a rate not greater than twenty-five percent (25%) of the estimated daily usage outlined in Appendix B of this part.

(e) A visible and audible high-water alarm shall be required for all electrical dosing situations.

(f) Stand-alone dosing tanks shall have:

(1) A capacity sufficient to contain the required dose;

(2) Storage for ballast not less than one-quarter (1/4) of the dose tank capacity; and

(3) Emergency storage above the high-water alarm not less than one-third (1/3) of the estimated daily usage.

(g) The compartment of combination tanks used for dosing shall:

(1) Have a capacity sufficient to contain the required volume; and

(2) Be hydraulically isolated from the primary compartment.

(h)(1) Pre-cast dosing tanks shall meet the same construction and testing requirements for pre-cast septic tanks outlined in 14 CAR § 21-907.

(2) The approval of any distribution device utilized in dosing situations shall be at the sole discretion of the department or its authorized agent.

(i) For designs utilizing seven (7) or more distribution box outlets and the elevation across the absorption area is greater than six inches (6”), mechanical dosing is required.

(j) **Dosing utilizing a filtered pump vault.**

(1) When dosing from a single compartment septic tank, the tank capacity shall be increased by not less than two hundred fifty (250) gallons above that specified in Appendix C of this part.

(2) The filtered pump vault shall be securely mounted to the tank in a manner that prevents movement of the vault during operation.

(3) The minimum horizontal separation between the inlet baffle of the septic tank and the filtered pump vault shall be three feet (3').

(4) When a system is dosed from a single compartment septic tank, the drawdown per dose cycle shall not be greater than three inches (3").

(k) **Dosing utilizing a solids handling pump basin.**

(1)(A) Solids handling pump basins used in conjunction with an individual onsite wastewater system require approval by the department prior to any use or installation.

(B) Macerating or grinder pump basins are not covered by this section.

(2) The pump basin shall be constructed of a durable material such as:

(A) Concrete;

(B) High-strength plastic;

(C) Fiberglass; or

(D) Other authorized material.

(2) The bottom of the pump basin shall be solid and structurally capable of supporting the solids handling pump.

(3)(A) The pump basin shall have a gas-tight removable lid or cover.

(B) The lid or cover shall be structurally capable of supporting the weight of the load it will receive based on the location of the pump basin.

(4) The pump basin shall be properly vented.

(5)(A) The pump basin shall be properly sized to receive or contain no more than twelve (12) hours of normal discharge or one-half (1/2) of the daily flow rate, whichever is the smallest.

(B) Additionally, the pump basin shall be sized so when the pump is

activated the pump will operate for a minimum of fifteen (15) seconds.

(6) Minimum structural dimensions of eighteen inches (18″) in diameter and twenty-four inches (24″) in depth.

(7) The pump basin shall incorporate in its design a means to prevent floating during any given period of low effluent levels within the basin.

(8) Each pump basin shall contain as part of the pump discharge assembly a full-open valve and a check valve.

(9) The effluent level control device or floats shall be adjusted and maintained at all times to prevent the effluent in the pump basin from rising within two inches (2″) of the invert of the building drain inlet into the basin.

(10) Solids handling pumps used with this type of basin shall be capable of handling spherical solids with a diameter of up to and including two inches (2″).

(11) Solids handling pumps shall:

(A) Be sized to provide for peak flow events; and

(B) Provide a full flow velocity of at least two feet (2′) per second in the discharge piping.

(12) Solids handling pump and basin shall be equipped with an audio and visual alarm.

(l) **Electrical connections.**

(1) Electrical connections shall be complete at the time of final system inspection unless otherwise specified by the department's authorized agent.

(2) System wiring shall be encased in electrical conduit.

(3)(A) Splices within system wiring shall be made with heat shrink connectors or waterproof wire nuts.

(B) System wiring may use control floats and/or pump electrical leads of such length allowing connections at remote control panel location.

(4) Electrical connections which terminate shall be in internal and/or external splice boxes and shall be of watertight construction.

(5) Conduit and connection boxes shall be sealed with electrical grease or other waterproof electrical sealant in order to minimize corrosion due to moisture

and/or gasses escaping the system.

(6) System wiring shall comply with the Arkansas electrical code.

(7) Pumps and pump alarms shall not be on the same circuit.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-709. Low pressure distribution (LPD).

(a)(1) Low pressure distribution allows an absorption area or secondary treatment filter to be dosed evenly across the entire area.

(2) The discharge assembly of LPD systems consists of small diameter piping with orifices drilled at predetermined intervals through which effluent is dosed to the absorption area or secondary treatment filter.

(3)(A) All LPD systems shall meet the following requirements.

(B) See Appendix G, figure 10.

(b)(1) Piping in LPD systems shall be constructed of Schedule 40 PVC pipe.

(2) Joints or connections shall be primed and welded with the appropriate chemical agents.

(c)(1) Orifices may range in size from one-eighth inch (1/8″) to three-sixteenths inch (3/16″).

(2) Orifices shall be:

(A) Centered in the pipe;

(B) Pointed up or down; and

(C) Shielded.

(3) For soils with high hydraulic conductivity, the orifice spacing shall not exceed twenty-four inches (24″).

(4) For soils with moderate hydraulic conductivity, the orifice spacing shall not exceed forty-eight inches (48″).

(5) Orifices shall not be installed within twelve inches (12″) of the manifold pipe.

(6) LPD applications require an authorized effluent filter.

(d)(1) In situations where the LPD manifold discharge assembly is located at a lower elevation than the pump, a one-quarter inch (1/4″) siphon-breaker hole shall be drilled in the pump effluent line or vacuum breaker above the high-water level to prevent siphoning.

(2) An extra two (2) gallons per minute shall be added to the system flow rate to accommodate the siphon-breaker hole.

(e) The squirt height, also referenced as, distal pressure, distal height, or residual head or height, shall not be less than five feet (5′).

(f) The dose volume shall not exceed one-half (1/2) gallon per orifice.

(g)(1) Plastic or brass valves, either globe or gate, shall be installed between the manifold and distribution laterals in order to facilitate orifice head adjustment.

(2) Control valves shall be encased in readily accessible valve boxes or similar encasement.

(h)(1) A ninety-degree (90°) electrical sweep with threaded cleanout or valve shall be installed at each end of the laterals for maintenance.

(2) Cleanouts shall be encased in readily accessible valve boxes or similar encasement.

(i)(1) LPD absorption trenches shall contain a minimum of eight inches (8″) of gravel and four inches (4″) of cover above the gravel bed.

(2) Authorized gravel substitutes may be used in LPD design.

(3) See Appendix G, figure 3.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "PVC" means polyvinyl chloride.

14 CAR § 21-710. Construction considerations.

(a)(1) Careful construction is important in constructing a satisfactory absorption area.

(2) Attention shall be given to the protection of the natural absorption

properties of the soil.

(3) Care shall be taken to prevent sealing of the surface on the bottom and sides of the trench.

(4) Trenches shall not be excavated when the soil is wet enough to smear or compact easily.

(5) When significant smearing of the sidewalls or bottom of the absorption trench occurs during installation, construction shall be halted and the local authorized agent shall be contacted for guidance.

(6) During the wet season periods of the year or after any significant rainfall event, failure to obtain authorization from the local authorized agent for beginning construction of an onsite wastewater system may void the onsite wastewater system permit.

(7) Open trenches shall be protected from surface run-off to prevent the entrance of any silt and debris.

(8) If it is necessary to walk in the trench, a temporary board laid on the bottom will reduce damage by compaction.

(9) Smeared or compacted surfaces shall be raked to a depth of one inch (1″), and loose material removed, before the gravel is placed in the trench.

(10) Perforated pipes shall be bedded on undisturbed earth to prevent settling.

(11) Lateral lines shall be surrounded by:

(A) Clean, graded gravel;

(B) Washed rock; or

(C) Other authorized aggregate.

(12) The aggregate material may range in size from one-fourth inch (1/4″) to one and one-half inches (1 1/2″).

(b)(1) The top of the gravel shall be covered with untreated building paper or other authorized materials before placing the earth backfill.

(2) This will help prevent the gravel from becoming clogged with the earth.

(3) An impervious covering shall not be used, as this interferes with evaporation.

(4) The cover over a new absorption trench shall be adequately overfilled to allow for settling.

(c) Heavy machinery, exclusive of the equipment needed to install the system, shall be excluded from the absorption area unless special provision is made to support the weight.

(d) **Distribution boxes/devices.**

(1) A distribution box/device is required for every standard absorption system.

(2) Distribution devices shall be designed for serviceability, including but not limited to, risers to grade.

(3) The purpose of the box/device is to ensure equal distribution of septic tank effluent to the lateral lines.

(4) It is important that the entrance to each lateral line from the distribution box be set at the same elevation to attempt to ensure equal flow into all lines.

(5) The design of the distribution box and absorption system can be varied to meet most topographical conditions encountered while giving proper grade and alignment for all laterals.

(6) Distribution boxes shall be:

(A) Sealed;

(B) Bedded in concrete or gravel on undisturbed ground; and

(C) Water leveled with leveling devices.

(7) Distribution boxes shall have an easily removable cover to facilitate:

(A) Leveling;

(B) Inspection; and

(C) Repairs.

(8) Inlet and outlet lines at the distribution box shall be installed in such a manner as to be firmly supported and adequately sealed as approved by the authorized agent.

(9)(A) Where the elevation across the absorption area is greater than six inches (6”), the outlet invert (flowline) of the distribution box shall be installed at an elevation equal to or greater than the finished ground elevation of the highest line of

the absorption area.

(B) See Appendix G, Figure 2.

(e) **Septic tanks.**

(1) On sites that do not have sufficient slope to allow the distribution box to be installed as in subsection (d) of this section, the flow line of the septic tank outlet shall be at an elevation equal to or greater than the finished ground elevation of the highest line of the absorption area.

(2) See Appendix G, Figure 1.

(f)(1) Absorption trenches shall not start closer than five feet (5′) from the distribution box.

(2) A horizontal separation of five feet (5′) shall be required between the absorption area and tight line trench.

(3) In systems utilizing a distribution box, lateral lines shall be of the same length.

(4) Distribution devices used in conjunction with soil absorption systems shall be approved by the Department of Health prior to their use or installation.

(g)(1) The tight line or manifold trench shall not be excavated lower than the flow line of the trench media to be installed.

(2) However, in no case will the tight line trench be excavated lower than twelve inches (12″) from the ground surface.

(h)(1) Materials used in the construction of the onsite wastewater system shall meet the following requirements.

(2) New products may be authorized by the department as technology allows.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-711. Solid pipe.

(a) Pipe installed from the outlet tee of the septic tank to the distribution box or diversion device shall be Schedule 40 pipe for whatever distance is required to reach undisturbed soil, but in no case shall be less than ten feet (10′).

(b) Once a solid trench bottom is achieved the Schedule 40 pipe may be adapted to SDR 35 PVC pipe or ASTM 3034 PE (polyethylene) pipe for the remaining distance to the distribution box or diversion device.

(c) SDR 35 PVC, ASTM 3034 PE, or Schedule 40 PVC shall be used from the distribution box or diversion device to the perforated field line pipe.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "PVC" means polyvinyl chloride.

14 CAR § 21-712. Perforated drain pipe.

Perforated pipe in absorption lines shall be ASTM D2729 PVC or ASTM F-810-12 PE.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-713. Pipe under traffic ways.

(a) Any pipe under driveways, roadways, parking areas, or any area where traffic will pass over shall:

(1) Be constructed of Schedule 40 PVC;

(2) Be constructed of cast iron; or

(3) Use a steel sleeve.

(b) A cleanout shall be located between the stub-out and the septic tank.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "PVC" means polyvinyl chloride.

14 CAR § 21-714. Sewer lines.

House sewer lines shall be installed and maintained in accordance with the Arkansas Plumbing Code, 17 CAR pt. 65.

Authority. Arkansas Code § 14-236-107.

Subpart 8. Alternate Systems

14 CAR § 21-801. Generally.

(a) Alternate systems outlined in this subpart shall not be approved as a uniform plan of development in any:

(1) Municipality;

(2) Community;

(3) Subdivision; or

(4) Other developed area.

(b)(1) Alternate systems outlined in this subpart shall be installed by a licensed septic system installer.

(2) Installers may be required to attend special training sessions before being allowed to install certain types of alternate systems.

(c) The Department of Health or its authorized agent may require the designated representative to oversee the construction of projects with unusual or rarely used designs.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-802. Surface discharging systems.

(a) Surface discharging systems shall not be approved for sites with soil conditions which meet the standards referenced in 14 CAR §§ 21-605 and 21-606 for the installation of standard onsite wastewater systems.

(b) Prior to approval, for sites proposed for surface discharging systems, concurrence shall be obtained from one (1) of the following individuals in addition to the local authorized agent:

(1) A professional soil classifier of the Department of Health or a designated

authorized agent trained and proficient in soil analysis; or

(2) A private professional soil classifier holding a current designated representative license retained at the discretion of the permit applicant.

(c) Surface discharging systems are subject to National Pollutant Discharge Elimination System permit requirements.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-803. Disinfection.

(a) Surface discharging systems shall be adequately disinfected prior to discharge.

(b)(1) Chlorination, ozone induction, and ultraviolet exposure are all acceptable means of disinfection for surface discharges.

(2) Installation, operation, and performance data supplied by the manufacturer shall be submitted with all designs incorporating ozone or ultraviolet light devices.

(3) A sample port shall be installed within five feet (5′) of the disinfection outlet or chlorine contact chamber with a minimum six inches (6″) of fall for sample collection.

(c) Chlorinators used in surface discharging systems shall produce a minimum ten parts per million (10 ppm) chlorine solution during peak flow.

(d)(1) A baffled contact chamber sufficient in size to provide a thirty-minute retention time with a minimum flow of one (1) gallon per minute shall be required after the chlorinator for all surface discharging systems utilizing chlorine disinfection.

(2) The minimum size of a chlorine contact chamber shall be thirty (30) gallons.

(e)(1) The point of discharge from the chamber shall be above the high-water level of a receiving stream or ditch.

(2) The chamber discharge elevation shall also be below its influent elevation to prevent flooding of the treatment unit.

(f)(1) When a surface discharging system fails to function properly or does not consistently meet the discharge requirements, the discharge of wastewater shall stop

immediately.

(2) The owner shall be allowed to use the septic tank or mechanical treatment unit as a holding facility until adequate repairs are made.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-804. Surface discharging system minimum requirements.

Sites considered for a surface discharging system shall meet the following minimum requirements in addition to setback requirements outlined in 14 CAR § 21-502:

(1) The lot size for a surface discharging system shall be three (3) acres or greater;

(2) The point of discharge shall be three hundred feet (300') or greater from any adjacent dwelling or commercial establishment;

(3) The point of discharge shall be one hundred fifty feet (150') or greater from any adjacent property line not in the direction of horizontal flow;

(4) The point of discharge shall be two hundred feet (200') or greater from any property line in the direction of flow on sites exhibiting slopes of twelve percent (12%) or less;

(5) The point of discharge shall be one hundred feet (100') or greater from the dwelling or building served by the surface discharging system; and

(6)(A) The slope of the discharge area shall not be greater than twelve percent (12%).

(B) However, variances for sites proposed for surface discharges that exhibit a slope greater than twelve percent (12%) may be requested of the Department of Health in writing.

(C) Approval of such variances shall be at the sole discretion of the department.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-805. Drip dispersal systems.

See Rules Pertaining to Drip Dispersal, 14 CAR pt. 20.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-806. Holding tanks.

(a) Holding tanks shall not be approved on sites acceptable for the installation of standard onsite wastewater systems as outlined in 14 CAR §§ 21-605 and 21-606.

(b) Holding tanks shall be approved only for domestic waste from commercial establishments, excluding grocery stores and/or food service establishments.

(c) Holding tanks shall not be approved for residencies, full-time or part-time.

(d)(1) The minimum capacity of any holding tank shall be ten (10) times the estimated daily usage as outlined in Appendix B of this part or one thousand (1,000) gallons, whichever is greater.

(2) When two (2) or more tanks are required to meet the holding capacity, detailed plans shall be submitted.

(e)(1) A service riser with a minimum diameter of twelve inches (12″) and installed above ground surface shall be required on all holding tanks.

(2) Service risers installed on holding tanks shall be adequately secured to prevent unauthorized access.

(f) Facilities shall be maintained to allow a pumper vehicle to drive within ten feet (10′) of the service riser in all weather conditions.

(g)(1) Proof of a notarized contract with a licensed septic tank cleaner shall be submitted with the application for construction.

(2) The contact shall:

(A) Provide for cleaning with twenty-four (24) hours of notification; and

(B) State when the wastewater will be deposited.

(h)(1) Holding tank contents shall not be land applied.

(2) The contents of a holding tank shall only be disposed of by means of

deposition into a municipal wastewater treatment plant with which the septic tank cleaner has permission to discharge.

(i) Holding tanks shall comply with the specifications for septic tanks outlined in 14 CAR § 21-901 et seq.

(j)(1) A visible and/or audible high-water alarm indicating when the tank has reached seventy-five percent (75%) capacity shall be installed inside the structure served by the holding tank.

(2) Information on the alarm system's brand name, manufacturer, use, and installation shall be provided with the submittal of plans.

(3) The name of the licensed cleaner and his or her telephone number shall be displayed on the alarm.

(k)(1) A monitoring contract is required.

(2) See 14 CAR § 21-1101 et seq.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-807. Composting/incinerating toilets.

(a)(1) A composting toilet is a device specifically designed to retain and process body wastes and, in some cases, household garbage by biological degradation.

(2)(A) The process may be either thermophilic or mesophilic, depending on the design of the toilet.

(B) Thermophilic devices are normally smaller and require some type of energy input to maintain the desired temperature.

(C) Mesophilic devices rely on the heat produced by the biological process to maintain the required temperature.

(3) Whether or not a device can accept household garbage is dependent on product design and intended use.

(4)(A) An incinerating toilet is a device designed to reduce body wastes, both urine and feces, to an ash residue.

(B) The type of energy used to incinerate wastes is dependent upon the

design of the device used.

(b)(1) Only premanufactured composting or incinerating toilets authorized by the Department of Health shall be utilized in the onsite wastewater system.

(2) Under National Sanitation Foundation standard 41, composting and incinerating devices shall be evaluated by an American National Standards Institute-approved laboratory.

(c) Wastewater, exclusive of urine and feces, produced by the structure served by a composting/incinerating toilet shall be renovated or disposed of in accordance with 14 CAR § 21-701 et seq., or 14 CAR § 21-801 et seq.

(d) The stabilized compost from a composting toilet shall be buried onsite or deposited in an approved sanitary landfill.

(e) The ash from an incinerating toilet requires no special handling since any pathogen would be destroyed in the incineration process.

Authority. Arkansas Code § 14-236-107.

Subpart 9. Septic Tanks

14 CAR § 21-901. Standard household appliances.

(a) The minimum liquid capacities required in Appendix C allow for the use of standard household appliances.

(b) Garbage grinders are not recommended for standard onsite wastewater systems.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-902. Location.

(a) Consideration should also be given to the location from the standpoint of cleaning and maintenance.

(b) Septic tanks shall be located so that septic tank cleaning equipment trucks can

be driven within reasonable vertical and horizontal distance of the tank for the purpose of tank cleaning.

(c) Where public sewers may be installed at a future date, provision should be made in the household plumbing system for connection to such sewer.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-903. Manufacture.

(a) Septic tanks, septic holding tanks, pump basins, and dosing tanks used in Arkansas shall be manufactured by an individual holding a current septic tank manufacturer license issued by the Department of Health.

(b) The manufacturer is responsible for producing septic tanks, pump basins, and dosing tanks that meet current requirements as outlined in this part.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-904. Installation.

(a) The septic tank installer is responsible for inspecting the tank or tanks delivered to the jobsite to ensure:

(1) A licensed manufacturer produced it; and

(2) That it remains in a sound, watertight condition throughout the installation.

(b) Septic tanks, septic holding tanks, pump basins, and dosing tanks shall be installed and bedded on a firm, level, gravel surface or according to manufacturer's instructions.

(c) Influent and effluent lines connected to the tank shall be sealed in a manner that prevents groundwater infiltration and pipe movement.

(d) Only authorized rubber boot type pipe penetration seals shall be cast into the tank.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-905. Inlet pipe penetration.

(a) Septic holding tanks shall be manufactured with only an inlet pipe penetration.

(b) No outlet or outlets or other means of discharge shall be cast into the tank.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-906. Septic tanks no longer in use.

Septic tanks no longer in use shall be:

(1) Pumped out by a licensed septic tank cleaner;

(2) Collapsed; and

(3) Filled with clean material at the time of abandonment.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-907. Specifications for septic tanks and dosing tanks.

(a) **General.**

(1) Septic tanks shall be of watertight construction.

(2) Approved materials include:

(A) Concrete;

(B) Fiberglass; and

(C) Polyethylene.

(3) Approval of other materials will be considered on a case-by-case basis.

(4) Septic tanks sold or installed in the State of Arkansas shall:

(A) Meet the specifications in this part; and

(B) Be approved by the Department of Health.

(5) With the exception of wall and bottom thickness, pre-cast tanks and cast-in-place tanks shall meet the same design requirements.

(b) **Cast-in-place concrete tanks.** Permit applications utilizing a cast-in-place concrete tank shall include a plan approved by a professional engineer.

(c) **Pre-cast concrete septic tanks.**

(1) Pre-cast septic tanks sold or installed in Arkansas shall be manufactured in accordance with the American Society for Testing and Material (ASTM) standard specification for pre-cast concrete septic tanks C 1227-05-cast septic tanks shall be constructed with high-strength concrete made with Portland cement and achieve a compressive strength of four thousand pounds per square inch (4,000 psi) at twenty-eight (28) days of age.

(2) No aggregate used in the concrete mix is to exceed a diameter or length of one-half inch (1/2″).

(3) Lightweight aggregates shall meet ASTM specification C 330 specification for lightweight aggregates for structural concrete.

(4) Water used in mixing concrete shall be clean and free of injurious amounts of oil, alkalines, acids, salts, or other substances that may be incompatible with concrete.

(5) Tanks shall be designed so they will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures when the tanks are either full or empty.

(6)(A) Pre-cast concrete tanks shall be reinforced with a minimum of #10, six inches by six inches (6″ x 6″), welded concrete reinforcement wire overlapped a minimum of six inches (6″) and tied at the edges.

(B) Reinforcement rods are required to be added at lift points.

(C) Chairs, bolsters, braces, and spacers in contact with the forms shall have a corrosion-resistant surface.

(D) Reinforcement shall:

(i) Be placed as near the center of the walls as possible; and

(ii) Have a minimum of one inch (1″) concrete cover.

(7) The department shall approve new forms or modifications to existing forms.

(8)(A) The forms used in septic tank manufacture shall be sufficiently rigid and accurate to maintain the dimensions of the tank.

(B) Casting surfaces shall be of a smooth, non-porous material.

(C) Form releasing agents used shall not be injurious to the concrete.

(9)(A) Concrete for the tank walls and floor shall be placed in the forms in a single, continuous pour.

(B) The concrete shall be placed in the forms at a rate that allows the concrete to consolidate in all parts of the form and around all reinforcement steel and imbedded fixtures without segregation of materials.

(C) The finished tank wall shall:

(i) Be smooth; and

(ii) Have a uniform thickness of not less than three inches (3″).

(D) The lid and floor of the tank shall be:

(i) Not less than four inches (4″) thick; and

(ii) Adequately reinforced to support the load to which it may be subjected.

(E) At a minimum, the lid shall be reinforced with:

(i) #10, six inches by six inches (6″ x 6″), welded wire mesh; and

(ii) One-half inch (1/2″) reinforcement rods (which is #4 rebar) on eighteen-inch centers.

(F) During delivery, the tanks are to be properly handled to ensure the installation of a tank that is watertight and otherwise in good condition.

(10) Concrete septic, holding, and dosing tanks buried two feet (2′) or more shall require the manufacturer's certification relating to structural integrity.

(11)(A) Joints between the tank body and lid or between sections of multipiece tanks shall be sealed to prevent leakage during settling or shifting.

(B) The sealant shall be resistant to corrosion and anaerobic activity and meet ASTM C990-09 Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

(C) The inside joint seam gap, between the two (2) sections placed together before sealing, is not to exceed one-quarter inch (1/4″).

(12) The lid and upper and lower sections of septic tanks shall be connected

with noncorrosive mechanical devices by the manufacturer to ensure no separation occurs.

(13)(A) Septic tank manufacturers are required to demonstrate the watertightness on their products when requested by the system designer, installer, or the authorized agent.

(B) Vacuum testing shall be the only method for watertightness during septic tank manufacturers' annual production plant inspection.

(C) Testing for leakage may be done using either vacuum testing or water pressure testing at the time of delivery.

(D) Small leaks found during testing may be sealed with an appropriate sealer.

(E) In no case will a tank be considered acceptable which has evidence of large cracks or repairs that compromise the structural integrity and watertightness of the tank.

(F) **Vacuum testing.**

(i) Seal the empty tank and apply a vacuum to four inches (4″), or one hundred millimeters (100 mm) of mercury.

(ii) The tank is approved if ninety percent (90%) of the vacuum is held for two (2) minutes.

(iii) Manufacturers shall be capable of vacuum testing all tanks.

(G) **Water-pressure testing.**

(i) Seal the tank.

(ii) Fill with water to the level of the top of the access port and let stand for twenty-four (24) hours.

(iii) Refill tank.

(iv) The tank shall be considered watertight if the water level is held for sixty (60) minutes.

(14) Precast concrete septic tanks manufactured and installed in Arkansas shall be clearly, permanently, and legibly labeled with the following:

(A) The name of the individual or company that manufactured the tank;

(B) The liquid capacity of the tank in gallons;

(C)(i) The inlet and outlet shall be indicated.

(ii) Tanks with more than one (1) outlet shall utilize authorized tank penetration seals; and

(D) The date of manufacture of the tank and lid.

(d) **Tank proportions.**

(1) The liquid depth of any tank compartment shall not:

(A) Be less than thirty-six inches (36″); and

(B) Exceed seventy-two inches (72″).

(2) The minimum horizontal distance from the inlet to the outlet of any tank may not be less than seventy-two inches (72″).

(3) Storage capacity is required above the liquid line to provide for that portion of scum that floats above the liquid in all septic tanks.

(4) One (1) inch shall be provided at the top of the tank to permit the free passage of gas back to the inlet and house vent pipe.

(5) For tanks having vertical sides, the distance between the inside top of the tank and the liquid level shall be twelve and five-tenths percent (12.5%) of the liquid capacity or nine inches (9″), whichever is greater.

(6) In horizontal, cylindrical tanks, this distance should be equal to twenty percent (20%) of the tank diameter.

(e) **Inlet and outlet.**

(1) Four-inch or larger sanitary tees shall be used as inlet and outlet devices in all septic tanks.

(2) The septic tank manufacturer shall provide properly constructed inlet and outlet devices with each tank.

(3) The effluent line leaving the tank shall be Schedule 40 PVC.

(4)(A) The inlet invert shall enter the tank two (2) to four (4) inches above the liquid level in the tank to allow for a momentary rise in liquid level during discharges to the tank.

(B) This free drop prevents black water and standing of solid material in

the house sewer leading to the tank.

(5) The inlet tee shall extend:

(A) At least six inches (6″) below the liquid level in the tank; and

(B) Above the liquid level to a minimum of one inch (1″) from the top of the tank.

(6) In no case shall the inlet device be greater in length than the outlet device.

(7) Outlet tees shall extend to a distance below the surface thirty-five percent (35%) to forty-five percent (45%) of the liquid depth.

(f)(1) Authorized outlet filter products are recommended on all septic tanks.

(2) Outlet filters:

(A) Have been shown to reduce total suspended solids (TSS) and biochemical oxygen demand (BOD); and

(B) Should be utilized to protect and lengthen the life of the absorption area.

(3) Proprietary gas deflectors designed to deflect or otherwise prevent solids from entering the outlet tee are not required but are recommended to increase the efficiency of the septic tank.

(4) Where gas deflectors, outlet filters, or other devices requiring routine maintenance are installed in the tank, a service riser extending to grade shall be installed over the outlet inspection port.

(5) Inlet and outlet baffles and devices shall be evaluated and authorized by the department prior to use.

(6) Manufacturers may submit product samples and ancillary documentation to the department for evaluation.

(7)(A) After evaluation, the department may give authorization for use in the state.

(B) The list of authorized products will be routinely updated on the department website.

(g) **Fiberglass and plastic septic tanks.**

(1) Fiberglass and plastic septic tanks shall comply with International

Association of Plumbing and Mechanical Officials.

(2) The manufacturer shall supply without charge satisfactory evidence of approval and compliance with IAPMO PS 1-2004e1 construction and manufacturing requirements.

(3) Fiberglass and plastic septic tanks shall be tested for watertightness using one (1) of the prescribed methods found in IAPMO PS 1-2004e1.

(h) **Service risers.**

(1) Access shall be provided:

(A) Over the inlet and outlet tees or other devices; and

(B) To each tank compartment by means of a service riser.

(2) Maintenance ports shall be sealed and watertight.

(3) Where the top of the tank is located below the finished grade, service risers shall extend to or above the finished grade.

(4) The extension can be made using risers of authorized material and fitted with tight covers and secured to prevent unauthorized access.

(5) Proper attention shall be given to the accident hazard involved when maintenance ports are extended close to the ground surface.

(6) Service risers shall be a minimum of twelve inches (12″) in diameter.

(7) Service risers providing access to a pump compartment or dosing tank shall be a minimum of eighteen inches (18″) in diameter.

(8) Risers shall be installed by the manufacturer.

(9) An entry prevention device is recommended for riser openings more than twelve inches (12′) in diameter.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "IAPMO" means International Association of Plumbing and Mechanical Officials.

"PVC" means polyvinyl chloride.

14 CAR § 21-908. Grease interceptors.

(a) Precast grease interceptors sold and used in Arkansas shall be manufactured in accordance with the American Society for Testing and Materials (ASTM) Standard Specification for Precast Concrete Grease Interceptor Tanks C1613-10.

(b) Grease interceptors shall be installed and maintained in accordance with the Arkansas Plumbing Code, 17 CAR pt. 65.

(c) The minimum volume for a grease interceptor utilized with an onsite wastewater system shall be five hundred (500) gallons.

(d) Grease interceptors installed below finished grade will be installed with service risers to the finished grade.

(e)(1) The size of the service riser will be adequate in size to accommodate proper inspection and maintenance.

(2) See Appendix G, Figure 11.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-909. House sewer.

(a) The house sewer is an important part of the private sewage disposal system.

(b) It should convey the sewage from the building to the septic tank inlet, but not at a high velocity that would cause disturbance in the septic tank.

(c) The house sewer shall not be reduced in size from the house drain to the septic tank.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-910. House sewer grade.

The house sewer should be installed with a uniform slope that complies with the Arkansas Plumbing Code, 17 CAR pt. 65.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-911. Cleanouts.

(a) The house sewer line shall contain a four-inch cleanout before entering the septic tank or treatment plant.

(b) Changes in direction more than forty-five degrees (45°) and/or every one hundred feet (100') require a cleanout.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-912. Septic tanks in series.

When more than one (1) septic tank is used in series, the first tank shall be no less than fifty percent (50%) of the total septic tank design capacity.

Authority. Arkansas Code § 14-236-107.

Subpart 10. Secondary Treatment

14 CAR § 21-1001. Generally.

(a)(1) Secondary treatment systems utilize an additional means of septic effluent treatment subsequent to the primary treatment performed by a septic tank.

(2) Some aerobic treatment units (ATUs) do not require that effluent be treated by a septic tank prior to treatment by the ATU.

(3) Secondary treatment units incorporated into the design of an onsite wastewater system shall comply with the following specifications.

(b) Secondary treatment units with surface discharge shall meet current NPDES discharge requirements.

(c) Onsite wastewater systems incorporating secondary treatment units shall comply with the Onsite Wastewater Systems Monitoring Program outlined in 14 CAR § 21-1101 et seq.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "NPDES" means National Pollutant Discharge Elimination System.

14 CAR § 21-1002. Aerobic treatment units (ATUs).

(a)(1) Only ATUs authorized by the Department of Health shall be utilized in onsite wastewater systems.

(2) ATUs shall meet and be listed under current American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 40 requirements.

(b)(1) ATUs shall be installed according to the manufacturer's specifications as authorized by the department.

(2) ATUs shall be installed as provided in 14 CAR § 21-904.

(3) Some ATUs require installer certification provided by the manufacturer in order to install and/or maintain the unit.

(c) Aerobic treatment units (ATUs) may be substituted for a septic tank under the following conditions:

(1) The tank construction of an ATU shall comply with the requirements found within 14 CAR § 21-901 et seq.;

(2) No aeration, filter media, or other treatment device within said tank shall:

(A) Restrict the flow of effluent into or out of the tank; or

(B) Reduce the capacity in gallons as stated in Appendix C;

(3) No aeration, filter media, or other treatment device shall be connected directly or indirectly to the outlet baffle of the tank; and

(4) The substitution of an ATU in place of septic tank shall be at the sole discretion of the department.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1003. Filters.

(a) **Multiple pass filters — Recirculating sand filters (RSF).**

(1) Recirculating sand filters pass effluent treated by a septic tank or ATU through a sand and/or gravel bed, built on site, prior to subsurface absorption or surface discharge.

(2) Recirculating sand filters shall meet the following criteria:

(A) A septic tank or ATU shall be required as the primary treatment of effluent prior to treatment by an RSF;

(B) Effluent shall be dosed to an RSF by a pump housed in a filtered pump vault authorized by the Department of Health;

(C) Effluent shall be distributed to an RSF by means of low-pressure distribution as outlined in 14 CAR § 21-709;

(D) The collection line in the bottom of an RSF shall not be less than four inches (4″) perforated or slotted Schedule 40 PVC pipe;

(E) The dosing rate for RSFs shall not be more than one-quarter (1/4) gallons per orifice per dose (gal/orifice/dose);

(F)(i) The initial recirculation rate for RSFs shall be 4:1.

(ii) Depending upon water usage, the recirculation rate may be adjusted after system evaluation;

(G) The loading rate for RSFs shall not be more than five (5) gallons per square foot per day (gal/ft^2/day);

(H)(i) RSFs may be installed either in or above ground.

(ii) However, the top of the RSF bed shall not be installed below the finished grade of the ground surface;

(I) A PVC liner not less than thirty (30) mils in thickness, with inlet and outlet boots shall be required in all RSFs in order to minimize groundwater infiltration into the system;

(J)(i) Not less than two inches (2″) of gravel cover shall be applied atop the collection pipe in the bottom of an RSF.

(ii) The gravel used shall be crushed rock or rounded rock, one-half inch (1/2″) to one and one-half inches (1 1/2″) in diameter;

(K) Not less than four inches (4″) of three-eighths inch (3/8″) pea gravel shall be applied atop the crushed or rounded rock in the bottom of an RSF in order to prevent migration of filter sand into the collection piping and out of the filter;

(L)(i) Not less than twenty-four inches (24″) of filter sand shall be applied atop the pea gravel in the bottom of an RSF.

(ii) Filter media used shall be one and one-half millimeters (1 1/2 mm) to two millimeters (2 mm) in diameter, with a uniformity coefficient of 2.0 or less;

(M)(i) Not less than three inches (3″) of three-eighths inch (3/8″) pea gravel shall be applied atop the filter sand in an RSF.

(ii) The low pressure distribution system servicing an RSF shall be installed atop this layer of pea gravel;

(N) Not less than three inches (3″) of gravel shall be installed as cover over the low pressure distribution system servicing an RSF; and

(O) The top of the RSF filter bed shall be left uncovered.

(b) **Other filters.** Proprietary media filters such as peat filters, gravel filters, and geotextile filters shall be designed and installed in accordance with the manufacturer's specifications as authorized by the department.

Authority. Arkansas Code § 14-236-107.

Codification Notes. "ATU" means aerobic treatment unit.

"PVC" means polyvinyl chloride.

Subpart 11. Onsite Wastewater Systems Monitoring Program

14 CAR § 21-1101. Generally.

(a)(1) Owners of holding tanks or alternative wastewater systems are required to maintain a monitoring contract with a monitoring person registered by the Department of Health for the life of the system.

(2) A monitoring person shall be authorized by the manufacturer in order to provide a contract for the monitoring of any proprietary system.

(3) No homeowner shall be allowed to monitor their own system.

(4)(A) All systems discharging treated sewage shall be maintained at all times by an individual or company trained in the operation and maintenance of that system.

(B) See Rules Pertaining to General Sanitation, 20 CAR § 131-106(a).

(b) The monitoring contract and the memorandum of agreement shall be submitted with the application for an onsite wastewater system permit (EHP-19).

(c) Monitoring contracts shall include the following minimum terms or services:

(1) Frequency of system assessments;

(2) Assessment of system components;

(3) Length of contract;

(4) Assessment of proper servicing of grease interceptor, if applicable; and

(5) Reporting to the department.

(d) Assessments shall be conducted for all systems monitored under the program a minimum of once every six (6) months.

(e) Monitoring contracts with certified onsite wastewater systems monitoring personnel with additional monitoring terms and services may be required by the department for approval of systems permitted under the variances and experimental sections, 14 CAR §§ 21-201 and 21-202.

(f)(1) Onsite monitoring reports shall be submitted to the:

(A) Homeowner;

(B) Local health unit; and

(C) Department's database.

(2) Certified monitoring personnel shall maintain a copy for their records.

(g)(1) Monitoring personnel shall be registered by the department.

(2) To maintain certification, onsite wastewater systems monitoring personnel shall:

(A) Pay a fifty dollar ($50.00) annual fee; and

(B) Attend an annual training session.

(3) Failure to pay the registration renewal fee by March 1 shall result in a late fee equal to one half (1/2) of the renewal fee.

(4) Failure to renew within a calendar year shall require reexamination in order to become registered.

(h)(1) The monitor's license may be revoked or suspended whenever any provision of this part is violated pursuant unto the Arkansas Administrative Procedure Act, Arkansas Code § 25-15-201 et seq.

(2) Each monitor shall furnish proof of current registration upon request by an authorized agent of the department.

Authority. Arkansas Code §§ 14-23-116, 14-236-107.

Subpart 12. Designated Representative

14 CAR § 21-1201. Registration fee and license revocation.

(a)(1) A fee of one hundred dollars ($100) shall be levied annually for the registration of each designated representative.

(2) Each designated representative who operates within the State of Arkansas, regardless of where their home office is located, shall be registered by the Department of Health.

(3) The registration will be issued by the department upon successful completion of an examination and compliance with the provisions of this part.

(4) Each designated representative shall:

(A) Attend an annual training course approved by the department; and

(B) Continue to demonstrate competency in practice to ensure the purpose of this part.

(5) Registration renewal fees shall be renewable on January 1 of each year.

(6) Failure to pay the registration renewal fee by March 1 shall result in a late fee equal to one-half (1/2) of the renewal fee.

(7) Failure to pay the registration renewal fee within a calendar year or failure

to attend an approved training course shall require reexamination in order to become registered.

(b)(1) The designated representative's license may be revoked or suspended whenever any provision of this part is violated pursuant unto the Arkansas Administrative Procedure Act, Arkansas Code § 25-15-201 et seq.

(2) Each designated representative shall furnish proof of current registration upon request by an authorized agent of the department.

Authority. Arkansas Code §§ 14-236-107, 14-236-116.

Subpart 13. Installers

14 CAR § 21-1301. Installers.

(a)(1) Each installer who operates within the State of Arkansas, regardless of where the home office may be, shall be registered by the Department of Health.

(2) The registration will be issued by the department or its authorized agent upon:

(A) Successful completion of an examination; and

(B) Compliance with the provisions of this part.

(3) A registered installer shall be present at the job site during all phases of system construction.

(4) In order to maintain registration, an installer shall:

(A) Attend at least one (1) annual training course approved by the department; and

(B) Continue to demonstrate competency in practice to ensure the purpose of this part.

(5) The registration shall be renewable on January 1 of each year.

(6) Failure to renew by March 1 shall result in a late fee equal to one half (1/2) of the renewal fee.

(7) Failure to renew within a calendar year shall require reexamination in order

to become registered.

(8) Installers licensed at the time of the effective date of this part will be exempt from the initial examination.

(b)(1) The installer's license may be revoked or suspended whenever any provision of this part is violated pursuant unto the Arkansas Administrative Procedure Act, Arkansas Code § 25-15-201 et seq.

(2) Each installer shall furnish proof of current registration upon request by an authorized agent of the department.

(c) It shall be a violation of this part for an installer to start the actual construction, alteration, repair, or extension of any onsite wastewater system without first notifying the department or its authorized agent twenty-four (24) hours in advance.

(d) **Installer's registration fee.**

(1) A fee of one hundred dollars ($100) shall be levied annually for the registration of each installer.

(2) The registration fee shall be:

(A) Made payable to the department; and

(B) Attached to the completed application and forwarded to the department.

Authority. Arkansas Code §§ 14-23-116, 14-236-107.

Subpart 14. Manufacturers

14 CAR § 21-1401. Manufacturers.

(a) Septic tank manufacturers doing business in Arkansas shall hold a valid registration issued by the Department of Health.

(b) A registration fee of one hundred dollars ($100) will be levied annually, payable by July 1.

(c) Septic tank manufacturers shall submit an annual inspection report conducted within sixty (60) days prior to registration renewal.

(d) Production plant inspection conducted by a National Precast Concrete Association Onsite Wastewater Certified Program representative will be considered to meet the registration inspection requirement.

Authority. Arkansas Code §§ 14-236-107, 14-236-116.

Subpart 15. Reciprocity and licensure — Arkansas Code §§ 17-1-108(c), (d)(1)(A), and 17-1-106

14 CAR § 21-1501. Required qualifications.

An applicant applying for reciprocal licensure shall meet the following requirements:

(1)(A) The applicant shall hold a substantially similar license in another United States jurisdiction.

(B) A license from another state is substantially similar to an Arkansas license if the other state's licensure qualifications require:

(i) Designated representatives must be a:

(a) Registered land surveyor;

(b) Registered sanitarian;

(c) Plumber;

(d) Engineer; or

(e) Similarly qualified individual as defined in this part; and

(ii) Certified monitoring personnel and installers have no minimum educational requirements.

(C) The applicant shall hold his or her occupational licensure in good standing.

(D) The applicant shall not have had a license revoked for:

(i) An act of bad faith; or

(ii) A violation of:

(a) Law;

(b) Rule; or

(c) Ethics;

(E) The applicant shall not hold a suspended or probationary license in a United States jurisdiction; and

(2) The applicant shall be sufficiently competent in the design, installation, or monitoring of onsite wastewater systems.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1502. Required documentation.

(a) An applicant shall submit a fully executed application, the required fee, and the documentation described below.

(b) As evidence that the applicant's license from another jurisdiction is substantially similar to Arkansas's, the applicant shall submit the following information:

(1)(A) Evidence of current and active licensure in that state.

(B) The Department of Health may verify this information online if the jurisdiction at issue provides primary source verification on its website or by telephone to the other state's licensing board; and

(2)(A) Evidence that the other state's licensure requirements match those listed in 14 CAR § 21-1501(1).

(B) The department may verify this information online or by telephone to the other state's licensing group.

(c) To demonstrate that the applicant meets the requirements in 14 CAR §§ 21-1501(1)(C) – (E), the applicant shall provide the department with:

(1) The names of all states in which the applicant is currently licensed or has been previously licensed; and

(2)(A) Letters of good standing or other information from each state in which the applicant is currently or has ever been licensed showing that the applicant:

(i) Has not had his or her license revoked for the reasons listed in 14 CAR § 21-1501(1)(D); and

(ii) Does not hold a license on suspended or probationary status as described in 14 CAR § 21-1501(1)(E).

(B) The department may verify this information online if the jurisdiction at issue provides primary source verification on its website or by telephone to the other's state's licensing department.

(d) As evidence that the applicant is sufficiently competent in the field of design, installation, or monitoring of onsite wastewater systems, an applicant shall pass the designated representative test, or installer test, or the certified monitoring test conducted by the department.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1503. Temporary and provisional license.

(a) The department shall issue a temporary and provisional license immediately upon receipt of the application, the required fee, and the documentation required under 14 CAR § 21-1502(b)(1) and (2).

(b) The temporary and provisional license shall be effective for least ninety (90) days or until the department makes a decision on the application, unless the department determines that the applicant does not meet the requirements in reciprocity,14 CAR § 21-1503(b)(1) and (2), in which case the provisional and temporary license shall be immediately revoked.

(c) An applicant may:

(1) Provide the rest of the documentation required above in order to receive a license; or

(2) Only provide the information necessary for the issuance of a temporary and provisional license.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1504. License for person from state that does not license

profession — Acts 2019, No. 1011, Arkansas Code § 17-1-108(d)(2).

(a) **Required qualifications.** An applicant from a state that does not license designated representatives, installers, and certified monitoring personnel shall meet the following requirements:

(1) The applicant shall be sufficiently competent in the onsite wastewater:

(A) Design;

(B) Installation; or

(C) Monitoring; and

(2) The applicant for a designated representative license shall meet the qualifications in 14 CAR § 21-1501(1)(B)(i).

(b) **Required documentation.**

(1) An applicant shall submit a fully executed application, the required fee, and the documentation described below.

(2) As evidence that the applicant is sufficiently competent in the field of onsite wastewater design, installation, or monitoring an applicant shall:

(A) Pass the required tests for:

(i) Designated representative;

(ii) Installer; or

(iii) Certified maintenance person; and

(B) Submit any design or other paperwork indicating experience in onsite wastewater.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1505. Reciprocity and state-specific education — Acts 2019, No. 1011, Arkansas Code § 17-1-108(d)(3).

(a) The Department of Health shall require an applicant to take the designated representative, installer, or certified maintenance person test if the applicant is licensed in another state that does not offer reciprocity to Arkansas residents that is similar to reciprocity provided to out-of-state applicants in Arkansas Code § 17-1-108.

(b) Reciprocity in another state will be considered similar to reciprocity under Arkansas Code § 17-1-108 if the reciprocity provisions in the other state:

(1) Provide the least restrictive path to licensure for Arkansas applicants;

(2) Do not require Arkansas applicants to participate in the apprenticeship, education, or training required as a prerequisite to licensure of a new professional in that state, except that the state may require Arkansas applicants to participate in continuing education or training that is required for all professionals in that state to maintain the licensure; and

(3) Do not require Arkansas applicants to take a state-specific education.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1506. Automatic licensure for active duty service members, returning military veterans, and spouse.

(a) As used in this subpart:

(1) "Automatic licensure" means granting the occupational licensure without an individual having met occupational licensure requirements provided:

(A) Under the Arkansas Code; or

(B) By other provisions in this part;

(2) "Uniformed service member" means an:

(A) Active or reserve component member of the:

(i) United States Air Force;

(ii) United States Army;

(iii) United States Coast Guard;

(iv) United States Marine Corps;

(v) United States Navy;

(vi) United States Space Force; or

(vii) National Guard;

(B) Active component member of the National Oceanic and Atmospheric Administration Commissioned Officer Corps; or

(C) Active or reserve component member of the United States Commissioned Corps of the Public Health Service; and

(3) "Uniformed service veteran" means a former member of the United States uniformed services discharged under conditions other than dishonorable.

(b) This subpart applies to:

(1) A uniformed service member stationed in the State of Arkansas;

(2) A uniformed service veteran who resides in or establishes residency in the State of Arkansas; and

(3) The spouse of subdivision (b)(1) or (b)(2) of this section including a uniformed service member who is:

(A) Assigned a tour of duty that excludes the spouse from accompanying the uniformed service member and the spouse relocates to Arkansas; or

(B) Killed or succumbs to his or her injuries or illness in the line of duty if the spouse establishes residency in Arkansas.

(c) Automatic licensure shall be granted to persons listed in subsection (b) of this section if the person:

(1) Is a holder in good standing of occupational licensure with similar scope of practice issued by another state, territory, or district of the United States; and

(2) Pays the licensure fee.

(d) Relevant and applicable uniformed service education, training, national certification, or service-issued credential shall be accepted toward initial licensure.

(e) A license expiration date shall be extended for a deployed uniformed service member or spouse for one hundred eighty (180) days following the date of the uniformed service member's return from deployment.

(f) A uniformed service member or spouse shall be exempt from continuing education requirements for one hundred eighty (180) days following the date of the uniformed service member's return from deployment.

(g) Any uniformed service member or spouse exercising the exemption shall provide evidence of completion of continuing education before renewal or grant of a subsequent license.

Authority. Arkansas Code § 14-236-107.

14 CAR § 21-1507. Automatic occupational licensure under Acts 2023, No. 457.

(a) **Definitions for the purpose of automatic occupational licensure.** As used in this part, "automatic occupational licensure" means the granting of occupational licensure to an applicant who establishes residency in this state without the individual's having met occupational licensure requirements provided:

(1) Under Title 17 of the Arkansas Code; or

(2) By this part.

(b) **Automatic Occupational Licensure for Out-of-State Licensure Act, Acts 2023, No. 457.**

(1) An applicant shall be eligible for automatic occupational licensure if:

(A) The applicant either:

(i) Is in good standing for at least one (1) year for a Designated Representatives, Installers, and Certified Monitoring Personnel license under this part with similar scope of practice issued by another state, territory, or district of the United States; or

(ii) Has worked for at least three (3) years in the designated representatives, installers, or certified monitoring personnel occupation in another state, territory, or district of the United States that does not use a Designated Representatives, Installers, or Certified Monitoring Personnel licensure to regulate the designated representatives, installers, or certified monitoring personnel occupation for which the applicant is applying;

(B) The applicant does not have a disqualifying criminal offense under Arkansas Code § 17-3-102 or under any additional state law relating to the Designated Representatives, Installers, or Certified Monitoring Personnel licensure;

(C) The applicant does not have a complaint, allegation, or investigation pending in his or her occupational activity in this state or in the state of the applicant's

previous residency where the Designated Representatives, Installers, or Certified Monitoring Personnel licensure was granted; and

(D) The applicant passes an examination specific to relevant state laws that regulate the designated representatives, installers, or certified monitoring personnel occupation.

(2) The Department of Health may waive the requirement for the applicant to pass an examination specific to relevant state laws that regulate the designated representatives, installers, or certified monitoring personnel occupation if the department finds that:

(A) The combination of the applicant's education, training, and experience is a sufficient substitute for the state law examination requirement; and

(B) A waiver by the department will not harm public health, safety, or welfare.

(3) Upon the applicant being granted automatic occupational licensure, the applicant shall meet all:

(A) Other designated representatives, installers, or certified monitoring personnel licensure requirements; and

(B) Renewal requirements of the Designated Representatives, Installers, or Certified Monitoring Personnel licensure, including without limitation a criminal background check and continuing education hours.

Authority. Arkansas Code § 14-236-107.

Subpart 16. Code of Ethics

14 CAR § 21-1601. Code of ethics.

(a) All licensees shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.

(b) All licensees shall not accept compensation, financial or otherwise, from more than one (1) party for services on the same project, or for services pertaining to the

same project, unless the circumstances are:

(1) Fully disclosed; and

(2) Agreed to by all interested parties.

(c) All licensees shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.

Authority. Arkansas Code § 14-236-107.

Subpart 17. Penalties

14 CAR § 12-1602. Penalties.

(a) Any person, firm, corporation, or association who violates any of the provisions of Acts 1977, No. 402 (Arkansas Sewage Disposal Systems Act, Arkansas Code § 14-236-101 et seq.), or any rules promulgated under the authority of Acts 1977, No. 402 (Arkansas Sewage Disposal Systems Act, Arkansas Code § 14-236-101 et seq.), shall:

(1) Upon conviction, be deemed guilty of a misdemeanor; and

(2) Be punished by a fine of not less than one hundred dollars ($100) nor more than one thousand dollars ($1,000).

(b) Installers, designated representatives, certified monitoring personnel, and septic tank manufacturers who do not renew their licenses prior to sixty (60) days after the annual expiration date will be charged a late fee equal to one-half (1/2) the annual fee.

Authority. Arkansas Code §§ 14-236-106, 14-236-107, 14-236-116.

Appendix A. Absorption Area Requirements

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendice

s/251/14CARpt.21AppendixA.pdf

Appendix B. Quantities of Wastewater Flow for Various Types of Establishments

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/252/14CARpt.21AppendixB.pdf

Appendix C. Minimum Capacity of Spetic Tanks

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/253/14CARpt.21AppendixC.pdf

Appendix D. Requirements for the Approval of Residential Aerobic Treatment Units for Distribution in Arkansas

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/254/14CARpt.21AppendixD.pdf

Appendix E. Requirements for becoming an Aerobic Treatment Unit Distributor

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/255/14CARpt.21AppendixE.pdf

Appendix F. Requirements for Submission of an Onsite Wastewater System

Permit Application

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/256/14CARpt.21AppendixF.pdf

Appendix G. Drawings

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/257/14CARpt.21AppendixG.pdf

Appendix H. Soil Texture Triangle

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/258/14CARpt.21AppendixH.pdf

Appendix I. Red Soil Chart

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/259/14CARpt.21AppendixI.pdf

Appendix J. Conversion Table

Link:
https://CodeOfARRules.arkansas.gov/docs/CARCodeAppendices/Appendices/260/14CARpt.21AppendixJ.pdf