

ARKANSAS REGISTER

Proposed Rule Cover Sheet



Secretary of State
John Thurston
500 Woodlane Street, Suite 026
Little Rock, Arkansas 72201-1094
(501) 682-5070
www.sos.arkansas.gov



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ARKANSAS STATE BOARD OF HEALTH
AND REGULATIONS
RULES PERTAINING TO
DRIP DISPERSAL SYSTEMS



ACT 402 OF 1977

A.C.A. 14-236-101 et seq.

Effective TBD

Environmental Health Protection
Arkansas Department of Health
José Romero, MD
Secretary of Health

IMPORTANT!

These rules are designed for use with individual residential, small commercial, or decentralized wastewater systems (defined as 10,000 gpd or less) utilizing drip dispersal.

The soil loading rates authorized in this rule shall be utilized with the water usage tables of Appendix B in Rules and Regulations pertaining to Onsite Wastewater Systems.

When using these rules for subdivision development with a decentralized wastewater treatment and collection system, an estimated water usage rate of no less than 370 gallons per day per lot shall be utilized. Subdivisions utilizing individual onsite wastewater systems are required to be designed on standard, conventional systems for subdivision review process.

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SECTION 1. Authority and Purpose

- 1.1 The following RULES ~~AND REGULATIONS~~ PERTAINING TO DRIP DISPERSAL 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 of 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.).
- 1.2 Purpose: A drip dispersal system is a technology for the distribution of treated wastewater uniformly over a large area beneath the soil surface. Drip Dispersal fields are a "bed" design. The use of four (4) to six (6) inch installation cover does not fit the conventional trench design criteria utilized in the Onsite Wastewater Soil Morphology Program for system design.

SECTION 2. Definitions

- 2.1 **Aerobic Treatment Unit (ATU):** A mechanical on-site treatment unit that provides secondary wastewater treatment by mixing air and aerobic and facultative microbes with the wastewater. ATU's typically use a suspended growth treatment process or a fixed treatment process.
- 2.2 **Air/Vacuum (A/V) Relief Valve:** A valve that automatically lets air out of or into liquid carrying pipe as needed in response to changes in system pressure.
- 2.3 **Aerobic:** Having molecular oxygen as a part of the environment, or growing or occurring only in the presence of molecular oxygen.
- 2.4 **Backwash:** The process of flow reversal to clean a filter and to restore it to the normal clean condition for filtering with a minimum resistance to flow through the media or screen.
- 2.5 **Control Panel:** An electronic control panel that controls the quantity and time of dose. This can also control the zone receiving the effluent, automatically flushes the lines, flushes the filters, monitors the flow rates and pump run cycles or times.
- 2.6 **Decentralized System:** An onsite and/or cluster wastewater system used to treat and disperse or discharge small volumes of wastewater, generally from dwellings or businesses that are located relatively close together.
- 2.7 **Disk Filter:** A type of filter that utilizes a series of grooved rings that overlay each other to form a network of very small openings to trap contaminants.

- 2.8 **Distributing Valve:** A valve that distributes flow to multiple drain field laterals, zones or locations by automatically rotating upon each pump cycle.
- 2.9 **Drain-back:** The process of effluent draining along the laterals and manifolds after the pump shuts off. Drainage occurs both inside and outside the drip tubing and manifolds to lower elevations in the drip field.
- 2.10 **Drip Line:** Tubing constructed from polyethylene with emitters embedded regularly along the length of the tube.
- 2.11 **Effluent:** Sewage, water or other liquids, partially or completely treated or in its natural state flowing out of a septic tank, aerobic treatment unit, or other treatment system or systems.
- 2.12 **Emitters:** Small diameter openings in drip line that can dissipate pressure and allow a slow, controlled discharge normally rated in gallons per hour.
- 2.13 **Field Flush:** Water is passed through the drip lateral for the purpose of removing particles and other debris from the walls of the drip tubing. The flush water is carried back through the return manifold and return line to the pretreatment unit.
- 2.14 **Filter:** A device for the main purpose of removing suspended solids and other debris from the wastewater.
- 2.15 **Hydraulic Conductivity:** The rate of water movement under unit gradient in a specific soil horizon.
- 2.16 **Interceptor Drain:** A subsurface drain line, usually constructed upgrade from the absorption area to divert seasonal groundwater.
- 2.17 **Lateral:** One single run or multiple runs of drip tubing connected at one end to a supply manifold and the other end connected to a return manifold.
- 2.18 **Maintenance Personnel:** A individual certified by the Department to conduct assessments under the Onsite Maintenance and Monitoring Program.
- 2.19 **Monitoring:** Periodic inspection of system for performance.
- 2.20 **Pressure Compensating (PC) Emitters:** Drip emitters that allow a constant flow or discharge over a wide range of applied pressure.
- 2.21 **Pressure Distribution:** A system of small diameter pipes equally distributing effluent through a trench or bed.

2.232.22 **Pressure Regulator:** A device used to regulate and maintain a constant discharge pressure.

2.242.23 **Pretreatment:** The conditioning of effluent prior to dispersal by a drip system.

2.252.24 **Return Line:** The return line connects the return manifold to the pretreatment unit for the purpose of carrying flush water from the drip field.

2.262.25 **Return Manifold:** A collection manifold or piping that returns excessive wastewater and debris to the primary treatment tank during system flushes,

2.272.26 **Run:** One continuous length of tubing routed across contour connected to a supply line or return line or another run.

2.282.27 **Soil Structure:** The combination or arrangement of individual soil particles in definable aggregates, or peds, which are characterized and classified on the basis of size, shape, and degree of distinctness.

2.292.28 **Solenoid Valve:** An electric valve actuated by a solenoid, used for controlling the flow or liquid in pipes.

2.302.29 **Spin Filter:** A filter that consists of a screen cylinder enclosed in a casing. The typical filter screen mesh size is 150 and a micron rating of 100.

2.312.30 **Static Plow:** A drip line plow with a shank that remains at a given depth as the plow is pulled through the soil.

2.322.31 **Supply Line:** The line that extends from the pump to the supply manifold of a given zone.

2.332.32 **Supply Manifold:** The supply manifold connects the supply line to the drip laterals.

2.342.33 **Vertical Separation:** The depth of unsaturated, original, undisturbed soil between the bottom of the drip tubing and highest seasonal water table or restrictive layer.

2.352.34 **Vibratory Plow:** A vibratory plow is a drip line plow with a shank that vibrates vertically as the plow is pulled through the soil.

2.362.35 **Water Table:** The level in saturated soil at which the hydraulic pressure is zero.

2.372.36 **Zone:** A group of laterals that are dosed at the same time.

SECTION 3. Site Assessment

3.1 Subsurface Drip System(s) may be utilized on sites that meet the following criteria:

~~3.1.1 The minimum vertical separation between the drip tubing or installed trench bottom and any rock substrata (consolidated or fractured) shall be nine (9) inches or greater of undisturbed, natural soil.~~

3.1.1~~2~~ The drip tubing or installed trench bottom shall be above the seasonal water table, whatever the duration. Brief seasonal water tables may be minimized or eliminated by the use of effective interceptor drains. Any design, which incorporates the use of an interceptor drain, shall indicate the effective depth of seasonal water table reduction.

~~3.1.2 The percent clay of a soil may be interpreted as a Seasonal Water Table Class Clay percentage, as it relates to seasonal water table interpretation, is sited in Section 8 of the Onsite Wastewater Regulations.~~

3.1.2 Low hydraulic conductivity shall include soils with 40% or greater clay. Clay percentage shall be determined from in depth zone extending 6" above and 12" below installed drip tubing depth.

3.1.3 No loading rates are available for low hydraulic conductivity soils with greater than 60% clay.

3.1.4 Systems utilizing drip dispersal must maintain minimum of 9" separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit a moderate and/or long SWT.

3.1.5 Systems utilizing drip dispersal must maintain minimum of 15" separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit only a brief SWT or do not exhibit a SWT.

~~3.1.33.1.6~~ Soils that are structure less or with massive structure shall not be approved for onsite sub-surface treatment.

~~3.1.43.1.7~~ The lot size shall be of sufficient area to accommodate both the primary and secondary dispersal area. Both the primary and secondary dispersal area shall be sized according to the respective loading rates. If the lot can only support the primary dispersal field, a subsurface drip dispersal system shall not be installed.

~~For lots three (3) acres or greater, the use of a surface discharge drip system may be considered. (See Surface Discharge Systems)~~

SECTION 4. Drip Tubing and Emitters

- 4.1 Emitter spacing can range from six (6) to twenty-four (24) inches. The emitters used in the tubing shall be pressure compensating. Pressure compensating emitters have a relatively constant discharge rate *over* a wide range of pressures. Emitter flow rate shall be specified by the designer and stated on the system plans. The drip line pressure can range from 5 to 70 pounds per square inch (PSI).
- 4.2 Drip tubing shall be installed by one of the following methods: static plow, chain trencher or vibratory plow.
- 4.3 Static plow is the preferred method for inserting drip tubing into the soil. The static plow shall be pulled not pushed through the soil.
- 4.4 Chain trencher may be used for placement of the drip tubing in the soil. The maximum chain trench width is four (4) inches.
- 4.5 Wet soil shall not be plowed because of smearing.
- 4.6 Drip tubing installed in natural soil shall be installed to a depth of six (6) inches.
- 4.7 If capping fill material is used as part or all of the *cover over* the tubing, the installed depth of the tubing can range from one (1) to five (5) inches in the natural soil. Drip tubing shall not be placed in the capping fill material. In no case shall the *cover over* the tubing be less than six (6) inches.
- 4.8 Settled depth of the cap shall not be more than eight (8) inches. The capping fill material shall not contain more than 27% clay or 60% sand or 70% silt. Before the capping fill material is delivered to the proposed dispersal site, a textural analysis shall be provided. A credit of up to 50% of the settled cap depth may be allowed in the adjustment of the seasonal water table. The seasonal water table credit is at the sole discretion of the Department.

SECTION 5. Pretreatment Requirements

- 5.1 The quality of effluent that will be applied to the dispersal field shall meet the American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 40 (revised 2005) requirements for class 1 treatment systems. Only pretreatment units that have obtained approval from the Department shall be used.
- 5.2 Pretreatment system shall be required as part of any Drip Dispersal System design.
- 5.3 The daily flow rate capacity of a pretreatment system shall equal or exceed the daily flow rates found in Appendix [B of the Rules and Regulations Pertaining to Onsite Wastewater SystemsA](#).
- 5.4 Pretreatment systems installed in conjunction with an individual residential structure shall have a daily flow rate capacity of not less than 400 gallon per day.
- 5.5 Pretreatment systems installation on non-residential or multi-structures shall be sized according to influent wastewater strength and total daily flow rate expressed in gallons per day.

SECTION 6. Filters and Screens

- 6.1 There are three types of filters or screens used for wastewater applications: spin or screen filter, disk, and sand.
- 6.2 Solids and other debris shall be filtered to a size of 100 microns or less.
- 6.3 Filter debris shall be returned to the septic tank, pretreatment unit, or a separate settling tank regardless of the type of filter system. The clear Schedule 40 PVC piping allows for a direct observation of the wastewater as it flows from the filter flush line or the field flush line.

SECTION 7. Control Panel

- ~~7.1 Timed dosing is the only method for controlling the dose cycles and volumes.~~
- 7.1² Control panels shall be constructed of the following basic components: NEMA 4X rated enclosure, motor-start contractors, separate circuit breakers for pump and panel control, audio and visual alarms, and wiring terminals. Optional components range from elapsed time meter or counters, event counters and pump run lights.

SECTION 8. Flow Meters and Pressure Gauges

- 8.1 A flow meter shall be installed after the filter system but before the drip dispersal field. The flow meter shall incorporate not only a rate of flow gauge but also a total gallons pumped register. The flow rate gauge and total gallons pumped register may be separate devices. The flow meter shall be installed in a protective box that will be of sufficient size for servicing the meter and to allow easy access for reading the meter. The flow meter shall be sized for the dispersal flow as well as the additional field flushing volume.
- 8.2 Pressure gauges shall be located before the filter, after the filter and on the dispersal field return line. Pressure gauges shall be enclosed in the head works box, which allows easy access for observation. The gauges shall be liquid filled and a minimum of three (3) inches in diameter. The pressure range of the gauge shall be sufficient for the maximum pressure that will be expected in the system.

SECTION 9. Supply Line and Manifold

- 9.1 The supply line and manifold should be designed with a flow velocity between the 0.5 feet per and 5 feet per second.
- 9.2 The piping and fittings in the supply line and the manifold shall be Schedule 40. Schedule 80 fittings shall be used at the filter system as well as any point where the piping will be disconnected or subjected to abuse.
- 9.3 When dosing, the supply manifold shall eliminate the drain back potential from a higher to a lower elevation in the drain field.

SECTION 10. Return Manifold and Line

- 10.1 The return manifold and line allow the flushing of the drip dispersal field. The flushed wastewater and solids shall be returned back to the settling tank or treatment tank.

SECTION 11. Flexible Hose and Tubing

- 11.1 Flexible Schedule 40 PVC piping shall be used at all connections to the supply and return manifolds.

SECTION 12. Air/Vacuum Relief Valves

- 12.1 Air/vacuum relief valves provide a means for releasing air at the start of a dose cycle, so the system will charge quickly with wastewater and allow air to enter the system quickly at the end of dose cycle. Air/vacuum valves shall be located at the highest points of either supply or return manifolds, or both.
- 12.2 Air/vacuum relief valves shall be sized based on the proposed design flow rate. A valve that is under sized will not provide an adequate amount of airflow.
- 12.3 A Schrader valve shall be provided at each vacuum valve as a means of checking the pressure of the drip field.

SECTION 13. Flushing Valves

- 13.1 Automatic flushing controls shall be required for all drip systems. The flush valve shall be a solenoid [or dole](#) type valve. Manual flushing valves may be installed in the field flush line. Manually operated valves may be standard ball or gate valves. The flush valve shall be fully opened during a flush cycle, regardless of the valve type. The field flushing velocity shall be in accordance with the drip tubing or system manufacturer's recommendations. The minimum field flushing velocity shall not be less than 0.5 feet per second.

SECTION 14. Pipe and Specialty Connectors and Fittings Standard

- 14.1 PVC pipe, tubing, reducer tees, adapters, elbows, couplers and compression fittings shall be constructed of Schedule 40 PVC.
- 14.2 Lock-Slip fittings, adapters, tees, elbows, and couplings shall be specifically manufactured for use with wastewater drip dispersal systems.
- 14.3 Insert fittings, barbed adapters, tees, elbows, and couplings shall be specifically manufactured and sized for use with wastewater drip dispersal system.

SECTION 15. Headworks Boxes

- 15.1 Any component or assembly that may need to be routinely serviced shall be located in a headworks box that is readily accessible.
- 15.2 Headworks boxes may be constructed of high-density PE (polyethylene) fiberglass, PVC, or concrete.
- 15.3 Headworks boxes shall be large enough to allow ease of service and allow periodic removal and replacement of components as needed. The headworks box shall be of sufficient length and depth to accommodate the various components that will be housed in the box. The lid of the headworks box shall extend above the finished grade. The bottom of the headworks box shall be designed to drain any rainwater or wastewater away from the inside of the box. The headworks box lid shall be easy to remove but also shall be made tamperproof where access to the site is not restricted or controlled. The structural strength of the headworks box and lid shall be sufficient to withstand the weight of any lawn maintenance equipment or other service equipment that may roll over the box. If the box will be subject to excessive wheel loading, additional protection shall be provided.

SECTION 16. Zones and Related Components

- 16.1 Automatic distributing valves shall include clear Schedule 40 piping on the output of each zone.
- 16.2 Check valves shall not be required if separate return lines are used to isolate returned wastewater to the pretreatment system.

SECTION 17. Pressure Regulators

- 17.1 Regulators shall be selected to allow sufficient pressure and flows for flushing. Pressure regulators shall be designed for use in wastewater drip dispersal system.

SECTION 18. System Installation

- 18.1 Protect the site prior to and after the installation of the drip system. Activities on the site shall be limited only to what is necessary for the installation of the system.
- 18.2 Any clearing or grubbing shall be performed based on a site-specific plan, which minimizes the disturbance of the soil and protects the overall soil characteristics. It may be necessary to use flexible PVC tubing to work around or over objects in the dispersal field; however, the number of emitters shall not be reduced.
- 18.3 Drip tubing shall not be installed when the soil is wet or frozen.
- 18.4 Drip tubing shall be installed on contour.
- 18.5 Flexible Schedule 40 PVC tubing shall be used at each manifold connection to
-provide additional crimping protection and to prevent the tubing from being pulled out of the supply or return manifold as the soil settles.
- 18.6 Drip tubing shall be taped, plugged or capped when cut. All piping shall be taped or capped at the end of the construction day.
- 18.7 PVC pipe cutters that cleanly shear the pipe or tubing shall be used rather than sawing the pipe or tubing.
- 18.8 Complete flushing of the supply line prior to the connection of the drip tubing shall
-be performed. Sufficient volume of water shall be used to ensure all debris is
-removed from both the supply line and the drip tubing.
- 18.9 A start-up system check shall be performed before the system is placed in operation.
-All operational functions that would be expected during routine operations shall be performed in a specified time period of not less than 24 hours. This operational test shall include but not be limited to: timed dose functions, volume loading, flow rates,
-pressures at the inlet and outlet of each zone, pressures at the inlet and outlet of filters, leak detection, flushing, and alarms.
- 18.10 Repairs or modifications shall be made to eliminate any wet spot.
- 18.11 The establishment of a vegetative cover is critical to the overall performance of a drip dispersal system. The dispersal area shall be covered with sod or mulch as soon as possible after the installation of the drip tubing.

SECTION 19. System Operation and Maintenance

- 19.1 Periodic servicing shall be required. The frequency of the service period is dependent on the operational parameters set for the system by its designer. The minimal service period shall not be less than once every three (3) months.
- 19.2 Alarms resulting from mechanical break downs shall be investigated and the situation causing the alarm resolved.
- 19.3 Owners of Drip Dispersal Systems are required to maintain a Maintenance and Monitoring Contract with Maintenance Personnel certified by the Department for the life of the system.

SECTION 20. System Design

- 20.1 The following procedure shall be used to determine the minimum surface area required for drip dispersal system.
- 20.2 The depth and duration of the seasonal water table shall be determined.
- 20.3 The sizing ~~and/or~~ loading rate chart found in Table 1 and 2 of this manual shall be used to determine the amount of surface area required for installation.
- 20.4 Residential systems utilizing drip dispersal designs shall include a minimum of 500 sq. ft. of absorption area per bedroom regardless of SWT depths.
- 20.54 The spacing between drip tube laterals shall not be less than two (2) ft. center to center. Drip tube laterals spacing may be greater than two (2) ft. however, for the purpose of determining the length of tubing required for a dispersal field, all length calculation shall be two (2) ft. center to center.
- 20.65 The effective area of the dispersal field shall be calculated by dividing the daily wastewater flow rate (DWF) in gallons per day (gpd) by the soil loading rate (SLR) in gallons per foot square per day (g/ft ft² / d). [Area of the dispersal field (DF) = design wastewater flow (DWF) ÷ soil loading rate (SLR).]
- 20.76 The length of the drip tubing shall be determined by dividing the dispersal field (DF) required by the drip tube spacing (DT) of two (2) Ft. [Drip tube length (DTL = dispersal field area (DF) ÷ drip tube spacing (DT) of two (2) ft.]
- 20.87 The number of emitters required shall be determined by dividing the drip tube length (DTL) by the emitter spacing (E) ft. [Drip line lateral length (ft.) ÷ emitter spacing (ft.) = Number of emitters.]
- 20.98 The loading rate for a soil which has a rock substrata (consolidated or fractured) and no seasonal water tables present above the rock substrata shall be sized as a moderate seasonal water table.

SECTION 21. Training and Certification

- 21.1 All Designated Representatives, Installers, Environmental Health Specialists, and Certified Maintenance Personnel shall be certified in the design, construction, and maintenance of a drip dispersal system. The certification program will be provided or approved by the Department Onsite Wastewater Section.

SECTION 22. Surface Discharge Drip System

- ~~22.1 Under certain conditions, Drip Dispersal Systems may be approved as a surface discharge system.~~
- ~~22.2 The requirements for surface discharge are:~~
- ~~22.2.1. The site is unsuited for a subsurface drip dispersal system.~~
- ~~22.2.2. Pre-treatment shall be a Class 1 treatment unit as approved by the Department. (See Section 5 Pretreatment Requirements)~~
- ~~22.2.3 Lot size shall not be less than three (3) acres. The lot size shall not include road or highway right of ways or utility easements.~~
- ~~22.2.4. A one hundred (100) foot setback from any property lines shall be maintained in all directions from the drip dispersal field.~~
- ~~22.2.5. A maximum loading rate of 0.09 gallons per square foot per day shall be utilized.~~
- ~~22.2.6. Ultraviolet light disinfection units shall be used as the primary method of disinfection. Ultraviolet light (UV) units shall be approved by the Department. UV units shall be installed and maintained in accordance with manufacturers recommended practices.~~

SECTION 223. Variances and Exemptions

- ~~223.1~~ Requested variations from these Rules and Regulations will be considered and may be approved at the sole discretion of the Department.
- ~~223.2~~ Submission of proposed experimental onsite wastewater systems may be approved, disapproved, or approved on a trial basis for a specific period of time. Such approval or disapproval shall be at the sole discretion of the Department. Submission of an experimental design shall include data as to the efficiency of operation of the proposed experimental system. A monitoring plan shall be submitted for approval in addition to the system design.

223.3 Good management practices are additions or modifications to systems which will make such systems more efficient, or which could make such systems acceptable in certain soil conditions. Where good management practices are proposed for inclusion in a drip dispersal system, approval shall be at the sole discretion of the Department or its Authorized Agent.

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SECTION 234. Fees

- 234.1 A fee shall be levied for the review of individual drip dispersal system permit application pursuant to A. C. A. § 14-236-116.
- 234.2 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).
- 234.3 For structures more than one thousand five hundred square feet (1,500 sq. ft.) and less than two thousand square feet (2,000 sq. ft.), the fee to review a permit application is forty-five dollars (\$45.00).
- 234.4 For structures more than two thousand square feet (2,000 sq. ft.) and less than three thousand square feet (3,000 sq. ft.), the fee to review a permit application is ninety dollars (\$90.00).
- 234.5 For structures more than three thousand square feet (3,000 sq. ft.) and less than four thousand square feet (4,000 sq. ft.), the fee to review a permit application is one hundred twenty dollars (\$120.00).
- 234.6 For structures four thousand (4,000 sq. ft.) and greater, the fee to review a permit application is one hundred fifty dollars (\$150.00)
- 234.7 For the alteration, repair, or extension of any individual drip dispersal system, the fee to review a permit application is thirty dollars (\$30.00).
- 234.8 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.
- 234.9 Auxiliary areas include garages, carports, porches, and other similar areas as determined by the Department.
- 234.10 Non-individual or multi structure permit submittals shall include a Cost Estimate Worksheet (EHP-17).

SECTION 245. Penalties

245.1 Any person, firm, corporation or association who violates any of the provisions of Act 402 of 1977, as Amended, or any Rules and Regulations promulgated under the authority of Act 402 of 1977, as Amended, shall upon conviction, be deemed guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars (\$100.00) nor more than one thousand dollars (\$1,000.00)

SECTION 256. Severability

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

SECTION 267. Repeal

267.1 All Regulations and parts of Regulations in conflict herewith are hereby repealed.

SECTION 277. Certification

This will certify that the foregoing Rules Pertaining to Drip Dispersal Systems were adopted by the Arkansas Department of Health at a regular session of the Board of Health on TBD.

José Romero, MD
Secretary of Health
Arkansas Department of Health

TABLE 1
DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
MODERATE HYDRAULIC CONDUCTIVITY SOILS

<u>DEPTH TO</u> <u>RMF (inches)</u>	<u>Brief SWT</u>		<u>Mod SWT</u>		<u>Long SWT</u>	
	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>
1	0.021	4761.9	0.007	14285.71	0.003	33333.33
2	0.041	2439.02	0.014	7142.86	0.007	14285.71
3	0.062	1612.9	0.021	4761.9	0.010	10000
4	0.082	1219.51	0.027	3703.7	0.014	7142.86
5	0.103	970.87	0.034	2941.18	0.017	5882.35
6	0.123	813.01	0.041	2439.02	0.021	4761.9
7	0.144	694.44	0.048	2083.33	0.024	4166.67
8	0.164	609.76	0.055	1818.18	0.027	3703.7
9	0.185	540.54	0.062	1612.9	0.031	3225.81
10	0.205	487.8	0.068	1470.59	0.034	2941.18
11	0.226	442.48	0.075	1333.33	0.038	2631.58
12	0.246	406.5	0.082	1219.51	0.041	2439.02
13	0.267	374.53	0.089	1123.6	0.044	2272.73
14	0.287	348.43	0.096	1041.67	0.048	2083.33
15	0.308	324.68	0.103	970.87	0.051	1960.78
16	0.328	304.88	0.109	917.43	0.055	1818.18
17	0.349	286.53	0.116	862.07	0.058	1724.14
18	0.369	271	0.123	813.01	0.062	1612.9
19	0.390	256.41	0.130	769.23	0.065	1538.46
20	0.410	243.9	0.137	729.93	0.068	1470.59
21	0.431	232.02	0.144	694.44	0.072	1388.89
22	0.451	221.73	0.150	666.67	0.075	1333.33
23	0.472	211.86	0.157	636.94	0.079	1265.82
24	0.492	203.25	0.164	609.76	0.082	1219.51
25	0.513	194.93	0.171	584.8	0.085	1176.47
26	0.533	187.62	0.178	561.8	0.089	1123.6
27	0.554	180.51	0.185	540.54	0.092	1086.96
28	0.574	174.22	0.191	523.56	0.096	1041.67
29	0.595	168.07	0.198	505.05	0.099	1010.1
30	0.615	162.6	0.205	487.8	0.103	970.87
31	0.636	157.23	0.212	471.7	0.106	943.4
32	0.656	152.44	0.219	456.62	0.109	917.43
33	0.677	147.71	0.226	442.48	0.113	884.96
34	0.697	143.47	0.232	431.03	0.116	862.07
35	0.718	139.28	0.239	418.41	0.120	833.33
36	0.738	135.50	0.246	406.5	0.123	813.01
37	0.750	133.33	0.253	395.26	0.126	793.65
38	0.750	133.33	0.260	384.62	0.130	769.23
39	0.750	133.33	0.267	374.53	0.133	751.88
40	0.750	133.33	0.273	366.3	0.137	729.93
41	0.750	133.33	0.280	357.14	0.140	714.29
42	0.750	133.33	0.287	348.43	0.144	694.44
43	0.750	133.33	0.294	340.14	0.147	680.27
44	0.750	133.33	0.301	332.23	0.150	666.67
45	0.750	133.33	0.308	324.68	0.154	649.35
46	0.750	133.33	0.314	318.47	0.157	636.94
47	0.750	133.33	0.321	311.53	0.161	621.12
48	0.750	133.33	0.328	304.88	0.164	609.76

TABLE 2
DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
LOW HYDRAULIC CONDUCTIVITY SOILS

<u>DEPTH TO</u> <u>RMF (inches)</u>	<u>Brief SWT</u>		<u>Mod SWT</u>		<u>Long SWT</u>	
	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100</u> <u>Gal./Day</u>
1	0.014	7142.86	0.005	20000	0.002	50000
2	0.028	3571.43	0.009	11111.11	0.005	20000
3	0.042	2380.95	0.014	7142.86	0.007	14285.71
4	0.055	1818.18	0.018	5555.56	0.009	11111.11
5	0.069	1449.28	0.023	4347.83	0.012	8333.33
6	0.083	1204.82	0.028	3571.43	0.014	7142.86
7	0.097	1030.93	0.032	3125	0.016	6250
8	0.111	900.9	0.037	2702.7	0.018	5555.56
9	0.125	800	0.042	2380.95	0.021	4761.9
10	0.139	719.42	0.046	2173.91	0.023	4347.83
11	0.152	657.89	0.051	1960.78	0.025	4000
12	0.166	602.41	0.055	1818.18	0.028	3571.43
13	0.180	555.56	0.060	1666.67	0.030	3333.33
14	0.194	515.46	0.065	1538.46	0.032	3125
15	0.208	480.77	0.069	1449.28	0.035	2857.14
16	0.222	450.45	0.074	1351.35	0.037	2702.7
17	0.235	425.53	0.078	1282.05	0.039	2564.1
18	0.249	401.61	0.083	1204.82	0.042	2380.95
19	0.263	380.23	0.088	1136.36	0.044	2272.73
20	0.277	361.01	0.092	1086.96	0.046	2173.91
21	0.291	343.64	0.097	1030.93	0.048	2083.33
22	0.300	333.33	0.102	980.39	0.051	1960.78
23	0.300	333.33	0.106	943.4	0.053	1886.79
24	0.300	333.33	0.111	900.9	0.055	1818.18
25	0.300	333.33	0.115	869.57	0.058	1724.14
26	0.300	333.33	0.120	833.33	0.060	1666.67
27	0.300	333.33	0.125	800	0.062	1612.9
28	0.300	333.33	0.129	775.19	0.065	1538.46
29	0.300	333.33	0.134	746.27	0.067	1492.54
30	0.300	333.33	0.139	719.42	0.069	1449.28
31	0.300	333.33	0.143	699.3	0.072	1388.89
32	0.300	333.33	0.148	675.68	0.074	1351.35
33	0.300	333.33	0.152	657.89	0.076	1315.79
34	0.300	333.33	0.157	636.94	0.078	1282.05
35	0.300	333.33	0.162	617.28	0.081	1234.57
36	0.300	333.33	0.166	602.41	0.083	1204.82
37	0.300	333.33	0.171	584.8	0.085	1176.47
38	0.300	333.33	0.175	571.43	0.088	1136.36
39	0.300	333.33	0.180	555.56	0.090	1111.11
40	0.300	333.33	0.185	540.54	0.092	1086.96
41	0.300	333.33	0.189	529.1	0.095	1052.63
42	0.300	333.33	0.194	515.46	0.097	1030.93
43	0.300	333.33	0.199	502.51	0.099	1010.1
44	0.300	333.33	0.203	492.61	0.102	980.39
45	0.300	333.33	0.208	480.77	0.104	961.54
46	0.300	333.33	0.212	471.7	0.106	943.4
47	0.300	333.33	0.217	460.83	0.109	917.43
48	0.300	333.33	0.222	450.45	0.111	900.9

ARKANSAS STATE BOARD OF HEALTH

RULES PERTAINING TO DRIP DISPERSAL SYSTEMS



ACT 402 OF 1977

A.C.A. 14-236-101 et seq.

Effective TBD

Environmental Health Protection
Arkansas Department of Health
José Romero, MD
Secretary of Health

IMPORTANT!

These rules are designed for use with individual residential, small commercial, or decentralized wastewater systems (defined as 10,000 gpd or less) utilizing drip dispersal.

The soil loading rates authorized in this rule shall be utilized with the water usage tables of Appendix B in Rules and Regulations pertaining to Onsite Wastewater Systems.

When using these rules for subdivision development with a decentralized wastewater treatment and collection system, an estimated water usage rate of no less than 370 gallons per day per lot shall be utilized. Subdivisions utilizing individual onsite wastewater systems are required to be designed on standard, conventional systems for subdivision review process.

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**TABLE 1 DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
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**TABLE 2 DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
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SECTION 1. Authority and Purpose

- 1.1 The following RULES PERTAINING TO DRIP DISPERSAL 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 of 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.).
- 1.2 Purpose: A drip dispersal system is a technology for the distribution of treated wastewater uniformly over a large area beneath the soil surface. Drip Dispersal fields are a "bed" design. The use of four (4) to six (6) inch installation cover does not fit the conventional trench design criteria utilized in the Onsite Wastewater Soil Morphology Program for system design.

SECTION 2. Definitions

- 2.1 **Aerobic Treatment Unit (ATU):** A mechanical on-site treatment unit that provides secondary wastewater treatment by mixing air and aerobic and facultative microbes with the wastewater. ATU's typically use a suspended growth treatment process or a fixed treatment process.
- 2.2 **Air/Vacuum (A/V) Relief Valve:** A valve that automatically lets air out of or into liquid carrying pipe as needed in response to changes in system pressure.
- 2.3 **Aerobic:** Having molecular oxygen as a part of the environment, or growing or occurring only in the presence of molecular oxygen.
- 2.4 **Backwash:** The process of flow reversal to clean a filter and to restore it to the normal clean condition for filtering with a minimum resistance to flow through the media or screen.
- 2.5 **Control Panel:** An electronic control panel that controls the quantity and time of dose. This can also control the zone receiving the effluent, automatically flushes the lines, flushes the filters, monitors the flow rates and pump run cycles or times.
- 2.6 **Decentralized System:** An onsite and/or cluster wastewater system used to treat and disperse or discharge small volumes of wastewater, generally from dwellings or businesses that are located relatively close together.
- 2.7 **Disk Filter:** A type of filter that utilizes a series of grooved rings that overlay each other to form a network of very small openings to trap contaminants.

- 2.8 **Distributing Valve:** A valve that distributes flow to multiple drain field laterals, zones or locations by automatically rotating upon each pump cycle.
- 2.9 **Drain-back:** The process of effluent draining along the laterals and manifolds after the pump shuts off. Drainage occurs both inside and outside the drip tubing and manifolds to lower elevations in the drip field.
- 2.10 **Drip Line:** Tubing constructed from polyethylene with emitters embedded regularly along the length of the tube.
- 2.11 **Effluent:** Sewage, water or other liquids, partially or completely treated or in its natural state flowing out of a septic tank, aerobic treatment unit, or other treatment system or systems.
- 2.12 **Emitters:** Small diameter openings in drip line that can dissipate pressure and allow a slow, controlled discharge normally rated in gallons per hour.
- 2.13 **Field Flush:** Water is passed through the drip lateral for the purpose of removing particles and other debris from the walls of the drip tubing. The flush water is carried back through the return manifold and return line to the pretreatment unit.
- 2.14 **Filter:** A device for the main purpose of removing suspended solids and other debris from the wastewater.
- 2.15 **Hydraulic Conductivity:** The rate of water movement under unit gradient in a specific soil horizon.
- 2.16 **Interceptor Drain:** A subsurface drain line, usually constructed upgrade from the absorption area to divert seasonal groundwater.
- 2.17 **Lateral:** One single run or multiple runs of drip tubing connected at one end to a supply manifold and the other end connected to a return manifold.
- 2.18 **Maintenance Personnel:** A individual certified by the Department to conduct assessments under the Onsite Maintenance and Monitoring Program.
- 2.19 **Monitoring:** Periodic inspection of system for performance.
- 2.20 **Pressure Compensating (PC) Emitters:** Drip emitters that allow a constant flow or discharge over a wide range of applied pressure.
- 2.21 **Pressure Distribution:** A system of small diameter pipes equally distributing effluent through a trench or bed.

- 2.22 **Pressure Regulator:** A device used to regulate and maintain a constant discharge pressure.
- 2.23 **Pretreatment:** The conditioning of effluent prior to dispersal by a drip system.
- 2.24 **Return Line:** The return line connects the return manifold to the pretreatment unit for the purpose of carrying flush water from the drip field.
- 2.25 **Return Manifold:** A collection manifold or piping that returns excessive wastewater and debris to the primary treatment tank during system flushes,
- 2.26 **Run:** One continuous length of tubing routed across contour connected to a supply line or return line or another run.
- 2.27 **Soil Structure:** The combination or arrangement of individual soil particles in definable aggregates, or peds, which are characterized and classified on the basis of size, shape, and degree of distinctness.
- 2.28 **Solenoid Valve:** An electric valve actuated by a solenoid, used for controlling the flow or liquid in pipes.
- 2.29 **Spin Filter:** A filter that consist of a screen cylinder enclose in a casing. The typical filter screen mesh size is 150 and a micron rating of 100.
- 2.30 **Static Plow:** A drip line plow with a shank that remains at a given depth as the plow is pulled through the soil.
- 2.31 **Supply Line:** The line that extends from the pump to the supply manifold of a given zone.
- 2.32 **Supply Manifold:** The supply manifold connects the supply line to the drip laterals.
- 2.33 **Vertical Separation:** The depth of unsaturated, original, undisturbed soil between the bottom of the drip tubing and highest seasonal water table or restrictive layer.
- 2.34 **Vibratory Plow:** A vibratory plow is a drip line plow with a shank that vibrates vertically as the plow is pulled through the soil.
- 2.35 **Water Table:** The level in saturated soil at which the hydraulic pressure is zero.
- 2.36 **Zone:** A group of laterals that are dosed at the same time.

SECTION 3. Site Assessment

- 3.1 Subsurface Drip System(s) may be utilized on sites that meet the following criteria:
- 3.1.1 The drip tubing or installed trench bottom shall be above the seasonal water table, whatever the duration. Brief seasonal water tables may be minimized or eliminated by the use of effective interceptor drains. Any design, which incorporates the use of an interceptor drain, shall indicate the effective depth of seasonal water table reduction.
 - 3.1.2 Low hydraulic conductivity shall include soils with 40% or greater clay. Clay percentage shall be determined from in depth zone extending 6” above and 12” below installed drip tubing depth.
 - 3.1.3 No loading rates are available for low hydraulic conductivity soils with greater than 60% clay.
 - 3.1.4 Systems utilizing drip dispersal must maintain minimum of 9” separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit a moderate and/or long SWT.
 - 3.1.5 Systems utilizing drip dispersal must maintain minimum of 15” separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit only a brief SWT or do not exhibit a SWT.
 - 3.1.6 Soils that are structure less or with massive structure shall not be approved for onsite sub-surface treatment.
 - 3.1.7 The lot size shall be of sufficient area to accommodate both the primary and secondary dispersal area. Both the primary and secondary dispersal area shall be sized according to the respective loading rates. If the lot can only support the primary dispersal field, a subsurface drip dispersal system shall not be installed.

SECTION 4. Drip Tubing and Emitters

- 4.1 Emitter spacing can range from six (6) to twenty-four (24) inches. The emitters used in the tubing shall be pressure compensating. Pressure compensating emitters have a relatively constant discharge rate *over* a wide range of pressures. Emitter flow rate shall be specified by the designer and stated on the system plans. The drip line pressure can range from 5 to 70 pounds per square inch (PSI).
- 4.2 Drip tubing shall be installed by one of the following methods: static plow, chain trencher or vibratory plow.
- 4.3 Static plow is the preferred method for inserting drip tubing into the soil. The static plow shall be pulled not pushed through the soil.
- 4.4 Chain trencher may be used for placement of the drip tubing in the soil. The maximum chain trench width is four (4) inches.
- 4.5 Wet soil shall not be plowed because of smearing.
- 4.6 Drip tubing installed in natural soil shall be installed to a depth of six (6) inches.
- 4.7 If capping fill material is used as part or all of the *cover over* the tubing, the installed depth of the tubing can range from one (1) to five (5) inches in the natural soil. Drip tubing shall not be placed in the capping fill material. In no case shall the *cover over* the tubing be less than six (6) inches.
- 4.8 Settled depth of the cap shall not be more than eight (8) inches. The capping fill material shall not contain more than 27% clay or 60% sand or 70% silt. Before the capping fill material is delivered to the proposed dispersal site, a textural analysis shall be provided. A credit of up to 50% of the settled cap depth may be allowed in the adjustment of the seasonal water table. The seasonal water table credit is at the sole discretion of the Department.

SECTION 5. Pretreatment Requirements

- 5.1 The quality of effluent that will be applied to the dispersal field shall meet the American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 40 (revised 2005) requirements for class 1 treatment systems. Only pretreatment units that have obtained approval from the Department shall be used.
- 5.2 Pretreatment system shall be required as part of any Drip Dispersal System design.
- 5.3 The daily flow rate capacity of a pretreatment system shall equal or exceed the daily flow rates found in Appendix B of the Rules and Regulations Pertaining to Onsite Wastewater Systems.
- 5.4 Pretreatment systems installed in conjunction with an individual residential structure shall have a daily flow rate capacity of not less than 400 gallon per day.
- 5.5 Pretreatment systems installation on non-residential or multi-structures shall be sized according to influent wastewater strength and total daily flow rate expressed in gallons per day.

SECTION 6. Filters and Screens

- 6.1 There are three types of filters or screens used for wastewater applications: spin or screen filter, disk, and sand.
- 6.2 Solids and other debris shall be filtered to a size of 100 microns or less.
- 6.3 Filter debris shall be returned to the septic tank, pretreatment unit, or a separate settling tank regardless of the type of filter system. The clear Schedule 40 PVC piping allows for a direct observation of the wastewater as it flows from the filter flush line or the field flush line.

SECTION 7. Control Panel

- 7.1 Control panels shall be constructed of the following basic components: NEMA 4X rated enclosure, motor-start contractors, separate circuit breakers for pump and panel control, audio and visual alarms, and wiring terminals. Optional components range from elapsed time meter or counters, event counters and pump run lights.

SECTION 8. Flow Meters and Pressure Gauges

- 8.1 A flow meter shall be installed after the filter system but before the drip dispersal field. The flow meter shall incorporate not only a rate of flow gauge but also a total gallons pumped register. The flow rate gauge and total gallons pumped register may be separate devices. The flow meter shall be installed in a protective box that will be of sufficient size for servicing the meter and to allow easy access for reading the meter. The flow meter shall be sized for the dispersal flow as well as the additional field flushing volume.
- 8.2 Pressure gauges shall be located before the filter, after the filter and on the dispersal field return line. Pressure gauges shall be enclosed in the head works box, which allows easy access for observation. The gauges shall be liquid filled and a minimum of three (3) inches in diameter. The pressure range of the gauge shall be sufficient for the maximum pressure that will be expected in the system.

SECTION 9. Supply Line and Manifold

- 9.1 The supply line and manifold should be designed with a flow velocity between the 0.5 feet per and 5 feet per second.
- 9.2 The piping and fittings in the supply line and the manifold shall be Schedule 40. Schedule 80 fittings shall be used at the filter system as well as any point where the piping will be disconnected or subjected to abuse.
- 9.3 When dosing, the supply manifold shall eliminate the drain back potential from a higher to a lower elevation in the drain field.

SECTION 10. Return Manifold and Line

- 10.1 The return manifold and line allow the flushing of the drip dispersal field. The flushed wastewater and solids shall be returned back to the settling tank or treatment tank.

SECTION 11. Flexible Hose and Tubing

- 11.1 Flexible Schedule 40 PVC piping shall be used at all connections to the supply and return manifolds.

SECTION 12. Air/Vacuum Relief Valves

- 12.1 Air/vacuum relief valves provide a means for releasing air at the start of a dose cycle, so the system will charge quickly with wastewater and allow air to enter the system quickly at the end of dose cycle. Air/vacuum valves shall be located at the highest points of either supply or return manifolds, or both.
- 12.2 Air/vacuum relief valves shall be sized based on the proposed design flow rate. A valve that is under sized will not provide an adequate amount of airflow.
- 12.3 A Schrader valve shall be provided at each vacuum valve as a means of checking the pressure of the drip field.

SECTION 13. Flushing Valves

- 13.1 Automatic flushing controls shall be required for all drip systems. The flush valve shall be a solenoid or dolo type valve. Manual flushing valves may be installed in the field flush line. Manually operated valves may be standard ball or gate valves. The flush valve shall be fully opened during a flush cycle, regardless of the valve type. The field flushing velocity shall be in accordance with the drip tubing or system manufacturer's recommendations. The minimum field flushing velocity shall not be less than 0.5 feet per second.

SECTION 14. Pipe and Specialty Connectors and Fittings Standard

- 14.1 PVC pipe, tubing, reducer tees, adapters, elbows, couplers and compression fittings shall be constructed of Schedule 40 PVC.
- 14.2 Lock-Slip fittings, adapters, tees, elbows, and couplings shall be specifically manufactured for use with wastewater drip dispersal systems.
- 14.3 Insert fittings, barbed adapters, tees, elbows, and couplings shall be specifically manufactured and sized for use with wastewater drip dispersal system.

SECTION 15. Headworks Boxes

- 15.1 Any component or assembly that may need to be routinely serviced shall be located in a headworks box that is readily accessible.
- 15.2 Headworks boxes may be constructed of high-density PE (polyethylene) fiberglass, PVC, or concrete.
- 15.3 Headworks boxes shall be large enough to allow ease of service and allow periodic removal and replacement of components as needed. The headworks box shall be of sufficient length and depth to accommodate the various components that will be housed in the box. The lid of the headworks box shall extend above the finished grade. The bottom of the headworks box shall be designed to drain any rainwater or wastewater away from the inside of the box. The headworks box lid shall be easy to remove but also shall be made tamperproof where access to the site is not restricted or controlled. The structural strength of the headworks box and lid shall be sufficient to withstand the weight of any lawn maintenance equipment or other service equipment that may roll over the box. If the box will be subject to excessive wheel loading, additional protection shall be provided.

SECTION 16. Zones and Related Components

- 16.1 Automatic distributing valves shall include clear Schedule 40 piping on the output of each zone.
- 16.2 Check valves shall not be required if separate return lines are used to isolate returned wastewater to the pretreatment system.

SECTION 17. Pressure Regulators

- 17.1 Regulators shall be selected to allow sufficient pressure and flows for flushing. Pressure regulators shall be designed for use in wastewater drip dispersal system.

SECTION 18. System Installation

- 18.1 Protect the site prior to and after the installation of the drip system. Activities on the site shall be limited only to what is necessary for the installation of the system.
- 18.2 Any clearing or grubbing shall be performed based on a site-specific plan, which minimizes the disturbance of the soil and protects the overall soil characteristics. It may be necessary to use flexible PVC tubing to work around or over objects in the dispersal field; however, the number of emitters shall not be reduced.
- 18.3 Drip tubing shall not be installed when the soil is wet or frozen.
- 18.4 Drip tubing shall be installed on contour.
- 18.5 Flexible Schedule 40 PVC tubing shall be used at each manifold connection to provide additional crimping protection and to prevent the tubing from being pulled out of the supply or return manifold as the soil settles.
- 18.6 Drip tubing shall be taped, plugged or capped when cut. All piping shall be taped or capped at the end of the construction day.
- 18.7 PVC pipe cutters that cleanly shear the pipe or tubing shall be used rather than sawing the pipe or tubing.
- 18.8 Complete flushing of the supply line prior to the connection of the drip tubing shall be performed. Sufficient volume of water shall be used to ensure all debris is removed from both the supply line and the drip tubing.
- 18.9 A start-up system check shall be performed before the system is placed in operation. All operational functions that would be expected during routine operations shall be performed in a specified time period of not less than 24 hours. This operational test shall include but not be limited to: timed dose functions, volume loading, flow rates, pressures at the inlet and outlet of each zone, pressures at the inlet and outlet of filters, leak detection, flushing, and alarms.
- 18.10 Repairs or modifications shall be made to eliminate any wet spot.
- 18.11 The establishment of a vegetative cover is critical to the overall performance of a drip dispersal system. The dispersal area shall be covered with sod or mulch as soon as possible after the installation of the drip tubing.

SECTION 19. System Operation and Maintenance

- 19.1 Periodic servicing shall be required. The frequency of the service period is dependent on the operational parameters set for the system by its designer. The minimal service period shall not be less than once every three (3) months.
- 19.2 Alarms resulting from mechanical break downs shall be investigated and the situation causing the alarm resolved.
- 19.3 Owners of Drip Dispersal Systems are required to maintain a Maintenance and Monitoring Contract with Maintenance Personnel certified by the Department for the life of the system.

SECTION 20. System Design

- 20.1 The following procedure shall be used to determine the minimum surface area required for drip dispersal system.
- 20.2 The depth and duration of the seasonal water table shall be determined.
- 20.3 The sizing and loading rate chart found in Table 1 and 2 of this manual shall be used to determine the amount of surface area required for installation.
- 20.4 Residential systems utilizing drip dispersal designs shall include a minimum of 500 sq. ft. of absorption area per bedroom regardless of SWT depths.
- 20.5 The spacing between drip tube laterals shall not be less than two (2) ft. center to center. Drip tube laterals spacing may be greater than two (2) ft. however, for the purpose of determining the length of tubing required for a dispersal field, all length calculation shall be two (2) ft. center to center.
- 20.6 The effective area of the dispersal field shall be calculated by dividing the daily wastewater flow rate (DWF) in gallons per day (gpd) by the soil loading rate (SLR) in gallons per foot square per day ($\text{g}/\text{ft}^2 / \text{d}$). [Area of the dispersal field (DF) = design wastewater flow (DWF) \div soil loading rate (SLR).]
- 20.7 The length of the drip tubing shall be determined by dividing the dispersal field (DF) required by the drip tube spacing (DT) of two (2) Ft. [Drip tube length (DTL) = dispersal field area (DF) \div drip tube spacing (DT) of two (2) ft.]
- 20.8 The number of emitters required shall be determined by dividing the drip tube length (DTL) by the emitter spacing (E) ft. [Drip line lateral length (ft.) \div emitter spacing (ft.) = Number of emitters.]
- 20.9 The loading rate for a soil which has a rock substrata (consolidated or fractured) and no seasonal water tables present above the rock substrata shall be sized as a moderate seasonal water table.

SECTION 21. Training and Certification

- 21.1 All Designated Representatives, Installers, Environmental Health Specialists, and Certified Maintenance Personnel shall be certified in the design, construction, and maintenance of a drip dispersal system. The certification program will be provided or approved by the Department Onsite Wastewater Section.

SECTION 22. Variances and Exemptions

- 22.1 Requested variations from these Rules and Regulations will be considered and may be approved at the sole discretion of the Department.
- 22.2 Submission of proposed experimental onsite wastewater systems may be approved, disapproved, or approved on a trial basis for a specific period of time. Such approval or disapproval shall be at the sole discretion of the Department. Submission of an experimental design shall include data as to the efficiency of operation of the proposed experimental system. A monitoring plan shall be submitted for approval in addition to the system design.
- 22.3 Good management practices are additions or modifications to systems which will make such systems more efficient, or which could make such systems acceptable in certain soil conditions. Where good management practices are proposed for inclusion in a drip dispersal system, approval shall be at the sole discretion of the Department or its Authorized Agent.

SECTION 23. Fees

- 23.1 A fee shall be levied for the review of individual drip dispersal system permit application pursuant to A. C. A. § 14-236-116.
- 23.2 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).
- 23.3 For structures more than one thousand five hundred square feet (1,500 sq. ft.) and less than two thousand square feet (2,000 sq. ft.), the fee to review a permit application is forty-five dollars (\$45.00).
- 23.4 For structures more than two thousand square feet (2,000 sq. ft.) and less than three thousand square feet (3,000 sq. ft.), the fee to review a permit application is ninety dollars (\$90.00).
- 23.5 For structures more than three thousand square feet (3,000 sq. ft.) and less than four thousand square feet (4,000 sq. ft.), the fee to review a permit application is one hundred twenty dollars (\$120.00).
- 23.6 For structures four thousand (4,000 sq. ft.) and greater, the fee to review a permit application is one hundred fifty dollars (\$150.00)
- 23.7 For the alteration, repair, or extension of any individual drip dispersal system, the fee to review a permit application is thirty dollars (\$30.00).
- 23.8 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.
- 23.9 Auxiliary areas include garages, carports, porches, and other similar areas as determined by the Department.
- 23.10 Non-individual or multi structure permit submittals shall include a Cost Estimate Worksheet (EHP-17).

SECTION 24. Penalties

24.1 Any person, firm, corporation or association who violates any of the provisions of Act 402 of 1977, as Amended, or any Rules and Regulations promulgated under the authority of Act 402 of 1977, as Amended, shall upon conviction, be deemed guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars (\$100.00) nor more than one thousand dollars (\$1,000.00)

SECTION 25. Severability

25.1 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 26. Repeal

26.1 All Regulations and parts of Regulations in conflict herewith are hereby repealed.

SECTION 27. Certification

This will certify that the foregoing Rules Pertaining to Drip Dispersal Systems were adopted by the Arkansas Department of Health at a regular session of the Board of Health on TBD.

José Romero, MD
Secretary of Health
Arkansas Department of Health

TABLE 1
DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
MODERATE HYDRAULIC CONDUCTIVITY SOILS

<u>DEPTH TO RMF (inches)</u>	<u>Brief SWT</u>		<u>Mod SWT</u>		<u>Long SWT</u>	
	<u>(g/ft²/d)</u>	<u>FT²/100 Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100 Gal./Day</u>	<u>(g/ft²/d)</u>	<u>FT²/100 Gal./Day</u>
1	0.021	4761.9	0.007	14285.71	0.003	33333.33
2	0.041	2439.02	0.014	7142.86	0.007	14285.71
3	0.062	1612.9	0.021	4761.9	0.010	10000
4	0.082	1219.51	0.027	3703.7	0.014	7142.86
5	0.103	970.87	0.034	2941.18	0.017	5882.35
6	0.123	813.01	0.041	2439.02	0.021	4761.9
7	0.144	694.44	0.048	2083.33	0.024	4166.67
8	0.164	609.76	0.055	1818.18	0.027	3703.7
9	0.185	540.54	0.062	1612.9	0.031	3225.81
10	0.205	487.8	0.068	1470.59	0.034	2941.18
11	0.226	442.48	0.075	1333.33	0.038	2631.58
12	0.246	406.5	0.082	1219.51	0.041	2439.02
13	0.267	374.53	0.089	1123.6	0.044	2272.73
14	0.287	348.43	0.096	1041.67	0.048	2083.33
15	0.308	324.68	0.103	970.87	0.051	1960.78
16	0.328	304.88	0.109	917.43	0.055	1818.18
17	0.349	286.53	0.116	862.07	0.058	1724.14
18	0.369	271	0.123	813.01	0.062	1612.9
19	0.390	256.41	0.130	769.23	0.065	1538.46
20	0.410	243.9	0.137	729.93	0.068	1470.59
21	0.431	232.02	0.144	694.44	0.072	1388.89
22	0.451	221.73	0.150	666.67	0.075	1333.33
23	0.472	211.86	0.157	636.94	0.079	1265.82
24	0.492	203.25	0.164	609.76	0.082	1219.51
25	0.513	194.93	0.171	584.8	0.085	1176.47
26	0.533	187.62	0.178	561.8	0.089	1123.6
27	0.554	180.51	0.185	540.54	0.092	1086.96
28	0.574	174.22	0.191	523.56	0.096	1041.67
29	0.595	168.07	0.198	505.05	0.099	1010.1
30	0.615	162.6	0.205	487.8	0.103	970.87
31	0.636	157.23	0.212	471.7	0.106	943.4
32	0.656	152.44	0.219	456.62	0.109	917.43
33	0.677	147.71	0.226	442.48	0.113	884.96
34	0.697	143.47	0.232	431.03	0.116	862.07
35	0.718	139.28	0.239	418.41	0.120	833.33
36	0.738	135.50	0.246	406.5	0.123	813.01
37	0.750	133.33	0.253	395.26	0.126	793.65
38	0.750	133.33	0.260	384.62	0.130	769.23
39	0.750	133.33	0.267	374.53	0.133	751.88
40	0.750	133.33	0.273	366.3	0.137	729.93
41	0.750	133.33	0.280	357.14	0.140	714.29
42	0.750	133.33	0.287	348.43	0.144	694.44
43	0.750	133.33	0.294	340.14	0.147	680.27
44	0.750	133.33	0.301	332.23	0.150	666.67
45	0.750	133.33	0.308	324.68	0.154	649.35
46	0.750	133.33	0.314	318.47	0.157	636.94
47	0.750	133.33	0.321	311.53	0.161	621.12
48	0.750	133.33	0.328	304.88	0.164	609.76

TABLE 2
DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR
LOW HYDRAULIC CONDUCTIVITY SOILS

DEPTH TO RMF (inches)	Brief SWT		Mod SWT		Long SWT	
	(g/ft²/d)	FT²/100 Gal./Day	(g/ft²/d)	FT²/100 Gal./Day	(g/ft²/d)	FT²/100 Gal./Day
<u>1</u>	<u>0.014</u>	7142.86	<u>0.005</u>	20000	<u>0.002</u>	50000
<u>2</u>	<u>0.028</u>	3571.43	<u>0.009</u>	11111.11	<u>0.005</u>	20000
<u>3</u>	<u>0.042</u>	2380.95	<u>0.014</u>	7142.86	<u>0.007</u>	14285.71
<u>4</u>	<u>0.055</u>	1818.18	<u>0.018</u>	5555.56	<u>0.009</u>	11111.11
<u>5</u>	<u>0.069</u>	1449.28	<u>0.023</u>	4347.83	<u>0.012</u>	8333.33
<u>6</u>	<u>0.083</u>	1204.82	<u>0.028</u>	3571.43	<u>0.014</u>	7142.86
<u>7</u>	<u>0.097</u>	1030.93	<u>0.032</u>	3125	<u>0.016</u>	6250
<u>8</u>	<u>0.111</u>	900.9	<u>0.037</u>	2702.7	<u>0.018</u>	5555.56
<u>9</u>	<u>0.125</u>	800	<u>0.042</u>	2380.95	<u>0.021</u>	4761.9
<u>10</u>	<u>0.139</u>	719.42	<u>0.046</u>	2173.91	<u>0.023</u>	4347.83
<u>11</u>	<u>0.152</u>	657.89	<u>0.051</u>	1960.78	<u>0.025</u>	4000
<u>12</u>	<u>0.166</u>	602.41	<u>0.055</u>	1818.18	<u>0.028</u>	3571.43
<u>13</u>	<u>0.180</u>	555.56	<u>0.060</u>	1666.67	<u>0.030</u>	3333.33
<u>14</u>	<u>0.194</u>	515.46	<u>0.065</u>	1538.46	<u>0.032</u>	3125
<u>15</u>	<u>0.208</u>	480.77	<u>0.069</u>	1449.28	<u>0.035</u>	2857.14
<u>16</u>	<u>0.222</u>	450.45	<u>0.074</u>	1351.35	<u>0.037</u>	2702.7
<u>17</u>	<u>0.235</u>	425.53	<u>0.078</u>	1282.05	<u>0.039</u>	2564.1
<u>18</u>	<u>0.249</u>	401.61	<u>0.083</u>	1204.82	<u>0.042</u>	2380.95
<u>19</u>	<u>0.263</u>	380.23	<u>0.088</u>	1136.36	<u>0.044</u>	2272.73
<u>20</u>	<u>0.277</u>	361.01	<u>0.092</u>	1086.96	<u>0.046</u>	2173.91
<u>21</u>	<u>0.291</u>	343.64	<u>0.097</u>	1030.93	<u>0.048</u>	2083.33
<u>22</u>	<u>0.300</u>	<u>333.33</u>	<u>0.102</u>	980.39	<u>0.051</u>	1960.78
<u>23</u>	<u>0.300</u>	<u>333.33</u>	<u>0.106</u>	943.4	<u>0.053</u>	1886.79
<u>24</u>	<u>0.300</u>	<u>333.33</u>	<u>0.111</u>	900.9	<u>0.055</u>	1818.18
<u>25</u>	<u>0.300</u>	<u>333.33</u>	<u>0.115</u>	869.57	<u>0.058</u>	1724.14
<u>26</u>	<u>0.300</u>	<u>333.33</u>	<u>0.120</u>	833.33	<u>0.060</u>	1666.67
<u>27</u>	<u>0.300</u>	<u>333.33</u>	<u>0.125</u>	800	<u>0.062</u>	1612.9
<u>28</u>	<u>0.300</u>	<u>333.33</u>	<u>0.129</u>	775.19	<u>0.065</u>	1538.46
<u>29</u>	<u>0.300</u>	<u>333.33</u>	<u>0.134</u>	746.27	<u>0.067</u>	1492.54
<u>30</u>	<u>0.300</u>	<u>333.33</u>	<u>0.139</u>	719.42	<u>0.069</u>	1449.28
<u>31</u>	<u>0.300</u>	<u>333.33</u>	<u>0.143</u>	699.3	<u>0.072</u>	1388.89
<u>32</u>	<u>0.300</u>	<u>333.33</u>	<u>0.148</u>	675.68	<u>0.074</u>	1351.35
<u>33</u>	<u>0.300</u>	<u>333.33</u>	<u>0.152</u>	657.89	<u>0.076</u>	1315.79
<u>34</u>	<u>0.300</u>	<u>333.33</u>	<u>0.157</u>	636.94	<u>0.078</u>	1282.05
<u>35</u>	<u>0.300</u>	<u>333.33</u>	<u>0.162</u>	617.28	<u>0.081</u>	1234.57
<u>36</u>	<u>0.300</u>	<u>333.33</u>	<u>0.166</u>	602.41	<u>0.083</u>	1204.82
<u>37</u>	<u>0.300</u>	<u>333.33</u>	<u>0.171</u>	584.8	<u>0.085</u>	1176.47
<u>38</u>	<u>0.300</u>	<u>333.33</u>	<u>0.175</u>	571.43	<u>0.088</u>	1136.36
<u>39</u>	<u>0.300</u>	<u>333.33</u>	<u>0.180</u>	555.56	<u>0.090</u>	1111.11
<u>40</u>	<u>0.300</u>	<u>333.33</u>	<u>0.185</u>	540.54	<u>0.092</u>	1086.96
<u>41</u>	<u>0.300</u>	<u>333.33</u>	<u>0.189</u>	529.1	<u>0.095</u>	1052.63
<u>42</u>	<u>0.300</u>	<u>333.33</u>	<u>0.194</u>	515.46	<u>0.097</u>	1030.93
<u>43</u>	<u>0.300</u>	<u>333.33</u>	<u>0.199</u>	502.51	<u>0.099</u>	1010.1
<u>44</u>	<u>0.300</u>	<u>333.33</u>	<u>0.203</u>	492.61	<u>0.102</u>	980.39
<u>45</u>	<u>0.300</u>	<u>333.33</u>	<u>0.208</u>	480.77	<u>0.104</u>	961.54
<u>46</u>	<u>0.300</u>	<u>333.33</u>	<u>0.212</u>	471.7	<u>0.106</u>	943.4
<u>47</u>	<u>0.300</u>	<u>333.33</u>	<u>0.217</u>	460.83	<u>0.109</u>	917.43
<u>48</u>	<u>0.300</u>	<u>333.33</u>	<u>0.222</u>	450.45	<u>0.111</u>	900.9

QUESTIONNAIRE
FOR FILING PROPOSED RULES WITH THE
ARKANSAS LEGISLATIVE COUNCIL

DEPARTMENT/AGENCY _____
DIVISION _____
DIVISION DIRECTOR _____
CONTACT PERSON _____
ADDRESS _____
PHONE NO. _____ FAX NO. _____ E-MAIL _____
NAME OF PRESENTER AT COMMITTEE MEETING _____
PRESENTER E-MAIL _____

INSTRUCTIONS

- A. Please make copies of this form for future use.
- B. Please answer each question completely using layman terms. You may use additional sheets if necessary.
- C. If you have a method of indexing your rules, please give the proposed citation after "Short Title of this Rule" below.
- D. Rule" below.
- E. Submit two (2) copies of the Questionnaire and Financial Impact Statement attached to the front of two (2) copies of the proposed rule and required documents. Mail or deliver to:

Jessica C. Sutton
Administrative Rules Review Section
Arkansas Legislative Council
Bureau of Legislative Research
One Capitol Mall, 5th Floor
Little Rock, AR 72201

- 1. What is the short title of this rule?

- 2. What is the subject of the proposed rule?

- 3. Is this rule required to comply with a federal statute, rule, or regulation? Yes No
If yes, please provide the federal rule, regulation, and/or statute citation.

- 4. Was this rule filed under the emergency provisions of the Administrative Procedure Act?
Yes No
If yes, what is the effective date of the emergency rule? _____

When does the emergency rule expire? _____

Will this emergency rule be promulgated under the permanent provisions of the Administrative Procedure Act? Yes No

5. Is this a new rule? Yes No If yes, please provide a brief summary explaining the rule.

Does this repeal an existing rule? Yes No If yes, a copy of the repealed rule is to be included with your completed questionnaire. If it is being replaced with a new rule, please provide a summary of the rule giving an explanation of what the rule does.

Is this an amendment to an existing rule? Yes No If yes, please attach a mark-up showing the changes in the existing rule and a summary of the substantive changes. Note: The summary should explain what the amendment does, and the mark-up copy should be clearly labeled “mark-up.”

6. Cite the state law that grants the authority for this proposed rule? If codified, please give the Arkansas Code citation.

7. What is the purpose of this proposed rule? Why is it necessary?

8. Please provide the address where this rule is publicly accessible in electronic form via the Internet as required by Arkansas Code § 25-19-108(b).

9. Will a public hearing be held on this proposed rule? Yes No If yes, please complete the following:

Date: _____

Time: _____

Place: _____

10. When does the public comment period expire for permanent promulgation? (Must provide a date.)

11. What is the proposed effective date of this proposed rule? (Must provide a date.)

12. Please provide a copy of the notice required under Ark. Code Ann. § 25-15-204(a), and proof of the publication of said notice. _____

13. Please provide proof of filing the rule with the Secretary of State as required pursuant to Ark. Code Ann. § 25-15-204(e). _____

14. Please give the names of persons, groups, or organizations that you expect to comment on these rules? Please provide their position (for or against) if known.

FINANCIAL IMPACT STATEMENT

PLEASE ANSWER ALL QUESTIONS COMPLETELY

DEPARTMENT _____
DIVISION _____
PERSON COMPLETING THIS STATEMENT _____
TELEPHONE NO. _____ FAX NO. _____ EMAIL: _____

To comply with Ark. Code Ann. § 25-15-204(e), please complete the following Financial Impact Statement and file two (2) copies with the Questionnaire and proposed rules.

SHORT TITLE OF THIS RULE

1. Does this proposed, amended, or repealed rule have a financial impact? Yes No

2. Is the rule based on the best reasonably obtainable scientific, technical, economic, or other evidence and information available concerning the need for, consequences of, and alternatives to the rule?
Yes No

3. In consideration of the alternatives to this rule, was this rule determined by the agency to be the least costly rule considered? Yes No

If an agency is proposing a more costly rule, please state the following:

- a) How the additional benefits of the more costly rule justify its additional cost;

- b) The reason for adoption of the more costly rule;

- c) Whether the more costly rule is based on the interests of public health, safety, or welfare, and if so, please explain; and

- d) Whether the reason is within the scope of the agency's statutory authority, and if so, please explain.

4. If the purpose of this rule is to implement a federal rule or regulation, please state the following:

a) What is the cost to implement the federal rule or regulation?

Current Fiscal Year

Next Fiscal Year

General Revenue _____
Federal Funds _____
Cash Funds _____
Special Revenue _____
Other (Identify) _____

General Revenue _____
Federal Funds _____
Cash Funds _____
Special Revenue _____
Other (Identify) _____

Total _____

Total _____

b) What is the additional cost of the state rule?

Current Fiscal Year

Next Fiscal Year

General Revenue _____
Federal Funds _____
Cash Funds _____
Special Revenue _____
Other (Identify) _____

General Revenue _____
Federal Funds _____
Cash Funds _____
Special Revenue _____
Other (Identify) _____

Total _____

Total _____

5. What is the total estimated cost by fiscal year to any private individual, entity and business subject to the proposed, amended, or repealed rule? Identify the entity(ies) subject to the proposed rule and explain how they are affected.

Current Fiscal Year

Next Fiscal Year

\$ _____

\$ _____

6. What is the total estimated cost by fiscal year to state, county, and municipal government to implement this rule? Is this the cost of the program or grant? Please explain how the government is affected.

Current Fiscal Year

Next Fiscal Year

\$ _____

\$ _____

7. With respect to the agency's answers to Questions #5 and #6 above, is there a new or increased cost or obligation of at least one hundred thousand dollars (\$100,000) per year to a private individual, private entity, private business, state government, county government, municipal government, or to two (2) or more of those entities combined?
Yes No

If YES, the agency is required by Ark. Code Ann. § 25-15-204(e)(4) to file written findings at the time of filing the financial impact statement. The written findings shall be filed simultaneously with the financial impact statement and shall include, without limitation, the following:

- (1) a statement of the rule's basis and purpose;
- (2) the problem the agency seeks to address with the proposed rule, including a statement of whether a rule is required by statute;
- (3) a description of the factual evidence that:
 - (a) justifies the agency's need for the proposed rule; and
 - (b) describes how the benefits of the rule meet the relevant statutory objectives and justify the rule's costs;
- (4) a list of less costly alternatives to the proposed rule and the reasons why the alternatives do not adequately address the problem to be solved by the proposed rule;
- (5) a list of alternatives to the proposed rule that were suggested as a result of public comment and the reasons why the alternatives do not adequately address the problem to be solved by the proposed rule;
- (6) a statement of whether existing rules have created or contributed to the problem the agency seeks to address with the proposed rule and, if existing rules have created or contributed to the problem, an explanation of why amendment or repeal of the rule creating or contributing to the problem is not a sufficient response; and
- (7) an agency plan for review of the rule no less than every ten (10) years to determine whether, based upon the evidence, there remains a need for the rule including, without limitation, whether:
 - (a) the rule is achieving the statutory objectives;
 - (b) the benefits of the rule continue to justify its costs; and
 - (c) the rule can be amended or repealed to reduce costs while continuing to achieve the statutory objectives.



Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000
Governor Asa Hutchinson
José R. Romero, MD, Secretary of Health

PROPOSED REVISIONS TO THE RULES PERTAINING TO DRIP DISPERSAL SYSTEMS

November 12, 2021

BACKGROUND

Pursuant to Act 402 of 1977 the Department, through the Board of Health, has authority to promulgate the Rules Pertaining to Drip Dispersal Systems. These rules promote health through creating specifications for safe and adequate sewage disposal. The Board of Health voted to move forward with these amendments on July 22, 2021.

KEY POINTS

The proposed rule:

- Updates dispersal Specifications
- Cleans up various language
- Provides for the addition of a rules disclaimer

DISCUSSION

The following additions are being proposed for the Rules Pertaining to Drip Dispersal Systems.:

Add summary of rules disclaimer on page 2

○ IMPORTANT!

These rules are designed for use with individual residential, small commercial, or decentralized wastewater systems (defined as 10,000 gpd or less) utilizing drip dispersal.

The soil loading rates authorized in this rule shall only be utilized with the water usage tables of Appendix B in Rules and Regulations pertaining to Onsite Wastewater Systems.

When using these rules for subdivision development with a decentralized wastewater treatment and collection system, an estimated water usage rate of no less than 400 gallons per day per lot shall be utilized. Subdivisions utilizing individual onsite wastewater systems are still required to be designed on standard, conventional systems for subdivision review process.

- Add Table 1 DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR MODERATE HYDRAULIC CONDUCTIVITY SOILS

- Add Table 2 DRIP DISPERSAL FIELD SIZING AND LOADING RATE CHART FOR LOW HYDRAULIC CONDUCTIVITY SOILS

- Add 3.1.2

o Low hydraulic conductivity shall include soils with 40% or greater clay. Clay percentage shall be determined from in depth zone extending 6” above and 12” below installed drip tubing depth.

- Add 3.1.3

o No loading rates are available for low hydraulic conductivity soils with greater than 60% clay.

- Add 3.1.4

o Systems utilizing drip dispersal must maintain minimum of 9” separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit a moderate and/or long SWT.

- Add 3.1.5

o Systems utilizing drip dispersal must maintain minimum of 15” separation between drip tubing and any rock substrata (consolidated or fractured) for soils that exhibit only a brief SWT or do not exhibit a SWT.

- Replace “Appendix A” with “Appendix B of the Rules and Regulations Pertaining to Onsite Wastewater Systems” in 5.3

- Add “or dole type” to 13.1.

o The flush valve shall be a solenoid or dole type valve.

- Add 20.4

o Residential systems utilizing drip dispersal designs shall include a minimum of 500 sq. ft. of absorption area per bedroom regardless of SWT depths.

The following deletions are being proposed:

Remove “AND REGULATIONS” from Title

- Remove Section 22 Surface Discharging Drip Systems and renumber Sections 23-27

- Remove Table 1 Drip Dispersal Field Size chart

- Remove Appendix A Quantities of Wastewater Flow for Various Types of Establishments

- Remove original 3.1.1

o The minimum vertical separation between the drip tubing or installed trench bottom and any rock substrata (consolidated or fractured) shall be nine (9) inches or greater of undisturbed, natural soil.

- Remove original 3.1.2

o The percent clay of a soil may be interpreted as a Seasonal Water Table Class Clay percentage, as it related to seasonal water table interpretation, is cited in Section 8 of the Onsite Wastewater Regulations

- Remove the phrase “For lots three (3) acres or greater, the use of a surface discharge drip system may be considered. (See Surface Discharge Systems) from original 3.1.4

- Remove Section 7.1

o Timed dosing is the only method for controlling the dose cycles and volumes.

RECOMMENDATION

ADH recommends that the proposed amendments to the Rules Pertaining to Drip Dispersal Systems be approved.