APA-1
11/96

TRANSMITTAL SHEET FOR NOTICE OF INTENDED ACTION

Control 420 Department or Agency Alabama Department of Public Health

Rule Number 420-3-1
Rule Title Onsite Sewage Treatment & Disposal

___X___ New _____ Amend ___X___ Repeal _____Adopt by Reference

Would the absence of the proposed rule significantly harm or endanger the public health, welfare or safety?	Yes
Is there a reasonable relationship between the state's police power and the protection of the public health, safety or welfare?	No
Is there another, less restrictive method of regulation available that could adequately protect the public?	No
Does the proposed rule have the effect of directly or indirectly increasing the costs of any goods or services involved and, if so, to what degree?	No
Is the increase in cost, if any, more harmful to the public than the harm that might result from the absence of the proposed rule?	N/A
Are all facts of the rulemaking process designed solely for the purpose of and so they have as their primary effect, the protection of the public?	Yes
Does the proposed rule have an economic impact?	No

If the proposed rule has an economic impact, the proposed rule is required to be accompanied by a fiscal note prepared in accordance with subsection (f) of §41-22-23, Code of Alabama, 1975.

Certification of Authorized Official

I certify that the attached proposed rule has been in full compliance with the requirements of Chapter 22, Title 41, Code of Alabama, 1975, and that it conforms to all applicable filing requirements of the Administrative Procedure Division of the Legislative Reference Service.

Signature of Certifying Officer _____ Date 10/19/16

REC'D & FILED

OCT 20 2016

LEGISLATIVE REF SERVICE

FORM APA2
11/96

STATE BOARD OF HEALTH
NOTICE OF INTENDED ACTION

AGENCY NAME: Alabama Department of Public Health

RULE NUMBER AND TITLE: 420-3-1, Onsite Sewage Treatment and Disposal

INTENDED ACTION: Repeal and Replace

SUBSTANCE OF PROPOSED ACTION: Reorganization of rule set to include three distinct sections, new tables to help applicant through the permitting process and removal of applications so that changes to the applications can be made without initiating formal rule making process.

TIME, PLACE, AND MANNER OF PRESENTING VIEWS: A public hearing will be held on November 8, 2016, at 10:00 a.m. in Room 1540 at the Alabama Department of Public Health, RSA Tower, Suite 1540, 201 Monroe Street, Montgomery, AL 36104.

FINAL DATE FOR COMMENTS AND COMPLETION OF NOTICE: Written or oral comments will be received until the close of the record at 5:00 p.m. on December 16, 2016. All comments and requests for copies of the proposed amendments should be addressed to the contact person listed below.

CONTACT PERSON AT AGENCY: Thad Pittman, Division of Community Environmental Protection, Bureau of Environmental Services, Department of Public Health, 201 Monroe Street, Suite 1250, Montgomery, Alabama 36104. Telephone number (334) 206-5373.

P. Brian Hale, Agency Secretary

NEW

RULES OF STATE BOARD OF HEALTH

BUREAU OF ENVIRONMENTAL SERVICES

DIVISION OF COMMUNITY ENVIRONMENTAL PROTECTION

CHAPTER 420-3-1

ONSITE SEWAGE TREATMENT AND DISPOSAL

ADOPTED BY THE STATE BOARD OF HEALTH

_____

EFFECTIVE DATE _____

ALABAMA STATE BOARD OF HEALTH
ALABAMA DEPARTMENT OF PUBLIC HEALTH
BUREAU OF ENVIRONMENTAL SERVICES
DIVISION OF COMMUNITY ENVIRONMENTAL PROTECTION
ONSITE SEWAGE TREATMENT AND DISPOSAL
ADMINISTRATIVE CODE
CHAPTER 420-3-1

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420-3-1-.01 Definitions

(1) **ADEM** -- the Alabama Department of Environmental Management.

(2) **Advanced Treatment (Effluent)** -- treatment that results in a minimum level of effluent quality attainable by secondary treatment as defined in 40 C.F.R. §133.102 (2008) before discharge into the environment. See Secondary Effluent and Primary Effluent.

(3) **Advanced Treatment System (ATS)** -- a treatment unit that is capable of producing advanced treatment as defined by these rules.

(4) **ADPH** -- the Alabama Department of Public Health, the administrative arm of the Board, including variations in the name such as State of Alabama Department of Public Health, State Department of Public Health, State Health Department, or Public Health Department.

(5) **Agent** -- a legally authorized representative of another person.

(6) **Aggregate or Drain Media** -- hard, clean gravel or rock that has been washed with water under pressure over a screen during or after grading to remove fine material, and that has a hardness value of three or greater on Mohs Scale of Hardness (aggregate that can scratch a copper penny without leaving any residual rock material on the coin would have a Mohs hardness of three), or other equivalent ADPH approved media, material, or device used for the subsurface distribution of effluent. Properly sized loose aggregate has a minimum size of one-quarter (1/4) inch and a maximum size of two and one-half (2-1/2) inches. The drain media, material, or device is durable and inert; will maintain its integrity and not collapse or disintegrate with time; will not generate a harmful leachate; and will not be detrimental to the system or the environment.

(7) **Approval for Use** -- the authorization to use a system. This is issued by the LHD after all conditions of these rules and permits are satisfied.

(8) **Approved Material** -- a material or product that has been granted a Product Permit by ADPH or one that is listed in the International Plumbing Code or International Residential Code (IPC/IRC) for a specific use and when used as provided therein.

(9) **AOWB** -- the Alabama Onsite Wastewater Board.

(10) **Average Monthly Discharge Limitation** -- the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. (Zero discharge days are not included in the number of daily discharges measured, and a less than detectable test result is treated as a concentration of zero if the most sensitive Environmental Protection Agency [EPA]-approved test method was used).

(11) **Average Seasonal High Extended Saturation (ASHES)** -- a zone or layer 6 or more inches thick that becomes saturated at least once during most years for a significant duration, typically 20 or more consecutive days or 30 or more cumulative days. See Appendix A, Table 19.

(12) **Average Weekly Discharge Limitation** -- the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. (Zero discharge days are not included in the number of daily discharges measured, and a less than detectable result is treated as a concentration of zero if the most sensitive EPA-approved test method was used).

(13) **Bed** -- an infiltrative surface, square or rectangular in shape, with no internal trench walls. This definition does not include the term "pad" as used by certain proprietary treatment products.

(14) **Bedrock** -- a general term for the consolidated rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

(a) Hard bedrock is known as a lithic contact and is described as a boundary between soil and continuous, coherent, underlying material. The underlying material shall be sufficiently coherent to make hand-digging with a spade impractical. If it is a single mineral, its hardness is three (Mohs scale), and gravel size chunks that do not disperse with 15 hours shaking in water or sodium hexametaphosphate solution.

(b) Soft bedrock is known as a paralithic contact, and is similar to a lithic contact except that it is softer and can be dug with difficulty with a spade. If a single mineral has a hardness less than three (Mohs scale), and gravel size chunks will partially disperse within 15 hours shaking in water or sodium hexametaphosphate solution.

(c) Practical application of the Mohs scale: When hit with a spade, a definite ring indicates a Mohs rating of three or greater. If no ring but more of a thud occurs, it indicates a rating less than three.

(15) **Best Management Practice** -- an activity or action, based on a formal plan, implemented in the approved manner, and properly maintained, that protects the public's health and the environment.

(16) **Board** -- the Alabama State Board of Health, as defined by § 22-2-1, *Ala. Code 1975.*

(17) **Building Development** -- a change in the characteristics of a lot, tract or parcel of land, or other real property by an action including the sale of or conveyance of any interest in the land that could be expected to lead to human habitation or creation of an establishment. Such change includes, but is not limited to, clearing plant life from property, other than minimal clearing for soil and substrate evaluation; alteration to any degree of the naturally occurring topography of the property; constructing roads; installing surface drainage systems or similar facilities; providing utility services or connections within the lot, tract, or parcel of land; constructing or placing shelters or dwellings, or providing sites for the same; installing or accessing public or private water or public or private sewer systems; planning or constructing individual, or other means of sewage disposal; recording the plat of the property as a large-flow development of lots of any size in the Office of the Probate Judge; recording an easement or covenant relative to an OSS for an individual lot; filing a plot plan with the LHD; or openly or by implication advertising a lot, tract, or parcel as being for residential, overnight recreational, or establishment uses, or as being part of an existing or planned large-flow development.

(18) **Building Drain** -- the part of the lowest piping of a drainage system which receives the discharge from waste drainage pipes inside the walls or under a habitable structure and conveys it to the building sewer, ending 30 inches from the wall of the structure.

(19) **Building Sewer** -- the part of a structure's drainage system which extends from the end of the building drain, and which receives the discharge of a building drain and conveys it to a public or private sewer system.

(20) **Certificate of Economic Viability** -- a document issued by the Alabama Public Service Commission that certifies the financial viability of a wastewater (sewage) management entity pursuant to the requirements of § 22-25B-1 et al., *Ala Code 1975.*

(21) **Cesspool** -- an excavation in the ground, with or without a waterproof lining into which sewage that has not received at least primary treatment is emptied.

(22) **Cluster Wastewater System** -- see Onsite Sewage Treatment and Disposal System (OSS).

(23) **Community Wastewater System** -- see Onsite Sewage Treatment and Disposal System (OSS).

(24) **Composting Toilet** -- a dry closet that combines human waste with optional food waste in an aerobic, vented environment to cause decomposition of the waste by dehydration and digestion of organic matter, yielding a composted residue that is removed for sanitary disposal.

(25) **Constructed Wetland** -- a man-made, engineered, marsh-like area that is designed, constructed, and operated to treat sewage by optimizing physical, chemical, and biological processes of natural ecosystems.

(26) **Construction Plan** -- a clear and legible scaled layout drawing, prepared and sealed by an engineer. Details are outlined in the ADPH Form CEP-2.

(27) **Conventional Onsite Sewage System (OSS)** -- a system for treating sewage that involves the use of a septic tank or proprietary advanced treatment unit that has been issued a Product Permit followed by non-pressurized dispersion of effluent in an EDF such that the trench bottom and sidewalls are located completely in unaltered natural soil and the bottom of the trench is at a depth not greater than 60 inches below the unaltered natural ground surface. Such systems do not require an engineer design. A shallow placement system is a Conventional OSS. See the definition of Shallow Placement System.

(28) **Crossover** -- a non-perforated pipe that connects one EDF pipe to another installed as specified in these rules or in the applicable product manuals.

(29) **Design Flow** -- the flow of sewage to a system dictated by good engineering practices, experience, or literature on which the design is based. This flow is generally considered to be the average daily flow that the treatment system and disposal field will receive with appropriate consideration given to maximum flow periods, equalization, and organic loading.

(30) **Developer** -- a person who engages in building development.

(31) **Drainage System (Surface)** -- a drainage ditch, drainage way, drainage structure, swale, trench, culvert, or any apparatus or method for directing the flow of

water over land. See Rule 420-3-1-.88 Setback or Separation Distances paragraph (4).

(32) **Drainage Way** -- a general term for a course or channel along which water moves in draining an area. Also a soils term restricted to small, roughly linear, or arcuate depressions that move concentrated water at some time, and either lacks a defined channel (e.g., head slope or swale) or has a small defined channel (e.g., low order stream). See also Gully and Ravine.

(33) **Dwelling** -- a house, manufactured or mobile home or house trailer, shelter, structure or building, or portion thereof, that is or could be expected to be occupied in whole or in part as the home, residence, or sleeping place of one or more person(s). This term does not include recreational vehicles or motor homes or coaches.

(34) **EDF Pipe** -- perforated pipe or ADPH-approved equivalent placed in the EDF for the purpose of dispersing effluent.

(35) **Effective Liquid Capacity** -- the liquid volume of a tank below the liquid level line (outlet invert).

(36) **Effluent** -- the discharge from a wastewater (sewage) treatment device. See Primary Effluent Standard, Secondary Effluent Standard, and Advanced Treatment.

(37) **Effluent Line** -- a watertight pipe in an OSS that conveys wastewater (sewage) from one component, such as a septic tank or treatment unit, to another, such as an EDF, distribution box, or header line.

(38) **Effluent Disposal Field (EDF)** -- a minimum area as calculated per these rules into which sewage treated to at least Primary Effluent Standards is dispersed into the soil.

(39) **Engineered OSS** -- all systems, other than those meeting the definition of Conventional OSS, that require engineer design. This includes, but is not limited to, mounds, advanced treatment (except proprietary advanced treatment followed by a conventional system), drip irrigation, constructed wetlands, and systems with a septic tank, followed by field lines where any portion of the field line protrudes above the unaltered natural soil surface. See Rule 420-3-1-.08 Engineer Design Required.

(40) **Establishment** -- a facility, other than a dwelling, that is generating or could be expected to generate sewage or high-strength sewage, or graywater sewage.

(41) **Failure** -- a breakage, weakness, or defect that causes a malfunction in the treatment, distribution, disposal, or dispersal of effluent into the EDF, or that causes a wash-out or disruption of the EDF as evidenced by one of the following:

(a) Surfacing or ponding of effluent at, over or around any component of the OSS.

(b) Backing up of sewage within a dwelling or establishment as a result of a malfunction of the OSS.

(c) The contamination of ground or surface waters by an OSS.

(42) **Flood Easement** -- an entitlement in perpetuity allowing the holder of the easement to flood and inundate land up to a specified contour elevation.

(43) **Flood-prone Area** -- an area that is generally subject to being flooded or ponded more than 50 times in 100 years or greater than a 50 percent chance in any year. This definition refers to an area that is subject to frequent flooding as observed, or as indicated by soil characteristics defined in the standards of the National Soil Survey Handbook, United States Department of Agriculture.

(44) **Flooding** -- the temporary covering of the soil surface by flowing or standing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources, and of a severity that damages or prohibits the normal use of the property. The frequency of the event determines the limitation assigned to each category. See Ponding.

(a) Rare -- flooding unlikely but possible under unusual weather conditions; 1 to 5 percent chance of flooding in any year or 1 to 5 times in 100 years.

(b) Occasional -- flooding occurs infrequently under usual weather conditions; 5 to 50 percent chance of flooding in any year or more than 5 to 50 times in 100 years. (Moderate limitations.)

(c) Frequent -- flooding is likely to occur often under usual weather conditions; more than a 50 percent chance of flooding in any year or more than 50 times in 100 years. (Severe limitations.)

(45) **GPD** -- gallons per day.

(46) **GPM** -- gallons per minute.

(47) **Gravel Field Standard EDF** -- the standard sizing of the EDF when gravel is used as the disposal medium as required by Rule 420-3-1-.79 Gravel Field Standard EDF Sizing.

(48) **Grease Trap** -- a watertight tank or receptacle in which the grease present in sewage is intercepted.

(49) **Gully** -- a small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water usually during and immediately following heavy rains. A gully is an obstacle to wheeled vehicles and too deep (greater than 18 inches) to be obliterated by ordinary tillage. See also Drainage Way and Ravine.

(50) **High Shrink Swell Soils** -- soils that have relatively high clay content and a dominant mineral type that causes significant swelling when wet and shrinking when dry such as montmorillonite, which is a member of the smectite family. These soils are inherently slowly or very slowly permeable. Most Vertisols and Vertic Intergrades have a high shrink-swell potential. COLEs (Coefficient of Linear Extensibility) are usually greater than or equal to 0.09.

(51) **Holding Tank** -- a water-tight receptacle specifically manufactured for the purpose of the collection and temporary retention of sewage. This term does not include self-contained sewage collection tanks on a recreational vehicle or travel trailer.

(52) **Hydric Soils** -- soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register July 13, 1994). Hydric soil

determinations shall be made using the USDA-NRCS document, "Field Indicators of Hydric Soils in The United States," herein adopted by reference.

(53) **Immediate Family** -- an individual's children, including adopted children and step children, brothers, sisters, spouse, parents, including adoptive parents and spouse's parents. The term also includes those in a guardian relationship and relatives that require special care because of age, sickness, or infirmity.

(54) **International Plumbing Code or International Residential Code (IPC/IRC) (Plumbing Chapters)** -- the latest version of the International Plumbing Code and the plumbing chapters of the International Residential Code published by the International Code Council, Inc., which is herein adopted by reference.

(55) **Landform** -- any physical, recognizable form or feature on the earth's surface having a characteristic shape and range in composition, and produced by natural causes; it can span a wide range in size (e.g., dune encompasses both parabolic dune, which can be several tens-of-meters across, as well as seif dune, which can be up to 100 kilometers long). Landforms provide an empirical description of similar portions of the earth's surface.

(56) **Large-Flow Development** -- a building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 13 bedrooms or more in a dwelling or dwellings, or an establishment with a design flow of more than 1,800 gpd. Unless subject to an exception provided in these rules, a group of residences or establishments that are constructed in phases and that will share infrastructures such as roads, entrances, water lines, etc., are considered to be a Large-Flow Development. This flow is development flow and not system flow. It establishes planning requirements and it is the combined flow in the planned development whether it is going to one or more OSS systems. See Rule 420-3-1-.16 Exceptions to the Large-Flow Development Rules.

(57) **Large-Flow OSS** -- any system that has a design flow of more than 1,800 gpd but less than 15,000 gpd or that serves 13 bedrooms or more.

(58) **Laundry Waste** -- the liquid waste from a clothes washing machine, laundry sink, or other receptacle used for laundering purposes. Also referred to as one type of graywater.

(59) **Local Health Department (LHD)** -- a county health department.

(60) **Lot** -- a legally described parcel of land.

(61) **Lot Modification** -- an activity that alters a lot or parcel of land in a manner which changes the natural character of the land. Lot modification is considered to be building development pursuant to these rules and may improve or impair a site's ability to use an OSS.

(62) **Maintenance** -- recommended or required periodic actions to maintain a system such as pumping the tank, cleaning or replacing the filter, or replacing a pump. Maintenance activities are not to be considered a repair. Activities to evaluate or improve structural integrity of the tank or lid or repairing a baffle, inlet, or outlet fixture, are considered maintenance and not a repair. See Repair and Replacement.

(63) **Mine Spoil** -- the waste material consisting of earth and rock excavated from a mine and generally left or placed in no specific order. Materials usually vary greatly in size and percentages. Excessive voids between coarse fragments and over

compaction of soil size materials are two of the major challenges for wastewater (sewage) disposal.

(64) **Minimum Vertical Separation** -- the minimum allowable vertical separation between the bottom of the trench and a restrictive layer or horizon.

(65) **Mound Systems** -- see Rule 420-3-1-.94 Control Field Mound Systems or Rule 420-3-1-.97 Recognized Mound Systems.

(66) **Multi-Family Dwelling** -- a dwelling intended to be occupied by more than one family, living as separate family units, and in which the rooms are occupied individually, or in apartments, suites or groups, including, but not limited to, tenant houses, flats, houses, extended-stay hotels, condominiums, kitchenette apartments, and other dwellings similarly occupied.

(67) **Natural Ground Surface** -- the naturally occurring surface of the earth which has not been significantly altered or disturbed by artificial means such as cutting and/or filling (does not include plowing for agricultural purposes). Except where severely eroded, the ground surface normally begins with a dark, organic matter enriched layer (topsoil) of varying thickness followed usually with a brighter colored layer (subsoil) increasing in clay content with depth.

(68) **Observation Pits** -- soil inspection trenches that shall be a minimum of 3 feet wide and 60 inches deep unless rock is encountered. Pits shall be constructed in such a fashion as to be safely accessible for the evaluator.

(69) **Onsite Sewage Treatment and Disposal System (OSS)** -- a system that collects, transports, treats, and provides subsurface dispersal of sewage from establishments or dwellings. Subsets of this definition are:

(a) Cluster Wastewater System -- a wastewater (sewage) system permitted by ADPH with a design flow of 15,000 gpd or less that discharges to land (groundwater) via a subsurface disposal system and that includes common collection, treatment and disposal technology, components and equipment, including but not limited to pipes, pumps, tanks, trenches, etc., for the purpose of treating wastewater (sewage) generated by more than four dwellings or establishments.

(b) Small-Flow Cluster Wastewater System -- an OSS permitted by ADPH which serves four or fewer dwellings or apartments. For permitting and planning purposes, it shall be inclusive of the entire development and is equivalent to a Small-Flow OSS with an average daily design flow of 1,800 gpd or less, or that serves 12 bedrooms or less.

(c) Community Wastewater System -- a wastewater (sewage) system permitted by ADEM with a design flow of more than 15,000 gpd that discharges to land (groundwater) via a subsurface disposal system and that includes common collection, treatment and disposal technology, components and equipment, including, but not limited to pipes, pumps, tanks, trenches, etc., for the purpose of treating wastewater (sewage).

(70) **Pad** -- an alternative trench design used by certain proprietary treatment products, such as peat treatment systems, as a means of effluent disposal.

(71) **Permeability** -- the long term rate at which soil will accept water.

(72) **Performance Permit** -- a permit required for Large-Flow Systems and other systems where the Approval for Use alone is not adequate to protect the public's health or the environment. This permit may also be referred to as an operational permit.

(73) **Person** -- an individual, firm, partnership, corporation, state agency, municipal corporation, party, company, association, or other public or private legal entity.

(74) **Pits** -- see Observation Pits.

(75) **Pit Privy** -- an enclosed, non-portable toilet, into which non-water-carried human waste is deposited to a subsurface storage chamber that is not watertight.

(76) **Plat (Preliminary)** -- a preliminary plat is a to-scale layout of the proposed development prepared by a professional land surveyor showing approximate locations of lots, streets, drainage, and other improvements.

(77) **Plat (Surveyed)** -- a surveyed plat is a property drawing or map, prepared by a professional land surveyor, and drawn to a scale of 1 inch equal to no more than 100 feet. It shall be suitable for recording and depict the location and boundaries of the parcel and of all lots (if subdivided) and include all details required by the appropriate application requirements of the ADPH Forms CEP-2 and CEP-3.

(78) **Plot Plan** -- a to-scale drawing, complying with the application requirements of the ADPH Forms CEP-2 and CEP-3, Section A, Part 1. This drawing shall identify the size and location of required items in these applications with a reasonable degree of accuracy.

(79) **Plumbing Code** -- the local plumbing code or if no local plumbing codes exist, the International Plumbing Code.

(80) **Ponding** -- standing water in a depression that is removed only by percolation, evaporation, and/or transpiration and that is of sufficient size that it lasts more than seven days, or is of sufficient size or duration to adversely affect the operation of an OSS.

(81) **Primary Effluent Standard** -- effluent of a lower quality than secondary effluent usually produced by a septic tank with no further treatment. For the average household, it is usually in the range of 30 day average of 200 to 250 milligrams per liter (mg/l) of Biological Oxygen Demand (BOD). See also Secondary Effluent Standard and Advanced Treatment.

(82) **Private Sewer System** -- a system, including an OSS, which serves an individual dwelling or one or more establishments so long as all the establishments share a common owner, such as a shopping center. Compare to Public Sewer System.

(83) **Product Permit** -- a permit of approval for products (proprietary and non-proprietary), to be used mostly in Small-Flow Systems at individual homes. These products, in most cases, will not be permitted under a Performance Permit. Systems or components that are used in large systems that hold a Performance Permit do not have to hold a Product Permit.

(84) **Proprietary Product** -- a product owned by a private individual or corporation under a trademark or patent.

(85) **Public Health Environmental Soil Specialist (PHESS)** -- a full-time employee of ADPH or a LHD who has completed the required training, testing, and certification requirements for evaluating EDF sites using soil morphology.

(86) **Public Sewer System** -- a properly permitted sewer system to which the public has access, be it privately or publicly owned. The definition includes Cluster and Community Systems as defined in § 22-25B-1, *Ala. Code 1975*, and is sometimes referred to as a sanitary sewer system. Compare to Private Sewer System.

(87) **Public Water Supply** -- a water supply system that is defined and permitted by ADEM as a Public Water System.

(88) **Ravine** -- a small stream channel that is narrow, steep-sided, commonly V-shaped in cross section and larger than a gully, cut in unconsolidated materials. See also Drainage Way and Gully.

(89) **Recreational Vehicle (RV) or Motor Home or Coach** -- a vehicle manufactured or modified for temporary human habitation or shelter, that is self-propelled or towed, which may have self-contained fixtures and facilities for collecting wastewater (sewage). The vehicle may be used from time to time for recreational, business, or routine transportation purposes, and which, by its design or fabrication, is neither intended for permanent or long-term placement, nor to be rendered immobile. This term includes recreational trailers and campers, but excludes manufactured or mobile homes. See Rule 420-3-1-.56 Recreational Vehicle/Camp Sites.

(90) **Recreational Vehicle (RV) Park** -- a park that meets the requirements of Rule 420-3-1-.56 Recreational Vehicle/Camp Sites.

(91) **Redoximorphic (Redox) Features** -- features formed by the processes of reduction, translocation, and/or oxidation of iron (Fe) and manganese (Mn) oxides. These features were formerly called mottles and low chroma colors. Redox features are indicators of current conditions of saturation, usually of significant duration.

(92) **Repair** -- a corrective action taken to repair, improve, or reestablish a component of an Onsite Sewage System where the OSS design parameters (BOD, Flow, etc) have not changed. A component is any part of an OSS which is not defined as maintenance.

(93) **Replacement** -- an action to replace an Onsite Sewage System when BOD or Flow, etc., has changed, when requested by the applicant, or when there is an overriding environmental or health reason to require a total replacement of the OSS. A replacement OSS is considered a new system and shall meet all current rules of a new OSS.

(94) **Replacement Effluent Disposal Field (REDF)** -- a minimum defined and documented area, separate and apart from the EDF, set aside to be used in case the EDF has to be replaced. See Effluent Disposal Field (EDF).

(95) **Responsible Person** -- in the case of a private dwelling, it is the property owner, or his or her authorized agent. In the case of a corporation, it is a principal executive officer. In the case of a partnership, it is a general partner. In the case of a

sole proprietorship, it is the proprietor. In the case of a municipal, state, federal, or other public entity, it is either a principal executive officer or ranking elected official.

(96) **Restrictive Layer or Horizon (Water Movement)** -- a layer in the soil more than 3 inches thick that significantly retards the downward movement of water or hinders acceptable treatment and renovation of effluent. A restrictive layer or horizon generally has redoximorphic features associated with it, known as ASHES. Also other features such as rock, or soil permeability could form a restrictive layer or horizon that would retard the downward movement of water and restrict the use of or dictate the design of an EDF.

(97) **Rock** -- see Bedrock.

(98) **Sand Lined System (SLS)** – a treatment system comprised of proprietary distribution media and system sand that is capable of producing effluent that meets secondary effluent as defined by these rules.

(99) **Sanitary Sewer System** -- a public or private sewer system. See Cluster Wastewater System, Small-Flow Cluster Wastewater System, and Community Wastewater System.

(100) **Sanitary Station** -- a facility for receiving and disposing of sewage from motor homes or coaches, recreational vehicles, travel trailers, auto campers, or other temporary-type dwellings or shelters. The term may also be referred to as a dump station.

(101) **Saturation** -- a condition where the larger soil pores are full or almost full of water, having a positive or zero pressure potential. Thus, water is allowed to freely flow into an open bore hole, except in cases where certain soils are dominated by small pores.

(102) **Scarify** -- to break up and loosen the surface of the soil in preparation for the application of fill material.

(103) **Secondary Effluent Standard** -- effluent that meets the secondary effluent standards as defined by 40 CFR § 133.102 and ADEM Water Quality Criteria Rule 335-6-10-.08, of a 30 day average of 30 milligrams per liter (mg/l) of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) a 7 day average of 45 mg/l of BOD and (TSS) and 6 to 9 pH before discharge into the environment. See also Primary Effluent and Advanced Treatment.

(104) **Septage** -- the solids and liquids removed during the pumping of an OSS pre-treatment device. The term septage, as used herein, excludes solids and liquids from marine sanitation, grease from establishments, and portable toilet wastes which have not been pretreated.

(105) **Septage Sludge** -- slushy matter or sediment such as that precipitated by the treatment of wastewater (sewage). For purposes of these rules, this term applies solely to the residue in septage in contrast to the term sewage sludge, which is residue overseen by ADEM.

(106) **Septic Tank** -- a tank that receives sewage and that meets the requirements of septic tanks as provided by these rules.

(107) **Sewage** -- for the purpose of these rules, the term refers to the following:

(a) Sewage -- waterborne or non-waterborne waste of similar composition and strength as may be found in the typical residence or dwelling and that has a wastewater (sewage) concentration of BOD5 - 250 mg/l, Total Suspended Solids - 250 mg/l, Ammonia - 10 mg/l, and Total Phosphorus - 9 mg/l.

(b) High Strength Sewage -- waterborne or non-waterborne waste from establishments, such as kitchen waste, that is of similar composition but of higher strength than would be found in a typical dwelling. This may be permitted at the discretion of ADPH.

(c) Graywater -- that portion of wastewater (sewage) generated by a water-using fixture, excluding toilet and food preparation waste from dwellings and regulated establishments. It is of similar composition but of lower strength than sewage. See Laundry Waste.

(108) Sewage Tank -- a component of an OSS that meets the requirement of Rule 420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications.

(109) **Sewage Tank Pumper Facility** – land, buildings, and other appurtenances used for flushing, cleaning and deodorizing of carrier tanks, and cleaning implements and equipment used in the pumping of septic and sewage tanks, and grease traps. A facility is also where pumper trucks are housed when not in use.

(110) **Shallow Placement System** -- a Conventional OSS in that the trench bottom and sidewalls are located in unaltered natural soil but that requires some amount of fill material above the EDF in order to provide a minimum soil cover of 12 inches.

(111) **Shoulder** -- the profile position that forms the convex, erosional surface near the top of a hillslope. If present, it comprises the transition zone from summit to backslope.

(112) **Shrink-Swell Potential** -- the relative change in soil volume to be expected with changes in moisture content. Soils that have relatively high clay content (greater than 30 percent clay) and dominant smectitic clay mineralogy shrink and swell markedly upon wetting and drying and are inherently slowly or very slowly permeable. A "high" shrink-swell potential is indicated by a Coefficient of Linear Extensibility (COLE) of 0.06-0.09. A COLE of more than 0.09 defines the "very high" shrink-swell class. Most Vertisols and soils in Vertic subgroups have a "high" or "very high" shrink-swell potential.

(113) **Single-Family Dwelling** -- a house, manufactured or mobile home or house trailer, shelter, structure or building, or portion thereof, which is occupied as a distinct and separate home, residence, or sleeping place of one or more persons.

(114) **Sinkhole** -- a natural depression formed as a result of subsurface removal of soil or rock materials and causing the formation of a collapse feature that exhibits internal drainage. The existence of a sinkhole is typically indicated by closed depression contour lines on a United States Geological Survey 7.5-minute quadrangle topographic map, or as determined by field investigation. A sinkhole begins at the outer margins of the depression, as determined at the site by a professional geologist.

(115) **Slope (Gradient)** -- the difference in elevation between two points and expressed as a percentage of the distance between those points. For example, a

difference in elevation of 1 meter over a horizontal distance of 100 meters is a slope of 1 percent. Slope gradient influences the retention and movement of water, the potential for soil slippage and accelerated erosion, the ease with which machinery can be used, soil-water states, and the engineering uses of the soil. Different slope positions (geomorphic components) and landform shapes handle surface and sub-surface water differently and shall be considered when locating EDF areas. Concave shaped landforms should be avoided. Drainage ways are unsuitable and shall be avoided.

(116) **Small-Flow Development** -- a building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 12 or fewer bedrooms in a dwelling or dwellings or an establishment or establishments with an average daily design flow from all planned or projected wastewater (sewage) systems of 1,800 gpd or less. This flow is development flow and not system flow. The design flow establishes planning requirements, and it is the combined flow of all systems in the planned development whether it is going to one or more systems.

(117) **Small-Flow OSS** -- a system with an average daily design flow of 1,800 gpd or less, or that serves 12 bedrooms or less.

(118) **Smectitic** -- a group of clay minerals, including montmorillonite, that causes soils to exhibit a high degree of shrinking and swelling when it is the dominant clay mineral occurring in the soil.

(119) **Spa** -- a water-holding unit designed for recreational and therapeutic use that may be drained, cleaned, or refilled for each use.

(120) **State Health Officer** -- the Health Officer for the State of Alabama, as defined by §22-2-8, *Ala. Code 1975,* or his or her designee.

(121) **Structure**-- any site built or any manufactured building including, but not limited to, dwellings, offices, stores, establishments, manufacturing facilities, storage buildings, warehouses, barns, garages and any other roofed area where it would be expected that sewage or high-strength sewage will be generated, or that will have an impact on a system's EDF or REDF.

(122) **Summit** -- the topographically highest position of a hillslope profile with a nearly level (planar or only slightly convex) surface. Compare with shoulder, backslope, footslope, toeslope, and crest. A general term for the top or highest area of a landform such as a hill, mountain, or tableland. It usually refers to a high interfluve area of relatively gentle slope that is flanked by steeper slopes, e.g., mountain fronts or tableland escarpments.

(123) **Surface Saturated Soils** -- soils that, due to their inherent wetness, cannot be used for a conventional OSS. Examples are soils in wetlands, hydric soils, and soils with less than 6 inches to Average Seasonal High Extended Saturation (ASHES).

(124) **Surface Water** -- water above the surface of the ground, including, but not limited to, waters of a bay, river, stream, watercourse, pond, lake, swamp, wetland, spring or artesian well, located partially or wholly within the state, including the Gulf of Mexico. Generally these features exhibit some characteristic(s) indicating a degree of permanence (i.e., a river bank, a depression that holds water for a few days after a rain, or a wet weather spring does not qualify.)

(125) **Surveyed Plat** -- see Plat (Surveyed).

(126) **Temporary Bench Mark (TBM)** -- a defined and recognizable point of reference which has a reasonable chance of surviving its time of need, and from which relative elevations can be established.

(127) **Terrace (Geomorphology)** -- a step-like surface, bordering a valley floor or shoreline that represents the former position of a flood plain, lake or seashore. The term is usually applied to both the relatively flat summit surface (tread), cut or built by stream or wave action, and the steeper descending slope (scarp, riser), graded to a lower base level of erosion.

(128) **Trash Trap** -- a tank required by some designs to precede an advanced treatment system that may or may not meet non-structural septic tank specifications, depending on the requirements of the advanced treatment device manufacturer.

(129) **Upset** -- an exceptional incident in which there is an unintentional and temporary noncompliance with permit discharge limitations because of factors beyond the control of the permittee. An upset does not include noncompliance caused by operational error, an improperly designed treatment facility, an inadequate facility, lack of preventive maintenance, or careless or improper operation.

(130) **Vertisols (and Vertic Soil Characteristics)** -- soils which contain clays dominated by high shrink and swell and that meet the requirements set forth by the USDA publication "Soil Taxonomy" or have vertic characteristics as described by the same. See also Shrink Swell Potential.

(131) **Water of the State** -- subsurface or surfaced ground water, including aquifers, and surface water of a river, stream, watercourse, reservoir, pond, lake, or coast, wholly or partially within the state, natural or artificial. This does not include waters that are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless the owner or others use such waters in the conduct of interstate commerce.

(132) **Wastewater** -- see Sewage.

(133) **Wastewater Management Entity** -- a public or private entity that exercises sole responsibility for the operation and maintenance of one or more Cluster or Community Wastewater Systems.

(134) **Wet Season** -- that portion of the year receiving the highest amount of rainfall, creating the most unfavorable conditions for the proper functioning of an OSS because of soil characteristics such as, but not limited to, shrink-swell potential, perched or apparent high water table, or other such conditions. Generally, the wet season in Alabama is December 1 through April 30, but it may vary during the year in a given location.

(135) **Wet Season Water Table** -- the water table elevation occurring during that portion of the year that receives the highest amount of rainfall, as observed during actual measurement by a soil classifier or engineer or as determined by a soil classifier based on established soil indicators.

(136) **Wetland --** a transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for long enough periods to produce hydric soils and support hydrophytic vegetation. See also Ponding.

Authors: Thad Pittman, Phyllis Mardis, Lem Burell, James Congleton
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.02 Use of an Onsite Sewage Treatment and Disposal System (OSS)

(1) A dwelling, establishment, or any other facility shall include toilet and plumbing facilities in accordance with the local plumbing code. If there is no local plumbing code, the provisions of the International Plumbing Code (IPC) shall apply. Where the plumbing code differs from these rules, these rules shall apply. The sanitary drainage piping shall be connected to a properly permitted system of sewage disposal used solely to treat and dispose of sewage.

(2) It is the responsibility of the owner of an OSS to be familiar with what should not go into a system, to not take any action that would adversely impact the system, and to properly maintain it in accordance with the recommendations of the designer and/or manufacturer.

(3) A typical residential OSS should be pumped every three years. Systems treating higher-strength waste loads, such as generated by garbage grinders, should be pumped more frequently. The septic tank effluent filter should be cleaned regularly.

(4) Advanced treatment systems shall be maintained according to manufacturer's recommendations and the conditions of the Performance Based Permit, if applicable.

(5) Non-waterborne systems and holding tanks shall only be used in accordance with Rules 420-3-1-.43 Non-Waterborne Systems: Pit Privies and Portable Toilets, and 420-3-1-.44 Composting and Incinerating Toilets. When non-waterborne systems and holding tanks are used for collecting toilet waste, an approved method of graywater disposal shall also be provided.

(6) The use of a cesspool is prohibited.

(7) Prohibited placements of the EDF do not apply to the placement of other parts of an OSS in prohibited areas, if, in the opinion of ADPH or the LHD, the overall operation of the OSS is not affected by such placement.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.03 General Requirements for an OSS

(1) Any person who installs, repairs, manages, and/or certifies an OSS shall be licensed by the Alabama Onsite Wastewater Board (AOWB) or be exempt from such licensure pursuant to § 34-21A-1 et seq., *Ala. Code 1975.*

(2) No person shall occupy, rent, lease, sell, possess, or allow a building to be occupied as a single or multifamily dwelling, establishment, business, office, place of employment, or place of assembly unless said building is provided with an approved sewage disposal system and the appropriate toilet facilities.

(3) An OSS shall be properly sited, designed, constructed, installed, operated, and maintained so that it:

(a) Does not create an actual or potential public health hazard or nuisance, and does not attract flies, mosquitoes, rats, or other wild or domestic animals.

(b) Does not endanger or contaminate a water of the state.

(c) Does not violate federal or state laws or regulations governing water pollution or sewage disposal.

(4) A lot or parcel on which an OSS is located or proposed shall not be altered or built upon so that the EDF or the REDF are adversely affected, nor shall the site be improved or developed in excess of its capacity to properly treat and/or absorb effluent in the quantities and by a means provided for by these rules. The acceptability of a lot or site to support an OSS of a type and size permitted by these rules shall be determined by a site evaluation and professionally certified soil data, site conditions, daily sewage flow and characteristics, and ADPH evaluation.

(5) A lot or parcel on which an OSS is located or is to be located shall not be divided for the purpose of building development so that the lot or parcel is smaller than the permitted size without submitting a new permit application to the LHD.

(6) Only treatment and disposal equipment that is appropriately permitted shall be used for an OSS.

(7) The installation of an OSS shall comply with the requirements and conditions of its permit.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.04 OSS Type, Site Classification, and Development

(1) System Types – Two types of OSS are recognized and defined by these rules -- Conventional and Engineered OSS.

(a) Conventional OSS.

1. A Conventional OSS is a system for treating sewage that involves the use of a septic tank or proprietary advanced treatment unit that has been issued a Product Permit followed by non-pressurized dispersion of effluent in an EDF such that the trench bottom and sidewalls are located completely in unaltered natural soil and the bottom of the trench is at a depth not greater than 60 inches below the unaltered natural ground surface.

2. A shallow placement system is a Conventional OSS in that the trench bottom and sidewalls are located in unaltered natural soil, but that requires some amount of fill material above the EDF in order to provide a minimum soil cover of 12 inches over the EDF.

(b) Engineered OSS. All systems other than those meeting the definition of Conventional OSS require an engineer design. This includes, but is not limited to, mounds, advanced treatment (except proprietary advanced treatment followed by a conventional system), drip irrigation, low pressure pipe (LPP) constructed wetlands,

and systems with a septic tank, followed by field lines where any portion of the field line protrudes above the unaltered natural soil surface. See Rule 420-3-1-.08 Engineer Design Required.

(2) Site Classification. Sites are classified as having Slight, Moderate, Severe, or Extreme Limitations pursuant to Rule 420-3-1-.61 Site Limitation Determination (SLD). Site classification generally determines whether a Conventional or Engineered OSS is required.

(3) Building Development. There are two general types of building developments, Small-Flow Development and Large-Flow Development - each dictating different levels of site investigation, planning, treatment, and permitting. The total flow (not the number of systems) determines the planning requirements of the development as defined in these rules.

(a) Small-Flow Development as defined by these rules is building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 12 or fewer bedrooms in a dwelling or dwellings, or an establishment or establishments with a total average daily design flow of 1,800 gpd or less.

1. Small-Flow OSS – a system with a design flow of 1,800 gpd or less.

(b) Large-Flow Development as defined by these rules is building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 13 bedrooms or more in a dwelling or dwellings, or more than 1,800 gpd average daily design flow from establishments. See Rule 420-3-1-.16 Exceptions to the Large-Flow Development Rules

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.05 Permits Required for an OSS

(1) Permit To Install or Repair. No person shall begin the installation or repair of an OSS, or component thereof, until the owner or the owner's agent has been issued a valid Permit To Install or Repair an Onsite Sewage System (OSS) by the LHD.

(a) When an Engineered OSS is required, no installation or construction of any part of the engineered system shall begin without installer consultation with the design engineer.

(b) ADPH may revoke a Permit To Install or Repair or An Approval For Use if there are changes in the lot conditions, the system is not installed in accordance with the permit or other factors affecting the permit's approval. Possible invalidating conditions include, but are not limited to, information submitted for the purpose of obtaining the permit is found to be misrepresented, materially false, or inaccurate, changes to regulatory agency rules, statutory provisions, acts of eminent domain, natural changes, man-made alterations, or water impoundments.

(c) The LHD shall be notified of a modification or repair to a system, pursuant to Rule 420-3-1-.47 Repair, Replacement, and Inspection of an Existing OSS.

(2) Performance Permits. Performance Permits are required for a Large-Flow OSS and for other systems where ADPH, in consultation with the LHD, concludes that the Approval for Use alone is not adequate to protect the public's health or the environment.

(a) The Performance Permit may be issued in draft form when ADPH has enough design information to do so. The Approval for Use is issued when the conditions of the Site Development Plan (SDP), if applicable and Draft Performance Permit have been met. The issuance of the Approval for Use activates the Performance Permit.

(b) The Performance Permit establishes conditions under which the system may be operated. The Performance Permit may include, but is not limited to, conditions regarding system type, system layout, location, operation and maintenance requirements, operational constraints and installation requirements, and may contain sampling and reporting requirements.

(c) The Performance Permit may be issued on a temporary basis when there are unresolved issues regarding design parameters for a system, such as strength of waste, so that actual parameters can be measured after the system is installed and adjustments to the system can be made if necessary.

(3) Approval for Use. The Approval for Use is issued after the LHD, (and ADPH in the case of problem sites or when a Performance Permit is required) is satisfied that all the conditions of these rules, the Permit To Install or Repair, and the Draft Performance Permit and SDP, if applicable, have been met.

(4) Certification of Economic Viability. Management entities required to obtain a Certificate of Economic Viability from the Alabama Public Service Commission shall have said certificate prior to any permits being issued by the ADPH or the LHD.

Authors: Thad Pittman, Karen Bishop, Dillon Bullard
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.06 Proprietary and Non-Proprietary Product Permits

(1) ADPH may issue a permit to a manufacturer of a proprietary product or a non-proprietary wastewater (sewage) treatment or disposal process, or design. This permit may include conditions and requirements for installation, and maintenance and reporting requirements that shall be adhered to by the manufacturer, installers, and users of the products.

(2) The Product Permit applicant shall demonstrate to ADPH's satisfaction that the product meets the requirements of this rule, including design calculations that demonstrate that the product can operate within the range of conditions specified by ADPH.

(a) If a particular certification is a condition of approval and permitting, the product manufacturer shall verify this certification as specified in the Product Permit.

(b) The applicant shall include a description of all system components by product name or model number that can be identified in the field, including, but not limited to, the treatment system, drip tube, controllers, pumps, filters, supply

manifold, return manifold, pressure regulators, air release valves, check valves, filter flush valves, and headworks assembly, as applicable.

(c) ADPH may accept third party assessment and approval of some components associated with an OSS in lieu of issuing a Product Permit if, in ADPH's opinion, the third party approval is adequate to assure that use of the component will not endanger the public's health or the environment, except that any advanced treatment system shall meet the conditions of Rule 420-3-1-.37 Advanced Treatment System (ATS) Specifications.

(3) Permittees holding Product Permits shall warrant the product or package of products as described by the permit for a minimum of two years from the date of its installation. The warranty shall comply with the provisions of §§ 7-2-316(2), 7-2-714(1) and (3), and 7-2-318, *Ala. Code 1975,* and shall guarantee the repair or replacement of a failing product, or a component thereof, at no cost to the owner when said failure is caused by a defect in the product. The warranty shall inform the owner of the replacement policy covering all mechanical and electrical component parts and the factors, events, or actions that may void the product warranty. The Product Permit holder, and not the manufacturers of the different components in the permitted product, shall furnish the warranty to the end user of the product or package of products.

(4) The permittee shall provide an installation manual which shall be incorporated into the Product Permit.

(5) The price of a system with a Product Permit that requires maintenance shall include the cost of an initial maintenance contract. The contract shall provide for at least four service calls (one every 6 months) for 2 years after installation to include inspection and, adjustment and servicing of mechanical, electrical, and other parts for proper function by a permittee-authorized distributor or service provider within the state. A continuing maintenance contract offering the same services shall be available and offered, through an in-state distributor or service provider, to the owner of the system package after the initial 2 year contract expires.

(6) The holder of a Product Permit shall provide the training necessary to ensure that an installer can competently install and maintain permitted products.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.07 OSS Installation

(1) Except as allowed in this rule, no part of any installation shall be covered or used until the LHD is afforded an opportunity to inspect and corrections are made, if necessary. An OSS shall not be used until an Approval for Use has been issued by the LHD. Any part of an OSS that has been covered prior to inspection or authorization by the LHD shall be uncovered upon direction of the LHD.

(2) Prior to the issuance of an Approval for Use, the installer shall:

(a) Install or repair the OSS pursuant to a valid Permit To Install or Repair with any special permit conditions of approval.

(b) Agree upon an inspection time and date with the LHD's Public Health Environmentalist (PHE), and the installer shall contact the PHE by 9:00 a.m., on the date of the inspection to verify that the system will be ready for inspection at the designated time.

(c) Notify the LHD of any problem encountered during the OSS installation or repair which may prevent the system from being installed in accordance with the Permit To Install or Repair or applicable rules, and stop installation until the problem is resolved with the LHD. When a disruption in installation will cause the installation not to be completed by the agreed-upon inspection time and/or date, a new agreed upon inspection time shall be established.

(d) Provide a completed ADPH Form CEP 5 within 3 business days of completion of the system. In the case of an intervening holiday, the completed CEP 5 shall be provided to the LHD on the LHD's first regularly scheduled business day following the holiday.

(3) The LHD may:

(a) Schedule an inspection as close as possible to the time requested by a licensed installer. This inspection time then becomes the "agreed upon system inspection time" referenced above in paragraph (2) (b).

(b) Allow a licensed installer to cover a Conventional OSS installation or repair when resource constraints, weather conditions, or other unforeseen circumstances prevent the LHD from conducting an inspection within 1 hour after the agreed upon inspection time.

(c) Authorize a licensed installer, in a valid emergency or special circumstance, to install or repair a Conventional OSS outside of normal LHD business hours.

(4) In accordance with Rule 420-3-1-.49 Certifications, a signed statement from the OSS installer and the engineer, if one was required, shall be submitted to the LHD prior to the issuance of an Approval for Use. See Rule 420-3-1-.52 Professional Signatures and Seals.

Authors: Thad Pittman, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.08 Engineer Design Required

An OSS shall be designed by an engineer under the following conditions or circumstances:

(1) The system has a design flow of more than 1,800 gpd of sewage. See Rule 420-3-1-.78 Design Flow and Wastewater Concentrations.

(2) The system will serve a food establishment that is classified as a Priority Category 2, 3, or 4 establishment by the Board's Rules for Food Establishment Sanitation, Chapter 420-3-22, *Ala. Admin. Code.*

(3) The system will receive high-strength sewage. A high-strength system does not have to use advanced treatment unless the design flow is over 1,800 gpd, but the field shall be sized according to Rule 420-3-1-.81 EDF Sizing for Establishments.

(4) The site characteristics prohibit the use of a Conventional OSS. See Table 19.

(5) The site characteristics set forth under 420-3-1-.95 Lot Modification – Planned and Unplanned stipulate engineer involvement.

(6) The lot is smaller than the minimums set out in Rule 420-3-1-.09 Minimum Lot Size Requirements for Sites Using an OSS.

(7) Slopes over 25 percent.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.09 Minimum Lot Size Requirements for Sites Using an OSS

(1) Any lot for which an OSS is proposed to be installed shall be large enough to accommodate the proposed development, the proposed EDF, and a 100 percent REDF, and shall meet all setback requirements of these rules.

(a) Advanced treatment systems that are owned and operated by a certified wastewater management entity, government agency or cooperative and are under a Performance Permit may, with ADPH approval, elect to use one-half (1/2) of the design flow when designing the REDF, provided the REDF is investigated in accordance with these rules.

(b) For dwellings or establishments on individual systems, minimum lot size requirements, based on the recording date, are set forth in Appendix A Table 17. These lots shall have a total square footage available per the number of dwellings or establishments placed on them.

1. The minimum lot sizes set forth in Appendix A, Table 17, may not be adequate under extreme lot conditions. The EDF and REDF could require up to an acre.

(c) Lot sizes may be reduced below the minimums established in Appendix A, Table 17, by utilizing an Engineered OSS in compliance with the requirements of ADPH Form CEP-2, Part B.

(2) Easements or right-of-way areas shall comply with Rule 420-3-1-.10 Easements Required.

(3) Swamps, marshes, ponded areas, surface or subsurface drainage areas, reservoirs or impoundments, and wetlands shall not be used in computing lot size, unless the area has been modified prior to application submittal within and according to these rules and other regulatory requirements including, but not limited, to Army Corps of Engineer requirements.

(4) Frequently flooded areas shall not be used in computing required lot sizes.

(5) There are no minimum size requirements for a lot being served by a Cluster Wastewater or Community Sewage System.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.10 Easements Required

(1) Easement or right-of-way areas for underground utilities, roads, streets, thoroughfares, and easements for reservoirs and impoundments, and flood zones shall not be used in computing lot size, or be used for placement of any part of an OSS.

(2) Easements or rights-of-way for overhead utilities on lots recorded prior to the adoption date of this rule may be utilized, if there is no other means of having the lot accommodate an OSS, or make a system repair. The easement holders shall state in writing no objection to such use of the easement.

(3) When an OSS is on property that was recorded after the adoption date of this rule, the property shall be clear of any impediments such as power line or other easements, including flood easements that would in any way potentially restrict the owner's use and control of the system. Said easement area shall not be used in computing lot size nor used for the location of the EDF or REDF.

(4) OSSs, including REDFs, shall be located on the same lot as the dwelling/establishment served unless, when approved by the LHD, an easement in perpetuity is recorded in the office of the Judge of Probate of the county in which the system is located. The easement shall be recorded prior to the issuance of a Permit To Install or Repair. Terms of the easement shall be sufficient for construction, operation, and continued repair and maintenance of the OSS until the system is abandoned per Rule 420-3-1-.35 Abandonment of a Sewage Tank.

Authors: Thad Pittman, Karen Bishop, Dillon Bullard
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.11 General Requirements for All Permit Applications

(1) An application for a new permit or reissuance of an existing permit shall be made to the LHD using the following forms designated by ADPH.

(a) ADPH Form CEP-2 is used to apply for a Permit To Install for Small-Flow developments and individual Small-Flow Systems in a Large-Flow Development.

(b) The ADPH Form CEP-3, Section A is used for Large-Flow Developments, and the ADPH Form CEP-3, Section B, is used for Large-Flow Systems.

(2) Signatory requirements for a permit application shall comply with the requirements of Rule 420-3-1-.45 Signatories to a Permit Application and Report.

(3) All applications are subject to Rule 420-3-1-.12 Time Limitations and Permitting Actions.

(4) All persons shall contact the LHD and begin the appropriate planning process for the type of development intended prior to undertaking building development as defined by these rules.

(5) ADPH or the LHD may assess a fee where fee authorization exists.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.12 Time Limitations and Permitting Actions

(1) All ADPH Form CEP-2 applications shall be submitted to the LHD.

(a) When an application is incomplete, the applicant shall be allowed 90 days to submit a complete application or the application shall be denied.

(b) After a complete application is received and the review of the LHD determines that the lot is suitable for an OSS in accordance with these rules, the LHD shall issue a Permit To Install.

1. All Permits To Install shall be valid for a period of 5 years from the date of issuance.

2. If the time limit in paragraph 1, above, has expired and reapplication is required, the LHD may investigate the site and determine if the site conditions remain consistent with those that existed at the time of the expired permit's issuance. Based upon this re-evaluation, the LHD may issue a Permit To Install without additional site evaluation.

(c) When an ADPH Form CEP-2 is submitted for a lot "approved" in a large-flow development under a previous set of rules, the LHD may investigate the validity of previously submitted lot evaluation data or conditions and determine whether a Permit To Install may be issued.

(2) If a Performance Permit is required, the application may be submitted with a Site Development Plan (SDP).

(a) If a Performance Permit is required, the application shall be forwarded to ADPH for review.

(b) The Performance Permit shall be valid for a period of 5 years from the effective date of the permit, after which the permit shall be renewed if it is to stay in effect. A modification to the permit does not extend the 5-year permitting period.

(c) The LHD and permittee shall have 30 days to comment on the Performance Permit. Once the comment period is over, ADPH may issue the Performance Permit, but its activation is subject to the LHD issuing an Approval for Use.

Author: Thad Pittman, Phyllis Mardis, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.13 General Provisions for Small-Flow Development/OSS

(1) An Application for a Permit To Install or Repair a Small-Flow OSS, the ADPH Form CEP-2, shall be submitted for each Small-Flow OSS, and be in compliance with Rule 420-3-1-.52 Professional Signatures and Seals.

(2) An application is required for the installation of a Small-Flow OSS Development or Systems. If a Small-Flow Development or System is determined to be part of a Large-Flow Development, the applicant shall comply with the applicable Large-Flow Development requirements. If significant modifications are made to a Small-Flow OSS site that affect either the EDF or the REDF, a new site evaluation may be required that is in compliance with Rule 420-3-1-.61 Site Limitation Determination (SLD).

(3) If the application is for a Small-Flow System that is part of a Large-Flow Development, such as a dwelling on a large-flow development lot, the SDP should be referred to when completing the application for the Permit To Install, ADPH Form CEP-2.

(4) If a lot that does not have an existing and approved OSS is to be sold, the prospective purchaser is responsible for investigating the site according to these rules, or to otherwise satisfy himself or herself that the intended use of the lot is feasible pursuant to these rules. Failure to make this investigation shall not be grounds for a variance.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.14 Construction Plan Requirements for Small-Flow Engineered Developments or Systems

For Small-Flow Developments and Systems required to be engineer designed by Rule 420-3-1-.08 Engineer Design Required, the engineer shall submit a construction plan as described in the ADPH Form CEP-2 that is in compliance with Rule 420-3-1-.52 Professional Signatures and Seals.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.15 General Provisions Large-Flow Development or OSS

No person shall begin building development on a Large-Flow OSS prior to receiving ADPH approval of an SDP.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.16 Exceptions to the Large-Flow Development Rules

(1) The following activities shall not be subject to the Large-Flow Development Rules:

(a) Dividing a parcel of land for the purpose of a bona fide gift.

(b) Dividing a parcel of land under the provisions of a will or under the laws of intestate succession.

(c) The sale, lease, or rental of land, provided that the sale, lease, or rental is not incidental to building development.

(d) Dividing a parcel of land under an exemption provided by § 22-26-7, *Ala. Code 1975.*

(e) The division of a parcel of land into lots or tracts three acres or greater in size that meet the requirements for Small-Flow Development.

(f) Building development that is exclusively for the immediate family of the owner or applicant.

(2) If ADPH and the LHD conclude that an existing Large-Flow OSS can handle additional flow, the permit may be modified accordingly and it is not necessary for the applicant to complete the entire Large-Flow application process. Only the additional information that will allow ADPH and LHD to determine that the system is capable of handling the additional flow is required.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.17 Establishments

(1) The wastewater generated by establishments may be sewage, high-strength sewage, or graywater.

(2) If an establishment is expected to generate 1,800 gpd or less of sewage or high-strength sewage, the establishment is a Small-Flow Development, and an ADPH Form CEP-2 shall be submitted. Advanced treatment is not required for a daily average flow of less than 1,800 gpd unless dictated by lot conditions, but the field shall be sized according to Rule 420-3-1-.81 EDF Sizing for Establishments. A Performance Permit may be required for Small-Flow Systems for establishments if ADPH or the LHD determine that special conditions exist.

(3) If the wastewater is high-strength sewage, the only reduction in field size that shall be allowed is for treatment.

(4) If the design flow is over 1,800 gpd, the establishment is a Large-Flow Development and an ADPH Form CEP-3 shall be submitted. The system is required to meet Secondary Limits and a Performance Permit is required. See Rule 420-3-1-.36 Advanced Treatment Required, Paragraph (1)(b)1. for exceptions to this rule.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.

History: Repealed and Replaced: Filed

420-3-1-.18 Site Development Plan Requirements

(1) A Site Development Plan (SDP) is required for the following:

(a) Large-Flow Developments (including large-flow developments).

(b) Large-Flow Systems.

(c) Establishments generating flow of over 1,800 gpd.

(2) See the ADPH Form CEP-3 Section A for the SDP Requirements and Review Process.

Authors: Thad Pittman, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.19 Application Requirements for Individual OSS on Each Lot in a Large-Flow Development

When the requirements of the SDP have been approved and the development has been recorded pursuant to Rule 420-3-1-.54 Recording Requirements, an ADPH Form CEP-2 may be submitted for each lot by the developer, builder, or homeowner, as appropriate.

Authors: Thad Pittman, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.20 Application Requirements for Large-Flow Systems

(1) Large-Flow Systems shall require a Performance Permit. See ADPH Form CEP-3, Section B.

(2) An application for a Performance Permit shall be completed by an engineer and may be accepted for review by the LHD, following the issuance and fulfillment of the conditions stated in the SDP.

(3) An applicant for a Performance Permit shall keep complete records of the data used to complete the permit application for a period of at least 3 years from the date the application is signed.

(4) The application for the Performance Permit shall be submitted and signed by an individual meeting the requirements of Rule 420-3-1-.45 Signatories to a Permit Application and Report. ADPH or the LHD may require that an applicant for a Performance Permit provide additional reports, specifications, plans, quantitative data, or other information required to assess the discharges and the potential impact of the discharges on waters of the state.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.

History: Repealed and Replaced: Filed

420-3-1-.21 General Requirements for Performance Standards

(1) With review and approval, ADPH may recognize standards that can be used to establish and ensure that an OSS provides a measurable level of wastewater (sewage) treatment in certain situations that do not lend themselves to a prescriptive method of permitting. In these situations, ADPH may select an appropriate standard to define acceptable OSS goals for specific environmentally sensitive sites.

(2) The standards that will primarily be used in review of Performance Permits are primary effluent standards and secondary effluent standards as defined by these rules. Under certain circumstances, ground-water monitoring with standards as stringent as drinking water standards may be applied, at the discretion of ADPH, such as with a large EDF located in close proximity to a property line or lake shore.

(3) Performance Permits may allow variances from the prescriptive requirements of these rules if, in the opinion of ADPH, the prescriptive requirements are too stringent, or not stringent enough, and the variance shall be protective of the public's health. See Rule 420-3-1-.36 Advanced Treatment Required.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.22 Requirements for Performance Permits

(1) A Performance Permit shall be issued to:

(a) Any system that has a design flow of over 1,800 gpd.

(b) Any system that produces high strength waste.

(c) Any system that ADPH, in consultation with LHD, decides requires a Performance Permit in order to protect the public's health or the environment.

(2) A Performance Permit may contain the following:

(a) Authorization to operate for a period not to exceed 5 years.

1. If a permittee desires to continue operation of a system past the permit's expiration date, the permittee shall submit an application for reissuance of the permit at least 90 days prior to expiration of the permit.

2. Applications for reissuance shall comply with Rule 420-3-1-.20 Application Requirements for Large-Flow Systems. Information submitted with the initial application need not be resubmitted unless requested by ADPH or the LHD.

(b) Construction and maintenance requirements.

1. The permittee shall comply with conditions of the permit when constructing, operating, and maintaining the treatment system(s), disposal system(s), monitoring well(s), sampling system(s), and other ancillary equipment which are installed or used by the permittee.

2. ADPH approval shall be obtained prior to any alteration or addition to a system including, but not limited to, when:

(i) The alteration or addition could result in the discharge of additional effluent;

(ii) The alteration or addition would result in additional discharge points that ADPH would require coverage under a Performance Permit; or

(iii) The alteration will be the cause of a site modification that will directly or indirectly affect the EDF.

3. When monitoring wells are required by ADPH, an as-built description and geologic log of the monitoring well(s) shall be obtained. The monitoring well(s) shall be completed and sampled prior to the use of the OSS disposal system.

(c) Monitoring and operating requirements.

1. The permittee shall provide a method of obtaining grab or composite samples of effluent after all treatment and prior to disposal.

2. The permittee shall monitor the effluent and monitoring well(s) as required by ADPH.

3. ADPH may change the sampling frequency if the sampling data indicates a need to do so.

4. When sampling is required by ADPH, all sampling and analysis shall be in accordance with EPA approved methods and procedures in all cases where such an approved method and procedure exists.

5. When the EPA has not approved methods and procedures for any sampling and analysis required by these rules, the method and procedure shall be stated in the permit.

6. Calibration of meters and other instruments used in monitoring shall be in accordance with the manufacturer's recommended procedure and frequency.

7. The system shall function properly and effluent shall not surface or saturate the uppermost soil layer. Any of the following shall constitute a failure of the system or a component and may require immediate repair or replacement:

(i) A breakage, puncture, or deterioration of the module, housing, or container that surrounds the treatment apparatus, medium or mechanism.

(ii) A malfunction of the effluent distribution mechanism or a product defect that would cause treated or untreated effluent to pond in the treatment unit, surface on the ground, back-up in the force main, sump pump, septic tank, or in the building, or interfere with the flow of effluent through the treatment system to the disposal field.

(iii) A wash-out, blow-out, or disruption of the effluent disposal field caused by a malfunction in the treatment system.

(iv) The contamination of groundwater as a result of the discharge from the system, as determined through groundwater monitoring.

8. The permittee shall obtain all applicable licenses and certifications required by the AOWB, the Alabama Water Pollution Control Act, the Alabama Public Service Commission, and ADEM.

9. When allowed by ADPH, the permittee may exceed permit discharge limits due to an upset if no later than 24 hours after becoming aware of the upset the

permittee reports the occurrence and cause of the upset to ADPH. The permittee shall provide evidence that the system was being properly operated at the time of the upset and demonstrate the steps that were taken to minimize adverse impact on human health or the environment resulting from the upset.

10. When required by ADPH, the permittee shall perform best management practices.

(d) Requirements for records, reports, and submittals.

1. The permittee shall retain all records concerning the data used to complete the permit application, the operation of the system, nature and composition of effluent injected, and ground water monitoring records for a period of at least 3 years from the date such records are established, and shall deliver copies of any records to ADPH upon request. Records of monitoring information shall include the following:

(i) The date, exact place, and time of sampling or measurements.

(ii) The names of the individual(s) who performed the sampling or measurements.

(iii) The date(s) analyses were performed.

(iv) The names of the individual(s) who performed the analyses.

(v) The analytical techniques or methods used.

(vi) The results of such analyses.

2. When required by ADPH, the permittee shall submit any monitoring reports required by the permit, not later than 28 days after the reporting period specified in the permit.

(3) The permittee shall report any of the following to ADPH:

(a) Any planned changes in the permitted facility or activity which may result in noncompliance with permit conditions.

(b) Any planned transfer of ownership of the permitted facility by the person buying and the person selling the facility.

(c) Compliance or noncompliance with interim and final requirements contained in any permit schedule of compliance.

(d) Any relevant facts which the permittee becomes aware of which should have been submitted in a permit application or corrections to incorrect data submitted in a permit application.

(4) Permit modification, suspension, or revocation.

(a) A permit may be modified, suspended, or revoked due to the following:

1. A violation of any provision of the permit or these rules.

2. Information submitted for the purpose of obtaining the permit or influencing the permit conditions is found to be incorrect, or inaccurate.

3. Errors in calculations, typographical errors, or clerical errors are found in the permit application or other information submitted for the purpose of obtaining a permit which materially affects permit conditions.

4. New information becomes known which, if available at the time the permit was issued, would have influenced the permitting decision or permit conditions.

5. Failure to meet conditions specified in the schedule of compliance contained in the permit.

6. New rules or regulations are promulgated which have a bearing upon the permitted operations.

7. Any other information not available at the time of permitting which may have a bearing upon the permitted operations.

8. The ownership of the facility is transferred to another person.

(b) Revocation or suspension of a permit shall not relieve the permittee of his or her responsibility to properly abandon the system.

(5) General provisions.

(a) Any permittee authorized by permit to construct or operate a system shall allow access to their property and records by a duly authorized representative of ADPH or the LHD for the purpose of routine or other inspections and shall allow copying of records by a duly authorized representative of ADPH or the LHD. The duly authorized representative of the ADPH or the LHD shall also be allowed to sample the effluent and the monitoring wells.

(b) The permit shall not convey any property rights of any sort or any exclusive privilege.

(c) The permittee shall comply with all conditions in the permit.

(d) The permittee shall halt or reduce disposal if needed to maintain compliance with the conditions of the permit.

(e) The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit.

(6) Other Responsibilities.

(a) Solids, sludge, filter backwash, or any other pollutant or other waste removed in the course of operating an OSS shall be disposed of in accordance with Rules of the Board and ADEM.

(b) Upon the loss or failure of any OSS, including but not limited to the loss or failure of the primary source of power, the permittee shall take necessary corrective action in direct coordination with ADPH or the LHD.

(c) All provisions of these rules that are applicable to the permit are made a part of the permit.

(d) The permit does not authorize noncompliance with, or violation of, any laws of the state of Alabama or the United States of America or any regulations or rules implementing such laws.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.23 Measurement Frequency, Limit Maximums, and Averages

Sampling shall be performed as prescribed by ADPH, following the criteria below:

(1) Daily sampling shall mean 7 days a week and shall be averaged on a monthly basis, unless otherwise stated in the permit and reported according to Rule 420-3-1-.24 Reporting. Daily sampling shall start on the first day of the month following the effective date of the permit.

(2) Five-days-per-week sampling shall mean Monday through Friday and shall be averaged on a monthly basis, unless otherwise stated in the permit, and reported according to Rule 420-3-1-.24 Reporting. Five-days-per-week sampling shall start on the first day of the month following the effective date of the permit.

(3) Weekly shall mean any day during the week, such that samples are at least 3 days apart, and shall be averaged on a monthly basis, unless otherwise specified by the permit. Weekly sampling shall start on the first day of the month following the month in which the permit became effective.

(4) Monthly sampling shall mean once per month during a calendar month, such that there are at least 7 days between samples, and shall be averaged on a running quarterly basis (an average of the most recent 3 months). Monthly sampling shall start on the first day of the month following the month in which the permit became effective.

(5) Quarterly sampling shall mean once per calendar quarter during any calendar month of that quarter, such that there are at least 30 days between samples, and shall be averaged on a running annual basis (an average of the most recent four quarters). Quarterly sampling shall start in the first calendar quarter in which there are 30 days or more left after the effective date of the permit.

(6) Semi-annual sampling shall mean once per 6 months during any calendar month of that 6-month period such that there are at least 175 days between samples. Semi-annual sampling shall start in the first month in which there are 30 days or more left after the effective date of the permit.

(7) Annual sampling shall mean once in a 12-month period such that there are at least 350 days between samples. Annual sampling shall start in the first month in which there are 30 days or more left after the effective date of the permit.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.24 Reporting

(1) Reporting shall be monthly, quarterly, semi-annually, or annually, as specified by the permit.

(2) Monthly reporting shall be due the twenty-eighth day of the month following the month in which sample(s) are taken.

(3) Quarterly reporting shall be due the twenty-eighth day of the month following the calendar quarter.

(4) Semi-annual results shall be due January 28 and July 28.

(5) Annual results for the past year shall be due January 28 of the following year.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.25 Calculating Permit Discharge Limitations for Performance Permits

(1) Permit discharge limitations, standards, and prohibitions shall be established for the discharge points from the OSS, except where limitations on internal waste streams are more appropriately used.

(2) For the purpose of reporting and compliance, a permittee shall use the Detection Level (DL) as established by the EPA. Analytical values at or above the DL shall be reported as the measured value. Values below the DL shall be reported as "0."

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.26 Schedule of Compliance for Performance Permits

(1) The permit may, when appropriate, specify a schedule of compliance leading to compliance with the appropriate law.

(a) A schedule of compliance shall require compliance as soon as possible.

(b) If a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement, in accordance with the following:

1. The time between interim dates shall not exceed 1 year.

2. Dates for compliance shall be established, where applicable, as follows:

(i) Submission of pollution abatement program and preliminary plans.

(ii) Submission of final plans, specifications, and drawings.

(iii) Initiation of construction.

(iv) Attainment of operational status.

(v) Attainment of compliance with permit limitations.

(2) The permit shall be written to require that no later than 14 days following each interim date or the final date of compliance or other period which ADPH

determines, the permittee shall notify ADPH in writing of its compliance or noncompliance with the interim or final requirements or submit progress reports.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Tanks

420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications

(1) A new, replacement, or repaired septic tank, grease trap, trash trap, or holding tank shall be designed and constructed in accordance with the following specifications and standards:

(a) A tank shall be watertight. The tank and all components shall be corrosion resistant and resist the effect of sewage, sewer gases, household chemicals, and soil burial.

(b) A septic tank shall have at least two compartments. The baffle wall forming the two compartments shall be located so that the inlet compartment comprises approximately two-thirds (2/3) of the effective liquid capacity of the tank.

(c) ADPH may require test reports from an independent testing laboratory to confirm a manufacturer's tank design.

1. A baffle wall is not required in a grease trap, holding tank, or a pump tank, provided the tank has been tested without the baffle to meet the structural requirements of these rules.

2. At the discretion of an advanced treatment system designer, the baffle wall for the tank preceding an advanced treatment system is not required provided the tank has been tested without the baffle to meet the structural requirements of these rules.

(d) The baffle wall forming the two compartments shall be permanently fastened to the tank and shall be one of the following types:

1. Type 1: A baffle wall with a continuous opening 4 inches wide extending at least 75 percent of the width of the baffle, with the top of the opening located 12 inches below the effective liquid surface. See Appendix A, Figure 7. Allowance shall be made for adequate support of the upper portion of the baffle. A space of 2 inches shall be provided between the top of the baffle and the opposing underside surface of the tank cover or top.

2. Type 2: A baffle wall designed and sealed by an engineer.

(e) Concrete tanks may be precast or poured in place. Both shall comply with these rules, and precast tanks shall conform to the requirements of the American Society for Testing and Materials (ASTM) Standard concerning the standard specifications for precast concrete septic tanks. ADPH may approve concrete tanks with advanced technologies for reinforcement, if the plans carry the seal of an engineer.

(f) Except as otherwise permitted by these rules, the minimum hydraulic detention time for tank(s), i.e., septic tanks and grease traps, or combinations of these in series, shall be 2 days (48 hours), based on flow computed per Rule 420-3-1-.78 Design Flow and Wastewater Concentrations, or in no case shall the tank effective liquid capacity be less than 1,000 gallons.

(g) The effective liquid capacity of a septic tank for a dwelling shall be based on the number of bedrooms proposed or that can be anticipated and shall, at a minimum, comply with Appendix A, Table 9.

(h) The inside length of a tank shall be at least one and one half (1½) times the inside width. The inside width of a tank shall not be less than 3 feet.

(i) The minimum effective liquid depth of a tank shall be 3 feet, and the maximum effective liquid depth shall be 6 feet. Greater liquid depths require special consideration by ADPH.

(j) A minimum air space of 8 inches shall be provided between the effective liquid surface and the lowest point on either the underside of the lid or the underside of the tank top.

(k) The inlet to a tank shall be a sanitary or vent tee extending below the effective liquid level.

(l) The invert of the inlet tee shall be a minimum of 2 inches above the invert of the outlet tee.

(m) When required, a tee shall be used for the outlet of the tank, and the tee shall extend at least 6 inches above and 18 inches below the water level. Special outlet structures may be proposed by an engineer to ADPH for consideration on special projects or for standard usage by the tank manufacturer or installer. See Rule 420-3-1-.33 Effluent Filter Specifications, for effluent filter requirements.

(n) The inlet tee and the outlet structure shall be centered and aligned with the access inspection openings in the lid or top so as to provide unrestricted access to the inlet and outlet structures. Inlet piping shall comply with the International Plumbing Code. The inlet and outlet structures shall penetrate the tank wall. A watertight flexible joint shall be used to accommodate installation and post-installation tank movement.

(o) Septic tanks with an integral pump chamber shall meet all design and testing requirements for septic tanks in these rules. The tank wall separating the septic tank and pump chamber compartment shall be poured monolithically with the tank walls and bottom, and shall have, at a minimum, the same reinforcing and the same thickness as the sidewalls of the septic tank.

(p) Cast in-place tanks shall have minimum wall, bottom, and lid thickness of 4 inches.

(q) Precast concrete tanks with capacities of less than 1,200 gallons shall have minimum lid thickness of 3 inches, and tanks with capacities of 1,200 gallons or more shall have minimum lid thickness of 4 inches.

(r) Concrete tank lids for individual dwellings shall have a minimum 6-inch by 6-inch by 10-inch (6-inch on centers of number 10 gauge) welded steel reinforcement.

(s) A lid for a tank may be monolithically poured. The lid for a tank with an effective liquid capacity of less than 1,200 gallons shall have only one section. A larger tank lid may have more than one section. In no case shall it be necessary to remove a lid or lid section in order to gain access to a tank for inspection or maintenance purposes. Where more than one lid section is used, joints between sections shall be sealed to form a watertight seal. Except for a monolithic pour or a proprietary product design, an approved water stop shall be used to affix the lid to the tank body or to seal multiple-part tank bodies.

1. Tanks, lids, and risers for traffic installations shall be designed, signed and sealed by an engineer.

2. Whenever vehicular traffic is anticipated to cross over a tank, traffic lids shall be installed with risers to finished grade.

3. Tanks and lids shall be designed in accordance with ASTM C 890-91 (Reapproved 1999), "Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures," herein incorporated by reference, for the appropriate loading.

4. Application of paragraph 5.2.4 of ASTM C 890-91 (Reapproved 1999) shall be at the discretion of the design engineer.

(t) Any tank lid certified by the engineer to meet the appropriate American Association of State Highway and Transportation Officials (AASHTO) H-20 Loading Criteria may be approved by ADPH. Access inspection openings with a minimum 18-inch diameter or equivalent area opening shall be provided in the tank lid or top over the area of the inlet and outlet structures.

(u) Risers for tanks shall be cast directly into tank lids or tops. Risers shall be manufactured of materials that are compatible with the expansion and contraction of tank material and form a mechanical bond with the tank material, ensuring a watertight seal.

1. Risers shall be located over the inlet and outlet structures and shall be a minimum of 18 inches in diameter. Depending on specific situations, additional risers may be required.

2. All risers and components shall have watertight covers or lids. The cover or lid shall be designed, constructed, and maintained to prevent unauthorized access.

3. A plastic or fiberglass access riser and cover or lid shall have third-party documentation that ultra-violet (UV) protection is molded into all components.

(2) Polyethylene and fiberglass tanks shall meet the requirements of the appropriate sections of the International Association of Plumbing and Mechanical Officials (IAPMO). If the requirements of this code conflict with the standards in this rule, the standards in this rule shall apply. Tanks shall be constructed in accordance with good construction practices.

(3) The use of metal tanks, drums, barrels, or pipes as sewage tanks is prohibited for use with onsite sewage disposal systems.

(4) If a trash trap is required by the OSS designer or manufacturer, the trash trap shall meet the structural requirements of this rule. When recommended or required by the advanced treatment system manufacturer or the engineer, a sewage

trash trap or septic tank preceding an advanced treatment unit shall meet the design requirement of the advanced treatment system manufacturer. Such a sewage trash trap or septic tank, if required by the manufacturer, shall meet the structural requirements for tanks in these rules.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.28 Tank Installation

(1) A septic tank, grease trap, or holding tank shall not be set into a prepared tank hole unless a valid Permit To Install or Repair has been issued by the LHD. The permit number shall be recorded and maintained by the individual or entity that sets the tank.

(2) Tanks shall be installed on a level, firm, and compacted surface such that the tank is placed both longitudinally and laterally level. A minimum layer of 2 inches of sand or gravel placed level in the tank hole is recommended for leveling purposes.

(3) Installation instructions shall be followed where specific installation instructions are provided by the tank manufacturer. All fiberglass and plastic tanks shall be accompanied by clear and concise instructions from the manufacturer for the proper installation of the tank.

(4) Tank risers for a dwelling may be placed above final grade but shall not be placed greater than 6 inches below final grade.

(5) Risers on a tank for an establishment shall be brought to a minimum of established finished grade.

(6) When two tanks are connected in series to obtain the required capacity, a baffle wall shall not be used in the inlet tank, and a baffle wall shall remain in the second tank. No more than one two-tank series may be used per building sewer.

(7) A new tank that requires repair prior to being placed into use shall be repaired to meet the standards of these rules and shall be repaired as directed by the manufacturer. Repair of a tank already in use shall be coordinated with the LHD, and shall meet the requirements of Rule 420-3-1-.47 Repair, Replacement, and Inspection of an Existing OSS. A repaired tank may be subjected to the same structural and water-tightness tests as are prescribed in Rule 420-3-1-.29 Tank Testing and Quality Control unless the work on the tank is exempted by the Rules' definition of repair.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.29 Tank Testing and Quality Control

(1) All tank manufacturers proposing to sell precast septic tanks, holding tanks, or grease traps of less than 2,500 gallons capacity, or that have a construction joint below the water line, shall demonstrate that the design and construction

techniques employed are sufficient to ensure that each such product meets or exceeds the structural, water-tightness, and concrete specimen testing protocols outlined below. The manufacturer shall make this demonstration upon initial application for each model tank to be sold in Alabama.

(a) The structural integrity shall be verified by actual vacuum load or hydrostatic test as specified by ADPH in accordance with Appendix A, Table 10

(b) The water tightness shall be verified by ASTM C1227 00b, "Standard Specification for Precast Concrete Septic Tanks," paragraph 9.2., herein incorporated by reference. ASTM C1227 98, paragraph 9.2.2, shall be modified to read as follows: water-pressure testing – fill the tank with water to the invert of the outlet and let stand for 24 hours. Refill the tank. The tank is approved as watertight if the water level is held for 1 hour. Tanks that pass the vacuum or pressure test and also pass the water tightness test shall be approved.

(c) Structural and water tightness testing of tanks shall be conducted in the presence of an engineer. Test results shall be certified by the engineer using the statement in Rule 420-3-1-.51 Tank Testing Certification

(d) Septic tanks of 1,500 gallons or less capacity used in a Cluster Wastewater System that are subject to Economic viability requirements of § 22-25B-1, et seq., Ala. Code 1975 shall, after installation, be individually tested for water tightness before backfilling. Written test results shall be provided to ADPH or the LHD upon request.

(2) Concrete used in septic tanks shall have a 28-day compressive strength of at least 4,000 pounds per square inch (psi). The concrete tank manufacturer shall submit to ADPH and the LHD for approval, the materials proportion for the concrete mix design and test data showing that such a mix meets the 4,000 psi requirements.

(a) Concrete tank manufacturers shall cast at least four compressive-strength specimens every week in which a tank is manufactured, or every 100 cubic yards, or increment thereof, of concrete mix used, whichever is more frequent. Two of the specimens shall be tested at 7 days and the other two shall be tested at 28 days. Specimens shall be tested in accordance with the appropriate ASTM standard covering testing method for compressive strength of cylindrical concrete specimens. If the 7-day specimen tests at 4,000 psi or greater, the 28-day test is not required.

(b) Specimens shall be 6 inches diameter by 12 inches high cylinders unless the maximum aggregate size is three-fourths (¾) inch or smaller, in which case 4 inches diameter by 8 inches high cylinders may be used. Specimens shall be made in accordance with the appropriate ASTM standard having to do with methods of making and curing concrete test specimens in the field. Specimens shall be cured in a manner similar to the curing of concrete products represented by the specimens.

(c) All test records shall be kept for a period of 3 years and shall be provided to ADPH or the LHD upon request. Failure to maintain records may be grounds for permit suspension.

(d) Any tank(s) manufactured from a pour that does not test at a minimum of 4,000 psi shall be destroyed.

(e) Persons conducting quality control (QC) tests shall hold either an American Concrete Institute (ACI) Level 1 certification or a National Precast Concrete

Association's (NPCA's) certification. If testing is performed by an outside testing agency, the agency shall maintain records to demonstrate that the personnel performing the tests are either ACI or NPCA certified.

(f) If a tank manufacturer can provide documentation to ADPH that the concrete used in the tanks came from an Alabama Department of Transportation (ALDOT) approved concrete plant and the concrete mix is an A1-C ALDOT approved concrete mix, the manufacturer shall not have to meet the requirements of paragraph (2) of this rule.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.30 Tank Manufacturer Inspections

(1) ADPH shall make periodic inspections of tank production sites or tank staging areas and tanks for all tank series with a capacity of 1,500 gallons or less to determine compliance with these rules.

(2) An inspection shall be made upon initial application for new tank series, upon annual permit renewal and periodically as deemed necessary by the ADPH or the LHD.

(a) The ADPH shall conduct these inspections and provide the LHD with the results of the inspection.

(b) Larger tanks may not be required to be available for inspection at the manufacturer or at a staging area if the tank manufacturer is certified by the NPCA, or the International Association of Plumbing and Mechanical Officials (IAPMO). The manufacturer shall certify to ADPH annually that they are certified by NPCA or IAPMO.

(c) When deemed necessary, the ADPH or the LHD may make periodic inspections of larger tanks at a site specified by ADPH or the LHD.

Authors: Thad Pittman, Pam Lockett
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.31 Prefabricated Septic Tank, Grease Trap, and Holding Tank Permit

(1) No prefabricated septic tank, grease trap, or holding tank shall be installed unless a permit for the tank series has been issued by ADPH. The permit number, issued by the LHD for the specified tank, and the effective liquid capacity of the tank, shall be permanently embossed on the tank end wall at the inlet end so that it is readily visible after installation and prior to covering.

(2) An out-of-state tank manufacturer shall, in coordination with ADPH and the designated LHD, establish a specific fee-based county within the state of Alabama as the county of record for business purposes. This manufacturer shall have and provide the LHD with information on their AOWB-licensed distributor or agent designee. An out-of-state manufacturer shall assure that its designated distributor or

agent provides and makes known to the LHD of the county of record a specific, fixed location, readily accessible, where its tanks are sent for distribution and made available for inspection by ADPH or the LHD during reasonable business hours.

(3) A manufacturer of a prefabricated tank shall comply with the requirements of Rule 420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications. On a form provided by ADPH, the tank manufacturer or its designated AOWB-licensed distributor or agent shall submit to the LHD of the county of record and to ADPH, the company name, owner's name, AOWB license number, mailing address, 911 address if available, telephone number, test results as outlined in Rule 420-3-1-.29 Tank Testing and Quality Control and accompanying detailed plans for each size and configuration of tank. The plans shall accurately and completely show all dimensions, baffle walls, access inspection holes, risers, inlet and outlet holes and water stops, and ancillary equipment. The plans shall include top, sectional side and sectional end views and shall include material specifications, such as reinforcement material and additives.

(a) The submittal shall include clear and concise written instructions from the manufacturer as to the proper shipping, handling, assembly, installation, maintenance, or repair of the tank and equipment. The instructions shall clearly identify site conditions, if any, that would prohibit tank installation or would void manufacture warranty.

(b) The submittal shall include a copy of any applicable tank warranty.

(c) Duplicate submittal packages shall be sent concurrently to the LHD in the county of record and to ADPH.

1. ADPH shall issue a permit number for each series of tanks that it approves.

2. ADPH shall maintain a listing of licensed manufacturers holding permits for approved tank series. The LHD shall maintain a current list of permits issued within its jurisdiction, including issue and anniversary dates, and shall ensure that current information is provided to ADPH.

3. A permit is not transferable from one person to another, from one tank form or tank model to another, or from one manufacturing site to another.

(4) A licensed manufacturer/distributor/agent shall submit to the LHD an application for an annual permit in December of each year. The terms and conditions of an existing permit are automatically extended pending reissuance of the permit if the manufacturer has submitted a timely and complete application.

(5) Prefabricated tank form manufacturers may submit detailed and professionally drawn scale plans to ADPH for pre-approval. Such plans shall be accompanied with electronic drawings in a format acceptable to ADPH. Upon approval, plans shall be assigned an ADPH approval number and date. If a tank manufacturer purchases a form that is preapproved in Alabama, the plans for the form need not be resubmitted. The application shall state the form manufacturer's name, the plans approval number and date assigned to the form that is to be used.

(6) The issuance by ADPH or the LHD of an initial or renewal permit for an approved tank model shall in no way imply a guarantee of an OSS acceptability, approval or performance of a tank.

(7) No cast in place or otherwise constructed tank shall be installed without prior review of design and construction plans by the ADPH or the LHD and subsequent permitting by ADPH.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.32 Tank Manufacturer Records

(1) A person selling or distributing tanks shall keep a complete record of all tanks sold. The record shall include the following:

(a) Name and address of the buyer;

(b) Date of sale of the tank(s);

(c) Tank series permit number(s), size of the tank(s) and number of tanks sold to the buyer;

(d) The location of the buyer or place of installation if other than that provided in subparagraph (a), above;

(e) A written explanation of the intended tank use, and if it is to be used as a septic tank a Permit To Install/Repair Identification Number shall be provided; and

(f) The AOWB licensed installer number, when applicable.

(2) All such records shall be made available to ADPH for inspection upon request.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.33 Effluent Filter Specifications

(1) All effluent filters shall comply with National Sanitation Foundation (NSF) Standard 46, shall be installed in the septic tank, and shall be properly sized for the system in accordance with the filter manufacturer's recommendations. The requirement for a septic tank effluent filter may not apply to any tank that is used as a grease trap in conjunction with a septic tank or a pre-treatment or trash tank in conjunction with an advanced treatment system.

(2) An effluent filter may be housed in a chamber separate from the primary treatment tank, in which case the chamber shall comply with Rule 420-3-1-.42 OSS Requiring Pumping of Effluent.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.34 Holding Tank Requirements

(1) Applications that propose using holding tanks as a temporary substitute for an OSS shall be submitted by an engineer and shall be permitted in the same manner as an OSS.

(2) The permanent use of a holding tank for a dwelling as part of a permanent OSS is prohibited.

(3) Use of a holding tank for a system serving a dwelling or dwellings on a temporary basis may be approved by the LHD when one or more of the following circumstances exist:

(a) When a permit has been issued and the system is expected to be in service in a reasonable time.

(b) When there is an emergency situation caused by a system failure that cannot be repaired in a timely manner.

(c) When it is the LHD's opinion that health and/or environmental priorities take precedence and a holding tank is the only practical solution.

(4) A LHD may permit a holding tank for a specific period of time for an establishment until another approved means of sewage treatment and disposal is available. The permit will expire at the end of the permit period which shall not exceed one year. A new permit may be issued at the discretion of the LHD.

(5) Permitting conditions shall be at the discretion of the LHD and may include, but may not necessarily be limited to, the following:

(a) A visual or audible alarm.

(b) Water conservation measures.

(c) Pumping requirements, including a contract with a licensed pumper.

(d) Reporting requirements.

(6) All prefabricated holding tanks shall be permitted by the LHD according to Rule 420-3-1-.31 Prefabricated Septic Tank, Grease Trap, and Holding Tank Permit or if a proposed tank is not prefabricated it shall be inspected and certified in writing by the engineer to be structurally sound and suitable for the intended purpose.

(7) Holding tank capacity shall be calculated using the sewage flows provided by Rule 420-3-1-.78 Design Flow and Wastewater Concentrations. The tank shall be sized to provide a capacity 25 percent larger than the projected sewage flow accumulation between scheduled pumping and as a buffer in case of weather conditions, temporary unavailability of a sewage tank pumper, or other adverse conditions.

(8) A holding tank shall be properly abandoned in compliance with Rule 420-3-1-.35 Abandonment of a Sewage Tank, when its permitted use expires.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.35 Abandonment of a Sewage Tank

When the use of a sewage tank is discontinued; or when the system cannot be made to comply with these rules; or when the property is condemned, the tank shall be abandoned, and its further use prohibited. An abandoned tank shall be pumped out by an AOWB-licensed pumper. An empty tank may be removed at the property owner's option, or to make room for new system components. If no replacement component is intended, the hole left by the removal of a tank shall be filled with sand or soil. An empty tank left in place shall be filled with sand or soil. The bottom of the tank may be ruptured.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Advanced Treatment, Drip Irrigation, Mounds, Grease Traps, and Pumps

420-3-1-.36 Advanced Treatment Required

(1) The following systems, sites, and/or conditions shall require advanced treatment:

(a) Any system with a design flow of over 4,000 gpd of sewage.

(b) Any system that is producing high-strength sewage of over 1,800 gpd shall treat to secondary effluent standards under a Performance Permit. If the average strength is 3,000 mg/l Biological Oxygen Demand (BOD) or greater, ADPH may consider treatment to primary effluent standards under a Performance Permit if:

1. There are no environmental or health ramifications.

2. The field shall be sized in accordance with Rule 420-3-1-.81 EDF Sizing for Establishments (2)(b)(3) except that actual BOD loading from the treatment systems shall be used.

(c) Sites where depth to ASHES from the surface is less than 6 inches.

(d) Sites where depth from surface to hard bedrock is less than 12 inches.

(e) Soil or soil material with an estimated or actual percolation rate of less than 1 minute per inch.

(f) Sites where percolation rate is greater than 240 minutes per inch.

(g) Sites containing mine spoil at the surface to a depth of at least 48 inches within the proposed EDF area at the time of the site evaluation.

(h) When there is, in the judgment of ADPH, a particularly environmentally sensitive site.

(i) When a bed is used as described in Rule 420-3-1-.83 Gravel Field Standard Construction Specifications.

(2) Systems serving dwellings with a design flow of sewage over 1,800 gpd shall be issued a Performance Permit that may include advanced treatment, installing ground water monitoring wells, and/or other measures that are protective of public health.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.37 Advanced Treatment System (ATS) Specifications

(1) A person proposing to market a proprietary advanced treatment system (ATS) within Alabama shall submit an application as required by these rules for each model to be marketed. The application shall include the following information:

(a) Model name and number and the names, mailing addresses, and telephone numbers of the manufacturer, authorized state dealer(s), and provider(s) of warranty service, repair, and maintenance.

(b) Test reports, identifying unit tested, with any added devices, and results and conclusions of tests conducted.

(c) Evidence (seal) that the certifying organization is American National Standards Institute (ANSI), European Committee for Standardization (CEN), or the Standards Council of Canada (SCC) certified to judge compliance with the appropriate National Sanitation Foundation (NSF), Committee for Standardization (CEN), or the Bureau de normalisation du Quebec (BNQ) Standard.

(d) Design hydraulic loading capacity (gallons per day) and design organic loading capacity (pounds of BOD per day).

(2) An ATS shall comply with the following requirements:

(a) The conditions of a Performance Permit; or

(b) Be currently listed and certified by a testing organization as meeting the appropriate NSF, CEN, or BNQ standard.

1. The testing organization shall be certified by ANSI, CEN, or SCC to be a testing organization capable of meeting the appropriate NSF, CEN, or BNQ standard. Such organization shall include developed criteria and procedures for periodic quality assurance inspection of the listed manufacturer's plant(s) and unit(s) equivalent to NSF, CEN, or BNQ. Those ATS units having a Product Permit on March 19, 2006, are exempt from this requirement. Should there be any changes in the exempted system it shall comply with the appropriate NSF, CEN, or BNQ Standard.

(c) Be capable of producing effluent that meets secondary effluent standards as defined by these rules.

(d) Be accessible for inspection and maintenance of the treatment medium or unit.

(3) The dealer of an ATS and its auxiliary or peripheral equipment installed within the state shall provide to the purchaser an owner's manual and written warranty that meets the requirements of Rule 420-3-1-.06 Proprietary and Non-Proprietary Product Permits.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.38 Drip Irrigation Approval

(1) A Permit To Install an OSS using a drip irrigation system may be granted under one of the following conditions:

(a) The drip irrigation system is designed by an engineer and complies with these rules and with any requirements of the drip tube manufacturer.

(b) The "packaged" drip irrigation system shall have a design flow of 1,800 gpd or less and be pre-approved as a package under a Product Permit issued by ADPH. The package shall be selected by an engineer from those that have been approved by the ADPH.

(2) For approval of a drip package, the applicant (a manufacturer of the drip tube or a secondary treatment device) shall submit to ADPH for review and approval a request for a Product Permit. The application shall list the advanced treatment device and all equipment (including manufacturer and model number) to be used with the drip package. In addition, the application shall include a letter or other certification from each component manufacturer stating that the component is appropriate for the intended use.

(3) The system will be permitted as a package and shall be installed as a package. The manufacturer of an advanced treatment device who intends to place a package drip field behind its treatment device shall design its own drip package or have an agreement with an existing drip field (system) manufacturer to use an approved package. This agreement shall be referenced in the Product Permit. Conversely, the manufacturer of the drip package may also hold a Product Permit by agreement with an ATS manufacturer.

(4) The drip package applicant shall demonstrate under what conditions (single or multiple zone) the package will be hydraulically stable and the conditions under which it may be used without modification. The design criteria of Rule 420-3-1-.37 Advanced Treatment System (ATS) Specifications, and Rule 420-3-1-.90 Drip Irrigation General Requirements, through Rule 420-3-1-.93 Drip Field Requirements, shall be satisfied. The proposed package shall address the design parameters below and show that the package will be hydraulically stable under each of the design parameters:

(a) Maximum linear feet per zone.

(b) Maximum number of laterals per zone.

(c) Maximum supply and return line allowed.

(d) Maximum elevation between filter and zone valve.

(5) The applicant shall demonstrate that the pressure at the pump, under discharge and flushing conditions, is adequate after subtracting friction loss of the system from the pump outward.

(6) The applicant shall show that the pump selected is within its recommended operating parameters under operational conditions and show that it is capable of maintaining adequate pressure in the lines without harming the emitters.

(7) The system shall be capable of flushing each drip field or zone back to the pre-treatment tank at a minimum fluid velocity of 2 feet per second. Field flushing velocity shall be measured at the distal end of the drip tube.

(8) If the site conditions (i.e., elevation to the field) are outside of the parameters set for the pre-approved package, the application shall be reviewed by ADPH, and may be approved after a receipt of a letter from a representative of the Product Permit holder stating that he or she is aware of the specific condition at the site and that the system will operate properly under those conditions.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.39 Drip Documentation and Warranty

The drip irrigation manufacturer shall provide to designers, installers, and service personnel, a manual that shall include instructions for the system's design, installation, operation, maintenance, and a warranty that meets the requirements of Rule 420-3-1-.06 Proprietary and Non-Proprietary Product Permits.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.40 Use of a Grease Trap

(1) A grease trap is not recommended for use with an individual dwelling OSS. A commercial food establishment or any establishment using commercial kitchen equipment shall install a grease trap that complies with Rule 420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications. An establishment which, by the nature of its operations or the product proposed, produces little grease waste may be excluded from this requirement, as determined by the LHD.

(2) A grease trap and its EDF shall be located as follows:

(a) In accordance with setback requirements of Rule 420-3-1-.88 Setback or Separation Distances.

(b) At an accessible location outside the building where it may be easily inspected, pumped, and maintained.

(3) Effluent from a grease trap may be disposed of as follows:

(a) By connecting to an EDF serving only the grease trap. The amount of EDF for the grease trap shall be determined from Table 3, or

(b) By connecting to the building sewer. Overall OSS design shall take into consideration the inclusion of grease trap effluent in a system.

(4) Where installation of a grease trap complying with Rule 420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications, is not practical, ADPH may consider approval for the use of other commercial grease interceptors or traps that meet or exceed the intended grease retention and interception needs.

Author: Thad Pittman

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.41 Sewage Tank Pumping Permit

(1) A person proposing to be a sewage-tank pumper shall obtain a permit (or permits) issued by the LHD(s) in each county where said sewage-tank pumper operates a sewage-tank pumper facility and in accordance with the requirements listed below. A LHD may honor a permit issued by another LHD.

(a) The applicant shall submit an application to the LHD on forms provided by the Department and shall state the business name, address and telephone number; the applicant's, owner's, and proprietor's name(s), address and telephone number; AOWB licensee name, license number and expiration date; the type of waste to be hauled; the manner in which tank contents are to be collected, transported, and disposed of; method of sewage-disposal and the type of waste disposal at each point; the location of disposal points, and the tag number, state of registration, and sewage tank capacity (in gallons) of each vehicle. Copies of written approvals from the disposal point authority shall be attached to the application.

1. The application shall have the following statement on it:

"I agree to allow inspection of all sewage tank cleaning equipment, vehicles, implements, containers, or other devices and sites used in the collection, transportation, or disposal of sewage tank contents. I also agree to mark my vehicle(s) and sewage holding tanks in accordance with the rules governing sewage tank pumpers. I agree to keep adequate records and submit them to the local health department personnel in accordance with Rules of the State Board of Health. I understand that permit renewal is required each year between November 1 and December 31."

(b) The LHD shall, prior to the issuance of a permit to pump sewage tanks, and as often as necessary thereafter, inspect or cause to be inspected the sewage tank cleaning equipment, implements, containers, or other devices used in the collection, removal, transportation or disposal of septage, as well as septage disposal sites and methods, to ensure that the above mentioned items are used, maintained, and operated in compliance with applicable provisions of these rules.

(c) The LHD shall not issue a Sewage-Tank Pumping Permit under this Chapter of the rules unless an approved disposal point and method of sewage disposal is provided.

(d) To operate in other counties in addition to (1) above, the sewage-tank pumper shall obtain approval from, and register with, the affected county health department(s) by submitting a written request accompanied by a copy of the permit obtained in (1) above and the information required in subparagraph (1)(a)(c) of this Rule.

(e) Authorization to operate in one county does not confer authorization to operate in any other county. It shall be the responsibility of the sewage-tank pumper permit holder to obtain proper approval and authorization to operate within each county.

(f) Upon renewal of the permit by the permitting county health department, the sewage-tank pumper shall furnish copies of the renewed permit within 10 (ten) working days to the health department of each county in which said collector or transporter is registered, in order to continue operation in that county.

(g) Any sewage-tank pumper operating in the State, whose sewage-tank pumper facility is located outside the State, shall, in coordination with the Board and the designated LHD, establish a specific fee-based county within the state of Alabama as the county of record for permitting purposes.

(h) If the application is approved, the LHD having jurisdiction where the pumper operates a sewage tank pumper facility shall issue a permit with an identifying number on a form provided by the Department.

1. Permits shall not be transferable, and shall become invalid upon a change of ownership or upon suspension or revocation.

2. A permit may be suspended or revoked when the LHD determines that the operation is not being conducted in accordance with these rules or conditions of the permit.

(2) A vehicle used in the collection, removal, transportation or disposal of septage shall display, in letters at least 2 inches high, and in a conspicuous place on both sides of the truck cab or carrier tank, the name and address of the firm under which the business is conducted. A valid and current Health Department decal issued by the fee-based county shall be displayed in a place to be determined by the Board. Such decals shall be issued only for those vehicles that pass Health Department inspections based on standards set forth in subparagraphs (2)-(4) of this Rule.

(a) A carrier tank aboard a vehicle used for collecting, removing and transporting sewage shall be conspicuously and permanently labeled "FOR SEWAGE ONLY" at or near the inlet and outlet valves of the tank. The use of the carrier tank for another purpose is prohibited. The required lettering shall be a minimum of 3 inches high.

(b) A carrier tank aboard a vehicle used for collecting, removing, and transporting grease trap waste only may use the label "Fats, Oils, and Grease" or "FOG" in lieu of "For Sewage Only."

(c) A carrier tank used for the collection, removal, transportation, or disposal of sewage shall be fully enclosed, leak proof, fly proof, and so operated as to prevent spillage or leakage during collection, removal, transportation and disposal. The carrier tank, when used for holding septage, shall have a minimum effective holding capacity of 1,250 gallons.

(d) Only pumping equipment, tanks and vehicles permitted by the LHD shall be used.

(e) The equipment, implements, containers or other devices used for the collection, removal, transporting or disposal of sewage tank contents shall be maintained and operated so as to prevent unsanitary or nuisance conditions.

(3) A person engaged in sewage tank pumping shall have facilities available for the flushing, cleaning and deodorizing of sewage tanks, carrier tanks and the

required cleaning implements and equipment. The following practices shall be observed:

(a) Wastewater resulting from the flushing and cleaning process shall be disposed of either by a public or private sewer system.

(b) Odor-controlling substances may be left in the sewage tank, carrier tank or other sewage tank cleaning implement or equipment, but in no case shall such substances be used in lieu of proper cleaning.

(4) A sewage tank pumping contractor shall keep a complete record of facilities pumped or cleaned and shall submit such records to the LHD when requested by the LHD. The LHD may suspend a sewage tank pumping contractor's permit for refusing to submit records when requested. Records shall specify the following:

(a) Name and address of the person for whom the waste was removed;

(b) Date of completion of the operation;

(c) Size of the tank and the amount, in gallons, of the waste removed;

(d) Location of the disposal site; and

(e) Method of final disposal.

(5) Septage shall be disposed of in a manner that will protect the public's health and avoid nuisance conditions. Raw sewage, such as that removed from holding tanks and portable toilets, shall be disposed of only by an approved public or private sewer system. Septage may be disposed of by the following approved methods:

(a) Discharged into a public sewer manhole or at an acceptable point in a ADEM-permitted sewage treatment plant, provided that the written approval of the responsible person of the governmental entity or other entity owning or operating the public sewer system or sewage treatment plant is received by the pumper prior to the use of such disposal facilities. A copy of such approval shall be provided to the LHD with the sewage tank pumping permit application;

(b) Land applied on a site permitted by the LHD when proper application for permit is made by the owner. Such applications shall be submitted through the LHD to the Department under the provisions of the Septage Management Rules of the State Board of Health, Chapter 420-3-6; or

(c) Placed in a Department approved sewage tank for temporary storage.

(6) A permitted sewage-tank pumping contractor, when pumping a sewage tank, shall effectively and completely remove the liquid and solids in the tank by removing the inspection ports at both ends of the tank or the lids covering both ends of the tank, where inspection ports are not provided, and pump all compartments. The pumper shall make the access ports used in pumping watertight at the end of the pumping, and shall note problems or deficiencies in the tank. If these problems are not repairs per the definition of Repair but are maintenance, no repair permit is required. (See the definition of Repair and Maintenance.) Deficiencies that are causing system failure shall be reported to the LHD and shall require a repair permit.

(7) The LHD may suspend or revoke a sewage tank pumping contractor's permit for improperly discharging septage into the environment.

(8) A pumper of portable toilets shall meet all conditions of this rule with the additional requirements listed below;

(a) A carrier tank used exclusively for the pumping of portable toilets or marine sanitation waste may have a minimum holding capacity of less than 1,250 gallons. The sewage-tank pumping contractor shall state in writing that the carrier tank is used only for the pumping of portable toilet or marine sanitation waste.

Authors: Thad Pittman, Phyllis Mardis, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.42 OSS Requiring Pumping of Effluent

(1) The pump specified for an OSS shall:

(a) Be capable of passing minimum one-half (½) inch spherical solids, in the event of filter failure. However, if an engineer, for design considerations, specifies a pump that will not pass one-half (½) inch solids, adequate precautions shall be taken to prevent one-half (½) inch or larger solids from entering the pump. In this case, at a minimum, the pump system shall not be placed in the primary septic tank but shall be placed in a secondary pump chamber or in a filtered pump vault.

(b) Be capable of being submerged.

(c) Produce sufficient capacity at the calculated total dynamic head (TDH).

(d) Have a variable level on-off pump activation device that is adjustable to meet specific application requirements.

(e) Be rated for effluent service by the manufacturer.

(f) Provisions shall be made for easy removal of the pump.

(g) Have a full flow shut-off valve installed.

(h) Have a check valve to prevent reverse drainage back into the pump chamber.

(2) The discharge pipe shall comply with the following requirements:

(a) The discharge pipe shall be the same size as or larger than the pump outlet.

(b) In order to ensure sufficient fluid velocity to carry solids (generally accepted to be 2 feet per second), the following pipe sizes shall be used: one and one-fourth (1¼) inch pipe with flows of at least 10 gpm; one and one-half (1½) inch pipe with flows of at least 13 gpm; 2 inch pipe with 21 gpm; two and one-half (2½) inch pipe with 30 gpm; and 3 inch pipe with 46 gpm; or manufacturers' specifications.

(c) Pipe materials shall be Schedule 40 PVC, or equal, as required by local plumbing codes or by the International Plumbing Code.

(3) The material and construction specifications for a dosing tank or pumping chamber shall:

(a) Be corrosion resistant.

(b) Be able to withstand anticipated internal and external loads.

(c) Have provisions for anti-buoyancy by design.

(d) Not allow infiltration or exfiltration.

(e) Be accessible from the surface to allow for installation and removal of the equipment, and to maintain the system.

(f) Have access covers which are lockable and heavy enough to prevent easy access, or shall be equipped with tamper-proof retainers.

(g) Have adequate reserve capacity.

(4) The pumping system shall have a high-water alarm which shall:

(a) Be installed on a separate electrical circuit from the pump.

(b) Be rated for the installation location.

(c) Have the ability to be tested for proper operation.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Systems and Criteria for Special Sites

420-3-1-.43 Non-Waterborne Systems: Pit Privies and Portable Toilets

(1) In remote areas of the state or in certain transient or temporary locations, the use of non-waterborne systems such as pit privies, portable toilets, and related sewage disposal systems may be approved. Due to their limited capacities, these systems shall be restricted to receive excreta only. Since such systems require regular service and maintenance to prevent their malfunction and overflow, they shall only be used where the LHD approves such use. Typical locations of non-waterborne systems are rural camps, seasonal recreation areas, public gatherings, and similar transient or temporary locations. Non-waterborne systems are prohibited in establishments. Conditions that may justify consideration of these systems include, but are not limited to one of the following:

(a) Soil and site conditions are severe for an OSS.

(b) Water under pressure is not available.

(2) A pit privy is an OSS, and it may not be constructed or used without a permit that limits the terms and conditions and clearly defines the effective period. Pit privy installation may be permitted only in remote locations, but installation may not be permitted for a dwelling or other building with indoor plumbing, and where water under pressure is in the structure.

(a) A pit privy shall be constructed and used pursuant to permit conditions and it shall comply with Rule 420-3-1-.88 Setback or Separation Distances.

(b) The pit shall be at least three and one half (3½) feet square, 5 feet deep, and at least 18 inches above seasonal high groundwater indicators. It shall be fitted with a restraining curb to prevent caving, and contain adequate openings to allow liquids to seep into the surrounding soil. The pit shall be vented to permit escape of the gases from decomposition of waste.

(c) The pit shall be located on a mound to provide drainage of roof water away from the pit to prevent erosion, caving, or flooding.

(d) The floor shall rest on a suitable foundation to prevent settling, sagging, erosion, or caving. It shall cover the pit tightly.

(e) The seat riser shall be joined to the floor, forming a watertight and insect resistant joint. It shall be fitted with a seat and a self-closing cover.

(f) The foundation, floor, and seat riser may not be made of wood. They shall be constructed of concrete or other impervious material that will not warp, crack, or develop openings for the entrance of insects or leakage of excreta.

(g) The abandonment of a pit privy shall be accomplished by filling the pit with soil or other inert material to an elevation equal to the surrounding grade.

(3) In the absence of water under pressure, graywater shall be dispersed through an EDF pipe a minimum of 50 linear feet per dwelling. The EDF pipe shall not be installed closer than 50 feet from any surface water of the state.

(4) LHDs may approve portable toilets, or chemical toilets for revivals, encampments, and other transient locations where numbers of people congregate for specified short periods of time.

(5) Portable and chemical toilets shall comply with the following requirements:

(a) The toilet shall be capable of being readily relocated as an intact unit and shall be self-contained.

(b) Waste receptacles shall be watertight and constructed of non-absorbent, acid resistant, non-corrosive, easily cleanable material.

(c) The floor and interior walls shall have a non-absorbent finish and be easily cleanable.

(d) The toilets shall be provided at all times with toilet tissue, and units for male use provided with urinals. The number of toilet seats provided shall be in compliance with the International Plumbing Code.

(e) The toilets shall be kept clean and deodorized to prevent a nuisance due to odor, flies, mosquitoes, or other vermin. It shall also be provided with a self-closing door and a privacy latch.

(f) The toilets shall be placed on a firm base to prevent tilting.

(g) A contract with a certified pumper permitted pursuant to Rule 420-3-1-.41 Sewage Tank Pumping Permit, shall be provided for pumping. Pumping shall be at a frequency so as to prevent public nuisances or hazards. The LHD may specify the frequency of pumping.

Author: Thad Pittman

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.44 Composting and Incinerating Toilets

(1) A permit issued by the LHD shall be required for composting and incinerating toilets.

(2) Approved composting toilets may be used to handle waste for which they are designed. If there is other wastewater (sewage) generated that the composting toilet is not designed to handle then an appropriate OSS shall be used.

(3) A composting toilet shall be certified by NSF or an organization that is ANSI-certified to judge compliance with the appropriate NSF Standard.

(a) Components for the storage or treatment of waste shall be continuously ventilated.

(b) The disposal of a liquid from a composting toilet shall be to either a public or private sewer system.

(4) The design, construction, and installation of a gas-fired incinerating toilet shall conform to the current ANSI Z21.61, adopted by reference. The materials, design, construction, and performance of an electric-fired incinerating toilet shall conform to the appropriate NSF Standard. The disposal of a liquid from an incinerating toilet shall be to either a public or private sewer system.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Signatories

420-3-1-.45 Signatories to a Permit Application and Report

(1) The application for a Permit To Install or Repair, a Performance Permit, Product Permit, Septic-Tank Pumper's Permit, or a Tank Manufacturers Permit shall be signed by a "responsible person" as defined by these rules.

(2) A report required by a permit and other information requested by ADPH or the LHD shall be made in writing and signed by a responsible person or his or her authorized agent.

(a) An authorization to an agent shall be made in writing by the Responsible Person and provided to ADPH or the LHD.

(b) The authorization shall specify either an individual or a position having responsibility for the overall operation of the regulated facility or activity.

(3) If an authorization under this rule is no longer valid because a different individual or entity has responsibility for the overall operation of the facility, a new authorization shall be submitted to ADPH or the LHD prior to, or together with, a report or other information signed by the newly authorized representative.

(4) In addition to the statement required in this rule, there are statements required of design engineers by Rule 420-3-1-.52 Professional Signatures and Seals.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Variances

420-3-1-.46 Variance to Rules

Written requests for a variance to these rules shall be submitted and considered pursuant to the Board's Rule-making Procedures, specifically Rule 420-1-2-.09, Waivers or Variances, *Ala. Admin. Code.*

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Repairs

420-3-1-.47 Repair, Replacement, and Inspection of an Existing OSS

(1) The LHD may investigate reports of a failing or an inadequate OSS. The LHD shall require the owner or responsible person to abate an unsanitary condition caused by a failing OSS or an unapproved sewage discharge by repairing or replacing the system or components of the system as required.

(2) If the strength of waste (BOD) or the flow has not changed the action shall be a repair as defined in these rules.

(a) Before an existing OSS may be repaired, the owner, his authorized agent or the responsible person shall apply for and obtain a permit to repair the OSS from the LHD.

1. No permit is required if the work performed meets these rules' definition of maintenance.

2. Verbal authorization to repair a conventional small-flow system may be given by the LHD. The verbal repair authorization shall be documented in the LHD file. However, an application for the Permit to Repair shall be submitted to the LHD within 10 days of the date that the verbal approval is given.

(b) The LHD may exercise discretion when evaluating repairs, supervising the nature and location of repair work to be performed, and inspecting completed repair work.

1. If an EDF is repaired, improved, or reestablished, the EDF area shall have an ADPH evaluation. Further site evaluation may be required as a result of the ADPH evaluation.

(c) When evaluating the site and repairing a failing EDF, the applicable sections of these rules shall be followed as guided by the definitions of repair, replacement, and maintenance.

(d) When an OSS fails and cannot be repaired in accordance with these rules and public sewer is available (within 500 feet), subject to approval of appropriate officials, connection to the public sewer shall be made.

(e) The owner or responsible entity, an engineer, an installer, and ADPH shall collaborate on the evaluation of a failing Large-Flow OSS. The engineer shall submit a plan for repairing the failing Large-Flow System to ADPH. If the system has been issued a Performance Permit, the permit shall be reviewed by ADPH and any necessary modifications shall be made in accordance with Rule 420-3-1-.22 Requirements for Performance Permits.

(f) Repaired systems are subject to the same inspection requirements and installation documentation as new systems.

(g) An additional REDF is not required for repairs to an existing OSS.

(h) If it is determined that the original REDF is inadequate and the repair would likely be more successful if the present EDF is used for the repair, it may be done with approval of ADPH and the LHD.

(3) If the strength of waste (BOD) or the flow has increased, the action shall be a replacement as defined by these rules.

(a) If a replacement is required, all applications, plans and specifications, certifications, site evaluation, and standards shall be the same as a new system.

(b) If certain components of the old system meet the current standards they may be incorporated into the replacement system.

Authors: Thad Pittman, Lem Burell, James Congleton
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.48 Evaluation of an Existing OSS

(1) When requested by the homeowner, his or her agent, or a lending institution representing the owner or buyer, an evaluation of an existing OSS may be performed by the LHD. Documentation of the evaluation may be provided to the requesting party upon completion of the evaluation.

(2) Evidence that an existing OSS is failing or will fail when used may be reason for the LHD to provide an unfavorable evaluation.

(3) Evidence that an existing OSS was installed without the issuance of a Permit To Install and/or an Approval for Use on or after March 18, 1982, may be reason for the LHD to refuse to evaluate the existing OSS. The LHD may require a professional site evaluation and application for Permit To Install be submitted by the owner. The LHD may require the existing OSS to either be brought into compliance with current rules or require replacement of the OSS.

(4) The evaluation of an existing OSS does not express or implies any guarantee that the OSS will function satisfactorily.

(5) Before completing the evaluation, the homeowner, his or her agent, or the lending institution shall provide evidence that the septic tank of an existing OSS has been pumped within the last 3 years. This maintenance service should include the cleaning of the effluent filter for tanks with filters.

(6) When an existing OSS has not been used for more than 2 weeks, additional information or site evaluation may be required by the LHD.

(7) The owner, agent, or economic institution shall be responsible for securing the services of a site evaluation professional or AOWB licensee when such service is determined to be needed by the LHD.

(8) Similar inspection services, such as those provided by a home inspector or an AOWB licensee, shall not imply that the service was provided under authority of these rules nor shall they imply that the system complies with these rules.

Author: Thad Pittman, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Certifications

420-3-1-.49 Certifications

(1) Prior to issuance of the Permit To Install or Repair, the site evaluator shall certify that the soil tests are true and accurate by signing the certification in the ADPH Form CEP-2/3 Part C.

(2) For a permit application for Small-Flow Developments or Systems, the applicant shall sign the certification in the ADPH Form CEP-2. For a permit application for Large-Flow Developments or Systems, the applicant shall sign the certification in the ADPH Form CEP-3.

(3) For an Engineered OSS, the design engineer (see Rule 420-3-1-.08 Engineer Design Required) shall certify that the design of the system will meet applicable performance standards by signing the certifications in the ADPH Form CEP-2 or CEP-3, as appropriate.

(4) For a Conventional OSS, the professional engineer, land surveyor, professional soil classifier, geologist, or the PHESS shall certify the information outlined in the ADPH Form CEP-2 or CEP-3 is complete, true, and correct.

(5) Prior to issuance of the Approval for Use, the installer shall certify the installation by submitting an ADPH Form CEP-5

(6) Prior to issuance of the Approval for Use, for a system designed by an engineer as required by Rule 420-3-1-.08 Engineer Design Required, the engineer shall certify the installation by submitting an ADPH Form CEP-6 Part A, if applicable; and an ADPH Form CEP-6 Part B form.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.50 Periodic Report Certifications

All reports required by the permit and other information requested by ADPH shall include the certification below and shall be signed by either the responsible person or his or her duly authorized representative as specified in Rule 420-3-1-.45 Signatories to a Permit Application and Report.

"I certify under penalty of law that this document and its attachments were prepared under my direction or supervision, in accordance with the system designed to ensure that qualified personnel properly gather and evaluate information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations."

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.51 Tank Testing Certification

The person witnessing tank tests pursuant to Rule 420-3-1-.29 Tank Testing and Quality Control shall execute a certification that, "I certify that structural and water tightness tests were conducted in accordance with applicable state law and regulation and guidelines of the Alabama Department of Public Health and the results of the tests reflected herein are accurate," and it shall be a part of the tank application.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.52 Professional Signatures and Seals

It is the responsibility of any person preparing or submitting an application to ensure that all studies, engineering reports, plans and specifications, soils reports, and other technical submittals required by state law or these rules, are prepared according to applicable licensure laws and regulations, and that they include the professional's signature and seal as required by the applicable licensure laws.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Other

420-3-1-.53 Wastewater Management Entities

(1) Any person operating a Cluster Wastewater System or Community Wastewater System as defined by these rules and §22-25B-1, *et seq., Ala. Code 1975,* is a management entity and, as such, shall meet the requirements of this rule.

(2) Small-Flow Cluster Systems that are operated by management entities and that do not require economic certification may be permitted by the LHD.

(3) Management entities are responsible to:

(a) Establish procedures and guidelines for operation and management of their Cluster and Community Systems. Such procedures and guidelines shall not conflict with Rules of the Board or § 22-25B-1 *et seq., Ala. Code 1975.*

(b) Recommend that the construction and installation of new systems approved and permitted by ADPH conform to the Minimum Construction and Testing Standards for Cluster and Community Wastewater Systems.

(c) Perform routine system inspection, operation, and maintenance using appropriately trained or licensed personnel as required by all established and applicable statutes and rules for the type of decentralized cluster system used, or to contract for performance of these services.

(d) Manage septage handling and disposal so as to comply with all established and applicable statutes and rules.

(e) Maintain all records and perform database maintenance, bookkeeping, billing, payment processing, and other administrative acts as required for proper management.

(f) Obtain easements for access to property for maintenance or repair, when needed, or to acquire land when necessary.

(g) Administer an internal enforcement program with appropriate sanctions.

(h) Comply with the conditions of certifications or conditions of operational permits as well as the applicable Rules of the Board; administrative orders; and state, federal, and local laws and regulations.

(i) Submit to ADPH a quarterly fee equal to 4 percent of its gross income.

(4) Each management entity, unless exempted pursuant to § 22-25B-5(3), *Ala. Code 1975,* shall apply for and obtain a Certificate of Economic Viability from the Alabama Public Service Commission.

(5) Violation or failure of a management entity to comply with the law or conditions of the operations permit, or the rules or administrative orders, may result in revocation of the operational permit, and also may result in civil penalties of not less than $100, or more than $5,000, per compliance failure or violation. The total penalty assessed for an order issued by ADPH shall not exceed $10,000. Each day of non-compliance constitutes a separate violation. Civil penalties may be assessed for any compliance failure or violation occurring within 3 years prior to the date of issuance of an order or notice or commencement of civil action pursuant to the Onsite Wastewater Management Entities Act § 22-25B-1, *et seq., Ala. Code 1975.*

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.54 Recording Requirements

(1) A plat recorded after the effective date of this rule for lots that will have an OSS shall have one of the following statements on the plat:

(a) For lots with individual systems on each lot it shall read:

"The lot(s) on this plat are subject to approval or deletion by the (name of county) LHD. No representation is made that any lot on this plat will accommodate an Onsite Sewage System (OSS). The appropriateness of a lot for wastewater (sewage) treatment and disposal shall be determined when an application is submitted. If permitted, the lot approval may contain certain conditions which restrict the use of the lot or obligate owners to special maintenance and reporting requirements, and these are on file with the said health department and are made a part of this plat as if set out here on."

(b) For lots on a Cluster Wastewater System it shall say:

"The Health Department signature is for recording purposes and signifies that the Department is aware of this development and sees no obvious impediments to the planned central sewer system serving the lots as it was presented."

(c) These statements may be modified when necessary.

(d) All the items that are required on the surveyed plat on record in the LHD do not have to be on the recorded plat so long as the statements above are on the recorded plat.

(2) The owner of any lots that are reduced in size below the minimums provided in Rule 420-3-1-.09 Minimum Lot Size Requirements for Sites Using an OSS, or for any reason has an Engineered OSS on the lot, and that is not part of a Large-Flow Development with a recorded plat containing the statement in paragraph (1) above shall execute and record the covenant to run with the land (ADPH Form CEP-7) before an Approval for Use may be issued by the LHD.

(3) All required recordings shall be completed before an Approval for Use is issued by the LHD.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.55 Plat Signing by Alabama Department of Public Health or Local Health Departments (ADPH or LHD)

(1) The LHD shall sign a surveyed plat, if applicable, to be recorded when the ADPH Form CEP-3 Application for Large-Flow Development has been completed and approved.

(a) In the case of a Large-Flow Development with Small-Flow Systems to be permitted by the LHD, plats may be signed when the ADPH Form CEP-3, Section A, Part 3 Final Site Development Plan, is approved.

(b) In the case of a Large-Flow Development with Large-Flow Systems to be permitted by ADPH or the LHD, plats may be signed when ADPH Form CEP-3 Section B, Part 1 and 2 are approved and, if required, the system has been certified by the Alabama Public Service Commission to be added to the list of certified systems managed by a management entity.

(2) In the case of a system that is to be permitted by ADEM, plats may be signed after ADEM has issued a draft permit and the system has been certified by the Alabama Public Service Commission, if required, to be added to the list of certified systems managed by a management entity.

(3) If the conditions are different than those stated in Paragraphs (1)(a), (1)(b) and (2), of this rule, the requirements for plat signing may vary since other circumstances unique to a development may also be a factor in determining when it is appropriate to sign a plat.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.56 Recreational Vehicle/Camp Sites

(1) For purposes of regulating sewage disposal, a site may be designated a Recreational Vehicle (RV) Park by the LHD if it meets the following conditions.

(a) The RVs shall not be rendered less than completely mobile by removing wheels or attaching permanent or semi-permanent structures.

(b) There shall be an office on or close to the property that is occupied during normal business hours.

(c) The lots and all appurtenances and utilities, including the OSS, shall be owned and operated by a responsible person as defined by these rules.

1. The responsible person shall provide sewage treatment and disposal meeting the requirements of ADPH or ADEM rules, or a central sanitary dump station into which RVs may discharge waste for ultimate disposal off-site. The method of off-site disposal shall be approved by the LHD. There shall be one sanitary station for wastewater disposal for every 50 vehicles that the park is designed to accommodate.

2. The location and design of a sanitary station or OSS shall be approved by the LHD. If ultimate disposal is to be through an OSS permitted by ADPH, the design shall take into account the chemicals that are used in RV holding tanks. The design of sanitary dump stations shall include a sanitary method of transfer from the RV to the station.

3. The design for each sanitary station or OSS shall be as that for dwellings except that the design and planning shall be based on a daily wastewater (sewage) discharge that the park will generate when using the flow rates in Appendix A Table 1, or other flows as proposed by the design engineer and approved by the LHD or ADPH. The peaking factor may be higher than those listed in Appendix A, Table 1, depending

on the nature of the park, and this shall be taken into consideration by the design engineer. The park shall not take in more recreational vehicles than it was designed to accommodate at any one time. The sanitary stations shall only receive sewage.

4. Except for the onboard sewage storage tank built into the RV, there shall be no other form of sewage disposal or storage in the park other than that approved by ADPH or ADEM.

(2) If an RV park meets the conditions of paragraph (1) of this rule it shall be determined to be a Large or Small-Flow Development based on flow only.

(3) If lots are sold or rented under conditions other than those described in paragraph (1) of this rule, the development shall be considered to be a RV Camp and part of a Small or Large-Flow Development as defined by these rules, and as such it shall meet all the requirements in these rules, including flow requirements in Appendix A, Table 1, and shall comply with Rule 420-3-1-.53 Wastewater Management Entities, if applicable.

(4) If the requirements of this rule cannot be met by existing RV parks or camps, then alternate solutions, whether temporary or permanent, may be considered under a Performance Permit.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.57 Appeals

(1) Permit denials, suspensions, and revocations. The denial, suspension and/or revocation of a permit shall be governed by the Alabama Administrative Procedure Act, § 41-22-1, et seq., *Ala. Code 1975.*

(2) Hearings.

(a) Contested case hearings shall be provided in accordance with the Alabama Administrative Procedure Act, §41-22-1, et seq., *Ala. Code 1975*, and the Board's Contested Case Hearing Rules, Chapter 420-1-3 *Ala. Admin. Code.*

(b) Informal settlement conferences may be conducted as provided in the Board's Contested Case Hearing Rules.

(3) Revocation of Permits. The State Health Officer may, after providing opportunity for hearing, revoke a permit for violations of any of the requirements of these rules.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.58 Access

Agents and employees of ADPH or the LHD shall be permitted access to all property on which an OSS is proposed or on which an OSS has been installed for the

purpose of consultation, evaluation, and/or inspection and determining compliance with these rules.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.59 Other Approvals Not Implied

(1) Approval of a lot, large-flow development, building development, or method of sewage disposal by ADPH, the LHD, or its agents does not constitute or imply approval by a municipality, county, or other entity having planning, zoning, or other legal jurisdiction. Similarly, approval of a like plan by another entity does not negate the requirement for approval of an OSS by ADPH, the LHD, or its agents.

(2) County Boards of Health may formulate more stringent regulations that do not conflict with this chapter.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.60 No Guarantee Implied

The issuance of a permit to construct, operate, or repair an OSS and a subsequent Approval for Use shall not be a guarantee or warranty, implied or expressed, that the system will function satisfactorily for any given period of time.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

SITE EVALUATION SECTION

420-3-1-.61 Site Limitation Determination (SLD)

(1) Site evaluations may be performed using percolation tests, soil mapping, soil morphology, or the unified method as described in these rules.

(2) The site evaluation shall be completed by one of the following who shall be licensed, registered, and certified in the state of Alabama: an engineer, land surveyor, geologist, or soil classifier; and in some cases a Public Health Environmental Soil Specialist (PHESS). All sites on which an OSS is proposed shall be evaluated and rated using the following six factors:

(a) Soil permeability: see Rule 420-3-1-.63 Soil Permeability.

(b) Depth to Average Seasonal High Extended Saturation (ASHES): see Rule 420-3-1-.64 Soil Testing Depth Requirements and 420-3-1-.66 Soil Depth and Vertical Separation.

(c) Depth to rock or other restrictive layer or horizon: see Rule 420-3-1-.64 Soil Testing Depth Requirements and Rule 420-3-1-.66 Soil Depth and Vertical Separation.

(d) Slope and landform limitations: see Rule 420-3-1-.62 Slope and Landform Limitations.

(e) Potential for frequent flooding: see Rule 420-3-1-.62 Slope and Landform Limitations.

(f) Presence of hydric soils: see Rule 420-3-1-.62 Slope and Landform Limitations.

(3) The most limiting factor shall determine the suitability of the site for a Conventional OSS and in some cases suggest a type of Engineered OSS, if needed.

(4) The limitation rating of each factor can be determined from Appendix A, Table 19. The ratings are slight (S), moderate (M), severe (V), and extreme (X).

(a) Slight limitations allow the greatest flexibility for use of a Conventional OSS.

(b) Moderate limitations also allow for use of a Conventional OSS, but with some modifications, usually in the form of added fill material for cover.

(c) Severe limitations may require an Engineered OSS, or at the least, careful planning and installation of a Conventional OSS.

(d) Extreme limitations require an Engineered OSS and possibly advanced treatment. Sites with extreme limitations may also be unacceptable for an OSS.

(5) All soil and site conditions, site limitations, restrictive layer or horizon, and soil tests and evaluation results may be verified by the ADPH.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.62 Slope and Landform Limitations

(1) Slope limitation ratings are found in Appendix A, Table 19, and Rules 420-3-1-.94 Controlled Fill Mound System, and 420-3-1-.95 Lot Modification – Planned and Unplanned, for options of manipulating steep slopes to overcome severe or extreme ratings.

(2) Prior to any cutting and/or filling operations, refer to Rules 420-3-1-.94 Controlled Fill Mound System, and 420-3-1-.95 Lot Modification – Planned and Unplanned.

(3] Sites with a drainage way within 25 feet of an EDF and/or REDF are unsuitable for OSS. Drains shall not be filled for the purpose of creating an acceptable EDF or REDF. (See these rules' definition of Drainage Way and Appendix A, Table 6, for the engineered setback exception.)

(4) Sites with caves, sinkholes, and similar depressions within 300 feet of the EDF or REDF, and are likely to be impacted by the sewage from the system and shall be rated extreme. The LHD may consider allowing OSS components in locations

less than 300 feet upon receipt of a report prepared and certified by a geologist. This report shall specifically address the susceptibility of contamination of both surface and groundwater by an OSS based on the existing conditions. However, no part of the system shall be allowed within 50 feet of the rim on any sinkhole.

(5) Any site rated extreme because of wetlands, hydric soils, or ponding is considered unsuitable for an EDF except when the conditions of Rule 420-3-1-.94 Controlled Fill Mound System, and 420-3-1-.95 Lot Modification – Planned and Unplanned, apply. Frequently flooded areas are considered unacceptable for an OSS. A minimum setback from an OSS to these features shall be 25 feet unless surface water is present for significant periods.

(6) Sites that are in a flood easement are considered extreme and are unacceptable for an OSS.

(7) Natural and artificial landforms such as filled areas with excessive voids or mine spoil areas require special consideration because of the high potential for contamination.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.63 Soil Permeability

(1) Permeability shall be determined as part of a site evaluation by one or more of the following methods:

(a) Actual percolation testing pursuant to these rules.

(b) The unified method provided by Rule 420-3-1-.71 Unified System for Site Evaluation.

(c) The soil morphology method stated in Rule 420-3-1-.72 Soil Morphology Method.

(d) The detailed soil mapping method as provided in Rule 420-3-1-.73 Soil Maps, through Rule 420-3-1-.76 Grid Staking for Soil Maps.

(2) The percolation method, when used, shall be performed and certified by an engineer, land surveyor, geologist, or professional soil classifier, in accordance with their respective licensing board rules and in accordance with Rule 420-3-1-.64 Soil Testing Depth Requirements through Rule 420-3-1-.70 Extended Saturation Procedure.

(a) Permeameter testing may be substituted for percolation tests when performed in accordance with the manufacturer's guidelines and procedures, with the exception of saturation. Saturation periods should be the same as for percolation testing found in Rule 420-3-1-.70 Extended Saturation Procedure.

(b) Permeameter tests may be required to be performed in lieu of percolation tests in special conditions, such as in fill material, at the discretion of ADPH or the LHD.

(c) Percolation tests or Permeameter tests shall be required for mine spoil sites.

(3) The unified soils classification method, when used, shall be performed and certified by an engineer or geologist according to Rule 420-3-1-.71 Unified System for Site Evaluation.

(4) The soil morphology method, when used, shall be performed and certified by a soil classifier or PHESS currently employed by ADPH, according to Rule 420-3-1-.72 Soil Morphology Method.

(5) The detailed soil mapping method, when used, shall be performed and certified by a professional soil classifier according to Rule 420-3-1-.73 Soil Maps, through Rule 420-3-1-.76 Grid Staking for Soil Maps.

(6) Soil absorption (application) rates for an EDF may be based on actual percolation results or assigned rates determined by using one of the other three methods of site evaluation. Although similarities exist, each method has specific procedures, soil groupings, terminology, and application ranges to be used and reported exclusively by the appropriate professional as set forth in this rule.

(7) When assigned or actual permeability (percolation) rates or other test results are in dispute, ADPH or the LHD may determine what test results or percolation rates are used in permitting an OSS.

(8) Test results or assigned rates obtained from natural soil, along with all other evaluation factors, shall be used to determine the design and size of the system. However, test results or assigned rates in fill material may not necessarily be the only criteria for determining the type or size of an EDF. Other requirements may apply as deemed necessary by ADPH or the LHD.

(9) ADPH or the LHD may require additional observation pits, borings, or other tests as necessary, if ADPH or the LHD becomes aware that the soil or site may be significantly different from that which was reported. Other tests may include, but are not limited to, saturated hydraulic conductivity tests (such as constant head permeameters), extended saturation testing, and/or monitoring of saturated conditions.

(10) Soil morphology performed by a soil classifier in addition to percolation test or permeameter test shall be required for sites that contain mine spoil. Soil morphology should be performed first to ensure the proper testing depth as well as to determine the presence of and depth to restriction(s). A minimum of three pits shall be required. The pits shall be spaced equally within the EDF area. Pit depth shall be 60 inches or refusal whichever comes first. The minimum test requirements shall be three tests in the EDF area and one test in the REDF. The EDF size shall be based on the slowest permeability rate recorded.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.64 Soil Testing Depth Requirements

(1) The correct testing depth to determine permeability shall be the least permeable horizon that is within 18 inches below the trench bottom or to a restriction, if present, that is shallower than 18 inches. Percolation tests may be conducted at

different depths to aid in this determination. In no case shall the test depth be less than 12 inches.

(2) Sites that do not meet the minimum conventional depth requirements in natural soils shall be evaluated as provided in this rule in the upper 12 to 24 inches (whichever is least permeable) of the natural soil for the system design prior to adding fill. See Rule 420-3-1-.94 Controlled Fill Mound Systems.

(3) A site having more permeable soils located below slowly permeable clay layers (but not a restrictive layer or horizon, see Appendix A, see Table 19 footnote 4), and which can still meet the required separation distance above the ASHES or other limiting layers, may be considered for an EDF. However, trench bottoms shall not exceed 72 inches below the natural surface.

(4) The LHD may require observation pits where questions arise about soil conditions or where soils are difficult to evaluate with manually operated equipment.

Author: David Gray, John Clement, Boyd Rogers
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.65 Minimum Testing Standards and Interpretations

(1) See Appendix A, Table 21, for the minimum number of tests required per site.

(2) Percolation test holes shall be located in the proposed EDF, and in the proposed REDF when required, with the exception of soil mapping which shall be performed in accordance with Rule 420-3-1-.73 Soil Maps, through Rule 420-3-1-.75 Required Map Information.

(3) Multiple testing locations for the same area shall be a minimum of 30 feet apart. Each boring and its respective percolation hole shall be 5 to 15 feet apart.

(4) When two tests are performed in the EDF and they produce significantly different results (more than 20 minutes per inch or the extreme of another soil group), one of the following shall be done:

(a) Relocate the proposed EDF area and retest or reevaluate as necessary to confirm that the site is consistent.

(b) Calculate the amount of EDF using the highest result(s).

(c) Soil evaluators may average test results on projects where four percolation tests have been conducted, if they can be considered representative for the site conditions.

(5) Boring diameters for soil maps shall be no less than 3 inches in diameter. Observation pits are required for evaluating Large-Flow Developments, including large-flow developments with an individual OSS, except where high intensity soil maps are provided.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.66 Soil Depth and Vertical Separation

(1) A minimum separation between the deepest trench bottoms and the ASHES shall be required. See Appendix A. Table 19, for specific depth requirements.

(2) The depth to the ASHES is approximated by the highest occurrence of 2 percent or more contemporary redoximorphic features. (See Appendix A, Table 19 note 3). The minimum vertical separation (MVS) is based on chroma 2 or less (Munsell or equivalent) colors (2 percent or more by volume). However, because saturation often occurs above these gray colors for shorter durations, the trench bottoms shall be at least the same elevation or higher than the top of this zone. (If there is sufficient evidence to suspect saturation occurs even higher than any obvious redox features for a significant period, groundwater monitoring may be required for a minimum of one normal wet season.)

(3) When the person performing the evaluation encounters difficulty in determining the depth of the ASHES, he or she should consult with the LHD.

(4) When actual monitoring is required to make a determination of the ASHES, a proposed plan shall be submitted to ADPH and the LHD for review and approval.

(5) ADPH or the LHD reserves the right to make the final determination concerning ASHES and useable soil depth.

(6) Disposal trenches shall not be installed below the elevation of contemporary ASHES indicators.

(7) Other soil features that may occur in or below the soil and restrict the downward movement of water or hinder acceptable treatment and renovation of effluent shall be considered a restrictive layer or horizon. These features may include, but are not limited to, the following:

(a) Bedrock layers that are tilted and variable in depth from the surface shall be treated as restrictive when the consistent mass of hard or soft rock exceeds 50 percent by volume.

(b) Some parent material layers with poor or massive structure and without adequate conducting pores (slowly or very slowly permeable).

(c) Fragipans or similar features with inherent dense or brittle qualities.

(d) A layer or layers of fill or mine spoil that has less than 50 percent soil size particles, or greater than 50 percent coarse fragments with 2 percent or more empty voids between fragments, or greater than 75 percent coarse fragments larger than gravel size).

(e) One or more layers of fill or mine spoil that have been compacted.

Author: David Gray, John Clement, Boyd Rogers
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.67 General Percolation Procedure

(1) A site may be evaluated using the percolation method by first boring a hole or digging a pit to establish the depth of the ASHES or other restrictive layer or horizon. The test hole depth is determined by Rule 420-3-1-.64 Soil Testing Depth Requirements. For the minimum number of tests required see Appendix A, Table 21.

(2) A valid percolation test shall be performed in accordance with Rule 420-3-1-.64 Soil Testing Depth Requirements.

(3) A minimum of two percolation tests shall be required for each EDF, and one percolation test shall be performed in the REDF for lots of less than 15,000 sq. ft. The test holes shall be located no closer than 30 feet apart.

(4) One percolation test and one boring shall be required for each additional 700 gpd flow or portion thereof, for establishments or Large-Flow Systems after the minimum of two percolation tests and two borings for the initial 500 gpd.

(5) Percolation tests shall not be conducted in stump holes, large root channels, fractured rock, or in association with any other factors that might cause test results to be non-representative of the actual site conditions. No soil additives shall be used in the percolation testing process.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.68 Soil Boring Procedure (for Percolation Testing)

A minimum of two soil borings or two observation pits shall be dug from 5 to 15 feet from the anticipated percolation test location in accordance with the following:

(1) Soil borings shall be dug to a minimum depth of 48 inches to determine the restrictive horizon depth, unless prevented by rock. The soil boring or observation pit shall be deeper than the intended trench depth by the minimum required separation distance (MVS).

(2) The minimum diameter of soil borings shall be 3 inches. Soil material from a boring shall be laid out in a manner consistent with the soil's natural order. Power augers or similar equipment that uses the Archimedes screw principle shall not be used for soil evaluation.

(3) Observation pits are required for Large-Flow Developments except where high intensity soil mapping is done. Pits shall be a minimum of 60 inches deep unless prevented by rock. Pits should be constructed in such a fashion as to be easily accessible for the evaluator. Pits are excluded from an organized layout of the removed soil material.

(4) The depth from the surface to the groundwater or saturated soil shall be reported if encountered.

(5) The depth from the surface to ASHES shall be reported if encountered.

(6) The depth from the surface to any other restrictive layer or horizon shall be identified and reported. See Rule 420-3-1-.66 Soil Depth and Vertical Separation.

If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(7) Soil colors shall be reported using the Munsell color standard or equivalent (hue, value, and chroma numeric designations). All colors observed, including primary and secondary colors for each layer, shall be reported.

(8) The depth from the natural surface to the upper and lower boundaries of each layer shall be reported.

(9) All measurements shall be reported in inches.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.69 Percolation Test Procedure

(1) The percolation test hole shall be dug or bored to the appropriate testing depth according to Rule 420-3-1-.64 Soil Testing Depth Requirements, but not less than 12 inches deep. The diameter of the hole shall be 6 to 12 inches (except when a permeameter is used).

(2) In order to remove any glazed or burnished spots on the walls of the test hole, the walls shall be scratched or made rough so as to provide a natural soil interface for absorption. All loose materials shall be removed from the hole. It is recommended that a 2-inch layer of coarse sand or gravel be added to the hole to protect the bottom from scouring.

(3) A percolation test hole shall be filled with clear water to a minimum depth of 12 inches. Water shall be added to the test hole to maintain the 12-inch depth as often as necessary over a minimum period of 4 hours and preferably overnight, in order to saturate the surrounding soil.

(4) Percolation test measurements shall be made no later than 8 hours following the saturation process. The drop in the water surface shall be measured from a stable reference point at or above the surface, not inside the test hole, at 30-minute intervals until the completion of the test.

(5) After the saturation process, the testing professional shall adjust the water level to a depth of approximately 6 inches over the bottom of the hole. From a stable reference point outside the test hole, the depth to the water surface shall be measured at 30-minute intervals for a period of 4 hours, or until a minimum of three readings have essentially the same drop. (The total variation in drop between three readings shall be no more than one-eighth (1/8) inch.)

(6) Water shall be added as necessary to maintain the 6 inches of water above the bottom. The drop in the water elevation occurring in the last 30-minute interval shall determine the percolation rate, provided that the absorption rate has stabilized. If there is more than one-eighth (1/8) inch variation in drop between the last three readings, the test shall continue to be made at additional 30-minute intervals until the rate has stabilized. The rate shall be considered stabilized when the last three readings are the same (not exceeding one-eighth [1/8] inch) after the minimum 4 hours saturation period.

(7) Soils that are rated higher than moderate shrink-swell potential (plasticity index above 20 and a liquid limit greater than 50) shall require a minimum of 24 hours of constant saturation prior to testing. See Rule 420-3-1-.70 Extended Saturation Procedure.

(8) Additional saturation time may be required if sufficient swelling has not occurred as indicated by non-representative test results.

(9) For soils that absorb the first 6 inches of water in less than 30 minutes following saturation, measurements on the water surface shall be made at 10-minute intervals over a period of 1 hour. The drop of water surface that occurs in the final 10 minutes shall be used to compute the percolation rate. Generally, these are coarse textured soils. If this situation occurs in other soils, the test should be relocated.

(10) The percolation rate shall be reported as the number of minutes required for the water surface to drop 1 inch in the test hole after the rate is stabilized.

(11) A copy of all field notes for each percolation test attempted shall be provided to the LHD upon request.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.70 Extended Saturation Procedure

(1) Certain soils, especially those with high, very high, and sometimes moderate shrink-swell potential require extended saturation periods before percolation or permeameter testing can be done. This process is necessary to allow sufficient time for swelling to occur in these soils if dry, regardless of the season of the year. The following list of indicators should be used as a guide to help soil testers identify those soils that require extended saturation prior to testing to ensure accurate test results.

(a) Soil areas identified by the USDA/NRCS county soil survey as having moderate or higher shrink-swell potential.

(b) Texture Group 4B and 4C soils.

(c) Soils with pH levels of seven or higher in some part. These soils may have vegetative indicators of a seemingly over-abundance of red cedar, red bud, green ash, osage orange, etc.

(d) Soils having developed directly over argillaceous limestone and/or shale parent material.

(2) At a minimum, the following procedures shall be met when the extended saturation procedure (ESP) is required:

(a) The LHD shall be notified at least two business days prior to the beginning of (including the saturation period) a simulated or actual wet-season percolation test.

(b) Percolation test holes shall be prepared according to Rule 420-3-1-.67 General Percolation Procedure except for the saturation period.

(c) A 12-inch column of clean water shall be maintained for at least 24 hours instead of the standard 4-hour saturation period. The regular procedures in Rule 420-3-1-.67 General Percolation Procedure should be followed for completing the test.

(d) A log of the procedures, times, and checks made during the process shall be kept and submitted with the test results to the LHD.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.71 Unified System for Site Evaluation

(1) An engineer or geologist may evaluate and certify the results for Large-Flow and Small-Flow Developments using the unified system method.

(2) The percolation test method may be used in combination with this method to aid in evaluating a site.

(3) Lab analysis may be substituted for estimates at any time but is required for Texture Group 4B and 4C soils (estimated permeability more than 90 minutes per inch). However, in the case where the results from this method conflict with an evaluation by a representative of ADPH or the LHD, ADPH evaluation results shall be determinative. If the design is utilizing drip irrigation at a .05 gpd/sq ft infiltration rate, lab analysis is not required.

(4) A minimum of two observation pits or two borings shall be required in the proposed site for the EDF and one observation pit or one boring shall be required in the REDF for lots of less than 15,000 sq ft. Additional tests may be dug for exploratory purposes. One observation pit or one boring shall be required for each additional 700 gpd flow or portion thereof, for establishments or Large-Flow Systems after the minimum number of observation pits or borings for the initial 500 gpd.

(5) Soil borings shall be dug to a minimum depth of 48 inches to determine the limiting zone depth, unless prevented by rock. The soil boring or observation pit shall be deeper than the percolation test depth by the required MVS. The minimum diameter of the soil boring shall be 3 inches.

(6) When observation pits are used, they shall be prepared as they are defined in these rules and be 72 inches deep unless prevented by rock and constructed in such a fashion as to be easily accessible and safe for the evaluator.

(a) The vertical section of the observation pit wall shall be picked to a width of at least 12 inches, from the ground surface to the floor of the observation pit, for observations and note-taking.

(b) The soil in the picked zone shall be moist so that the proper colors can be observed and noted. If additional moisture is needed, apply water with a spray bottle. All colors recorded shall be from samples moist and unmixed.

(7) The upper and lower depths of each layer (see paragraph (8) below) of soil shall be recorded in inches from the surface of the ground. Each layer shall be given a numerical identification, beginning with the surface as No. 1 and numbering consecutively with depth.

(8) The color(s) and texture of each layer shall be recorded, using unified designations, starting with the surface and continuing to the minimum required depth.

(9) Any other pertinent information about the site, including percent slope, shall be reported. From this information, the location, depth, and amount of EDF can be proposed to the LHD.

(10) Soil colors shall be reported using the Munsell color standard or equivalent (hue, value, and chroma numeric designations). All colors observed, including primary and secondary colors for each layer shall be reported.

(11) The depth to the ASHES is determined from Rule 420-3-1-.66 Soil Depth and Vertical Separation. EDF trench bottoms shall have a minimum separation distance above the ASHES or other restrictive layer or horizon as established in Appendix A, Table 19. If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(12) Once the upper and lower depths of each layer are determined and colors are noted, the permeability can be assigned for each layer. Use Appendix A, Table 23, to assign soil permeability classes based on the Unified System: (Reference: FHA No 373, Engineering Soil Classification for Residential Development).

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.72 Soil Morphology Method

(1) A professional soil classifier may evaluate and certify the results of the morphology method for Large-Flow and Small-Flow Developments. Certification by professionals shall comply with Rule 420-3-1-.52 Professional Signatures and Seals.

(2) A PHESS may evaluate sites for a Conventional OSS. The PHESS shall be currently employed by the ADPH, conduct these evaluations only in counties approved by ADPH for this program, and adhere to the requirements of these rules. This applies to Small Flow Systems only.

(3) The percolation test method may be used in combination with the soils morphology method to aid in evaluating a site.

(4) The PHESS or professional soil classifier may determine that a lab analysis is necessary. However, in the case where the results from the soil morphology method conflict with an evaluation by a representative of ADPH or the LHD, the evaluation results of ADPH shall be the final determinant.

(5) A minimum of two observation pits or two soil borings shall be dug in the area proposed for the OSS. Additional tests may be performed for exploratory purposes. One observation pit or one boring shall be required for each additional 700 gpd flow or portion thereof, for establishments or Large-Flow Systems after the minimum number of observation pits or borings for the initial 500 gpd.

(6) Soil borings shall be a minimum diameter of 3 inches and a minimum depth of 48 inches to determine the limiting zone depth, unless prevented by rock. The soil boring or observation pit shall be deeper than the percolation test depth by the

minimum required setback distance. The minimum diameter of the soil boring shall be 3 inches. When pits are used, they shall be dug to a minimum of 24 inches wide and 60 inches deep, unless prevented by rock.

(7) If an observation pit is used, a vertical section of the pit wall at least 12 inches wide shall be picked from the ground surface to the floor of the pit, and shall be scraped and picked to provide a fresh face (picked zone) for observations and note-taking.

(8) The soil in the picked zone shall be moist so that the proper colors can be observed and noted. If additional moisture is needed, apply water with a spray bottle. All colors recorded shall be from samples moist and unmixed.

(9) The upper and lower depths of each discernible layer of soil or soil material shall be recorded in inches from the surface of the ground. Each layer shall be given an alphabetical letter designation as appropriate. Subscripts are helpful but not required.

(10) The USDA color(s) and texture of each layer shall be recorded. Any other pertinent information about the soil or the site, including percent slope, and landform position shall be reported. From this information, the location, depth, and amount of EDF can be proposed to the LHD.

(11) When soil borings are used to evaluate a site, a 3-inch minimum diameter hand operated soil bucket auger shall be used. However, a 2-inch minimum diameter soil probe may be used if the sample can be obtained with horizons in their natural condition with appropriate depths and can be left virtually intact for the LHD's inspection. If there is an indication that problems may exist which would not allow for the proper evaluation of the soil using soil borings, then observation pits or other appropriate testing methods may be required.

(12) Soil colors shall be determined using a Munsell chart or equivalent. Soil colors may occur as:

(a) Only one color.

(b) One dominant color with secondary colors (mottles or redoximorphic features).

(c) Several colors with approximate equal coverage (mottled). To the extent possible, all colors should be recorded, with the dominant color first.

(13) The depth to the ASHES is determined by Rule 420-3-1-.66 Soil Depth and Vertical Separation. EDF trench bottoms shall have a minimum separation distance above the ASHES or other restrictive layer or horizon as established in Appendix A, Table 19. If there is uncertainty about whether a feature qualifies as a restrictive layer or horizon, the LHD shall be consulted.

(14) Once the upper and lower depths of each layer are determined and colors are noted, the permeability can be assigned for each layer. Use Appendix A, Table 24, to assign soil permeability classes based on the USDA System.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.73 Soil Maps

(1) The minimum number of soil borings required for soil map(s) depends upon the variability of the relief and the complexity of the soils present.

(2) The types of soil maps, their purposes, and the minimum number of soil observations appropriate for each map are addressed below.

(a) Preliminary Maps. -- these maps may be made using a wide variety of scales, but not smaller than 1:24,000. They usually provide sufficient information to make decisions about further land development. Minimum size delineation is approximately three acres. A preliminary soil map can usually be obtained from the USDA NRCS published soil survey, which is available in most counties. A preliminary soil map is a required part of Part 1 of the Site Development Plan. The map may be used in the Part 1 of the Site Development Plan process and can come directly from the published survey, or be made by a soil classifier. It is recommended that preliminary maps from USDA NRCS published soil surveys be reviewed and checked for accuracy by a Professional Soil Classifier. The preliminary maps from USDA NRCS published surveys may not be used in the place of soil maps required for site evaluation in Part 2 of the Site Development Plan.

(b) Low Intensity Maps. -- these maps show the location and extent of soils and landscape features sufficient for most Large-Flow planning, but are not site specific to such a degree that allows for individual site determinations. Base maps are 1 inch equals 300 feet scale or larger. Generally, one soil observation pit per three acres is a minimum. Low intensity maps are excellent planning tools for large-flow development and other areas where an OSS will be used.

(c) High Intensity Maps. -- this is the minimum level of intensity for soil maps when used in lieu of other evaluations or tests, i.e., percolation. The map scale shall be 1 inch equals 100 feet or larger. High-intensity soil maps can be used for individual lots or in large-flow development prior to the establishment of lot lines. A minimum of four borings per acre is required to define the soils. When a grid system is not used, boring location shall be dictated by the landscape or in a manner to best define the soils that occur. All borings shall be flagged and numbered. When a high intensity soil map is used to evaluate a site for an OSS on an individual lot, the lot corners shall be staked and flagged and the lot lines flagged at regular intervals in wooded or uncleared areas. If necessary, the owner shall mow or otherwise clear the site to facilitate the mapping process.

(d) Extra High-Intensity Studies. -- this is an intensive soil morphological study that is site specific. A minimum of two borings is required per site. Soil descriptions shall be provided and the soil classified to the series level whenever possible. Map boundaries are not necessarily required at this level of evaluation.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.74 Minimum Requirements for Soil Surveys and Maps

(1) Soil surveys or maps shall conform to the National Cooperative Soil Survey (NCSS) Standards.

(2) Soils shall be classified according to U.S. Soil Taxonomy to the series level and map units shall generally consist of consociations. Complexes may only be used under very limited conditions when two or more dissimilar soils or soils and rock outcrops cannot be separated.

(3) Soil series boundaries shall be plotted on a map at a scale dictated by the intended soil mapping intensity.

(4) A high-intensity soil map requires a carefully prepared base map on which the professional soil classifier shall accurately locate soil boundaries. A minimum of a 1-foot contour interval topographic base map is required for slopes 2 percent or less and a 2-foot contour for 2 to 4 percent slope. A 5-foot interval is usually acceptable for slopes greater than 4 percent. A grid map with 100 feet (maximum) spacing is strongly recommended (with or without a topographic map) and under certain conditions may be required (see Rule 420-3-1-.76 Grid Staking for Soil Maps).

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.75 Required Map Information

(1) The following information is required for all maps:

(a) A title block or caption that states the project or client name.

(b) The date of the survey.

(c) A north arrow for orientation.

(d) The scale of the map.

(e) The soil mapping intensity (i.e., preliminary, high intensity).

(f) The signature, stamp or seal, address, and telephone number of the professional soil classifier.

(g) A special symbols legend, if needed, defining special features identified on the survey map (i.e., springs, rocky outcrops, wells, sinkholes, gullies, etc.).

(2) The information listed below shall accompany or be provided on maps in table form with detailed maps for each boring:

(a) The name of the soil series (or closest series with similar interpretations).

(b) The percent slope or slope range class.

(c) The depth to redoximorphic features: see notes below Appendix A, Table 19.

(d) The depth to other restrictive layer or horizon.

(e) The assigned or adjusted permeability rate and depth at which it occurs.

(f) Additional notes and information as appropriate.

(3) Soil maps shall be color-coded with green for slight, yellow for moderate, orange for severe, and red for extreme.

(4) ADPH or the LHD may require or choose to allow a high intensity or extra high-intensity soil map for a special study on a parcel or lot where conditions may be severe or extreme for a Conventional OSS or where an advanced treatment system is needed.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.76 Grid Staking for Soil Maps

(1) Grid staking is required for any of the following sites and conditions:

(a) A site that is thickly wooded or otherwise uncleared, where vision is obstructed.

(b) The landscape lacks sufficient relief to be adequately depicted on a 1 or 2 foot contour interval base map.

(c) When, for any reason, grid staking is needed for adequate ground control by the professional soil classifier.

(2) Grids shall be laid out at a minimum of 100-foot spacing and flags or stakes shall be numbered.

(3) Staked lots shall have numbered surveyed stakes at each corner.

Author: David Gray
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.77 Protection of EDF and REDF

(1) The primary purpose for requiring protection of the EDF and REDF is to prevent any disturbance to these areas that will affect the integrity of the soil and the performance of the OSS, to avoid costly and untimely delays, and to identify these areas as sewage disposal fields to be restricted from activities prior to installation of the OSS.

(a) Protection of the EDF and REDF shall be the responsibility of the property owner, but may be delegated to an appropriate responsible party depending on the site location, type of system, level of development, and construction activity.

(b) Protective actions and methods may vary according to the type of building development and OSS.

(2) Large-Flow Developments shall have protective actions and methods submitted as part of the Site Development Plan. The Site Protection Plan is to be implemented once locations of EDF and REDF are determined. The EDF and REDF shall be physically protected in a manner directed by the LHD that has a reasonable chance to protect the areas prior to and during construction and development activities for the Large-Flow Development. The EDF and REDF shall be designated in

such a manner to communicate that these areas are for sewage disposal and shall be restricted from other activities.

(3) Small-Flow Systems within a Large-Flow Development shall have EDF and REDF protective measures in place prior to individual lot development and/or building or establishment construction. If protective measures implemented for the Large-Flow Development prove to be inadequate or need to be reinforced, adjustments shall be made prior to issuing a Permit To Install.

(4) Large-Flow Systems shall have protection of the EDF and REDF implemented as stated for Large-Flow Developments. Once the Large-Flow System is installed permanent protection and access restrictions shall be installed around the disposal field area as approved by the LHD.

(5) Small-Flow Developments, not part of a Large-Flow Development, shall have EDF and REDF protective measures in place as stated for Small-Flow Systems within a Large-Flow Development but may take into consideration factors that could require a lesser degree of protection due to property size, distance to EDF and REDF from building, or establishment construction, or other reasons as deemed appropriate for consideration by the LHD.

Author: Tom Jensen
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

DESIGN SECTION

420-3-1-.78 Design Flow and Wastewater Concentrations

(1) The daily design flow volume and concentration of sewage or sewage graywater from dwellings shall be computed using Appendix A, Table 1.

(2) The daily design flow and concentration of sewage or high-strength sewage or graywater sewage from establishments shall be computed by one of the following:

(a) From Appendix A, Table 1.

(b) From generally accepted engineering design criteria, taking into consideration the Biological Oxygen Demand (BOD) loading values from Appendix A, Table 1, or other generally accepted BOD loading values from literature subject to ADPH approval.

(c) The design flow may be derived from actual water use data of comparable developments and shall be submitted to ADPH or the LHD with the application. The flow shall be based on a thorough examination of actual water use, actual BOD and Total Suspended Solids (TSS) concentration, and other appropriate pollutant concentrations. Data from the establishment, or from a comparable establishment, justifying a flow rate and concentrations, shall be submitted with the application to ADPH and the LHD.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.

History: Repealed and Replaced: Filed

420-3-1-.79 Gravel Field Standard EDF Sizing for Dwellings

(1) The Gravel Field Standard is the minimum total trench bottom area for dwellings calculated by multiplying the number of bedrooms by the number in the column labeled "Square Feet per Bedroom" in Appendix A, Table 2, or Table 3. The infiltration rate for an EDF shall correspond to the measured or assigned percolation rate determined according to Rules 420-3-1-.61 Site Limitation Determination (SLD), through 420-3-1-.76 Grid Staking for Soil Maps.

(2) A primary EDF for dwellings shall be a minimum of 300 square feet of the Gravel Field Standard or equivalent disposal medium or device; and

(3) If a bed is to be used it shall be designed according to Appendix A, Table 18, and no minimums shall apply and no reductions shall be taken.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.80 Gravel Field Standard Reductions for Dwellings

(1) Any reductions in Gravel Field Standard bottom area for a dwelling using any disposal medium or device alternative to the Gravel Field Standard as calculated in 420-3-1-.80 Gravel Field Standard Reductions for Dwellings, shall be expressed as a percent reduction of bottom area and shall be reflected in the Product Permit.

(a) The bottom area reduction from the Gravel Field Standard for advanced treatment to secondary effluent standards is found in Appendix A, Column 8, of Table 2, or Table 3.

(b) The minimum bottom area square footage calculated for the Gravel Field Standard may be reduced by 33 percent of bottom area if gravel depth is increased to 24 inches total for fields with percolation rates of less than 120 minutes per inch.

(c) Only one bottom area reduction may be taken per field. For example, if a reduction is taken for effluent treatment, no bottom area reduction may be taken for disposal technology used, or if a bottom area reduction is taken for depth of gravel, no bottom area reduction may be taken for effluent treated to secondary standards.

1. If a bed is to be used per Appendix A, Table 18, the bottom area reduction is in the table and no other bottom area reductions are to be taken.

2. If the system has a design flow of over 4,000 gpd, advanced treatment is required. The only bottom area reduction that can be taken for the over 4,000 gpd systems is the advanced treatment reduction.

(2) If it is determined that a system has failed because a reduction to field size was taken, it shall be the owner's responsibility to repair the system.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.81 EDF Sizing for Establishments

(1) The procedure for EDF sizing for establishments depends on the estimation of volume and strength of waste. If in the opinion of ADPH, the waste has not been appropriately characterized, ADPH may offer the option of a temporary Performance Permit so that the applicant may demonstrate the volume and strength of the sewage.

(2) Sizing for High-Strength Sewage.

(a) If an establishment has a projected flow of 1,800 gpd or less of high-strength sewage, advanced treatment is optional, if there is enough room to accommodate the large field that will be required without treatment. In that case paragraph (b), below applies. If advanced treatment is used on high strength sewage (it is required at 1,800 gpd or above), paragraph (c), below, applies for sizing.

(b) If advanced treatment is not used, the field size is based on BOD and no reductions may be taken.

1. To determine the average design load in pounds of BOD per day, refer to Appendix A, Table 1, (or other appropriate engineering literature, as identified by the engineer and approved by ADPH).

2. To calculate the BOD load to the field, assume that the septic tank will remove 30 percent of BOD.

3. Divide the BOD load to the field (in pounds per day after the septic tank as calculated in paragraph 1.) by the appropriate figure from Column (7) of Appendix A, Table 2 and Table 3. That is the bottom area for the field unless advanced treatment is used to achieve secondary effluent standards. The only EDF size reduction allowed is for treatment.

(c) If advanced treatment is used, then the field is sized using the flow and is calculated by dividing the flow by the appropriate hydraulic loading rate in Column (8) of Appendix A, Table 2 or Table 3 for secondary effluent and Column (7) for primary effluent. This is the field size if advanced treatment is used. This calculation gives a reduction in field size for treatment and no other reductions are to be allowed.

(3) Sizing for Sewage.

(a) If the effluent that will come from the establishment is sewage and not high-strength sewage, advanced treatment is optional up to 4000 gpd flow or less. If the flow is greater than 4000 gpd, advanced treatment is required.

(b) If advanced treatment is used, divide the flow by the hydraulic loading rate in Column (8) of Appendix A, Table 2 or Table 3. This is the bottom area of the field if advanced treatment is used. This column gives a reduction in field size for treatment and no other reductions are allowed.

(c) If advanced treatment is not used, divide the flow by the appropriate hydraulic loading rate in Column (1) of Appendix A, Table 2 or Table 3. This is the field size if no advanced treatment is used on sewage. This is the same loading rate as used on a residence with no advanced treatment. If the flow for the establishment is sewage, a primary EDF shall be a minimum of 300 square feet of the Gravel Field Standard or equivalent disposal medium or device.

(4) Sizing for Graywater. If the establishment is producing only graywater, it will be permitted on a case by case basis at ADPH's discretion. If advanced treatment is not required, field sizing shall be calculated by dividing the flow by the hydraulic loading rate in Column (1) of Appendix A, Table 2 or Table 3, but the primary EDF shall be a minimum of 300 square feet of the Gravel Field Standard or equivalent disposal medium or device.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.82 Onsite Sewage Treatment and Disposal System (OSS) Area Requirements

(1) The OSS area, including the EDF and REDF, shall be protected and preserved in the following manner in order that the natural soil may function as an infiltrative medium for sewage treatment and disposal.

(a) An OSS shall not be constructed in Texture Group 3, 4A, 4B, or 4C soils during periods of wet weather or when the soil is sufficiently wet at the depth of installation to exceed its plastic limit. Under these rules, the plastic limit of a soil is deemed to have been exceeded when the soil can be rolled between the palms of the hands to produce threads one-eighth (1/8) inch in diameter without breaking apart and crumbling.

(b) Special caution shall be taken in allowing vehicles to cross the EDF during wet weather. Protection of Texture Group 3, 4A, 4B, or 4C soils, or imported soils, is extremely important. Alteration of soil structure in the EDF area by vehicles may be grounds for the ADPH to deny a Permit To Install or an Approval for Use.

(c) Excavating equipment used to construct an OSS shall be operated so as to not compress or smear the sidewalls or bottom of EDF trenches. Excessive smearing of the absorption trench sidewalls or bottom during construction may result in irreversible damage to the soil infiltrative surface, and may be grounds for the ADPH to deny a Permit To Install or an Approval for Use.

(d) Vegetation with extremely hydrophytic (water-loving) root systems shall be removed for a minimum distance of 10 feet from the EDF.

(2) Grading of a site shall comply with the Site Development Plan (SDP) and Rule 420-3-1-.82 Onsite Sewage Treatment and Disposal System (OSS) Area Requirements.

(a) Grading requirements for sites that do not require an SDP shall be as follows.

1. Alteration of the natural condition of a site may cause the site rating to be revised to a rating of severe or extreme and may necessitate compliance with the lot modification requirements of Rule 420-3-1-.95 Lot Modification – Planned and Unplanned, or may be grounds for denial of a Permit To Install or an Approval For Use.

2. Final grading of a site shall divert surface water around the EDF, shall prepare the site for seeding and landscaping, and shall avoid damaging or compacting the EDF area.

(b) When grading for a mound or controlled fill system, the engineer's design and the requirements set forth in the respective mound design manual or in Rule 420-3-1-.94 Controlled Fill Mound System and Rule 420-3-1-.95 Lot Modification – Planned and Unplanned, shall be followed.

(3) Drainage requirements for an OSS area shall be as follows.

(a) An EDF shall not be located in a depressed area where surface water can accumulate. Provisions shall be made to minimize the flow of surface water over an EDF.

(b) The discharge from drains, gutters, roof, condensate, sump pumps, footings, etc., shall be diverted away from the OSS tank(s) and EDF.

(c) A French drain may be required to divert subsurface water movement away from the EDF area. The French drain shall be placed perpendicular to the general slope of the land and generally parallel to and up gradient of the EDF. The French drain shall discharge into a natural or man-made drainage way. The French drain and associated drainage way shall comply with applicable setback or separation distances.

(d) An OSS shall not receive any discharge other than from the building sewer.

(4) Protection of an OSS area shall be accomplished as follows:

(a) No structure shall be placed over a component of the system unless approved by the LHD and access is provided for repair and replacement of the component.

(b) Lawn sprinkler water supply lines may be installed over an EDF if protected from backflow in accordance with the requirements of the International Plumbing Code. These lines, if installed, should be at least 12 inches above the top of the EDF pipe.

(c) Engineering precautions shall be taken in the design of an EDF proposed for installation under designated playgrounds and athletic fields.

(d) An EDF shall not be located under a driveway or other area subject to vehicular traffic, whether paved or unpaved. A driveway or parking area may be all or a part of the REDF when an engineer addresses its proposed future use to the satisfaction of the LHD.

(e) Driveways or parking areas shall not be constructed over other components of the system, unless structural provisions have been designed and certified by an engineer. A driveway or parking area shall not obstruct or limit access points required to operate or maintain a system component. The distribution piping and related devices and materials shall be rated for the anticipated load.

(f) Piping for effluent conveyed under a traffic area shall be in compliance with the International Plumbing Code.

(g) The plan for any structure, driveway, or parking area that will go over a component of the OSS shall be submitted to the LHD and approved before construction begins.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.83 Gravel Field Standard Construction Specifications

(1) The minimum acceptable material for non-perforated rigid pipe and fittings shall be Schedule 40 PVC or other material approved by ADPH.

(2) The EDF shall be of the level header type or the serial distribution type, depending on the topographic characteristics of the site. A properly designed and installed distribution box may be used in lieu of either. A distribution box is required instead of serial distribution when EDF lines are placed in fill on sloping sites.

(a) The level header type is used on relatively flat terrain where topography will allow EDF trench bottoms to be on the same elevation, within tolerance. The header shall be joined to the effluent line by a vent tee laid horizontally and at the same elevation as the EDF pipe. A sanitary tee shall not be used for this connection.

1. The invert of the header shall be at least 4 inches below the invert of the septic tank outlet.

2. The header line shall be level.

3. A non-perforated header line shall not be counted as part of the required EDF.

(i) The minimum diameter of the line shall be 4 inches unless otherwise specified by an engineer.

(ii) Outlet piping shall be 4-inch Schedule 40 PVC or approved equivalent and shall continue to the header line, uppermost EDF pipe, or distribution box.

(b) When a level header system cannot be installed, a system of serial distribution following land contours may be used, as shown in Appendix A, Figure 2 and Figure 3.

1. Effluent shall enter the uppermost EDF pipe through a watertight effluent line discharging into the trench through a vent tee laid horizontally. A sanitary tee shall not be used for this connection.

2. EDF pipes shall be connected by means of a non-perforated line, and constructed so that each trench is filled with effluent to the full design depth before effluent flows through the crossover line to the next lower EDF pipe. Distribution of effluent to EDF trenches shall be designed to ensure that lines are equally dosed when receiving effluent from preceding trenches. Where crossovers from the same trench are used to feed separate effluent lines, the receiving lines shall be of equal size and square feet.

3. The invert of the uppermost EDF pipe shall be at least 8 inches lower than the invert of the septic tank outlet. The invert of a crossover line shall be at least

4 inches lower than the invert of the septic tank outlet. The inverts of all crossovers from an EDF trench shall be set at equal elevation.

4. At the point where a crossover line leaves an EDF pipe, the trench for the crossover line shall be dug no deeper than the top of the aggregate or top of the EDF product in the preceding trench so that an undisturbed block of earth will remain in place for the full depth of the aggregate or EDF product. Crossover lines shall be laid on undisturbed earth. Successive crossover lines shall be separated to the maximum distance practical to prevent short circuiting. Crossovers shall be constructed as shown in Appendix A, Figure 4, or in accordance with the Product Permit.

5. The maximum length of a serial EDF pipe is 100 feet in each direction when measured from crossover.

(i) For EDF pipes less than or equal to 100 feet, one crossover is required.

(ii) When EDF pipes exceed 100 feet in length, at least two crossovers are required.

(iii) Crossovers on successive lines shall be distributed in the system to minimize short-circuiting of effluent.

(3) A distribution box may be used as follows:

(a) In lieu of a header line, to connect the effluent line to EDF pipes on the same elevation.

(b) To evenly distribute effluent to separate EDF field sections of an OSS.

(c) In lieu of serial distribution, to connect EDF pipes on different elevations.

(d) The distribution box shall be set on level grade. Watertight, non-perforated, rigid, 4 inch, Schedule 40 PVC or equivalent pipe shall extend from the distribution box to the EDF. The first 5 feet of this pipe shall be on level grade as shown in Appendix A, Figure 5.

(e) Where EDF trenches are not placed in natural soil, a distribution box shall be used. Alternatively, Schedule 40 PVC crossovers can be used in standard trenches with compatible 4 inch Schedule 40 PVC lines complying with provisions of paragraph (5) of this rule.

(4) The EDF trenches shall comply with the following requirements:

(a) The width of the bottom of the trench shall not be less than 18 inches nor more than 36 inches. See 420-3-1-.85 Bed Design Construction Standards for alternative trench widths.

(b) The minimum distance between EDF sidewalls shall be 5 feet measured horizontally. Where trenches are on slopes with a grade greater than 25 percent, the minimum distance between trenches shall comply with requirements set forth in Appendix A, Table 4.

(c) All trench bottom elevations in any 100-foot run of trench shall be within plus or minus 1 inch of all other elevations in that run.

(d) The minimum gravel field standard EDF trench depth shall be 12 inches.

(e) The maximum EDF trench depth shall be 60 inches. Trench depth shall comply with the minimum vertical separation (MVS) in the Rule 420-3-1-.66 Soil Depth and Vertical Separation.

(f) There shall be a minimum cover of 12 inches over the field lines.

(g) The maximum length of an EDF trench in an EDF shall be 100 feet, except as provided in the serial distribution systems section of this rule.

(h) The EDF trench requirements outlined in paragraphs (4)(a) through (g) above shall not be varied except as outlined in paragraph (8) below.

(5) The EDF pipe in an EDF using aggregate shall comply with the following requirements:

(a) Appropriate pipe and fittings that conform to applicable ASTM standards shall be used.

(b) All pipe elevations in any 100-foot run of trench shall be within plus or minus 1 inch of all other pipe elevations in that run.

(c) The inside diameter of EDF pipe shall be a minimum of 4 inches.

(d) EDF pipe shall be rigid or semi-rigid perforated plastic pipe with a minimum exfiltration area of 2.2 square inches per foot of pipe. The exfiltration area shall consist of openings located uniformly on one-half (1/2) the circumference of the pipe. The openings shall be of such size, shape and uniformity as to preclude sealing by solids or entrance of gravel or other approved substance surrounding the pipe. Pipe with slits, such as agricultural drain pipe, are not approved for use as EDF pipe.

(e) Perforated pipe in the EDF trenches shall be installed with the perforations turned down.

(f) The EDF pipe shall be installed in ADPH-approved aggregate.

(6) Aggregate and cover material shall comply with the following requirements:

(a) When the aggregate is coarse gravel or stone, it shall be washed and clean, free from fines, dust, sand, or clay, and ranging in size from one-fourth (¼) to 2½ inches. The gravel or stone shall extend at least 8 inches below the lowest point of the EDF pipe and at least level with the top of the EDF pipe. ADPH may consider other aggregate under a Product Permit.

(b) The aggregate surrounding the EDF pipe shall be gravel as specified by these rules or approved for such use by the product manufacturer and shall be covered with untreated building paper, heavy Kraft paper, geotechnical fabric, or other ADPH-approved material, and then back-filled with at least 12 inches of earth cover.

(c) Material which is impervious to air and water, such as plastic sheeting, polyethylene, or similar materials, shall not be used as a cover material over the aggregate in the EDF trench.

(7) The trench bottom of an EDF line shall be placed entirely in the native soil or in the fill soil, if required, but not in both. If the EDF line is in a Controlled Fill System or a mound, the depth of the line shall comply with Rule 420-3-1-.94 Controlled Fill Mound System subparagraph (5).

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.84 Bed Design Construction Standards

(1) As an alternative trench system, a bed may be utilized for systems in Group 1, 2, 3 and 4A soils. All sewage subject to this paragraph shall be pretreated to a minimum of the secondary standard.

(a) The total bottom area for all beds shall be computed as follows:

1. The bed length shall be computed by dividing the design flow by the hydraulic linear loading rate in Column 2 of Appendix A, Table 18, and rounded up to the next whole foot.

2. Bed width shall be computed by dividing hydraulic linear loading rate in Column 2 of Appendix A, Table 18 by the application rate in Column 4 of Appendix A, Table 18, and rounded up to the next whole foot.

3. This shall be the area required for the bed regardless of the configuration.

(b) For Texture Group 4A soils, the bed shall be constructed in accordance with the bed requirements of Converse and Tyler's Wisconsin Mound Manual with two exceptions:

1. The configuration (not area) may be varied if the lot requires it and is approved by the LHD.

2. Low Pressure Pipe (LPP) and time dosing shall be required for all beds regardless of the configuration.

(2) The bed shall be constructed in accordance with 420-3-1-.83 Gravel Field Standard Construction Specifications.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.85 Sand-Lined System Construction Specifications

For proposals utilizing sand-lined systems, construction specifications shall be stated in the specific design manual that is a part of the issued product permit. The size of the sand-lined system shall be computed by dividing the design flow by the hydraulic linear loading rate in Column 2 of Appendix A, Table 18, and rounded up to the next whole foot.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.86 EDF Dosing Requirements

EDFs requiring more than 1,400 linear feet of EDF pipe, as determined by the Gravel Field Standard, shall be divided into separate and equal EDFs containing not more than 1,000 linear feet of EDF trench in each field and shall comply with the following requirements:

(1) Each EDF shall be dosed not more than six times a day. If the effluent is treated to secondary effluent standards or better, dosing requirements may be modified by an engineer, with ADPH approval. This dosing requirement does not apply to drip irrigation or Controlled Fill System with Low Pressure Pipe (LPP).

(2) Each dose shall not be greater than 70 percent of the volume of the perforated pipe or other disposal product of the EDF into which the pumping tank is to discharge.

(3) Dosing shall be accomplished through the use of effluent pumps from a properly sized and designed dosing tank (this does not apply to drip irrigation). The dosing tank shall meet the structural tank requirements in Rule 420-3-1-.27 Septic Tank, Grease Trap, Trash Trap, and Holding Tank Standards and Specifications.

(4) Effluent pumps shall comply with the requirements of Rule 420-3-1-.42 OSS Requiring Pumping of Effluent.

(5) The use of dosing siphons such as Miller siphons may be used with approval of ADPH.

(6) The use of low-pressure EDF pipe, placed within 4-inch diameter EDF pipe or other permitted disposal product, and placed in minimum 18-inch wide trenches with a minimum of 8 inches of aggregate under the pipe, may be used as a means of equalizing the distribution of effluent over the EDF. The use of low-pressure EDF pipe shall require engineer design, using a recognized method.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.87 Disposal of Graywater

(1) Graywater (not including water from residential spas) from a single-family dwelling shall be disposed of by one of the following methods:

(a) Discharge into the building drain or sewer.

(b) Discharge into a separate EDF. The amount of field line for a separate EDF for graywater shall be no less than 25 percent of the EDF, as determined from Rule.420-3-1-.79 Gravel Field Standard EDF Sizing. The EDF may be reduced by the amount used for the graywater not to exceed 25 percent of the total required for the EDF before any other reductions are taken.

1. No permitted product reductions shall be taken in the separate EDF for graywater.

(2) The trench bottom areas of the EDF for graywater that includes a spa, at a private dwelling, shall be a minimum of 50 percent of the original EDF as computed from Appendix A, Table 2 or Table 3.

(3) No additional reductions are permitted unless the engineer determines the amount of additional field line for the spa or similar device from actual water use data and that information is submitted to and approved by ADPH.

(4) The effective liquid capacity of the tank shall be increased by 500 gallons for each spa.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.88 Setback or Separation Distances

(1) The minimum setback or separation distances for EDFs, septic tanks, pump chambers, aerobic pre-treatment devices (including sand filters, biofilters, and ATUs), header lines and similar devices, and various structures and topographic features, are contained in Appendix A, Table 6.

(2) No underground utility service or main, such as a water, electrical, phone, TV, or gas lines may cross over or under an EDF pipe.

(3) No OSS or REDF shall be located in a utility easement for underground equipment.

(4) Separation distances from a natural or man-made drainage system, embankment, or cut may be reduced in accordance with Appendix A, Table 6 and if supporting information is submitted with the application to show that the drainage feature will not adversely affect the functioning of the EDF and that effluent will not reach the feature, embankment or cut. Established natural or man-made drainage features shall not be filled or modified for the purpose of creating an area for EDF or REDF unless addressed by an engineer to the satisfaction of ADPH.

Authors: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.89 Additional Setback or Separation for a Large-Flow System

(1) A Large-Flow System, (which includes more than one EDF with individual capacities of greater than 900 gpd, and that can meet secondary effluent standards) shall be required to comply with the minimum horizontal setback distances listed in Appendix A, Table 6, except that, if in the opinion of the ADPH, a health, environmental or enforcement issue requires it to meet the minimum horizontal setback distances listed in Appendix A, Table 7 and Table 8.

(2) A sewer line (not EDF pipe) may cross a water line if 18 inches clear vertical separation distance is maintained, with the sewer line passing under the water line. When conditions prevent an 18-inch clear separation from being maintained, or whenever it is necessary for the water line to cross under the sewer, the water line shall be encased in materials specified in the International Plumbing Code for a distance of at least 5 feet on each side of the point of crossing.

(3) A collection sewer, force main, or supply line shall be located at least the minimum horizontal distances as listed in Appendix A, Table 6, except that, if in the opinion of ADPH, health, environmental, or enforcement issues require it to meet the minimum horizontal setback distances listed in Appendix A, Table 7 and Table 8.

(4) A sewer line may cross a storm drain culvert if one of the following requirements is met:

(a) Twelve inches clear separation distance is maintained.

(b) The sewer is of ductile iron pipe or encased in concrete or ductile iron pipe for at least 5 feet on either side of the crossing.

(5) A sewer line may cross under a stream if at least 3 feet of stable cover can be maintained, or if the sewer line is of ductile iron pipe or encased in concrete or ductile iron pipe for at least 10 feet on either side of the crossing, and protected against the normal range of high and low water conditions, including the 100-year flood or wave action. An aerial crossing shall be by ductile iron or steel pipe with mechanical joints. Pipes shall be anchored for at least 10 feet on either side of the crossing.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

Drip Irrigation, Control Fill, Lot Modification and Mounds

420-3-1-.90 Drip Irrigation General Requirements

(1) All drip irrigation systems shall meet the following requirements:

(a) All piping, valves, pumps, fittings, level control switches, and other components shall be designed and manufactured to resist the corrosive effects of wastewater (sewage) and common household chemicals, and meet applicable American Society for Testing and Materials (ASTM) standards.

(b) The design, placement, location, installation, and operation of a drip irrigation system shall comply with the standards and provisions of these rules, unless otherwise indicated in the Product Permit or the Performance Permit.

(2) A drip irrigation system may be placed in select fill soil that meets the requirements of Rule 420-3-1-.94 Controlled Fill Mound System and Rule 420-3-1-.95 Lot Modification – Planned and Unplanned.

(3) The size of the EDF for a drip irrigation system shall be based on Appendix A, Table 11.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.91 Drip Pre-Treatment and Flushing Requirements

(1) Wastewater entering a drip irrigation system shall be pretreated to meet the Secondary Effluent Standard for wastewater (sewage).

(2) All drip irrigation systems shall employ a method of filtration adequate to remove suspended solids from the wastewater (sewage). The filtration method used shall meet the standard specified by the drip tube manufacturer. The minimum filter specification shall not be less than 120 mesh or its equivalent. The filter shall achieve the minimum specified filtration at a rate equal to or greater than the peak discharge rate.

(a) The filtration system shall be capable of flushing each drip field or zone back to the pre-treatment tank at a minimum fluid velocity of 2 feet per second. Field flushing velocity shall be measured at the distal end of the drip tube.

(b) All filter and field flushing shall be accomplished automatically. Back flushing of the filter shall occur after each pump cycle or as recommended by the manufacturer. Back flushing of each drip field or zone shall occur at regular intervals, not to exceed 30 days.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.92 Drip Dosing Requirements

(1) A dosing chamber shall be employed, sized, and equipped to provide timed-dosing of the daily sewage flow with adequate reserve storage capacity for system malfunctions. The dosing chamber shall comply with the following:

(a) The dosing chamber shall have a minimum storage capacity above the high-water level of at least the peak daily sewage flow for systems of less than 2,500 gpd, or as designed by an engineer for larger systems, if approved by ADPH. The storage capacity shall be calculated as the volume held between the high water alarm activation level and the invert of the pump tank inlet pipe.

(b) The dosing chamber shall be equipped with an audible, visual, or other approved high-water alarm set to provide notification to the owner or operator of a malfunction when the design high-water level is exceeded and the emergency reserve capacity is being used. A low-water cutoff device shall be provided to prevent damage to the pump during low-water conditions.

(c) The dosing chamber shall be fitted with watertight access risers to grade that are secured against unauthorized entry. The chamber shall be vented through the access riser or by other approved method.

(2) Each drip irrigation field or zone shall be time-dosed at least six times per day (24 hours) at regular intervals. A programmable timer and control panel shall be employed to regulate the dosing frequency and volume, and to record sewage flow, the number of doses, and other pertinent dosing data.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.

History: Repealed and Replaced: Filed

420-3-1-.93 Drip Field Requirements

(1) The drip irrigation field shall comply with the requirements of the drip tube manufacturer and the following:

(a) The drip line shall be color coded so that it is easily recognized as suitable for wastewater (sewage) disposal. The drip line shall be warranted for protection against root intrusion and bacterial or fungal growth for a minimum period of 10 years.

(b) Drip lines shall have a minimum soil cover of 6 inches and a maximum depth of 12 inches from final grade. All vertical setbacks for drip shall comply with Appendix A, Table 6 and Appendix A, Table 19. Drip lines shall be extended to the maximum length specified for the drip irrigation system, where feasible.

(c) The standard spacing for drip lines and drip emitters shall be 24 inches. The drip lines shall be laid level and shall run with the contour. The maximum length of a drip line and drip zone size, measured from the supply line to the return manifold, shall be specified and comply with the drip tube manufacturer's requirements.

1. For slopes exceeding 20 percent, the minimum spacing shall be 36 inches. However, the spacing due to slope shall not reduce the total linear footage of drip tubing required.

2. Any other spacing of the drip lines and emitters shall require ADPH approval.

(2) Vacuum breakers shall be placed at the highest elevation of a drip field or zone under protective cover and with grade level access. The maximum elevation difference, from lowest to highest point of a drip field or zone shall be 8 feet when using non-pressure-compensating drip emitters.

(3) All drip irrigation systems shall be equipped with pressure regulators or compensating devices to achieve uniform distribution over the entire drip field or zone in such a manner that the discharge rate of any two emitters shall not vary by more than 10 percent.

(4) The operating pressure necessary to fully pressurize a drip field or zone shall be within the pressure ranges specified by the drip tube manufacturer and shall be described in the drip irrigation manual. Pump selection shall take account of the operating pressure appropriate for the drip irrigation field, which shall be fully pressurized throughout the dose cycle, and the total dynamic head required for dosing and flushing.

(5) The drip line shall be installed in such a manner as to prevent pulling, stretching, or crimping of the drip line; or smearing, compaction, or damage to soil. A trencher with moving blades shall not be used to install drip tubing in Group 3 or 4 soils.

(6) All equipment and components susceptible to freezing shall be adequately protected.

Author: Thad Pittman

Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.94 Controlled Fill Mound System

(1) If site conditions and/or characteristics of a given lot prohibit the use of a Conventional OSS in accordance with the requirements of these rules, the LHD may consider approval of plans for the installation of a Controlled Fill Mound System. Controlled Fill Mound System designs may be considered only on sites where the fill selection, placement, natural ground surface preparation, and the entire Controlled Fill Mound System construction process is performed under the direct supervision of, and certified by, a professional engineer. The Controlled Fill Mound System shall be designed in accordance with this rule.

(2) Site Evaluation. Prior to placing the fill, the site shall be evaluated in accordance with the site evaluation criteria of these rules.

(3) Design Calculations. The engineer shall submit a design with the following considerations:

(a) Design Flow as per Rule 420-3-1-.78 Design Flow and Wastewater Concentrations.

(b) Fill Material Loading Rate. This rate is applicable to Controlled Fill Systems utilizing LPP. See Appendix A, Table 12.

(c) Basal Area Loading Rate (BALR). The BALR is based on Rule 420-3-1-.64 Soil Testing Depth Requirements paragraph (2).

(d) Hydraulic Linear Loading Rate (LLR). This rate applies to Low Pressure Pipe (LPP) designs. (The nationally recognized Wisconsin Mound Soil Absorption System Manual may be referenced for an understanding of this design factor and the slope correction factor.) The Hydraulic LLR is an estimate of the amount of effluent in gallons per day (gpd) that will be dispersed per linear foot (lf) of LPP and is dependent on the direction and rate of effluent flow away from the Controlled Fill Mound System. Sites which have extreme or severe limitations (permeability, bedrock, water table) within the upper horizons of the natural soil shall be designed with a Hydraulic LLR of 3-4 gpd/lf of LPP. Sites which have moderate limitations shall be designed with a Hydraulic LLR of 5-6 gpd/lf of LPP. Sites which have slight limitations and those with creviced bedrock will generally have a Hydraulic LLR of 8-10 gpd/lf of LPP.

(e) Slope Correction Factor. This factor is necessary when the Controlled Fill Mound System is on a sloped lot and shall be applied using the rate found in Appendix A, Table 5.

(f) Distribution Area Size. The distribution area is the basic "footprint" of the EDF area within the Controlled Fill Mound System and shall be sized according to the type of EDF proposed.

1. The distribution area for systems containing drip irrigation shall be sized to accommodate the amount of tubing indicated by Appendix A, Table 11. The drip irrigation field shall comply with Rule 420-3-1-.93 Drip Field Requirements.

2. The distribution area (trench or bed) for systems containing small diameter LPP shall be sized according to the following:

(i) The fill material loading rate found in Appendix A, Table 12, when compared with the texture of the proposed fill material.

(ii) The projected hydraulic linear loading rate of the LPP when based on the upper horizons of the natural ground surface.

(iii) The design flow pursuant to Rule 420-3-1-.78 Design Flow and Wastewater Concentrations.

(iv) The distribution area shall have a minimum width of 3 feet.

3. The distribution area for other types of EDF (including 4-inch pipe with gravel) is based on the following:

(i) The design flow pursuant to 420-3-1-.78 Design Flow and Wastewater Concentrations.

(ii) The amount of EDF required, based on the permeability and soil textures found in the upper horizons of the natural ground surface.

(I) Controlled Fill Mound System designs for systems to be installed in very high shrink-swell soils (Vertisols, soils with vertic characteristics, etc.), or mine spoil shall be based on criteria found in this rule paragraph (8). Specifications regarding trench widths, construction, materials, and distances between trenches, etc., are the same as required within these rules for any EDF installation.

(g) Absorption Area Size. The absorption area includes the distribution area plus the required setbacks of 2 feet for drip irrigation and LPP (5 feet for all other EDF). These minimum distances are required between the shoulder of the fill (the beginning of the end or side slopes of the bed) and the nearest sidewall of the trench or bed containing the LPP, the nearest drip tube or end, or the nearest EDF trench sidewall or end.

(h) Basal Area Size. The basal area is comprised of the footprint of the entire Controlled Fill Mound System over the natural ground surface and shall be sized according to the most restrictive soil layer or horizon found within the top 12 inches of the undisturbed, natural ground surface. In addition to accommodating the required EDF amount in the distribution area and the absorption area setbacks, the basal area calculations shall allow for a 3:1 slope or flatter on both ends and both sides (from the shoulders of the fill down to the natural ground surface). Additionally, basal area calculations for designs utilizing LPP shall include the linear loading rate of the EDF pipes, and a slope correction factor, if applicable.

1. The side slope on the upper side of a sloping lot is not considered in the basal area sizing.

2. For EDFs containing drip irrigation, the basal area shall be sized to accommodate the required amount of EDF, plus the absorption area, plus the required side and end slopes.

3. For EDFs containing small diameter LPP, the basal area shall be sized according to the most restrictive soil layer or horizon found within the top 12 inches of the undisturbed, natural ground surface, according to the figures found in Appendix A, Table 13, or, to accommodate the total area encompassed by the distribution area, the absorption area, and the required side and end slopes. (The larger of these two calculations shall be used.) Additionally, the basal area shall incorporate a

determination of the Hydraulic LLR of the EDF pipes, and a slope correction factor, if applicable. When the LLR is small (3-4 gpd/lf), the Controlled Fill Mound System should be long and narrow with a minimum distribution area size of 3 feet. When the Controlled Fill Mound System is placed on a sloped lot, the slope correction factor will result in a basal width containing more fill on the down slope side than the upslope side. The nationally recognized Wisconsin Mound Soil Absorption System Manual shall be used for the LPP pressure distribution network design, with the pipe orifices closely spaced (4 to 6 square feet per orifice) and positioned (ideally, or as close as possible) to serve a square configuration.

4. For all other types of EDF, the system shall be sized according to the following:

(i) The amount of EDF pipe as required in Appendix A, Table 2 or Table 3, and Controlled Fill Mound System designs for systems to be installed in high shrink-swell soils (Vertisols, soils with vertic characteristics, etc.), or mine spoil shall be based on criteria found in paragraph (8) when matching the percolation rate with the proposed number of bedrooms or wastewater (sewage) flow.

(ii) The required separation distances (5 feet from sidewall to sidewall) between the EDF trenches.

(iii) The required separation distance (5 feet) from the trench ends or outer sidewalls to the beginning of the controlled system bed side or end slope.

(iv) The required side slope or end slope lengths based on a 3:1 slope or flatter.

(v) No reductions are allowed in the basal area size when based strictly on the type of pipe installed.

(vi) Controlled Fill Mound System reductions in Appendix A, Table 13 and Table 14 list reductions for Controlled Fill Mound System designs which utilize pre-treatment of effluent to secondary effluent standards prior to disposal in the Controlled Fill Mound System. The reductions affect the following:

(I) Separation requirements between bottom of EDF and chroma 2 ASHES.

(II) Separation requirements between bottom of EDF and rock.

(III) Separation requirements between bottom of EDF and other restrictive layer or horizons.

(IV) The distribution area and basal area sizes when LPP is used, since fill material and basal loading rate calculations are increased.

(V) Distribution area and absorption area of designs not using drip or low pressure pipe. The basal area for these type designs receives no reduction since the effluent is not equally distributed.

5. Fill Material. Soil used as fill material shall be approved by the design engineer. Appendix A, Table 12, Table 14, and Table 15 may be used as guides.

6. Fill material suitable for use in Controlled Fill Mound System installations shall be one of the following:

(i) Commercially available material, that being material that meets the appropriate ASTM standard for fine aggregate (concrete sand) and others to be approved by ADPH.

(ii) Naturally occurring material, such as top layers of some soils and soils from pits located in areas having deep sandy to loamy deposits.

7. Consistency of Fill. Uniformity of the fill material used for the mound construction is essential, as any variability will likely cause problems for the OSS. The fill shall be free of trash, debris, and other objectionable material and shall be certified by the engineer as being consistent (with respect to texture and compaction) throughout the bed construction.

8. Compatibility of Fill. Where possible, the fill material shall be compatible with the existing in-situ soil.

9. Construction of the Controlled Fill Mound. The natural ground surface shall be properly prepared to receive the fill material. Trees within the proposed bed area shall be cut flush with the ground and stumps left in place unless the engineer determines this is not in the best interest of the system. In such case, the engineer shall address the existing or proposed ground clearing in the design. Where possible, large rocks shall also be left in place, as removing them can destroy soil structure. Brush and vegetation shall be removed, taking care not to compact the original soil surface, which shall be scarified to a depth of 6 to 18 inches. Clay soils may require a minimum scarification depth of 18 inches in order to obtain a proper soil interface. The scarification process shall be accomplished utilizing proper equipment so that the soil structure is not destroyed and the root mat is removed from the natural surface. A chisel plow or chisel teeth mounted on a tool bar attached to the backhoe bucket is recommended. Tillers, moldboard plows, and backhoe bucket teeth are not recommended.

10. Compaction and Placement of the Fill. The fill material shall not be moved, placed, or disturbed, nor the mound constructed, if the material and/or the natural ground surface is wet. For fill material, wet is indicated by the occurrence of prominent water films on surfaces of sand grains and structural units that cause the soil material to glisten. For natural ground surface, wet is defined as the soils from the top 6 to 7 inches of the natural ground surface producing a ribbon when rolled between the palms. The fill material shall be placed in lifts not exceeding 6 to 12 inches, loose thickness, and compacted to a proper density so as to promote stability while allowing for the vertical movement of effluent. The fill shall be placed from the upslope side, if applicable, or from the mound edges, with care taken not to create ruts or compaction of the mound or the basal area. A track type tractor, or similar equipment, shall be used to move around and/or across the Controlled Fill Mound System site, but other vehicles may be used to install field lines as long as the fill is not excessively compacted. The final cover shall include a minimum of 6 inches of suitable topsoil material (properly crowned) placed over the fill material so that a suitable vegetative cover can be established. The Controlled Fill Mound shall be seeded and mulched to avoid erosion.

(4) Engineer's Certification of the Controlled Fill Mound Construction. Following the placement of the fill and construction of the mound but prior to the installation of the EDF, the engineer shall certify the fill material using ADPH Form CEP-6, Part A. Fill material permeability shall be verified by the design engineer. If the

fill material is tested in its naturally occurring condition, the methods used for testing can be morphology, percolation, or unified, as outlined in Rule 420-3-1-.61 Site Limitation Determination (SLD) through Rule 420-3-1-.76 Grid Staking for Soil Maps. After the fill material is placed a percolation or permeameter test shall be done in the fill. The test results shall be submitted with the engineer's fill certification. The percolation rate for the fill material shall not be greater than 45 minutes per inch or less than 5 minutes per inch. All control fill mounds utilizing LPP shall be certified in accordance with the Wisconsin Mound Construction section of the nationally recognized Wisconsin Mound Soil Absorption System Manual. See Appendix A, Table 15.

(5) Controlled Fill Mound System or mound designs, other than for drip irrigation, with any limiting zone which will require trench bottoms to be located at 0 to 6 inches above the natural ground surface, shall, at a minimum, have 6 inches of fill material below the trench bottoms. For drip irrigation, the 6 inches of fill below the trench bottom is not required.

(6) Controlled Fill Mound System designs on sites with less than 6 inches to ASHES shall, at a minimum, be required to treat effluent to secondary effluent standards prior to discharge into the Controlled Fill System Mound.

(7) Controlled Fill Mound System designs on sites with less than 12 inches to rock shall, at a minimum, be required to treat effluent to secondary effluent standards prior to discharge into the Controlled Fill System Mound.

(8) Controlled Fill Mound Systems proposed for very high shrink-swell soils (Vertisols or soils with vertic characteristics), or mine spoil shall incorporate the following minimum basal area design criteria unless soil tests or site conditions reveal that a larger basal area is needed.

(a) Controlled Fill Mound System with drip irrigation. A maximum infiltration design rate of .05 gallons per day per square foot (0.05 gpd/sq ft) of tubing.

(b) Controlled Fill Mound System with small diameter LPP.

1. A maximum Hydraulic LLR of 3 gallons per day per linear foot of LPP (3 gpd/LF).

2. A maximum basal area loading rate of 0.075 gallons per day per square foot (0.075 gpd/sq ft). A slower loading rate shall be used if site conditions demonstrate a need.

(c) Controlled Fill Mound System with other EDF types.

1. The minimum EDF amount (and basal area sized to accommodate the EDF) when the effluent entering the Controlled Fill System bed has received primary treatment shall be based on a minimum percolation rate of 180 minutes per inch (180 min/in). Should any portion of the area proposed for the Controlled Fill System yield a higher percolation rate, then that rate (See Appendix A, Table 3) shall be used for the design.

2. When the effluent entering the Controlled Fill System bed has received secondary treatment, the minimum EDF amount, the distribution area sized to accommodate the EDF, and the absorption area (to the bed side or end slopes) may be reduced according to the figures in Appendix A, Table 13. The minimum basal area

footprint shall remain as calculated for a Controlled Fill System design receiving non-treated effluent.

(9) The pipe distribution network for a Controlled Fill System utilizing LPP shall be configured based on a recognized manual and shall allow for closely spaced orifices (4 to 6 square feet per orifice in a square, or nearly square, pattern), timed dosing of effluent (with frequent, small doses being utilized) and provision made for surge capacity. The LPP orifices are typically placed facing downward but may be placed upward with the use of orifice shields. Consideration should also be given to the use of pipe sleeves, half-pipe caps, etc.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.95 Lot Modification – Planned and Unplanned

(1) Lot modification is the planned or unplanned changing of a lot characteristic that may impact the use of an OSS.

(2) Planned lot modification is accomplished under the supervision of an engineer and in accordance with the applicable sections of these rules to make a lot more conducive for use of an OSS. An OSS for a lot that has been proposed after lot modification shall be designed by an engineer when required.

(3) Unplanned or poorly executed lot modification can make a lot unsuitable as a site for an OSS. In these situations, the lot to be used shall require additional steps to return it to a useable state. If this is possible, the additional steps required shall be determined by an engineer with the concurrence of the ADPH except under (5)(a) and (5)(c) of this rule.

(4) Lot modification, as it impacts the use of an OSS, usually involves the use of fill. Fill is material that is used to modify a lot by filling cuts or is material that is placed over in situ soil to build the lot up. Fill can be appropriate or inappropriate for use with an OSS.

(5) Fill shall be evaluated in the following manner:

(a) Fill that has been in place for more than 5 years over soils that are not surface saturated soils shall be evaluated in accordance with the provisions of these rules. However, multiple percolation tests, permeameter tests, and soil borings may be required at the discretion of the LHD to determine consistency and compaction of the fill throughout the proposed EDF area.

(b) Fill that has been in place for less than 5 years over soils that are not surface saturated soils, shall be evaluated by a professional soil classifier (PSC) for confirmation of fill characteristics (consistency, uniformity, compaction, etc.) and identification of the soil characteristics underneath the fill. The PSC evaluation shall be submitted on an ADPH Form CEP-2/3 Part C and the results shall be used to determine if fill in the proposed EDF area is acceptable or not acceptable for further evaluation. Additionally, the fill shall be in place for a period extending through at least one wet season during which average precipitation amounts were experienced. (The applicant is responsible for providing this documentation. The LHD may consider

information from the National Weather Service in determining compliance with the normal or average wet season requirements).

(c) Fill that has been in place over surface saturated soils for more than 5 years may be evaluated during the wet season and in accordance with these rules. ADPH or the LHD may, at their discretion, require additional percolation tests and soil borings to determine consistency and compaction of fill throughout the proposed EDF area.

(d) Sites where fill will be placed, with engineer oversight, over surface saturated soils, shall first be determined to be in their natural state or returned to their previous natural state according to Rule 420-3-1-.95 Lot Modification – Planned and Unplanned paragraph (2). This includes sites with fill less than 5 years old placed over surface saturated soils. If the property consists of natural wetlands, the engineer or property owner shall first receive documented approval to fill the wetland from the appropriate regulatory authority. The following criteria shall be used by site evaluation professionals for these sites:

1. Fill shall be in place for a period extending through at least one wet season during which average precipitation amounts were experienced, with the site being monitored during this period. The monitoring may be accomplished by use of properly spaced observation wells which are inspected on a weekly basis. The results of these observations shall be certified by a professional engineer, professional soils classifier, or a professional geologist.

2. The applicant is responsible for providing documentation that verifies that average precipitation amounts were experienced during the monitoring period. The applicant is also responsible for providing documentation pertaining to the amount of time that the fill has been in place. This may be accomplished by, but is not limited to, one of the following methods:

(i) An estimation of the approximate age of the vegetation on the site (fill) determined by a botanist or forester.

(ii) The approximate age of the fill based upon the effects of soil development (or lack thereof), determined by a professional soils classifier.

(iii) A notarized letter or other document (sales invoice, construction billing, etc.) indicating dates and appropriate information.

(e) Sites containing fill which meet the requirements of this rule in paragraph (5)(d)1 above, may be evaluated by a PSC during the next (or any subsequent) wet season following the monitoring period. Special attention shall be given to identifying consistency, uniformity, and compaction of the fill (unless the project was under the direct supervision of an engineer who can certify the acceptability of these characteristics) and to identifying any water that has perched in the fill. Sites on which there is evidence of water rising into, or perching within, the fill material shall be required to have pre-treatment of effluent to secondary effluent standards and maintain a minimum separation distance of 12 inches between the noted water level and the proposed trench bottoms. If no water is observed, the OSS may be designed in accordance with appropriate sections of these rules.

(6) Proposed EDF sites that contain fill material other than soil shall not be considered for the installation of an OSS.

(7) Removing soil from a lot or property shall be evaluated in the following manner:

(a) Cuts of 12 inches or less in depth shall be evaluated according to the PSC evaluation requirements of paragraph (5)(b) of this rule when the cut may impact the EDF area for a shallow Conventional OSS or an Engineered OSS.

(b) When cuts of more than 12 inches in depth are performed within 25 feet of (and including) the proposed EDF, the following information (if applicable, as determined by the LHD) shall be provided:

1. A report prepared and certified by a geologist, identifying the type(s) of rock formations, the susceptibility of surface water and/or groundwater to contamination by an OSS, and any effect which the cut may have on surface and subsurface drainage patterns with respect to the proper functioning of the OSS.

2. A high-intensity soil map prepared and certified by a PSC, which addresses the impact the cut may have on the proposed EDF, REDF, and the proposed test area or reported soil tests.

(8) Design proposals which use cuts with fill placed below the natural ground surface (Deep Excavation with In-Ground Fill) may be used on sites with less permeable soils overlying Texture Group 1 or 2 soils where the construction of a Conventional OSS below the more restrictive layer or horizon is not practical. On such sites, the less permeable soil within the bed may be stripped away, replaced with a suitable fill material (sand [S], loamy sand [LS] or sandy loam [SL]) which is compatible with the underlying soil, and the EDF pipes installed, provided that the following conditions are met:

(a) The site is not located within an area containing high shrink-swell soils, or mine spoil.

(b) The existing underlying soils shall be Texture Group 1 or 2 soils, and contain a minimum thickness of 36 inches, with ASHES or bedrock no closer than 12 inches to the top of this layer.

(c) The design proposal shall provide for a minimum of 24 inches of suitable fill below the bottom of the EDF trench or bed. The total exposed trench depth after filling shall not exceed 60 inches.

(d) The engineer, with concurrence of the ADPH or the LHD, shall determine the depth at which the size of the EDF is based.

(e) The design proposal shall include advanced treatment.

(f) The design proposal is not for waste containing high-strength sewage.

(g) The OSS design shall contain instructions for removal of the unsuitable material in such a manner as to prevent compaction or disturbance of the underlying material.

(h) The OSS design shall contain instructions for preparing the top 6 inches of the existing, in-situ material (under the fill) to provide an acceptable interface with the fill material. The OSS design shall provide a minimum separation distance of 8 feet (on centers) between each EDF pipe (2 feet if small diameter, LPP is used).

(i) The OSS design shall have a minimum separation distance of 10 feet (8 feet for LPP), as measured from the side of the outer trench or bed walls, (or pipe ends) to the outer edges of the fill material (i.e., the sidewall of the cut soils).

(j) Provisions have been made to intercept any sub-surface water outside the cut area from flowing into the filled area.

(9) Design proposals which use cuts with fill over the newly exposed surface (surface cut with fill above ground) shall be subject to paragraph (7) (a) and (b) of this rule and other portions of these rules relating to site evaluation. This type of design shall not be considered for sites with high shrink-swell soils, or mine spoil and shall comply with Rule 420-3-1-.94 Controlled Fill Mound System.

(10) Design proposals which involve altering ("bench cut," etc.) a lot with severe (greater than 25 percent) or extreme (greater than 40 percent) slopes to accommodate an OSS are subject to the following requirements:

(a) "Cut" material which has been moved to the down-slope side shall not be considered a suitable site for installation of an EDF.

(b) The cut (benched) area, when proposed as the EDF site, shall be evaluated under the provisions of paragraph (7) (a) and (b) as applicable, and other portions of these rules relating to site evaluation.

(c) Sites containing continuous "hard rock" at the newly exposed surface (the cut or benched area) shall not be considered for the installation of an EDF. Sites containing other restrictive rock types at the newly exposed surface may be considered for a Controlled Fill System installation (see Rule 420-3-1-.94 Controlled Fill Mound System), provided that the design includes the following:

1. Advanced treatment of wastewater (sewage) to secondary levels.

2. A minimum separation distance of 24 inches between the trench bottoms and the newly exposed surface.

3. Use of small diameter pipe (LPP) providing low pressure disposal of effluent.

4. A minimum separation distance of 50 feet from the point where the Controlled Fill System side or end slope meets the newly exposed surface, to the end of the cut or benched area (i.e., the point where the cut meets the natural ground surface of the original slope).

Author: Thad Pittman, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.96 Shallow Systems

(1) A shallow placement of an OSS may be installed to overcome soil and site limitations. Except as provided in this rule, the requirements for the design and installation of a shallow OSS shall be the same as for other OSSs.

(2) Sites classified severe as to soil depth, soil wetness, or due to other applicable limiting factors, may be reclassified as moderate with respect to that

condition by utilizing shallow placement of effluent disposal trenches within the naturally occurring soil. Shallow trenches may be used under the following conditions:

(a) A gravel trench shall be a minimum of 12 inches into natural, undisturbed, in–situ soil. The minimum depth for other approved products shall be as shown in the Product Permit. The aggregate sidewalls or top of the EDF product are below original grade. The bottom of the trench shall comply with the vertical and horizontal separation requirements in Rule 420-3-1-.88 Setback or Separation Distances and Rule 420-3-1-.89 Additional Setback or Separation for a Large-Flow System.

(b) The trench design and construction is such that the trench bottom will meet the vertical and horizontal separation requirements in Rule 420-3-1-.88 Setback or Separation Distances and Rule 420-3-1-.89 Additional Setback or Separation for a Large-Flow System.

(c) The permeability rate is based on the hydraulically limiting, naturally occurring, soil horizon within 24 inches of the ground surface, or to a depth of 18 inches below the trench bottom, whichever is deeper.

(d) Soil cover above the original grade is placed prior to installation at a uniform depth over the entire EDF, and extends laterally 3 feet beyond any outermost effluent disposal trench side or end wall before the maximum side slope of 3:1 (33 percent) begins. The soil cover shall be a minimum 12 inch depth over the aggregate or EDF product.

(e) Soil used as cover shall be top soil that will support appropriate cover vegetation. It shall be a mineral soil material, preferably loose or friable, but not excessively sticky or plastic. It shall be relatively free of debris and coarse fragments larger than gravel size. Content of gravel shall not exceed 35 percent by volume. Textures may range from Groups 1 (I) through 4A (IVA). Texture Groups 4B (IVB) and 4C (IVC) shall not be used. Care shall be taken to prevent compaction.

Author: Thad Pittman, David Gray, John Clement, Boyd Rogers
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and Replaced: Filed

420-3-1-.97 Recognized Mound Systems

(1) A Mound system is an EDF constructed at a prescribed elevation in a prepared area of fill material.

(2) The three principle components of a recognized mound system are one or more pretreatment units, a dosing chamber, and the elevated mound. See Appendix A, Figure 9, Figure 10, and Figure 11 which illustrate a Wisconsin Mound and Control Fill System. A mound system shall be designed in accordance with the criteria found in a manual recognized by ADPH.

(3) Two factors that determine the size and configuration of a mound are how the effluent moves away from the system and the rate which the effluent moves. The prediction of the movement and rate of movement is determined from studies of the soil and site information obtained. Siting and design experience at sites suitable for mound systems indicate that absorption systems should be long and narrow and

should follow the contour (i.e., level). The more restrictive the site, the narrower and longer the system will be.

Author: Thad Pittman
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
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Appendix A

Table 1
Flow and Organic Loading

Generator	Design Unit	Design BOD/TSS[1] lbs/day	Design Flow gpd
DWELLINGS (Rule)[2]			
Dwelling (12 bedrooms or fewer)	per bedroom	0.4 (min)	150
13 or more bedrooms to a single system	per person	0.2 (min)	75 (min)
ESTABLISHMENTS (guidelines)[3]			
Airports (not including food service)	per passenger	0.02	5
Airport	per employee	0.05	15
Office	per employee	0.05	25
Marinas			
with bathhouse or showers or toilets	per boat slip	0.15	10
Motels			
no cooking facility	per bedroom	0.40	120
cooking facility	per bedroom	0.80	175
Movie Theater (no food preparation)	per seat	0.02	4
Restaurants	per seat	0.2	50
Restaurants			
Interstate or through highway	per seat	0.7	100-180
Interstate rest areas	per person	0.01	5
Service station	per vehicle serviced	0.01	10
Factories and office buildings	per person per 8-hr shift		
no shower		0.06	15
with shower		0.08	25
Laundromats[4] (9 to 12 machines)	per machine	0.3	500
Stores, shopping centers exclusive of food preparation	per 1000 sq ft. of floor space	0.1	200
Institutions/Establishments			
Churches (no food service)	per seat	0.002	3
Hospitals	per bed	0.7	300
Schools (with or without cafeteria)			
with shower	per person	0.06	16
without shower	per person	0.04	10
Boarding schools	per person	0.2	75
Nursing homes	per bed	0.3	200
Assisted living	per bed	0.2	100
Community colleges	per student and faculty	0.04	15
Recreational Establishments			
Theaters, auditorium type	per seat	0.02	5
Picnic areas	per person	0.01	5
Camps, day no meals served	per person	0.05	5
Camps resort day and night with limited plumbing	per space	0.05	50
Recreational Parks/Camp[5]			
RV park (RVs are mobile)[6] with flush toilets	per camp site	0.1	100
sanitary station	per camp site	0.05	50
RV camp (RVs are not mobile)	per bedroom	0.2	150

Appendix A

Footnotes to Table 1:

(1) Organic loadings are prior to septic tank. It may be assumed that the tank will remove a maximum of 40 percent of the BOD and TSS load of sewage and 30 percent of high-strength sewage. This is an assumed loading rate for field sizing and should not necessarily be used for treatment design.

(2) Estimated flows for residential systems assume a maximum occupancy of two persons per bedroom for systems handling fewer than 9 bedrooms. Large-Flow systems require an engineer design, including occupant loading. Where residential care facilities will house more than 2 persons in any bedroom, estimated flows shall be increased by 50 gallons and 0.2 lbs BOD per each additional occupant.

(3) If there are combinations of establishments, such as a convenience store with food outlet, all contributors must be combined to estimated sewage flows and BOD loadings.

(4) See Rule 420-3-1-.87 Disposal of Graywater

(5) If a central system (with a Performance Permit) is to be used in the park/camp, the flow requirements shall be proposed by the design engineer and may be different than what is in Appendix A, Table 1.

(6) For an RV park to considered servicing truly mobile and temporary RVs, it must meet Rule .57 requirements.

Table 2

Minimum Requirements for Conventional Gravel EDFs by Texture Group and Percolation Rate (2)

Soil Texture Group/Perc Rate	Field Size for Wastewater (Sewage) Treated to Primary Effluent Standards Based on 0.4 lbs BOD/Day/Bedroom (1)						(7)	(8)
	Primary EDF			Separate Washer Line (1)				
	(1)	Linear feet/bedroom			Linear feet/bedroom			
	Square Feet per Bedroom and / Hydraulic Loading Rate for Untreated Sewage (gal / sq ft / day)	(2) 24" Width	(3) 36" Width	(4) Sq Feet per Bedroom Req/Reduc	(5) 24" Width	(6) 36" Width	BOD Loading Rate for High-Strength Sewage with No Advanced Treatment (lbs-BOD/sq ft/day)	Hydraulic Loading Rate for Advance Treated Sewage Or Advance Treated High–Strength Sewage (gal / sq ft / day)
Group 1 5 10 15	200 / 0.75	100	67	50/40	25	17	0.00120	1.50
Group 2 16 25 30	250 / 0.60	125	83	63/50	32	21	0.00096	1.00
Group 3 31 40 45 50 55 60	300 / 0.50	150	100	75/60	38	25	0.00080	0.714
Group 4A 61 65 70 75 80 85 90 95 Group 4B 100 105 110 115 120	330 / 0.455 350 / 0.429 370 / 0.405 390 / 0.385 410 / 0.366 430 / 0.349 450 / 0.333 480 / 0.313 510 / 0.294 540 / 0.278 570 / 0.263 600 / 0.250 650 / 0.231	165 175 185 195 205 215 225 240 255 270 285 300 325	110 117 123 130 137 143 150 160 170 180 190 200 217	163/130	82	55	0.00073 0.00069 0.00065 0.00062 0.00059 0.00056 0.00053 0.00050 0.00047 0.00044 0.00042 0.00040 0.00037	0.568 0.536 0.507 0.481 0.457 0.436 0.417 0.391 0.368 0.347 0.329 0.313 0.288
Group 4C Perc >120	Unsuitable for Conventional EDF (Shrink-Swell Clays and Poorly Structured Soils), and mine spoil							
Group 1A Perc <5	Unsuitable for Conventional EDF (Very Coarse Sands, Extremely Gravelly, and Fragmental Soils) except as allowed in Appendix A, Table 1.							

(1) This is equivalent to 2 people per bedroom at 0.2 lbs per person with consideration that the septic tank will reduce the BOD by approximately 40 percent or 0.4 lbs - 0.16 lbs = 0.24 lbs to the field per bedroom, it may be assumed that the septic tank will remove 30 percent of the BOD when dealing with high-strength sewage.

(2) See Rule 420-3-1-.79 Gravel Field Standard EDF Sizing for Dwellings for further explanation.

Appendix A

Table 3

Minimum Requirements for Conventional Gravel EDFs by Texture Group and Percolation Rate (2)

Soil Texture Group/Perc Rate	Field Size for Wastewater (Sewage) Treated to Primary Effluent Standards Based on 0.4 lbs BOD/Day/Bedroom (1)						(7)	(8)
	Primary EDF			Separate Washer Line (1)				
	(1)	Linear feet/bedroom		(4)	Linear feet/bedroom			
	Square Feet per Bedroom and / Hydraulic Loading Rate for Untreated Sewage (gal / sq ft / day)	(2) 24" Width	(3) 36" Width	Sq Feet per Bedroom Reg/Reduc	(5) 24" Width	(6) 36" Width	BOD Loading Rate for High-Strength Sewage with No Advanced Treatment (lbs-BOD/sq ft/day)	Hydraulic Loading Rate for Advance Treated Sewage Or Advance Treated High–Strength Sewage (gal / sq ft / day)
Group 5b								
121	680 / 0.221	340	227				0.000353	0.245
130	710 / 0.211	355	237				0.000338	0.235
135	740 / .0203	370	247	208/166	104	70	0.000324	0.225
140	770 / .0195	385	257				0.000312	0.216
145	800 / .0188	400	267				0.000300	0.208
150	830 / .0181	415	277				0.000289	0.201
155	860 / .0174	430	287				0.000279	0.194
160	890 / .0169	445	297				0.000270	0.187
165	920 / .0163	460	307	253/202	127	84	0.000261	0.181
170	950 / .0158	475	317				0.000253	0.175
175	980 / .0153	490	327				0.000245	0.170
180	1010 / .0149	505	337				0.000245	0.165
185	1040 / .0144	520	347				0.000231	0.160
190	1070 / .0140	535	357				0.000224	0.156
195	1100 / .0136	550	367	298/238	149	99	0.000218	0.152
200	1130 / .0133	565	377				0.000212	0.147
205	1160 / .0129	580	387				0.000207	0.144
210	1190 / .0126	595	397				0.000202	0.140
215	1220 / .0123	610	407				0.000197	0.137
220	1250 / .0120	625	417				0.000192	0.133
225	1280 / .0177	640	427	343/274	172	115	0.000188	0.130
230	1310 / .0155	655	437				0.000183	0.127
235	1340 / .0112	670	447				0.000179	0.124
240	1370 / .0109	685	457				0.000175	0.122
Group 6 Perc <5	Unsuitable for Conventional EDF (Very Coarse Sands, Extremely Gravelly, and Fragmental Soils) except as allowed in Appendix A., Table 19							

Table 4
Slope
Spacing of Trenches
Based on Width of Trench
and Slope

Percent Slope	Trench Spacing (Side Wall to Side Wall)*	Minimum Trench Depth**	Minimum Cover
26-30	6 feet	28"	16"
31-40	7 feet	33"	21"

* The distances between trenches are measured between adjacent sidewalls.
** If the minimum trench depth is measured on the downhill side of the trench, the minimum cover as listed in the table should be assured.

Appendix A

Table 5

Mound Slope Correction Factor for Downslope and Upslope CF Bed Sides

Slope Percent	Downslope Factor	Upslope Factor
00	1.00	1.00
01	1.03	0.97
02	1.06	0.94
03	1.10	0.92
04	1.14	0.89
05	1.18	0.86
06	1.22	0.85
07	1.27	0.83
08	1.32	0.80
09	1.38	0.79
10	1.44	0.77
11	1.51	0.75
12	1.57	0.73
13	1.64	0.72
14	1.72	0.71
15	1.82	0.69
16	1.92	0.66
17	2.04	0.66
18	2.17	0.65
19	2.33	0.64
20	2.50	0.62
21	2.70	0.61
22	2.94	0.60
23	3.23	0.59
24	3.57	0.58
25	4.00	0.57

Table 6

Minimum Setback/Separation Distance for Components of Onsite Systems

Structure or Topographic Feature	Minimum Horizontal Distance (ft) To EDF	To Tank, Treatment Device, Pump Chamber, Receptacles & D-Box	Other Components of OSS
EDF of another system	10##	10	5
Components of another system (except EDF)	5	5	5
Basement or in-ground storm shelter*	15	5	5
w/drain	25	5	5
Building foundation*	5	5	5
Drainage way – natural or man-made*	25	10	N/A
Embankment or cut*	25	5	N/A
Hydric soils and non-ponded wetlands	25	25	N/A
Interceptor drain and storm water diversion*			
(feature located up-slope)	10	5	N/A
(feature located side-slope)	15	5	N/A
(feature located down-slope)	25	5	N/A
Potable (drinkable) water line**	5	5	5
Property line	5	5	N/A
Caves, sinkholes and similar depressions***	300	50	50
Surface water	50	25	10
Swimming pool (in-ground)	10	5	N/A
Wells and potable springs # (not to include ground water monitoring wells)	100	50	5

* Engineer may design system and reduce setback distance to a specified distance with acceptable justification, such as use of an advanced treatment system or use of solid or culvert pipe or drip disposal.

** May be less than 5 feet provided encapsulation of solid effluent line (pressurized or non-pressurized) for 5 feet from water line/well/spring. This setback is not applicable for water lines above effluent lines and where the vertical separation is 18 inches or greater.

*** Geologist may reduce setback distance with written documentation of geological investigation and specific setback distances set.

The minimum setback distance for an EDF to wells or springs for large-flow development lots recorded prior to October 18, 1978, and for other lots established prior to March 18, 1982, shall be 50 feet with every effort made to exceed that distance.

EDF to EDF for large-flow systems without advanced treatment is a minimum of 100 feet.

This Table applies to small systems and large systems with advanced treatment only, see Appendix A Table 7 for separations requirement for large systems with no treatment.

Drip irrigation disposal lines shall be 2 feet from all components in this table except that it shall be 25 feet from surface water.

Appendix A

Table 7
Additional Minimum Setback/Separation Distances for EDF
Large (>1,800 gpd) Systems
That Do Not Have Advanced Treatment and/or Are Not Managed by a Governmental Agency, Co-Op, or Certified Management Entity

Structure or Topographic Feature	Minimum Horizontal Distance (ft)
Public water supply source utilizing a shallow (under 50 feet) groundwater aquifer	500
Other public water supply, unless determined to utilize a confined aquifer	200
Private water supply source	200
Property line	25
Surface water of the state	200
Other large system	100

For drip irrigation disposal, lines shall be 2 feet from all components in this table except that it shall be 25 feet from surface water.

Table 8
Additional Minimum Setback/Separation Distances for
Collection Sewers, Force Mains, and Supply Lines
Large (>1,800 gpd) System
That Do Not Have Advanced Treatment and/or Are Not Managed by a Governmental Agency, Co-Op, or Certified Management Entity

Structure or Topographic Feature	Minimum Horizontal Distance (ft)
Public water supply source, unless constructed to International Plumbing Code standards; then	100 50
Private water supply source, unless constructed to International Plumbing Code standards; then	50 25
Property line	5
Basement	10
Surface water of the state, unless constructed to International Plumbing Code standards; then	50 10
Top of slope embankment or cut of 2 feet or more vertical height	10
Interceptor drain, storm drain, and storm water diversion	5
Swimming pool	10
Other EDF	5

For drip irrigation disposal, lines shall be 2 feet from all components in this table except that it shall be 25 feet from surface water.

Appendix A

Table 9

Septic Tank Capacities for Single-Unit Dwellings[1]

Number of Bedrooms	Effective Liquid Capacity (gal)
4 or fewer	1,000
5	1,500
Each additional bedroom add	250

1 Capacities listed provide for a single system to serve combined household wastes from standard plumbing fixtures and appliances commonly used in a dwelling, including dishwasher, shower, bathtub, and automatic clothes washer. See Rule 420-3-1-.87 Disposal of Graywater.

Table 10

TEST REQUIREMENT FOR STRUCTURAL PROOFING

	*Effective Depth	30	40	50	60	70	80	90
Vacuum Test	Inches of Water	33.4	40.8	48.2	55.6	63.0	70.4	77.8
	Inches of Mercury	2.5	3.0	3.6	4.1	4.7	5.2	5.7
Hydrostatic Test	Inches of Water In Standpipe Measured from the invert of the outlet up into the standpipe	15.9	18.1	20.3	22.6	24.8	27.1	29.3

*Effective depth is the depth between the bottom of the tank and the invert of the outlet

Appendix A

Table 11

Infiltration Rates for Drip Irrigation Systems

PERC RATE min/inch	SOIL GROUP U.S.D.A. Textures	DRIP FIELD gpd/sq.ft.
<5	Group 1 Sand, Loamy Sand	0.45
5		0.45
10		0.45
15		0.45
20	Group 2 Sandy Loam, Loam	0.4
25		0.4
30		0.4
35		0.4
40		0.4
45		0.4
50	Group 3 Sandy Clay Loam, Silt Loam, Clay Loam, Silty Clay Loam	0.3
55		0.3
60		0.2
65		0.2
70		0.1
75		0.1
80		0.1
85		0.1
90		0.1
95	Group 4 Sandy Clay, Silty Clay, Clay	0.075
100		0.05
105		0.05
110		0.05
115		0.05
120		0.05
>120		0.05

EXAMPLE: Three-Bedroom House

1. Total flow in gpd (gallons per day)/ infiltration rate = required total area (sq.ft.).

Total area (sq.ft.) / 2' (2 foot spacing is the standard used to determine total square footage required) drip tube spacing (ft) = required length of drip tubing (LF) (linear feet). For slopes greater than 20 percent, the spacing between the drip lines shall be increased to 36 inches or more.

3 bedroom house with 50 min/in perc. Rate:

Required total area (sq.ft.) = 450/.3 = 1,500 square feet

Required length of drip tubing (LF) = 1,500/2 = 750 LF

Appendix A

Table 12

Fill Material Loading Rate for Controlled Fill Systems

Using Small Diameter, Low Pressure Pipe

SOIL TEXTURE USDA	PERC RATE Min/inch	LOADING RATE Maximum gpd/sq.ft.
Sand	< 20	1.0
Loamy Sand	=/< 20	0.8
Sandy Loam	20 to 30	0.6
Sandy Clay Loam	30 to 45	0.4

Example for a three-bedroom home

1. Total flow in gpd / infiltration rate = required distribution area (sq.ft.).

3 bedroom house; Controlled Fill bed with loamy sand fill:

Required total area (sq.ft.) = $\frac{450}{0.8}$ = 563 square feet

Table 13

Basal Area Infiltration Rates for Controlled Fill Systems Using Small Diameter, Low Pressure Pipe

PERC RATE min/inch	SOIL GROUP See Appendix A, Table 2 Table 3	LOADING RATE gpd/sq.ft.	LOADING RATE w/secondary treatment gpd/sq.ft.
5 to 15	Group 1	1.0 to 0.8	2.0 to 1.6
16 to 30	Group 2	0.8 to 0.6	1.6 to 1.2
31 to 60	Group 3	0.6 to 0.4	1.2 to 0.8
61 to 90	Group 4A	0.4 to 0.2	0.6 to 0.3
91 to 120	Group 4B	0.2 to 0.1	0.3 to 0.15
121 to 180	Group 4C	.075	0.125 to 0.1
> 180		.050	*.075

Example for a three-bedroom home with 120 min/in percolation rate. Total flow in gpd (gallons per day)/ infiltration rate = required basal area (sq.ft.). 450 gpd / 0.1 = 4,500 sq.ft. basal area required

Table 14

Reductions for Controlled Fill Systems with LPP/Drip Receiving Effluent Treated to Secondary Effluent Standards

EDF Separation Requirement (Trench to Restrictive Layer)

Pipe Type	Chroma 2 ASHES	Rock	Other Restrictive Layers with permeability > 240 min/inch
Drip	12 inches	12 inches	6 inches
LPP	12 inches	12 inches	6 inches

LPP Fill Loading Rates

Fill Texture	Loading Rate When Effluent is Pre-treated
Sand	2.0 gpd / sq.ft.
Loamy Sand	1.5 gpd / sq.ft.
Sandy Loam	1.0 gpd / sq.ft.
Sandy Clay Loam	0.6 gpd / sq.ft.

The above table for LPP receiving secondary effluent gives reductions of 12 inches for chroma 2 ASHES and 6 inches for rock.
Additionally, loading rates are increased for the various texture classes of fill material listed.

Table 15

Controlled Fill Material Guide
(For determining suitable fill material when naturally available fill is used _1/)

Evaluation Method	Suitable	Marginal	Unsuitable
Percolation	5-30 Min/Inch	31-45 Min/Inch	<5 or >45 Min/Inch
Unified	1 - SW, SP, SM 2 – SM-SC, SC	3	3, 4A, 4B, 4C
Morphology	1 – S, LS 2 – SL, L, light SCL	3	3, 4A, 4B, 4C

_1/ this guide is intended for soils in their naturally occurring condition or soil material that has not been compacted or worked while wet.

Appendix A

Table 16

Sewage (For Dwellings and Establishments)		
	Small-Flow System (1800 or less)	***Large-Flow (> 1800 gpd)***
Advanced Treatment Required? See 420-3-1-.36 Advanced Treatment Required	Primary or Advanced depending on the site.	Advance treatment optional up to 4000 gpd if site will allow Over 4000 gpd advanced treatment required
Eng. Required? See 420-3-1-.08 Engineer Design Required	No for conventional Yes for other	Yes
Field Size?	Appendix A Table 2 & Table 3 or Product Permit	See Rule 420-3-1-.79 Gravel Field Standard EDF Sizing and 420-3-1-.81 EDF Sizing for Establishments
Performance Permit Required?	No	Yes
High Strength Sewage For Establishments		
	Small-Flow System (1800 gpd)	***Large-Flow (> 1800 gpd)***
Advanced Treatment Required?	No - if a conventional system can be installed when BOD load is considered when sizing field. Otherwise – Yes	Yes
Eng. Required?	Yes	Yes
Field Size?	See 420-3-1-.81 EDF Sizing for Establishments	See Rule 420-3-1-.81 EDF Sizing for Establishments
Performance Permit Required?	Yes	Yes

Appendix A

Table 17
Minimum Lot Size Categories
For Dwelling or Establishments on Individual Systems

Recording Date	**Water Supply***	**Type Lot** (Large-flow development or Non-Large-flow development)	**Lot Size**
Before 10/18/1978	Public/Private	Both	No minimum
Before 3/18/1982	Public/Private	Non-Large-flow development	No minimum
10/18/1978 to 3/17/1982	Private(well)	Large-flow development	20,000 sq.ft.
3/18/1982 to 1/20/2000	Private(well)	Both	20,000 sq.ft.
1/21/2000 to 3/18/2006	Private(well)	Both	20,000 sq.ft.
3/19/06 to current	Private(well)	Both	40,000 sq.ft.#
10/18/1978 to 3/17/1982	Public	Large-flow development	15,000 sq.ft.
3/18/1982 to 1/20/2000	Public	Both	15,000 sq.ft.
1/21/2000 to 3/18/2006	Public	Both	15,000 sq.ft.##
3/19/06 to current	Public	Lots except those with EDF/REDF in Hydric or High Shrink Swell, Mine Spoil	15,000 sq.ft.##
3/19/06 to current	Public/Private	Lots with EDF/REDF in Hydric or High Shrink Swell, Mine Spoil	43,560 sq.ft. (1 acre)+

* See Public Water Supply definition.

\# Lot size can be reduced to not less than 20,000 sq.ft. based on Engineered Design.

Lot size can be reduced based on Engineered Design.

\+ Noncontiguous satellite lots in high shrink swell soils; mine spoil must be ½ acre (21,780 sq. ft.). Square footage requirements in this table are average square footage per dwelling or establishment.

Appendix A

Table 18
Infiltration Rates for Sand-Lined systems (SLS)/BED
For conventional systems on lots in Texture Group 1, 2, 3, and 4A soils and that are not to be modified in accordance with Rule 420-3-1-.83 Gravel Field Standard Construction Specifications paragraph (8)

PERC RATE min/inch	LINEAR LOADING RATE gal/d/ft	SOIL GROUP U.S.D.A. Textures	SLS/BED Loading Rate gpd/sq.ft.
5	10	Group 1	1.50
10	10	Sand, Loamy Sandy	1.50
15	10		1.50
20	9	Group 2	1.00
25	8	Sandy Loam, Loam	1.00
30	7		1.00
35	6	Group 3	.71
40	5.8	Sandy Clay Loam,	.71
45	5.6	Silt Loam, Silty	.71
50	5.4	Clay Loam, Clay	0.71
55	5.2	Loam	0.71
60	5		0.71
65	4	Group 4A	0.36
70	4	Sandy Clay, Silty	0.36
75	3.5	Clay, Clay	0.36
80	3.5		0.28
85	3		0.28
90	3		0.28
95		Group 4B	0.28
100		High Shrink-Swell	0.28
105	NOT	Clay, Poorly	0.28
110	SUITABLE	Structured Soil	0.28
115			0.28
120			0.28

$$Length = \frac{Daily\,Design\,Flow}{Linear\,Loading\,Rate} \qquad Width = \frac{Linear\,Loading\,Rate}{Bed\,/\,SLS\;\;Loading\,Rate}$$

EXAMPLE: 3 Bedroom dwelling with a perc rate of 60 min/in.
***ROUND UP LENGTH AND WIDTH TO THE NEAREST WHOLE NUMBER.**

$$Length = \frac{450}{5} \qquad Width = \frac{5}{.71}$$

$$= 90 \qquad = 8$$

The area calculated here is required. The configuration is recommended see Rule 420-3-1-.83 Gravel Field Standard Construction Specifications.

Appendix A

Table 19
MVS Requirements
(For Drip See Table 14)

SYSTEM	CONVENTIONAL				ENGINEERED		
LIMITATION	SLIGHT	MODERATE	SEVERE		EXTREME		
						AT Required(6)	
1. Percolation (Min/In) (1)	5-30	31-90	91-120	1-<5	121-240	>240	1-<5<1
1a MVS (2) from Redox(3)	24	18	18	36	18	12	24 w/AT
1b MVS from Hard Rock	18	18	18		18	12	
1c MVS from Other R/L (4)	12	12	12		12	6	
Min trench depth for above	12" below NGS Natural Ground Surface (5)				May vary but either 6" above or below(not exactly at) the fill/soil interface		
2. Slope (%)	0-15	16-25	26-40		>40 (7)		
3. Flooding Frequency Chance/Year	None	Rare <5%	Occasional 5-50%		Frequent (7) >50%		
4. Landform (Slope Position)	Summit Shoulder Back & Other Linear or Convex	Lower Back Foot & Other Slightly Concave	Toe Head Depression & Other Concave Mine Spoil		Swamp, Wetlands, Floodplain Drain, Gully, Mine Spoil, Hydric Soil Area (7)		

(1) Percolation rates may be either actual measurements or assigned/estimated rates, depending on the method used (Refer to Rule 420-3-1-.63 Soil Permeability).

(2) MVS (Minimum Vertical Separation) from R/L (restrictive layers).

(3) ASHES/Redox (Redoximorphic Features) – The presence of chroma 2 or less colors (Munsell or equivalent) is universally accepted as indicating saturated and anaerobic conditions for a significant period of time during most years. In some soils additional redox features are often encountered above chroma 2 or less colors (i.e., chromas of 3 and/or 4 in combination with higher chroma concentrations, plinthite, manganese staining on peds, etc.). If indications of significant saturation occur higher than 24 (18)* inches above chroma 2s, the trench bottoms shall be positioned no deeper than where these additional contemporary redox features occur, but in no case less than 24 (18)* inches above 2 percent or more chroma 2 or less. (See Rule 420-3-1-.66 Soil Depth and Vertical Separation for the definition of significant saturation duration and problem soils as related to redox features other than chroma 2 or less). *(For the correct MVS based on percolation rate).

(4) Other restrictive layers may include but are not limited to the following: dense and/or brittle layers, slowly or very slowly permeable parent material, continuous weathered rock layers (Cr), or greater than 50 percent consolidated bedrock by volume. When restrictive rock layers are discontinuous or tilted such that the critical depths are highly variable, use the 50 percent rule. Any horizon with greater than 50 percent consolidated rock shall be considered a restrictive layer.

(5) NGS – Natural Ground Surface – That portion of a soil which is normally exposed to the atmosphere, has been subjected to plant and animal activity for a significant period of time and has accumulated some degree of organic matter usually accompanied by the development of soil structure.

(6) All vertical separation requirements (MVS) greater than 12" may be reduced to 12" with the addition of advanced treatment (AT) of effluent with the exception of soils with percolation rates less than 5 min/inch.

(7) OSS is generally not allowed in these areas – Do not fill or manipulate without prior approval. Some exceptions are addressed in 420-3-1-.94 Controlled Fill Mound System and 420-3-1-.95 Lot Modification – Planned and Unplanned but no provisions are made for the use of frequently flooded areas, slopes over 40 percent, or drainage ways for EDF/REDF.

Appendix A

Table 20
Flow Chart for Site Evaluation:

Limiting Factor	Possible Methods/Alternatives and Options
Hydric Soil No Yes→ ↓	Move to non-hydric area. Acquire or lease additional property. See Rules 420-3-1-.94 Controlled Fill Mound System and 420-3-1-.95 Lot Modification – Planned and Unplanned .
Frequent Flood. No Yes→ ↓	Move to non-frequently flooded area; acquire or lease additional property. (Non OSS site)
High Shrink-Swell Soils No Yes → ↓	See Rules 420-3-1-.94 Controlled Fill Mound System and 420-3-1-.95 Lot Modification – Planned and Unplanned.
Slope > 40 percent No Yes→ ↓	Move to a less steep area; acquire or lease additional property. See Rules 420-3-1-.94 Controlled Fill Mound System and 420-3-1-.95 Lot Modification – Planned and Unplanned.
< 36" to /2 or less No Yes→ ↓	Controlled Fill, Mounds, Drip Technology, etc.
< 30" to Hard Rock No Yes→ ↓	Controlled Fill, Mounds, Drip Irrigation, etc.
< 24" to other restr. layers No Yes→ ↓	Controlled Fill, Mounds, Drip Irrigation, etc.
Perc < 5 min/in No Yes→ ↓	1 to<5 min/inch may be treated as conventional with 36" MVS.
Perc>120 min/in No Yes→ ↓	Controlled Fill, Mounds, Drip Irrigation, etc.
Candidate For Conventional Onsite System→	Pipe and gravel trenches; other products as approved by the Board.

Appendix A

Table 21

Site Investigation Requirements

Method	Number Tests	Location on Lot	Test in REDF (req for lots <15,000 sq ft)
Percolation	2 percs & 2 borings	In proposed EDF area	1 perc & 1 boring
Unified	2	In proposed EDF area	1
Morphology	2	In proposed EDF area	1
High Intensity Map	2 per lot or 4 per acre	Borings located as required in Rule 420-3-1-.73 Soil Maps	Borings located as required in Rule 420-3-1-.73 Soil Maps

Table 22

Soils Requiring Systems Per Rules 420-3-1-.94 Controlled Fill Mound System and 420-3-1-.95 Lot Modification – Planned and Unplanned

METHOD	SOIL TYPE OR CLASSIFICATION
Unified	Soil Class 4C (CH or MH w/ LL > 50 percent)
Soil Morphology	Soil Group 4C (High Shrink-Swell Clays)
Soil Mapping	Vertisols, Vertic Subgroups, Other High Shrink-Swell Clays
Percolation	>120 min/in
Permeameter	Mine spoil sites

Appendix A

Table 23
UNIFIED METHOD

Soil Class/Texture Group	Unified System Symbol	Percent Fines Clay/Silt	Percent Liquid Limit	Percent Plastic Index	Estimated Permeability Min/Inch
1A	SP, SW, GP, GW	<12			<1-<5*
1	SM, SP-SM, GM	12-20		>4	5-15
2	SC, SC-SM, SM	21-35		4-7	16-30
3	SC, SC-SM, CL, ML, CL-ML	36-60	< 50	4-7	31-60
4A	CL, ML, CL-ML	50-70	< 50	7-15	61-90
4B	CL, ML, CL-ML	> 70	< 50	7-20	91-120
4C	CH, MH	> 70	> 50	>20	> 120

*<1 = uncoated sand – 1- <5 = coated sand

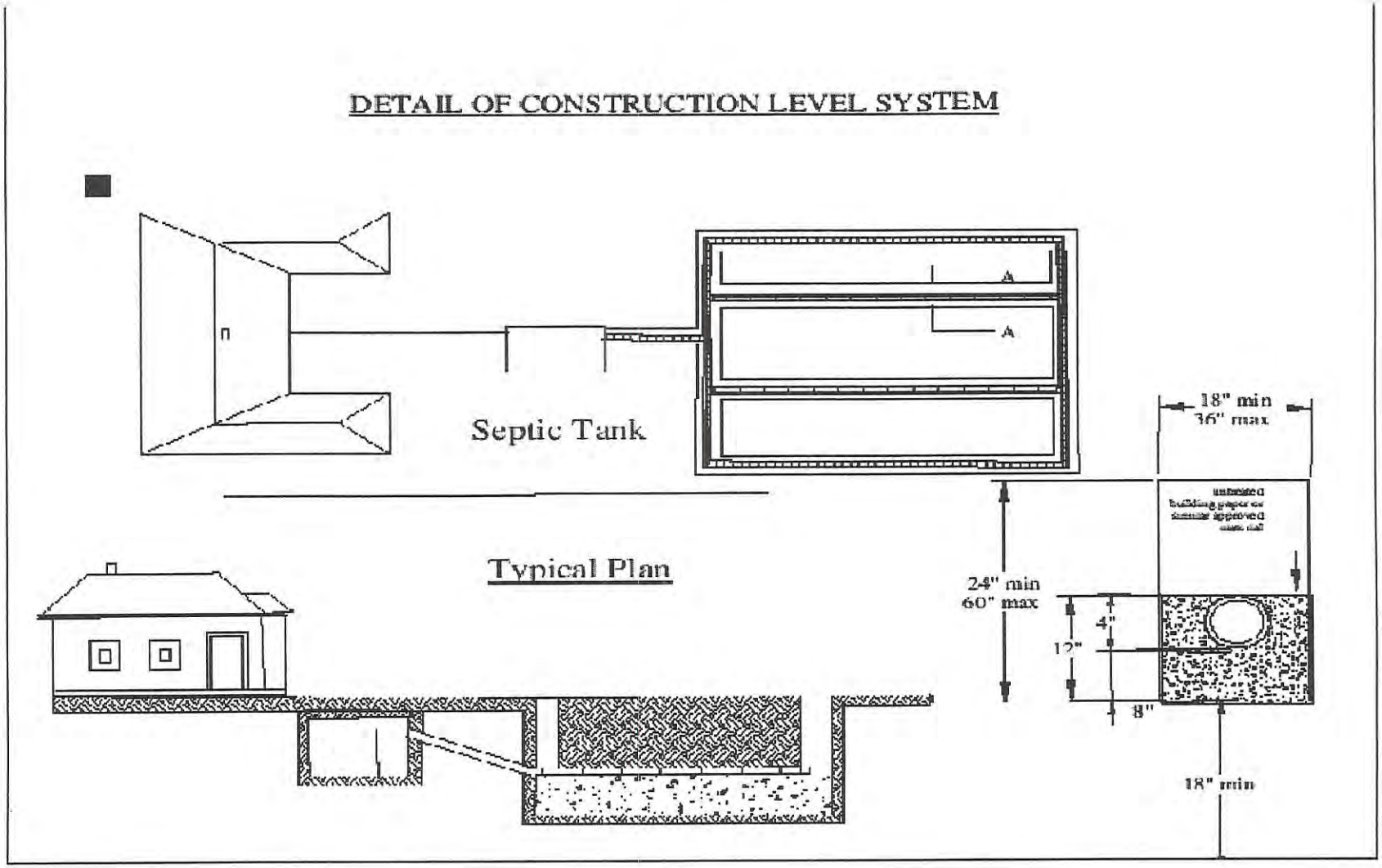
Table 24

Soil Morphology Method

Texture Groups	Min/Inch
1A cos, s (uncoated/coated)*	<1-<5*
1 s, ls	5-15
2 sl, l (<20% clay)	16-30
3 scl, sc, cl, l, sicl, sil (20-40% clay)	31-60
4A sc, sic, c (low s/s, kaolinitic)	61-90
4B sc, sic, c (moderate s/s, mixed)	91-120
4C sc, sic, c (high s/s, smectitic)	>120

Appendix A

Figure 1

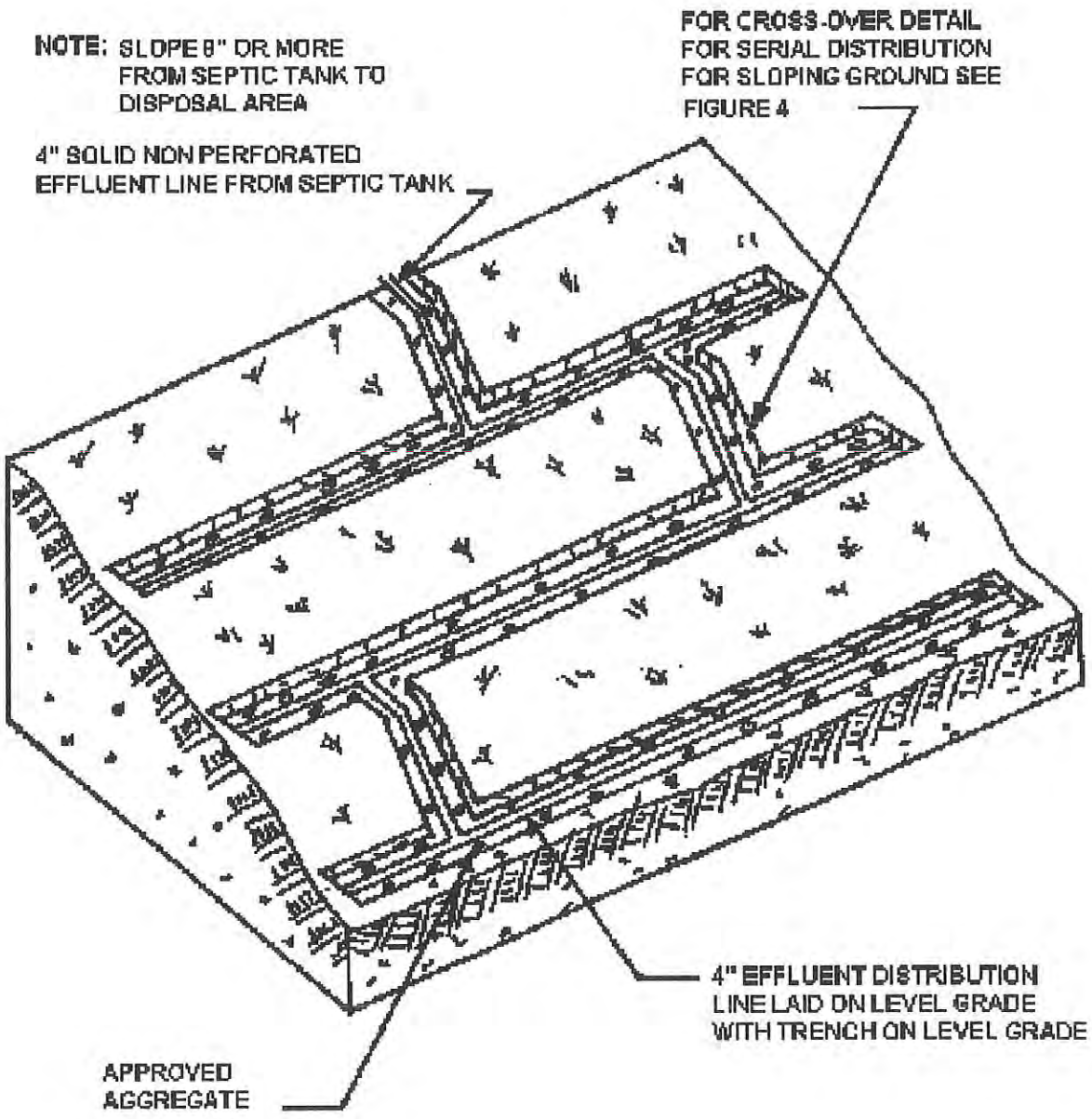


Appendix A

Figure 2

SERIAL DISTRIBUTION SYSTEM
LINE 100 FEET OR LESS IN LENGTH
MINIMUM OF ONE CROSS-OVER REQUIRED

NOT TO SCALE



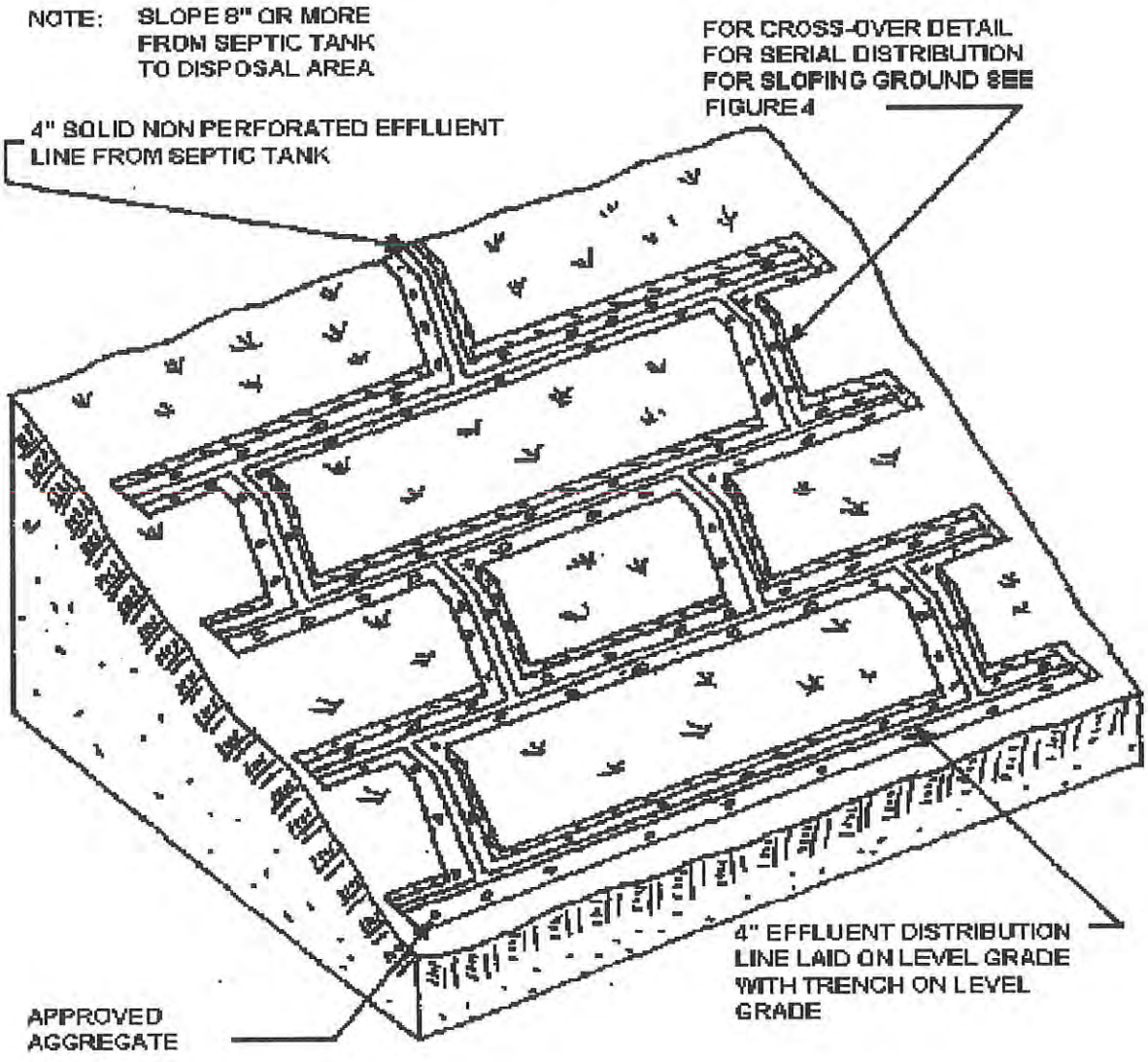
Appendix A

Figure 3

SERIAL DISTRIBUTION SYSTEM

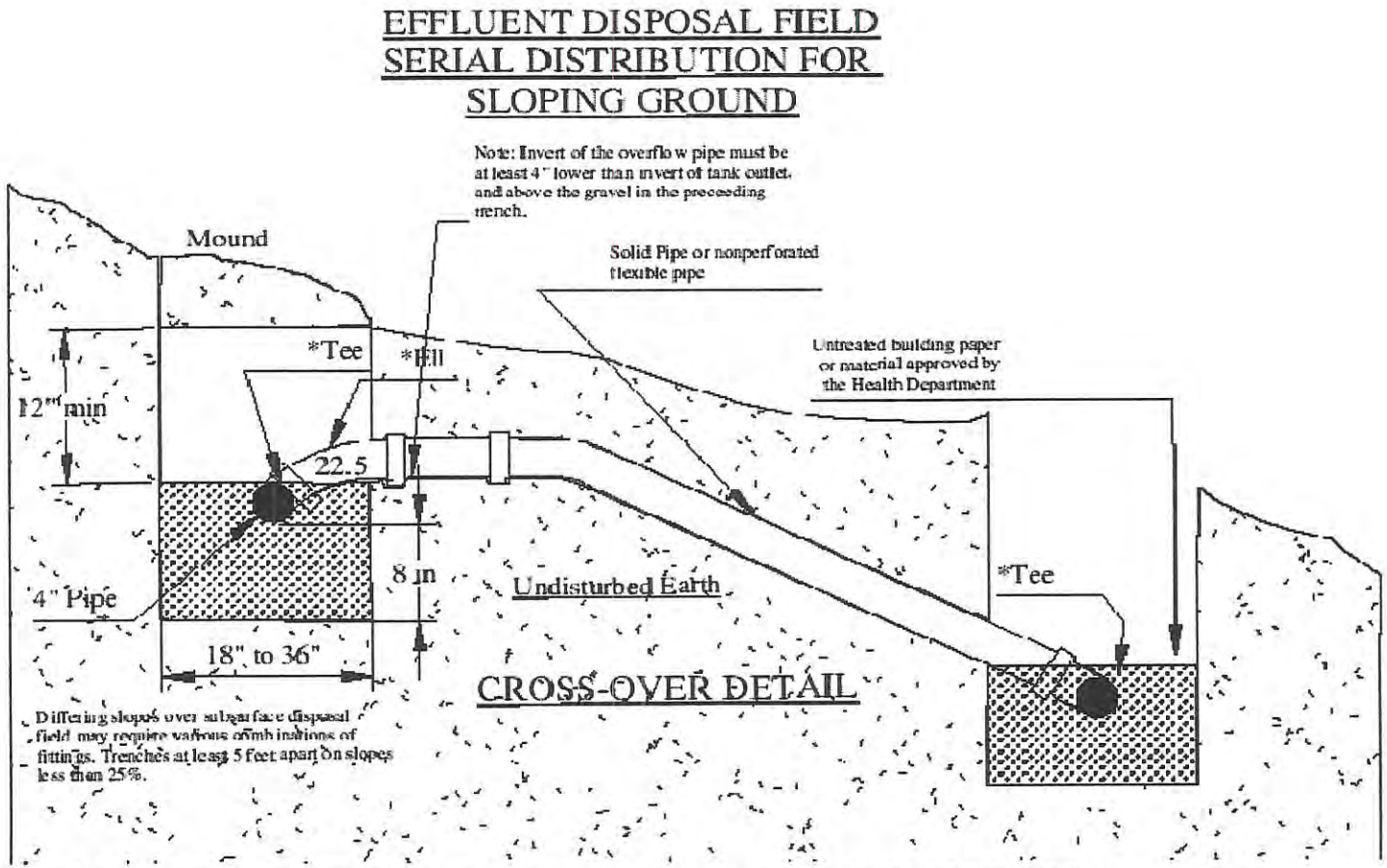
LINE OVER 100 FT. IN LENGTH
TWO CROSS-OVERS REQUIRED PER 100 FEET

NOT TO SCALE



Appendix A

Figure 4



*MINIMUM REQUIRED FITTINGS LINES 100 FT. OR LESS IN LENGTH SEE FIGURE 2
LINES OVER 100 FT. LENGTH SEE FIGURE 3

Appendix A

Figure 5

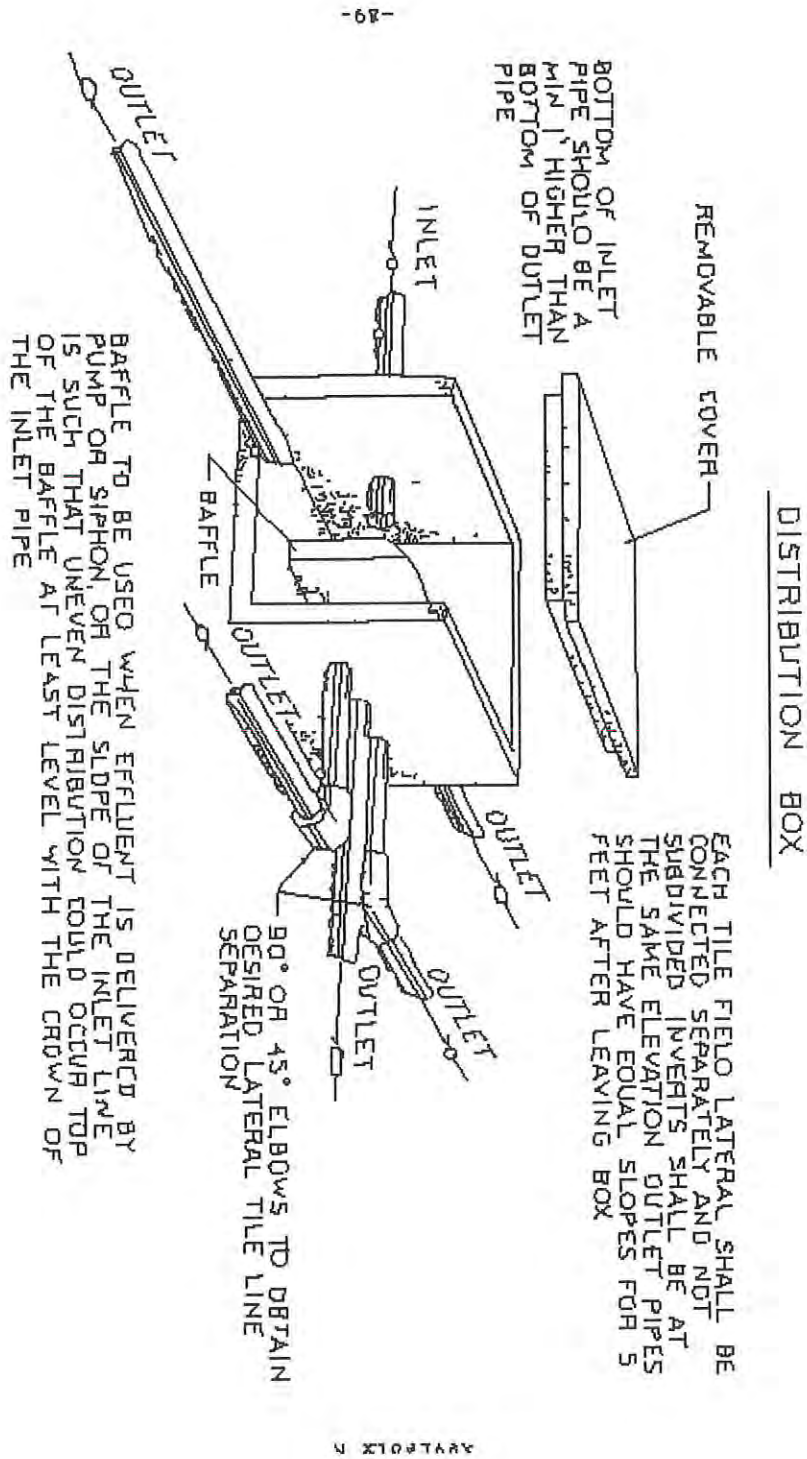


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Figure 6

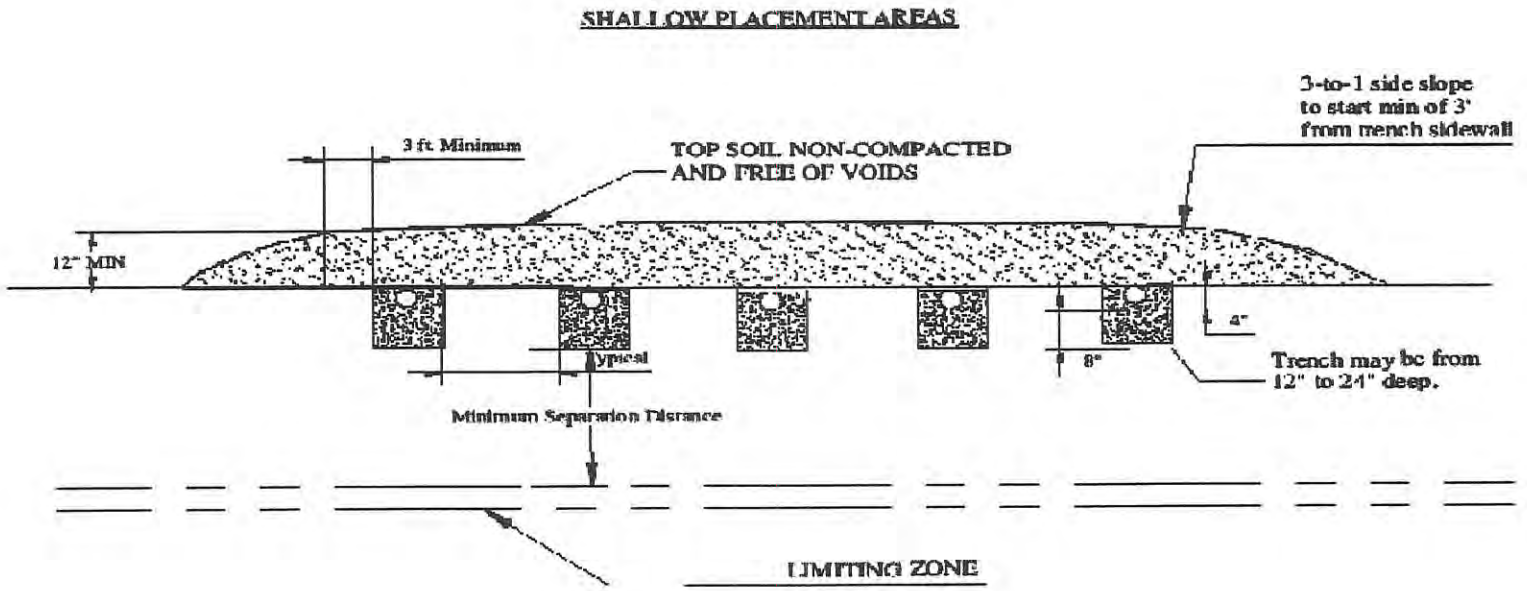

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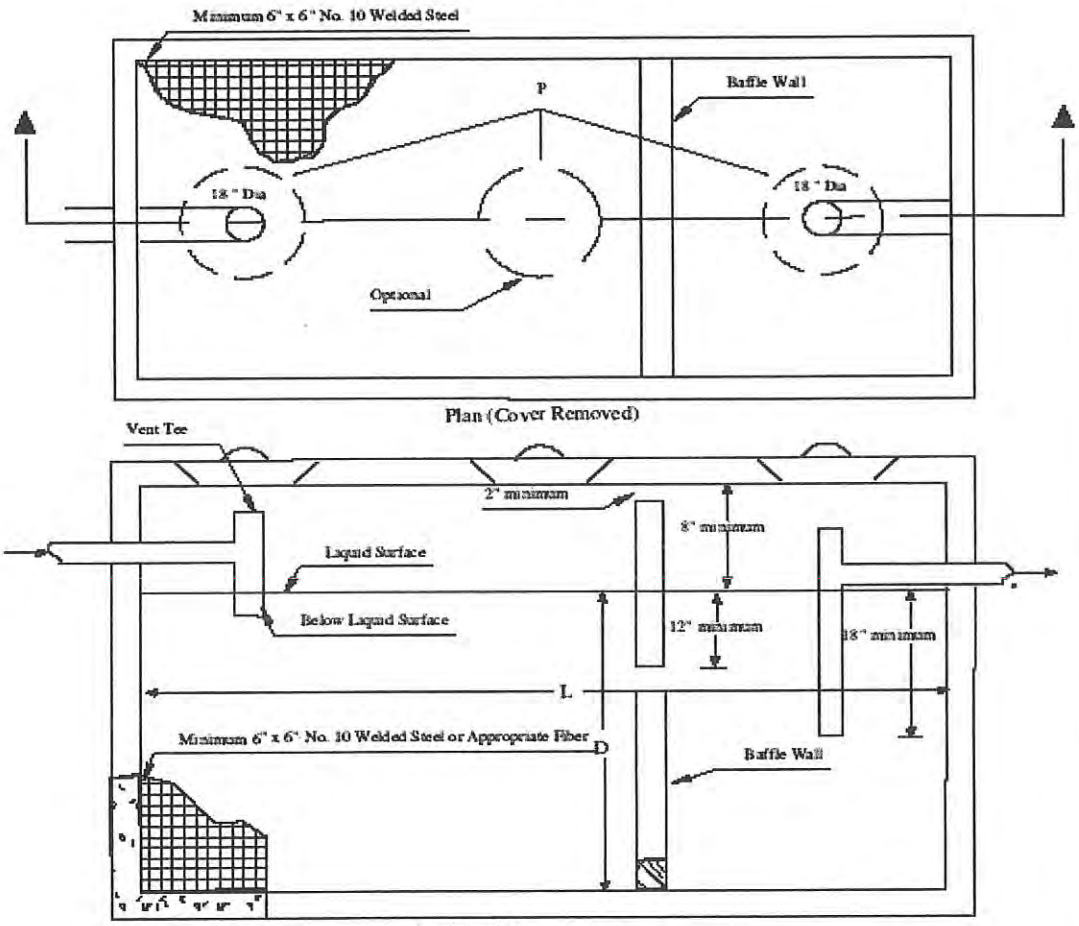
Figure 7

TYPICAL SINGLE-UNIT DWELLING SEPTIC TANK
TYPE 1 - BAFFLE WALL



D - Liquid Depth, not less than 3 feet nor greater than 6 feet.
L - Tank Length, at least 1& 1/2 times the width.
P - Position of inspection openings, minimum of 2 inspection openings, 18" in diameter.
W - Tank width, not less than 3 feet.
Y - Position of baffle wall, 1/3 of tank length (L).

*Note - invert of outlet tee 2 to 4 inches below invert of the inlet.

Appendix A

Figure 8

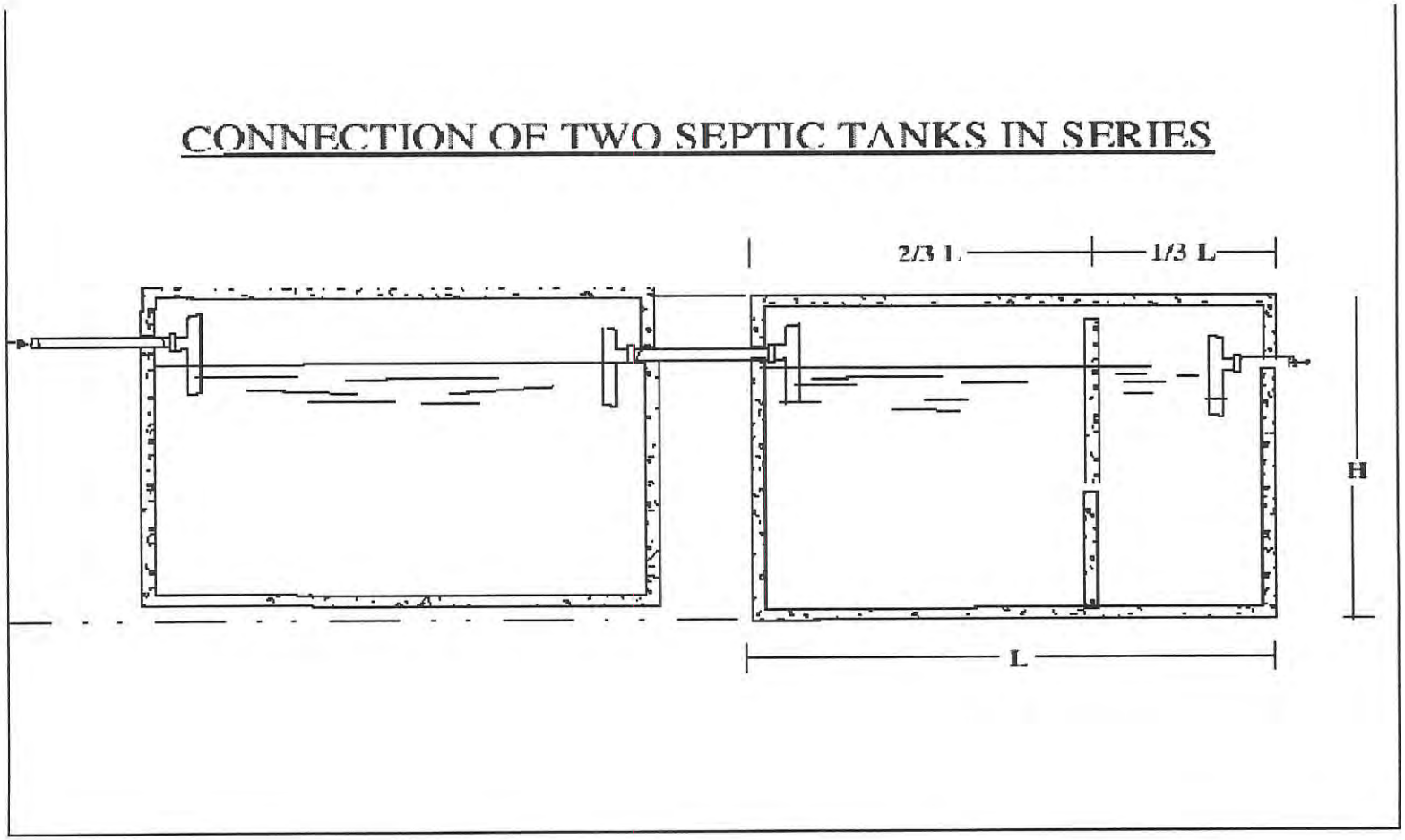


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Figure 9

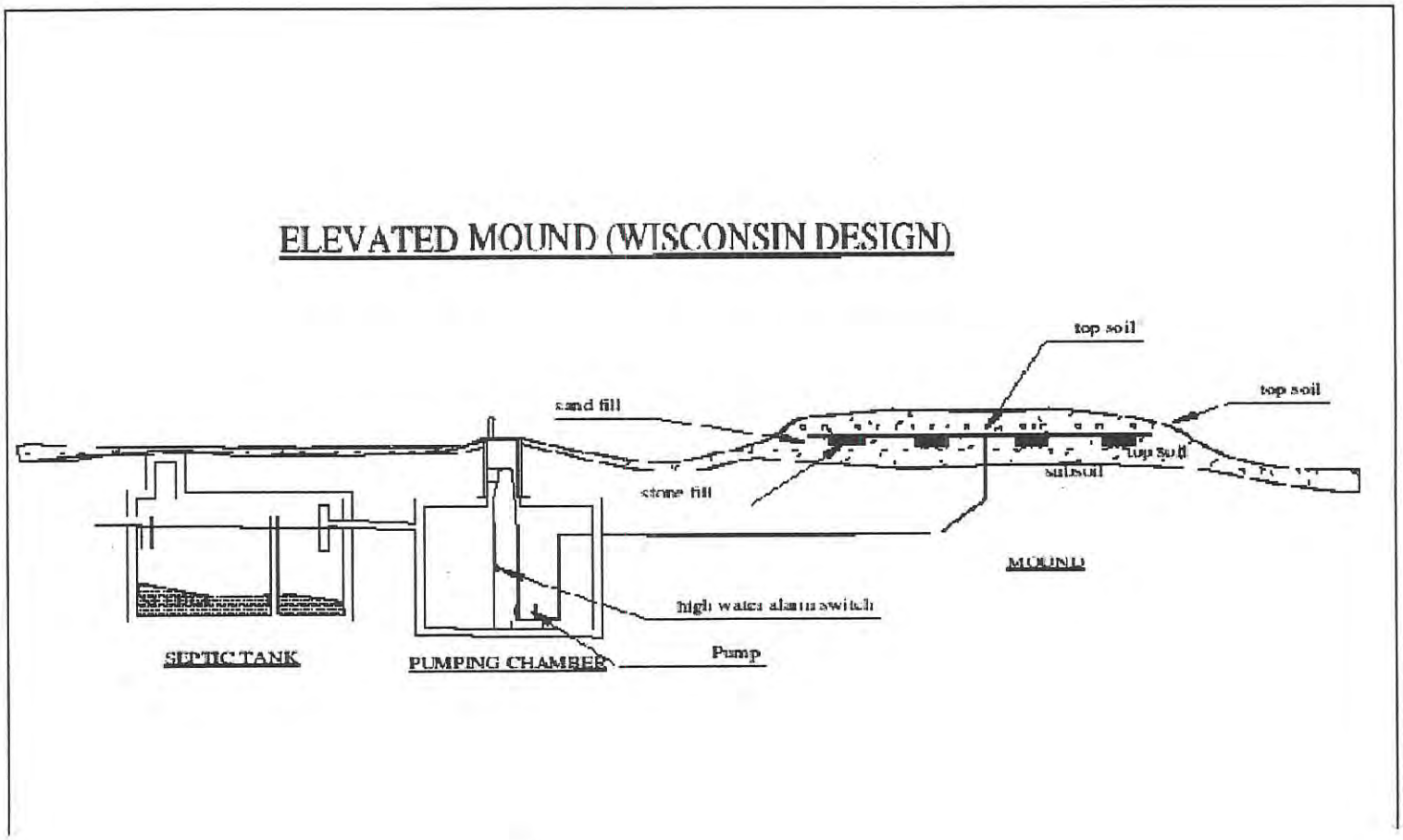

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Figure 10

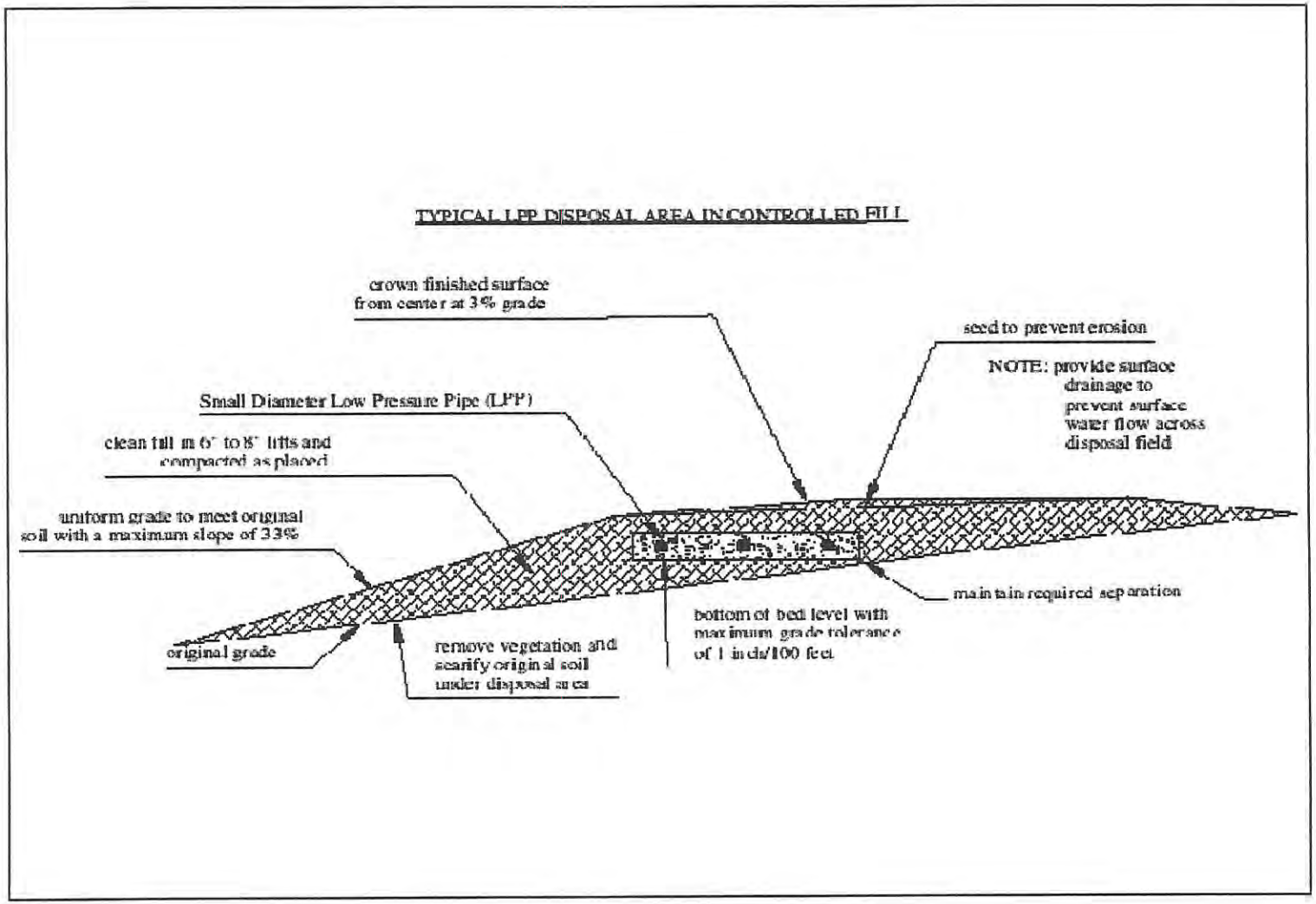

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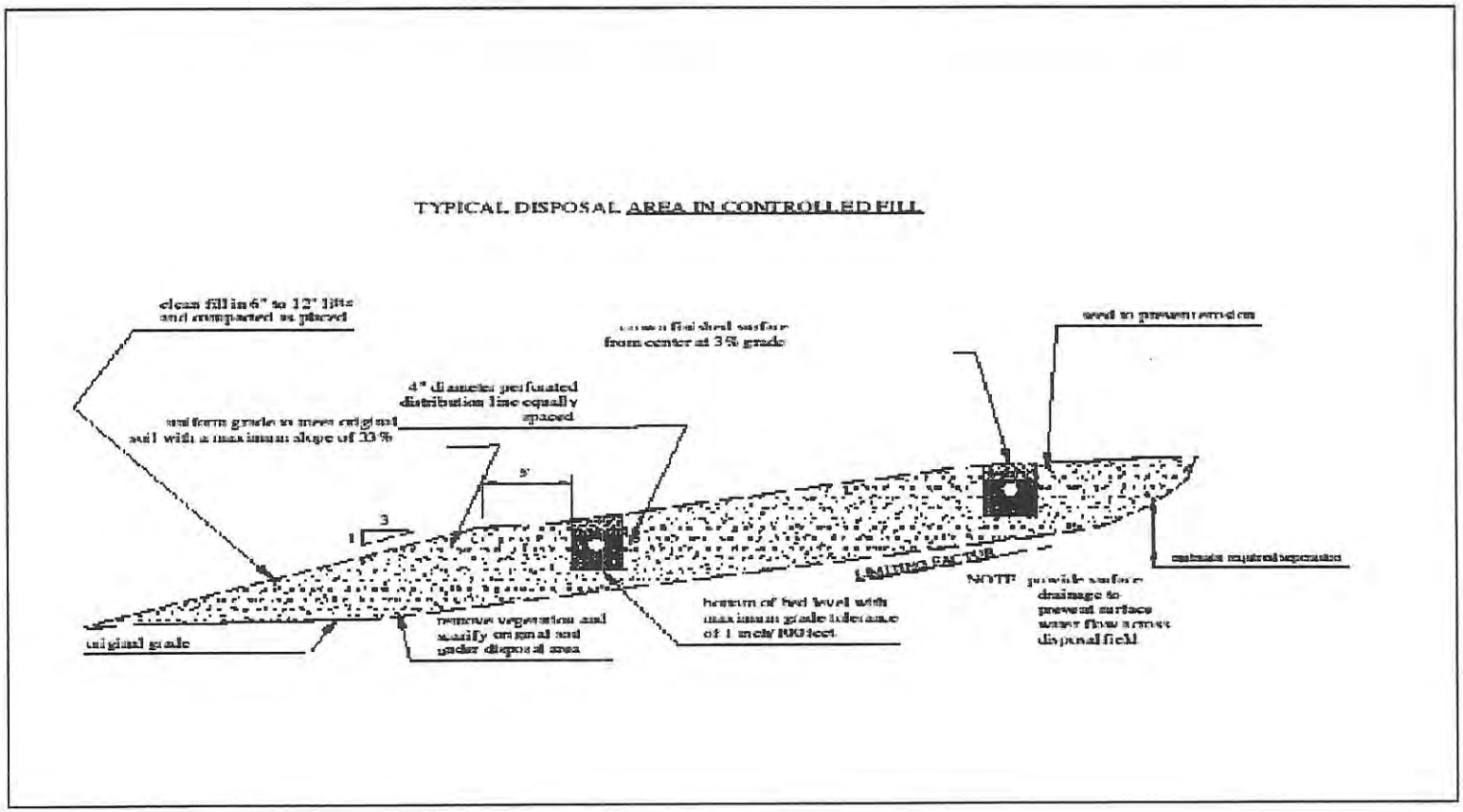
Figure 11



REPEAL

RULES OF STATE BOARD OF HEALTH BUREAU OF ENVIRONMENTAL SERVICES

DIVISION OF COMMUNITY ENVIRONMENTAL PROTECTION

CHAPTER 420-3-1

ONSITE SEWAGE TREATMENT AND DISPOSAL

ADOPTED BY THE STATE BOARD OF HEALTH

EFFECTIVE DATE MARCH 19, 2006
AMENDED EFFECTIVE NOVEMBER 23, 2006
AMENDED EFFECTIVE APRIL 19, 2010

ALABAMA STATE BOARD OF HEALTH
ALABAMA DEPARTMENT OF PUBLIC HEALTH
BUREAU OF ENVIRONMENTAL SERVICES
DIVISION OF COMMUNITY ENVIRONMENTAL PROTECTION
ONSITE SEWAGE DISPOSAL
ADMINISTRATIVE CODE
CHAPTER 420-3-1

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420-3-1-.01 Statutory Authority

The State Board of Health is authorized to promulgate these Rules under the Code of Ala. 1975, Title 22, Chapter 2, State Health Authorities, Sections 22-2-2(4) and 22-2-2(6); Chapter 10, Sections 22-10-1, et seq.; Chapter 20, Miscellaneous Health Laws, Section 22-20-5; Chapter 26, Sewage Collection, Treatment and Disposal Facilities, Sections 22-26-1, 22-26-2, 22-26-3, 22-26-5, and 22-26-7; Chapter 27, Solid Waste, Sections 22-27-1, et seq. and Onsite Wastewater Management Entities Act (§22-25A-1, et seq. Ala. Code (2001))

Author: Greg Locklier
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006.

420-3-1-.02 Purpose

The purpose of this Chapter of the Rules of the State Board of Health is to minimize the adverse effects of disposal of sewage and high-strength sewage (as defined by this chapter) on human health and the environment by establishing and enforcing requirements for the design, permitting, installation, approval and use of onsite sewage treatment and disposal systems (OSS).

Author: Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006.

420-3-1-.03 Responsibility

Compliance with these Rules shall be the responsibility of the designer, owner, Management Entity, responsible person, developer, installer or user of the system, as applicable, with the system owner bearing ultimate responsibility to comply with the provisions of this Chapter of the Rules of the State Board of Health.

Author: George Allison, Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006.

420-3-1-.04 Definitions

(1) For the purposes of this Chapter of the Rules of the State Board of Health, the terms and words shall have the meaning respectively ascribed to them as follows:

(a) **ADEM** -- Alabama Department of Environmental Management – The State Agency delegated by EPA to enforce The Clean Water Act and other federal environmental regulations.

(b) **Advanced Treatment (effluent)** -- treatment that produces secondary effluent or better as defined by 40 CFR 133.102 before discharge into the environment. (See Secondary Effluent and Primary Effluent.)

(c) **Advanced Treatment System** -- (ATS) A treatment unit that is capable of producing effluent that meets secondary standards (as defined by these Rules) and is distinct and separate from the disposal field.

(d) **ADPH** -- the administrative arm of the State Board of Health, including variations in that name, such as State of Alabama Department of Public Health, State Department of Public Health, State Health Department, Public Health Department, Health Department, or the Department; and its agent.

1. References to the Local Health Department (LHD) and the Local Health Officer (LHO) represent the operational level at which a given action or decision may be made or carried out. Each of Alabama's 67 counties has an LHD, and is overseen by an LHO.

(e) **Agent** -- a legally authorized representative of another person.

(f) **Aggregate/Drain Media** -- hard, clean gravel or rock that has been washed with water under pressure over a screen during or after grading to remove fine material, and that has a hardness value of 3 or greater on Moh's Scale of Hardness (aggregate that can scratch a copper penny without leaving any residual rock material on the coin would have a Moh's hardness of 3), or other equivalent Board-approved media, material or device used for the subsurface distribution of effluent. Properly sized loose aggregate has a minimum size of one-quarter (1/4) inch and a maximum size of two and one-half (2-1/2) inches. The drain media, material, or device is durable and inert; will maintain its integrity and not collapse or disintegrate with time; will not generate a harmful leachate; and will not be detrimental to the system or the environment.

(g) **Approved** -- authorized, certified, or permitted to meet the standards of a regulatory authority.

(h) **Approved Material** -- a material or product that has been granted a State-Issued Product Permit by the Board or one that is listed in the International Plumbing Code/International Residential Code (IPC/IRC) for a specific use when used as provided therein.

(i) **AOWB** -- Alabama Onsite Wastewater Board.

(j) **ASHES** -- Average Seasonal High Extended Saturation -- is a zone or layer 6 inches or more thick that becomes saturated at least once during most years for a significant duration, typically 20 or more consecutive days or 30 or more cumulative days. It is usually determined by the presence of chroma 2 or less colors (see Table 15).

(k) **Average Monthly Discharge Limitation** -- the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. (Zero discharge days are not included in the number of daily discharges measured, and a less than detectable test result is treated as a concentration of zero if the most sensitive EPA-approved test method was used).

(l) **Average Weekly Discharge Limitation** -- the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. (Zero discharge days are not be included in the number of daily discharges measured, and a less than detectable result is treated as a concentration of zero if the most sensitive EPA-approved test method was used).

(m) **Backslope** -- the hillslope profile position that forms the steepest and generally linear, middle portion of the slope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below. They may or may not include cliff segments (i.e. free faces). Backslopes are commonly erosional forms produced by mass movement, colluvial action, and running water. Compare - summit, shoulder, footslope, toeslope.

(n) **Best Management Practice** -- an activity or action, based on a formal plan, implemented in the approved manner, and properly maintained, that protects the public health and the environment.

(o) **Board** -- the Board of Health of the State of Alabama, as defined in 22-2-1, Ala. Code 1975 or the State Health Officer or State Health Officer's agent when acting for the Board.

(p) **Building Development** -- a change in the characteristics of a lot, tract or parcel of land, or other real property by an action including the sale of or conveyance of any interest in the land, that could reasonably be expected to lead to human habitation or creation of an establishment. Such change includes, but is not limited to, clearing plant life from property, other than minimal clearing for soil and substrate evaluation; alteration to any degree of the naturally occurring topography of the property; constructing roads; installing surface drainage systems or similar facilities; providing utility services or connections within the lot, tract, or parcel of land; constructing or placing shelters or dwellings, or providing sites for the same; installing or accessing public or private water or sanitary sewer systems; planning or constructing individual, or other means of sewage disposal; recording the plat of the property as a subdivision of lots of any size in the Office of the Probate Judge; recording an easement or covenant relative to an OSS for an individual lot; filing a plot plan with the LHD; or openly or by implication advertising a lot, tract, or parcel as being for residential, overnight recreational, or establishment uses, or as being part of an existing or planned subdivision development.

(q) **Building Drain** -- the part of the lowest piping of a drainage system which receives the discharge from waste drainage pipes inside the walls or under a habitable structure and conveys it to the building sewer, ending 30 inches from the wall of the structure.

(r) **Building Sewer** -- the part of a structure's drainage system which extends from the end of the building drain, and which receives the discharge of a building drain and conveys it to a sanitary sewer or an OSS.

(s) **Certificate of Financial Viability** -- a document issued by ADPH in accordance with the requirements of the Onsite Wastewater Management

Entities Act (§22-25A-1 *et seq.*, Ala. Code (2001))that certifies that the Onsite Management Entity has met the requirements of said law.

(t) **Cesspool** -- an excavation in the ground, with or without a waterproof lining, into which sewage that has not received at least primary treatment is emptied.

(u) **Cluster System** -- See Decentralized Wastewater Cluster System

(v) **Composting Toilet** -- a dry closet that combines human waste with optional food waste in an aerobic, vented environment to cause decomposition of the waste by dehydration and digestion of organic matter, yielding a composted residue that is removed for sanitary disposal.

(w) **Constructed Wetland** -- a man-made, engineered, marsh-like area that is designed, constructed and operated to treat sewage by attempting to optimize physical, chemical and biological processes of natural ecosystems.

(x) **Construction Plan** --a clear and legible scaled layout drawing, prepared and sealed by an engineer. Details are outlined in 420-3-1-.15, Construction Plan Requirements.

(y) **Conventional OSS** -- a system for treating sewage that involves the use of a septic tank followed by non-pressurized dispersion of effluent in an EDF such that the trench bottom and sidewalls are located completely in unaltered natural soil and at a depth not greater than 60 inches below the unaltered natural ground surface. A shallow placement system is a conventional OSS that requires some amount of fill material above the EDF in order to provide a minimum soil cover of 12 inches.

(z) **Crossover** -- non-perforated pipe that connects one EDF pipe to another.

(aa) **Decentralized Wastewater Cluster System** -- an onsite system for treating and disposing of sewage or high-strength sewage generated by more than one dwelling or establishment.

(bb) **Design Flow** -- the flow to a system dictated by good engineering practices, experience or literature on which design is based. This is generally considered to be average daily flow that the treatment system will see with appropriate consideration given to maximum flow periods, equalization and organic loading.

(cc) **Developer –** a person who does Building Development.

(dd) **Drainage System (Surface)** -- a drainage ditch, drainage way, drainage structure; swale, trench, culvert, or any apparatus or method for directing the flow of water over land. For purposes of set back this definition does not include lined culverts.

(ee) **Dwelling** -- a house, manufactured/mobile home or house trailer, shelter, structure, or building, or portion thereof, that is or could reasonably be expected to be occupied in whole or in part as the home, residence, or sleeping place of one or more person(s).

(ff) **EDF Pipe** -- perforated pipe or its Board-approved equivalent placed in the EDF for the purpose of distributing effluent.

(gg) **Effective Liquid Capacity** -- the liquid volume of a tank below the liquid level line (outlet invert).

(hh) **Effluent** -- the discharge from a pre-treatment device. See Primary Effluent, Secondary Effluent and Advanced Treatment.

(ii) **Effluent Line** -- a watertight pipe in an OSS which conveys wastewater from one component, such as a septic tank or treatment unit, to another such as an EDF distribution box or header line.

(jj) **Effluent Disposal Field (EDF)** -- an area into which sewage treated to at least primary standards is disposed into the soil.

(kk) **Engineered OSS** -- all systems other than those meeting the definition of Conventional OSS require engineer design. This includes, but is not limited to, mounds, advanced treatment, drip irrigation and systems with a septic tank, followed by field lines where any portion of the field line protrudes above the unaltered natural soil surface. See Rule 420-3-1-.35, Engineer Design Required.

(ll) **Establishment** -- a facility other than a dwelling that generates sewage or high-strength sewage.

(mm) **Failure** -- a breakage, weakness, or defect that causes a malfunction in the treatment, distribution, disposal, or dispersal of effluent into the soil absorption field, or that causes a wash-out or disruption of the effluent disposal field as evidenced by:

1. Surfacing or ponding of effluent at, over or around any component of the onsite sewage system.
2. Backing up of sewage within the dwelling or establishment as a result of a malfunction of the OSS.
3. The contamination of ground or surface waters by an onsite system.

(nn) **Flood-prone Area** -- an area that is generally subject to being flooded 50 times in 100 years or greater than a 50 percent chance in any year. This definition refers to an area that is subject to frequent flooding (defined below) as observed, or as indicated by soil characteristics defined in the standards of the National Soil Survey Handbook, United States Department of Agriculture.

1. **Flooding** is the temporary covering of the soil surface by flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources. The frequency of the event determines the limitation assigned to each category. Ponding as opposed to flooding is standing water in a depression that is removed only by percolation, evaporation, and/or transpiration that lasts greater than 7 days.
2. **Rare**. Flooding unlikely but possible under unusual weather conditions; 1 to 5 percent chance of flooding in any year or 1 to 5

times in 100 years. (Slight limitations; includes None or no chance of flooding).

3. **Occasional.** Flooding occurs infrequently under usual weather conditions; 5 to 50 percent chance of flooding in any year or more than 5 to 50 times in 100 years. (Moderate limitations.)

4. **Frequent**. Flooding is likely to occur often under usual weather conditions more than a 50 percent chance of flooding in any year or more than 50 times in 100 years, but less than a 50 percent chance of flooding in all months in any year. (Severe limitations.)

5. **Very Frequent.** Flooding is likely to occur very often under usual weather conditions with a more than a 50 percent chance of flooding in all months of any year. (Extreme limitations.)

(oo) **Gravel Field Standard EDF** -- the standard sizing of the EDF when gravel is used as the disposal medium as required under 420-3-1-.37, Gravel Field Standard EDF Sizing for Dwellings.

(pp) **Graywater** -- that portion of domestic sewage generated by a water-using fixture or appliance, excluding toilet and food preparation waste.

(qq) **Grease Trap** -- a watertight tank or receptacle, meeting the requirements of these Rules, in which the grease present in sewage is intercepted.

(rr) **Headslope** [geomorphology] -- a geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainage way, resulting in converging overland water flow (e.g., sheet wash); headslopes are dominated by colluviums and slope wash sediments (e.g., slope alluvium); contour lines form concave curves. Slope complexity (down slope shape) can range from simple to complex. Headslopes are comparatively moister portions of hill slopes and tend to accumulate sediments (e.g., cummulic profiles) where they are not directly contributing materials to channel flow. Compare with sideslope, noseslope, free face, interfluve, crest and baseslope.

(ss) **High Shrink Swell Soils** (H3S) -- soils that have a relatively high clay content and a dominant mineral type that causes significant swelling when wet and shrinking when dry such as montmorillonite, which is a member of the smectite family. These soils are inherently slowly or very slowly permeable. Most Vertisols and Vertic Intergrades have a high shrink-swell potential. COLEs (Coefficient of Linear Extensibility) are usually greater than or equal to 0.09.

(tt) **Holding Tank** -- a temporary OSS consisting of a water-tight receptacle for the collection and short-term retention of sewage or high-strength sewage on-site by way of the building drain and building sewer, and designed and constructed to facilitate removal and ultimate disposal at another site. This term does not include sewage collection tanks on-board a recreational vehicle or travel trailer.

(uu) **Hydric Soils** -- soils that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop

anaerobic conditions in the upper part (Federal Register July 13, 1994). Hydric soil determinations shall be made using the USDA-NRCS document, "Field Indicators of Hydric Soils in The United States."

(vv) **Immediate Family** – An individual's children, including adopted children and step children, brothers, sisters, spouse, parents, including adoptive parents and spouse's parents. The term also includes those in a guardian relationship and relatives that require special care because of age, sickness or infirmity.

(ww) **International Plumbing Code/International Residential Code (IPC/IRC) (Plumbing Chapters)** -- the most current edition of the International Plumbing Code and the plumbing chapters of the International Residential Code published by the International Code Council, Inc.

(xx) **Landform** -- any physical, recognizable form or feature on the earth's surface having a characteristic shape and range in composition, and produced by natural causes; it can span a wide range in size (e.g., dune encompasses both parabolic dune, which can be several tens-of-meters across, as well as seif dune which can be up to 100 kilometers long. Landforms provide an empirical description of similar portions of the earth's surface.

(yy) **Large-Flow Development** -- building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 9 bedrooms or more in a dwelling or dwellings, or an establishment which generates more than 1,200 gpd average daily design flow. See Rule 420-3-1-.17, Exceptions to the Large-Flow Development Rules. This flow is development flow and not system flow. It establishes planning requirements and it is the combined flow in the planned development whether it is going to one or more systems.

(zz) **Large-Flow Onsite Sewage Systems** -- any system that has an average daily design flow of more than 1,200 gpd.

(aaa) **Laundry Waste** -- the liquid waste from a clothes washing machine, laundry sink or other receptacle used for laundering purposes. Also referred to as one type of graywater.

(bbb) **Local Health Department (LHD)** -- a county or area health department, including by reference the local health officer, as appropriate.

(ccc) **Local Health Officer (LHO)** -- the county or area health officer of an LHD, appointed by the State Health Officer or elected in accordance with 22-3-2(5)&(6), Ala. Code 1975, or the local health officer's agent.

(ddd) **Lot** -- a legally described parcel of land.

(eee) **Minimum Vertical Separation** -- the minimum allowable vertical separation between the bottom of the trench and a restrictive layer/horizon.

(fff) **Multi-family Dwelling** -- a dwelling intended to be occupied by more than one family, living as separate family units, and in which the rooms are occupied individually, or in apartments, suites or groups, including, but not limited to, tenant houses, flats, houses, apartment hotels, condominiums, kitchenette apartments, and other dwellings similarly occupied.

(ggg) **Natural Ground Surface** -- the more or less naturally occurring surface of the earth which has not been significantly altered or disturbed by artificial means such as cutting and/or filling (does not include plowing for agricultural purposes). Except where severely eroded, the ground surface normally begins with a dark, organic matter enriched layer (topsoil) of varying thickness followed usually with a brighter colored layer (subsoil) increasing with clay content with depth.

(hhh) **Onsite Management Entity** -- a public or private Entity that exercises sole responsibility for the operation and maintenance of one or more decentralized wastewater cluster systems.

(iii) **Onsite Sewage Treatment and Disposal System (OSS)** -- a system that collects, transports, treats and disposes of sewage from establishments or dwellings as defined by these Rules and in accordance with these Rules.

(jjj) **Permeability** – The long term acceptance rate at which soil will accept water, Term is used at time synonymously with percolation rate.

(kkk) **Performance Permit** -- The State-Issued Performance Permit is required for large-flow systems and other systems where The Board, in consultation with the LHD, concludes that the Approval for Use alone is not adequate to protect public health or the environment.

(lll) **Person** -- an individual, firm, partnership, corporation, state agency, municipal corporation, party, company, association, or other public or private legal entity.

(mmm) **Pit Privy** -- an enclosed, non-portable toilet, into which non-water-carried human waste is deposited to a subsurface storage chamber that is not watertight.

(nnn) **Plat (Preliminary)** -- a to-scale layout of the proposed development prepared by a land surveyor showing approximate locations of lots, streets, drainage and other improvements.

(ooo) **Plat (Surveyed)** -- a property (drawing or map) prepared by a land surveyor in accordance with the rules and regulations governing the profession and act of land surveying in Alabama, and drawn to a scale of one inch equal to no more than 100 feet. It shall be suitable for recording and depict the location and boundaries of the parcel and of all lots (if subdivided) and include details if specified by these Rules.

(ppp) **Plot Plan** -- a to-scale sketch of the OSS site, complying with permit application requirements. This drawing, must be prepared with enough care that Alabama Dept of Public Health personnel can identify the size and location of required items with a reasonable degree of accuracy.

(qqq) **Plumbing Code** -- the local plumbing code or where no local plumbing codes exist, it means the International Plumbing Code or the International Residential Code, as applicable.

(rrr) **Primary Effluent** -- effluent of a lower quality than Secondary Effluent usually produced by a septic tank with no further treatment. See Secondary Effluent and Advanced Treatment.

(sss) **Product Permit** --- a permit of approval for those products to be used mostly in small systems at individual homes. These products, in most cases, will not be permitted under a State-Issued Performance Permit. Systems or components that are used in large systems that hold a State-Issued Performance Permit do not have to hold a product permit.

(ttt) **Public Health Environmental Site Specialist (PHESS)** -- a person who is a full-time employee of the ADPH and who has successfully completed the required training, testing, and certification requirements for evaluating OSS sites using soil morphology.

(uuu) **Recreational Vehicle or Motor Home/Coach** -- a vehicle manufactured or modified for temporary human habitation or shelter, that is self-propelled or towed, which may have self-contained fixtures and facilities for collecting domestic sewage, and which may be used from time to time for recreational, business, or routine transportation purposes, and which, by its design or fabrication, is neither intended for permanent or long-term placement, nor to be rendered immobile. This term includes recreational trailers and campers, but excludes manufactured/mobile homes.

(vvv) **Redoximorphic (Redox) Features** -- features formed by the processes of reduction, translocation, and/or oxidation of iron (Fe) and manganese (Mn) oxides. Formerly called mottles and low chroma colors. Redox features are indicators of current conditions of saturation usually of significant duration.

(www) **Repair** -- a corrective action taken to repair or replace a failing or damaged component of a legally installed OSS, including the EDF, if none of the OSS design parameters has changed. Recommended or required periodic maintenance, such as pumping the tank, cleaning the filter or replacing a pump, is not considered a repair.

(xxx) **Replacement** -- a corrective action taken when a design parameter, such as flow or loading, has changed, the system is being completely relocated or replaced, or the system was never properly permitted. A replacement is considered a new system.

(yyy) **Replacement Effluent Disposal Field** -- see Effluent Disposal Field (EDF). A defined and documented area, set aside to be used in case the Primary Effluent Disposal Field has to be replaced.

(zzz) **Restrictive Horizon/Layer (Water Movement)** -- a layer in the soil more than 3 inches thick that significantly retards the downward movement of water or hinders acceptable treatment and renovation of effluent. A restrictive layer/horizon generally has redoximorphic features associated with it, at least in the upper part of the restrictive layer, as well as in the horizon above it.

(aaaa) **Sanitary Sewer System** -- a public or private sewer system including Decentralized Wastewater Cluster System.

(bbbb) **Sanitary Station** -- a facility for receiving and disposing of sewage from motor homes/coaches, recreational vehicles, travel trailers, auto campers, or other temporary-type dwellings or shelters. May also be referred to as a dump station.

(cccc) **Saturation** - a condition where the larger soil pores are full or almost full of water, having a positive or zero pressure potential. Thus water is allowed to freely flow into an open bore hole except in cases where certain soils are dominated by small pores

(dddd) **Scarify** – to break up and loosen the surface of the soil in preparation for the application of fill material.

(eeee) **Secondary Effluent** -- effluent that meets a minimum of secondary standards, as defined by 40 CFR 133.102 and ADEM Water Quality Criteria 335-6-10-.08, Waste Treatment Requirements, before discharge into the environment. Usually, additional treatment after the septic tank is required to achieve this. See Primary Effluent & Advanced Effluent.

(ffff) **Septage** -- the solids and liquids removed during the pumping of an OSS pre-treatment device. The term septage, as used herein, excludes marine sanitation, holding tanks, commercial and industrial grease traps, and portable toilet wastes which have not been pretreated in a manner approved by the Board.

(gggg) **Septage Sludge** -- slushy matter or sediment such as that precipitated by the treatment of domestic sewage. For purposes of these Rules, this term applies solely to the residue in septage, in contrast to the term sewage sludge, which is residue overseen by the Alabama Department of Environmental Management.

(hhhh) **Septic Tank** -- a tank meeting the requirements of septic tanks in these Rules that receives sewage.

(iiii) **Sewage Tank** -- a septic tank or any other tank that holds sewage.

(jjjj) **Sewage** -- waterborne or non-waterborne waste of similar composition and strength as may be found in the typical residence (dwelling). The EPA Onsite Wastewater Treatment Manual defines typical residential wastewater component median concentrations as BOD5 - 250 mg/l, Total Suspended Solids - 350 mg/l, Ammonia - 10 mg/l and Total Phosphorus - 9 mg/l.

(kkkk) **Sewage (High-strength)** -- waterborne or non-waterborne waste from establishments that are of similar composition but of higher strength than would be found in a typical dwelling. This may be permitted at the discretion of the Board. Historically this has been kitchen waste from establishments.

(llll) **Site Preparation Plan (SPP)** -- the product of the planning process for Large-Flow Development and Large Systems. It is a rationale for site modifications a plan for the protection of the original and replacement EDF area during the construction/development process.

(mmmm) **Shallow Placement** -- see Conventional Systems.

(nnnn) **Shoulder** -- the hillslope profile position that forms the convex, erosional surface near the top of a hillslope. If present, it comprises the transition zone from summit to backslope. Compare - summit, crest, backslope, footslope, and toeslope.

(oooo) **Shrink-swell Potential** -- the relative change in soil volume to be expected with changes in moisture content. Soils that have a relatively high clay content (>35% c) and a dominant smectitic clay mineralogy shrink and swell markedly upon wetting and drying and are inherently slowly or very slowly permeable. A "high" shrink-swell potential is indicated by a Coefficient of Linear Extensibility (COLE) of 0.06-0.09. A COLE of more than 0.09 defines the "very high" shrink-swell class. Most Vertisols and soils in Vertic subgroups have a "high" or "very high" shrink-swell potential.

(pppp) **Sideslope** [geomorphology] -- a geomorphic component of hills consisting of a laterally planar area of a hillside, resulting in predominantly parallel overland water flow (e.g., sheet wash); contour lines generally form straight lines. Sideslopes are dominated by colluvium and slope wash sediments. Slope complexity (downslope shape) can range from simple to complex. Compare with headslope, noseslope, free face, interfluve, crest, baseslope. The slope bounding a drainage way and lying between the drainage way and the adjacent interfluve. It is generally linear along the slope width.

(qqqq) **Single-Family Dwelling** -- a house, manufactured/mobile home or house trailer, shelter, structure, or building, or portion thereof, which is occupied as a distinct and separate home, residence, or sleeping place of one person or a single-family of human beings.

(rrrr) **Sinkhole** -- a natural depression formed as a result of subsurface removal of soil or rock materials and causing the formation of a collapse feature that exhibits internal drainage. The existence of a sinkhole is typically, but not always, indicated by closed depression contour lines on a United States Geological Survey 7.5-minute quadrangle topographic map, or as determined by field investigation. A sinkhole begins at the outer margins of the depression, as determined at the site by a professional geologist.

(ssss) **Small-Flow Development** -- building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 8 or fewer bedrooms in a dwelling or dwellings or an establishment or establishments with an average daily design from all planned/projected onsite systems of 1,200 gpd or less. This flow is development flow and not system flow. It establishes planning requirements and it is the combined flow in the planned development whether it is going to one or more systems.

(tttt) **Small-Flow OSS** -- a system with a average daily design flow of 1,200 gpd or less flow.

(uuuu) **Smectitic** -- group of clay minerals, including montmorillonite, that causes soils to exhibit a high degree of shrinking and swelling when it is the dominant clay mineral occurring in that soil.

(vvvv) **Spa** -- a water-holding unit designed for recreational and therapeutic use that may be, but is not normally, drained, cleaned, or refilled for each use.

(wwww) **State** -- when capitalized, means the State of Alabama; when in lower case and applied to a part of the United States of America, includes any state, district, commonwealth, territory, insular possession thereof, and any area subject to the legal authority of the United States.

(xxxx) **State Health Officer (SHO)** -- the Health Officer for the State of Alabama, as provided for in § 22-2-8, Ala. Code 1975 or the State Health Officer's agent.

(yyyy) **Structure (Construction)** -- any site built or any manufactured building, including, but not limited to dwellings, offices, stores, establishments, manufacturing facilities, storage buildings, warehouses, barns, garages and any other roofed area where it reasonably would be expected that sewage or high-strength sewage will be generated.

(zzzz) **Subdivision** -- a large-flow development where lots are platted, typically for single-family dwellings.

(aaaaa) **Summit** -- 1. The topographically highest position of a hillslope profile with a nearly level (planar or only slightly convex) surface. Compare with shoulder, backslope, footslope, and toeslope, crest. 2. A general term for the top, or highest area of a landform such as a hill, mountain or tableland. It usually refers to a high interfluve area of relatively gentle slope that is flanked by steeper slopes, e.g., mountain fronts or tableland escarpments.

(bbbbb) **Surface Water** -- water above the surface of the ground, including, but not limited to, waters of a bay, river, stream, watercourse, pond, lake, swamp, wetland, spring or artesian well, located partially or wholly within the State, including the Gulf of Mexico. Generally these features exhibit some characteristic(s) indicting a degree of permanence, (i.e., a river bank, A depression that holds water for a few days after a rain or a wet weather spring does not qualify.)

(ccccc) **Surveyed Plat** -- see Plat (Surveyed)

(ddddd) **Temporary Bench Mark (TBM)** – a defined and recognizable point of reference, which has a reasonable chance of surviving its time of need, from which relative elevations can be established.

(eeeee) **Terrace** [geomorphology] -- a step-like surface, bordering a valley floor or shoreline that represents the former position of a flood plain, lake or seashore. The term is usually applied to both the relatively flat summit surface (tread), cut or built by stream or wave action, and the steeper descending slope (scarp, riser), graded to a lower base level of erosion. Compare with stream terrace, and flood-plain step. HP. [soil survey].

(fffff) **Toeslope** -- the hillslope position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hill-slope continuum that grades to valley or closed-depression floors. Compare with summit, shoulder, backslope, footslope and valley floor.

(ggggg) **Trash Trap** -- a tank required by some designs to precede an advanced treatment system that may or may not meet non-structural septic tank specifications, depending on the requirements of the advanced treatment device manufacturer.

(hhhhh) **Upset** -- an exceptional incident in which there is an unintentional and temporary noncompliance with permit discharge limitations because of factors beyond the control of the permittee. An upset does not

include noncompliance caused by operational error, an improperly designed treatment facility, an inadequate facility, lack of preventive maintenance, or careless or improper operation.

(iiiii) **Vertisols (and vertic soil characteristics)** -- those soils which contain clays dominated by high shrink and swell and meet the requirements set forth by the USDA publication Soil Taxonomy for vertisols or have vertic characteristics as described by the same.

(jjjjj) **Wastewater** -- any polluted water. For the purpose of these Rules the term generally refers to sewage or high-strength sewage.

(kkkkk) **Waters of the State** -- subsurface or surfaced ground water, including aquifers, and surface water of a river, stream, watercourse, reservoir, pond, lake, or coast, wholly or partially within the State, natural or artificial. This does not include waters that are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless the owner or others use(s) such waters in the conduct of interstate commerce. "Waters" include "navigable waters," as defined in the FWPCA, Section 502(7), which are within the State.

(lllll) **Wet Season** -- that portion of the year receiving the highest amount of rainfall, creating the most unfavorable conditions for the proper functioning of an OSS because of soil characteristics, such as, but not limited to, shrink-swell potential, perched or apparent high water table, or other such conditions. Generally, the wet season in Alabama is December through April, but it may vary during the year in a given location.

(mmmmm) **Wet Season Water Table** -- the water table elevation occurring during that portion of the year that receives the highest amount of rainfall, as observed during actual measurement by a soil classifier or engineer or as determined by a soil classifier based on established soil indicators.

(nnnnn) **Wetland** – A transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for long enough periods to produce hydric soils and support hydrophytic vegetation. Ponding as opposed to wetlands is standing water in a depression that is removed only by percolation, evaporation, and/or transpiration that lasts greater than 7 days.

Author: George Allison, Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006. Amended: filed October 19, 2006; effective November 23, 2006.

420-3-1-.05 Use of an OSS

(1) A dwelling or establishment shall include toilet and plumbing facilities in accordance with the local plumbing code. If there is no local plumbing code the provisions of the International Plumbing Code/ International Residential Code (IPC/IRC) shall apply. Where the plumbing code differs from these Rules, these Rules shall apply. The sanitary drainage piping shall be connected to a properly permitted system of sewage disposal used solely to treat

and dispose of sewage and high-strength sewage as defined by this Chapter of the Rules of the State Board of Health.

(2) It is the responsibility of the owner of an OSS to be familiar with what should not go into a system, to not take any action that would adversely impact the system and to properly maintain it in accordance with the recommendations of the designer and/or manufacturer.

(a) The ADPH recommends that a typical residential OSS be pumped every three years. Systems treating higher-strength waste loads, such as generated by garbage grinders, should be pumped more frequently. The septic tank effluent filter should be cleaned regularly.

(b) Advanced treatment systems shall be maintained according to manufacturer's recommendations and the State-Issued Performance Based permit if applicable.

(c) Non-waterborne systems and holding tanks shall be used in accordance with Rules 420-3-1-.69, Non-Waterborne Systems: Pit Privies and Portable Toilets, and 420-3-1-.70, Composting, and Incinerating Toilets.

(3) When non-waterborne systems and holding tanks are for collecting toilet waste, an approved method of sewage disposal shall also be provided for sewage generated by other sanitation activities.

(4) The use of a cesspool is prohibited.

Author: Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006.

420-3-1-.06 General Requirements for an Onsite Sewage Treatment and Disposal System (OSS)

(1) An OSS shall be properly sited, designed, constructed, installed, operated and maintained, according to the current permit, so that it:

(a) Does not create an actual or potential public health hazard or give rise to nuisances, flies, mosquitoes, rats, or other wild or domestic animals.

(b) Does not endanger or contaminate a water of the State (either surface or groundwater.)

(c) Does not violate federal or state laws or regulations governing water pollution or sewage disposal.

(2) A lot or parcel on which an OSS is located or proposed shall not be altered or built upon so that the EDF or the REDF are adversely affected, nor shall the site be improved or developed in excess of its capacity to properly treat and/or absorb sewage effluent in the quantities and by a means provided for by this Chapter of the Rules of the State Board of Health. The acceptability of a lot or site to support an OSS of a type and size permitted by this Chapter of the Rules of the State Board of Health shall be determined on the basis of the required site evaluation and professionally certified soil data, site conditions,

daily sewage flow quantity and characteristics, and the Department's Field Review

(3) A lot or parcel on which an OSS is located or is to be located shall not be divided for the purpose of building development so that the lot/parcel is smaller than the permitted size without submitting a new application to the Health Department.

(4) Only treatment and disposal equipment that is appropriately permitted shall be used for onsite sewage management.

Authors: Lynn Scott, Lem Burell
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006.

420-3-1-.07 System Type, Site Classification and Development

(1) System Types – Two types of systems are recognized by these Rules and generally will be used on sites as listed:

(a) Conventional OSS as defined.

1. A shallow placement system is a conventional OSS that requires some amount of fill material above the EDF in order to provide a minimum soil cover of 12 inches.

(b) Engineered OSS – All systems other than those that meet the definition of Conventional OSS require engineer design. This includes, but is not limited to, mounds, advanced treatment, drip irrigation and systems with a septic tank followed by field lines where any portion of the field line protrudes above the unaltered natural soil surface. See Rule 420-3-1-.35, Engineer Design Required.

(2) Site Classification – Sites shall be classified as having Slight, Moderate, Severe or Extreme Limitations in accordance with Rule 420-3-1-.71, Site Limitation Determination (SLD).

(a) As a general rule a Conventional OSS is suitable for sites classified as slight or moderate. An Engineered OSS would usually be required for sites classified as severe. Both lot modification and an engineered OSS are usually required for an OSS to be installed on a site classified as extreme if it can be done at all.

(3) Building Development -- There are two general types of building developments, each dictating different levels of site investigation, planning, treatment and permitting. The total flow (not the number of systems) determines the planning requirements of the development.

(a) Small-Flow Development is building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 8 or fewer bedrooms in a dwelling or dwellings, or an establishment or establishments with a total average daily design flow of 1,200 gpd or less.

1. Small-Flow OSS – A system with a design flow of 1,200 gpd or less flow.

(b) Large-Flow Development is building development on a single parcel or multiple adjacent parcels that singularly or as a group would result in 9 bedrooms or more in a dwelling or dwellings, or more than 1,200 gpd average daily design flow from establishments. See Rule 420-3-1-.17, Exceptions to the Large-Flow Development Rules.

1. Large-Flow OSS – A system with a design flow of over 1,200 gpd.

Author: Jimmy Coles
Statutory Authority: Code of Ala. 1975, §§22-2-2(4); 22-2-2(6); 22-10-1, et seq.; 22-20-5; 22-26-1; 22-26-2; 22-26-3; 22-26-5; 22-26-7; 22-27-1, et seq.
History: Repealed and New Rule: Filed October 20, 2005, effective March 19, 2006. Amended: filed October 19, 2006; effective November 23, 2006.

420-3-1-.08 Permits Required for an OSS

(1) Permit to Install/Repair. Unless otherwise allowed by these rules, no person shall begin the installation or repair of an OSS, or component thereof, until the owner or the owner's agent possesses a valid Permit To Install/Repair an OSS issued by the LHD.

(a) Where an engineered OSS is required, no installation or construction of any part of the engineered system shall begin without the installer having consulted with the design engineer.

(b) The Health Department may revoke a Permit to Install/Repair if there are changes in the lot conditions or other factors affecting the permit's approval. Factors that may lead to permit revocation include, but are not limited to, changes to regulatory agency rules and/or statutory provisions, acts of eminent domain, natural changes or man-made alterations to a lot, or water impoundments.

(c) The LHD shall be notified of a modification or repair to an OSS, according to Rule 420-3-1-.89, Repair, Replacement and Inspection of an Existing OSS.

(2) Site Preparation/Evaluation. Unless otherwise provided in these rules, all lots or building sites, except for those on which repairs to OSS will be made pursuant to rule 420-3-1-.89, shall have a site evaluation that complies with Rules 420-3-1-.71 through 420-3-1-.86. Large-flow developments and large-flow systems shall have a Site Preparation Plan.

(3) State-Issued Performance Permits. These permits are required for large-flow OSS and for other systems where the Board, in consultation with the LHD, concludes that the Approval for Use alone is not considered adequate to protect public health or the environment.

(a) This permit may be issued when the SPP has been approved. The Approval for Use is issued when the conditions of the SPP and State-Issued Performance Permit have been met. The issuance of the Approval for Use activates the State-Issued Performance Permit.

(b) The State-Issued Performance Permit establishes the conditions under which the OSS shall be operated. The State-Issued Performance Permit may include, but is not limited to, conditions regarding system type, system

layout, location, operation and maintenance requirements, operational constraints and installation requirements, and may contain sampling and reporting requirements.

(c) The Department of Public Health shall collect from the Wastewater Management Entity a fee of $250 for the review of an application for issuance, renewal, or modification of a State-Issued Performance Permit. This fee is non-refundable and shall be paid in advance of review.

(4) Approval for Use. The Approval for Use is issued after the LHD (and State Health Department in the case of problem sites or when a State-Issued Performance Permit is required) is satisfied that all the conditions of these Rules, the Permit to Install/Repair, and the State-Issued Performance Permit and SPP, if applicable, have been met.

(5)Except as allowed in Paragraph (10) and (11) of this Rule, no part of an OSS shall be covered or used until the LHD is afforded an opportunity to inspect its installation and corrections are made, if necessary. The OSS shall not be used until the Approval for Use is issued by the LHD. Any part of an OSS that has been covered prior to inspection or authorization by the LHD shall be uncovered upon direction of the LHD.

(6) The installer shall notify the LHD of any problem encountered during an OSS installation or repair which may prevent the OSS from being installed in accordance with these Rules and/or the conditions of the permit. The installer shall cease installation or repair of the OSS until the problem is resolved to the satisfaction of the LHD.

(7) An inspection shall be scheduled as close as possible to the date and time requested by a licensed installer. A request for an inspection shall be made no later than 9:00 a.m. of the date of the requested inspection.

(8) When a disruption in installation results in the inability to complete installation or repair of an OSS by the scheduled inspection time, the installer shall contact the LHD to reschedule an inspection.

(9) Installer and engineer certifications of installation shall be submitted in accordance with Rule 420-3-1-.95. Such certifications shall be submitted within four (4) working days of a LHD inspection of installation of a system or within four (4) working days of installation where an inspection is not performed. An Approval for Use shall not be issued until the required certifications are submitted to the LHD.

(10) The LHD may allow an AOWB licensed installer to cover an installation of a conventional system when resource constraints, weather conditions, or unforeseen circumstances prevent the LHD from conducting an inspection within one (1) hour after the scheduled inspection time.

(11) In an emergency or due to special circumstances, the LHD may authorize a licensed installer to install or repair a conventional OSS without an inspection outside of normal business hours of the LHD.

(12) Certification of Financial Viability. Management Entities that are required by Rule 420-3-1-.98, Onsite Management Entities, to obtain a