

Negotiated Rule Draft No. 3, Dated June 12, 2008
Docket No. 58-0103-0801 – Individual/Subsurface Sewage Disposal Rules
Shaded text indicates revisions made based on comments received and discussion held on June 5, 2008

003. DEFINITIONS.

For the purposes of these rules, the following definitions apply. (5-7-93)

Subsections 003.01 through 003.21 have no changes

XX. Module. A module shall consist of one (1) primary drainfield, one (1) secondary drainfield with a design flow equal to that of the primary drainfield, and one (1) reserve area capable of handling the same design flow as the primary drainfield. The primary drainfield in any module may be designed for flows up to a maximum of ten thousand (10,000) gallons per day and shall not receive more than ten thousand (10,000) gallons per day. An area large enough to construct two (2) pressurized drainfields, each capable of handling a daily wastewater flow not to exceed ten thousand (10,000) gallons, and a reserve area equal in size to a single drainfield. ()

Subsections 003.22 through 003.38 have no changes

(Break in Continuity of Sections)

007. SEPTIC TANKS DESIGN AND CONSTRUCTION STANDARDS.

01. Materials. New septic tanks will be constructed of concrete, or other materials approved by the Director. Steel tanks are unacceptable. (10-1-90)

02. Construction Requirements. All septic tanks will be water tight, constructed of sound, durable materials and not subject to excessive corrosion, decay, frost damage or cracking. (10-1-90)

03. Concrete Septic Tanks. New concrete septic tanks will at a minimum meet the following requirements: (10-1-90)

a. The walls and floor must be at least two and one-half (2 1/2) inches thick if adequately reinforced and at least six (6) inches thick if not reinforced. (10-1-90)

b. Concrete lids or covers must be at least three (3) inches thick and adequately reinforced. (10-1-90)

c. The floor and at least a six (6) inch vertical portion of the walls of a poured tank must be poured at the same time (monolithic pour). (10-1-90)

d. Wall sections poured separately must have interlocking joints on joining edge. (10-1-90)

e. All concrete outlet baffles must be finished with an asphalt or other protective coating. (10-1-90)

04. Horizontal Dimension Limit. No interior horizontal dimension of a septic tank or compartment may be less than two (2) feet. (10-1-90)

05. Liquid Depth. The liquid depth shall be at least two and one-half (2 1/2) feet but not greater than five (5) feet. (10-1-90)

06. Manufactured Tank Markings. Septic tanks manufactured in accordance with a specified design approved by the Director, will be legibly and indelibly marked with the manufacturer's name or trademark, total liquid capacity and shall indicate the tank's inlet and outlet. (10-1-90)

07. Minimum Tank Capacities.

(7-1-93)

a. Tanks serving one (1) or two (2) single dwelling units:

MINIMUM CAPACITY PER DWELLING UNIT	
Number of Bedrooms	Minimum Liquid Capacity (Gallons)
1 or 2	900
3 or 4	1,000

For each bedroom over four (4) add two hundred fifty (250) gallons.

(10-1-90)

b. Tanks serving all other flows. Septic tank capacity shall be equal to two (2) times the average daily flow as determined from Subsection 007.08. The minimum tank capacity shall be seven hundred and fifty (750) gallons.

(12-31-91)

08. Wastewater Flows From Various Establishments In Gallons Per Day.

ESTABLISHMENTS	
Single Family Dwelling and Mobile Homes:	250/Unit
3 1 bedroom:	350 300
Add/subtract 50 gallons/bedroom	
2 & 3 bedrooms	400350
4 bedrooms	500450
5 bedrooms	600550
6 or more bedrooms	700650+50 gpd/ bedroom
MULTIPLE RESIDENTIAL	
Hotel:	
With Private Baths	60/Bedspace
Without Private Baths	40/Bedspace
Motel:	
With Kitchenette	40/Bedspace
Without Kitchenette	60/Bedspace
Boarding House:	150/Bedspace
Add for each nonresident	25
Rooming House/Bunk House	40/Resident
Staff Resident	40/Staff
Nonresident	15/Staff
Apartments	250/Unit
INSTITUTIONAL	
Assembly Hall/Meeting House	2/Seat
Church:	
With Kitchen	3/Seat
Without Kitchen	7/Seat
Hospital:	
Kitchen only	250/Bedspace
Kitchen & Laundry	25/Bedspace
Laundry only	40/Bedspace
Nursing Home/Rest Home	125/Bedspace
Day School:	
Without Showers	20/Student
With Showers	25/Student
With Cafeteria, add	3/Student
Staff-Resident	40/Staff
Nonresident	20/Staff
FOOD SERVICE	
Conventional Service:	
Toilet & Kitchen Wastes	13/Meal

Kitchen Wastes	3.3/Meal
Take Out or Single Service	2/Meal
Dining Hall:	
Toilet & Kitchen Wastes	8/Meal
Kitchen Wastes	3.3/Meal
Drinking Establishment	2/Person
Food Service Employee	15/Employee
COMMERCIAL AND INDUSTRIAL	
Bowling Alley	125/Lane
Laundry - Self Service	50/Wash
Public Transportation Terminal	5/Fare
Service Station	10/Vehicle
Car Wash:	50/Vehicle
1st Bay	1000
Additional Bays	500 each
Shopping Center (No food/laundry)	1/Pkg.Sp.
Theaters (including Concession Stand):	
Auditorium	5/Seat
Drive-in	10/Space
Offices	20/Employee
Factories:	
No Showers	25/Employee
With Showers	35/Employee
Add for Cafeteria	5/Employee
Stores	2/Employee
Public Restrooms	
SEASONAL AND RECREATIONAL	
Fairground (Peak Daily Attend)	1/Person
Stadium	2/Seat
Swimming Pool:	
Toilet & Shower Wastes	10/Person
Parks & Camps (Day Use):	
Toilet & Shower Wastes	15/Person
Roadside Rest Area:	
Toilet & Shower Wastes	10/Person
Toilet Waste	5/Person
Overnight Accommodation:	
Central Toilet	25/Person
Central Toilet & Shower	35/Person
Designated Camp Area:	
Toilet & Shower Wastes	90/Space
Toilet Wastes	65/Space
Seasonal Camp	50/Space
Luxury Cabin	75/Person
Travel Trailer Park with Sewer and Water Hook-up	125/Space
Construction Camp	50/Person
Resort Camps	50/Person
Luxury Camps	100/Person
Country Clubs Resident Member	100/Member
Add for Nonresident Member	25/Person
Public Restrooms:	
Toilet Wastes	5/Person
Toilet & Shower Wastes	15/Person

09. Total Volume. The total volume of a septic tank will at a minimum be one hundred fifteen percent (115%) of its liquid capacity. (10-1-90)

10. Inlets. (7-1-93)

a. The inlet into the tank will be at least four (4) inches in diameter and enter the tank three (3) inches above the liquid level. (10-1-90)

b. The inlet of the septic tank and each compartment will be submerged by means of a vented tee or baffle. (10-1-90)

c. Vented tees or baffles will extend above the liquid level seven (7) inches or more but not closer than one (1) inch to the top of the tank. (10-1-90)

d. Tees should not extend horizontally into the tank beyond two (2) times the diameter of the inlet. (10-1-90)

11. Outlets. (7-1-93)

a. The outlet of the tank will be at least four (4) inches in diameter. (10-1-90)

b. The outlet of the septic tank and each compartment will be submerged by means of a vented tee or baffle. (10-1-90)

c. Vented tees and baffles will extend above the liquid level seven (7) inches or more above the liquid level but no closer than one (1) inch to the inside top of the tank. (10-1-90)

d. Tees and baffles will extend below the liquid level to a depth where forty percent (40%) of the tank's liquid volume is above the bottom of the tee or baffle. For vertical walled rectangular tanks, this point is at forty percent (40%) of the liquid depth. In horizontal cylindrical tanks this point is about thirty-five percent (35%) of the liquid depth. (10-1-90)

e. Tees and baffles should not extend horizontally into the tank beyond two (2) times the diameter of the outlet. (10-1-90)

12. Scum Storage. A septic tank will provide an air space above the liquid level which will be equal to or greater than fifteen percent (15%) of the tank's liquid capacity. For horizontal cylindrical tanks, this condition is met when the bottom of the outlet port is located at nineteen percent (19%) of the tank's diameter when measured from the inside top of the tank. (10-1-90)

13. Manholes. Access to each septic tank or compartment shall be provided by a manhole twenty (20) inches in minimum dimension or a removable cover of equivalent size. Each manhole cover will be provided with a corrosion resistant strap or handle to facilitate removal. (10-1-90)

14. Inspection Ports. An inspection port measuring at least eight (8) inches in its minimum dimension will be placed above each inlet and outlet. Manholes may be substituted for inspection ports. (10-1-90)

15. Split Flows. The wastewater from a single building sewer or sewer line may not be divided and discharged into more than one (1) septic tank or compartment. (10-1-90)

16. Multiple Tank Or Compartment Capacity. Multiple septic tanks or compartmented septic tanks connected in series may be used so long as the sum of their liquid capacities is at least equal to the minimum tank

capacity computed in Subsection 007.07 and the initial tank or compartment has a liquid capacity of more than one-half (1/2) but no more than two-thirds (2/3) of the total liquid capacity of the septic tank facility. (12-31-91)

17. Minimum Separation Distances Between Septic Tanks and Features of Concern.

Features of Concern		Minimum Distance to Septic Tank in Feet
Well or Spring or Suction Line	Public Water	100
	Other	50
Water Distribution Line	Public Water	25
	Other	10
Permanent or Intermittent Surface Water		50
Temporary Surface Water		25
Downslope Cut or Scarp		25
Dwelling Foundation or Building		5
Property Line		5
Seasonal High Water Level (Vertically from Top of Tank)		2

(10-1-90)

18. Installation Of Manufactured Tanks. If written installation instructions are provided by the manufacturer of a septic tank, those instructions relative to the stability and integrity of the tank are to be followed unless otherwise specified in the installation permit of these rules. (5-7-93)

19. Manhole Extension. If the top of the septic tank is to be located more than twenty-four (24) inches below the finished grade, manholes will be extended to within eighteen (18) inches of the finished grade. (10-1-90)

20. Sectional Tanks. Sectional tanks will be joined in a manner that will insure that the tank is watertight. (10-1-90)

21. Inlet And Outlet Piping. Unless otherwise specified in the installation permit, piping to and from a septic tank or dosing chamber, to points three (3) feet beyond the tank excavation shall be of a material approved by the Director. The following materials are required: (5-7-93)

a. ABS schedule forty (40) or material of equal or greater strength piping shall be used to span the excavations for the septic tank and dosing chamber. (5-7-93)

b. ASTM-D-3033 or 3034 plastic pipe may be used to span the septic tank and dosing chamber if the excavation is compacted with fill material. (5-7-93)

i. The fill material must be granular, clean and compacted to ninety percent (90%) standard proctor density. (5-7-93)

ii. Placement of ASTM-D-3033 or 3034 on undisturbed earth is suitable, but in no installation shall there be less than twelve (12) inches of cover over the pipe. (5-7-93)

22. Effluent Pipe Separation Distances. Effluent pipes shall not be installed closer than fifty (50) feet from a well. (5-7-93)

23. Septic Tank Abandonment. Responsibility of properly abandoning a septic tank shall remain with the property owner. Septic tanks shall be abandoned in accordance with the following: (5-7-93)

a. Disconnection of the inlet and outlet piping; (5-7-93)

- b. Pumping of the scum and septage with approved disposal; (5-7-93)
- c. Filling the septic tank with earthen materials; or (5-7-93)
- d. Physically destroying the septic tank or removing the septic tank from the ground. (5-7-93)

008. STANDARD SUBSURFACE DISPOSAL FACILITY DESIGN AND CONSTRUCTION.

01. Standard Drainfield. A drainfield consisting of an effluent sewer, one (1) or more aggregate filled trenches and a gravity flow wastewater distribution system. These standards will be the basis of acceptable design and configuration. Overall dimensions of a specific facility will depend upon site characteristics and the volume of wastewater. (10-1-90)

02. Site Suitability. The area in which a standard drainfield is to be constructed must meet the conditions stated in this subsection: (10-1-90)

- a. Slope. The natural slope of the site will not exceed twenty percent (20%). (10-1-90)
- b. Soil types. Suitable soil types must be present at depths corresponding with the sidewalls of the proposed drainfield and at depths which will be between the bottom of the proposed drainfield and any limiting soil layer (effective soil depth).

Design Soil Group	Design Soil Subgroup	Soil Textural Classification	USDA Field Test Textural Classification	
Unsuitable		Gravel (>95%)	10 Mesh	
		Coarse Sand (>95%)	10-35 Mesh	Sand
A	<u>A-1</u>	Medium Sand	35-60 Mesh	Sand
	<u>A-2a</u>	<u>Medium Sand</u>	<u>Poorly Graded</u>	<u>Sand</u>
	<u>A-2b</u>	Fine Sand	65-140 Mesh	Sand
		Loamy Sand		Sand
B	<u>B-1</u>	Very Fine Sand	140-270 Mesh	Sand
		Sandy Loam		Sandy Loam
		Very Fine Sandy Loamy Sand		Sandy Loam
	<u>B-2</u>	Loam		
		Silt Loam		Silt Loam
		<u>Sandy Clay Loam</u>	<u>(<27% Clay)</u>	
C	<u>C-1</u>	Silt		Silt Loam
		Clay Loam		Clay Loam
		Sandy Clay Loam	<u>(>27% Clay)</u>	Clay Loam
		Silty Clay Loam		Clay Loam
	<u>C-2</u>	<u>Clay Loam</u>		<u>Clay Loam</u>
Unsuitable		Sandy Clay	<u>(>35% Clay)</u>	Clay
		Silty Clay	<u>(>40% Clay)</u>	Clay
		Clay		Clay
		Clay soils with high shrink/swell potential		Clay
		Organic mucks		
		<u>Claypan, Duripan, Hardpan</u>		
	Hardpan			

(10-1-90)()

c. Effective Soil Depths. Effective soil depths, in feet, below the bottom of the drainfield must be equal to or greater than those values listed in the following table.

EFFECTIVE SOIL DEPTHS TABLE						
Site Conditions	Design Soil Group					
	A-1	A-2	B-1	B-2	C-1	C-2
Limiting Layer	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>4</u>
Impermeable Layer	4	<u>4</u>	<u>4</u>	4	<u>4</u>	4
Fractured Bedrock, Fissured Bedrock or Extremely Permeable Material	6	<u>5</u>	<u>4</u>	<u>4</u> ₃	<u>3</u>	<u>3</u> _{2.5}
Normal High Groundwater Level	6	<u>5</u>	<u>4</u>	<u>4</u> ₃	<u>3</u>	<u>3</u> _{2.5}
Seasonal High Groundwater Level	1	<u>1</u>	<u>1</u>	1	<u>1</u>	1

(5-7-93)()

d. Separation Distances. The drainfield must be located so that the separation distances given be maintained or exceeded according to the following Table:

Feature of Interest	Soil Types All	A	B	C
Public Water Supply	100			
All Other Domestic Water Supplies including Springs and Suction Lines	100			
Water Distribution Lines: Pressure Suction	25 100			
Permanent or Intermittent Surface Water other than Irrigation Canals & Ditches		300	200	100
Temporary Surface Water and Irrigation Canals and Ditches	50			
Downslope Cut or Scarp: Impermeable Layer Above Base Impermeable Layer Below Base		75 50	50 25	50 25
Building Foundations: Crawl Space or Slab Basement	10 20			
Property Line	5			

(5-7-93)

03. Subsurface Disposal Facility Sizing. The size of a subsurface disposal system will be determined by the following procedures: (10-1-90)

a. Daily flow estimates should be determined in the same manner as are flow estimates for septic tank sizing in Subsection 007.08. (5-7-93)

b. The total required absorption area is obtained by dividing the estimated daily flow by a value below.

Design Soil Group	A-1	A-2a	A-2b	B-1	B-2	C-1	C-2
Absorption Area - Gallons/Square Foot/Day	<u>1.0</u> ₂	<u>1.0</u>	<u>0.75</u>	<u>0.56</u>	<u>0.45</u>	<u>0.23</u>	<u>0.2</u>

(10-1-90)()

c. Required Area. The size of an acceptable site must be large enough to construct two (2) complete drainfields in which each are sized to receive one hundred percent (100%) of the design wastewater flow.

04. Standard Subsurface Disposal Facility Specifications. The following table presents additional design specifications for new subsurface sewage disposal facilities.

SUBSURFACE DISPOSAL FACILITY TABLE	
Item	All Soil Groups
Length of Individual Distribution Laterals	100 Feet Maximum
Grade of Distribution Laterals and Trench Bottoms	Level
Width of Trenches	1 Foot Minimum 6 Feet Maximum
Depth of Trenches	2 Feet Minimum 4 Feet Maximum
Total Square Feet of Trench for A and B Soils	1500 Sq.ft. Max.
Total Square Feet of Trench for C Soils	2500 Sq. ft. Max.
Undisturbed Earth Between Trenches	6 Feet Minimum
Undisturbed Earth Between Septic Tank and Trenches	6 Feet Minimum
Depth of Aggregate	
Total	12 In. Minimum
Over Distribution Laterals	2 In. Minimum
Under Distribution Laterals	6 In. Minimum
Depth of Soil Over Top of Aggregate	12 In. Minimum

(10-1-90)()

05. Wastewater Distribution. Systems shall be installed to maintain equal or serial effluent distribution. (10-1-90)

06. Excavation. Trenches will not be excavated during the period of high soil moisture content when that moisture promotes smearing and compaction of the soil. (10-1-90)

07. Soil Barrier. The aggregate will be covered throughout with untreated building paper, a synthetic filter fabric (geotextile), a three (3) inch layer of straw or other acceptable permeable material. (10-1-90)

08. Aggregate. The trench aggregate shall be crushed rock, gravel, or other acceptable, durable and inert material which is, free of fines, and has an effective diameter from one-half (1/2) to two and one-half (2 1/2) inches. (10-1-90)

09. Impermeable Surface Barrier. No treatment area trench or replacement area shall be covered by an impermeable surface barrier, such as tar paper, asphalt or tarmac or be used for parking or driving on or in any way compacted and shall be adequately protected from such activities. (5-7-93)

10. Standard Absorption Bed. Absorption bed disposal facilities may be considered when a site is suitable for a standard subsurface disposal facility except that it is not large enough. (10-1-90)

a. **General Requirements.** Except as specified in this section, rules and regulations applicable to a standard subsurface disposal system are applicable to an absorption bed facility. (10-1-90)

b. **Slope Limitation.** Sites with slopes in excess of eight percent (8%) are not suitable for absorption bed facilities. (10-1-90)

c. **Vehicular Traffic.** Rubber tired vehicles must not be driven on the bottom surface of any bed excavation. (10-1-90)

d. **Distribution Lateral Spacing.** Distribution laterals within a bed must be spaced on not greater than six (6) feet centers nor may any sidewall be more than three (3) feet from a distribution lateral. (10-1-90)

11. Seepage Pit. Seepage pit disposal facilities may be used on a case by case basis within the boundaries of District Health Department Seven when an applicant can demonstrate to the district director's satisfaction that the soils and depth to ground water are sufficient to prevent ground water contamination. The district director shall document all such cases. (4-2-91)L

a. **General Requirements.** Except as specified in Subsection 008.11.b., rules and regulations applicable to a standard subsurface disposal system are applicable to a seepage pit. (12-31-91)

b. **Other conditions for approval, sizing and construction** will be as provided for in the seepage pit section of the Technical Guidance Manual for Individual and Subsurface Sewage Disposal, except that the site size restriction in condition two (2) of the Conditions for Approval will not apply. (10-1-90)

12. Failing Subsurface Sewage Disposal System. If the Director determines that the public's health is at risk from a failed septic system and that the replacement of a failing subsurface sewage disposal system cannot meet the current rules and regulations, then the replacement system must meet the intent of the rules and regulations by utilizing a standard subsurface sewage disposal design or alternative system design as specified by the Director.(5-7-93)

(Break in Continuity of Sections)

013. LARGE SOIL ABSORPTION SYSTEM DESIGN AND CONSTRUCTION.

01. Site Investigation. A site investigation for a large soil absorption system by a soil scientist and/or hydrogeologist may be required by the Director for review and approval and shall be coordinated with the Director. Soil and site investigations shall conclude that the effluent will not adversely impact or harm the waters of the State.(5-7-93)

02. Installation Permit Plans. Installation permit application plans, as outlined in Subsection 005.04, for a large soil absorption system submitted for approval shall include provisions for inspections of the work during construction by the design engineer or his designee and/or by the Director. (5-7-93)

03. Module-Size Flow. The maximum size of any subsurface sewage disposal module shall be ten thousand (10,000) gallons per day. Developments Large soil absorption systems with greater than ten thousand (10,000) gallons per day flow shall be divided the system into absorption modules designed for ten thousand (10,000) gallons per day or less. (5-7-93)