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Residential Onsite Wastewater Treatment Systems (OWTS)

Conventional Dispersal System Replacements

This guidance document has been prepared based upon the requirements specified by the Monterey County Local Agency Management Program (LAMP) for OWTS, effective date May 11, 2018. This information is provided as a courtesy only and the requirements in the comprehensive LAMP document shall prevail in the event any discrepancy is identified.

1) **DETERMINE WASTEWATER DESIGN VOLUME**
   Refer to Table 5-3 (back of sheet).

2) **ESTABLISH SOIL CHARACTERISTICS**
   a. **Soil Profile Analysis** completed to 3 feet past the bottom on the proposed trench. Can be completed using a boring or excavation, and may be the same boring or excavation used to determine the depth of groundwater.
   b. **Absorptive Characteristics**

      Option 1 – Direct Inspection completed by a Qualified Consultant, describing the soil at the depth equal to the bottom of the proposed trench. Soil Application Rate (SAR) determined by Table 5-5 (back of sheet).

      Option 2 – Percolation Testing completed by a Qualified Consultant, completed at the depth equal to the bottom of the proposed trench. Soil Application Rate (SAR) determined by Table 5-4 (back of sheet).

   c. **Determination of Depth of Groundwater** can be completed using a boring or excavation. The minimum vertical setback varies based on the type of soil encountered at the depth equal to the bottom of the proposed trench.
      Option 1 – Direct Inspection – Refer to Table 5-5
      Option 2 – Percolation Testing – Refer to Table 5-6

3) **CALCULATE OWTS DISPERSAL SYSTEM REQUIREMENT**

$$\text{Dispersal System Capacity (square feet)} = \frac{\text{Design Volume (gallons)}}{\text{Soil Application Rate (gallons/square foot)}}$$

4) **CALCULATE LENGTH OF DISPERSAL SYSTEM TRENCH**

$$\text{Trench Length (linear feet} = \frac{\text{Dispersal System Capacity (square feet)}}{\text{4 square feet/linear foot)**}}$$

***** Typically 4 s.f./l.f.; however, up to 10 s.f./l.f. may be allowed by variance when site constraints preclude the use of a shallow (4 s.f/l.f.) dispersal system.***

Dispersal system trenches shall be designed and installed as shallow as practical, based on site constraints and soil conditions, and may not exceed 10’ total depth.

Table 5-3. Minimum Capacity of Septic Tanks

Number of Bedrooms	Volume of Wastewater for OWTS Design	Septic Tank Capacity	Septic Tank Capacity (Kitchen Garbage Grinder Installed)
1 or 2 Bedrooms	300 gallons	1,000 gallons	1,500 gallons
3 or 4 Bedrooms	450 gallons	1,500 gallons	2,000 gallons
5 or 6 Bedrooms	600 gallons	2,000 gallons	2,500 gallons
Each Additional Bedroom	75 gallons	Add 250 gallons	Add 250 gallons
Each Additional Garbage Grinder			Add 500 gallons

Table 5-4. Soil Application Rate as Determined from Stabilized Percolation Rates

Source: Modified version of Table 3, OWTS Policy, Tier 1

Percolation Rate (minutes per Inch)	Maximum Soil Application Rate (gallons per day per square foot)
< 1	1.2 (Requires Alternative OWTS with Supplemental Treatment)
1 – 5	1.2
6 – 10	0.8
11 – 17	0.7
18 – 24	0.6
25 – 33	0.5
34 – 42	0.4
43 – 51	0.3
52 – 60	0.2
61 – 66	0.18
67 – 72	0.16
73 – 78	0.14
79 – 84	0.12
85 – 90	0.1
> 90 – 120[1]	0.1 (Requires Alternative OWTS with Supplemental Treatment)

[1] When percolation testing yields slower than 90 MPI, the qualified professional shall incorporate alternative OWTS with supplemental treatment to further reduce BOD and TSS beyond primary treated effluent to slow down the development of biomat and extend the life of the disposal field; nitrogen reduction is not required. No OWTS permits shall be issued when the percolation rate is slower than 120 MPI.

Table 5-6. Minimum Vertical Separation to Groundwater for Conventional OWTS Dispersal Systems

Percolation Rate	Minimum Vertical Separation to Groundwater
Percolation Rate ≤1 MPI	Not Authorized without Alternative OWTS with Supplemental Treatment
1 MPI < Percolation Rate < 5 MPI	Twenty (20) feet
5 MPI < Percolation Rate ≤ 30 MPI	Eight (8) feet
30 MPI < Percolation Rate ≤ 90 MPI	Five (5) feet
Percolation Rate > 90MPI	Not Authorized without Alternative OWTS with Supplemental Treatment

Table 5-5. Soil Application Rate as Determined from Soil Texture, Structure and Grade

(Source: OWTS Policy Tier 1 Table 4, based on US EPA Onsite Wastewater Treatment Systems Manual, February 2002)

Soil Texture (per the USDA Soil Classification System)	Soil Structure Shape	Grade	Maximum Soil Application Rate (gallons per day per square foot)	Vertical Groundwater Separation (feet)
Coarse Sand, Sand, Loamy Coarse Sand, Loamy Sand	Single grain	Structureless	0.8	20
Fine Sand, Very Fine Sand, Loamy Fine Sand, Loamy Very Fine Sand	Single grain	Structureless	0.4	8
Coarse Sandy Loam, Sandy Loam	Massive	Structureless	0.2	8
	Platy	Weak	0.2	8
		Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
		Moderate, Strong	0.6	20
Fine Sandy Loam, very fine Sandy Loam	Massive	Structureless	0.2	8
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.2	8
		Moderate, Strong	0.4	8
Loam	Massive	Structureless	0.2	8
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
		Moderate, Strong	0.6	20
Silt Loam	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
		Moderate, Strong	0.6	20
Sandy Clay Loam, Clay Loam, Silty Clay Loam	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.2	8
		Moderate, Strong	0.4	8
Sandy Clay, Clay, or Silty Clay	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	Prohibited	n/a
		Moderate, Strong	0.2	8