

# Monterey County Health Department Environmental Health Bureau

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## Onsite Wastewater Treatment Systems (OWTS)

### Percolation Testing Methodology

Percolation testing is conducted to estimate the soils absorptive characteristics and determine the size of the dispersal field for the project. Testing may be performed by a Qualified Professional who shall be a registered California professional, including Civil Engineer, Professional Geologist, or Certified Engineering Geologist or other qualified professional as approved by the EHB. Qualified Professionals must obtain an annual registration from the Health Department. It will be necessary to submit a workplan to EHB prior to commencing a site and soil evaluation for:

- A commercial operation or employee housing facility that will generate more than 1,000 gallons of domestic wastewater each daily; or
- A new or expanded dispersal system for a wastewater treatment facility; or
- A proposed subdivision of land.

#### Number and Location of Tests

- Minimum of three percolation tests are to be performed within 50-100 feet of the area proposed for an absorption system and spaced uniformly throughout the area. If soil conditions are highly variable, more tests may be required.
- All percolation tests must be conducted at the level of the deepest trench depth proposed in the dispersal system design. An alternative method would be to allow the percolation test holes to be at a depth midway between the shallowest trench depth proposed and the maximum trench depth proposed, providing the soil is of consistent type throughout the trench depth range.
- Test holes shall be identified with:
  - A test hold number or letter
  - The depth of the test boring
  - Lot/parcel number or letter if associated with a subdivision or lot line adjustment.

#### Preparation of Test Holes

- Each test hole shall be a minimum of 6 inches in diameter.
- Scrape the sides and bottom of the holes with a sharp instrument to remove any surfaces that became smeared by the auger or other instrument. All loose material shall be removed from the hole and add 1-2 inches of clean, washed coarse sand or fine gravel.
- Insert a 3-inch diameter perforate pipe in the hole and carefully pack the annular space between the outside of the pipe and the soil surface with clean, washed coarse sand or gravel.

## Presoaking

1. Presoaking of test holes is required on the day prior to testing, except during wet weather period when the presoak may occur on the same day as testing.
  - Fill test hole to 12 inches above gravel bottom and maintain for a minimum 4 hour period, refilling at least once per hour.
  - With an indelible marker, date and note the hole number on the pipe. Mark the water level for verification at presoak inspection.
2. Maintain approximately 12 inches of clear water for a minimum of four (4) hours. After four hours, allow the water column to drop overnight (testing must be done within 15-30 hours after the initial four-hour presoak).

## Testing Procedure

It is considered an automatic failure if more than 6 inches of water above the gravel bottom remains in any test hole after the presoak and no further testing of the hole is warranted.

1. Carefully fill the holes to 6 inches of water above the gravel bottom.
2. Measure the water level from a fixed reference point to the nearest 1/16 in. at 30 min intervals.
3. Refill the test hole to 6 inches over the gravel after every 30 minute reading. Immediately after adjustment, the test is continued until a total of 8 readings have been made or two successive water level drops do not vary by more than 1/16 in. The final reading is used to calculate the percolation rate. A minimum of three measurements shall be obtained.
  - If there is a pattern of a significant declining percolation rates towards the end of the testing period, then additional testing might be required.
  - In sandy soils or soils in which the first 6 in. of water added after the soaking period seeps away in less than 30 min, water level measurements are made at 10 min intervals for 1 hour. The last water level drop is used to calculate the percolation rate.
  - If the percolation rate is slower than 90 minutes/inch or faster than 1 minute/inch, the soil is unsuitable for a conventional sewage disposal system. Additional testing for an alternative sewage disposal system may be conducted but only for existing lots of record.

## Calculations and Measurements

1. All readings are to be reported in minutes per inch.
2. The final, stabilized percolation rates obtained for each dispersal area shall be averaged to determine the soil application rate utilizing Table 5-4. When the highest and lowest percolation rates vary by more than 30 minutes per inch, the qualified professional shall determine if additional testing is necessary or recommend an appropriate soil application rate based on the information available.
3. Complete the calculations on the Soil Percolation Test & Soil Log Data form and enter the final stabilized rate for each test hold.
4. Reports shall be signed with an original signature by the consultant who either performed or supervised the testing.
5. Data for all percolation holes must be submitted to the Department of Environmental Health for evaluation. This data is to be included with a copy of the site map showing the location of the numbered percolation holes and a letter of certification.
6. The percolation test is only one component in evaluating an OWTS. Site considerations may require special evaluation by a Qualified Professional to technically address issues such as high groundwater, steep slope, nitrate impacts, and cumulative impacts.



# MONTEREY COUNTY ENVIRONMENTAL HEALTH BUREAU

## SOIL PERCOLATION TEST & SOIL LOG DATA

A MINIMUM OF 3 PERCOLATION TESTS ARE TO BE PERFORMED IN EACH PROPOSED DISPERSAL SYSTEM AREA. SOIL LOGS TO BE RECORDED ON THE REVERSE SIDE OF THIS FORM OR ATTACHED.

OWNER'S NAME \_\_\_\_\_ APN \_\_\_\_\_

SITE LOCATION \_\_\_\_\_ DATE OF TEST: \_\_\_\_\_

HOLE # _____	DEPTH _____		
Reading #	Refilled To	Time	Fall in Min/In
inches			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
13. _____	_____	_____	_____
14. _____	_____	_____	_____
15. _____	_____	_____	_____
16. _____	_____	_____	_____
AVG. STABILIZED RATE _____			

HOLE # _____	DEPTH _____		
Reading #	Refilled To	Time	Fall in Min/In
inches			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
13. _____	_____	_____	_____
14. _____	_____	_____	_____
15. _____	_____	_____	_____
16. _____	_____	_____	_____
AVG. STABILIZED RATE _____			

HOLE # _____	DEPTH _____		
Reading #	Refilled To	Time	Fall in Min/In
inches			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
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7. _____	_____	_____	_____
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11. _____	_____	_____	_____
12. _____	_____	_____	_____
13. _____	_____	_____	_____
14. _____	_____	_____	_____
15. _____	_____	_____	_____
16. _____	_____	_____	_____
AVG. STABILIZED RATE _____			

HOLE # _____	DEPTH _____		
Reading #	Refilled To	Time	Fall in Min/In
inches			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
13. _____	_____	_____	_____
14. _____	_____	_____	_____
15. _____	_____	_____	_____
16. _____	_____	_____	_____
AVG. STABILIZED RATE _____			

I CERTIFY THAT I PERFORMED THE TEST AND THE INFORMATION IS CORRECT OT THE BEST OF MY KNOWLEDGE: SIGNATURE: \_\_\_\_\_ LICENSE: TYPE \_\_\_\_\_ LIC./REG. # \_\_\_\_\_

REMARKS: