



Lancs Tanks Ltd
23 Midge Hall Lane
Leyland
PR26 6TN

01772 433459
07772 168886
www.lancstanks.co.uk
claire@lancstanks.co.uk

Waste Water Services in Lancashire

Septic Tanks & Sewage Treatment Plants - Supply, Install, Service, Repair

Date: 31/08/2021
Author: Adam Lewis

Site Location:

Weavers Farm
Weavers Lane
Cabus
Garstang
PR3 1 AJ

Client Name: Mr James Davis

Dear Sir/Madam

Percolation tests for the proposed sewage treatment plant outfall were carried out as per Appendix A methodology on the 24th of August 2021 at the site stated above. Please find below the results of the tests and the drainage field calculations.

Percolation Test Results and Drainage Field Calculations

It was confirmed that the water table did not rise to within 1 metre of the invert of the proposed land irrigation scheme.

The weather conditions on the day the tests were conducted were sunny intervals with 0mm rain in the 24hr period of the test with a maximum recorded temperature of 20C and a minima of 9C.

Percolation Test Measurements

	Hole 1	Hole 2	Hole 3	Total Time (s)
Time taken in seconds (s) for the water level to drop from 75% to 25% (225mm to 75mm)	13800	14440	14550	42790

Calculating the Percolation Value (Vp)

Average Vp = (Total Time/No Trial Holes) / 150

Average Vp = (42790/3) / 150 = **95.1**

The Vp is within the acceptable range of 15 and 100.

Calculating Drainage Area

Assumes a single 3 bed dwelling with a maximum occupancy of 5 people.

(Maximum Occupants x Vp) x Sewage Treatment Plant Coefficient

$$(5 \times 95.1) \times 0.20 = 95.1 \text{ m}^2$$

Given a trench volume of 600mm² the drainage field should have a total linear area of:

95.1 / 0.6 = 158m, ie 3 legs of 48m to a total of 144m plus lateral connections at the head and terminus of the system, or variations thereof.

Appendix A: Percolation Test Methodology (PPG4 and Building Control Approved Document H (Drainage)).

Percolation tests should not be carried out during abnormal weather conditions such as heavy rain, severe frost or drought.

Preparing the test hole:

A trial hole should be dug to determine the position of the standing ground water table. The trial hole should be a minimum of 1m² in area and 2m deep, or a minimum of 1.5m below the invert of the proposed drainage field pipe work. The ground water table should not rise to within 1m of the invert level of the proposed effluent distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered. A percolation test should then be carried out to assess the further suitability of proposed area.

Percolation test method

- A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out. Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically to the appropriate depth taking care to remove all loose debris.
- Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.
- Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from the 75% full to 25% full level (ie a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds (Vp) required for the water to drop 1 mm.
- The test should be carried out at least three times per trial hole with at least two trial holes. The average figure from the tests should be taken.
- Drainage field disposal should only be used when percolation tests indicate average values of Vp of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. This minimum value ensures that untreated effluent cannot percolate too rapidly into ground water.
- Where Vp is outside these limits effective treatment is unlikely to take place in a drainage field. However, provided that an alternative form of secondary treatment is provided to treat the effluent from the septic tank, it may still be possible to discharge to a soakaway.

These tests can be used to evaluate the suitability and size of a secondary effluent treatment system such as a drainage field (AKA soakaway).

Regards

Adam Lewis
Technical Director
Lancs Tanks Ltd

Email: adam@lancstanks.co.uk
Web: www.lancstanks.co.uk

Tel: 01772 433459
Mob: 07772 168886
Company Reg. No: 7304128 VAT No: 100 5305 84