

david owen associates

planning and architectural services

corporate building engineers



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PRELIMINARY ASSESSMENT

Various factors may determine that a site is unsuitable for septic tank drainage in conjunction with a drainage field. 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 pipe work. If the test is carried out in Summer the likely Winter groundwater levels should be considered.

GUIDANCE NOTE

The disposal of final effluent from a septic tank must be very carefully designed and can be effected by a system of field drains which should be constructed using porous or perforated pipes, laid in trenches, with a uniform gradient which should be not steeper than 1:200. The pipes should be laid on a 300 mm layer of clinker, clean gravel or broken stone 20 mm to 50 mm grade and the trenches filled to a level 50 mm above the pipe and covered with strips of plastics material laid to prevent the entry of silt. The remainder of the trench can be filled with normal soil. Drain trenches should normally be about 300 mm to 900 mm wide and an area of undisturbed ground 2 m wide should be maintained between parallel trenches. The length of land drain is determined by making the following percolation test.

1

Name of Applicant Mr and Mrs Allen

Full Address of Property to be Drained Church View, Church Road
Worthenburg, Wrexham, LL13 0AW.

2

PROCEDURE FOR PERCOLATION TEST:

- (i) Excavate at least two trial holes to level of proposed outlet to the septic tank, then excavate test hole 300 mm sq. x 300 mm deep.
- (ii) Fill test hole with water and allow to seep away overnight.
- (iii) Next day fill test hole to not less than 300 mm depth of water (care to be taken to avoid abnormal conditions, i.e. heavy rain, severe frost, drought).

First Test

Date 7/11/2011

Weather Conditions

Dry Partly Overcast.

(a) Depth of water (min. 250 mm deep) 300 mm.

(b) Time in seconds taken to seep away 10830

Therefore average time for water to drop 1mm = $\frac{B}{A} = \frac{10830}{300} = 36.1$

3

Second Test

Date 8/11/2011

Weather Conditions

Cool and Dry

(a) Depth of water (min. 250 mm deep)

300

HOLE 1

HOLE 2

mm.

(b) Time in seconds taken to seep away

13320

Therefore average time for water to drop 1mm = $\frac{B}{A}$

= 44.4

4

Third Test

Date 9/11/2011

Weather Conditions

Cool and Dry

(a) Depth of water (min. 250 mm deep)

300

HOLE 1

HOLE 2

mm.

(b) Time in seconds taken to seep away

13620

Therefore average time for water to drop 1mm = $\frac{B}{A}$

= 45.4

5

(c) Average of the tests =

 $\frac{\text{Sum of average times}}{\text{Number of tests}}$

= Percolation value

Floor area of land drainage trench (M²) required for irrigation.

= Percolation Value

44.9

x 0.25 x No. of persons

9

Total area =

94.2

m²

Length of land drain =

 $\frac{\text{Total Area}}{\text{Width of Trench}}$

=

155

m

WARNING

Drainage field disposal should only be used where percolation tests indicate average percolation values of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. Where values are outside these limits effective treatment is unlikely to take place in a drainage field.

6

Dates when tests were carried out

As above

Name of person who conducted the test

D. Saywell

Address

C/O Agent

I hereby certify that the trial hole test for groundwater levels was favourable and that the above results are a true and accurate reflection of the tests carried out.

Signed

D. Saywell

Status