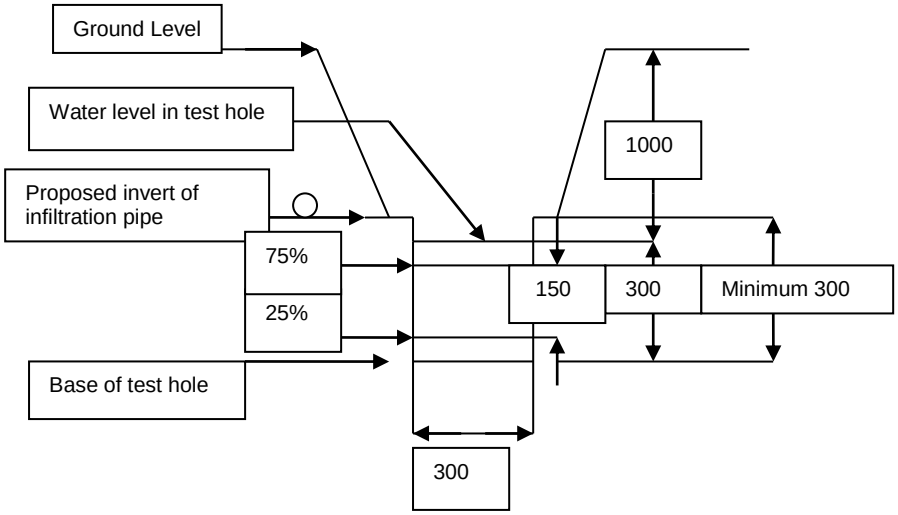
PERCOLATION TEST PROCEDURE

1. Excavate at least 3 holes, 300mm square to a depth of at least 300mm below the proposed invert level (bottom of the infiltration pipe), spacing them along the proposed line of the subsurface irrigation system. While digging the hole, note and record changes in soil characteristics at measured depths and the position of the water table if reached.
2. Saturate the local soil by filling each hole with water to a depth of at least 300mm and allow this to seep away completely.
3. If the water drains rapidly, within 10 minutes, the hole should be refilled up to a maximum of 10 times. If the water continues to drain away rapidly, the ground is unsuitable.
4. If the water has not soaked away within 6 hours, the area is not suitable.
5. Determine the percolation rate by refilling each hole with water to a depth of at least 300mm and observe the time in seconds for the water to seep away from 75% full to 25% full (i.e. a depth of 150mm).
6. Divide this time in seconds by 150. This gives the average time in seconds required for the water to drop 1mm.
7. Repeat the test at least three times in each hole.8. Take the average figure from the tests to produce the percolation value Vp (in seconds).
9. Obtain the average figure for the percolation value (Vp) by summing all the values and dividing by the number of values used.
10. Retain the results, these may be required by the regulator and the property owner.

1. Where the Vp results vary widely (50% above or below the average figure), make further tests on a minimum of three different locations in the area of the proposed drainage field.
12. Drainage field disposal can only be used when percolation tests indicate average values of Vp between 15 and 100 and the preliminary assessment of the trial hole tests has been favourable.
13. The minimum value of 15 ensures that untreated effluent cannot percolate too rapidly into the ground potentially resulting in the pollution of groundwater. Where Vp is above the limit of 100, effective treatment is unlikely to take place in the drainage field as there will be inefficient soakage leading to wastewater ponding on the surface.
14. If the Vp is between one and 15, or greater than 100, the regulator should be consulted to identify alternative options for disposal.



Environmental Drain Services Ltd

Site: Field Farm

Date Test Carried Out: 07 Jan 2024

DATE OF TESTS	TEST NO	START TIME	END TIME	ELAPSED TIME		ELAPSED TIME
				HOURS	MINUTES	(SECONDS)
HOLE NO 1	1	10:40	11:20	0	40	2400
Total Depth:	2	12:13	12:54	0	41	2460
	3	14:48	15:31	0	43	2580
HOLE NO 2	1	10:48	11:26	0	38	2280
Total Depth:	2	12:23	13:03	0	40	2400
	3	15:00	15:39	0	39	2340
HOLE NO 3	1	10:54	11:38	0	44	2640
Total Depth:	2	12:31	13:13	0	42	2520
	3	15:12	15:52	0	40	2400
HOLE NO 4	1					
Total Depth:	2					
	3					

	TOTAL ELAPSED TIME	22020
	AVERAGE TIME (DIVIDE TOTAL BY 12) 9	2447
	PERCOLATION VALUE (DIVIDE AVERAGE BY 150)	16.3

Calculating trench area and trench length

The Vp is used to determine the total floor area of the drainage trenches and therefore the total length of irrigation drain. For domestic premises, the floor area of the drainage field required may be calculated as follows.

A = p x Vp x 0.25 for septic tanks
OR A = p x Vp x 0.20 for package wastewater treatment plants
(i.e. 20% less, because the effluent has received additional treatment)

A = required drainage field floor area in square metres (m^2).
P = number of people served by the tank (for domestic applications this should be the maximum number of people that could live in the dwelling).
Vp = percolation value.