

Example of a failed registration using application form B6.5

Option A – Discharge into ground

The Cottage Supporting Information

Applicant: Mrs Jane Anita Jones

Position: Property Owner

Site Address: The Cottage, Cottage Lane, Town A, County B, AB12 3CD

Summary

Application for an Environmental Permit for a new bespoke point source groundwater activity of less than 2 cubic metres of domestic treated sewage effluent discharging into ground via an infiltration system. As the location of the outlet is within 50m of a sensitive receptor e.g. a SSSI (Site of Special Scientific Interest), this discharge does not qualify to be registered as an exempt activity.

The infiltration system will be designed and installed in accordance with the British Standard design and installation requirements in force at the time of installation, currently BS 6297:2007+A1:2008.

The package treatment plant will be designed and constructed according to the relevant British Standard (BS) design requirements in force at the time of installation (currently BSEN12566:2005 (part 3)). The plant has been sized in accordance with the industry Code of Practice: Flows and Loads 3.

4 Site Plan – The Cottage Discharge Map Option A

5c Connection to the foul sewer

Connection to the public foul sewer must be made where the discharge is within a public sewered area. Discharges within 30 metres of an existing public foul sewer are considered to be within a public sewered area.

On this basis we would consider that we are not in a sewered area as the closest sewer connection is over 500m away.

We did however consult the local sewerage undertaker (the local Water Company) to confirm whether a suitable connection can be made but after investigation it was not deemed practicable or cost effective to connect to the public sewer.

Justification why we cannot discharge the effluent into the sewer was obtained from the sewerage undertaker (shown in Sewerage Connection Letter X) and includes the following details:

- Cost of connection to sewer
- Cost of purchase and installation of the proposed on site treatment system
- Details of any physical obstacles for example roads, railways, rivers or canals impeding the connection to sewer.

The letter from the sewerage undertaker is summarised below:

The nearest sewer is approximately 500 metres away at NGR TR 73237 71795, at the junction with Main Street which is up gradient from The Cottage. Connection to this sewer would require a pumping station and 500 metres of rising main. Three estimates were obtained for the cost of connection to the sewer at this point. The

prices ranged from £X to £Y. This is not financially viable for our domestic 4 bedroom property.

The following physical obstacles were also identified:

- the volume is too small to pump over the required distance without septicity problems arising within the pipe;
- the ground conditions are unsuitable for the laying of a sewer along parts of the route, due to bedrock, further increasing the cost of connection;
- the sewer would need to pass under a number of roads and across private land which I do not have permission to cross;
- we have no legal right to cross land between the site and the connection point to the main sewer at Main Street. Requisitioning a drain or sewer under section 98 of the Water Industry Act 1991 may overcome this. However, following initial discussions with the landowners the compensation costs would be significant, making connection unreasonable.

The level of treatment provided by the package plant together with our contracted maintenance programme will ensure a high level of treatment is achieved before the effluent is discharged into the newly installed infiltration system.

5d Maximum volume of effluent to be discharged

The plant has been sized in accordance with the industry Code of Practice: Flows and Loads 3, page 4

- A treatment system for a single house with up to and including 3 bedrooms shall be designed for a minimum population (P) of 5 people.

(P is the number of people served by the tank)

- The size of a treatment system for a single house with more than 3 bedrooms shall be designed by adding 1 P for each additional bedroom to the minimum single house value of 5 P. For example:
 - house with 3 bedrooms = minimum 5 P system
 - house with 4 bedrooms = minimum 6 P system (5+1)
 - house with 6 bedrooms = minimum 8 P system (5+3)

Flow for a Standard residential domestic dwelling = 180 Litres per person per day

Maximum volume of effluent to be discharged per day in cubic metres:

Volume = $(6P \times 180L) / 1000 = 1.08 \text{ cubic metres per day}$

Appendix 2 Discharge into Land Percolation test results

Date test carried out: 01 April 2010.
Weather Conditions: Dry and settled
Proposed: package sewage treatment plant.
Population 6 people.
Trench width 0.9 metres.

The test was carried out by Mr B Bloggs of Percolation Testing Limited in accordance with the British Standard (BS 6297:2007+A1:2008)

Test Results

| Time in seconds for water to soak away 150mm | | | | |
|--|--------|--------|--------|---------|
| Hole | Test 1 | Test 2 | Test 3 | Average |
| 1 | 4800 | 4500 | 4700 | 4666 |
| 2 | 4550 | 4800 | 4900 | 4750 |
| 3 | 4670 | 4890 | 4790 | 4783 |

Average time in seconds for the water to soakaway =

$$\frac{(4666 + 4750 + 4783)}{3} = \mathbf{4733 \text{ (seconds)}}$$

You will need to use the following calculations depending on whether it is for a septic tank or package sewage treatment plant:

For package treatment plants: $A = P \times V_p \times 0.20$

For septic tanks: $A = P \times V_p \times 0.25$

Where,

A = Area (required drainage field floor area (in square metres)

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)

V_p = Percolation value (seconds per millimetre)

V_p = can be calculated by:

$$V_p = \frac{\text{Average time}}{\text{Depth (150mm)}} = \frac{4733}{150} = \mathbf{31.5 \text{ (seconds per millimetre)}}$$

For a package sewage treatment plant: $A = P \times V_p \times 0.20$
 $A = 6 \times 31.5 \times 0.20 = \mathbf{37.8 \text{ square metres}}$

The trench length: $\frac{\text{Area (as calculated above)}}{\text{Trench Width (e.g. 0.9 metres)}} = \frac{37.8}{0.9} = \mathbf{42 \text{ metres}}$

So the Area required for the drainage field floor area is: 38 metres squared with a trench length of 42 metres.