

# SITE CHARACTERISATION FORM

## COMPLETING THE FORM

### Step 1:

Goto Menu Item **File, Save As** and save the file under a reference relating to the client or the planning application reference if available.

#### Clear Form

Use the **Clear Form** button to clear all information fields.

### Notes:

All calculations in this form are automatic.

Where possible information is presented in the form of drop down selection lists to eliminate potential errors.

Variable elements are recorded by tick boxes. In all cases only one tick box should be activated.

All time record fields must be entered in twenty four hour format as follows: HH:MM

All date formats are DD/MM/YYYY.

All other data fields are in text entry format.

This form can be printed out fully populated for submission with related documents and for your files. It can also be submitted by email.

**Section 3.2** In this section use an underline \_\_\_\_\_ across all six columns to indicate the depth at which changes in classification / characteristics occur.

**Section 3.4** Lists supporting documentation required.

**Section 4** Select the treatment systems suitable for this site and the discharge route.

**Section 5** Indicate the system type that it is proposed to install.

**Section 6** Provide details, as required, on the proposed treatment system.

# APPENDIX B: SITE CHARACTERISATION FORM

File Reference:

## 1.0 GENERAL DETAILS (From planning application)

Prefix:  First Name:  Surname:

Address:  Site Location and Townland:

Number of Bedrooms:  Maximum Number of Residents:

Comments on population equivalent

Proposed Water Supply:  
Mains  Private Well/Borehole   Group Well/Borehole

## 2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type):

Subsoil, (Specify Type):

Bedrock Type:

Aquifer Category: Regionally Important  Locally Important  Poor

Vulnerability: Extreme  High  Moderate  Low

Groundwater Body:  Status

Name of Public/Group Scheme Water Supply within 1 km:

Source Protection Area: ZOC  SI  SO  Groundwater Protection Response:

Presence of Significant Sites (Archaeological, Natural & Historical):

Past experience in the area:

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, and/or any potential site restrictions).

**Note:** Only information available at the desk study stage should be used in this section.

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment

Landscape Position:

Slope: Steep (>1:5)  Shallow (1:5-1:20)  Relatively Flat (<1:20)

Slope Comment

Surface Features within a minimum of 250m (Distance To Features Should Be Noted In Metres)

Houses:

Existing Land Use:

Vegetation Indicators:

Groundwater Flow Direction:

Ground Condition:

Site Boundaries:

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment (contd.)

Roads:

Outcrops (Bedrock And/Or Subsoil):

Surface Water Ponding:

Lakes:

Beaches/Shellfish Areas:

Wetlands:

Karst Features:

Watercourses/Streams:\*

\*Note and record water level

## 3.0 ON-SITE ASSESSMENT

### 3.1 Visual Assessment (contd.)

Drainage Ditches:\*

Springs:\*

Wells:\*

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, the suitability of the site to treat the wastewater and the location of the proposed system within the site).

\*Note and record water level

**3.2 Trial Hole** (should be a minimum of 2.1m deep (3m for regionally important aquifers))

To avoid any accidental damage, a trial hole assessment or percolation tests should not be undertaken in areas which are at or adjacent to significant sites, (e.g. NHAs, SACs, SPAs, and/or Archaeological etc.), without prior advice from National Parks and Wildlife Service or the Heritage Service.

Depth of trial hole (m):

Depth from ground surface to bedrock (m) (if present):

Depth from ground surface to water table (m) (if present):

Depth of water ingress:  Rock type (if present):

Date and time of excavation:   Date and time of examination:

Depth of Surface and Subsurface Percolation Tests	Soil/Subsoil Texture & Classification**	Plasticity and dilatancy***	Soil Structure	Density/ Compactness	Colour****	Preferential flowpaths
0.1 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.2 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.3 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.4 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.5 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.6 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.7 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.8 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0.9 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.0 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.1 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.2 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.3 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.4 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.5 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.6 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.7 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.8 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1.9 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.0 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.1 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.2 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.3 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.4 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.5 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.6 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.7 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.8 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.9 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.0 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.1 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.2 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.3 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.4 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.5 m	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Likely Subsurface Percolation Value:

Likely Surface Percolation Value:

**Note:** \*Depth of percolation test holes should be indicated on log above. (\*Enter Surface or Subsurface at depths as appropriate).  
 \*\* See Appendix E for BS 5930 classification.  
 \*\*\* 3 samples to be tested for each horizon and results should be entered above for each horizon.  
 \*\*\*\* All signs of mottling should be recorded.

**3.2 Trial Hole (contd.)** Evaluation:

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**3.3(a) Subsurface Percolation Test for Subsoil**

**Step 1: Test Hole Preparation**

**Percolation Test Hole**

	1	2	3
Depth from ground surface to top of hole (mm) (A)			
Depth from ground surface to base of hole (mm) (B)			
Depth of hole (mm) [B - A]			
Dimensions of hole [length x breadth (mm)]	x	x	x

**Step 2: Pre-Soaking Test Holes**

Pre-soak start	Date			
	Time			
2nd pre-soak start	Date			
	Time			

Each hole should be pre-soaked twice before the test is carried out.

**Step 3: Measuring  $T_{100}$**

**Percolation Test Hole No.**

	1	2	3
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time to drop 100 mm ( $T_{100}$ )			
Average $T_{100}$			

If  $T_{100} > 300$  minutes then Subsurface Percolation value  $>120$  – site unsuitable for discharge to ground

If  $T_{100} \leq 210$  minutes then go to Step 4;

If  $T_{100} > 210$  minutes then go to Step 5;

**Step 4: Standard Method (where  $T_{100} \leq 210$  minutes)**

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)
1									
2									
3									
Average $\Delta t$ Value									
	Average $\Delta t/4 =$ [Hole No.1] <input type="text"/> ( $t_1$ )			Average $\Delta t/4 =$ [Hole No.2] <input type="text"/> ( $t_2$ )			Average $\Delta t/4 =$ [Hole No.3] <input type="text"/> ( $t_3$ )		

Result of Test: Subsurface Percolation Value =  (min/25 mm)

Comments:

**Step 5: Modified Method (where  $T_{100} > 210$  minutes)**

Percolation Test Hole No.	1				2				3			
Fall of water in hole (mm)	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T-Value = 4.45 / $K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T-Value = 4.45 / $K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T-Value = 4.45 / $K_{fs}$
300 - 250	8.1				8.1				8.1			
250 - 200	9.7				9.7				9.7			
200 - 150	11.9				11.9				11.9			
150 - 100	14.1				14.1				14.1			
Average T- Value	T- Value Hole 1= ( $t_1$ ) <input type="text"/>				T- Value Hole 1= ( $t_2$ ) <input type="text"/>				T- Value Hole 1= ( $t_3$ ) <input type="text"/>			

Result of Test: Subsurface Percolation Value =  (min/25 mm)

Comments:

### 3.3(b) Surface Percolation Test for Soil

#### Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm)			
Depth from ground surface to base of hole (mm)			
Depth of hole (mm)			
Dimensions of hole [length x breadth (mm)]	x	x	x

#### Step 2: Pre-Soaking Test Holes

Pre-soak start	Date			
	Time			
2nd pre-soak start	Date			
	Time			

Each hole should be pre-soaked twice before the test is carried out.

#### Step 3: Measuring $T_{100}$

	1	2	3
Percolation Test Hole No.			
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time to drop 100 mm ( $T_{100}$ )			
Average $T_{100}$			

If  $T_{100} > 300$  minutes then Surface Percolation value  $>90$  – site unsuitable for discharge to ground

If  $T_{100} \leq 210$  minutes then go to Step 4;

If  $T_{100} > 210$  minutes then go to Step 5;

**Step 4: Standard Method (where  $T_{100} \leq 210$  minutes)**

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta T$ (min)
1									
2									
3									
Average $\Delta T$ Value									
	Average $\Delta T/4 =$ [Hole No.1] <input type="text"/> ( $T_1$ )			Average $\Delta T/4 =$ [Hole No.2] <input type="text"/> ( $T_2$ )			Average $\Delta T/4 =$ [Hole No.3] <input type="text"/> ( $T_3$ )		

Result of Test: Surface Percolation Value =  (min/25 mm)

Comments:

**Step 5: Modified Method (where  $T_{100} > 210$  minutes)**

Percolation Test Hole No.	1				2				3			
Fall of water in hole (mm)	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = $4.45 / K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = $4.45 / K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = $4.45 / K_{fs}$
300 - 250	8.1				8.1				8.1			
250 - 200	9.7				9.7				9.7			
200 - 150	11.9				11.9				11.9			
150 - 100	14.1				14.1				14.1			
Average T- Value	T- Value Hole 1 = ( $T_1$ ) <input type="text"/>				T- Value Hole 2 = ( $T_2$ ) <input type="text"/>				T- Value Hole 3 = ( $T_3$ ) <input type="text"/>			

Result of Test: Surface Percolation Value =  (min/25 mm)

Comments:

**3.4 The following associated Maps, Drawings and Photographs should be appended to this site characterisation form.**

1. Discovery Series 1:50,000 Map indicating overall drainage, groundwater flow direction and housing density in the area.
2. Supporting maps for vulnerability, aquifer classification, soil, subsoil, bedrock.
3. North point should always be included.
4. (a) Scaled sketch of site showing measurements to Trial Hole location and
  - (b) Percolation Test Hole locations,
  - (c) wells and
  - (d) direction of groundwater flow (if known),
  - (e) proposed house (incl. distances from boundaries)
  - (f) adjacent houses,
  - (g) watercourses,
  - (h) significant sites
  - (i) and other relevant features.
5. Cross sectional drawing of the site and the proposed layout<sup>1</sup> should be submitted.
6. Photographs of the trial hole, test holes and site (date and time referenced).
7. Pumped design must be designed by a suitably qualified person.

<sup>1</sup> The calculated percolation area or polishing filter area should be set out accurately on the site layout drawing in accordance with the code of practice's requirements.

## 4.0 CONCLUSION of SITE CHARACTERISATION

Integrate the information from the desk study and on-site assessment (i.e. visual assessment, trial hole and percolation tests) above and conclude the type of system(s) that is (are) appropriate. This information is also used to choose the optimum final disposal route of the treated wastewater.

Are all minimum separation distances met?

Slope of proposed infiltration / treatment area:

Depth of unsaturated soil and/or subsoil beneath invert of gravel

Percolation test result: Surface:

Sub-surface:

**Suitable for Development**

### Suitable for <sup>1</sup>

1. Septic tank system (septic tank and percolation area)

2. Secondary Treatment System

a. septic tank and soil, sand, constructed wetland or media filter system; or

b. Packaged plant and polishing filter or constructed wetland; or

c. Packaged plant and low pressure pipe distribution system or

d. Packaged plant and drip dispersal system

### Discharge Route

## 5.0 RECOMMENDATION

Propose to install:

and discharge to:

Trench/Bed  
or Gravel Invert level (m):

Site Specific Conditions (e.g. special works, site improvement works testing etc.)

<sup>1</sup> note: more than one option may be suitable for a site and this should be recorded

<sup>2</sup> A discharge of sewage effluent to "waters" (definition includes any or any part of any river, stream, lake, canal, reservoir, aquifer, pond, watercourse or other inland waters, whether natural or artificial) will require a licence under the Water Pollution Acts 1977-90. Refer to Section 2.6.2.

## 6.0 TREATMENT SYSTEM DETAILS

### SYSTEM TYPE: Septic Tank Systems as per Section 7

Tank Capacity (m <sup>3</sup> )	<input type="text"/>	Percolation Area		Mounded Percolation Area	
		No. of Trenches	<input type="text"/>	No. of Trenches	<input type="text"/>
		Length of Trenches (m)	<input type="text"/>	Length of Trenches (m)	<input type="text"/>
		Invert Level (m)	<input type="text"/>	Invert Level (m)	<input type="text"/>

### SYSTEM TYPE: Secondary Treatment System

#### Secondary Treatment Systems receiving septic tank effluent, as per Section 8

Media Type	Area (m <sup>2</sup> )*	Depth of Filter	Invert Level
Sand/Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Constructed Wetland	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>

#### Packaged Secondary Treatment Systems receiving raw wastewater, as per Section 9

Type	<input type="text"/>
Capacity PE	<input type="text"/>
Sizing of Primary Compartment	<input type="text"/>
	<input type="text"/> m <sup>3</sup>

### SYSTEM TYPE: Tertiary Treatment Systems receiving secondary treated effluent, as per Section 10

<b>Polishing Filter:</b> Surface Area (m <sup>2</sup> )*	<input type="text"/>	<b>Package Treatment System:</b> Capacity (pe)	<input type="text"/>
Offset Filter Size	<input type="text"/>	<b>Constructed Wetland:</b> Surface Area (m <sup>2</sup> )*	<input type="text"/>
Low Pressure Pipe Distribution Trench length	<input type="text"/>		
Drip Dispersal System Surface area (m <sup>2</sup> )	<input type="text"/>		
<b>or Gravity Fed:</b>			
No. of Trenches	<input type="text"/>		
Length of Trenches (m)	<input type="text"/>		
Invert Level (m)	<input type="text"/>		

### DISCHARGE ROUTE:

Groundwater	<input type="checkbox"/>	Hydraulic Loading Rate * (l/m <sup>2</sup> .d)	<input type="text"/>
Surface Water **	<input type="checkbox"/>	Discharge Rate (m <sup>3</sup> /hr)	<input type="text"/>

\* Hydraulic loading rate is determined by the percolation rate of subsoil

\*\* Water Pollution Act discharge licence required

## 6.0 TREATMENT SYSTEM DETAILS

### QUALITY ASSURANCE:

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Installation & Commissioning

On-going Maintenance

## 7.0 SITE ASSESSOR DETAILS

Company:

Prefix:  First Name:  Surname:

Address:

Qualifications/Experience:

Date of Report:

Phone:  E-mail

Indemnity Insurance Number:

Signature: \_\_\_\_\_