

Guidance notes on Part B8 – New ground source or surface water source heating and cooling scheme



Please read these guidance notes carefully before you fill in the forms.

This guidance will help you complete Part B8 of the application form pack.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Further guidance on abstraction licences and environmental permits can be found at www.gov.uk/government/organisations/environment-agency.

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What am I applying for?

This application is for a full abstraction licence and for a bespoke groundwater or surface water point source discharge activity environmental permit. These are required for most ground source and surface water source heating and cooling schemes.

Why you need an abstraction licence

Under the Water Resources Act 1991 (as amended), an abstraction licence from the Environment Agency will usually be needed if you want to abstract water from a surface or underground source. The licensing system helps us to manage water resources in England and Wales for the protection of the environment and in a way that is fair to all users.

If we issue a licence to abstract water there is no guarantee:

- that the amount of water you are licensed to abstract will in fact be available (this can be affected by things such as weather conditions);
- of the quality of the water;
- that the water is suitable for the licensed purpose.

Why you need a discharge permit

Under the Environmental Permitting (England and Wales) Regulations 2010 an environmental permit is needed for most heating or cooling systems which return abstracted water (effluent) back to surface water or groundwater.

There are two types of environmental permit available:

- A bespoke permit, for either a ground source or a surface water source system. This is written specifically for your scheme and varies in cost, depending on the scale of the activity.
- A standard permit, with a set of fixed rules and a fixed charge. This is only available for a surface water heating and/or cooling system which discharges up to 1000 cubic metres of water each day.

Some types of ground source heating and cooling systems of low environmental risk can be registered for an exemption from the need for an environmental permit. These must comply with the criteria set out in the 'Guidance Notes on Registration of low risk ground source heating and cooling systems' (see also Section 12). An abstraction licence is also required.

No permit is needed for the discharge from small open loop surface water heating and cooling systems serving single domestic properties (see Section 12) but an abstraction licence is still required.

Which forms do I have to complete?

You should have already completed Part A – About you. Now you need to fill in Part B8 – Application for an environmental permit and full abstraction licence. You will also need to fill in Part F1 – Charging.

1 Discussions before your application

1a If you have had discussions with us before your application was submitted tell us the permit reference or give details on a separate sheet and tell us the reference you have given the document. We will then be able to refer back to the information you've already given us, which will help us determine your application.

For further information about advice before you submit your application, contact us on 03708 506 506.

2 Scheme details

2a Type of scheme

We need these details to understand when you will be taking the water (which months) and the purpose for which the water will be used and what will happen to that water afterwards. This is important to help us assess any potential environmental risks, can affect charging, and influence whether the scheme can be permitted. It will also help us decide whether the quantity you plan to abstract is reasonable for your needs.

3 About the site location

3a and b What is the site name, address, postcode and national grid reference?

Provide the 12 digit Ordnance Survey national grid reference for each abstraction and discharge point; for example, ST 12345 67890.

To find out the 12 digit grid reference you can search on the UK Grid Reference Finder website which you can link to via our website www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506.

Effluents are usually discharged to one location in one receiving environment. If the effluent is discharged to more than one borehole or outlet to surface water, on a separate sheet, give details of the circumstances under which each borehole or outlet to surface water would be used by this effluent.

Give all relevant details of every discharge point that the effluent can be discharged through and the different circumstances under which each will be used. If the discharge goes into a surface water sewer provide details of where it goes into and out of the surface water sewer.

3c Provide a plan or plans for the site

You must send us a site plan that identifies where your abstraction and discharge points are. The site plan should provide a date and a reference and must be drawn accurately to a defined scale. The outline of the site must be clearly shown.

Your site plan must show the abstraction point (label the points with letter(s), 'A', 'B', and so on) and the discharge point.

Note: If you are sending us a paper copy of your site plan it must be either A3 or A4 size. Alternatively you can send us an electronic copy on CD.

3d Please provide details if the effluent will be discharged into a foul sewer. Where all the abstracted water will be discharged to a foul sewer you do not need to complete the discharge section of this form.

3e There can be restrictions on the volumes discharged to foul sewer due to capacity limitations. You should contact the water company to discuss.

4 Groundwater investigation consent

Complete this section for ground source heating and cooling systems.

4a and b If you have not discussed the need for a Groundwater Investigation Consent relating to your proposed abstraction please phone us on 03708 506 506. Please be aware that this can be a lengthy process and the application cannot be progressed until this is resolved.

5 Borehole information

Complete this section for ground source heating and cooling systems.

Please complete all columns, for all points, if your scheme involves switching boreholes, where the boreholes are fixed for abstraction and discharge you need to provide answers to:

columns for abstraction 1, 2, 3, 4, 5, 6, 9

columns for discharge 1, 2, 3, 4, 7, 8

- column 3 depth – in metres
- column 4 this is the distance from surface level down to the maximum sealed depth of well or borehole. This information should be included in your drilling record.
- column 5 diameter – in millimetres
- column 6 lining – type and thickness
- column 7 tell us if the borehole extends into the water table

- column 8 this is the distance from ground level to highest level that the surface of the water reaches in the well or borehole.

6 Abstraction and discharge quantity details

6a Abstraction quantities

- Yearly quantity

For each purpose, give the maximum amount of water you propose to abstract in any one year (in cubic metres).

- Daily quantity

For each purpose, give the maximum amount of water you propose to abstract in any one day (in cubic metres).

This could be more than the yearly quantity divided by the number of days.

- Hourly quantity

For each purpose, give the maximum amount of water you propose to abstract in any one hour (in cubic metres).

- Hours per day

For each purpose, give the hours per day you will be abstracting.

- Maximum flow rate (litres per second)

For each purpose, give the maximum rate (in litres per second) that you plan to abstract at any given moment.

6b Discharge quantities

- Maximum daily

This is the maximum volume that will be discharged in any day. You must ensure that you choose a volume you can always comply with.

- Peak instantaneous litres/second

This is the maximum instantaneous rate at which the effluent is discharged.

6c Please state how you calculate the quantities you need to abstract and discharge.

7 Method and measurement of abstraction

7.1 Fill in the table below to tell us how you will abstract water and measure the amount abstracted.

In the **first column**, tell us the name of the abstraction location.

In the **second column**, tell us how you propose to abstract the water. Please give full details of the structure and equipment involved. If you have drawings to illustrate the structure and equipment, send these with the form.

In the **third column**, tell us how you propose to measure the amount of water you are abstracting.

In the **fourth column**, tell us the reference number of your flood defence consent (if you need one).

8 Abstraction intake screening details

Further information can be found in our guide 'Screening for intakes and outfalls: A best practice guide' on www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506.

The intake screen aperture necessary to protect eels is dependent upon the size of eels and the orientation of the screen (its angle to the flow). Screen apertures required for adult eels can be as fine as 1 mm for glass eels in tidal areas. For further guidance, please refer to our eel screening guidance, 'Screening at intakes and outfalls: measures to protect eels' on www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506.

Further protection may be required for species protected under specific legislation – such as lampreys, shad and bullhead where they are designated features of Habitats Directive sites.

9 Entitlement to apply for abstraction licence

You can only apply for a licence to abstract water if you have, or expect to have, a right of access to:

- the land directly adjoining the surface water; or
- the land the aquifer containing the groundwater is on.

You must have the right of access for the full 12 months after the date the licence starts, unless the licence is only needed for a period of less than 12 months.

If you are the occupier

A map showing which land you occupy and the proposed abstraction locations.

If you have the right of access

A map showing the land which you have a right of access to or over and the proposed abstraction locations.

You may be asked for a copy of the document giving you those rights, such as:

- a deed of grant or lease of rights; or
- a conveyance, lease or tenancy agreement.

If you expect to have right of access

A map showing the land you expect to get rights of access over and the proposed abstraction locations.

You may be asked for a copy of documents setting out your negotiations so far, such as:

- a draft of the 'heads of terms' of agreement; or
- copies of letters between legal advisors about rights of access.

We will ask for a date when you expect to have right of access.

10 Duration of abstraction licence

All new abstraction licences are legally required to include a time limit. When we grant a licence to take (abstract) water for the first time, it is normally to be for between 6 and 18 years. When we renew a licence it will normally be for another 12 years. We will renew licences without changes to conditions where the abstraction is sustainable, where there is still a justification for the abstraction being licensed and where the water is used efficiently.

If you need to abstract water for a period of up to 24 years you will need to demonstrate that your scheme can meet the conditions set out in our 'Guidance on Long Duration Licences'. When you apply you will have to demonstrate (through a business case) that:

- the lifetime of the infrastructure (for example, pumps and pipe work) inseparably associated with the licence will extend over the desired duration of the licence;
- you continuously need the service the infrastructure supplies throughout the duration of the licence;
- you have assessed the likely environmental and economic changes that may affect the abstraction over the duration of the licence and the assessment shows no significant concerns. (If an Environmental Impact Assessment is required under planning law, this may suffice. Alternatively you will need to provide an environmental assessment);
- the infrastructure contributes to sustainable development.

Most licences will expire together at 'common end dates'. This is so that renewals can be considered on a catchment-wide basis. For a time-limited licence to be renewed, the abstraction must satisfy certain tests. See how time limits on abstraction licences work at www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506.

If you wish to abstract water after your licence expires, you will need to apply for a new one in advance of the expiry date.

The current legislative requirements and policy on water resource management are subject to future changes as part of abstraction reform. If you would like to find out more, please search for 'abstraction reform' on www.gov.uk/government/organisations/environment-agency.

11 Other abstraction considerations

11a Existing licences or applications

If you do not know your licence numbers or application numbers please phone our National Customer Contact Centre on 03708 506 506 (Monday to Friday, 8am to 6pm).

11b Management agreements

We need to know whether you are required to enter into a management agreement with Natural England.

11c and d Planning permissions

Where part or all of a project requires planning permission the planning authority may have requested an environmental statement. In this case the water-related issues may already have been covered. We may ask for a copy of this to be submitted in support of your application.

We will always try to avoid duplication of work and suggest you contact us immediately to discuss what we need from you. You can phone our National Customer Contact Centre on 03708 506 506.

12 About the discharge

12.2 For some low risk ground source heating and cooling systems we allow exemptions from permitting to be registered with conditions, or general binding rules. For details of these exemptions see our guidance note on www.gov.uk/government/organisations/environment-agency. You have to notify us of a registered exemption by completing and submitting a registration form available on www.gov.uk/government/organisations/environment-agency.

12.3 For some low risk water source heating and cooling systems discharging up to 1000 cubic metres of water a day we may issue a permit under a set of Standard Rules. See details of 'Standard Rules SR2010 No2' at

www.gov.uk/government/organisations/environment-agency. If your scheme meets the criteria in the Standard Rules, you will also need to complete 'Application for an Environmental Permit Part B1 – Standard facilities permit'.

Note that a heating or cooling discharge from an open loop system serving a single domestic property does not require a discharge permit if it meets the criteria in our 'Regulatory Position Statement'. You will still require an abstraction licence for volumes greater than 20 cubic metres each day.

13 Surface water discharge information

13.1/2b Most surface water source heating and/or cooling systems (the effluent) pass along a dedicated pipe and are discharged via an outlet to a receiving water. We need to understand the type of receiving water (tidal, non-tidal etc). In some cases effluents may be discharged into a surface water sewer owned by someone else before they discharge into a receiving water. If this is the case you must give the grid reference where your discharge enters the surface water sewer and into receiving water. A discharge to a lake or pond which does not discharge into a river or watercourse or another pond (which itself discharges into a river or watercourse) does not require a permit unless a Notice has been served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2010. If you are unsure whether or not you will require a permit for a discharge to a pond or lake you should contact us on 03708 506 506.

13.1/2c The mean low water spring tide mark can usually be found from Admiralty Charts or Tide Tables and corrected where necessary. Where reasonably possible, we prefer that discharges are made below this point to prevent effluent flowing across beaches, exposed river beds or mud flats and so on.

13.1/2d We will have told you if a diffuser is needed during pre-application discussions.

We need to know the type, number, their position and the volume they will handle. Your design should have been established through the coastal modelling you have undertaken.

14 Period of operation

14a Give a date when you want the permit for this discharge to start.

You cannot discharge your effluent prior to this start date on your permit unless you contact us and ask to change (bring forward) your start date. Charges will start on this date even if you have not started to discharge unless you contact us to change (delay) the start date.

Once you have a permit please think about whether any changes are needed to its start date and tell us at least 28 days before the start date so we have time to implement the change before the date arrives – we cannot make retrospective changes.

15 How will the discharged effluent be treated?

15b You must choose each element of your treatment process in the order that they are carried out and enter them in the box provided. You must write down the treatment type code number and also its standard description. The most common descriptions are listed below.

If you are using one of these, you can insert the number and name of the type from the list below the box provided.

If you choose 'other', you must ensure that your short description adequately explains the treatment process.

Code	Treatment
99	None
32	No treatment required – good engineering design
04	Chemical
33	Membrane filtration
08	Chemical – phosphate stripping
17	Chlorination
18	Dechlorination
	Other

16 What will be in the effluent?

Which substances may be present in the discharge? For further details of the substances to be considered and the approach to assessing risks, refer to 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' on www.gov.uk/government/organisations/environment-agency. Substances may be present if they are:

- measured (i.e. detected by chemical analysis) in the discharge;
- permitted or otherwise allowed to be discharged into the effluent;
- dosed into the effluent.

If you have answered yes to any of 16a – 16c, the discharge contains, or potentially contains, specific substances. You must carry out a specific substances screen of sample data using the 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' screening tool and send us the completed tool along with the raw data used to create the summary statistics. The following information is required to allow the assessment to be undertaken.

For existing discharges, the discharge effluent will need to be analysed for all the substances which may be present in the effluent. Baseline (upstream) river quality data may also be beneficial, as it will provide more accurate information for the assessment to be undertaken.

For new discharges, estimated or proxy site data will be necessary.

For each substance, the following information is required.

Substance	The chemical name of the substance being analysed.
Unit	The units of measurement. These will usually be micrograms per litre ($\mu\text{g/l}$), but may also be mg/l or ng/l.
Maximum concentration	The maximum recorded concentration of the substance in the effluent.
Minimum concentration	The minimum recorded concentration of the substance in the effluent.
Mean concentration	The average recorded concentration of the substance in the effluent.
Maximum flow	The maximum recorded effluent flow.
Mean flow	The average recorded effluent flow.
Number of samples	The minimum number of samples required for screening and modelling is 12; the ideal number is 36 (or, for new discharges, assumed means and standard deviations can be accepted if effluent data are not available).
Total and/or dissolved metal data	As a minimum, total metal data are required for all metal analyses. Dissolved metal data are also required to allow accurate modelling; if dissolved metal data are not supplied, total metal data can be used for modelling but will result in a more precautionary assessment.
Required limit of detection	'Horizontal Guidance H1 Environmental Risk Assessment Annex D' should be checked to determine the minimum acceptable limit of detection for the analysis of each substance. If the detection limit used is not low enough, the analysis may need to be repeated.
EQS	The relevant Environmental Quality Standard for the substance. This can be found in 'Horizontal Guidance H1 Environmental Risk Assessment Annex D'.

16e, f and g You must produce a report describing how you have assessed the effects of your scheme on water temperatures, for example the extent of any changes in river temperatures caused by the abstraction and discharge. Include the maximum and minimum temperatures of the discharge and the maximum change in temperature compared to the abstracted supply.

17 Abstraction and discharge monitoring arrangements

17a This is the sample point used to assess the temperature of the abstracted water and what is in the abstracted water before it enters the ground source or surface water heating and cooling system. We will set comparative limits for these values which will be used to monitor compliance with the agreed operating conditions.

17b This is the sample point used to assess compliance with any water quality or temperature emission limits on your permit. You must ensure that it allows a representative sample of the discharge to be obtained. You must also ensure that all constituents of the discharge pass through the sampling point at all times.

17c This will be the location of your flow monitoring equipment where compliance with the volume limits on your permit will be assessed.

17d Further guidance on MCERTS the competency standard for effluent monitoring inspectors and assistant inspectors can be found on www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506.

17e You must send us a map or plan that:

- is A4 or larger;
- is at a scale of 1:10,000 (approximately 6 inches to 1 mile); and
- shows clearly which direction North is.

The plan should show:

- the premises discharging effluent;
- the site in relation to the local area; and
- any watercourses, wells, springs or boreholes on the site (or within 50 metres of it).

Please also mark the map to show the points where:

- effluent is discharged into the receiving waters;
- samples of effluent and influent can be taken automatically or manually (if required); and
- flow or quality will be measured (if required).

You may submit more than one plan if necessary.

18 Your ability as an operator

You must have an effective, written management system in place that identifies and reduces the risk of pollution. You may show this by using a certified scheme or your own system.

Your permit requires you (as the operator) to ensure that you manage and operate your activities in accordance with a written management system.

You can find guidance on management systems on www.gov.uk/government/organisations/environment-agency or by calling 03708 506 506. We have also developed environmental management toolkits for some business sectors which you can use to produce your own management system. You can get these by calling 03708 506 506.

You must send us a summary of your management system. Give the document reference here and send the documents with the application form when you've completed it.

19 Supporting information

19a Provide a non-technical summary of your application

Write a non-technical summary that explains your application. This should include a summary of the regulated facility, a summary of the key technical standards and control measures arising from your risk assessment.

19b Environmental risk assessment

To avoid delays with your application we strongly recommend that you discuss your proposal with us to assess the need for any environmental appraisals or reports before you submit your application.

Abstraction and discharge of water can have environmental effects that we will need to assess. If you have prepared an Environmental Impact Assessment (EIA) as part of an application for development consent, please provide a copy of the Environmental Statement with this application.

Where there is less risk of significant environmental effects we may not ask you to provide an Environmental Statement but we will need additional information on the environmental impacts of your proposals.

Once you have developed a full set of proposals for your intended operations, including the nature, quantities and sources of your foreseeable emissions to air, water and land you should describe the environmental risk posed by the scheme. This must take the form of an environmental risk assessment which should follow the methodology set out in the 'Risk assessment for treated sewage or trade effluent discharges to surface water' or available from www.gov.uk/government/organisations/environment-agency.

If you wish to use a methodology other than that in our H1 guidance, that methodology must address the same issues to an equivalent level of detail. The purpose of the environmental risk assessment is to demonstrate that the impacts of your proposals will be acceptable.

20 Fees and charges

When you send us your application form, you will need to pay fixed fees for processing your application. The amounts are stated in our 'Abstraction Charges Scheme' and our 'Environmental Permitting: Charging scheme and Guidance', both of which can be found on www.gov.uk/government/organisations/environment-agency.

We cannot progress your application if:

- the fees are not enclosed;
- the fees enclosed are incorrect;
- forms are not completed fully or appropriate additional information is not provided.

Advertising your application

We will decide if your application needs to be advertised. The decision will be made on the risk posed to the environment of your proposed abstraction. We will notify you if advertising is required and carry out the advertising on your behalf.

If your application requires advertising you will be charged the advertising costs and an administration fee.

Annual charges for abstracting water

Full licences

Most full licences attract an annual charge based on:

- the amount of water they are licensed to abstract;
- the source of the water;
- the time of the year the water is abstracted;
- the purpose the water is used for.

Remember that if your licence is chargeable, you pay the same charges, even if you abstract less water than your licence allows. Our 'Abstraction Charges Scheme' is available for download from www.gov.uk/government/organisations/environment-agency.

Discharge permit

Details of our charges for discharges are available in our 'Environmental Permitting: Charging scheme and guidance' see www.gov.uk/government/organisations/environment-agency or call 03708 506 506.

21 Commercial confidentiality and national security for the abstraction (Note: Part F2 also has this section for the discharges)

Only tick this box if you are very certain that you wish information to be confidential.

Confidential information is information that is commercially or industrially confidential in relation to any person. Information may be withheld from the public registers where the regulator judges that it may be commercially or industrially confidential. When this occurs a statement must be placed on the register indicating the existence of that information.

Please ensure that you include a copy of your supporting statement detailing why you are requesting confidentiality and what information you believe should be kept confidential. We advise you to have a pre-application discussion with area staff before deciding if anything is confidential information.

We will then have to assess your statement and therefore the progress of your application will take longer.

National security

Ensure you enclose with the application a letter stating that you have written to the Secretary of State to claim national security for your application.

You cannot apply for national security via this application.

We will not be able to progress your application until we receive the decision from the Secretary of State and therefore your application is highly likely to be delayed.

We will not include the information in the public register unless the Secretary of State decides that it should be included.

22 Abstraction declaration (declaration for discharge is in Part F2)

Please ensure you check the form thoroughly and complete the checklist before signing and dating the form.

- If the applicant is an individual they have authority to sign the form.
- If the applicant is a sole trader they have authority to sign the form.
- If the applicant is a partnership all partners must sign the form.
- If the company has trustees all trustees must sign the form.
- If the application is for a limited company the application should be signed by a company secretary or a director.

If you are in any doubt as to who should sign the form please phone us on 03708 506 506.

Please note that it is a criminal offence to:

- make false statements in order to obtain a licence;
- impound or abstract water without a licence where one is necessary;
- fail to comply with conditions on a licence;
- fail to provide us with information about an abstraction, whether licensable or not;
- interfere with meters or other devices to measure quantities of water abstracted.

If convicted, you could be fined, sent to prison or both.

Officers of corporate bodies may be personally liable under Sections 206 and 217 of the Water Resources Act 1991 (as amended).

23 The Data Protection Act 1998

Make sure you understand how we will use the information you provide to us.

Now fill in Part F2 for the fee for an environmental permit.

24 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency