

Briefing Note Regarding Closed Loop Geothermal Boreholes

1. Open loop geothermal boreholes, which facilitate the extraction of groundwater to enable a heat pump to remove heat and then return of the water back into the environment, are subject to regulation by the environmental regulator.
2. The Environment Agency (EA) have extended regulatory control in England to include closed loop boreholes under The Environmental Permitting (England and Wales) (Amendment) (England) Regulations 2023. The legislation has been enacted under Statutory Instrument No. 651 (the SI) with effect from the 2nd October 2023. Heat is considered to be a potential source of pollution.
3. A closed loop ground source heating or cooling system is defined under the SI and any borehole in the system is required comply with regulatory conditions. It specifically states that a borehole does not take water from the environment and does not discharge water or fluid into the environment.
4. Any geothermal heating or cooling system which becomes operational on or after the 2nd October 2023 will be subject to environmental control under one of three options: -
 - 4.1. General Binding Rules (GBR)
 - 4.1.1 An installation which is compliant with the GBR does not require to be notified to the EA.
 - 4.1.2 The GBR are loosely based on some of the restrictions that apply to the drilling of water boreholes.
 - 4.1.3 Examples of GBR conditions are: -
 - i) The system must be fully sealed.
 - ii) The borehole must not be adjacent to a septic tank or cesspit, including the infiltration system (*adjacent is not defined*).
 - iii) The borehole must not be within the inner zone of a groundwater Source Protection Zone (SPZ1).
 - iv) The borehole is not within a specified distance from a protected site. Protected sites include sites of special scientific interest (SSSI) and ancient woodland. Specified distances are related to the type of building and the heating/cooling capacity of the whole heating/cooling system.
 - v) The borehole must not be within 50m of a well, spring or borehole supplying water for domestic use or food production.
 - vi) Decommissioning of the borehole must not cause a pollution risk.
 - vii) Equipment installed must comply with relevant design and manufacturing standards set by the British Standards Institute (*6 standards are specified*) and the Ground Source Heat Pump Association (*2 standards are specified*).
 - 4.2 If the system has a single parameter which falls outside the GBR then an environmental permit will be required.
 - 4.3 Permits can be a standard rules permit. These are permits which have set conditions which cover the activity.
 - 4.4 If the activity does not comply with the requirements of a standard rules permit then a bespoke permit will be required.
 - 4.5 Permits are required to be 'duly made' by the EA before the EA process the application.
 - 4.6 SI No. 651 only deals with activities in England.