

The Future Regulation of Cemeteries

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Outline of talk

**Why do we need to protect groundwater?
- bit of geology and a bit of groundwater...**

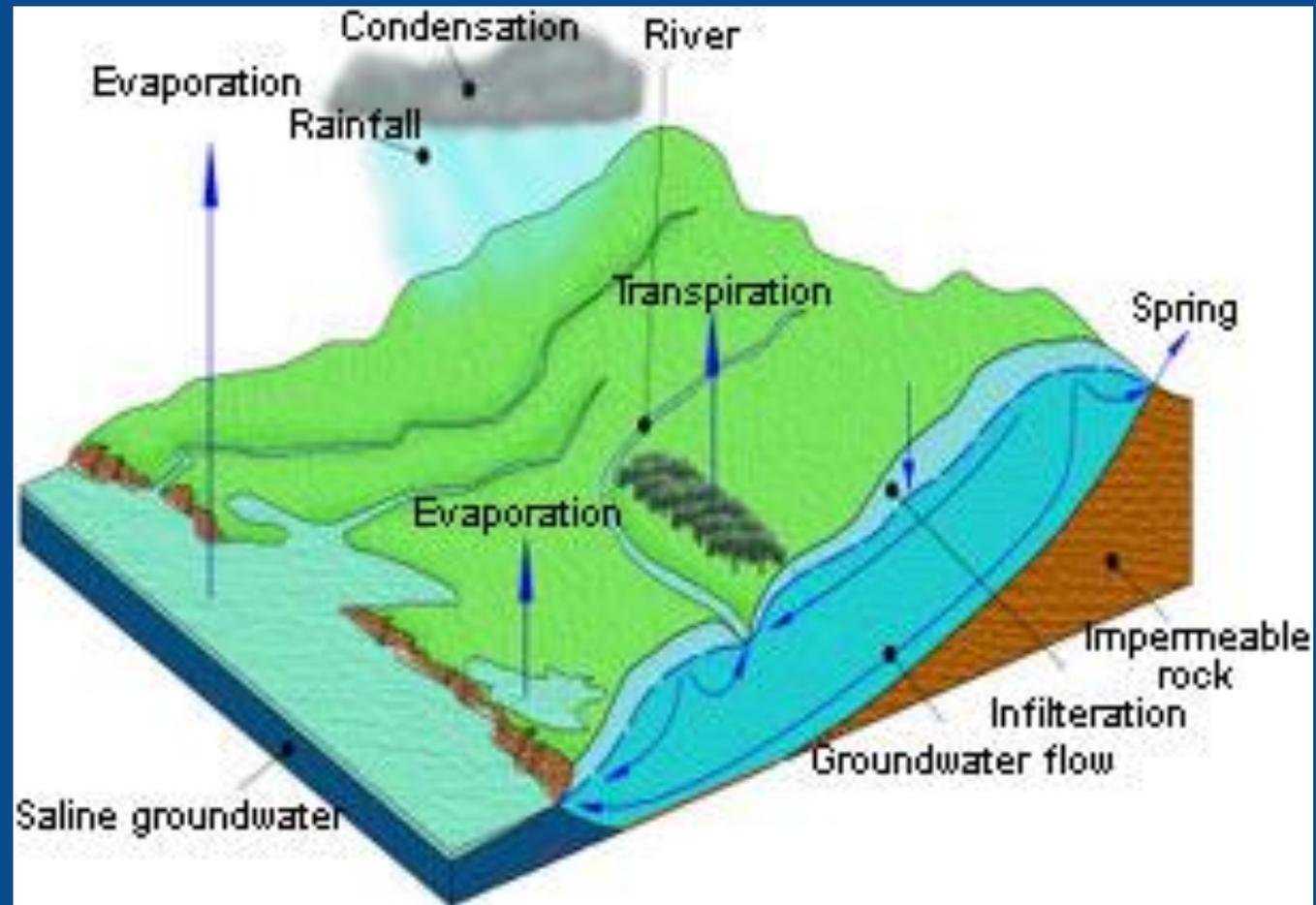
Current situation – GP3, GOV.UK, Planning regime

Proposed situation – tiered approach

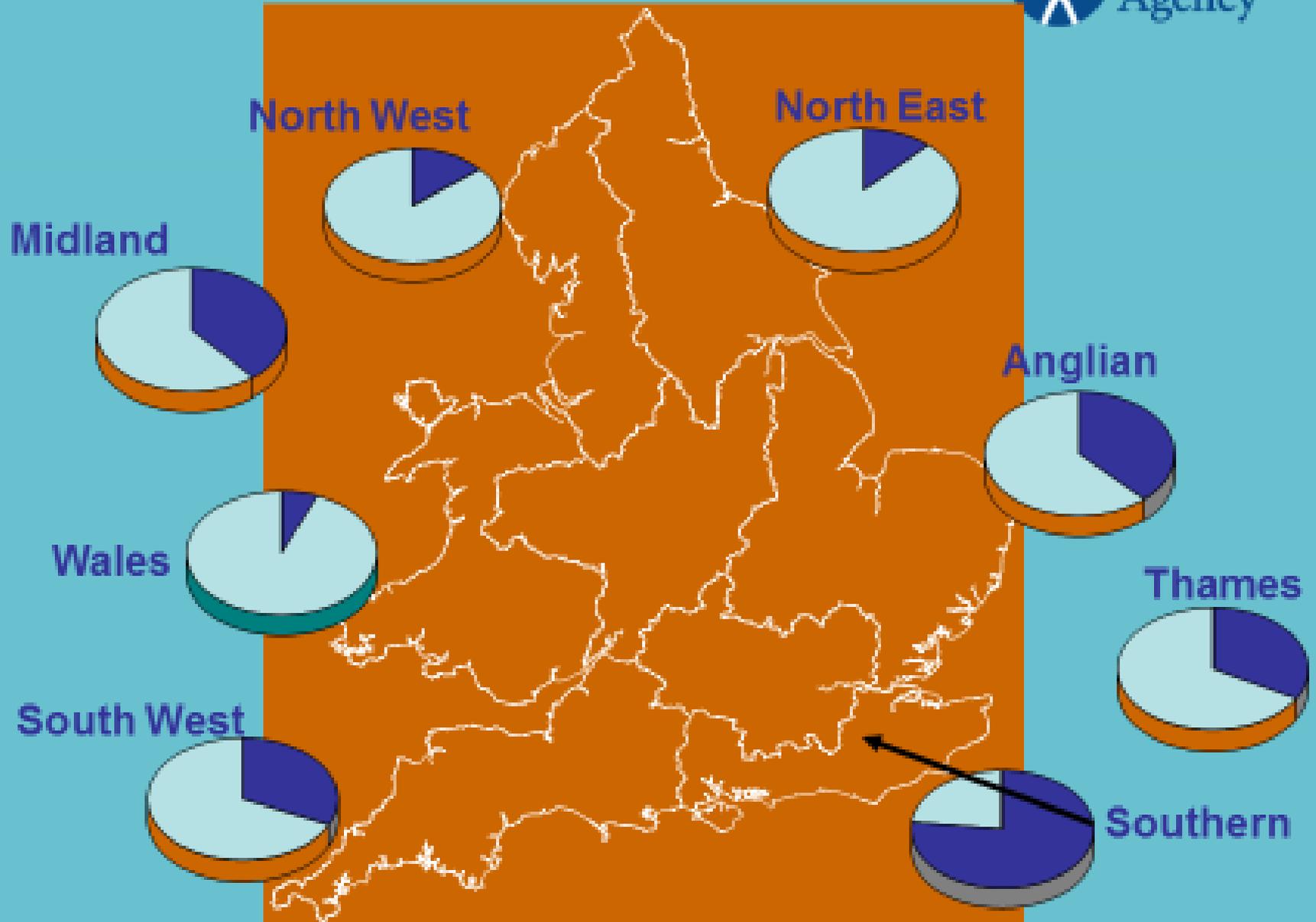
Your turn – we want your input!

Groundwater Quality

and the importance of protecting it.....



Groundwater Use for Public Supply



Groundwater Protection – Why?

- Important Resource

Public water supply – Nationally 30% of our drinking water comes from groundwater **but in the South the figure is greater than 70%**

Groundwater provides important flow for streams, rivers and wetlands, often sustaining them in times of drought

Groundwater also supplies agricultural abstractions, industry, abstractions for food-use / bottled water and private abstractions

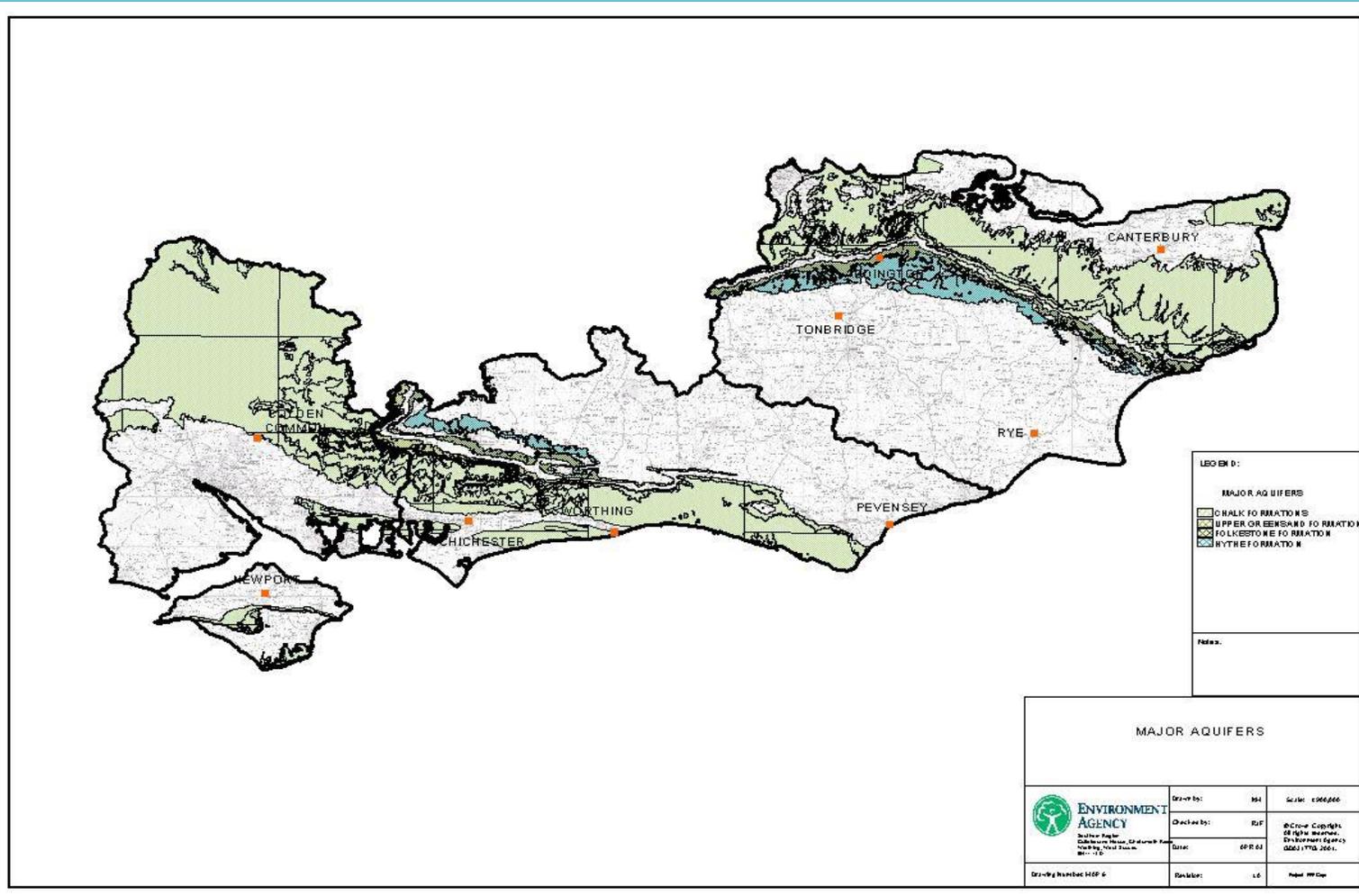
Groundwater Protection – Why?

- Once groundwater is contaminated, and an aquifer is contaminated it is extremely difficult to clean up. It is therefore vital to try and protect it before it gets contaminated.
- People's perception is 'out of sight, out of mind'
- GP3 Position Statements across England
- EC Directives (E.g. Groundwater Directive, Water Framework Directive, Groundwater Daughter Directive)

Groundwater Vulnerability

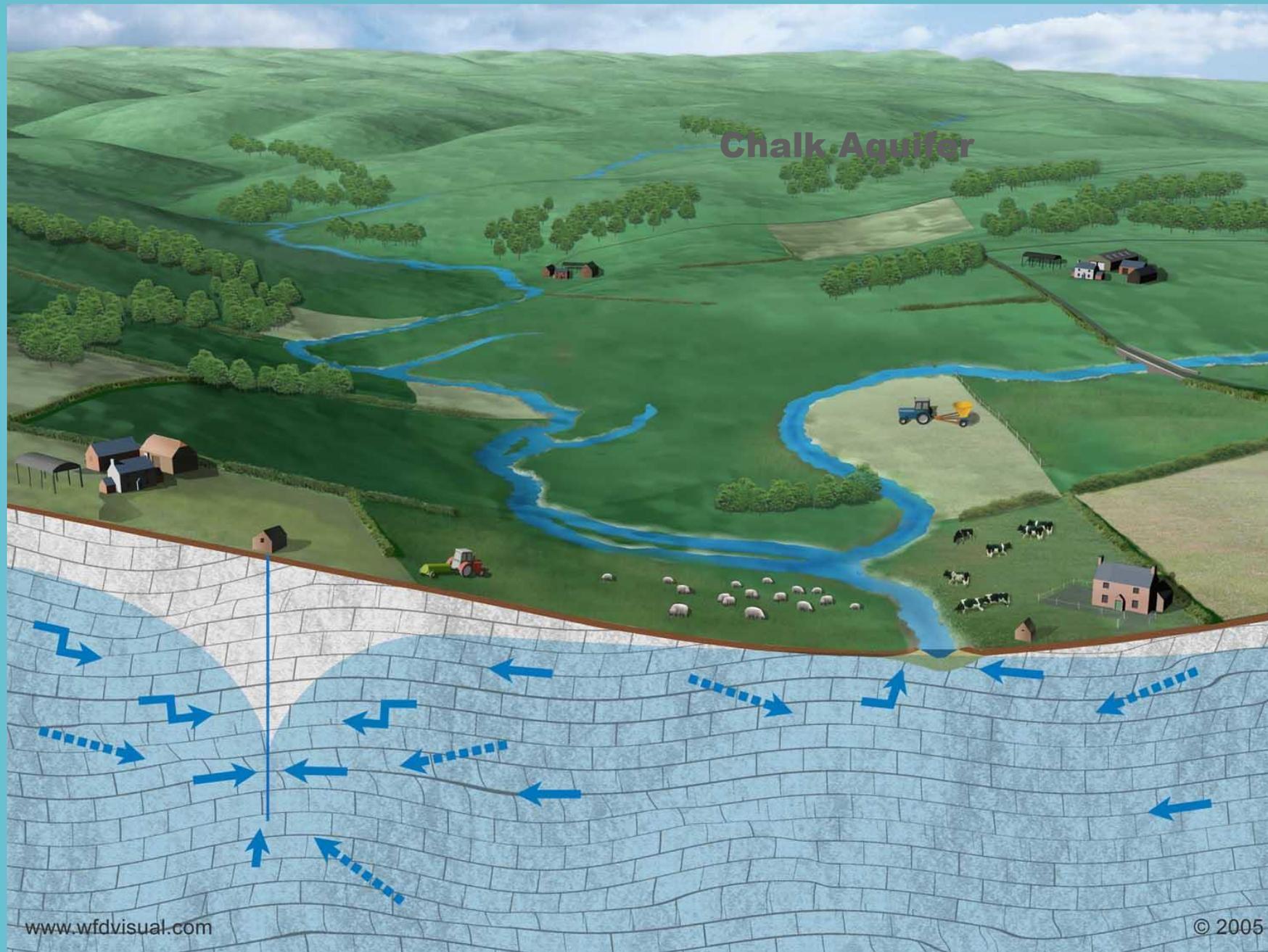
- Rock type (aquifer)
Major / Minor / Non-aquifer - old!
Now - Principal / Secondary / Unproductive
- Source Protection Zone – 1 & 1C / 2 / 3 (or 50 metres for small abstractions)
- Depth to watertable – none! / shallow / deep
- Groundwater/soil vulnerability

Major / Principal aquifers in the South

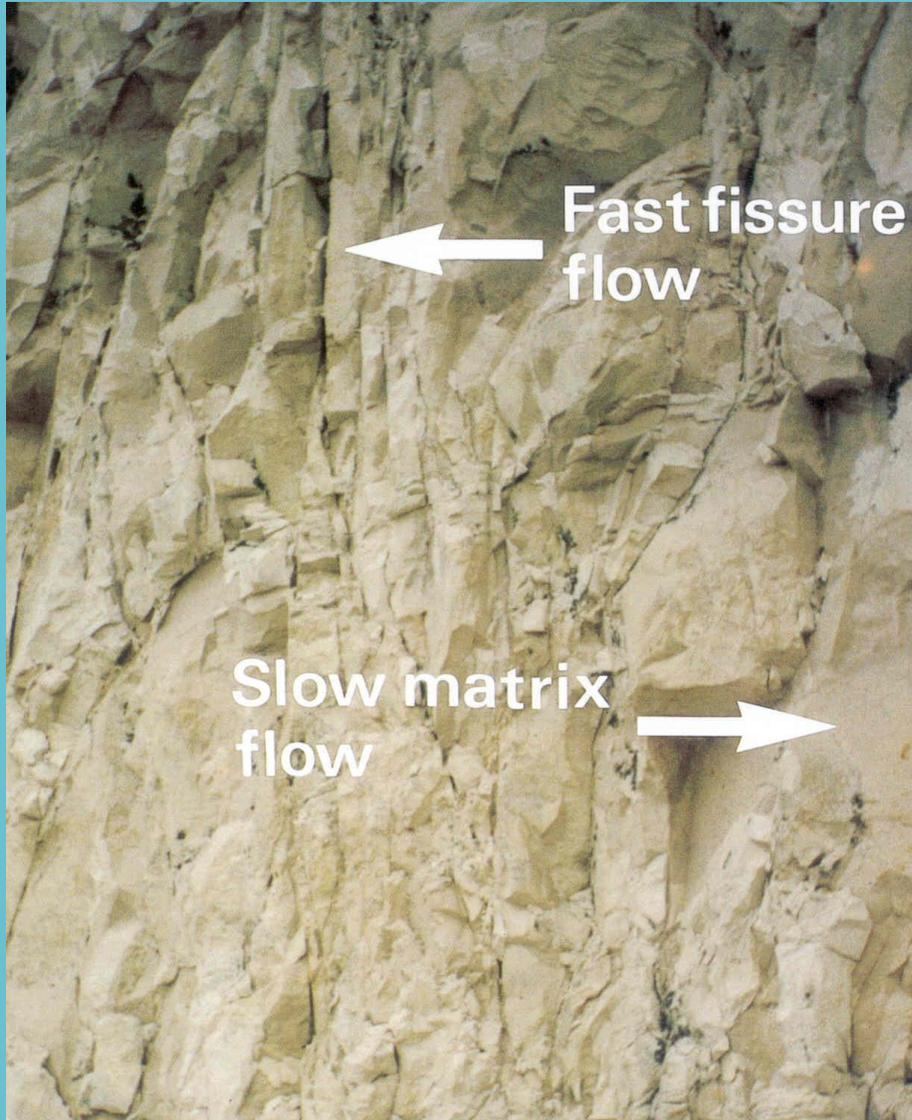




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Chalk Aquifer



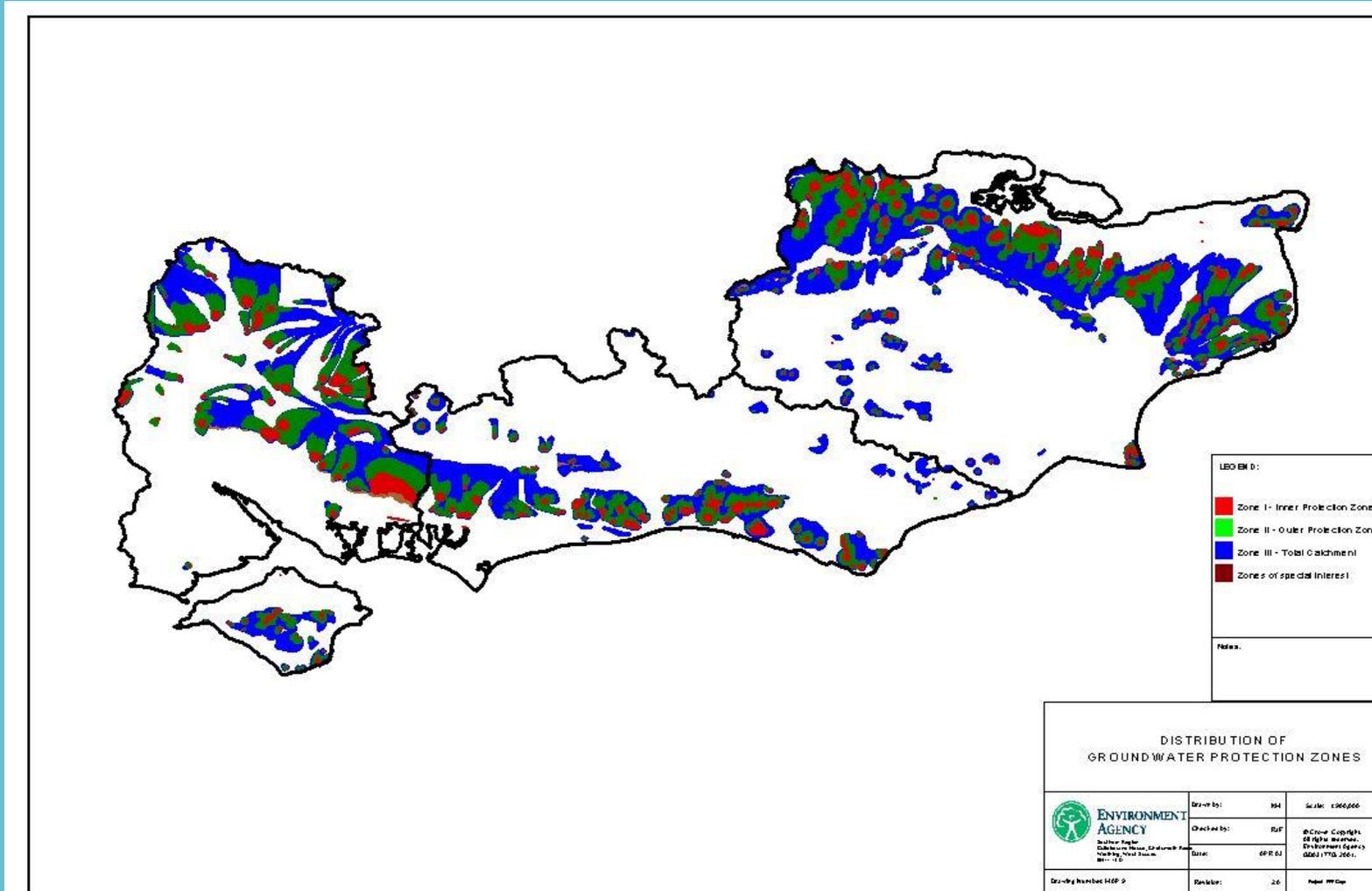
Rapid flow of water and pollutants down through fractures and fissures

Slow movement of water and pollutants through main matrix

Source Protection Zones - Classification

Zone 1	50 day travel time	Biological contaminants
Zone 2	400 day travel time	Slowly degraded contaminants ($t_{1/2} < 40$ days)
Zone 3	Total Catchment	Non-degradable contaminants
<hr/>		
Zone 1C	Zone of Confinement	Zones where local conditions require additional protection

Source Protection Zones



Current Regulation

- Currently influenced through the planning regime
- GP3
- Advice on GOV.UK
- Emissions from crematoria through EPR (air quality)

GP3

L1 - Locating cemeteries close to a water supply used for human consumption

The Environment Agency will normally object to the locating of any new cemetery or the extension of any existing cemetery, within SPZ1, or 250 metres from a well, borehole or spring used to supply water that is used for human consumption, whichever is the greater distance.

L2 - Mass casualty emergencies

The Environment Agency will normally object to or may refuse to permit new or existing cemeteries planned for use in mass casualty emergencies if they are in SPZ1 or within 250 metres of an abstraction point, whichever is the greater distance. Where there is a risk of disease transmission into groundwater the Environment Agency will extend its objection to SPZ2.

GP3

L3 - Cemeteries: protecting groundwater in highly sensitive locations

The Environment Agency will apply a risk-based approach to assessing the suitability of sites for cemeteries outside of the zones noted in position statements L1 and L2. A high priority is placed on protecting groundwater within principal aquifers and groundwater catchments used for drinking water supply, and new larger cemetery developments in such areas might not be appropriate. Proposals for new cemetery developments for greater than 100 burials per year are considered to be high risk even in a lower sensitivity groundwater scenario. Such proposals will only be agreed by the Environment Agency where a developer can demonstrate through detailed risk assessment that, given the site specific setting and the engineering methods proposed, groundwater pollution will be avoided.

Note that all cemetery developments and burials must maintain an unsaturated zone below the level of the base of the grave(s). The Environment Agency will work with the local authorities to identify alternative site and burial options where necessary.

GP3

L4 - Home burials

The Environment Agency would not expect to be consulted on home burials or sites used for single burials, but would expect that the site should conform to the requirements set out in the [cemeteries guidance](#).

Guidance

Cemeteries and burials: prevent groundwater pollution

Understand how to manage cemeteries and burial of human and animal remains, to prevent or limit groundwater pollution.

Published 14 March 2017

Last updated 27 February 2018 — [see all updates](#)

From: [Environment Agency](#)

Contents

- [Human and animal burials: minimum groundwater protection](#)
- [Burials below the water table](#)
- [Disposal of ashes](#)
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- [Green burial sites](#)
- [Existing cemeteries](#)
- [New cemeteries and extensions](#)
- [Arrangements for human burials in emergencies](#)
- [Animal burials](#)
- [Animal burials in emergencies](#)
- [Emergency animal burial by weight](#)

Related content

[Water industry](#)

Collection

[Groundwater protection](#)

Guidance

Cemeteries and burials: groundwater risk assessments

How to carry out a groundwater risk assessment for human or animal burials.

Published 14 March 2017

Last updated 21 August 2017 — [see all updates](#)

From: [Environment Agency](#)

Contents

- Source, pathway and receptor
- Tiered approach to risk assessment
- Tier 2 and 3 minimum risk assessment requirements
- Monitoring groundwater
- Minimum monitoring requirements
- Calculate your site's pollutant release
- Attenuation of pollutants from burial sites
- Transport of micro-organisms and pathogens

Related content

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Collection

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[Water discharge and groundwater activity environmental permits](#)

Human and animal burials: minimum groundwater protection

A burial site must be:

- outside a [source protection zone 1](#) (SPZ1)
- at least 250 metres from any well, borehole or spring supplying water for human consumption or used in food production – for example at farm dairies
- at least 30 metres from any spring or watercourse not used for human consumption or not used in food production
- at least 10 metres from any field drain, including dry ditches

Different rules apply for:

- [home burials of a person](#) or larger domestic [pet animal](#) – the minimum distance is 50 metres from any well, borehole or spring supplying water for human consumption or used in food production purposes, including [private water supplies](#)
- [home burials of domestic pets](#) – there are no minimum groundwater protection requirements
- mass emergency burials with a risk of disease carried by groundwater – the zone may extend to [source protection zone 2](#) (SPZ2)

All graves must:

- have at least 1 metre clearance between the base of the grave and the top of the water table – they shouldn't have any standing water in them when dug
- not be dug in unaltered or unweathered bedrock
- not be dug in areas susceptible to groundwater flooding
- be deep enough so at least 1 metre of soil will cover the top of the coffin,



Tiered approach to permitting

- Targeting high risk sites
- Regulatory position statement
- Risk assessment required for higher risk sites
- Will not apply to single burials or animal burials
- Retrospective application??
- Phased approach

Regulatory Position Statement

Sites meeting certain criteria will not require a permit:

- Sites wholly on unproductive strata
- Sites on Secondary B aquifer with fewer than 100 burials a year
- Sites on Secondary A aquifer with fewer than 50 burials a year
- Sites on Principal aquifer, not in SPZ 1 or 2, with fewer than 30 burials a year
- All burials on site are of human ashes from crematoria

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Regulatory Position Statement

Not currently set in stone

Are these numbers appropriate?

We want your input!