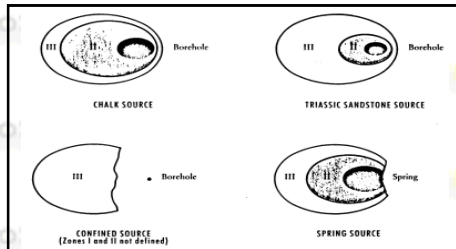




## PROJECTS

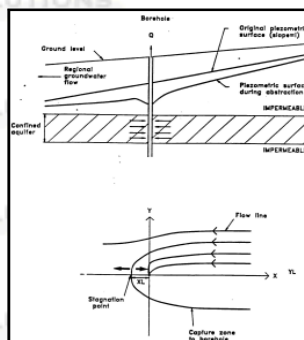
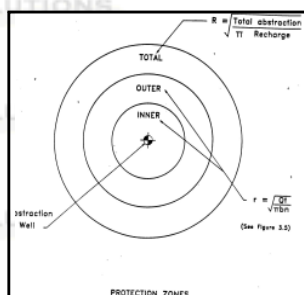
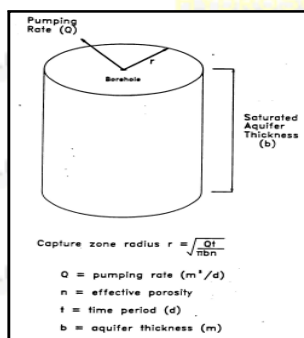
## HYDROGEOLOGY

Hydro19



**NATIONAL RIVERS AUTHORITY UK (now ENVIRONMENTAL PROTECTION AGENCY):**  
National Groundwater Protection Policy-  
Determination of Groundwater Protection  
Zones, 750 Public Water Supply sources.

Groundwater protection zones (GPZ's) were developed for 750 public water supply groundwater sources as part of the National Groundwater Protection Policy for England & Wales. A consistent methodology was developed for each source. A data request proforma was used to obtain hydrogeological data from regional authorities. The quality of data was evaluated and a decision made on the most appropriate method to delineate the GPZs. Like sources/locations were grouped where possible.



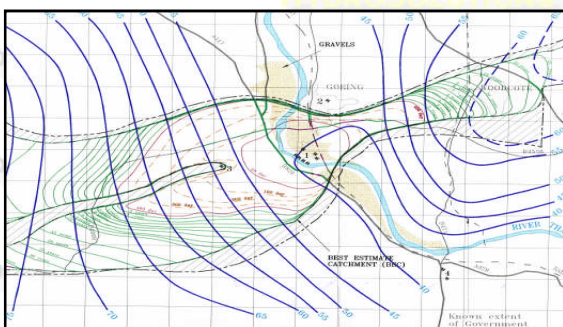
Analytical methods were used initially to provide a simple check on the catchment & time of travel zones using recharge estimates. The analytical result was adopted for sources with poor data quality. GPZ for sources with intermediate data quality were determined using a computerised analytical model WHPA using particle back-tracking methods.

Sources with 'good' data were analysed using the numerical finite difference model FLOWPATH. A conceptual model was developed & agreed, which was represented as a numerical flow domain. The following isochrone & catchment zones were defined:

- The 50-day (inner) protection zone (biological & sanitary protection)
- The 400-day (outer) protection zone (response zone in the event of a contaminant release to the aquifer)
- Total catchment zone: Steady state based on recharge estimates.

A standardised report was produced for each group of sources, including:

- All data & evaluations
- Analytical determinations
- Numerical model & source codes/files
- Time of travel & total catchment maps as GIS files



Hydrosolutions Pty Ltd  
U14, 14 Whyalla Street  
Willetton  
Western Australia 6155  
Tel: (+61 8) 9457 5448  
Fax: (+61 8) 9457 4293  
Mob: 0403 021533

E-mail: [stuart.jeffries@hydrosolutions.com.au](mailto:stuart.jeffries@hydrosolutions.com.au)  
Website: [www.hydrosolutions.com.au](http://www.hydrosolutions.com.au)