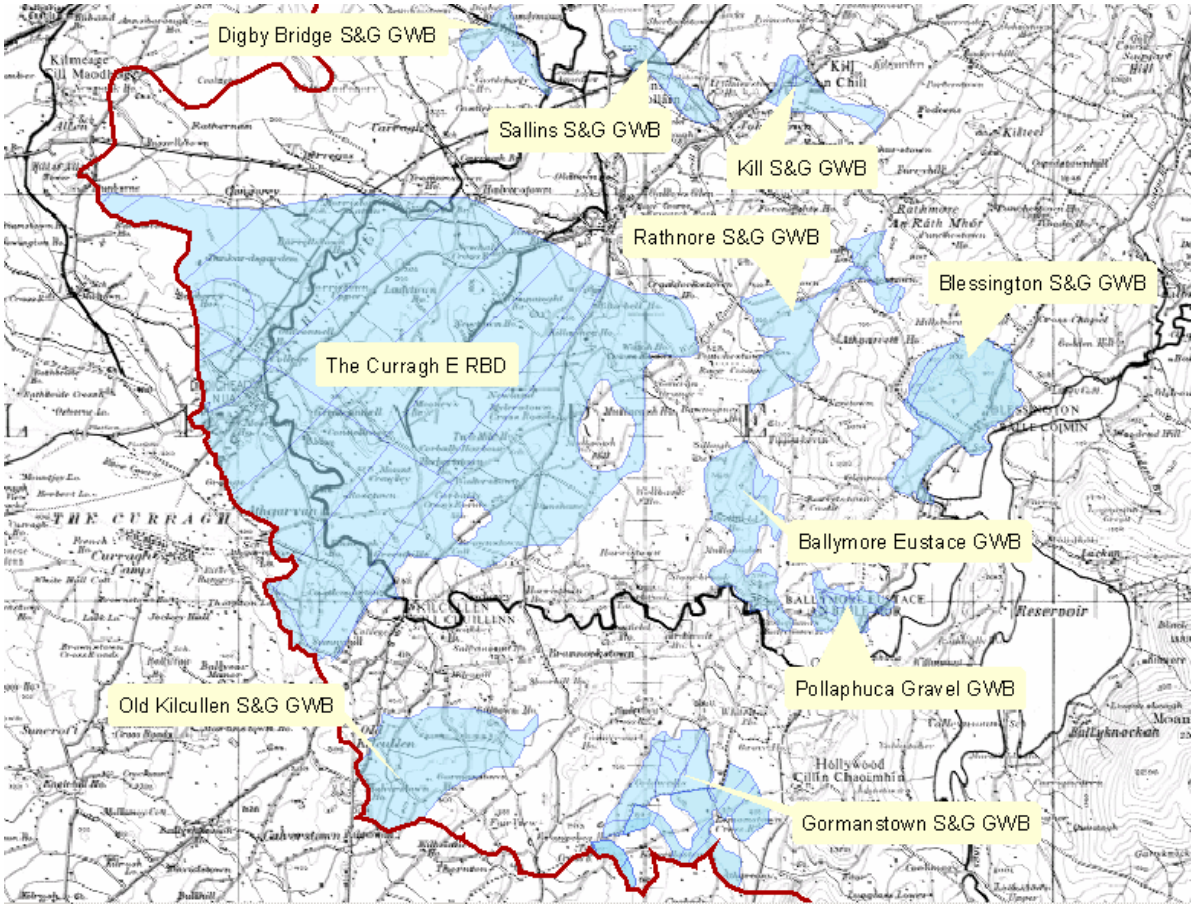
Pollaphuca Gravel GWB: Summary of Initial Characterisation *(This GWB deleted from list 7/9/04)*

Hydrometric Area Local Authority	Associated surface water bodies	Associated terrestrial ecosystems	Area (km^2)
Kildare Co. Co. Hydrometric Area 09	Pollaphuca Reservoir	Pollaphuca Reservoir (731)	1.65

Topography		This GWB is located between Ballymore Eustace and Pollaphuca Reservoir in east Co. Kildare. The area lies between 170 and 190 m OD. There is a topographic high running north south in the eastern half of the body. To the east elevations fall towards the reservoir and to the west the land slopes towards the Kilcullen Stream.
Geology and Aquifers	Aquifer type(s) Main aquifer lithologies	Lg: Locally Important Gravel Aquifer Sand & Gravel.
	Key structures.	N/A
	Key properties	Though permeability testing data are limited, productivity, borehole logging and quarry data indicate that coarse material predominates and that permeability and storativity in the aquifer are high.
	Thickness	By definition (DELG/EPA/GSI, 1999) this gravel deposit must be at least 10m thick. Drilling evidence from Wicklow suggest the thickness of this deposit varies from 10 - 30 m
Overlying Strata	Lithologies	None
	Thickness	N/A
	% Area aquifer near surface	High
	Vulnerability	High
Recharge	Main recharge mechanisms	This GWB is recharged from rainwater percolating through the topsoil and unsaturated sand and gravel deposits and becomes recharge when it encounters the water table. Surface runoff from such gravel aquifers is considered to be low and not more than 20% of effective rainfall. The presence of less permeable layers in the deposit, even if thin, can create perched water tables and prevent recharge of the true water table. Where the water table lies below the local river network it is likely that some stream water may pass into the aquifer. This will be most likely in the higher elevations where a river flows onto the aquifer from where it has previously been flowing over impermeable subsoil or bedrock.
	Est. recharge rates	*[Information to be added at a later date]*
Discharge	Springs and large known abstractions	There are no recorded large abstractions from this GWB.
	Main discharge mechanisms	The primary mechanism for water to discharge from this aquifer will be groundwater seepage from the extremities of the gravel body at the lower elevations, which may appear as springs or seeps. The eastern areas of the aquifer discharges to the reservoir and the western area to the catchment of the Kilcullen stream.
	Hydrochemical Signature	There is no information on the hydrochemical nature of the groundwater.
Groundwater Flow Paths		Although the aquifer is permeable groundwater velocity is slow because storativity in the aquifer is high and water table elevations are generally subdued.
Groundwater & surface water interactions		The interaction between surface water and groundwater throughout this aquifer is complex and will depend on the position of the water table. The nature of this interaction will not be uniform over the area of the body. There is a direct transition of groundwater to surface water along the boundary of the reservoir at the extremities of the gravel deposit.
Conceptual model	This GWB is located between Ballymore Eustace and Pollaphuca Reservoir in east Co. Kildare. The area lies between 170 and 190 m OD. A topographic high runs north south in the eastern half of the body. The extent of the body is defined by the presence of gravel deposits more than 10 m thick and in the east by the presence of Pollaphuca Reservoir. The GWB is composed of permeable sand and gravel deposits with a high storativity. Recharge occurs diffusely through the overlying topsoil. The aquifer is generally unconfined, but may become locally confined where lower permeability deposits overlie the gravels. The water table within gravel aquifers is usually flat and therefore the depth to water will depend on the topography of the area. The flow paths within the aquifer are constrained by the extent of the deposit and therefore will not develop to a regional scale. Groundwater discharge will occur via springs and seeps as the gravel deposits thin out.	

Attachments	
Instrumentation	Stream gauge: Borehole Hydrograph: None EPA Representative Monitoring boreholes:
Information Sources	DELG/EPA/GSI (1999) *Groundwater Protection Schemes.* Department of Environment & Local Government, Environmental Protection Agency & Geological Survey of Ireland, joint publication. Kelly C, Fitzsimons V (2002) *County Kildare Groundwater Protection Scheme*. Report to Kildare County Council. Geological Survey of Ireland 55pp
Disclaimer	Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae


Digby Bridge S&G GWB
Sallins S&G GWB
Kill S&G GWB
Rathnore S&G GWB
Blessington S&G GWB
The Curragh E RBD
Ballymore Eustace GWB
Pollaphuca Gravel GWB
Old Kilcullen S&G GWB
Gormanstown S&G GWB