Control of water resources in W.A

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CONTROL OF WATER RESOURCES IN W.A.

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Use of underground and surface water is controlled so that the supplies are available to the general benefit of all domestic, industrial and agricultural users in a particular area.

Water is a valuable resource and its contamination and wastage must be avoided. This article outlines the provisions of the Rights in Water Act which is designed to protect water supplies from undue exploitation, contamination and wastage. These provisions cover both the landholder and the driller or contractor who constructs the bore or dam. The Act is administered by the Irrigation and Drainage Branch of the Public Works Department.

GROUNDWATER

Estimates show that 78 per cent of the world’s fresh water is contained in ice caps and in the air. The remaining 22 per cent. is practically all groundwater—only 0.34 per cent. is surface water.

Groundwater may be artesian—which flows or has flowed naturally to the surface at any time, or non-artesian—which must be pumped. The drilling of artesian bores anywhere in W.A. is subject to licensing. Licenses are also required for the drilling of non-artesian bores in certain proclaimed areas, i.e. Carnarvon, Derby and a fairly large area covering the Pilbara: other areas are in course of proclamation.

Artesian bores

Wastage from all artesian bores, either at the surface or into porous strata beneath the surface, must be prevented, and there must be no contamination of the artesian supply from other water bearing strata. The following are fairly standard conditions on all artesian licenses.

- The bore must be adequately capped and equipped with a valve to control the flow.
- The bore must not run to waste.
- The bore must be pressure cement grouted from the top of the aquifer to the surface.

At present the main areas where the use of artesian water for agriculture is being limited are the Metropolitan Area and the coastal strip down as far as Bunbury.

Metropolitan Area.

The development of artesian supplies is playing a vital part in supplying areas difficult or uneconomic to supply from hills storages. The long-term life of underground supplies is being carefully examined. The supply is affected by other artesian flows in the general area and all bores are carefully controlled.

South-West Coastal Plain

All the available surface and ground water in the South-West Coastal Plain area will be needed to supply the likely industrial and domestic demand in the area. The agricultural use of artesian water has been pegged at the existing level.

Busselton

There has been an increasing demand for artesian bore licenses in the Busselton area for domestic, stock, agricultural, mining and light industrial use. The resources in the Busselton area are currently being investigated. With the need to preserve an adequate supply for the township, all artesian licenses in the area are subject to the conditions that the amount of water to be drawn may be restricted if a bore affects the supply from other bores or there is a reduction in the supply available for the township.

Non-artesian bores

Water from a non-artesian source such as a bore, well or soakhole may be used without license, except in the proclaimed areas at Carnarvon, Derby and the Pilbara. Other areas are in the course of gazetral.
Carnarvon

In the late 1950's, water being drawn from the sands of the Gascoyne River bed exceeded the re-charge from the infrequent stream flows. This resulted in the ingress of salt water which contaminated some water sources and resulted in toxic salt levels in some irrigated plantation soils. Pumping controls were introduced and the ingress of salt water was halted. A condition of all licenses is that a meter be fitted to every bore and well.

Pilbara

The Pilbara Non-Artesian Area was proclaimed in 1965 to ensure that the utilization of the scarce supplies was in the best interests of mining companies and pastoralists. There is normally no limitation on the number of bores sunk by pastoralists, and the issue of a license is fairly automatic. Pastoral bores are protected in that no bore can be sunk within 1/4 mile of an existing pastoral bore.

The water drawn from bores sunk by mining companies is being restricted to the quantity proven by exploration.

At North West Cape the fresh groundwater is a shallow wedge overlying salt water, and special conditions apply to prevent contamination.

Derby

Derby relies for its town water supply on a very limited underground source and controls were introduced in 1968 when increased pumping caused a rise in salinity in the bores providing the town’s domestic supply.

SURFACE WATER

The law governing the taking of water from rivers, streams, lakes and swamps is complicated. In certain areas which have been “proclaimed” the Rights in Water and Irrigation Act applies; in other areas, common law applies.

In broad terms both common law and the Rights in Water and Irrigation Act maintain the right of a landowner whose property abuts a watercourse to take water from the watercourse for stock and domestic purposes.

However, the owner may only take water for irrigation purposes if in so doing he does not sensibly diminish the flow of water in the watercourse.

A number of the river systems in the State have been proclaimed under the Rights in Water and Irrigation Act to give the Government the power to adjudicate in disputes between owners. The full powers of the Act, which requires landholders to obtain licenses to draw water, are, however, only being insisted upon for those rivers being maintained by releases from the metropolitan storages—Canning, Serpentine, North and South Dandalup and in the Warren-Lefroy area where competition for water has been severe in dry years.

Full control is also exercised within the boundaries of irrigation districts.

On the rivers where the flow is being maintained by releases from the metropolitan storages, irrigation development is being pegged at the existing level.

Building dams

Because of the requirement to not sensibly diminish the flow in a river or stream, it is essential that provision is made to pass the low flows through any dam constructed across a watercourse.

A license must be obtained before starting construction of any dam in areas in which full control is being exercised under the Rights in Water and Irrigation Act.

LICENSING

All landholders must apply for a license to commence, construct, enlarge, deepen or alter, or draw water from any artesian well or from any non-artesian well in a proclaimed area. Although the owner is required to make the application it is also the responsibility of the driller to see that a license has been obtained before starting to drill. Licenses are also required for construction of all dams across watercourses in the Warren-Lefroy area, Canning, Serpentine and Dandalup Rivers, and within irrigation districts.

Any person sinking a new well under license must provide full details of the strata and water encountered.

Procedure

Application for a license is made on standard forms available from the Public Works Department. The information required is the location, including a sketch plan, and details of the proposed use of the water. Forms are issued with bore licenses for recording the information on soil strata.

Monthly reports on the appropriate form must be submitted where a bore takes longer than a month to complete.