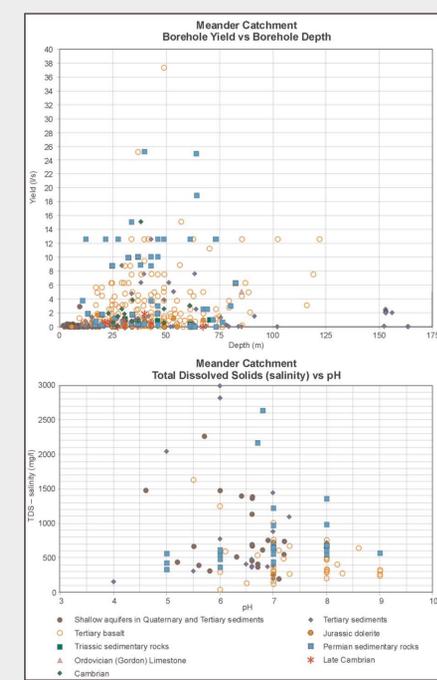
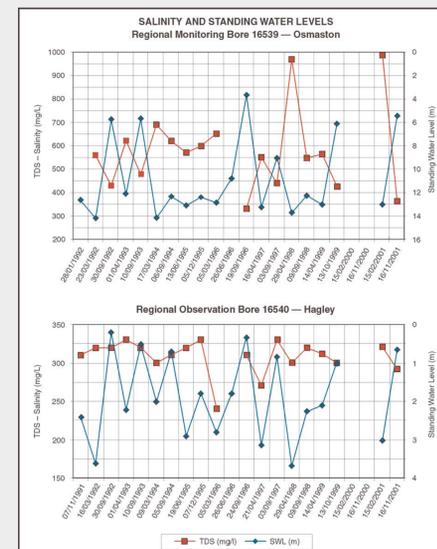
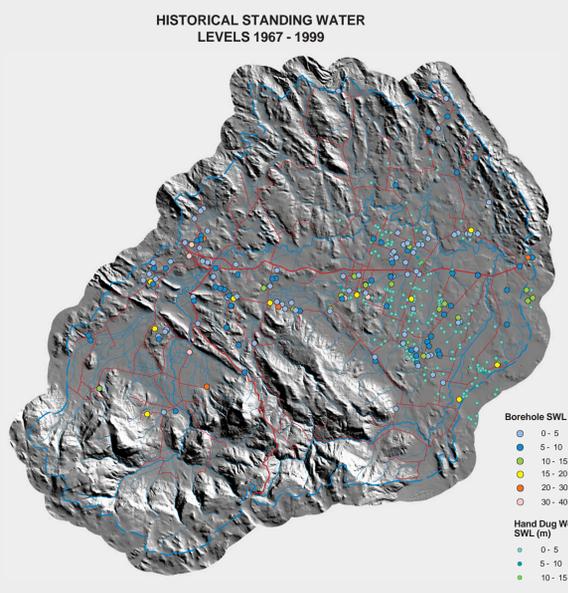
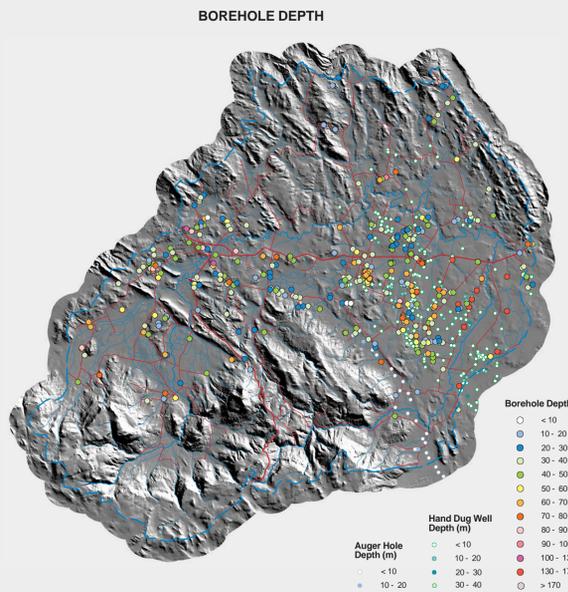
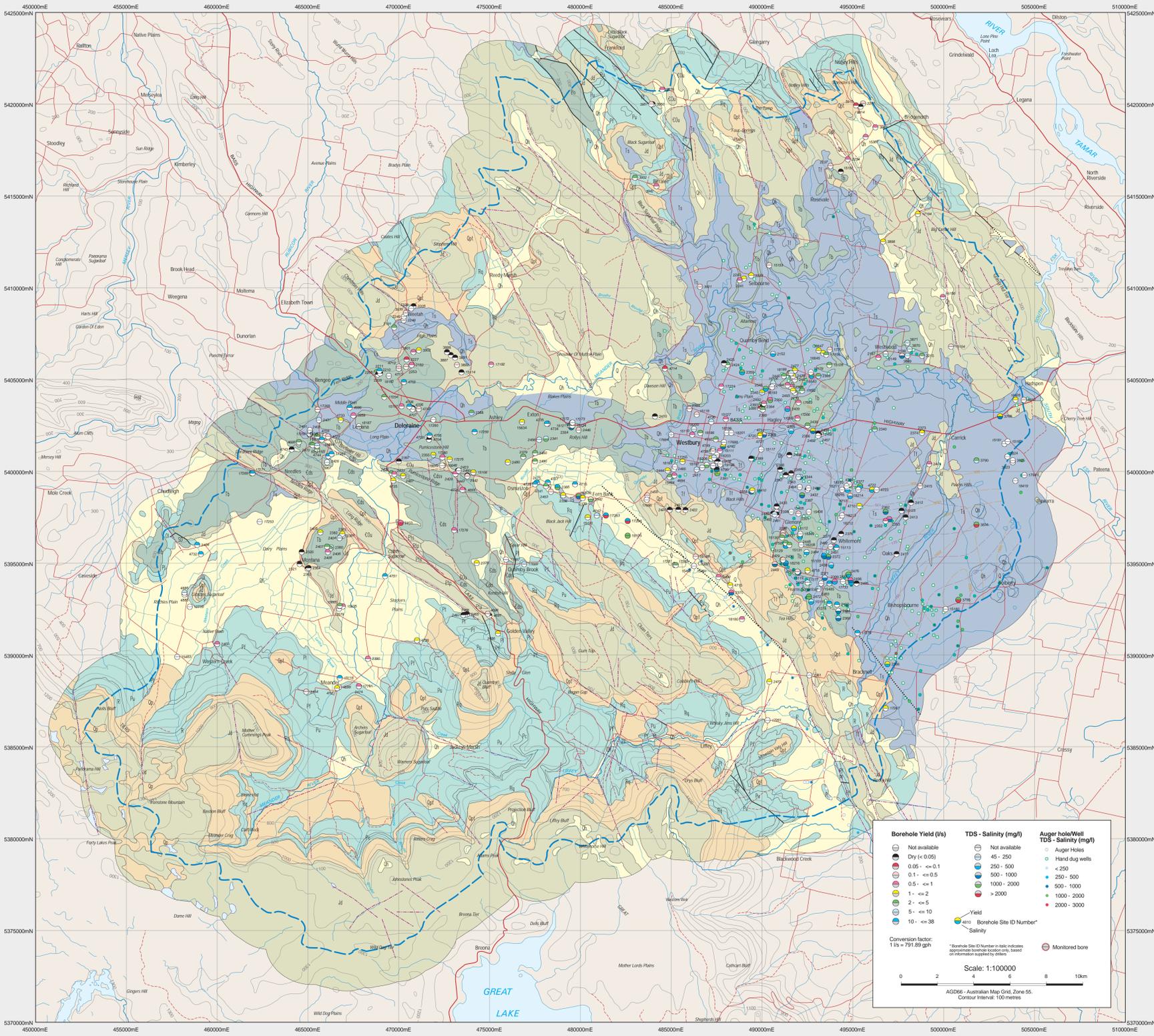


GROUNDWATER PROSPECTIVITY MEANDER CATCHMENT



AQUIFER TYPE	PROSPECTIVITY	ROCK GROUPS	NUMBER OF BORES	NUMBER OF SUCCESSFUL BORES	YIELD (l/s)	SALINITY AS TDS (mg/l)	GENERAL AQUIFER CHARACTERISTICS
POROUS (INTERGRANULAR)	HIGH	Quaternary - sand, gravel and clay of alluvial, fluvial and aeolian origin (Q1) and undifferentiated tertiary sediments (Q2) within the tertiary basin. Tertiary sediments - dominantly non-marine interbedded clay, sandy clay, and unconsolidated and poorly consolidated sand, with minor occurrences of lacustrine gravel and siltstone (T1). Minor occurrences of tertiary, undifferentiated Cretaceous sediments (T2).	300**	46	range 0.00 - 0.39 mean 0.09	range 200 - 2500 mean 420	The top 30m of this unit hosts unconfined and confined shallow Quaternary and Tertiary low yielding aquifers with good water quality usually suitable for domestic, stock and garden use. Vulnerability to pollution is moderate to high. Deeper Tertiary aquifers in Meander catchment consist predominantly of fine to medium sand (T1) with occasional gravel layers. They are mainly confined with occasional occurrences of unconsolidated, high yielding aquifers. The majority of water quality data indicates low salinity, however higher salinity may occur units with higher clay content. A limited number of water quality data indicates low salinity, however higher salinity may occur units with higher clay content. Generally yields are suitable for domestic, livestock and irrigation purposes. Moderate irrigation quantities (5-8 l/s) may be obtained from properly constructed deep boreholes. To date there has been little utilisation of this resource. Quality of the water renders it usually suitable for most purposes. Water quality of deep aquifers is similar. No High Cationic Sodium Adsorption Ratio (SAR) of 1.7 (0.8-7.2). Vulnerability to pollution: moderate for main deep aquifers that are usually confined with extensive clay layer. Where a layer of high permeability material overlies deep aquifers vulnerability is high.
POROUS (INTERGRANULAR)	LOW-MODERATE	Quaternary sand, gravel, and clay of alluvial, fluvial and aeolian origin (Q1) and undifferentiated tertiary sediments (Q2) outside the tertiary basin.	26**	No data	No data	range 240 - 2200 mean 660	Generally contains groundwater, including perched water tables, but is unlikely in most cases to provide long term sustainable and sufficient yields. Possibly suitable for limited domestic or livestock purposes. Auger holes drilled in Cluan - Braclach area (Tasmanian Geological Survey Bulletin 59) have recorded depths in a range from 0.6 - 15.2m (mean 4.8m) with depth to water struck in a range from 0.3 - 8.2m (average 2.6m). The underlying rock types with fractured aquifers are likely to be the main groundwater source (Permian and Triassic rocks between Osmaston and Cluan and Devonian limestone and Permian rocks between Osmaston and Cluan). Vulnerability to pollution is generally moderate to high with increased risk for pollution in areas with decreased clay content.
POROUS (INTERGRANULAR)	LOW	Quaternary clayey silts derived mainly from Permian and Triassic sedimentary rocks. Tertiary basalt and Tertiary basalt (T3). Silty, argillaceous and functional sediments including silt and stratigraphic deposits (Q3). Undifferentiated Cretaceous sediments (T2).	10**	1	range 0.00 - 0.03 mean 0.00	range 100 - 1500 mean 512	Low yields, possibly suitable for limited domestic or livestock purposes. The underlying rock types with fractured aquifers are likely to be the main groundwater source. Hand dug wells recorded in the area have depths in a range from 1.7 - 14.6m (average 6.8m) and standing water levels in a range from 0.3 - 8.6m (average 4.8m). A limited number of water quality data indicates low salinity, however higher salinity may occur units with higher clay content. Generally yields are suitable for domestic, livestock and irrigation purposes. Moderate irrigation quantities (5-8 l/s) may be obtained from properly constructed deep boreholes. To date there has been little utilisation of this resource. Quality of the water renders it usually suitable for most purposes. Water quality of deep aquifers is similar. No High Cationic Sodium Adsorption Ratio (SAR) of 1.7 (0.8-7.2). Vulnerability to pollution: low to moderate unless high permeability material overlies the aquifer.
FRACTURED	HIGH	Tertiary Basalt - highly fractured mainly fresh rocks (T3). Silty, argillaceous and functional sediments including silt and stratigraphic deposits (Q3). Devonian undifferentiated shallow marine quartz sandstone, siltstone and shale (D1). Cambrian - dominantly sedimentary sequences (Ordovician, Silurian, Devonian, Carboniferous and Permian) with minor occurrences of lacustrine gravel and siltstone (C1). Cretaceous - undifferentiated Cretaceous sediments (T2).	181*	101	range 0.00 - 1.62 mean 0.31	range 100 - 1500 mean 512	High success rates and high yields (short term yields up to 38 l/s) have been reported in Tertiary Basalt. The reported yields are adequate for domestic, livestock and irrigation purposes and much of the groundwater currently used in the catchment is extracted from basalt areas. Braclach - Westbury - Hagley (in some part of this area the basalt is overlain by the upper sequence of Tertiary sediments and Devonian-Erion Area. Permian and Triassic rocks underlie this unit have not been extensively tested but are expected to have high success rate and good water quality in other parts of the State. Quality water is suitable for most purposes including irrigation. Basalt aquifers water types is mainly Mg (Na/Ca) HCO3 with average Sodium Adsorption Ratio (SAR) of 1.7 (0.8-7.2). Variable yields generally suitable for most domestic and livestock purposes. Small irrigation supplies have been obtained in Meander - Osmaston and Cluan areas from fractured Permian rocks. The marine sandstone beds at the base of the Permian rocks (P1) are more prospective for fractured (P1) beds in the upper part of Triassic sequences. In general these rock types are more prospective in the low lying areas than in the high - elevated areas. The majority of water quality data indicates low salinity, however higher salinity may occur units with higher clay content. Generally yields are suitable for domestic, livestock and irrigation purposes. Moderate irrigation quantities (5-8 l/s) may be obtained from properly constructed deep boreholes. To date there has been little utilisation of this resource. Quality of the water renders it usually suitable for most purposes. Water quality of deep aquifers is similar. No High Cationic Sodium Adsorption Ratio (SAR) of 1.7 (0.8-7.2). Vulnerability to pollution: high unless low permeability material overlies the aquifer. Elevated Nitrate concentrations in a range from 10 - 25 mg/l have been obtained in monitoring borehole 16540 over a decade. This is generally caused by use of nitrogenous fertilisers on tertiary basalt soils.
FRACTURED	HIGH-MODERATE	Permian - Triassic sedimentary rock sequences (Silurian, Devonian, Carboniferous, Permian and Triassic) with minor occurrences of lacustrine gravel and siltstone (C1). Cretaceous - undifferentiated Cretaceous sediments (T2). Ordovician (Gordon) Limestone (O1).	60**	52	range 0.00 - 0.26 mean 0.04	range 100 - 1500 mean 512	Variable yields generally suitable for most domestic and livestock purposes. Small irrigation supplies have been obtained in Meander - Osmaston and Cluan areas from fractured Permian rocks. The marine sandstone beds at the base of the Permian rocks (P1) are more prospective for fractured (P1) beds in the upper part of Triassic sequences. In general these rock types are more prospective in the low lying areas than in the high - elevated areas. The majority of water quality data indicates low salinity, however higher salinity may occur units with higher clay content. Generally yields are suitable for domestic, livestock and irrigation purposes. Moderate irrigation quantities (5-8 l/s) may be obtained from properly constructed deep boreholes. To date there has been little utilisation of this resource. Quality of the water renders it usually suitable for most purposes. Water quality of deep aquifers is similar. No High Cationic Sodium Adsorption Ratio (SAR) of 1.7 (0.8-7.2). Vulnerability to pollution: high unless low permeability material overlies the aquifer. Elevated Nitrate concentrations in a range from 50 - 250 mg/l have been obtained in monitoring borehole 16539 over a decade.
FRACTURED	LOW-MODERATE	Jurassic Dolomite (J1) - generally moderately fractured. Late Cambrian - undifferentiated dominantly quartz sandstone sequences (C2a). Devonian - dominantly sedimentary sequences, mainly phylite, with granitoid facies metamorphism (E1) and quartzite (E2).	21*	9	range 0.00 - 1.77 mean 0.51	range 100 - 1500 mean 512	Limited information available from the small number of boreholes drilled in these rock types. Generally a limited groundwater resources in other part of the State. Yields generally low, dependent on fracture frequency and localized grain concentrations. Highly fractured areas may yield domestic and livestock supplies and occasionally small irrigation supplies in areas with annual rainfall higher than 600mm. Quality information from the boreholes drilled to date near Elizabeth Town (border of the catchment northern boundary) indicates that groundwater is suitable for most domestic purposes. Vulnerability to pollution: moderate. If highly fractured zones occur without a low permeability cover, the vulnerability will be high.

