

# **Otway-Torquay Groundwater Catchment Statement**

**January 2014**

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## Purpose of this document

Victoria has introduced Groundwater Catchments to capture the full extent of connected groundwater resources.

The catchment statement is the first step toward ensuring users and the community have a complete picture of the current management of groundwater in the Otway-Torquay Groundwater Catchment. The objective is, over time, to simplify management of groundwater throughout the catchment and enable users to get access to water for future development. The Otway-Torquay Groundwater Catchment boundary is available at the state government's Central Plan Office (document reference LEGL./12-064).

This document brings together all the plans affecting the licensed use of groundwater in the Otway-Torquay Groundwater Catchment. Water Supply Protection Areas and Groundwater Management Areas exist within the catchment. Statutory management plans apply in some Water Supply Protection Areas and Local Management Plans apply in all other areas.

Management plans included in this statement will be reviewed at least every five years, but reviews may occur earlier if required. Reviews will improve existing management and potentially reduce the number of management areas within the catchments. This will make management less complex, while ensuring equitable sharing and long term sustainability of the resource.



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General Manager Groundwater & Rivers

19 July 2013

## Definitions

### Carryover

Allows entitlement holders to retain ownership of unused water allocated or purchased from the current season into the following season in accordance with rules specified in a Ministerial Order made under section 62A of the *Water Act 1989*.

### Entitlements

Water entitlements referred to in this report refer to entitlements issued under section 51 of the *Water Act 1989*.

### Groundwater basins

One or more groundwater catchments within a geological basin. The basin may extend off-shore or across State boundaries. In some cases a basin may be broken into one or more sub-basins to reflect administrative management boundaries.

### Groundwater catchments

An area containing a connected groundwater resource(s), bringing together the input (recharge) areas, use (demand) areas and discharge areas.

### Groundwater Management Area (GMA)

A Groundwater Management Area (GMA) is a discrete area where groundwater of a suitable quality for irrigation, commercial or domestic and stock use is available or expected to be available.

### Groundwater Management Plan (GMP)

The object of a management plan is to make sure that the water resources of the relevant water supply protection area are managed in an equitable manner and so as to ensure the long-term sustainability of those resources (section 32(A)(1), *Water Act 1989*).

### Groundwater Management Unit (GMU)

Either a Groundwater Management Area or a Water Supply Protection Area.

### Local Management Plans

Local Management Plans describe the resource, management objectives and specific rules such as restrictions, carryover (if applicable) and trade within a specified area. Local Management Plans cannot amend licence conditions.

### Permissible Consumptive Volume (PCV)

The total volume of water that can be taken in an area or water system and a period of time. (section 22(A)(1), *Water Act 1989*)

### Victorian Water Accounts

The Victorian Water Accounts document key water resource management issues and provides an overview of water availability and use across Victoria.

### Water Supply Protection Area (WSPA)

A Water Supply Protection Area (WSPA) is an area declared under section 27 of the *Water Act 1989* to protect the groundwater or surface water resources through the development of a management plan which aims for equitable management and long-term sustainability.

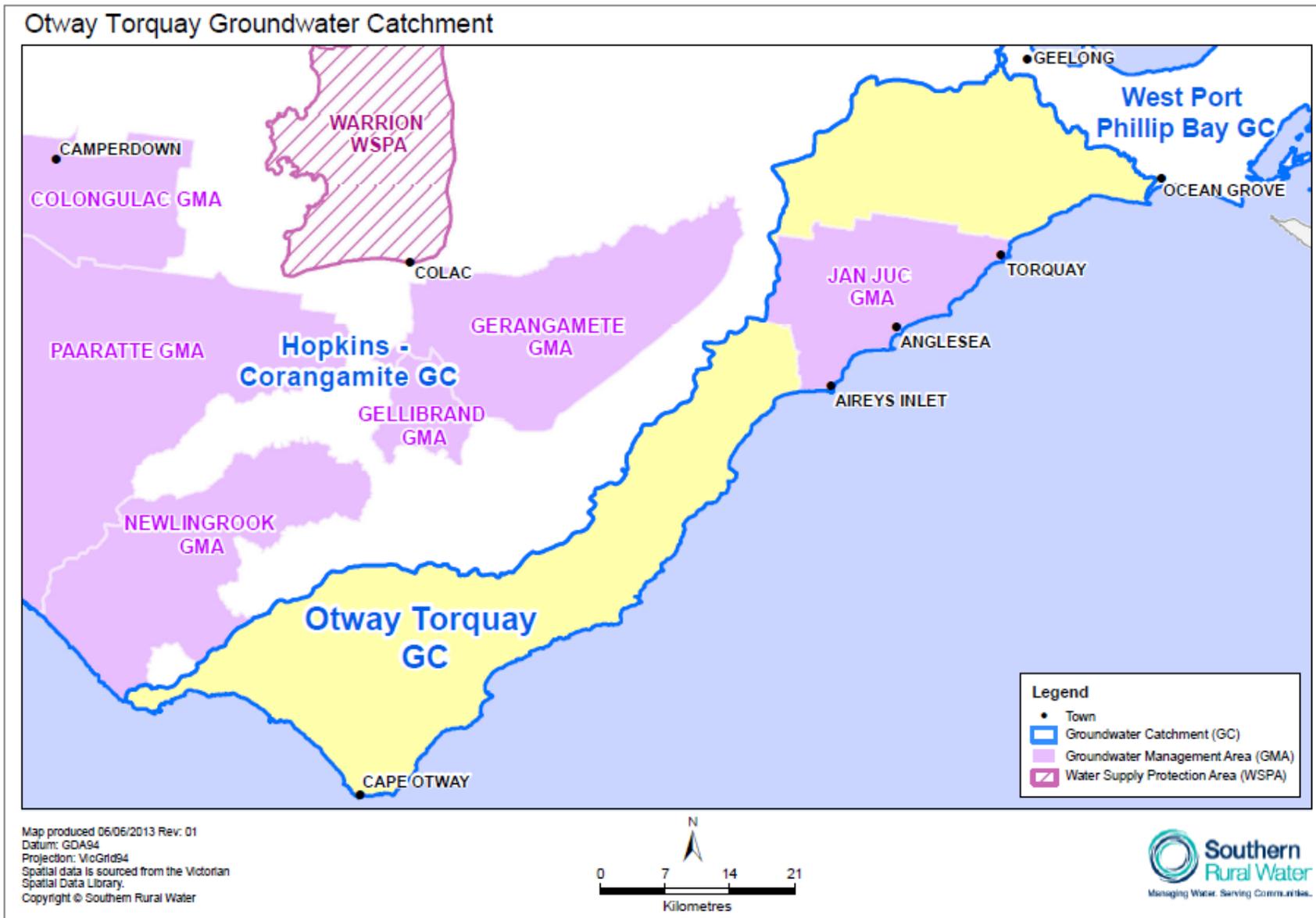
## Otway-Torquay Groundwater Catchment

The Otway-Torquay Groundwater Catchment is located in the Otway-Torquay Basin in south-western Victoria (Figure 1). The onshore Otway Basin borders the Goulburn Murray Basin and the Wimmera Mallee Basin to the north and Central Basin to the east. The basin extends offshore beneath the Southern Ocean. The Otway-Torquay Groundwater Catchment map is lodged with the Central Plan Office, reference number: LEGL./12-064 OTWAY-TORQUAY GROUNDWATER CATCHMENT. Local Management Plans for sub-areas of the catchment form the basis for groundwater management.

The Local Management Plans do not replace Permissible Consumptive Volumes, approved groundwater management plans or place any additional requirements on the use of groundwater for stock and domestic purposes.

The Local Management Plan details can be found in the appendices.

<b>Local Management Plan Area</b>	<b>Plan Details</b>
Jan Juc Groundwater Management Area	Appendix 1
All remaining areas	Appendix 2



• **Figure 1 - Location of the Otway-Torquay groundwater catchment and GMA/WSPAs in the Otway-Torquay Basin.**

Local Management Plans may (from Policy 3.3, *Western Region Sustainable Water Strategy*, p61):

- document management objectives for the system;
- explain to licence holders (and the broader community) the specific management objectives and arrangements for their water resource and the rules that apply to them as users of that resource;
- be based on existing operational rules, recognising the rights of existing licence holders;
- be consistent with the *Policies for Managing Section 51 Take and Use Licences*;
- document any limits, including water use caps, permissible consumptive volumes (PCVs) or extraction limits that apply to the Groundwater Management Units (GMUs);
- include trading zones and rules;
- clarify water sharing arrangements for all users and the environment, including environmental flow requirements;
- document monitoring and reporting requirements, and
- be periodically reviewed to incorporate new knowledge.

## Aquifers in the Otway-Torquay Groundwater Catchment

Groundwater is found in aquifers. An aquifer is a layer of fractured rock, gravel, sand or limestone below the ground that is porous enough to hold groundwater and allow it to flow. An aquitard is a layer of rock or clay that may hold some groundwater but is not porous enough to allow it to flow significantly.

The South West Victoria Groundwater Atlas (Southern Rural Water 2011) identifies and clearly describes the resources across the catchment. The catchments can be broadly subdivided into three layers; the upper, middle and lower aquifers. The aquifer layers are generally separated from one another by aquitards. A cross section showing the relative position of the aquifer layers is provided in Figure 2.

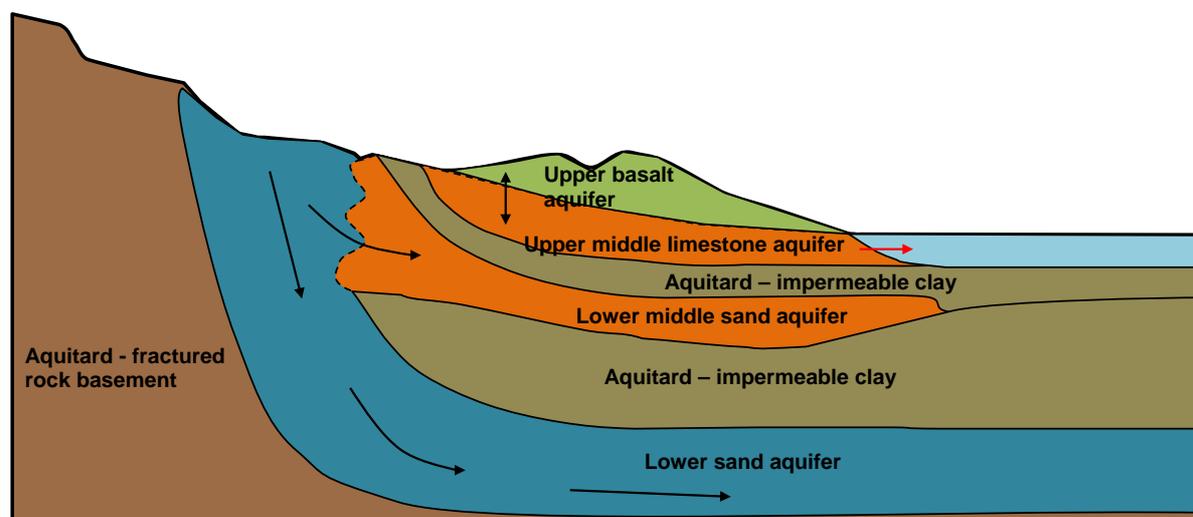


Figure 2 –Cross-section showing the relative position of the aquifer layers (taken from the “South West Victoria Groundwater Atlas”, p45, Southern Rural Water, 2011)

The Local Management Plans describe the rules for management of all or part of an aquifer (upper, middle or lower). The aquifers comprise layers that have both hydrogeological names (as described in the Victorian Aquifer Framework, DSE, 2012) and primary geological names. The principal aquifer managed by each Local Management Plan area and the associated hydrogeological and geological names are summarised in Table 1.

**Table 1 – Principal aquifer resource managed by the Local Management Plan Area<sup>1</sup>**

Principal Local Management Plan for the layer (or part layer) and Groundwater catchment <sup>2</sup>	Aquifer layer	Hydrogeological layers (Victorian Aquifer Framework, DSE, 2012)	Geological Layers
	Upper	QA Quaternary	Various aeolian deposits, various fluvial, lacustrine, alluvial and colluvial sediments.
		UTB Upper Tertiary/ Quaternary Basalt Aquifer	Quaternary stoney rises, tuff, undifferentiated. Quaternary basalt (including Newer Volcanics)
		UTAM Upper Tertiary Aquifer (Marine)	Whalers Bluff Formation, Moorabool Viaduct Formation, Hanson Plain Sand, Dorodong Sand, Grange Burn Formation
		UTAF Upper Tertiary Aquifer (Fluvial)	Unnamed duricrust, undifferentiated UTAF
	Middle	UMTA Upper Mid Tertiary Aquifer	Port Campbell Limestone, Portland Limestone, Gambier Limestone, Bochara Limestone, Heywood Marl, Heytesbury Group.
		UMTD Upper Mid Tertiary Aquitard	Gellibrand Marl
		LMTA Lower Mid- Tertiary Aquifer	Clifton Formation
Jan Juc		LMTD Lower Mid Tertiary Aquitard	Wangoom Sand, Narrawaturk Marl, Upper Mepunga Formation, Sturgess Point Member, Nirranda Group, Demons Bluff Group
	Lower	LTB Lower Tertiary Basalts	Phase 2 Basalts
Jan Juc		LTA Lower Tertiary Aquifer	Eastern View Formation, Lower Mepunga Formation, Dilwyn Formation, Yaughar Volcanics, Pembler Mudstone, Pebble Point Formation, Timboon Sand, Rivernook Member, Burrungule Member, Moomowroong Sand Member, Wiridjil Gravel Member, Brucknell Member, Wangerrip Group, Dartmoor Formation, Knight Group
		LTB Lower Tertiary Basalts	Older Volcanic Group (Phase 1)
	Basement	CPS Cretaceous and Permian Sediments	Paarate Formation, Belfast Mudstone, Flaxman Formation, Nullawarre Greensand, Waarre Formation
		BSE Mesozoic and Palaeozoic Bedrock	Permian Glacial Sediments, all Palaeozoic basement rock

Descriptions from: Groundwater Resources Online (DSE 2012) Victorian Aquifer Framework, (DSE 2012) and South West Victoria Groundwater Atlas (SRW, 2011)

Note 1: The areas are often defined by a depth from surface that may incorporate parts of other aquifers and aquitards. The principal aquifer is the primary target for management of groundwater extraction. Any rules, however, apply to the entire defined area (see Appendices).

Note 2: All other aquifer layers not covered by the local management plans above are covered in the “All remaining areas” Local Management Plan (Appendix 2).

## Water management arrangements

### Overarching responsibilities

Groundwater management falls within both the jurisdiction of Southern Rural Water (SRW) and the Department of Environment and Primary Industries (DEPI) in ensuring the delivery of government policy on water and the environment. They are jointly responsible for implementing the Western Region Sustainable Water Strategy. The groundwater catchment statements, of which the Otway-Torquay GCS is one, are part of the implementation of this strategy.

The licensing authority for groundwater within the Otway-Torquay Groundwater Catchment is SRW. SRW is responsible for issuing bore construction licences (section 67, *Water Act 1989*) and licensing groundwater extractions under “take and use” licences, section 51 of the Act. See the SRW website ([www.srw.gov.au](http://www.srw.gov.au)) or the Victorian Water Register ([waterregister.vic.gov.au](http://waterregister.vic.gov.au)) for additional information about these.

DEPI is the department responsible for administration of the *Water Act 1989*, and oversee the management of water resources in Victoria. Sustainable Water Strategies (SWS) and groundwater (or local) management plans are one way that DEPI and SRW ensure the long term sustainability of those resources, and that they are managed equitably.

Monitoring of the groundwater resources (quality and levels) forms a substantive component of this by providing the information to assess the health and availability of the resource. SRW and DEPI undertake extensive monitoring of groundwater in the Otway-Torquay catchment.

### Water accounting

Information on the management and use of groundwater within this groundwater catchment is included in the Victorian Water Accounts which are published annually by the DEPI.

Annual reports on WSPAs with groundwater management plans are produced each year by SRW tabulating usage, allocations and entitlements for those areas.

Groundwater entitlements are listed on the Victorian Water Register and are publicly available on the web ([waterregister.vic.gov.au](http://waterregister.vic.gov.au)).

### Review

DEPI may review and evaluate progress on management of groundwater at any time, in collaboration with SRW.

SRW may independently review Local Management Plans. Administrative changes or clarifications may be made without consultation. SRW will consult licence holders and stakeholders on any change that affects their rights.

## Access to information

More information on groundwater can be obtained from the websites listed below. This includes information on groundwater levels, the South West Victoria Groundwater Atlas and groundwater resource reports.

Southern Rural Water – [www.srw.com.au](http://www.srw.com.au)

Department of Environment and Primary Industries – [www.depi.vic.gov.au](http://www.depi.vic.gov.au)

Victorian Water Register – [waterregister.vic.gov.au](http://waterregister.vic.gov.au)

SRW Victoria Groundwater Atlases, available online at:

[http://www.srw.com.au/Page/page.asp?Page\\_Id=687&h=0](http://www.srw.com.au/Page/page.asp?Page_Id=687&h=0)

Groundwater Resource Reports (DSE, 2012):

<http://www.water.vic.gov.au/monitoring/groundwater/groundwater-resource-reports>

Melbourne Groundwater Directory (DSE, 2009):

<http://www.water.vic.gov.au/monitoring/groundwater/general/melbourne-groundwater-directory>

Victorian Aquifer Framework (DSE, 2012) –

<http://www.water.vic.gov.au/environment/groundwater/national-groundwater-action-plan-victorian-projects>

## Appendix 1 Jan Juc Local Management Plan

### Objective of the Local Management Plan

The objective of the Local Management Plan is to make sure that the groundwater resources in the Jan Juc Groundwater Management Area (GMA) are managed in an equitable and sustainable manner.

### Area description

Jan Juc GMA is shown below. The plan is lodged with the Central Plan Office, reference number LEGL./09-252.

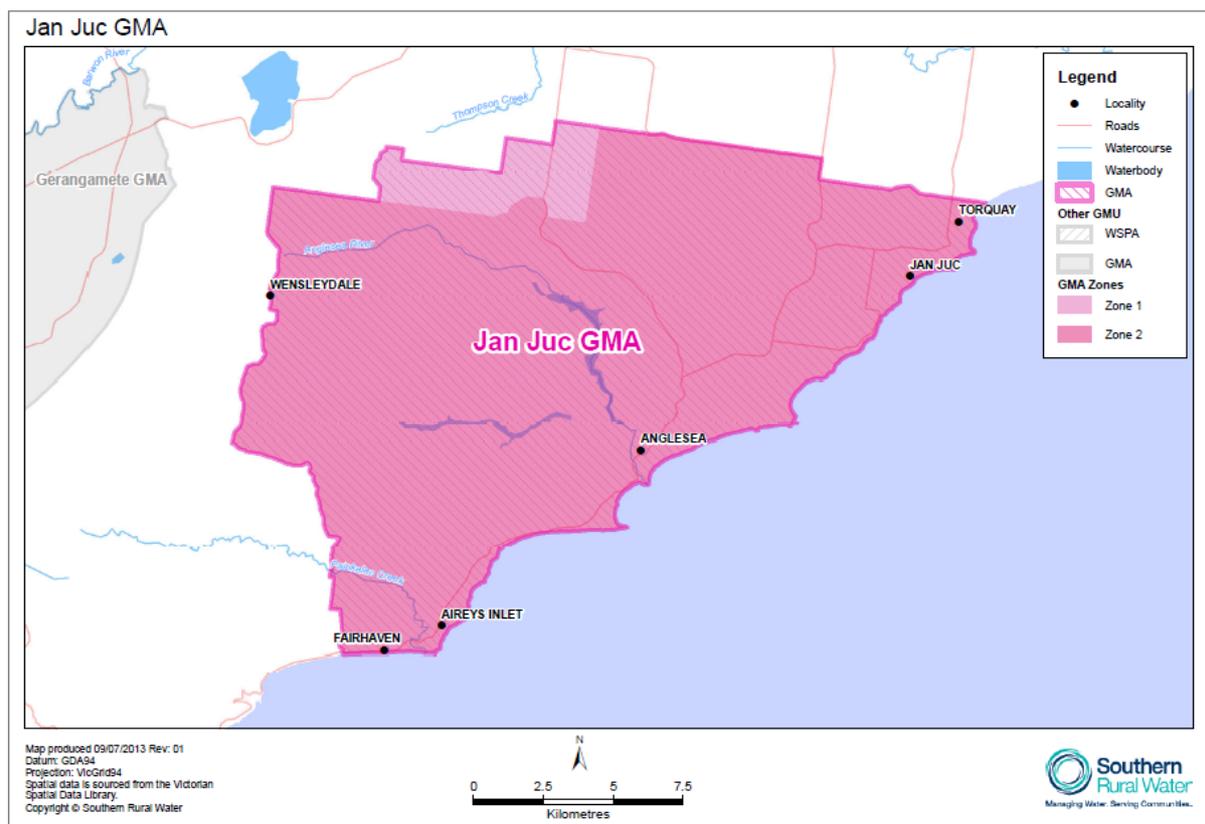


Figure A1-1: Map of Jan Juc Groundwater Management Area

### Permissible Consumptive Volume

A Permissible Consumptive Volume (PCV) currently applies to the Jan Juc GMA. The PCV is a cap on the amount of groundwater allocated in this management unit. The PCV for Jan Juc GMA includes the Anglesea Bulk Entitlement Order for Barwon Water to supply groundwater to Geelong. The Order is available from the Victorian Water Register - <http://waterregister.vic.gov.au/Public/Reports/BulkEntitlements.aspx> (<http://www.gazette.vic.gov.au/gazette/Gazettes2009/GG2009S224.pdf#page=1>).

The PCV applies to the area covered in Figure A1-1, and is split by zone and depth criteria as listed below:

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Zone 1: All formations below the surface	250 ML
Zone 2: Upper Eastern View Formation	4,000 ML
Zone 2 – Lower Eastern View Formation Bulk Entitlement Order for further details)	35,000 in any five year period (see Anglesea Bulk Entitlement Order for further details)
Zone 2 – All formations below the surface other than the Lower Eastern View formation and the Upper Eastern View formation	0 ML

## Water entitlements

The extraction of groundwater for purposes other than domestic and stock use is authorised under a groundwater licence. There are 2 groundwater licences in the Jan Juc GMA that authorise a total of 4,250 ML from Zone 1 and Zone 2 (Upper Eastern View Formation).

Additionally, groundwater is authorised for use in Zone 2 (Lower Eastern View Formation) under a bulk entitlement for urban use for the township of Geelong. This is authorised by the Minister under Bulk Entitlement (Anglesea) Groundwater Order 2009. DEPI is responsible for administering the Bulk Entitlement.

The Bulk Entitlement allows Barwon Water to extract up to 7,000 ML in any one year; however the maximum volume that can be extracted over any period of five (5) years is 35,000 ML. The maximum daily volume that can be extracted is 40 ML/d.

The Barwon Water entitlement includes extensive conditions that cover the monitoring of water levels and salinity, water level decline, metering, subsidence, impacts on surfacewater, impacts on riparian vegetation, impacts on domestic and stock users and reporting. The Bulk Entitlement is administered by the Minister under the *Water Act 1989*.

Metered groundwater use is less than the total groundwater entitlements and varies each year according to the seasonal conditions. Entitlement holders must not take more than their annual licence volumes.

People have rights to take groundwater for domestic and stock use without a groundwater licence.

## Restrictions

The PCV determines the maximum volume of water that can be extracted from the Jan Juc GMA; however, the Local Management Plan does not place specific restrictions on taking groundwater.

If necessary, SRW is able to temporarily qualify rights to groundwater under section 33AAA of the *Water Act 1989* if a water shortage occurs - for example, if regional drawdown is affecting access to groundwater by users.

Groundwater licences also allow SRW to restrict extraction if required - for example, to minimise the effect of extraction from specific sites if there is a significant impact on nearby users or the aquifer. If restrictions are necessary, SRW will notify licence holders in advance.

## Trading

In considering an application to transfer a licence temporarily or permanently, SRW must thoroughly assess the application. An application to transfer a licence is not automatically approved. In deciding whether or not to approve an application, SRW must consider section 40 of the Act, including:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality in the GMA.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set transfer conditions to minimise interference, or it may refuse the application. Approval of an application to transfer may be subject to technical assessments to determine bore interference and impact on surface water bodies.

In the Jan Juc GMA:

- Permanent transfers are permitted
- Temporary transfers are permitted for a period of up to five years

## New licences

New licences can be issued up to the PCV and in accordance with policies for managing take and use licences.

## Metering

Southern Rural Water meters new and existing licensed water users. This allows SRW to keep track of how much water is being used and enables licence holders to keep within their allocated volume. This means:

1. All new licences for irrigation or commercial purposes require a meter
2. Existing licences of 10ML or greater require a meter

The meters are supplied by SRW, and the licence holder will be responsible for paying the full cost of the meter and initial installation. The meter remains the property of SRW. SRW is responsible for maintenance and replacement.

Meters are read at least twice per year. The Bulk Entitlement (Anglesea) Order 2009 stipulates specific metering requirements for Barwon Water.

## **Consultation**

SRW will consult with licence holders and relevant stakeholders before making changes to the Local Management Plan, other than administrative changes or clarifications.

The Local Management Plan will be reviewed every 5 years, unless an update is required sooner.

Please note that changes to the Local Management Plan cannot affect the Barwon Water Bulk Entitlement.

## Appendix 2 Otway-Torquay Groundwater Catchment (Areas outside of GMUs) Local Management Plan

### Objective of the Local Management Plan

The objective of the Local Management Plan is to make sure that the groundwater resources in Otway-Torquay Groundwater Catchment are managed in an equitable and sustainable manner.

### Area description

The remaining region of the Otway-Torquay Groundwater Catchment comprises all areas excluding the Jan Juc Groundwater Management Area (Appendix 1).

The remaining area of the Otway-Torquay Groundwater Catchment is subdivided into two zones based on depth. The boundary between the zones is defined as 200m below the natural surface or 50 metres below the base of the Tertiary surface (whichever is the greater, refer Figure A7-1).

Where it can be shown that extraction from the deeper zone has no material impact on the upper zone, a licence is still required but upper zone management rules (in particular, PCVs and restrictions) would not apply.

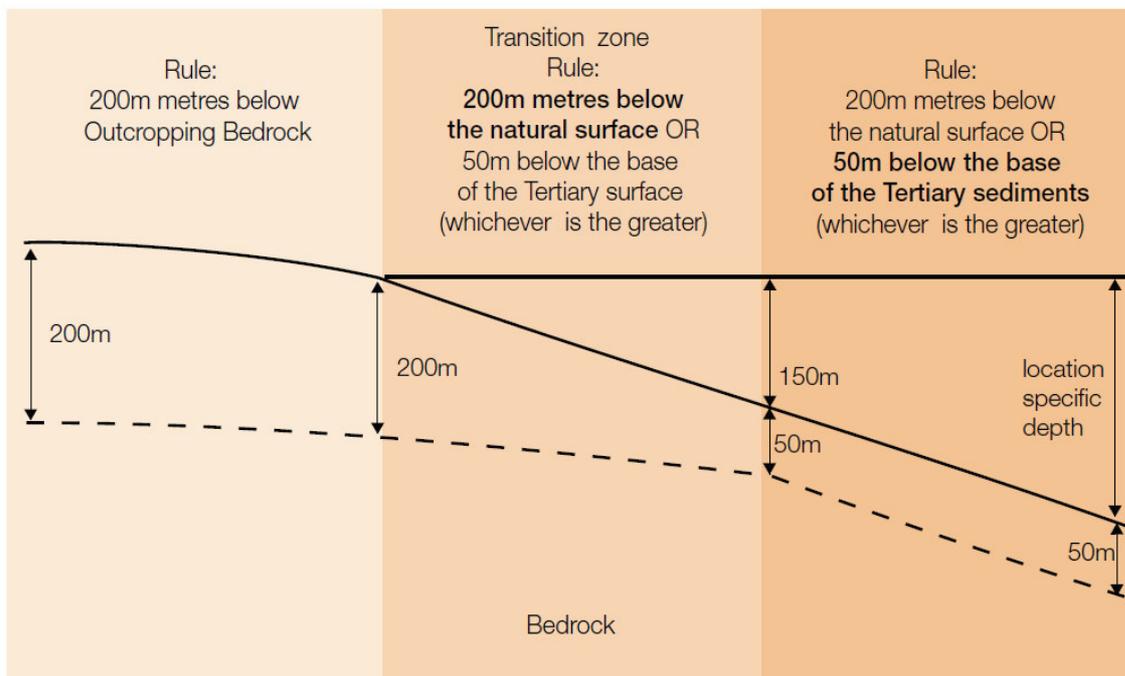


Figure A2-1: Depth defined management zones

### Permissible Consumptive Volume (PCV)

There are no PCVs that currently apply to this area or its zones.

## Water use and entitlements

The extraction of groundwater for purposes other than domestic and stock use is authorised under a groundwater licence. People have the right to take groundwater for domestic and stock use without a groundwater licence. This applies for the entire area and all zones.

Guidelines on the rights to take and use groundwater under section 51 of the Act are available on the Water Register site ([www.waterregister.vic.gov.au](http://www.waterregister.vic.gov.au)).

## Restrictions

This Local Management Plan does not place any restrictions on taking groundwater.

If necessary, SRW is able to temporarily qualify rights to groundwater under section 33AAA of the *Water Act 1989* if a water shortage occurs - for example, if regional drawdown is affecting access to groundwater by users.

Groundwater licences also allow SRW to restrict extraction if required - for example, to minimise the effect of extraction from specific sites if there is a significant impact on nearby users or the aquifer. If restrictions are necessary, SRW will notify licence holders in advance.

## New licences

New groundwater licences can be issued within this Local Management Plan area. In considering an application for a groundwater licence SRW must undertake a thorough assessment. An application is not automatically approved. In deciding whether or not to approve an application SRW must consider:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set conditions to minimise interference, or it may refuse the application. Approval of an application may be subject to technical assessments to determine water availability, bore interference and impact on surface water bodies.

## Groundwater trade

There are no trading rules in this Local Management Plan area.

In considering an application to transfer a licence temporarily or permanently, SRW must thoroughly assess the application. An application to transfer a licence is not automatically approved. In deciding whether or not to approve an application, SRW must consider section 40 of the Act, including:

- Availability of water now and in the future;

- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality in the area.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set transfer conditions to minimise interference, or it may refuse the application. Approval of an application to transfer may be subject to technical assessments to determine bore interference and impact on surface water bodies.

## **Metering**

Southern Rural Water meters new and existing licensed water users. This allows SRW to keep track of how much water is being used and enables licence holders to keep within their allocated volume. This means:

1. All new licences for irrigation or commercial purposes require a meter
2. Existing licences of 10ML or greater require a meter

The meters are supplied by SRW, and the licence holder will be responsible for paying the full cost of the meter and initial installation. The meter remains the property of SRW. SRW is responsible for maintenance and replacement.

Meters are read at least twice per year.

## **Consultation**

SRW will consult with licence holders and relevant stakeholders before making changes to the Local Management Plan, other than administrative changes or clarifications.

The Local Management Plan will be reviewed every 5 years, unless an update is required sooner.