

Annual Report on Drinking Water Quality in Victoria

1 July 2004 – 30 June 2005

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Foreword

One of the key drivers for the development of the state's drinking water regulatory framework is the recognition of the importance of safe drinking water to the ongoing social and economic wellbeing of Victorians.

The *Safe Drinking Water Act 2003* came into effect on 1 July 2004. This report is the first annual report on the safety and quality of drinking water in Victoria under this legislation. It covers the period 1 July 2004 to 30 June 2005.

This report has been prepared in accordance with section 32 of Victoria's *Safe Drinking Water Act 2003*, which requires the Secretary to the Department of Human Services to provide the Minister for Health an annual report of drinking water quality in Victoria.

This annual report provides an overview of the operations and implementation of the Act and the performance of water businesses in respect to the Act for the 2004-05 year. The report includes a statewide perspective of drinking water quality, a summary of implementation activities, and summaries of the performance of the regulated water businesses in respect to the draft drinking water quality standards and water quality incidents.

Copies of this report can be obtained from the Department of Human Services' Drinking Water Regulatory Unit, or downloaded from the website:

www.health.vic.gov.au/environment/water/drinking.htm

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Executive summary

Access to safe drinking water is one of the indicators of a modern, developed society. Water is necessary for life, and clean drinking water is necessary to maintain public health. Waterborne disease and the lack of access to safe drinking water continues to be an intermittent source of illness in some developed countries, and a major source of illness and death in developing countries.

The *Safe Drinking Water Act 2003* (the Act) came into effect on 1 July 2004 and the *Safe Drinking Water Regulations 2005* (regulations) were prepared for commencement in July 2005.

The Act and regulations provide a comprehensive regulatory framework that encompasses a catchment-to-tap, risk-based approach to the management of drinking water quality across the state. The key objectives of the regulatory framework are:

- to ensure that where water is supplied as drinking water it is safe to drink
- that any water not intended to be drinking water cannot be mistaken for drinking water
- that water quality information is disclosed to consumers and is open to public accountability.

For the first year of operations under the Act, data provided to the department by water businesses indicates that Victoria's drinking water is generally of a high standard and that water across the Melbourne metropolitan area showed 100 per cent compliance to all the draft water quality standards.

Several areas of non-compliance to the draft water quality standards were detected in regional Victoria. The Department of Human Services is currently working with water businesses that experienced non-compliances to put in place undertakings with the department that will detail how these non-compliances will be resolved.

A number of water quality incidents were reported to the department, however, none of the reported incidents resulted in reports of waterborne illness, indicating that all incidents were managed appropriately from a public health perspective.

The first year of operations under the *Safe Drinking Water Act 2003* has been one of learning for all stakeholders involved in the drinking water quality regulatory framework.

Section 1

Victoria's Drinking Water Quality Regulatory Framework & Activities of the Secretary under the Act

Victoria's Drinking Water Quality Regulatory Framework

The regulatory framework for safe drinking water in Victoria is comprised of:

- the *Safe Drinking Water Act 2003* (the Act) which was enacted on 1 July 2004
- the draft *Safe Drinking Water Regulations 2005* (the regulations) which were scheduled for commencement in July 2005 and prepared during this reporting period.

In addition to these legislative instruments, the Department of Human Services provides water businesses with guidance on a range of matters relating to safe drinking water.

The major focus of the department over the reporting period has been the development and implementation of the regulations and the introduction of a reporting framework designed to enable water businesses to meet the requirements of the new legislative framework.

A list of the water businesses to which the regulatory framework applies can be found in Appendix A.

Administration of the Act

The Drinking Water Regulatory Unit on behalf of the Secretary to the Department of Human Services administers the legislation. The primary functions of this unit are to oversee the implementation of, and monitor compliance with, the Act and regulations.

Functions of the Secretary to the Department of Human Services

Protect public health in relation to the supply of drinking water.
Monitor and enforce compliance with this Act and the regulations.
Report on the performance of water suppliers and water storage managers in relation to the requirements imposed on them under this Act.
Investigate and report on any aspect of drinking water quality in Victoria.
Make recommendations to the Minister for Health on any matter relating to drinking water or regulated water.
Promote industry and public awareness and understanding of drinking water quality issues.

Overview of Act and draft regulations *Safe Drinking Water Act 2003*

Requires water suppliers and water storage managers to prepare and implement plans to manage risks in relation to drinking water and some types of non-potable water.
Provides for the auditing of those plans by approved auditors.
Requires water suppliers to ensure that the drinking water they supply meets quality standards specified by the regulations.
Requires water suppliers to disclose to the public information concerning the quality of drinking water.
Provides for the variation, after community consultation, of water quality standards that relate only

to aesthetic factors.

Requires the reporting of known or suspected contamination of drinking water to the Secretary to the Department of Human Services.

Empowers the Secretary to enforce this Act.

The (draft) Safe Drinking Water Regulations

Set out the further matters to be addressed in risk management plans and the risks to be specified in risk management plans.

Describe the documents that are to be available for inspection in a risk management plan audit.

Prescribe the form of audit certificates to be given to the person who has commissioned a risk management plan audit at the completion of the audit.

Set out the risk management plan auditor approval criteria.

Set out drinking water quality standards.

Set out requirements relating to the frequency of collection of samples of water for analysis.
Empower the Secretary to:

- divide areas supplied by water suppliers into water sampling localities
- specify locations within a water sampling locality at which samples of water are to be collected
- vary the frequency of collection for samples of water in certain circumstances
- approve persons to be approved water analysts;

Require all water samples to be analysed by an approved water analyst and a summary of the results of the analyses to be given to the Secretary.

Specify the issues relating to the quality of drinking water and regulated water, in an annual report in respect of every financial year to be given to the Secretary by a water supplier and water storage manager.

Set out details to be included in an annual report to the Secretary.

Risk management plans

The adoption of a risk-based approach to the management of drinking water supplies through the preparation of risk management plans provides a framework for managing, reviewing and maintaining high quality drinking water supplies from catchment to tap. The application of risk management principles promotes a proactive, rather than reactive, approach to the provision of safe drinking water.

The plans are required to ensure that management and operational procedures and practices are implemented so that the treated water does not pose a risk to public health. The requirement

to have these plans audited will provide confirmation that the water suppliers are operating and maintaining the water supply against a set of risk management practices.

The majority of water businesses had pre-existing incident management protocols prior to commencement of the regulatory framework, however the regulatory framework requires businesses to integrate these protocols into the broader risk management framework. It is expected that risk management processes will be revised and updated to take into account reviews of incidents.

Standards for drinking water quality

From July 2005 the (draft) regulations will require water businesses to report against nine drinking water quality standards to verify that safe drinking water is delivered to Victorian consumers.

In the interim the department requested that all water business report monthly against the draft standards over the 2004-05 reporting period and include this information in their annual reports.

The majority of water businesses have complied with this request and a detailed summary of the results for 2004-05 can be found in Appendix B. A discussion of these results can be found in section 3 of the report.

It is a requirement of the Act that water business report water quality issues of potential health significance to the department. An outline of these incidents is presented in section 2.

Undertakings

Where the department identifies non-compliance with the requirements of the Act or draft regulations the Secretary can require a water business to enter into a written undertaking to rectify the non-compliance within a certain period of time. This has not occurred during this reporting period.

Disclosure of information

The Act requires water businesses to provide the following information in their annual report.

- notifications of known or suspected contamination
- water quality monitoring information
- monthly summaries of their drinking water quality monitoring activities.

Regulated water

Some water businesses supply a number of their customers with water that is not intended for human consumption. The Minister for Health may declare such water to be regulated water if it is considered it could be mistaken as drinking water.

A water business supplying regulated water is obligated to prepare a risk management plan for the

water, and to take all reasonable steps to ensure that the intended recipients are made aware of the nature of the water and of the health risks that may arise from the consumption of the water.

Matters not covered by this Act

The Act does not apply to:

- water that is not intended for drinking and which cannot be mistaken for drinking water.
- the supply of water for irrigation purposes
- the supply of water by a proprietor of prescribed accommodation within the meaning of Part XII of the *Health Act 1958* to such accommodation
- the supply of packaged drinking water.

Activities of the Secretary under the Act

The Drinking Water Regulatory Unit was established within the Public Health Branch of the Department of Human Services to administer the Act and associated regulations on behalf of the Secretary.

The Drinking Water Regulatory Unit was established in 2004 and consisted of two senior project officers at 1 July 2004. At 30 June 2005 the Unit consisted of a Unit Manager, five project officers and an administrative officer.

Regulations

During the reporting period the Department prepared and drafted the Safe Drinking Water Regulations 2005. As part of this process it undertook industry-wide consultation and prepared a Regulatory Impact Statement. Public and industry submissions received by the department in response to the Regulatory Impact Statement were reviewed and a number of amendments were incorporated into the final draft of the regulations¹.

The department also finalised the preparation of statutory documents for the presentation of the final draft of the Safe Drinking Water Regulations 2005 to the Minister and the Governor in Council¹.

Communication

The department undertook a range of activities including:

- The establishment of a dedicated website for water businesses, the publication of regular newsletters, and the publication of guidance materials to support the implementation of the regulatory framework.

1 - The Safe Drinking Water Regulations were made by Governor in Council on 19 July 2005.

- Assigning departmental contact officers to each water business. This arrangement allows these officers to develop a detailed knowledge of individual water business and to establish relationships with relevant staff members.
- A number of seminars were held to support understanding of the new regulatory requirements to key stakeholders.

More information on these activities can be found on the department's drinking water website:

www.health.vic.gov.au/environment/water/drinking.htm

Undertakings

No undertakings were required during this reporting period. However water businesses provided information, which allowed measurement of performance against the draft regulations and water quality standards. The information derived from these activities will be used to put in place a number of undertakings during the 2005-06 reporting period. Details regarding these prospective undertakings will be provided in next year's annual report.

Regulated water

The Department has been working with water businesses to identify supplies of water that could be declared as regulated water in future reporting periods. No water was declared as regulated water during this reporting period.

Information and data management

The department has commissioned a data management system to:

- provide a consistent reporting framework;
- allow statewide analysis and comparison of data; and
- identify and track performance against standards.

Risk management plans

During this reporting period water businesses were required to prepare risk management plans for their drinking water supplies in readiness for the implementation deadline of 1 July 2005. Future annual reports will describe the implementation and operation of these plans and the outcomes of risk management audits. A number of larger water businesses already had existing plans in place, however the majority of small water businesses developed risk management plans for the first time for during the 2004-05 reporting period.

Expenditure under the Act

For the 2004-05 financial year, the department set the administrative levy, payable under section 51 of the Act, at the amount of \$910,000, which was paid into consolidated revenue, as is required under the Act. From this amount, the department received a treasurer's advance of \$560,000 to cover the administration of the Act for the reporting period. The advance was spent as detailed in the table below.

2004-2005 Expenditure under Safe Drinking Water Act

Expenditure Item	2004-2005 Expenditure
Salaries & Allowances	\$369,263
Indirect Costs	\$86,117
Operating Costs	\$52,737
Communication & Education	\$6,050
Research & Development	\$45,833

The department administers but does not control these resources on behalf of the Victorian Government. It is accountable for the transactions involving those administered resources, but does not have the discretion to use the resources for achievement of other department objectives.

Transactions and balances relating to these administered resources are not recognised as departmental revenues, expenses, assets or liabilities, but are disclosed in the applicable output schedules of the department's Annual Report.

With the 2004-05 financial year being the first year of the operation of the Act, administration costs associated with the Act could only be estimated. Future values of the administration levy will more closely match the Department's operational costs under the Act.

Section 2

Statewide perspective of drinking water quality

Water quality data for Victoria for 2004-05

Drinking water supplies in Victoria

Twenty-four water suppliers provided drinking water to a total of 473 water sampling localities across Victoria for this reporting period. These localities vary considerably in size, from individual small towns that supply water to fewer than two hundred people, to Melbourne metropolitan localities, that supply water to many thousands of people (see Appendices B and I). Water samples were taken from each of these localities and where relevant² these data were measured against the draft water quality standards³(standards). Water businesses were required to provide information about what actions were taken where drinking water supplies did not satisfy the standards. The majority of drinking water supplied across Victoria met the standards for the reporting period. All samples that exceeded a standard were investigated and remedial action undertaken where necessary.

The following information summarises results of sampling for this reporting period. Further discussion about water samples that did not satisfy the standards can be found in section 3 of this report.

Microbiological organisms - *Escherichia coli*

The standard is designed to ensure that *E. coli* is absent from at least 98 per cent of samples taken during the preceding 12 months.

Escherichia coli (*E. coli*) is a type of bacteria and is an indicator of the bacteriological quality of drinking water. In addition to being a possible pathogenic organism, the detection of *E. coli* can indicate that the disinfection of the water supply has failed. All 473 drinking water localities over the reporting period were monitored for *E. coli* and 451 of them met the benchmark standard.

Turbidity

The standard is designed to ensure that turbidity does not exceed 5.0 NTU (Nephelometric Turbidity Units) over twelve month period⁴.

Turbidity is a measure of how cloudy drinking water may appear. High turbidity in a water supply may interfere with the effectiveness of disinfection; it may also indicate microbial or other contamination and may also render the water unsatisfactory in appearance to consumers. All 473 drinking water localities were monitored for turbidity and 459 met the standard.

Chlorine based chemicals

The standards relating to chlorine-based chemicals⁵ are designed to ensure that drinking water that has been disinfected with chlorine-based chemicals is free of by-products.

Four of these by-products are required to be measured under the standards^{6,7}. They are total trihalomethanes, chloroacetic acid, dichloroacetic acid and trichloroacetic acid.

424 localities were monitored for total trihalomethanes, and twenty-one did not meet the standard.

424 localities were monitored for chloroacetic acid, and two did not meet the standard.

424 localities were monitored for dichloroacetic acid, and seven did not meet the standard.

424 localities were monitored for trichloroacetic acid, and forty-two did not meet the standard.

As the health standards are based on exposure over a lifetime, short-term exposure to elevated levels of these by-products does not present a significant public health risk. Nonetheless, the department and affected water businesses view this as a serious ongoing issue and will be working together to put in place appropriate undertakings that address these issues.

Chemicals derived from disinfection or treatment with ozone

The standard is designed to ensure that drinking water that has been disinfected with ozone is free of by-products⁸.

Bromate and formaldehyde are by-products that may arise in small quantities when drinking water has been disinfected or treated with ozone.

All drinking water localities that were monitored satisfied the benchmark standard.

Aluminium

The standard is designed to ensure that problems relating to the treatment of drinking water are minimised. This standard is not a health-related standard^{9 10}.

Aluminium may be present in drinking water as a residue from processes that use aluminium salts as coagulants when drinking water is treated or filtered. Aluminium may also be present as a result of leaching from soils (particularly clays) that may be present in the source water.

364 drinking water localities were monitored for aluminium during period and 309 supplies met the standard.

-
- 2 - It is not necessary to test all water samples against nine draft standards, for example not all samples are tested for chlorine based chemical as not all suppliers use chlorination to disinfect their water supplies.
 - 3 - This information is also provided in each water businesses annual report.
 - 4 - The actual statistical expression was that the 95 percent upper confidence limit of the mean of samples collected over the twelve month period should not exceed 5.0 NTU (Nephelometric Turbidity Units).
 - 5 - The standards against which drinking water supplies were assessed for trihalomethanes, chloroacetic acid, dichloroacetic acid and trichloroacetic acid were 0.25 milligrams per litre, 0.15 milligrams per litre, 0.1 milligrams per litre and 0.1 milligrams per litre, respectively.
 - 6 - Trihalomethanes, chloroacetic acid, dichloroacetic acid and trichloroacetic acid are all potential by-products that may arise in small quantities when drinking water has been disinfected with chlorine (chlorination) or with chlorine and ammonia (chloramination).
 - 7 - An allowance was made for rounding of data in some circumstances where a result was very close to the benchmark standards for chlorine based chemicals.
 - 8 - The standards against which drinking water supplies were assessed for bromate and formaldehyde were 0.02 milligrams per litre and 0.5 milligrams per litre, respectively. Only supplies where drinking water was disinfected or treated with ozone were monitored for these parameters.
 - 9 - The standard against which drinking water supplies were assessed for aluminium was 0.2 milligrams per litre. The standard is designed to ensure that drinking water that has been treated with aluminium based salts is free of potential residues above this level. Only supplies where drinking water was treated with aluminium based chemicals were monitored for these parameters.
 - 10 - An allowance was made for rounding of data in some circumstances where a result was very close to the benchmark standard for aluminium.

Water businesses have indicated to the department that they believe the completion of their water quality improvement programs will mean that drinking water supplies which currently do not satisfy the benchmark standard for aluminium will be improved in future years.

Other water quality issues of potential health significance

On a few occasions lead, arsenic, manganese and chlorite were detected in supplies around Victoria at levels that exceeded the Australian Drinking Water Guidelines health-related guideline value for that chemical. The health-related guideline value is a concentration that is widely regarded as safe for consumption over a lifetime. Lead was detected in five localities, arsenic in four localities, chlorite in four localities and manganese in one locality. The relevant water supplier investigated all exceedances of the guideline-value. The lead and manganese detections were caused by short-term problems in the particular supplies concerned or were isolated anomalous results. The reported concentrations were only present in the water supplies for very short time periods and as the risk is assessed on lifetime or long-term exposure, the exceedances were assessed as not posing a risk to health.

Arsenic detections resulted from monitoring in four small localities that have principally drawn water from sources or rock strata with naturally occurring arsenic. The department is discussing these matters with the water suppliers concerned with a view to implementing a long-term solution for these supplies.

Chlorite detections arose as a by-product of disinfection with chlorine dioxide in four small localities.

Reporting of water quality incidents to the department

Under section 22 of the Act, the Department of Human Services must be notified of circumstances where drinking water is supplied such that it may pose a risk to human health or cause widespread public complaint.

Situations which may result in a notification to the department include breakdowns or failures in the barriers that protect drinking water from contamination, or widespread public complaint or illnesses within the community that are suspected to have resulted from the drinking water supplied.

In this first year of operation, water businesses advised the department about the majority of public health incidents prior to the preparation of their annual reports. The department has notified businesses that they are required under the Act and regulations to report these matters immediately.

Assessment of water quality incidents by the department

The department issued guidance to water businesses on the types of situations which may result in a notification under section 22 of the Act which include:

- disinfection breakdown
- accidental spills of potentially harmful substances
- reports from customers or doctors
- detections of potentially toxic substances such as blue-green algae
- unusual odours
- dirty water.

Water businesses, and in some cases testing laboratories, are also obliged to report the finding of *Giardia* and *Cryptosporidium* pathogens to the department under the Health (Infectious Diseases) Regulations 2001.

The department assesses all water quality incidents reported to it to determine whether any public health response is necessary such as the implementation of a temporary boil water notice, the provision of an alternative supply, the provision of health based assessments and the co-ordination of any wider incident response.

The information used by the department in the assessment of reported incidents includes, but is not confined to:

- the water supply involved
- the nature of the contamination or suspected contamination
- the extent of the incident
- relevant test results
- the period of contamination
- the type of treatment usually applied to the water
- details of customer complaints or reported illness
- possible cause or source of the problem
- any corrective actions that are being undertaken
- whether the water business proposes a consumer notification.

The key focus for the department for this year has been on the development of appropriate reporting systems that enable it to gather pertinent information about the nature of incidents and how these incidents were managed by the water business in order to protect public health.

Water quality incidents 2004-05

Both water suppliers and water storage managers reported a range of water quality incidents to the department during the reporting period.

Reported water quality incidents: Water suppliers

One hundred and twenty one water quality incidents involving water suppliers were reported to the Department of Human Services between 1 July 2004 and 30 June 2005. A description of the main types of incidents reported is included below. A summary of water quality incidents reported to the department is included in Appendix D and in the individual business summaries included in Section 3 of this report.

Escherichia coli detected in drinking water supplies

Over the reporting period the department emphasised the importance of reporting all detections of the faecal indicator bacteria *Escherichia coli* (*E. coli*) in drinking water.

Reporting of all *E. coli* detections in treated drinking water is considered necessary as such detections can be indicative of ineffective water treatment and disinfection processes, ensures assessment of all potential incidents involving the entry of microorganisms into water supplies, and provides a better understanding of risk management regimes and responses by water businesses in Victoria.

Seventy-nine *E. coli* incidents were reported to the department over the reporting period. Water businesses are required to resample and retest all reported cases *E. coli*.

In the majority of circumstances *E. coli* was absent in the subsequent samples and the cause of the original detections could not be determined. Where a cause was able to be determined, the following factors contributing to the detections:

- lack of disinfection
- interruption to disinfection
- inadequate concentration of disinfectant or contact time
- contamination of storage tanks or reservoirs (for example by animals or birds)
- contamination of mains during repairs and construction
- heavy rains or flooding
- contamination of source water
- inappropriate sample collection location

Where the presence of *E. coli* was found to be due to an operational or process problem in the disinfection/treatment system, the business undertook action to rectify the problem, and where appropriate amend its risk management processes.

Over the reporting period several *E. coli* incidents resulted in either boiled water advisory notices being issued or the provision of alternative drinking water to affected customers. In most cases, these advisories were implemented when *E. coli* was detected in systems utilising disinfection such as ultraviolet (UV) radiation or ozone, where there is no residual disinfection within the distribution system. The remaining boil water advisories were implemented due to a significant deterioration in source water quality and to a lack of disinfection.

In all circumstances, boil water advisories remained in place until corrective measures had been implemented and evidence was received that the system was free of *E. coli*. The department did not receive any notifications of illness associated with detections of *E. coli* in drinking water during the reporting period.

Other micro-organisms in drinking water supplies

Water businesses, and in some cases testing laboratories, are also obliged to report the finding of *Giardia* and *Cryptosporidium* pathogens to the department under the Health (Infectious Diseases) Regulations 2001.

During the reporting period, two detections of faecal streptococci bacteria and one detection of *Cryptosporidium* were reported to the department in drinking water samples.

In response to these detections water businesses carried out inspections of the treatment and disinfection systems and took additional samples. In all circumstances, subsequent re-samples were reported to contain no further faecal streptococci bacteria or *Cryptosporidium*. These detections did not pose a significant public health risk and there have been no associated public health impacts.

Chlorinator/Ultraviolet disinfection system failures

Seven chlorinator failures and one ultraviolet disinfection system failure were reported during the reporting period,¹¹ but no micro organisms were detected as a result of these system failures.

Under the regulatory framework, water businesses are required to have a range of risk management processes that are designed to minimise the occurrence and impact of these incidents. Equipment failures will occasionally occur, but it is the response to breakdowns and the preventative actions that are put in place to minimise any reoccurrence that indicates the effectiveness of the risk management process.

Common responses in relation to chlorinator failures during year included diversions of undisinfecting water, the provision of alternate supplies and repairs to failed chlorinators. In general, the processes used by businesses after reported breakdowns had occurred followed accepted risk management principles.

Customer complaints

Water businesses are required to report instances of widespread public complaint in relation to drinking water to the department. A number of customer complaints were reported to the department by water businesses relating to taste and odour, low water pressure, dirty water and the sighting of non-toxic algal mucilage in water supplies.

11 - In cases of chlorinator failure in the metropolitan system, the incident was reported by both Melbourne Water and the relevant water supplier.

The majority of the complaints relating to taste and odour could be traced back to two incidents relating to a change in disinfection levels in the source water supplied by the water storage manager. In these incidents the two water businesses involved have developed an agreed protocol for dealing with changes to the distribution system, and have reviewed and updated their communication protocols.

The majority of dirty water complaints for the reporting period were found to be largely due to burst mains, main shutdowns and to elevated levels of iron in the source water. Responses to these complaints involved maintenance works and investigations aimed at reducing iron levels in the source water.

The complaints reported to the department during the reporting period were not found to present a risk to public health.

Chemicals in drinking water supplies

During the 2004-05 reporting period, several incidents were reported to the department in relation to elevated levels of chemicals in drinking water. Elevated chemical incidents included those for elevated aluminium, fluoride and chlorine.

Chemicals such as chlorine and aluminium are predominant in water treatment and disinfection processes whereas fluoride is added to some water supplies for dental protection purposes under the *Health (Fluoridation) Act 1973*. The aluminium incidents reported to the department during the reporting period were aesthetic in nature and did not pose a risk to health. The fluoride and chlorine incidents reported to the department related to elevated levels of these chemicals in drinking water, but the values detected did not exceed the health guideline values specified in the 2004 Australian Drinking Water Guidelines.

Other drinking water incidents

One major incident occurred when 2000-3000 kilolitres of dairy effluent flowed into Leongatha's drinking water raw water storage area through a broken pipe. In order to manage the public health risk, the local Municipal Emergency Plan was activated. A boil water notice was hand delivered to all properties within the town. Alternative drinking water supplies were supplied (small water tanks) to local schools outside the town.

Early detection of the contamination and effective emergency procedures resulted in all consumers being advised of the problem in advance of contaminated water entering the system.

Blue green algae

In addition to the incidents specified in this report, water businesses recorded numerous blue-green algal blooms. Further information on the Blue-green Algae Statewide Co-ordination Plan can be obtained by contacting the Water Sector Governance and Regulatory Policy section of the Department of Sustainability and Environment.

Reported water quality incidents: Water storage managers

Eleven incidents were reported in relation to water supplied by water storage managers during the reporting period. An outline of each water businesses water quality incidents and follow-up actions is detailed in Appendix D and in the individual business summaries included in Section 3 of this report.

The majority of these incidents reported to the department related to spills and emissions, dead stock or wildlife, reported illness, and detections of protozoa in raw source waters. Water storage managers also reported numerous blue-green algae blooms to the department during the reporting period through the Blue-green Algae Statewide Co-ordination Plan.

Some water businesses undertake sampling and testing of source waters for pathogens for operational purposes and for research and development. Water businesses, and in some cases the testing laboratories, are obliged to report the finding of Giardia to the department. Where appropriate treatment processes are in place, there is usually no associated public health risk when such pathogens are detected pre-treatment.

Two Giardia detections in raw water samples, collected pre-treatment were reported to the department as part of an ongoing risk management program for the Melbourne metropolitan area. In both cases, the subsequent treatment of the source water involved coagulation, filtration and disinfection, which are designed to remove pathogens such as Giardia.

Incidents in source waters reported to the Department during the 2004-05 reporting period illustrated the importance of collaboration between government agencies and between water storage managers and water suppliers to ensure that any potential public health risks were managed and mitigated.

Section 3

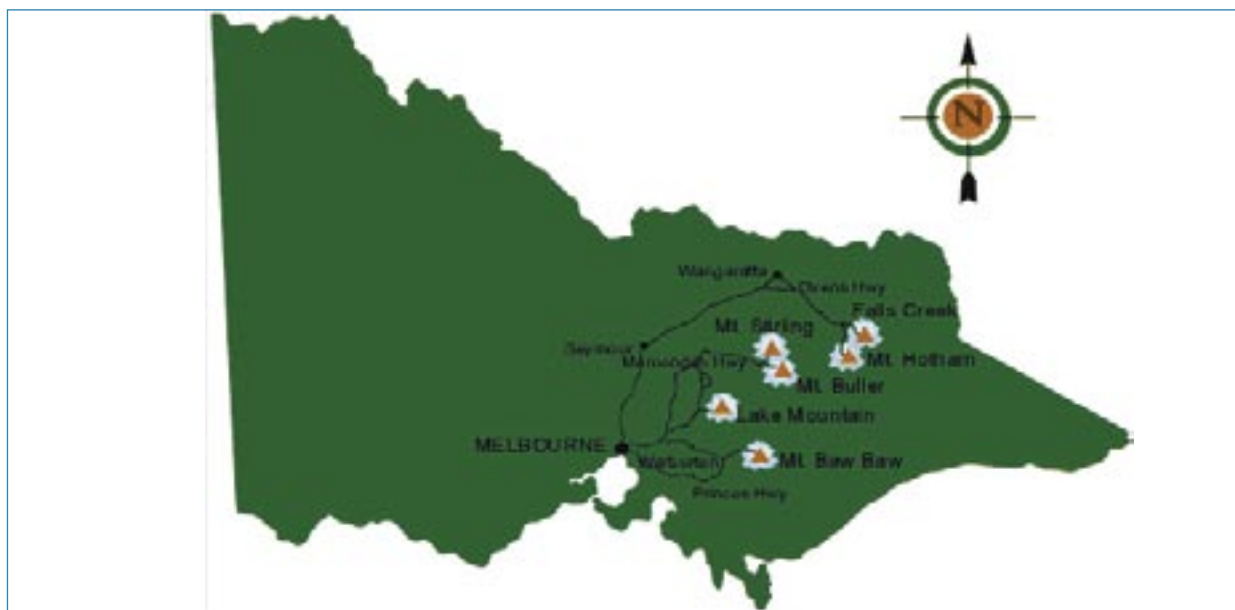
Summaries of performance of individual water businesses

Alpine resorts

Five Alpine Resorts Management Boards, as designated in the Alpine Resorts (Management) Act 1997, have responsibility for all aspects of management of the commercial alpine resorts in Victoria. The current Boards are:

- Falls Creek Alpine Resort Management Board
- Lake Mountain Alpine Resort Management Board
- Mount Baw Baw Alpine Resort Management Board
- Mount Buller and Mount Stirling Alpine Resort Management Board
- Mount Hotham Alpine Resort Management Board

The resorts have very small, or no, year-round permanent populations. During the ski season, the permanent populations rise, and the number of visitors ranges from 7,000 (Mount Stirling) to 245,000 (Mount Buller)¹². In recent years, winter visitors to all resorts have numbered between 460,000 and 830,000. All resorts except Lake Mountain have residential accommodation, varying from 750 to 7,700 beds. The demand for a drinking water supply is highly seasonal.



Map prepared by, and used with permission of, Department of Sustainability and Environment

Prior to the commencement of the *Safe Drinking Water Act* 2003 in July 2004, the only requirement for the alpine resorts in relation to the provision of drinking water was set out in the Alpine Resorts (Management) Act 1997. This Act obliges the Boards to provide a range of services, including the supply of water. There are no conditions or obligations attached to this requirement that necessitated the Boards to consider the quality of water provided or to manage public health risk.

The Department of Sustainability and Environment (DSE) is the lead Government agency overseeing the Alpine Resorts (Management) Act. In 2004 DSE produced the Alpine Resorts 2020 Strategy, to guide the sustainable planning and management of Victoria's alpine resorts.

This policy document identifies the key challenge of providing access to adequate volumes of high quality potable water to meet increasing demand.

The *Safe Drinking Water Act 2003* captures the Boards identified in the *Alpine Resorts (Management) Act 1997* as water suppliers. This imposed a number of new legislative obligations in relation to the provision of a water supply on the Boards. If the Boards made the decision to provide water that was intended for drinking, they were then obliged to undertake specific action to ensure that the supplied water met the legislated standards defined in the Act and the subordinate *Safe Drinking Water Regulations 2005*, and was fit for the human consumption.

With multiple legislative and policy obligations, the provision of drinking water, in a way that does not compromise human health, is now a major business imperative for the Alpine Resort Management Boards.

Drinking water is supplied at Falls Creek, Mount Baw Baw, Mount Buller and Mount Hotham. Untreated water that is not intended for drinking is supplied at Mount Stirling and Lake Mountain. All resorts supplying drinking water treat their raw water with ultraviolet (UV) disinfection systems, prior to distribution. Lake Mountain provides untreated water, and the Mount Buller and Mount Stirling Alpine Resort Management Board is currently reviewing the system at Mount Stirling.

None of the Boards treat or disinfect with chlorine, ozone or aluminium-based chemicals. The relevant parameters for drinking water quality monitoring at the resorts are, therefore, *Escherichia coli* and turbidity. Other testing programs are undertaken for operational and risk management purposes.

During the reporting period a number of the localities did not attain the draft water quality standards and are listed in the table below.

Assessment against benchmark standards

All drinking water supplies attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Mount Buller – Low Level, Mount Baw Baw, Mount Hotham
Turbidity	Lake Mountain

The department is working with the relevant Boards to address the supplies that did not achieve the draft standards.

In the case of the Mount Baw Baw Resort, during the reporting period an ultraviolet disinfection system was installed and commissioned. It is anticipated that will address the *Escherichia coli* issue.

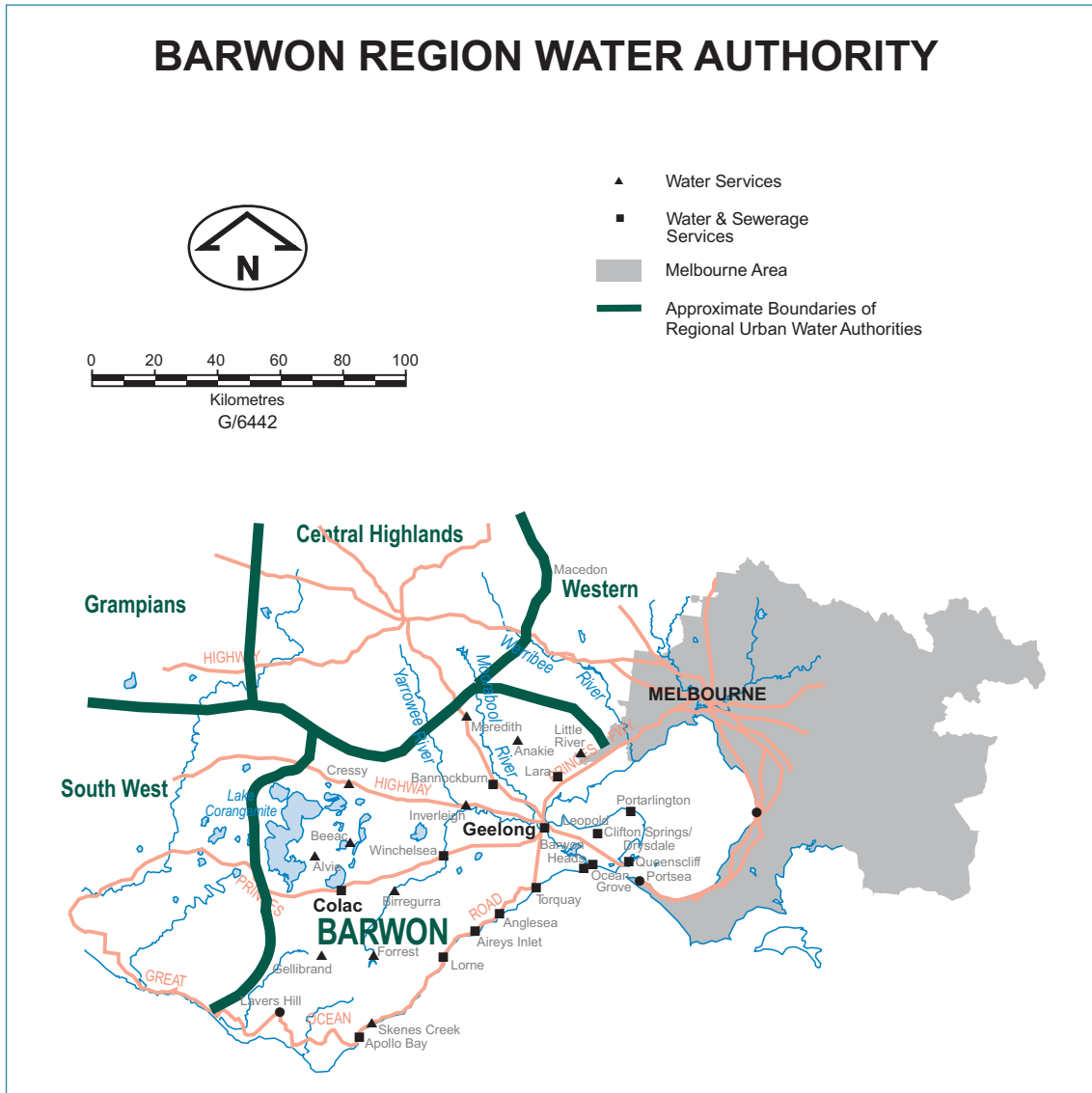
The Boards have raised several issues that are unique to the provision of drinking water in alpine resorts. These include the:

- provision of drinking water is not their core business
- resorts do not have permanent customer bases
- lack of staff capacity to manage and deliver all required elements of the Act and Regulations
- imposition of increased responsibilities and obligations without any increased funding
- lack of access to capital works funds for the purpose of improving infrastructure related to drinking water quality
- requirement to manage the alpine environment in an ecologically sensitive and sustainable manner
- challenge of managing water supply systems during periods of both very high, and very low demand.

In addition to the resources and information provided by the department's Drinking Water Regulatory Unit to the water businesses generally, the Unit also held a workshop on risk management that was designed specifically for the alpine resort staff involved with water quality management and risk management planning. The workshop was held at Mansfield on 30 March 2005.

Barwon Water

Head office: Geelong



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Aireys Inlet, Alvie, Anakie, Anglesea, Apollo Bay, Bannockburn, Beeac, Birregurra, Clifton Springs – Drysdale, Colac, Cororooke, Cressy, Forrest, Gellibrand, Gheringhap, Grovedale, Highton, Highton High Level, Inverleigh, Leopold, Lethbridge, Little River, Lorne, Lovely Banks, Meredith, Montpellier, Moriac, Mount Duneed, Ocean Grove, Portarlington, Queenscliff, Shelford, Teesdale, Torquay, Winchelsea

Population supplied with drinking water: approximately 265,450

Assessment against benchmark standards

Barwon Water monitored for the nine draft drinking water quality standards. All localities, with the exception of Winchelsea, attained the relevant draft standards monitored during 2004-05.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Winchelsea

Water quality within the Winchelsea locality did not meet the draft standard for *E. coli*. Only 96 per cent of samples had zero *E. coli*/100mL, the standard being 98 per cent. There were two occasions where low levels of *E. coli* were detected. Barwon Water undertook immediate investigation and remedial action as outlined in the Water Quality Incidents and Events section below.

Other water quality issues of potential health significance

The Lorne locality recorded a single high manganese result (0.67 mg/L), above the health guideline value of 0.5 mg/L, as listed in 2004 Australian Drinking Water Guidelines. This was caused by high flows scouring the pipes. Immediate mains flushing was undertaken and extensive air scouring was initiated once the peak season had ended.

No other parameters measured by Barwon Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Action(s)
August 2004	Lovely Banks	Taste and odour	Caused by out of service basin being brought back into service. Mains flushing undertaken.
September 2004	Winchelsea	<i>E. coli</i> detection	Spot dosing with chlorine and mains flushing. Repeat samples free of <i>Escherichia coli</i> . Inspection of the Winchelsea tank revealed small gaps that would potentially allow entry to birds. These were sealed.
December 2004	Winchelsea	<i>E. coli</i> detection	Spot dosing with chlorine and mains flushing. Repeat samples free of <i>Escherichia coli</i> .
February 2005	Bannockburn	<i>E. coli</i> detection	Spot dosing with chlorine and mains flushing. Repeat samples free of <i>Escherichia coli</i> .
March 2005	Ocean Grove / Barwon Heads	Reduction in water pressure	Problem caused by excessive growth of the invertebrate <i>Plumatella</i> . Extensive meter cleaning and mains flushing program undertaken to resolve the problem

For further information on the water quality incidents listed above please refer to Barwon Water's annual drinking water quality report.

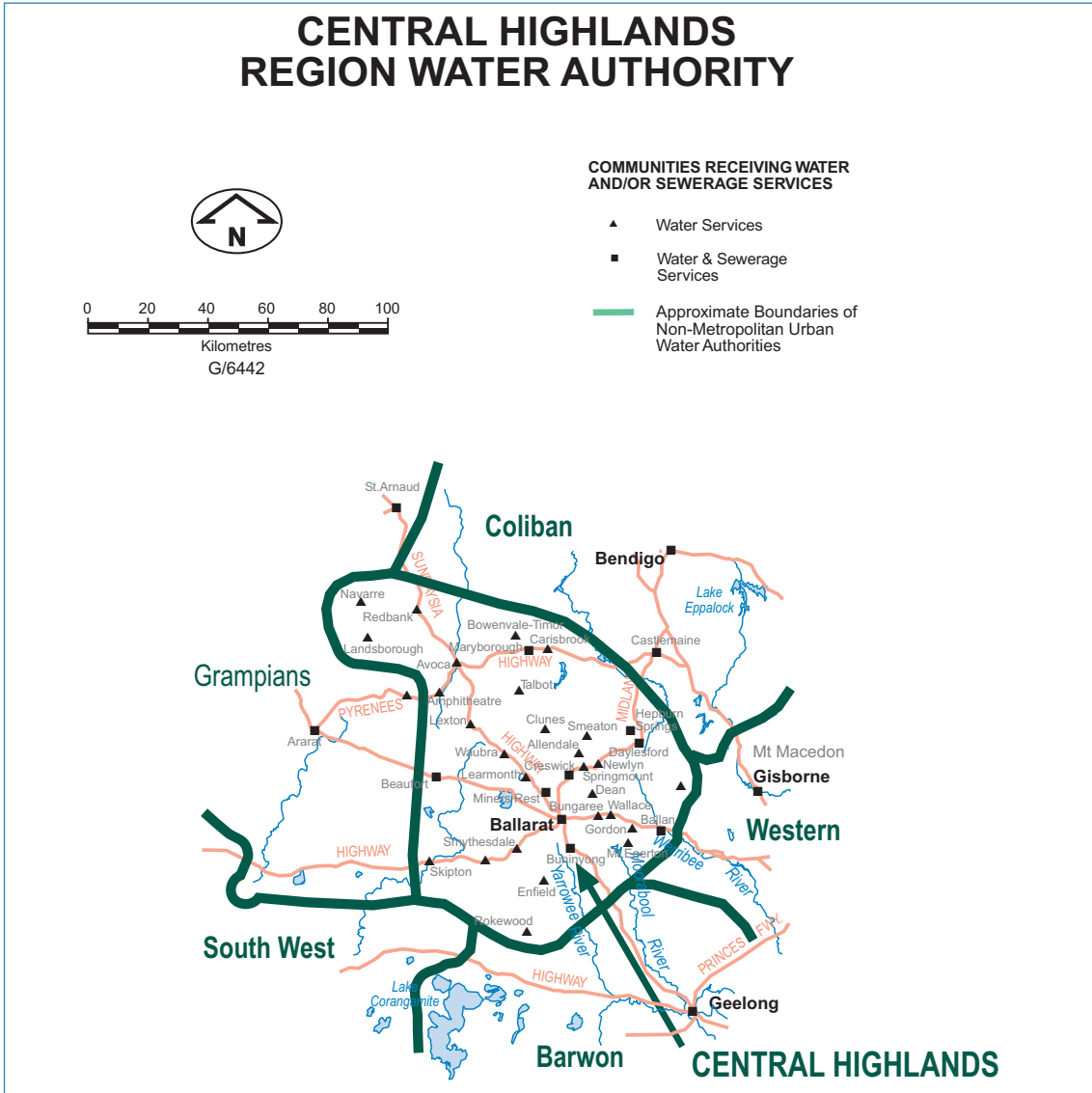
Customer complaints related to water quality

Barwon Water records its customer complaints in six broad categories: discoloured water, suspected illness, air in water (white water), blue water, taste/odour and other. The number of complaints in 2004-05 was 3.8/1000 properties, which was a decrease compared to the previous 2003-04, when it was 5.2/1000 properties. The predominant category of customer complaints was discoloured water.

Complaint category	Localities with the greatest number of complaints
Discoloured water	Lovely Banks (40) Lorne (30) Ocean Grove (14)
Taste/odour	Lovely Banks (28) Ocean Grove (22) Portarlington (12)
Blue water	Clifton Springs (1)
Air in water (white water)	Lovely Banks (5) Montpellier (4) Apollo Bay (4)
Suspected illness	Portarlington (2) Montpellier (1) Pettavel (1)
Other	Ocean Grove (66) Queenscliff (15) Colac (2)

Central Highlands Water

Head office: Ballarat



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Localities supplied with drinking water: Alma, Avoca, Ballan, Ballarat Central, Ballarat North/Nerrina, Beaufort, Bet Bet/Simson/Havelock, Blackwood/Barry’s Reef, Bungaree/Wallace, Buninyong/Mount Helen, Cardigan Village, Carisbrook, Clunes, Creswick, Daisy Hill, Daylesford High Level, Daylesford Low Level/Hepburn, Dean, Enfield, Fiskville/Glenmore, Gordon/Mount Egerton, Haddon, Kingston/Smeaton, Lal Lal, Learmonth, Lexton, Linton, Majorca/Craigie, Maryborough, Napoleons, Newlyn/Springmount, Sebastopol, Skipton, Smythesdale, Talbot, Timor/Bowenvale, Waubra, Wendouree

Towns supplied with non-potable (non-drinking) water:

Amphitheatre, Landsborough/Navarre, Raglan and Redbank

Population supplied with drinking water: approximately 115,480

Assessment against benchmark standards (drinking water supplies only)

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Beaufort, Clunes
Trihalomethanes	Alma, Avoca, Bet Bet/Simson/Havelock, Carisbrook, Daisy Hill, Lexton, Majorca/Craigie, Maryborough, Talbot and Timor/Bowenvale

In March 2005, a new water supply was introduced to the township of Clunes, which had previously received un-disinfected water. The Clunes upgrade project involved the introduction of a new groundwater supply and construction of a new water filtration and disinfection plant. Since the new supply has been in place, increased pumping pressures have caused major bursts on old water mains located at the end of the Clunes system, resulting in ingress of potentially contaminated material from surrounding farmland. As a result of these main bursts, *Escherichia coli* has been detected on numerous occasions in the drinking water. In order to minimise the risk of burst mains and rectify the *Escherichia coli* issues, Central Highlands Water has initiated the replacement of the old mains with new smaller diameter high-pressure mains in one section of the Clunes water supply system. Central Highlands Water has implemented a boil water recommendation as a precautionary measure, which is to remain in place until the improvement works have been completed.

In April 2005, a new water supply was introduced to the township of Beaufort, which had previously received un-disinfected water. The Beaufort upgrade project involved the construction of a new water filtration and disinfection plant which adopts a non-chemical disinfection approach using ultraviolet. The system is subject to a trial period during which time Central Highlands Water will assess the effectiveness of the system and evaluate established maintenance, treatment and operational regimes. Central Highlands Water has implemented a boil water recommendation as a precautionary measure, which is to remain in place until the system can meet the *Escherichia coli* standard. Central Highlands Water and the department are working towards having an undertaking in place to address the *Escherichia coli* issues in the water supplied to Beaufort.

Central Highlands Water and the department are also working towards having undertakings in place to address the trihalomethane issues in the localities listed above.

Other water quality issues of potential health significance

The Fiskville/Glenmore locality did not meet the 2004 Australian Drinking Water Guidelines health related guideline value of 0.01 mg/L for lead. The maximum recorded concentration of lead was 0.02 mg/L. Central Highlands Water has indicated that this result is not typical for this locality and will continue to closely monitor the system.

As indicated above, Central Highlands Water manages a number of non-potable (non-drinking) water supplies in its region. Central Highlands Water is developing a program that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply.

Water quality incidents and events

During 2004-05, the following water quality incidents occurred:

Date	Supply	Issue	Action(s)
November 2004	Smythesdale	<i>E. coli</i> detection	Tilligs Road tank isolated, drained and refilled. Re-sampling undertaken.
June 2005	Rowsley (Fiskville/Glenmore supply)	<i>E. coli</i> detection	A boil water notice was issued to customers, flushing undertaken, system inspected and additional chlorine added to the system

For further information on the water quality incidents listed above please refer to Central Highlands Water's annual drinking water quality report.

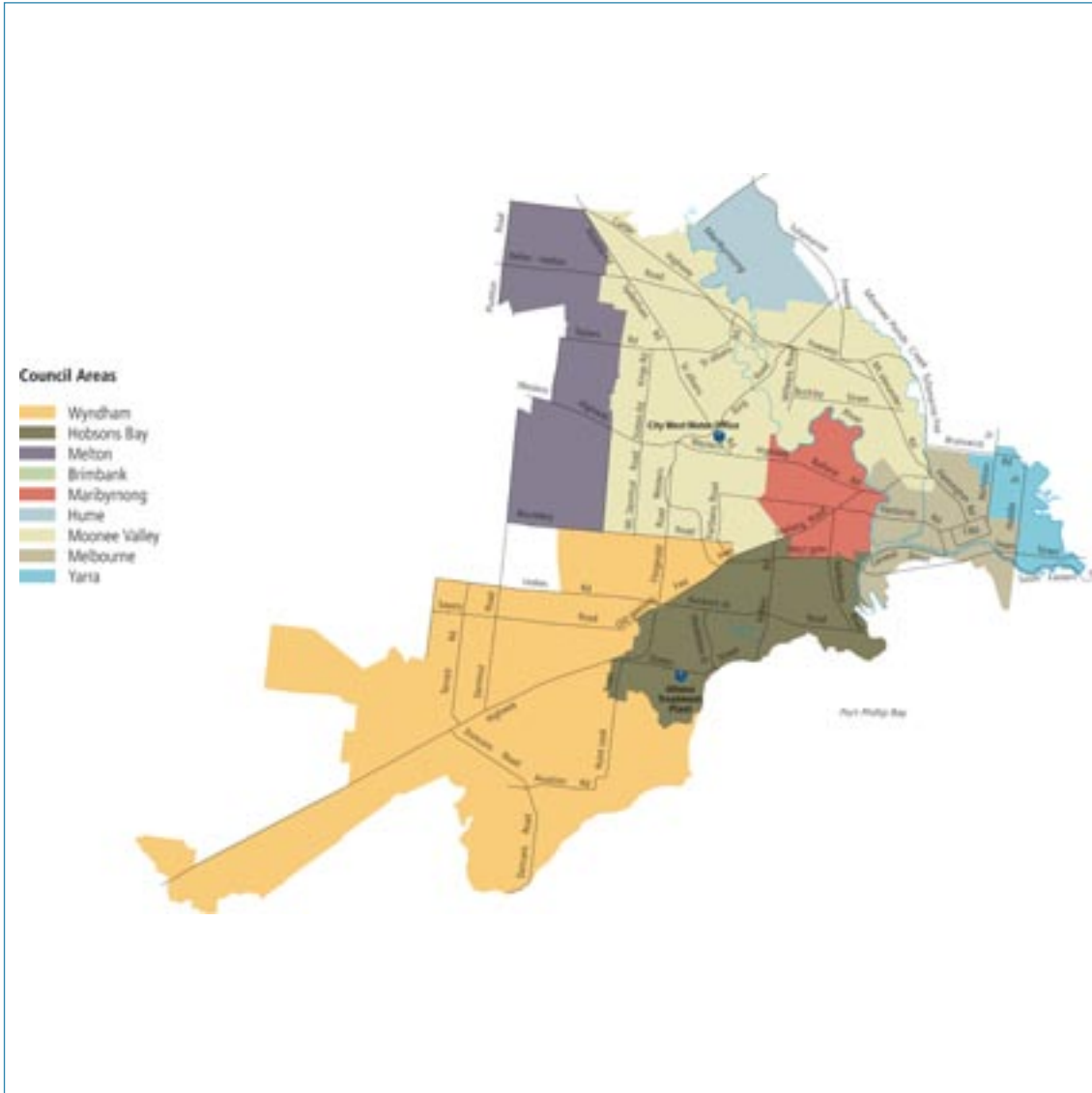
Customer complaints related to water quality

A summary of the customer complaints on water quality that were recorded by Central Highlands Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	116	Maryborough	Ballarat	Clunes
Taste/odour	24	Maryborough	Clunes	Landsborough
Blue water	0	-	-	-
Air in water	11	Ballarat	Maryborough	Waubra
Suspected illness	6	Clunes	Maryborough	Avoca
Other	26	Forest Hill	Ballarat	Avoca

City West Water

Head office: Sunshine



Map prepared by, and used with permission of, City West Water Limited

Localities supplied with drinking water:

Altona, Coburg, East Keilor, Footscray, North Melbourne, Richmond, St Albans, Sydenham, Tullamarine, Werribee South, Werribee

Population supplied with drinking water: approximately 623,402

Assessment against benchmark standards

All localities attained the draft drinking water quality standards that were monitored during 2004-05.

Ozone is not used either by City West Water or Melbourne Water as a treatment chemical therefore bromate and formaldehyde were not required to be monitored at the frequencies specified in Schedule 2 of the Safe Drinking Water Regulations.

Other water quality issues of potential health significance

No other parameters measured by City West Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Action(s)
November 2004	Carlton/Parkville to Williamstown/Altona	Taste and Odour	No immediate follow-up action required, problem self-limiting.
February 2005	Airport West to St Albans	Taste and Odour	No immediate follow-up action required, problem self-limiting.
May 2005	Werribee	Detection of other pathogen (Cryptosporidium)	System checked for cross-connections and re-sampled. Re-sample was free of oocysts. ^a
June 2005	Little River	<i>E. coli</i> detection	Elevated tank isolated from the supply and spot dosed with sodium hypochlorite. Re-samples were clear of <i>Escherichia coli</i> .
June 2005	Essendon	<i>E. coli</i> detection	System flushed and re-sampled, until free of <i>E. coli</i> . Second set of re-samples free of <i>E. coli</i> .

a - Notified to the department under the Health (Infectious Diseases) Regulations 2001.

Customer complaints related to water quality

City West Water records its customer complaints in five broad categories: discoloured water, suspected illness, white water, blue-green water and taste/odour.

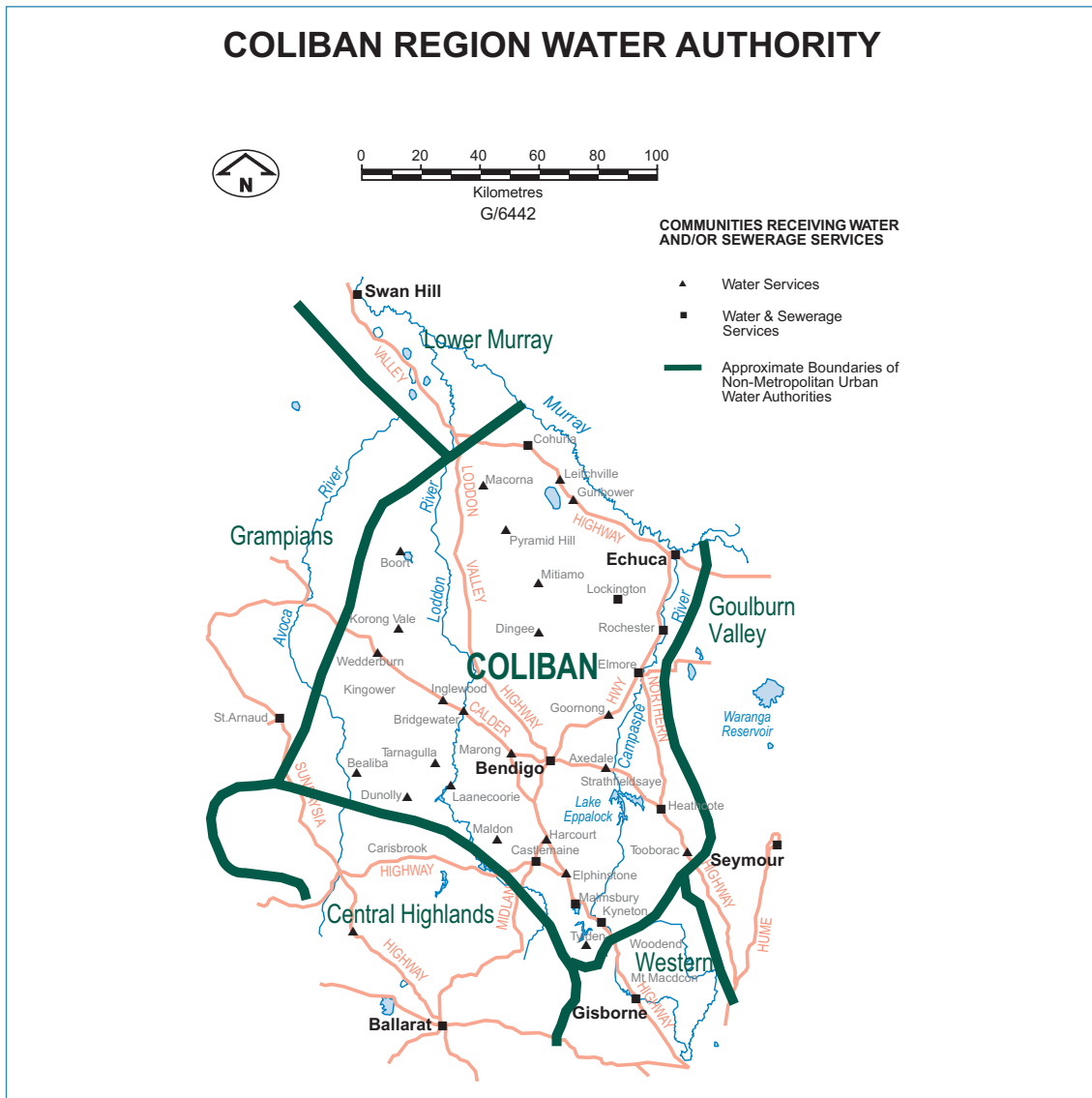
City West Water received 404 complaints during 2004-2005 (1.3 complaints/1000 properties), which was an increase compared to the previous two years. The distribution of complaints generally reflects population size, in that the three most populous localities had the highest number of complaints. Of these 404 complaints, 174 of them were received as a result of the two taste/odour incidents described above. The table below gives a breakdown of the complaints.

(Table Overleaf)

Complaint category	Localities with the greatest number of complaints
Discoloured water	North Melbourne (64), Sydenham (28), Footscray (13)
Suspected illness	Footscray (2)
White water	North Melbourne (9), Footscray (4), Werribee (2)
Blue-green water	North Melbourne (3), Richmond (3), Sydenham (2)
Taste/odour	North Melbourne (82), Footscray (86), Werribee (20)

Coliban Water

Head office: Bendigo



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Axedale, Bealiba, Belvoir Park, Big Hill, Boort, Bridgewater, Castlemaine, Chewton, Cohuna, Dunolly, Echuca, Edwards Road, Elmore, Fryerstown, Goornong, Guildford, Gunbower, Harcourt, Heathcote, Huntly, Inglewood, Junortoun, Korong Vale, Kyneton, Laanecoorie, Leitchville, Lockington, Maldon, Malmsbury, Marong, Newstead, Park Valley, Pyramid Hill, Raywood, Rochester, Sandhurst, Serpentine, Specimen Hill, Taradale/Elphinstone, Tarnagulla, Tooborac, Trentham, Tylden, Wedderburn

Towns supplied with non-potable (non-drinking) water:

Borong, Dingee, Jarklin, Macorna, Mitiamo, Mysia, Sebastian and Wychitella

Population supplied with drinking water: approximately 117,170

Assessment against benchmark standards (drinking water supplies only)

Coliban Water monitored for six of the nine water quality standards within all of its forty-four localities. Bromate and formaldehyde were monitored for in localities treated with ozone, which include Belvoir Park, Big Hill, Castlemaine, Chewton, Edwards Road, Fryerstown, Guildford, Harcourt, Huntly, Kyneton, Maldon, Malmsbury, Marong, Newstead, Park Valley, Sandhurst, Specimen Hill, Strathfieldsaye, Taradale/Elphinstone, Trentham and Tylden. Aluminium was monitored for in all localities with the exception of Elmore, Gunbower, Tooborac and Trentham, where alum is not used in the treatment process.

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Serpentine, Tooborac
Aluminium	Axedale, Heathcote
Trihalomethanes	Axedale, Bealiba, Bridgewater, Goornong, Inglewood, Serpentine, Tooborac
Trichloroacetic acid	Tooborac

Exceeding values for trihalomethanes were recorded at Serpentine, Goornong, Bridgewater and Inglewood, and for *Escherichia coli* at Serpentine during 2004-05. In order to rectify the failure to attain the draft standards for water supplied to these localities, Coliban Water will install ammonia-dosing systems to reduce the potential for trihalomethane production and to provide more persistent chlorine residual to the systems.

Exceeding values for trihalomethanes were also recorded at Tooborac and Axedale during 2004-05. Exceeding values for aluminium were recorded at Axedale, and for trichloroacetic acid and *Escherichia coli* at Tooborac. In order to rectify the failure to attain the draft standards for water supplied to Tooborac, the water treatment plant at Tooborac will be decommissioned and replaced with a pipeline from the Heathcote reticulation system. In order to rectify the failure to attain the draft standards for water supplied to Axedale, the water treatment plant at Axedale will be decommissioned and replaced with a pipeline from the Bendigo reticulation system at Junortoun.

With regard to Heathcote, in early February 2005 Coliban Water had a failure of the water treatment process at the Heathcote water treatment plant. The failure resulted in coagulant, containing aluminium salts, being added to the water twice, resulting in the delivery of water to the Heathcote reticulation system that was high in aluminium. Details of the actions taken to rectify the exceeding values for aluminium are included in the Water Quality Incidents and Events section below.

With regard to Bealiba, exceeding values for trihalomethanes are likely to have resulted from overdosing of chlorine during the commissioning and evaluation phase of a booster chlorine dosing facility that was installed at Bealiba in October 2004. The system is now considered to be operating reliably.

Other water quality issues of potential health significance

As indicated above, Coliban Water manages a number of non-potable (non-drinking) water towns in its region. Water supplied to these towns was recently declared as regulated water under section 6 of the Act. Coliban Water is developing a program that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply.

Water quality incidents and events

During 2004-05, the following water quality incidents occurred:

Date	Supply	Issue	Actions
December 2004	Serpentine	<i>E. coli</i> detection	Re-samples collected. No further <i>E. coli</i> detected.
January 2005	Bealiba	<i>E. coli</i> detection	Re-samples collected. No further <i>E. coli</i> detected.
February 2005	Inglewood	<i>E. coli</i> detection	Re-samples collected. No further <i>E. coli</i> detected.
February 2005	Tooborac	<i>E. coli</i> detection	Re-samples collected. No further <i>E. coli</i> detected.
February 2005	Heathcote	High aluminium, high turbidity and low pH	Water treatment plant taken offline, clear water storage isolated and drained and standby clear water storage utilised. Flushing of reticulation system and notification of customers. A leak on raw water main was located and repaired. In addition backflow prevention valve installed on water treatment delivery pipe.
April 2005	Tooborac	<i>E. coli</i> detection	Re-samples collected. No further <i>E. coli</i> detected.

Customer complaints related to water quality

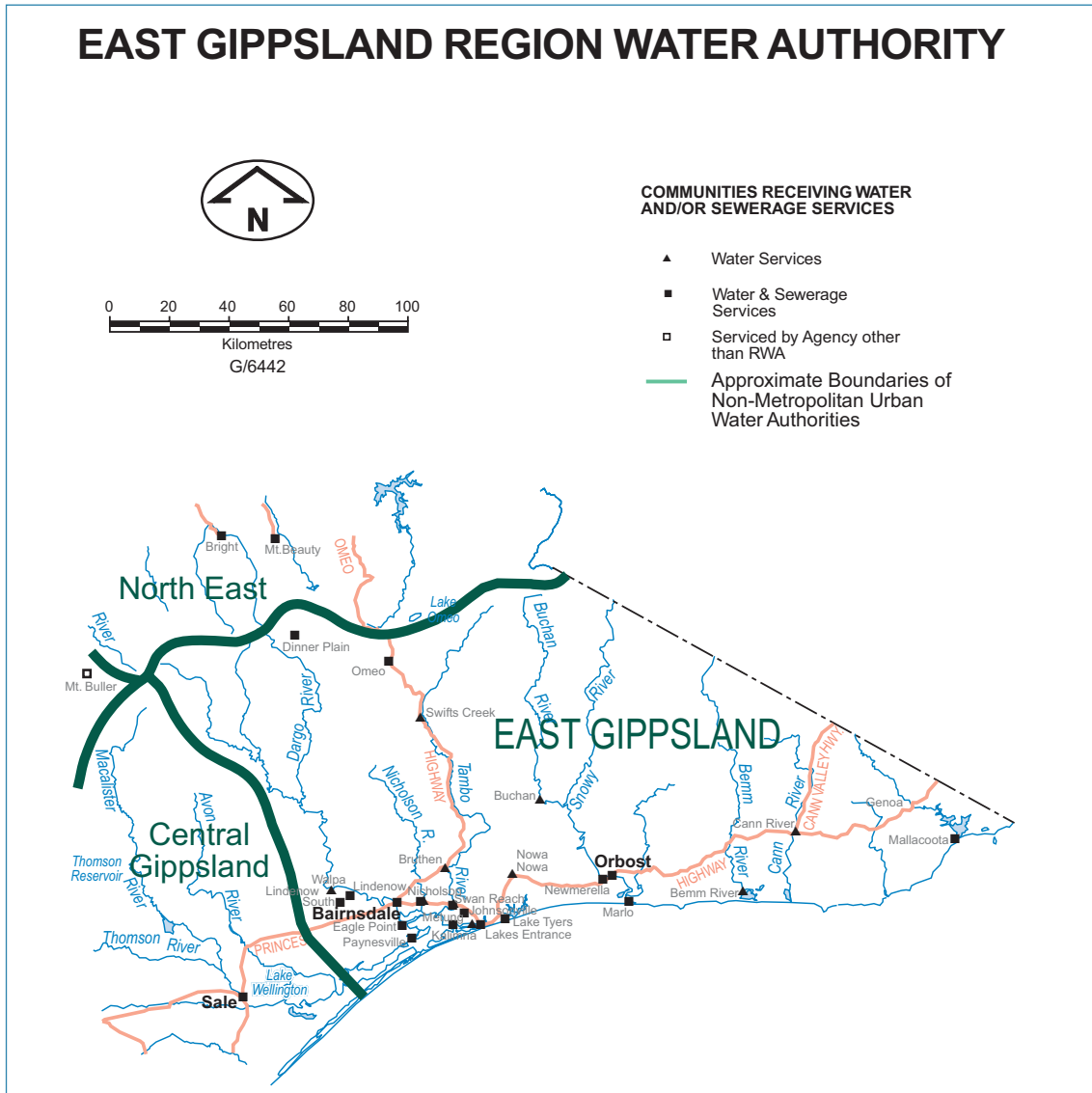
A summary of the customer complaints on water quality that were recorded by Coliban Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	166	Bendigo*	Echuca	Heathcote
Taste/odour	48	Heathcote	Bendigo	Elmore
Odour	66	Bendigo	Heathcote	Inglewood

* Bendigo includes the localities of Belvoir Park, Big Hill, Edwards Rd Tank, Huntly, Marong, Sandhurst, Specimen Hill & Strathfieldsaye

East Gippsland Water

Head office: Bairnsdale



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Bairnsdale, Bemm River, Buchan, Cann River, Dinner Plain, Eagle Point High Level, Kalimna, Lindenow, Lindenow South, Mallacoota, Merrangbaur, Metung, Nicholson - Swan Reach, Nowa Nowa, Omeo, Orbest, Paynesville - Grandview Rd, Sarsfield - Bruthen, Sunlakes - Toorloo, Swifts Creek

Population supplied with drinking water: approximately 37,130

Assessment against benchmark standards

All localities attained the draft drinking water quality standards monitored during 2004-05.

East Gippsland Water does not use ozone as a treatment chemical, therefore bromate and

formaldehyde were not required to be monitored.

Other water quality issues of potential health significance

Chlorine dioxide is used as a disinfectant in three of East Gippsland Water's towns, Bemm River, Nowa Nowa and Swifts Creek. All three towns did not meet the health-based standard for chlorite (0.3 mg/L) during 2004-05 (data from November 2004 to June 2005). East Gippsland Water has undertaken extensive trials to minimise chlorite production. Results to date suggest that reducing the dose of chlorine dioxide compromises disinfection effectiveness. To minimise the risk to consumers, East Gippsland Water have planned to install full water treatment plants that will utilise chlorine rather than chlorine dioxide at Bemm River and Swifts Creek and a new source for Nowa Nowa within the next 18 months.

Water quality incidents and events

During 2004-05, the following water quality incident occurred:

Date	Supply	Issue	Actions
December 2004	Cann River	<i>E. coli</i> detection	Re-samples collected. No further <i>Escherichia coli</i> detected.

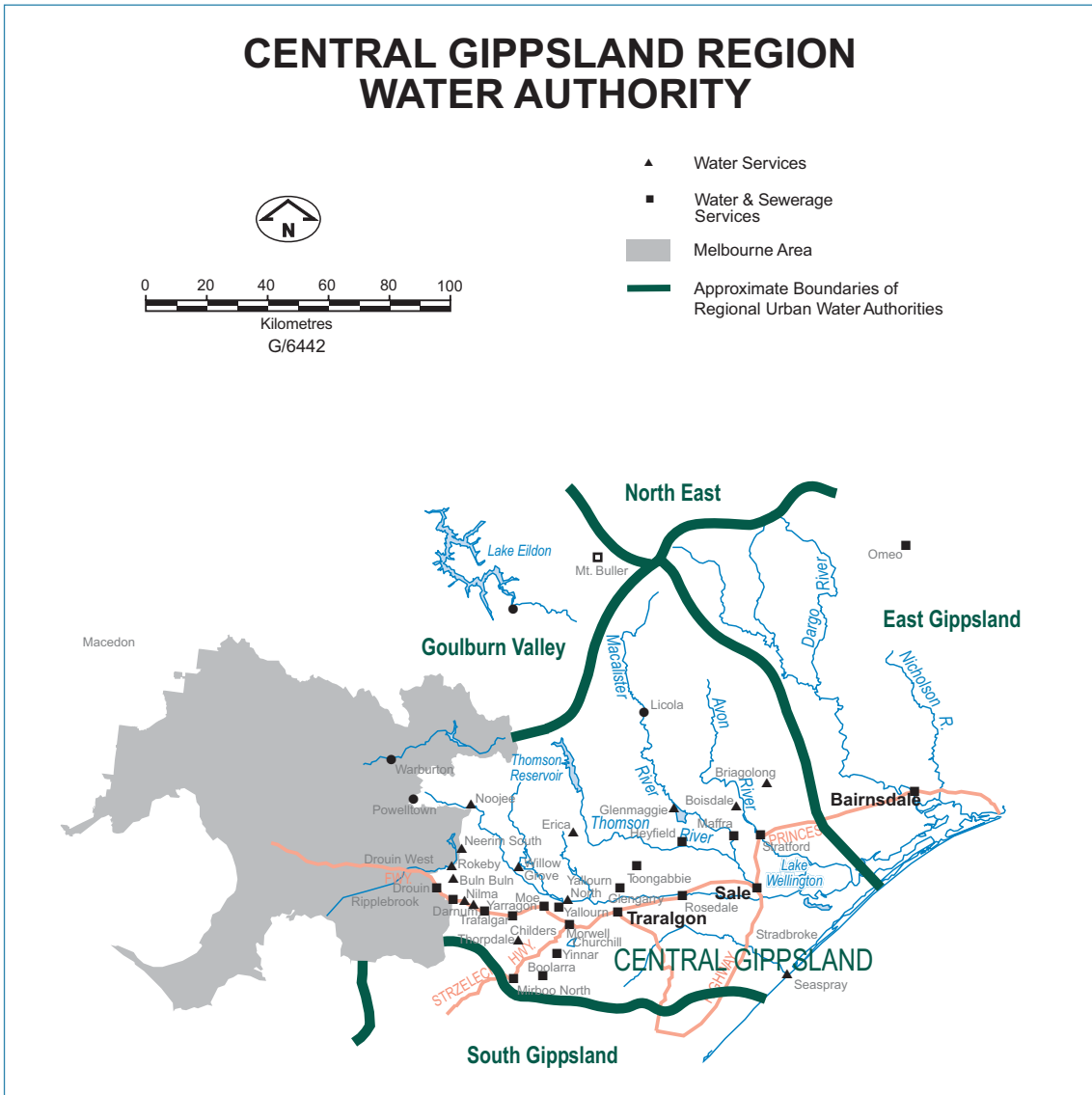
Customer complaints related to water quality

East Gippsland Water records its customer complaints in seven broad categories: dirty water, taste/odour – chlorine, taste/odour – not chlorine, (eg earthy, musty etcetera), white water, Coloured water (for example yellow, red, brown), weeds (Bryozoans, slimes, moulds) and water quality others. There were a total of 71 water quality complaints during 2004-05. The majority of complaints were around dirty water.

Complaint category	Localities with the greatest number of complaints
Dirty water	Bairnsdale (9), Paynesville-Grandview Rd (4)
Taste/odour - chlorine	Bairnsdale (4), Paynesville-Grandview Rd (3) Sunlakes-Toorloo (2)
Taste/odour – not chlorine	Sunlakes-Toorloo (3), Eagle Point High Level (3)
White water – air bubbles	Bairnsdale (4), Metung (3), Bruthen-Sarsfield (2)
Coloured water (for example yellow, red, brown)	Bairnsdale (4), Sunlakes-Toorloo (2)
Weeds (Bryozoans, slimes, moulds) – loss of pressure due to blocked water meters	Paynesville-Grandview Rd (2)
Water quality others (medical health complaint, corrosion issues)	Sunlakes-Toorloo (2), Bairnsdale (2)

Gippsland Water

Head office: Traralgon



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Boisdale, Boolarra, Briagolong, Churchill, Coongulla and Glenmaggie, Cowwarr, Drouin, Erica, Glen Garrary, Heyfield, Jumbuk, Maffra, Mirboo North, Moe, Morwell, Neerim South, Newborough, Noojee, Rawson, Rokeby and Buln Buln, Rosedale, Sale/Wurruk, Seaspray, Stratford, Thorpdale, Toongabbie, Traralgon, Trafalgar, Traralgon South and Hazelwood North, Tyres, Warragul, Warragul South/Nilma/Darnum, Willow Grove, Yallourn North, Yarragon, Yinnar

Population supplied with drinking water: approximately 110,700

Assessment against benchmark standards

All localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
Dichloroacetic acid	Rawson
Trichloroacetic acid	Rawson

To solve the problem of disinfection by-product formation in the Rawson supply, Gippsland Water will be constructing a new water treatment plant to service the Erica/Rawson localities. The new treatment plant is scheduled to be operational by late 2006/early 2007.

With regard to aluminium, during 2004-05, all samples collected during the reporting period were analysed for total aluminium, not acid-soluble aluminium, as is required under the draft water quality standard. Several towns (Churchill, Jumbuk, Maffra, Morwell, Rokeby/Buln Buln, Rosedale, Stratford, Toongabbie, Traralgon South/Hazelwood North, Tyers, Yinnar) were found to have elevated total aluminium results, in excess of the acid-soluble standard of 0.2 mg/L. On the same sample, total aluminium is always higher than acid-soluble aluminium. As acid-soluble aluminium is a usually significantly lower than total aluminium, it is likely that all the above towns achieved the draft standard, but this cannot be stated categorically. Gippsland Water has subsequently moved to acid soluble testing.

Other water quality issues of potential health significance

No other parameters measured by Gippsland Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality events and incidents

During 2004-05, the following water quality incidents occurred:

Date	Supply	Issue	Actions
December 2004	Jumbuk	<i>E. coli</i> detection	Jumbuk tank isolated, drained and refilled. Reticulation flushed.
June 2005	Maffra	Elevated aluminium levels in reticulation system as result of cross-connection	Cross-connection fixed, reticulation system flushed.

For further information on the water quality incidents listed above please refer to Gippsland Water's annual drinking water quality report.

Customer complaints related to water quality

Gippsland Water records its customer complaints in three broad categories: taste and odour problems, dirty water and air in pipes. The towns that recorded the most customer complaints per category are presented in the table below.

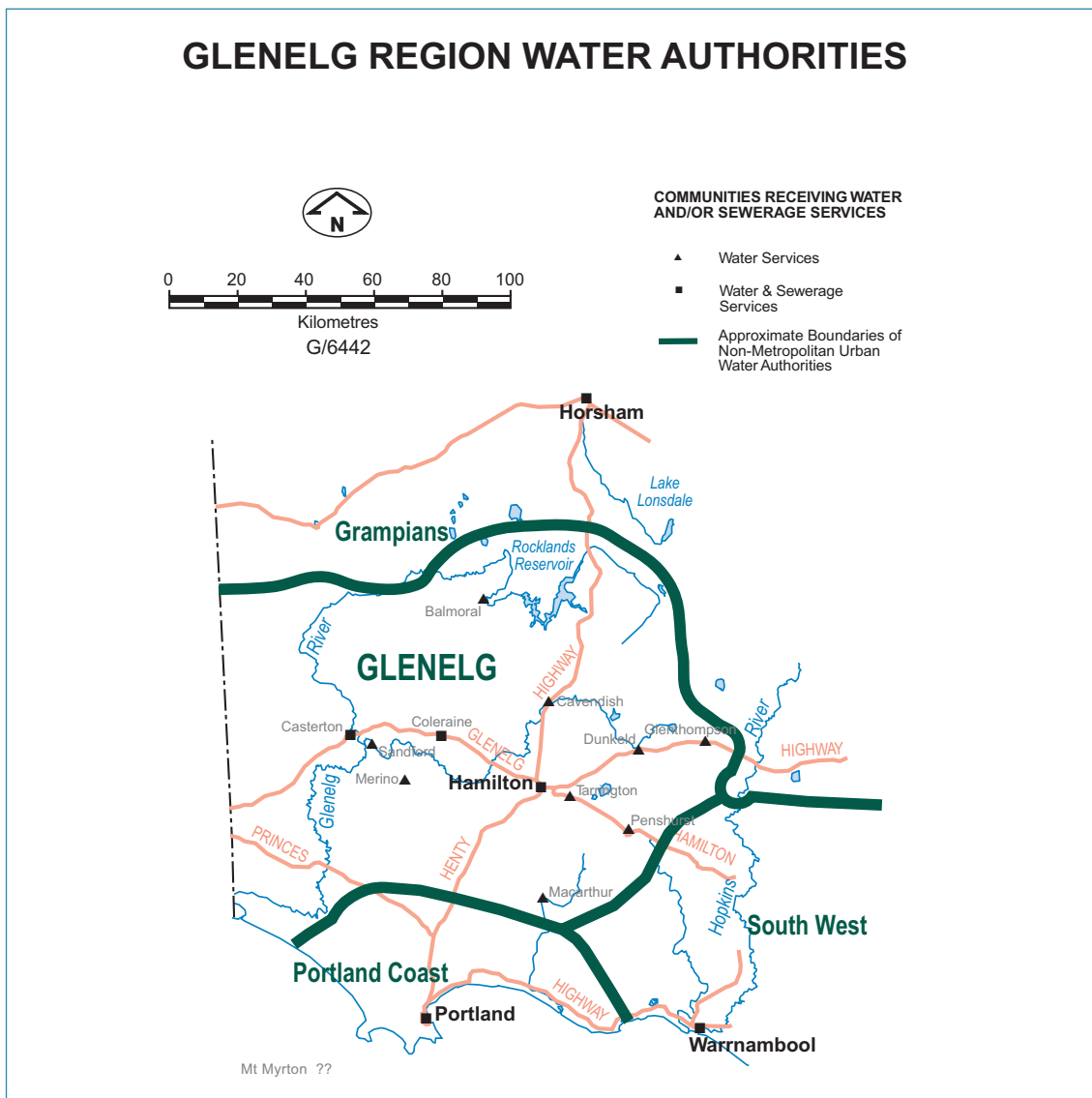
Complaint category	Localities with the greatest number of complaints
Taste and odour	Sale/Wurruk (6), Traralgon (2), Morwell (2), Maffra (2)
Dirty water	Bairnsdale (4), Paynesville-Grandview Rd (3) Sunlakes-Toorloo (2)
Air in pipes	Traralgon (8), Maffra (5), Warragul (3)

For period August 2004 to June 2005

Glenelg Water

Now Wannon Water, Hamilton Zone

Head Office: Hamilton



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Balmoral, Casterton, Cavendish, Coleraine, Dunkeld, Glenthompson, Hamilton, Macarthur, Merino, Penhurst, Sandford and Tarrington.

Population supplied with drinking water: approximately 14,290

Assessment against benchmark standards

All localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
Trihalomethanes	Balmoral, Coleraine, Glenthompson
Trichloroacetic acid	Balmoral

Ozone was not used to disinfect water supplied by the former Glenelg Water during 2004-05, therefore bromate and formaldehyde were not required to be monitored at the frequencies set out in the draft regulations.

Exceeding values for trihalomethanes were recorded at Balmoral, Coleraine and Glenthompson and for trichloroacetic acid at Balmoral. A high level of organic matter present in the source water leads to the formation of such by-products. This problem was identified in the risk assessment of water supplies and capital expenditure has been allocated to improve the quality. This will be done by installing full treatment at Balmoral and constructing a new pipeline to Coleraine to provide water from the Tullich bore field. Glenthompson has full treatment so trials have been conducted to optimize the plant. In addition, funds have been allocated to fully enclose the treatment system to further improve the quality.

Although the overall data for Cavendish and Merino satisfied the standard for turbidity, exceeding values for turbidity were recorded at these unfiltered supplies. This problem was identified in the risk assessment of water supplies and capital expenditure has been allocated to improve the quality. Full treatment of the Cavendish supply has been scheduled and an alternative water source for Merino now exists.

For detailed water quality data please refer to the annual drinking water report for the former Glenelg Water, published by Wannon Water.

Other water quality issues of potential health significance

The drinking water supplies for Merino and Macarthur exceeded the health-related guideline value levels for arsenic set out in the 2004 Australian Drinking Water Guidelines.

Due to the elevated arsenic levels within the Merino supply an alternative source of water has been sought. Wannon Water has advised the department that Merino's drinking water supply will come from the Casterton supply system as of December 2005.

Detailed investigations were undertaken during the year to optimise the Macarthur water treatment plant in an attempt to meet the guideline limit. The current performance of the plant is now unacceptable to produce a safe quality drinking water to be consumed over a lifetime. Wannon Water is currently discussing the issue with the Department to find the most appropriate solution for the community.

No other parameters measured by the former Glenelg Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in the 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Actions
December 2004	Balmoral	<i>E. coli</i> detection	Very low chlorine residual - loss of disinfection was due to the sampling location being on the extremity of the supply network, hence, little flow and disinfection replenishment. Glenelg Water increased the chlorine dosing to ensure a residual throughout and conducted additional samples.
March 2005	Balmoral	Chlorinator failure	The supporting structure of the sodium hypochlorite (disinfectant) tank failed, causing the pipe work delivering the disinfectant to break. Additional disinfectant and dosing equipment was sought immediately however, due to the location of the township and the night time conditions (heavy fog) the town was without disinfection for five hours. The mains were thoroughly flushed until an adequate level of disinfection was achieved. Resampling results showed an absence of <i>Escherichia coli</i> .
June 2005	Coleraine	Chlorinator failure and <i>E. coli</i> detection	Loss of disinfection from a main break in a unique location of the supply network creating a pressure issue at the disinfection point. Wannon Water has advised that the procedures have since been modified. Resampling results showed an absence of <i>Escherichia coli</i> .

For further information on the water quality incidents and events listed above please refer to the annual drinking water report for the former Glenelg Water, published by the merged entity Wannon Water.

Customer complaints related to water quality

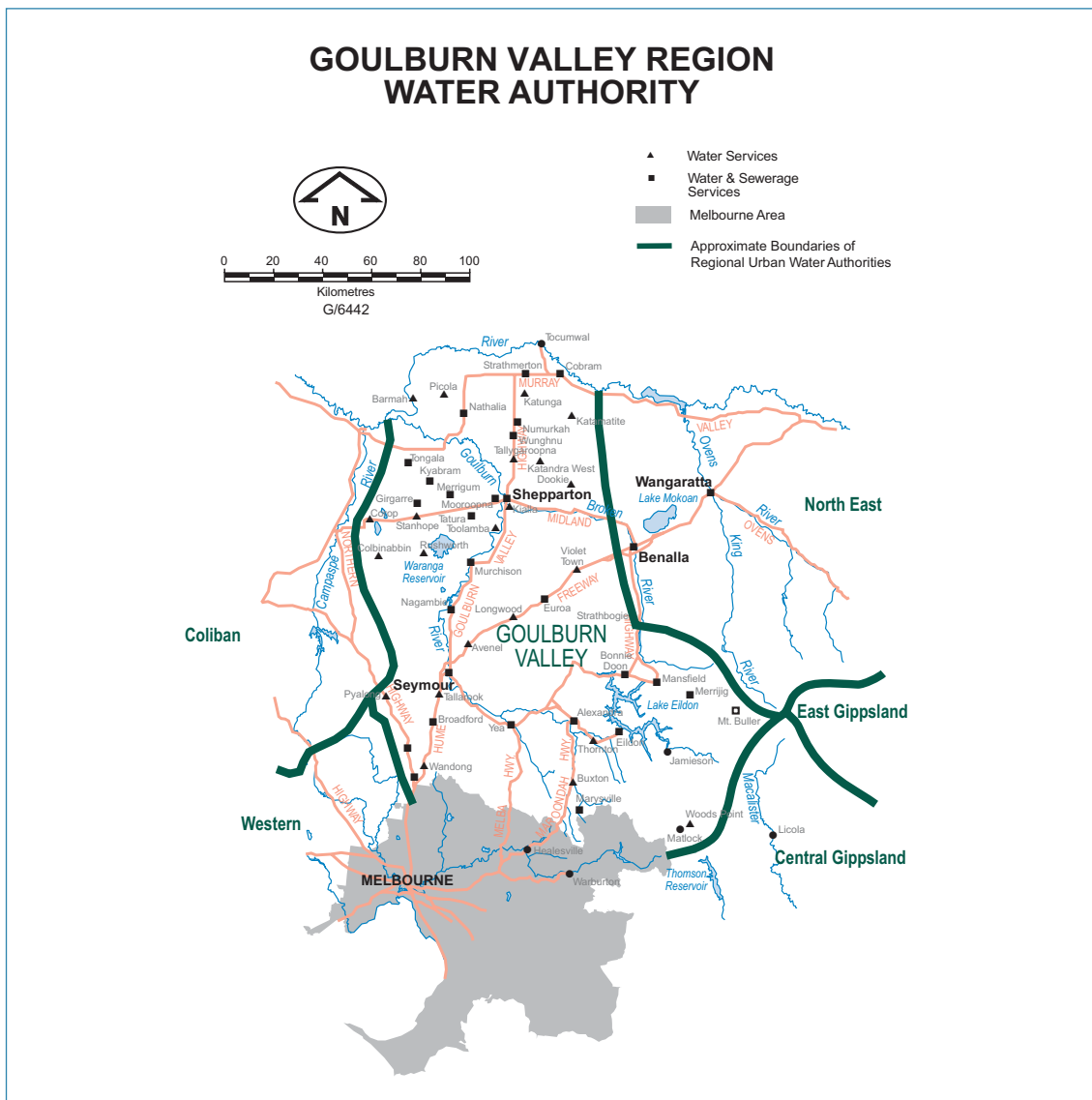
A comprehensive town by town summary of the customer complaints related to water quality that were recorded during the reporting period can be found in the annual drinking water report for the former Glenelg Water, published by the merged entity Wannon Water.

Date	Incident Type	Issue	Actions
5 July 2004	Spill/emission	A passerby observed an oil slick in the Murray River 5km downstream of Echuca.	Echuca Country Fire Association (CFA) advised by Goulburn Murray Water of the oil slick. CFA carried out an inspection the following day and observed no significant spill. CFA contacted NSW Environment Protection Agency (EPA) and Murray Water who were to conduct further investigations.
March 2005	Spill/emission	Effluent observed from knackery holding pond overtopping onto creek frontage. There was concern that if the creek increased flow to a sufficient level or if further rain is experienced then contamination could occur.	The Victorian EPA (Wangaratta) office was contacted by Goulburn Murray Water. EPA handled the issue and dealt with the licence holder.
24 September 2004	Spill/emission	Central Highlands Water informed Goulburn Murray Water that they were to commence the release of approximately 2 ML/d treated sewage into Jim Crow Creek as part of a Victorian EPA approved emergency discharge from their Daylesford wastewater treatment plant.	A full report including monitoring results was forwarded to Goulburn Murray Water by Central Highlands Water. A list of downstream users was compiled by Goulburn Murray Water in case users needed to be notified of the changes in water quality. All monitoring results were found acceptable by the Victorian EPA.
1 November 2004	Reported illness	Reported that three people with gastro were admitted to Shepparton Hospital after eating red fin caught at Lake Nagambie. Goulburn Murray Water notified the department.	Goulburn Murray Water notified the department who investigated the incident. Goulburn Valley Water forwarded their regular monitoring data as they have an off-take in the vicinity. Goulburn Murray Water erected signage that advised users not to eat fish caught from the lake.
6 January 2005	Reported illness	Two children developed rashes and elevated temperatures the day after waterskiing in Lake Nagambie.	Goulburn Murray Water notified the department of the incident, who then investigated. Water samples taken by Goulburn Murray Water were tested for blue green algae. Samples indicated rare abundance of blue green algae. The department concluded that the symptoms were more likely related to a virus than to water quality.
9 February 2005	Stock or wildlife health	Two dead sheep were found in the 7/3 channel, belonging to a farmer.	Goulburn Murray Water spoke to the farmer who arranged for the removal of the sheep.
22 February 2005	Stock or wildlife health	Significant rainfall in early February produced a minor flood on the Broken Creek. This flood caused very poor water quality and as a result, dead fish and yabbies were reported (approximately 1 cod, 4 yellow belly and 70 red fin).	Goulburn Murray Water advised customers of the issue. Water quality monitoring was conducted and additional flows were allowed to pass through the system.

Date	Incident Type	Issue	Actions
2 May 2005	Stock or wildlife health	A dead red fin was noticed on the upstream side of the east abutment of the Goulburn Weir. It was also advised that the water in the area was covered with brown scum.	Goulburn Murray Water removed fish and sent it to Department of Primary Industries (DPI) for analysis. A water sample was taken at the location and testing for blue-green algae was undertaken. The department and North-east Victorian EPA were notified of the incident.
30 April 2005	Spill/emission	Issue: 10 Kilolitres of sewerage went into Jack in the Box Creek, Wodonga via a stormwater drain.	North East Water notified Victorian EPA, Goulburn Murray Water and customer downstream. North East Water has implemented works to prevent occurrence of such incidents in the future.

Goulburn Valley Water

Head office: Shepparton



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Alexandra, Avenel, Barmah, Bonnie Doon, Broadford, Buxton, Cobram, Colbinabbin, Dookie, Eildon, Euroa, Girgarre, Katamatite, Katandra West, Katunga, Kilmore, Kyabram, Longwood, Mansfield, Marysville, Merrigum, Mooroopna, Murchison, Nagambie, Nathalia, Numurkah, Picola, Pyalong, Rushworth, Seymour, Shepparton, Stanhope, Strathmerton, Tallarook, Tallygaroopna, Tatura, Thornton, Tongala, Toolamba, Upper Delatite, Violet Town, Wallan, Wandong-Heathcote Junction, Waterford Park, Wunghnu, Yea, Yarroweyah¹³

Towns supplied with non-potable (non-drinking) water: Corop, Goulburn Weir, Kirwan’s Bridge, Molesworth, Strathbogie, Woods Point.

13 - In May 2005, a new water supply was introduced to Yarroweyah, which had previously received un-disinfected water

Population supplied with drinking water: approximately 121,400

Assessment against benchmark standards (drinking water supplies only)

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
Dichloroacetic acid	Numurkah
Trichloroacetic acid	Numurkah and Thornton
Trihalomethanes	Broadford, Nathalia, Numurkah, Pyalong, Thornton and Waterford Park
Aluminium (acid soluble)	Barmah, Broadford, Colbinabbin, Euroa, Katandra West, Kilmore, Longwood, Nathalia, Numurkah, Thornton, Violet Town, Wandong-Heathcote Junction, Waterford Park, Wunghnu

During the reporting period, the two major water quality issues that Goulburn Valley Water faced were excessive levels of disinfection by-products and elevated levels of aluminium.

The department is working closely with Goulburn Valley Water to seek solutions to the water quality issues identified in the table above and to put in place undertakings where required.

Other water quality issues of potential health significance

The locality of Dookie recorded a single result that was above the health-related guideline for lead. The health-related guideline value is 0.01 mg/L, and the single result above the guideline value was 0.02 mg/L.

Upon investigation, Goulburn Valley Water attributed the elevated lead result obtained at Dookie to a sample anomaly, as the same sample also exhibited unusually elevated results for iron, copper and zinc. The source water, which was sampled on the same day and on subsequent occasions, revealed an absence of lead.

As indicated above, Goulburn Valley Water manages a number of non-potable (non-drinking) water supplies in its region. Goulburn Valley Water is developing a program that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply.

(Table Overleaf)

Water quality events and incidents

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Actions
September 2004	Stanhope and Colbinabbin	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
September 2004	Upper Delatite	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
November 2004	Numurkah	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
November 2004	Pyalong	Chlorinator failure	System manually dosed with chlorine, chlorinator repaired.
December 2004	Shepparton	<i>E. coli</i> detection	Investigation revealed that the sample had been taken from an incorrect location. A re-sample collected from the correct location was clear of <i>Escherichia coli</i> .
January 2005	Katunga and Strathmerton	Faecal Streptococcus detection	System inspected, follow-up samples collected, which were clear of Faecal Streptococcus.
February 2005	Girgarre, Stanhope, Tongala and Kyabram	<i>E. coli</i> detection	Heavy rains may have compromised systems. Follow-up samples taken, which were clear of <i>Escherichia coli</i> .
February 2005	Wallan	Taste and odour	Dinobryon and Peridinium, two common algal species known for producing strong tastes and odours were detected in drinking water. Supply was isolated and water was supplied from an alternate source until the algae disappeared.
March 2005	Wallan Reservoir	<i>E. coli</i> detection	Insufficient chlorine contact time at point of sampling. No <i>Escherichia coli</i> detected within Wallan reticulation.
April 2005	Shepparton	Failure of fluoride dosing system, leading to elevated fluoride levels.	Fault repaired, system flushed to remove water with excess fluoride.

More information on these events and incidents can be found in Goulburn Valley Water's annual drinking water quality report.

Customer complaints related to water quality

In its annual report, Goulburn Valley Water provided details on its customer complaints in five broad categories: discoloured water, taste and odour problems, blue water, air in pipes and alleged illness. The towns that recorded the most customer complaints per category are presented in the table below.

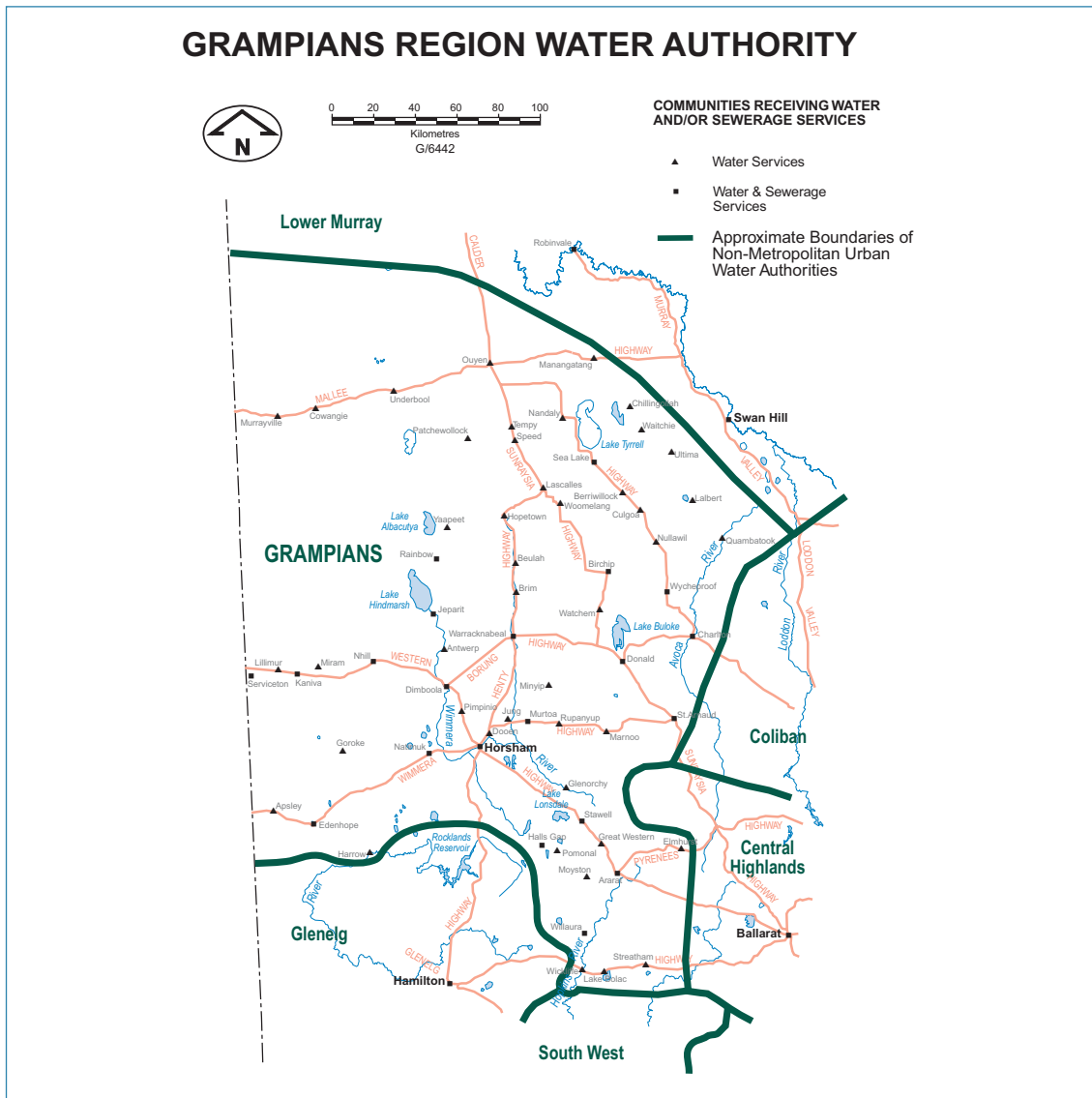
In its annual report to the Department of Human Services, Goulburn Valley Water made the point that the majority of complaints received were isolated in nature and were generally resolved by flushing water mains in the local area. They noted that two incidents resulted in customers experiencing water quality issues over a wider area. These were:

- An incident in Mansfield that resulted in turbid water throughout the township. A system wide flushing program was implemented which resolved the incident.
- Customers in Wallan experienced taste issues as a result of an algal bloom in the Pretty Sally Reservoir. This issue was quickly addressed by taking the reservoir out of service and supplying the township directly from the Wallan water treatment plant.

Complaint Category	Number of complaints	Localities with the greatest number of complaints (in order)
Taste and odour	54	Wallan, Shepparton, Kilmore
Discoloured water	199	Shepparton, Wallan, Mansfield
Air in pipes	21	Wallan, Buxton, Wandong
Blue water	0	-
Alleged illness	1	Cobram

Grampians Wimmera Mallee Water (GWM Water)

Head office: Horsham



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Ararat, Beulah, Birchip, Brim, Charlton, Dimboola, Donald, Edenhope, Great Western, Halls Gap, Hopetoun, Horsham, Jung, Lalbert, Manangatang, Minyip, Murrayville, Murtoa, Nullawil, Ouyen, Pomonal, Quambatook, Rainbow, Rupanyup, Sea Lake, St Arnaud, Stawell, Tait's Lane (Reids Lane), Ultima, Walpeup, Warracknabeal, Watchem, Woomelang and Wycheproof.

Towns and areas supplied with non-potable (non-drinking) water:

Antwerp, Apsley, Berriwillock, Buangor, Chillingollah, Chinkapook, Clear Lake, Cowangie, Culgoa, Doon, Elmhurst, Glenorchy, Goroike, Harrow, Jeparit, Kaniva, Kiata, Lake Bolac, Lascelles, Lillimur, Marnoo, Miram, Moyston, Nandaly, Natimuk, Nhill, Noradjuha, Patchewollock, Pimpinio, Serviceton, Speed, Streatham, Tarranyurk, Tempy, Underbool, Waitchie, Westmere, Wickliffe, Willaura, Yaapeet and a number of private diversion and irrigation schemes in the Wimmera Mallee region.

Population supplied with drinking water: approximately 45,290

Assessment against benchmark standards (drinking water supplies only)

All drinking water supplies attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Brim, Great Western, Hopetoun, Lalbert, Nullawil, Sea Lake, Woomelang
Trihalomethanes	Beulah, Birchip, Brim, Donald, Hopetoun, Jung, Lalbert, Minyip, Murtoa, Rupanyup, Warracknabeal, Woomelang, Wycheproof
Aluminium	Birchip, Hopetoun, Lalbert, Manangatang, Murtoa, Rainbow, Rupanyup, Ultima, Walpeup, Warracknabeal
Turbidity	Beulah, Jung, Lalbert, Manangatang, Minyip, Nullawil, Quambatook, Rupanyup, Sea Lake, Ultima, Watchem, Woomelang

In general, where drinking water supplies did not attain the draft *Escherichia coli* standard, this was caused by isolated instances where the disinfection system failed or was unable to cope with an adverse change in the quality of raw water, or where the sample was compromised in some way. Most of these supplies were only sampled monthly during 2004-05 rather than weekly (that is, 12 to 15 samples per annum rather than 52), so an individual detection had a more significant adverse effect on the annual percentage figure (usually around 92 per cent) than if the supplies were sampled more frequently.

Where supplies did not attain the draft trihalomethanes or aluminium standard, this was typically caused by intermittent instances where plant or equipment failure, build up of sludge in flocculation tanks or high raw water pH caused higher levels of aluminium or organic matter in the water, thus generating the higher sample results. Grampians Wimmera Mallee Water has advised that many of the aluminium results for 2004-05 were for total aluminium rather than acid-soluble aluminium, although the results are expected to have been similar for acid-soluble aluminium for the filtered supplies sampled.

Whilst all the failures to meet the draft standards identified above were undesirable, it should be noted that all of the instances of intermittent poor quality water were investigated by Grampians Wimmera Mallee Water, usually in conjunction with the department, to ensure that any risk to the quality of the supply was rapidly rectified. None of the higher aluminium results would be expected to have any health-related significance and intermittent exposure to trihalomethanes at the reported concentrations for these supplies was unlikely to pose a risk to public health.

Nevertheless, these water supply systems are being monitored more closely to determine if undertakings are necessary, if the problems identified in the table above persist. Grampians Wimmera Mallee Water has advised that many of the water quality problems identified in the supplies to these towns will be resolved once major works projects such as the Wimmera Mallee pipeline are completed.

For detailed water quality data please refer to Grampians Wimmera Mallee Water's annual drinking water quality report.

Other water quality issues of potential health significance

The drinking water supplies for Minyip and Murrayville exceeded the health-related guideline value level for arsenic (0.007 mg/L) set out in the 2004 Australian Drinking Water Guidelines.

Murrayville is a ground water supply with a history of arsenic levels of up to 0.014 mg/L. Grampians Wimmera Mallee Water has advised that a trial is being undertaken with several arsenic removal technologies using various resins and filter media. Traces of arsenic in the Minyip supply are suspected to originate from the rock beaching of the town storages. Grampians Wimmera Mallee Water has advised that this anomaly has only recently been discovered and is being investigated further.

Monitoring indicated that, other than the matters identified in the above, drinking water met the other health-related guideline values in the 2004 Australian Drinking Water Guidelines.

As indicated above, Grampians Wimmera Mallee Water also manages a number of non-potable (non-drinking) water supplies in its region, primarily for irrigation. Grampians Wimmera Mallee Water has developed a program of community consultation that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply and improvements are made where there is local community support for such improvements.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Actions
September 2004	Woomelang	<i>E. coli</i> detection	Blockage in service water pump affected chlorination. Pump fixed and affected area flushed.
September 2004	Lalbert	<i>E. coli</i> detection	Fault in chlorine injector or dosing system. Fault fixed and affected area flushed.
February 2005	Hopetoun	<i>E. coli</i> detection	Failure of chlorine flow pacing unit, boil water advisory issued. Affected tower super chlorinated. Re-samples taken. Reticulation flushed until appropriate chlorine residual reached.
February 2005	Hopetoun	<i>E. coli</i> detection	Possible issue with sample integrity. Re-samples taken and no additional <i>Escherichia coli</i> were detected.
April 2005	Brim	<i>E. coli</i> detection	Fault in disinfection system. Fault fixed and repeat samples were collected.
April 2005	Great Western	<i>E. coli</i> detection	Insufficient flushing after installation of new main. Affected area flushed. Re-samples taken and no additional <i>Escherichia coli</i> were detected.

Date	Supply	Issue	Actions
May 2005	Sea Lake	<i>E. coli</i> detection	Disinfection problem. Chlorine dose rate increased, and affected area flushed. chlorine residual reached.
May 2005	Nullawil	<i>E. coli</i> detection	Disinfection problem. Chlorine dose rate increased, and affected area flushed.
June 2005	Nullawil	<i>E. coli</i> detection	Disinfection problem. Preventative maintenance undertaken on disinfection system, free chlorine residual increased.

The intermittent high results for trihalomethanes, turbidity and aluminium as well as the intermittent detection of *Escherichia coli* in the drinking water supplies identified in the table above were all investigated by Grampians Wimmera Mallee Water.

Further to these incidents, an incident occurred in February 2005 in relation to a sample collected from Hopetoun that had high levels of *Escherichia coli* (200 organisms per 100 mL). The actions taken during the management of the incident included:

- boil water notices being issued by a "door knock" delivery by local customer response officers;
- an announcement of the boil water notice was made over local radio;
- the elevated water tower was inspected and the source of contamination identified;
- the tower was subsequently super-chlorinated and chlorine residuals were monitored;
- reticulation mains throughout the distribution system were flushed until adequate chlorine residuals were achieved;
- repeat samples were collected to ensure that that problem had been resolved before rescinding the boil water notice.

This incident generated some significant findings in relation to water treatment plant alarms, disinfection equipment improvement, operator training and optimisation of water treatment plant operation. Grampians Wimmera Mallee Water advised that it has, amongst other responses, reviewed its emergency management plans and further developed its boil water advisory notice (in conjunction with the department) for issue in an emergency.

For further information on the water quality incidents and events listed above please refer to Grampians Wimmera Mallee Water's annual drinking water quality report.

Customer complaints related to water quality

A summary of the customer complaints related to water quality that were recorded by Grampians Wimmera Mallee Water during the period is provided in the table below.

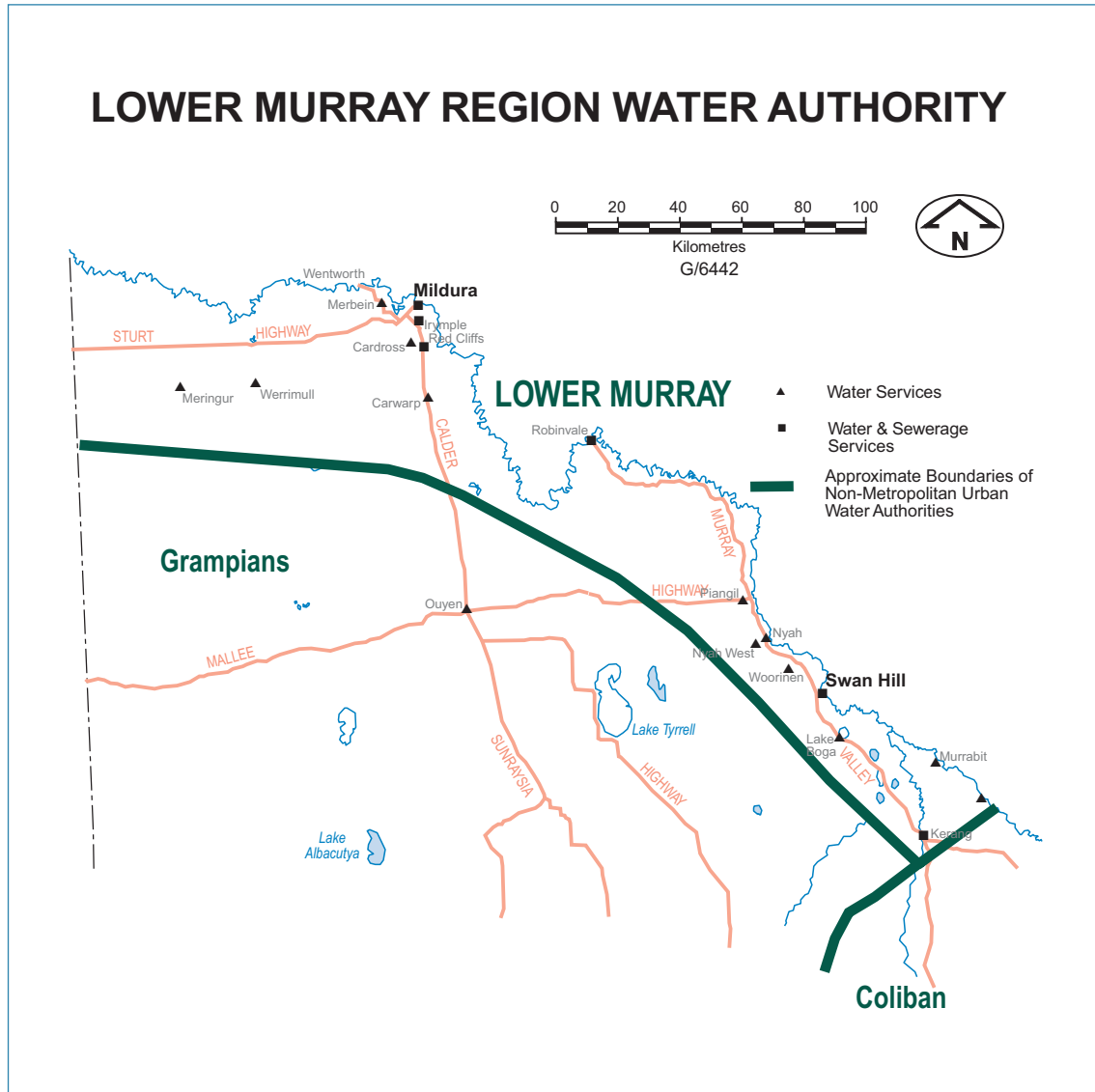
Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Water quality – general	112	Horsham	Natimuk	Ultima
Discoloured water	23	Horsham	Ararat	Natimuk
Taste/odour	34	Jeparit	Natimuk	Lascelles
Blue water	1	Murtoa	---	---
Air in water	0	---	---	---
Suspected illness	0	---	---	---
Other	12	Horsham	Minyip	Rainbow

The results comparison is generally reflective of populations and communities where water quality improvements have been identified in the Authority's water quality improvement plan.

Of particular note are the towns of Natimuk and Jeparit, where the established Community Reference groups have both requested water quality improvements via the community consultation programs.

Lower Murray Water

Head office: Mildura



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Irymple, Kerang, Koondrook, Lake Boga, Merbein, Mildura, Murrabit, Nyah, Nyah West, Piangil, Red Cliffs, Robinvale, Swan Hill and Woorinen South.

Towns and areas supplied with non-potable (non-drinking) water:

Werrimull, Meringur, Cullulleraine and irrigation schemes in the Sunraysia region, including Robinvale and private diverters from Piangil to the South Australia border.

Population supplied with drinking water: approximately 54,430

Assessment against benchmark standards (drinking water supplies only)

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
Aluminium	Kerang

The high aluminium result recorded in the Kerang locality was investigated by Lower Murray Water and follow-up samples were taken for the next two weeks after the high result was recorded. The aluminium results on the follow-up samples were below 0.05 mg/L, with no changes to plant operations and similar quality raw water. Despite the investigations undertaken, Lower Murray Water was unable to identify a reason for the high aluminium result.

Ozone was not used to disinfect water supplied by Lower Murray Water during 2004-05, therefore bromate and formaldehyde were not required to be monitored at the frequencies set out in the draft Regulations.

For detailed water quality data please refer to Lower Murray Water's annual drinking water quality report.

Other water quality issues of potential health significance

No drinking water issues are apparent in drinking water supplies managed by Lower Murray Water in terms of the safety of the supplies. All supplies are filtered. Monitoring indicated that drinking water met the health-related guideline values in the 2004 Australian Drinking Water Guidelines.

As indicated above, Lower Murray Water manages a number of non-potable (non-drinking) water supplies in its region, primarily for irrigation. Lower Murray Water is developing a program that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Actions
March 2005	Robinvale	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i>

In March 2005, Lower Murray Water reported a positive *Escherichia coli* result to the department. The tap used for sampling may have been subject to contamination, due to its location. Follow-up samples, one taken directly from the property meter and elsewhere in the reticulation were free of *Escherichia coli*, and no other contamination source could be located.

For further information on the water quality incidents and events listed above please refer to Lower Murray Water's annual drinking water quality report.

Customer complaints related to water quality

A summary of the customer complaints related to water quality that were recorded by Lower Murray Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	14	Mildura	Kerang	Swan Hill
Taste/odour	1	Mildura	---	---
Blue water	0	---	---	---
Air in water	0	---	---	---
Suspected illness	0	---	---	---
Other	0	---	---	---

Melbourne Water

Head office: East Melbourne



Water Suppliers serviced:

City West Water, South East Water, Yarra Valley Water and Western Water (treated drinking water) and Gippsland Water (untreated water).

Water quality incidents and events in treated/disinfected water:

During 2004-05, the following water quality incidents and events occurred in water post-treatment and/or disinfection:

(Table Overleaf)

Date	Supply	Issue	Action(s)
September 2004	Lusatia Park treatment plant	Disinfection failure	Power surge caused the plant to transfer over to the standby dosing pump, which failed to dose and resulted in a zero disinfection event for 12 minutes. The plant was reset and resumed chlorination
October 2004	Montrose Reservoir	Dirty water	Caused by Montrose Reservoir being brought back into service after cleaning. Investigation and rectification of the outlet/scour pipe work configuration.
October 2004	St Albans Reservoir	Dirty water and low pressure	St Alban Reservoir was shut down, but valve was incorrectly closed. Value closed correctly.
October 2004	Lusatia Park	Disinfection failure	Plant failed to disinfect intermittently for 45 minutes, when the chemical dosing pumps became blocked and caused the plant to stop.
November 2004	Mitcham-Surrey Hills-Preston main.	Taste and odour	Valve closed by mistake, resulting in low pressures and taste odour complaints. Problem rectified upon identification.
December 2004	Lyrebird Avenue - Ultraviolet disinfection plant in East Warburton	Disinfection failure	Backup generator did not start when the mains power failed and the Ultraviolet plant did not disinfect for about 40 minutes. The generator was checked by maintenance contractors and found to be operating correctly
February 2005	Silvan-Preston Main	Taste and odour	Defective valve identified, causing low turnover of the Silvan Preston water main, resulting in low chlorine residuals. Scours were opened to increase turn over and complaints ceased.
February 2005	Sydenham Locality	Taste and odour	Greenvale-St Albans main was inadvertently supplying the Sydenham locality. Valve on main closed.
May 2005	Greenvale disinfection failure	Disinfection failure	Major re-valving exercise undertaken to prevent un-disinfected water reaching customers.

Water quality notifications in source waters:

The pathogen *Giardia* was detected in two raw water samples, prior to treatment, that were collected as part of Melbourne Water's ongoing risk management program. The detections were notified to the Department under the Health (Infectious Diseases) Regulations 2001.

Date	Supply	Issue	Actions
December 2004	Maroondah Aqueduct - Yarra Glen, upstream of the filtration plant	<i>Giardia</i> detection	Additional follow up test revealed no <i>Giardia</i> cysts.
June 2005	Clear Water Channel Inlet to Yan Yean Reservoir	<i>Giardia</i> detection	Channel and drains were inspected and a re-sample was taken. Additional follow up test revealed no <i>Giardia</i> cysts.

For further information on the water quality incidents listed above please refer to Melbourne Water's annual drinking water quality report.

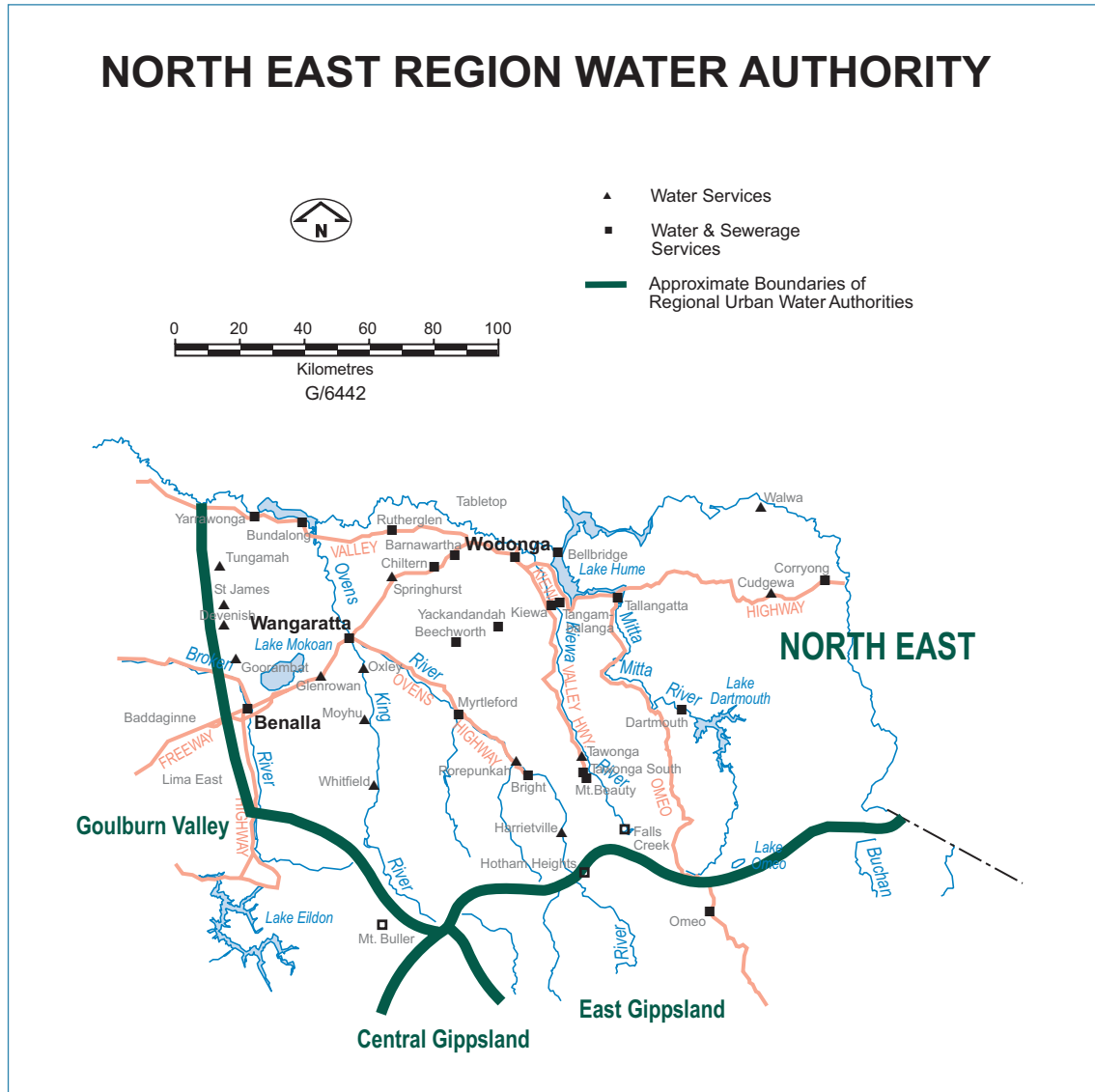
Melbourne Water is unique amongst the dedicated water storage managers in Victoria, in that it not only stores and manages raw water that will eventually be used for drinking water, but it also treats this water to a drinking standard, and then distributes this treated water to four water suppliers, the three Melbourne metropolitan retail companies (City West Water, South East Water and Yarra Valley Water), and parts of Western Water. Melbourne Water, therefore, provide water treatment services to approximately 80% of Victoria's population.

Given the complexity of the metropolitan drinking water distribution system, and the volumes of water being moved through the system (Melbourne Water annually distributes approximately 440GL of treated water), there will always be challenges in managing the system. The incidents that were reported to the Department during the reporting period fell into two broad categories: equipment failure that lead to the non-treatment of water, or operational changes that resulted in customer complaints. There was no evidence that these incidents resulted in an increased public health risk.

The aforementioned complexity of the metropolitan system raises a number of operational issues with regard to the management of water quality issues. Melbourne Water and the water suppliers that it supplies have an effective working relationship, where water quality incidents are managed through a multi-agency approach. The department will continue to liaise with all water businesses to ensure that appropriate actions are taken to protect public health in the event of a water quality incident.

North East Water

Head office: Wodonga



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Baranduda, Barnawartha, Beechworth High Level, Beechworth Low Level, Bellbridge, Benalla, Bright, Bundalong, Chiltern, Corryong Low level, Corryong Low Level, Cudgewa, Dartmouth, Devenish, Ebdon, Glenrowan, Goorambat, Harrietville, Kiewa, Moyhu, Mount Beauty, Myrtleford, Oxley, Porepunkah, Ranch Road Tawonga, Rutherglen, Springhurst, St James, Tallangatta, Tangambalanga, Tawonga, Tawonga South, Tungamah, Wahgunyah, Walwa, Wandiligong, Wangaratta, Whitfield, Wodonga High Level, Wodonga Low Level, Yackandandah, Yarrowonga, Yarrowonga Woodlands.

Population supplied with drinking water: approximately 94,000

Assessment against benchmark standards

All localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Corryong - High Level, Corryong - Low Level, Tawonga Ranch Road, Tawonga, Whitfield
Trichloroacetic acid	Dartmouth, St James
Aluminium	Beechworth - High Level, Beechworth - Low Level, Bundalong, Chiltern, Ebden, Glenrowan, Oxley, Springhurst, St James, Tallangatta, Tungamah, Walwa, Yarrawonga
Turbidity	Corryong - Low Level

North East Water manages four supplies (Mount Beauty/Tawonga South, Corryong, Myrtleford and Whitfield) where an alternative to chlorine disinfection is used at the request of the resident communities. The water supplies in these towns are disinfected using ultraviolet light or ozone. Chlorine dioxide is also used at Whitfield to boost disinfection within the system. The lack of residual disinfection is an ongoing issue, with *E. coli* detections in all supplies, except Myrtleford, occurring during the reporting period.

The department is working closely with North East Water in relation to the water supplied to Corryong. Community consultation on this issue has been initiated by North East Water as part of this process and it is anticipated that an undertaking will be sought once remedial actions are determined.

The department and North East Water are reviewing the other supplies that did not attain the draft standards.

Other water quality issues of potential health significance.

The only failure to achieve a health-related guideline, as detailed in the 2004 Australian Drinking Water Guidelines was for chlorite in the Whitfield supply. The guideline value for chlorite is 0.3 mg/L, and a maximum value of 0.65 mg/L was recorded.

Health impacts require long-term exposure to elevated levels of chlorite, but the department and North East Water will keep monitoring this issue.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

(Table Overleaf)

Date	Supply	Issue	Action(s)
August 2004	Glenrowan	<i>E. coli</i> detection	Blocked chlorine rotameter was fixed and the reticulation was flushed.
August 2004	Whitfield	<i>E. coli</i> detection	System was dosed with chlorine, the reticulation was flushed and re-samples were taken.
October 2004	Myrtleford	Customer complaints - mucilaginous substance present in drinking water	Situation monitored, problem eventually resolved itself.
November 2004	Corryong Low Level	<i>E. coli</i> detection	System maintenance undertaken, re-samples collected, followed by dosing with sodium hypochlorite, as required.
November 2004	Tangambalanga	<i>E. coli</i> detection	Pump regime was changed to increase flow and restore chlorine residual.
January 2005	Whitfield	<i>E. coli</i> detection	Re-samples collected, chlorine dioxide dosage increased. Boil water notice was issued, and remained in place until mid-March 2005.
January 2005	Corryong High Level	<i>E. coli</i> detection	System maintenance undertaken, re-samples collected, followed by dosing with sodium hypochlorite, as required.
January 2005	Corryong Low Level	<i>E. coli</i> detection	System maintenance undertaken, re-samples collected, followed by dosing with sodium hypochlorite, as required.
January 2005	St. James	<i>E. coli</i> detection	Reticulation was flushed and chlorine dose was increased.
March 2005	Oxley	High aluminium	Equipment malfunction occurred, which led to an overdose of alum. System flushed to remove affected water.
March 2005	Corryong High Level	<i>E. coli</i> detection	System maintenance undertaken, re-samples collected, followed by dosing with sodium hypochlorite, as required.
March 2005	Dartmouth	<i>E. coli</i> detection	Malfunctioning chlorine dose pump and air lock led to a loss of chlorine residual. Reticulation air-scoured and a new dosing pump installed.
March 2005	Tawonga	<i>E. coli</i> detection	Maintenance on one ozone generator had been undertaken and may have resulted in inadequate disinfection during start-up.
April 2005	Mount Beauty/ Tawonga/ Tawonga South	<i>E. coli</i> detection	Two potential sources of contamination identified, boil water notice issued, alternative water supply made available.
May 2005	Corryong High Level	<i>E. coli</i> detection	System maintenance undertaken, re-samples collected, followed by dosing with sodium hypochlorite, as required.
May 2005	Tawonga	<i>E. coli</i> detection	Re-samples taken and boil water notice issued.

As with the failure to attain the water quality standards, the majority of the issues occurred in the supplies that utilise disinfectants other than chlorine. Boil water advisories were issued at Whitfield and Mount Beauty/Tawonga.

Customer complaints related to water quality

In its annual report, North East Water provided details on its customer complaints in four broad categories: discoloured water, taste problems, odour problems, and alleged illness. Some reported incidents covered multiple categories. The towns that recorded the most customer complaints per category are presented in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	58	Wangaratta (13)	Bright (9)	Chiltern (4) Myrtleford (4)
Taste	11	Beechworth (3) Yarrowonga (3)	Chiltern (2)	Barnawartha (1) Walwa (1) Wangaratta (1)
Odour	8	Beechworth, Chiltern, Corryong, Oxley, St James, Tallangatta, Tungamah, Yarrowonga (1 each)		
Illness	8	Whitfield (3)	Myrtleford (2)	Barnawartha (1) Corryong (1) Wodonga (1)
Combination	4	Beechworth (2)	Corryong (1) Wodonga (1)	
Other	11	Myrtleford (6)	Oxley (3)	Barnawartha (1) Mount Beauty (1)

Parks Victoria

Parks Victoria manages almost 3,000 parks and reserves across Victoria. These range from well developed metropolitan parks to wilderness areas.

Parks Victoria has a very strong focus on both management and conservation of the land, flora, fauna and waterways under its care, as well as developing services for the 42.7 million annual visits to the parks, reserves and 1,397 visitor sites that it manages. In total, 73.5 million visits are made to Parks Victoria assets and sites each year.

Parks Victoria is specifically named as a water supplier in the *Safe Drinking Water Act 2003*.

Parks Victoria also have a relationship with other water suppliers or water storage managers, in their role as managers of public lands that form the catchment areas of various water supply systems.

Visitor services at Parks Victoria sites include the provision of shelter, camping grounds, water, safe access to sites and general safety. Parks Victoria is not obligated to provide drinking water for visitors at any of their sites, however, where it chooses to commit to providing visitors with water intended for drinking, Parks Victoria is then obliged to ensure the supplied drinking water meets the legislated water quality standards. It is also obliged to undertake other legislated requirements such as risk assessment and the preparation of risk management plans, to provide an annual report to the department, and to report any incidents that may impose a human health risk on those consuming the water.

At the commencement of the Act in July 2004, Parks Victoria had a single site that provided water that was intended for drinking, at the Tidal River Camp Ground in Wilson's Promontory National Park. A full water treatment plant was installed at this site in 1999.

Also at the commencement of the Act, Parks Victoria had a number of major visitor sites that provided untreated water, including the visitor centres at the Twelve Apostles and the Grampians, and at Mount Buffalo. At this time, the availability of system and water quality information relating to these other sites that provided water for visitor use was poor.

To improve its understanding of where and how they supplied water to visitors, during the reporting period Parks Victoria undertook a comprehensive asset audit of all sites, identifying all infrastructure involved in the provision of water to the public.

The audit identified 260 sites across Victoria where water is provided. A review of these sites, based on the following criteria resulted in the decision to commit to providing drinking water at 20 sites. The current lists of proposed drinking and non-drinking water sites for Parks Victoria are listed in Appendices F and G. The list of sites where water will be provided for drinking is under constant review, and will be increased as time and resources allow. The criteria that was applied was:

- visitor numbers
- current infrastructure
- site prominence
- cost implications for water quality monitoring

Sampling, testing and reporting as required to the Department was undertaken at the Tidal River supply during the reporting period. The water supply attained the relevant benchmark standards during the period covered by this report.

Specific actions undertaken by Parks Victoria in relation to the Act include:

- identification of water supply infrastructure across Parks Victoria sites
- the engagement of an environmental engineer to coordinate the implementation of the regulatory framework
- formation of a Safe Drinking Water Working Group, with representation from each of the five Parks Victoria regions and the Commercial Services Division
- the sourcing of funds for the next five years
- investigatory testing of existing water quality at all prioritised supplies
- the development and implementation of risk management plans, based on a common template, for each drinking water supply, in collaboration with the relevant park staff
- consultation with the Victorian water industry
- regular communication, including attendance at seminars and workshops (including on risk management), with the department's Drinking Water Regulation Unit.

Parks Victoria has also committed to appropriately sign-posting all non-drinking water sites by 30 September 2006.

Issues associated with the ongoing implementation of the *Safe Drinking Water Act 2003* for Parks Victoria include:

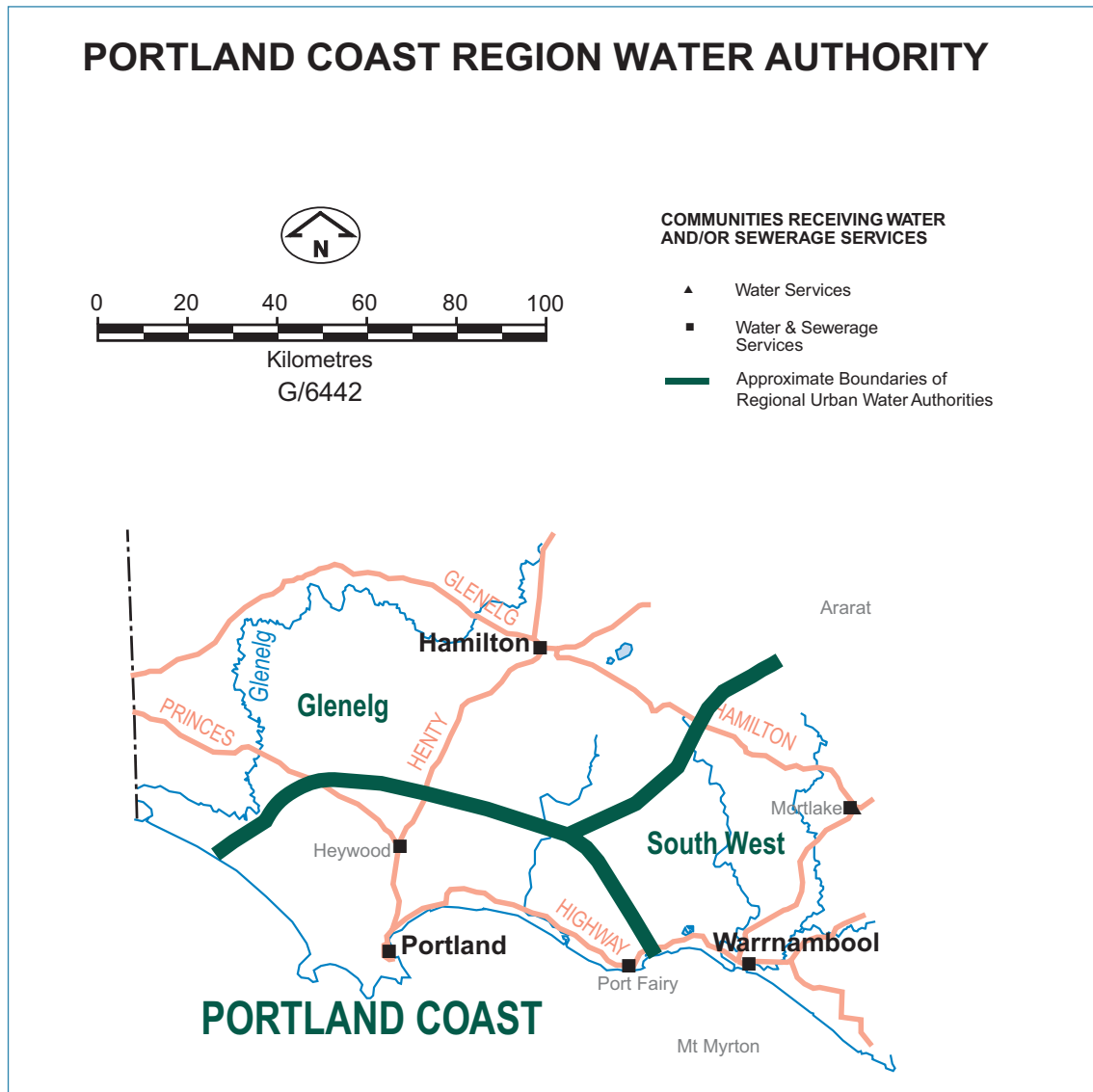
- management of visitor expectations that drinking water will be supplied, or that water has previously been supplied that was considered to be drinking water, but now may be not drinking water
- limited funding to manage the water sampling and testing necessary to comply with the Act
- provision of drinking water is not their core business
- lack of a permanent drinking water customer base from which income could be generated
- lack of staff capacity to manage and deliver all required elements of the Act and Regulations
- the imposition of increased responsibilities and obligations with a limited increase in funding.

During the reporting period, Parks Victoria took major steps forward in understanding their role as a water supplier, and developing and implementing a program of action to ensure that they meet their legislative obligations under the *Safe Drinking Water Act 2003*.

Portland Coast Water

Now Wannon Water, Portland Zone

Head office: Portland



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Portland, Port Fairy, Dartmoor, Heywood

Population supplied with drinking water: approximately 14,300

Assessment against benchmark standards

Portland Coast Water monitored for seven of the nine draft drinking water quality standards within its four localities. Bromate and formaldehyde were not monitored for as none of the supplies are treated with ozone.

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Dartmoor

During 2004-05, the Dartmoor water supply only served 49 homes, or approximately 30 per cent of the town. During 2004-05 Portland Coast Water worked towards completing the first stage of a replacement program to provide reticulated supply from a new bore and disinfection system for those 49 homes and for the remainder of the town.

Other drinking water quality issues

No other parameters measured by Portland Coast Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in 2004 Australian Drinking Water Guidelines during the reporting period.

Reported incidents and events

During 2004-05, the following water quality incidents occurred.

Date	Supply	Issue	Action(s)
August 2004	Dartmoor	<i>E. coli</i> detection	Mains were flushed and additional follow up samples were taken which showed an absence of <i>Escherichia coli</i> .
October 2004	Dartmoor	<i>E. coli</i> detection	Mains were flushed and additional follow up samples were taken which showed an absence of <i>Escherichia coli</i> .

Customer complaints related to water quality

During 2004/05, Portland Coast Water registered ten customer complaints in relation to water quality, which are summarised in the table below. Further information recorded during the reporting period can be found in the annual drinking water report for the former Portland Coast Water, published by the merged entity Wannon Water.

Complaint category	Number of complaints
Discoloured water	0
Taste and odour	8
Blue water	2
Other	0

South East Water

Head office: Moorabbin



Localities supplied with drinking water:

Belgrave, Berwick, Bittern, Bunyip, Chelsea, Cranbourne, Dandenong, Flinders, Frankston, Frankston South, Hallam, Hastings, Knox, Koo Wee Rup, Lang Lang, Malvern, Moorabbin, Mornington/Mount Martha, Mount. Eliza, Mulgrave, Notting Hill, Pakenham, Rosebud, Rowville, Sandringham, Somers, Somerville, St.Kilda, Tynong and Wantirna

Population supplied with drinking water: approximately 1,434,724

Assessment against benchmark standards

All localities attained the draft drinking water quality standards monitored during 2004-05.

Ozone is not used either by South East Water or Melbourne Water as a treatment chemical, therefore bromate and formaldehyde were not monitored.

St. Kilda is the only locality where alum is added, and therefore it is the only locality where samples were analysed for aluminium. During the 2004-05 financial year, only three samples were taken at customer taps in the St. Kilda locality and analysed for aluminium. All samples reported attained the draft aluminium standard.

Other water quality issues of potential health significance

No other parameters measured by South East Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in the 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004/05, the following water quality incidents were reported:

Date	Supply	Issue	Action(s)
December 2004	Mount Eliza	<i>E. coli</i> detection	Re-samples collected. No further <i>Escherichia coli</i> detected.
April 2005	Balnarring Tank (Somers)	<i>E. coli</i> detection	Tank was isolated, inspected and cleaned. Re-samples collected. No further <i>Escherichia coli</i> detected.
June 2005	Somers	<i>E. coli</i> detection	Tank was inspected and re-samples collected. No further <i>Escherichia coli</i> detected.
June 2005	Somerville	<i>E. coli</i> detection	Re-samples collected. No further <i>Escherichia coli</i> detected.
June 2005	Mount Martha	<i>E. coli</i> detection	Tank was inspected and re-samples collected. No further <i>Escherichia coli</i> detected.

For further information on the water quality incidents listed above please refer to South East Water's annual drinking water quality report.

Customer complaints related to water quality

The following customer complaints were recorded during 2004-05.

(Table Overleaf)

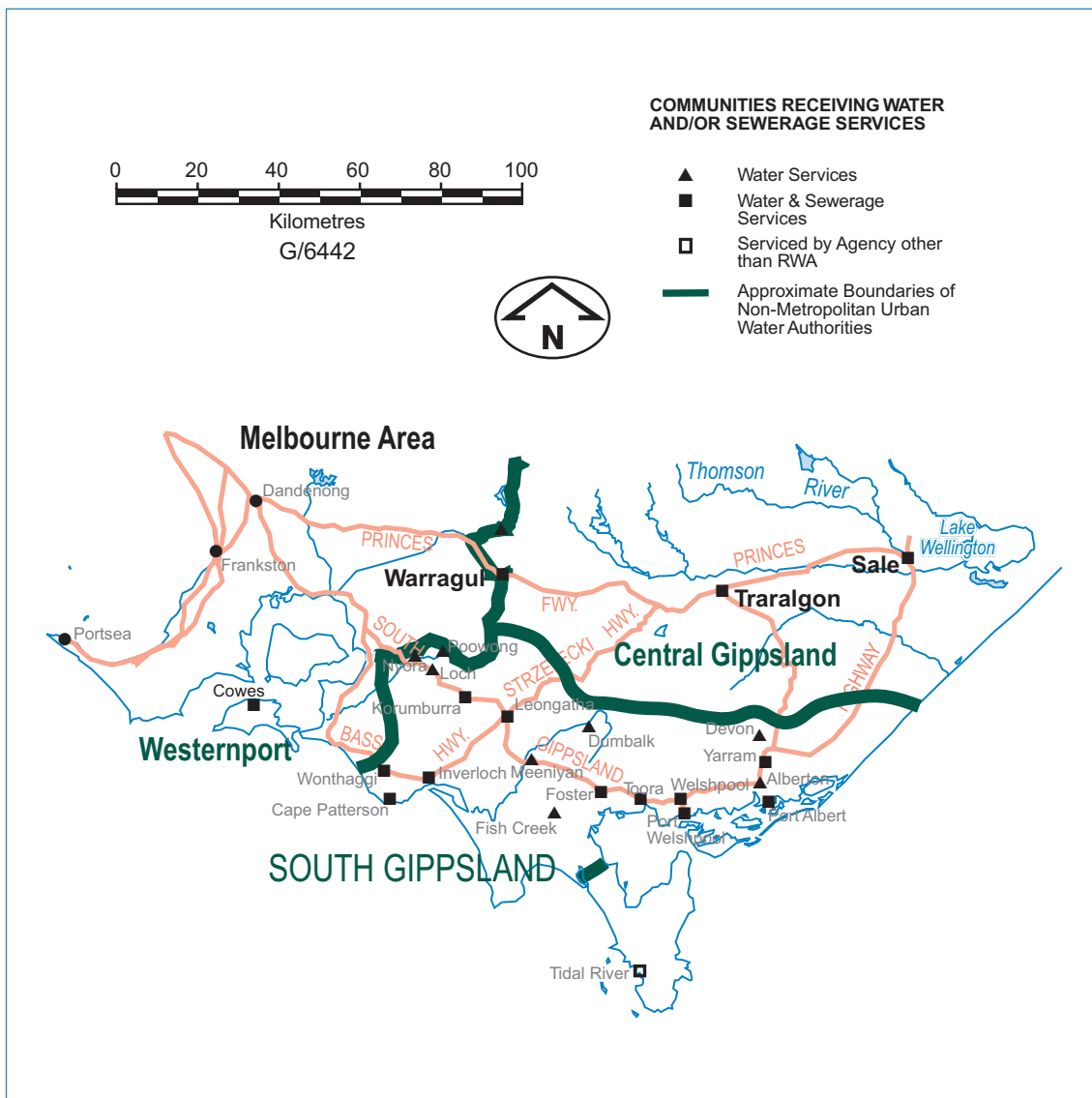
Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water (including brown, black, white, yellow or stained washing)	659	Mornington (37)	Mulgrave (23)	Pakenham (17)
Taste/Odour	248	Chelsea (33)	Rosebud (26)	Malvern (26)
		Notting Hill (13)	Moorabbin (6)	Belgrave (5)
Blue Water	57			
Possible Illness	10	One complaint in 10 separate localities as a result of separate issues ^b		
Other	78	St. Kilda (10)	Notting Hill (9)	Frankston (8)

a Number in brackets represents the number of complaints in that water quality locality during 2004-05

b The specific localities were Flinders, Frankston, Mornington, Belgrave, Wantirna, Malvern, St. Kilda, Chelsea and Notting Hill

South Gippsland Water

Head office: Foster



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Alberton, Cape Paterson, Devon North, Dumbalk, Fish Creek, Foster, Inverloch, Koonwarra, Korumburra, Leongatha, Loch, Meeniyana, Nyora, Poowong, Port Albert, Port Franklin, Port Welshpool, Toora, Welshpool, Wonthaggi and Yarram.

Population supplied with drinking water: approximately 25,840

Assessment against benchmark standards

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
<i>Escherichia coli</i>	Port Franklin
Trihalomethanes	Foster, Meeniyan, Wonthaggi
Aluminium	Korumburra, Leongatha

Ozone was not used to disinfect water supplied by South Gippsland Water during 2004-05, therefore bromate and formaldehyde were not required to be monitored at the frequencies set out in the draft Regulations.

South Gippsland Water has implemented a number of responses to the high levels of trihalomethanes detected in the Foster, Meeniyan and Wonthaggi systems. These are set out in their annual drinking water quality report.

In relation to the levels of aluminium reported in the Leongatha and Korumburra distributions systems, actions undertaken by South Gippsland Water included improvements to the pH and alum dosing systems at the water treatment plants and introduction of polymer filter aid at the water treatment plants.

These systems are being monitored to determine if the problems identified in the table above persist and whether undertakings are necessary.

For detailed water quality data please refer to South Gippsland Water's annual drinking water quality report.

Other water quality issues of potential health significance

No other drinking water issues are apparent in drinking water supplies managed by South Gippsland Water. All supplies are filtered. Monitoring indicated that, other than the matters identified in the table above, drinking water met the other health-related guideline values in the 2004 Australian Drinking Water Guidelines.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Action(s)
October 2004	Leongatha	Water contamination leading to boil water advisory	Broken pipe released dairy effluent to raw water storage. Boil water advisory put in place and alternative water supply provided.
October 2004	Welshpool	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
November 2004	Port Franklin	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
December 2004	Port Franklin	<i>E. coli</i> detection	System inspected, follow-up samples collected, recontamination of storage basin identified as source of problem.
December 2004	Koonwarra	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .
March 2005	Poowong	<i>E. coli</i> detection	System inspected, follow-up samples collected, which were clear of <i>Escherichia coli</i> .

Escherichia coli were detected in water samples in the Koonwarra, Poowong, Welshpool and Port Franklin distribution systems during 2004-05.

For the Port Franklin distribution system detections, the presence of *Escherichia coli* was determined to be due to recontamination in an open storage basin. Additional actions include:

- additional booster trim chlorination has been introduced at the Toora open storage basin outlet and in the distribution system that supplies Port Franklin.
- development of a strategic plan to reduce the microbiological risk in this system.
- increased monitoring implemented in Toora and Port Franklin.

The Leongatha raw water contamination incident is described in Section 2 of this report.

For further information on the water quality incidents and events listed above, please refer to South Gippsland Water's annual drinking water quality report.

Customer complaints related to water quality

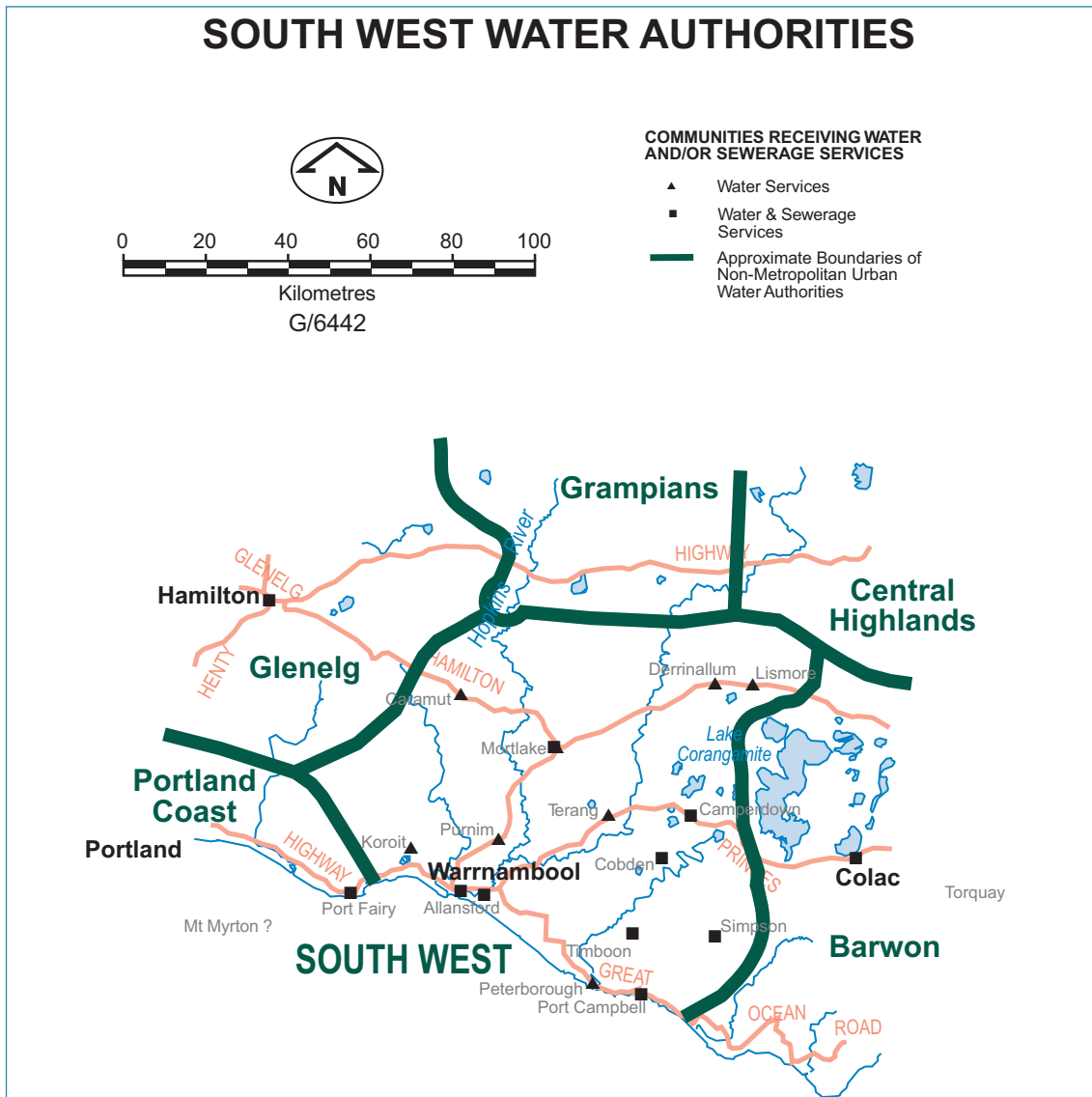
A summary of the customer complaints related to water quality that were recorded by South Gippsland Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	24	Mornington (37)	Wonthaggi	Korumburra, Welshpool
Taste/Odour	4	Korumburra, Dumbalk and Wonthaggi		
Blue Water	0	---	---	---
Air in water	0	---	---	---
Suspected illness	0	---	---	---
Other	0	---	---	---

South West Water

Now Wannon Water, Warrnambool Zone

Head office: Warrnambool



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Allansford, Camperdown – Rural, Camperdown – Urban, Caramut, Cobden, Derrinallum, Glenormiston Noorat, Koroit, Lismore, Mortlake, Peterborough, Port Campbell, Purnim, Simpson, Terang, Timboon, Warrnambool

Towns supplied with non-potable (non-drinking) water:

Darlington

Population supplied with drinking water: approximately 40,440

Assessment against benchmark standards (drinking water supplies only)

South West Water monitored for seven of the nine water quality standards within all of its seventeen localities. Ozone is not employed by South West Water as a treatment chemical, therefore bromate and formaldehyde were not required to be monitored.

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

Parameter	Localities not attaining benchmark standards
Aluminium	Cobden, Derrinallum, and Mortlake

In order to rectify contraventions to the aluminium standard, Wannon Water has indicated it is currently investigating the cause of the elevated aluminium concentrations and will implement remedial actions based on the findings of its investigations.

Other water quality issues of potential health significance

A result in exceedance of the health-related guideline value for lead was recorded for water supplied to the locality of Caramut. The result was 0.032 mg/L, compared with the 2004 Australian Drinking Water Guidelines health guideline value of 0.01 mg/L for lead. Re-samples were subsequently taken, which showed the water met the guideline value.

As indicated above, South West Water manages non-potable (non-drinking) water supplies in its region. South West Water is developing a program that is designed to ensure that such non-drinking supplies are not consumed or confused with a drinking water supply.

Water quality incidents and events

During 2004-05, the following water quality incidents occurred.

Date	Supply	Issue	Action(s)
December 2004	Purnim	<i>E. coli</i> detection	Additional follow up samples were taken which were found to contain no <i>Escherichia coli</i> .
February 2005	Purnim	Dirty water complaints	Increased frequency of water testing, pipe flushing and an investigation aimed at reducing iron levels. Notification of customers.
March 2005	Koroit	High turbidity	Planned works to replace the unlined cast iron pipes by November 2005.
June 2005	Koroit	High turbidity	Planned works to replace the unlined cast iron pipes by November 2005.

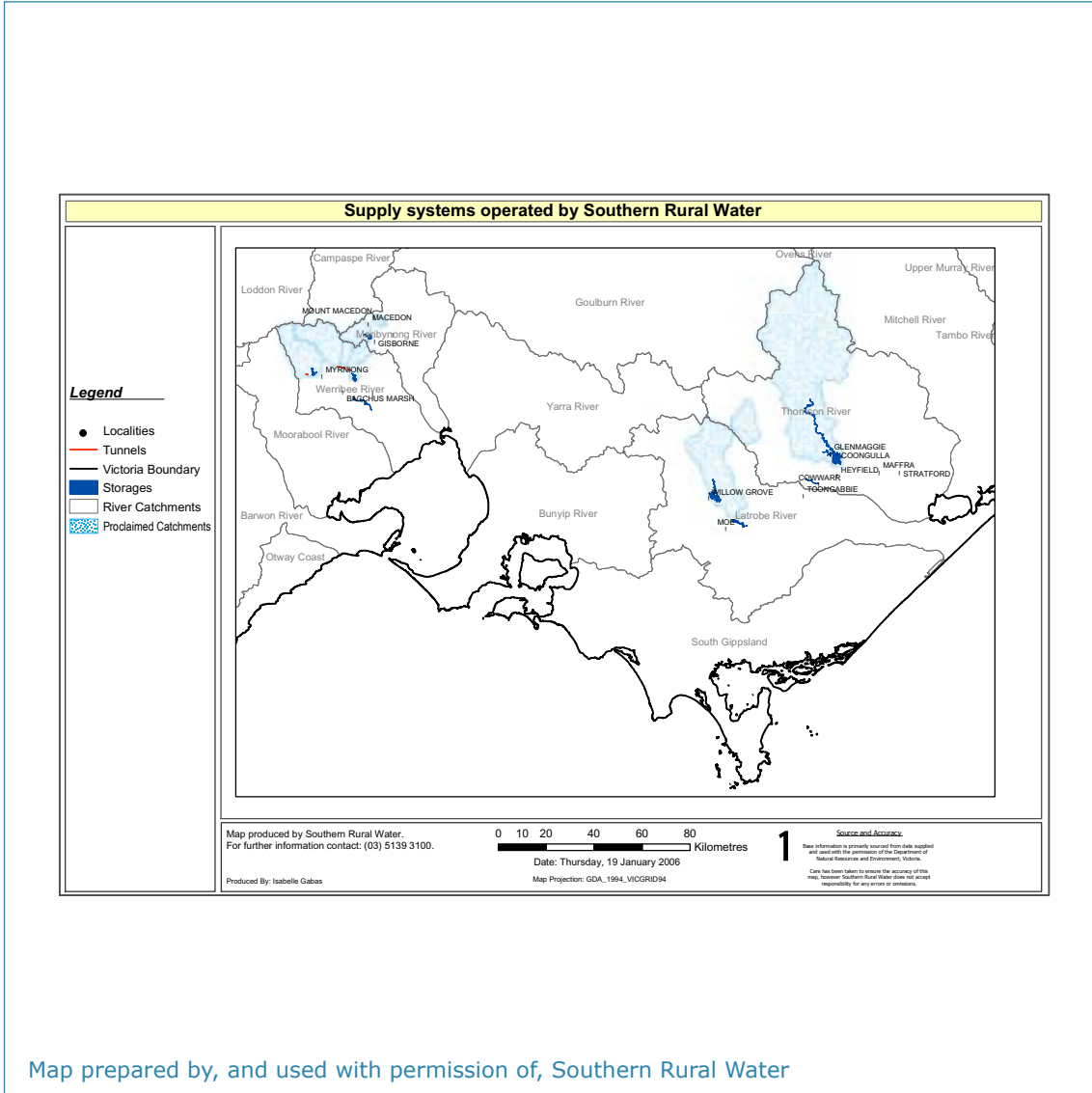
Customer complaints related to water quality

A summary of the customer complaints on water quality that were recorded by South West Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	35	Warrnambool (16)	Purnim (7)	Koroit (1)
Odour	3	Warrnambool (1)	Purnim (1)	
Taste	6	Warrnambool (3)	Single complaints	
Other	8	Allansford (2)	Single complaints	

Southern Rural Water

Head office: Maffra



Water Suppliers serviced:

Gippsland Water and Western Water (untreated water).

Major water storages:

Glenmaggie, Narracan, Blue Rock (Gippsland Region) Melton, Merrimu, Pykes Creek and Rosslynne (Central Region)

Water quality events and incidents

During 2004/05, the only water quality incidents and events that occurred within the storages operated by the Southern Rural Water, and were subsequently reported to the department, were blue-green algae (cyanobacterial) blooms on several storages (Blue Rock Lake, Lake Glenmaggie

Rosslynne Reservoir, Merrimu, Pykes Creek).

Overview

Southern Rural Water provides bulk water supplies of raw water to Gippsland Water and Western Water, who then treat the water to a drinking water standard. Therefore, one of the challenges for Southern Rural Water is to manage the water storage areas under their responsibility so as to optimise the quality of raw water available for treatment to a drinking water standard. The better the raw water quality, generally the easier the treatment process.

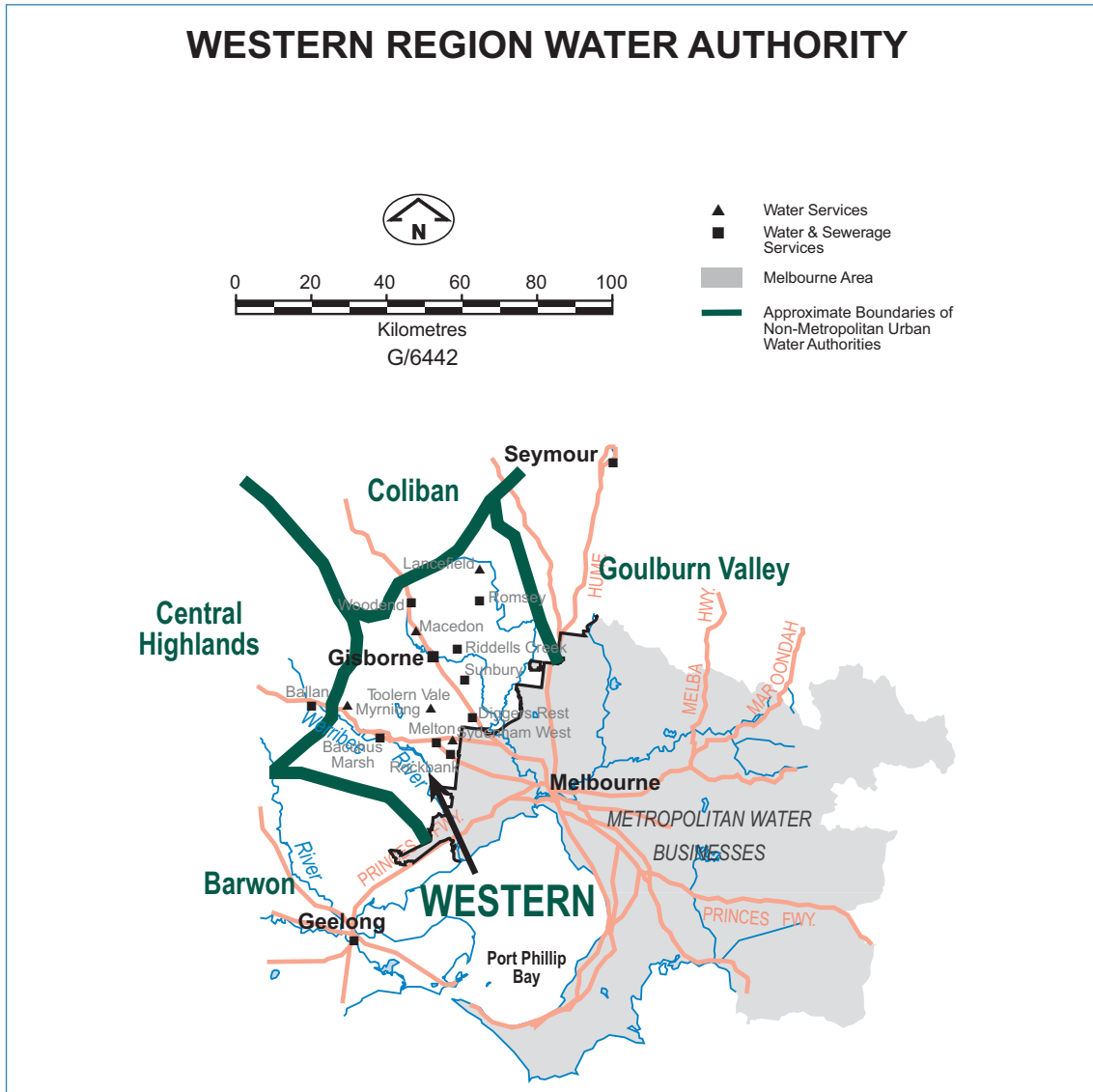
During 2004-05, the main water quality issue that faced Southern Rural Water were blooms of potentially toxic blue green algae (cyanobacteria). Five of the drinking water storages managed by Southern Rural Water experienced blooms at levels that required reporting to the department under the relevant reporting protocols. None of these reported blooms had an impact on finished drinking water quality.

No other water quality incidents were reported by Southern Rural Water during the reporting period.

The nature of the water storage areas managed by Southern Rural Water means that they are likely to have ongoing algal issues. Current protocols and management strategies are viewed as being adequate to minimise the risk to drinking water quality in the event of a bloom.

Western Water

Head office: Gisborne



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Bacchus Marsh, Bulla, Diggers Rest, Gisborne, Lancefield, Long Forest, Macedon, Melton, Mount Macedon, Myrniong, Riddells Creek, Rockbank, Romsey, Sunbury, Toolern Vale and Woodend.

Population supplied with drinking water: approximately 123,210

Assessment against benchmark standards

All drinking water localities attained the draft drinking water quality standards monitored during 2004-05, except as noted in the table below.

(Table Overleaf)

Parameter	Localities not attaining benchmark standards
Aluminium	Myrniong

Ozone was not used to disinfect water supplied by Western Water during 2004-05, therefore bromate and formaldehyde were not required to be monitored at the frequencies set out in the draft Regulations. Although Lancefield was not treated with aluminium based chemicals, aluminium was nevertheless monitored for this supply, albeit quarterly rather than monthly.

During 2004-05 the drinking water supplied in Myrniong originated from a water supply carted by Western Water from the nearby Bacchus Marsh system (in turn supplied from the Melbourne metropolitan system). This arrangement concluded in June 2005, with water for Myrniong now being drawn from the nearby Pykes Creek reservoir. As a result, Western Water has sought an undertaking in relation to failure to meet the draft aluminium, trihalomethane and turbidity standards for the period commencing June 2005. These chemicals are likely to be present at levels that will periodically exceed the proposed drinking water quality standards until October 2006, when a filtration plant is scheduled to be commissioned.

As a result of the health risk assessment undertaken by the department in relation to this supply, the Drinking Water Regulatory Unit has concluded that the time period and interim risk management measures proposed by Western Water to rectify the exceedance in the supply to Myrniong is reasonable and that exposure to aluminium, trihalomethanes and higher turbidity at the reported concentrations over these time periods will not pose a risk to public health.

For detailed water quality data please refer to Western Water's annual drinking water quality report.

Other water quality issues of potential health significance

No other parameters measured by Western Water as part of its drinking water quality monitoring program were reported to have exceeded the relevant health guideline values detailed in the 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004-05, the following water quality incidents and events occurred:

Date	Supply	Issue	Action(s)
July 2004	Mount Macedon	High chlorine residual caused by human error in adding chemicals to water supply.	Water in the local clear water storage tanks was diluted with an alternative water source within three hours and monitoring of the chlorine level saw a reduction to normal levels over the next 24 hours.
February 2005	Melton and Bacchus Marsh supplies	Dirty water complaints caused by major rainfall event over 48 hours.	Operational rectification of storm damage to assets.

Date	Supply	Issue	Action(s)
March 2005	Myrniong	High volume of water consumption caused by leaking on private supply line with possible backflow contamination risks.	Leak rectified by Western Water in conjunction with customer.
April 2005	Lancefield	Dirty water complaints caused by unfiltered surface water introduced in error.	Control fault was rectified.

For further information on the water quality incidents and events listed above please refer to Western Water's annual drinking water quality report.

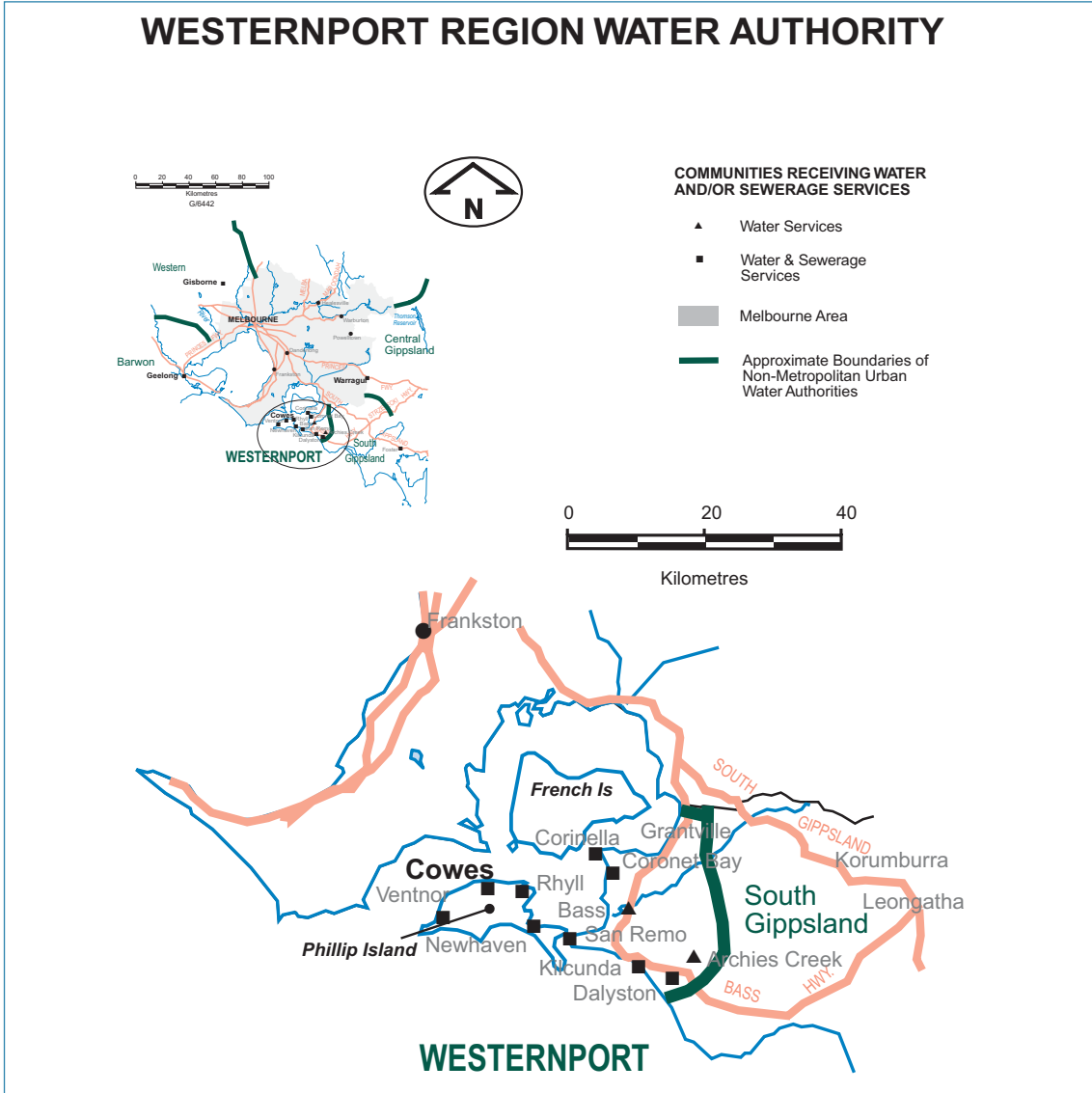
Customer complaints related to water quality

A summary of the customer complaints related to water quality that were recorded by Western Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	100	Melton	Lancefield	Sunbury
Taste/Odour	33	Melton	Sunbury	Woodend
Blue water	0	---	---	---
Air in water	8	Melton	Bacchus Marsh	Sunbury
Suspected illness	0	---	---	---
Other	17	Melton	Lancefield	Macedon

Westernport Water

Head office: Newhaven



Map prepared by, and used with permission of, Department of Sustainability and Environment

Localities supplied with drinking water:

Bass, Grantville, Corinella/Coronet Bay/Tenby Point, Kilcunda, Dalyston, San Remo/Newhaven, Cape Woolamai to Sunderland Bay, Rhyll, Cowes, Ventnor

Population supplied with drinking water:

approximately 9,760, rising to 33,500 in peak holiday periods

Assessment against benchmark standards

All localities attained the draft water quality standards monitored during 2004-05.

Ozone is not used Westernport Water as a treatment chemical, therefore, bromate and formaldehyde were not required to be monitored at the frequencies specified in Schedule 2 of the Safe Drinking Water Regulations 2005.

During the reporting period, samples for the parameter aluminium were collected at various entry points into the distribution system, instead of customer taps as is required by the legislation. All results for entry point samples attained the draft aluminium standard. The collection protocols have been amended, and Westernport Water are now sampling and testing in accordance with the legislation.

Other water quality issues of potential health significance

No other parameters measured by Westernport Water as part of its drinking water quality monitoring program exceeded the relevant health guideline values detailed in the 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During June 2005 elevated levels of the metal manganese were detected in the reticulation system. Westernport Water engaged a consultant to investigate the probable cause, and to review standard operating procedures for this event. The likely cause was found to be an increase of manganese-producing bacteria in the Candowie Reservoir. Westernport Water has amended its Water Quality Management Program to deal with the taste and aesthetic issues that result from increased levels of manganese. Health standards for manganese in drinking water were not breached.

Westernport Water has a number of ongoing issues associated with variable quality of raw water sourced from Candowie Reservoir. The catchment is unprotected, and located in an intensively farmed area. Recurrent issues requiring management include blue-green algal blooms, high manganese and high iron. Despite this, all localities attained the draft drinking water quality standards during the reporting period.

Detections of blue-green algae occurred in November 2004 and April 2005. As a result of concurrent risk factors an algicide was applied to the reservoir to prevent the formation of algal blooms. Subsequent monitoring showed this to be successful.

Customer complaints related to water quality

A summary of the customer complaints on water quality that were recorded by Westernport Water during the reporting period is provided in the table below.

Complaint Category	Number of Complaints	Localities with the greatest number of complaints		
		1st	2nd	3rd
Discoloured water	3	San Remo	Sunderland Bay	Sunbury
Illness	1	Sunderland Bay	---	---
Other	1	Cape Woolamai	---	---

Yarra Valley Water

Head office: Mitcham



Localities supplied with drinking water:

Broadmeadows Reservoir, Bulleen, Coburg, Croydon, Doncaster, Eltham, Emerald, Epping, Glen Waverley, Healesville, Keon Park, Lilydale, Malvern, Mernda/Hurstbridge, Mitcham Reservoir, Montrose, Mulgrave, Northcote, Plenty, Preston, Richmond, Ridge/Monbulk, Seville, Somerton, Surrey Hills, Thomastown, Tullamarine, Upper Yarra, Wantirna, Warranwood, Watsonia, Whittlesea, Woori Yallock, Yarra Glen

Population supplied with drinking water: approximately 1,516,744

Assessment against benchmark standards

All localities attained the relevant draft water quality standards monitored during 2004-05.

Ozone is not used either by Yarra Valley Water or Melbourne Water as a treatment chemical, therefore, bromate and formaldehyde were not required to be monitored at the frequencies specified in Schedule 2 of the Safe Drinking Water Regulations 2005.

Other water quality issues of potential health significance

During the reporting period, results exceeding the relevant health guideline value for lead, as detailed in 2004 Australian Drinking Water Guidelines were detected in the Montrose and Seville localities. Mains were flushed immediately on detection. Subsequent samples taken for these two localities were below the guideline value. The cause of the elevated lead results could not be identified.

No other parameters measured by Yarra Valley Water as part of its drinking water quality monitoring program exceeded the relevant health guideline values detailed in the 2004 Australian Drinking Water Guidelines during the reporting period.

Water quality incidents and events

During 2004-05, the following water quality incidents occurred:

Date	Supply	Issue	Action(s)
November 2004	Thornbury/Northcote	Taste and odour	Mains were flushed in the affected areas.
November 2004	Greenvale Reservoir	Chlorinator failure	Un-disinfected water was diverted from the reticulation system to Yuroke Creek.
February 2005	Reservoir, Rosanna, Preston, Coburg, Coolaroo, Greenvale, Macleod, Heidelberg and Lalor	Taste and odour	Mains were flushed in the affected areas.
May 2005	Greenvale Reservoir	Chlorinator failure	An alternative supply from the Somerton locality was supplied to customers.
Various dates	Northcote, Keon Park and Emerald	<i>E. coli</i> detections	Affected areas flushed and re-sampled. No <i>Escherichia coli</i> detected in resamples.
Various dates	Whittlesea, Northcote, Epping, Doncaster and Bulleen	Dirty water complaints	Mains were flushed in the affected areas.

For further information on the water quality incidents listed above please refer to Yarra Water's annual drinking water quality report.

Customer complaints related to water quality

Yarra Valley Water records its customer complaints in five broad categories: dirty water, suspected illness, air in water (white) water, blue water and taste/odour.

Yarra Valley Water recorded 4101 complaints during 2004-05 (6.5 complaints/1000 customers), which was an increase compared to previous years, primarily due to operational changes of the supply introduced for drought management. More than 200 complaints were received from the two taste/odour incidents described above.

The localities with the greatest number of complaints were Croydon, Mitcham Reservoir, Ridge/Monbulk and Epping. A mains cleaning program was commenced in these areas during the reporting period.

APPENDICES

Appendix A

Water storage managers and water suppliers 2004 – 2005

Water storage managers

Goulburn-Murray Water

Grampians Wimmera Mallee Water

Lower Murray Urban and Rural Water

Melbourne Water

Southern Rural Water

Water suppliers

Barwon Water

Central Highlands Water

City West Water

Coliban Water

East Gippsland Water

Falls Creek Alpine Resort Management Board

Gippsland Water

Glenelg Water*

Goulburn Valley Water

Grampians Wimmera Mallee Water

Lake Mountain Alpine Resort Management Board

Lower Murray Urban and Rural Water

Mount Baw Baw Alpine Resort Management Board

Mount Buller & Mount Stirling Alpine Resort Management Board

Mount Hotham Alpine Resort Management Board

North East Water

Parks Victoria

Portland Coast Water*

South East Water

South Gippsland Water

South West Water*

Western Water

Westernport Water

Yarra Valley Water

* On 1 July 2005, South West Water, Glenelg Water and Portland Coast Water merged to form Wannon Water

Appendix B

Water quality for 2004-05 reporting period

(Abbreviations, symbols and derivation are explained at end of table)

Water Supplier	Locality	Estimated Population	<i>E. coli</i> % of samples with zero <i>E. coli</i> / 100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Barwon Water	Aireys Inlet	1,260	100	0.2	0.12	0.200	0.0025	0.068	0.081	--	--
Barwon Water	Alvie	300	100	0.4	0.03	0.063	0.0025	0.015	0.022	--	--
Barwon Water	Anakie	350	100	0.6	0.04	0.043	0.0025	0.006	0.003	0.01	0.05
Barwon Water	Anglesea	2,630	100	0.2	0.04	0.055	0.0025	0.003	0.007	--	--
Barwon Water	Apollo Bay	2,130	100	0.3	0.05	0.086	0.0025	0.007	0.012	--	--
Barwon Water	Bannockburn	2,700	98	0.3	0.06	0.041	0.0025	0.007	0.003	0.01	0.05
Barwon Water	Beac	300	100	0.1	0.05	0.065	0.0025	0.015	0.023	--	--
Barwon Water	Birregurra	730	100	0.2	0.03	0.089	0.005	0.015	0.013	--	--
Barwon Water	Clifton Springs - Drysdale	12,080	100	0.5	0.02	0.072	0.0025	0.008	0.020	--	--
Barwon Water	Colac	11,990	100	0.2	0.05	0.054	0.005	0.016	0.024	--	--
Barwon Water	Cororooke	300	100	0.2	0.03	0.051	0.0025	0.016	0.024	--	--
Barwon Water	Cressy	490	100	0.2	0.04	0.083	0.0025	0.014	0.033	--	--
Barwon Water	Forrest	320	100	0.5	0.06	0.110	0.0025	0.044	0.056	--	--
Barwon Water	Gellibrand	300	100	0.3	0.02	0.110	0.0025	0.021	0.044	--	--
Barwon Water	Gheringhap	100	100	0.3	0.06	0.040	0.0025	0.003	0.003	0.01	0.05
Barwon Water	Grovedale	16,830	100	0.2	0.02	0.067	0.0025	0.007	0.006	--	--
Barwon Water	Highton	41,760	100	0.2	0.05	0.065	0.0025	0.007	0.006	--	--
Barwon Water	Highton High Level	2,150	100	0.2	0.02	0.059	0.0025	0.008	0.006	--	--
Barwon Water	Inverleigh	810	100	0.3	0.06	0.089	0.0025	0.006	0.003	0.01	0.05
Barwon Water	Leopold	10,360	100	0.2	0.03	0.064	0.0025	0.005	0.006	--	--
Barwon Water	Lethbridge	650	100	0.2	0.02	0.031	0.0025	0.013	0.003	--	--
Barwon Water	Little River	360	100	0.6	0.04	0.049	0.0025	0.003	0.003	--	--
Barwon Water	Lorne	1,710	100	0.5	0.04	0.084	0.0025	0.060	0.049	--	--
Barwon Water	Lovely Banks	58,420	100	0.4	0.06	0.058	0.0025	0.012	0.033	0.01	0.2
Barwon Water	Meredith	510	100	0.2	0.02	0.046	0.0025	0.017	0.031	--	--
Barwon Water	Montpellier	56,890	100	0.4	0.05	0.063	0.0025	0.009	0.006	0.01	0.1
Barwon Water	Moriac	500	100	0.2	0.04	0.049	0.0025	0.006	0.003	--	--
Barwon Water	Mount Duneed	1,500	100	0.2	0.02	0.062	0.0025	0.003	0.007	--	--
Barwon Water	Ocean Grove	14,920	100	0.6	0.06	0.018	0.0025	0.017	0.006	--	--
Barwon Water	Portarlington	6,070	100	1.6	0.03	0.018	0.0025	0.003	0.006	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Barwon Water	Queenscliff	4,510	100	1.7	0.01	0.012	0.0025	0.003	0.003	--	--
Barwon Water	Shelford	140	100	0.3	0.06	0.033	0.0025	0.006	0.005	0.01	0.05
Barwon Water	Teesdale	1,290	100	0.3	0.06	0.029	0.0025	0.009	0.003	0.01	0.05
Barwon Water	Torquay	8,440	100	0.3	0.02	0.067	0.0025	0.012	0.008	--	--
Barwon Water	Winchelsea	1,650	96	0.2	0.03	0.042	0.005	0.003	0.006	--	--
Localities and population	35	265,450									
Central Highlands Water	Alma	330	100	0.3	0.05	0.383	0.005	0.005	0.004	--	--
Central Highlands Water	Avoca	1,500	100	0.3	0.16	0.343	0.005	0.009	0.004	--	--
Central Highlands Water	Bailan	2,500	100	0.2	0.08	0.004	0.005	0.008	0.003	--	--
Central Highlands Water	Ballaarat Central	30,200	100	0.6	0.05	0.005	0.005	0.009	0.001	--	--
Central Highlands Water	Ballaarat North High Level / Nerrina	3,000	100	0.2	0.20	0.005	0.005	0.009	0.001	--	--
Central Highlands Water	Beaufort	1,200	96	1.0	0.05	--	--	--	--	--	--
Central Highlands Water	Bet Bet / Simson / Havelock	250	100	0.3	0.02	0.361	0.005	0.006	0.004	--	--
Central Highlands Water	Blackwood / Barrys Reef	850	98	1.7	--	--	--	--	--	--	--
Central Highlands Water	Bungaree / Wallace	200	100	0.2	0.05	0.003	0.005	0.003	0.001	--	--
Central Highlands Water	Buninyong / Mount Helen	14,100	100	0.1	0.05	0.006	0.005	0.008	0.001	--	--
Central Highlands Water	Cardigan Village	260	100	0.2	0.07	0.006	0.005	0.009	0.001	--	--
Central Highlands Water	Carisbrook	1,200	100	0.5	0.02	0.347	0.005	0.009	0.003	--	--
Central Highlands Water	Clunes	2,000	74	1.9	--	0.16	0.005	0.001	0.001	0.02	0.1
Central Highlands Water	Creswick	3,000	100	0.3	0.08	0.004	0.005	0.010	0.001	--	--
Central Highlands Water	Daisy Hill	500	100	0.3	0.04	0.361	0.005	0.012	0.004	--	--
Central Highlands Water	Daylesford High Level	2,000	100	0.2	0.10	0.131	0.005	0.020	0.021	--	--
Central Highlands Water	Daylesford Low Level / Hepburn	3,000	100	0.4	0.14	0.116	0.010	0.063	0.022	--	--
Central Highlands Water	Dean	50	100	0.2	--	0.020	0.005	0.005	0.001	--	--
Central Highlands Water	Enfield	400	100	0.3	0.05	0.008	0.005	0.002	0.001	--	--
Central Highlands Water	Fiskville / Glenmore	200	98	0.2	0.06	0.004	0.048	0.010	0.003	--	--
Central Highlands Water	Gordon / Mount Egerton	500	100	0.2	0.05	0.005	0.005	0.011	0.003	--	--
Central Highlands Water	Haddon	1,340	100	0.1	0.05	0.006	0.005	0.008	0.001	--	--
Central Highlands Water	Kingston / Smeaton	620	100	0.1	--	0.008	0.005	0.005	0.001	--	--
Central Highlands Water	Lal Lal	100	100	0.1	0.05	0.004	0.005	0.005	0.001	--	--
Central Highlands Water	Learnmonth	370	100	0.2	--	0.009	0.005	0.005	0.001	--	--
Central Highlands Water	Lexton	250	100	0.2	--	0.935	0.005	0.039	0.017	--	--
Central Highlands Water	Linton	450	100	0.3	0.06	0.004	0.005	0.001	0.001	--	--
Central Highlands Water	Majorca / Craigie	200	100	0.2	0.02	0.344	0.005	0.011	0.004	--	--
Central Highlands Water	Maryborough	7,100	100	0.4	0.09	0.338	0.011	0.011	0.004	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Central Highlands Water	Napoleons	350	100	0.1	0.06	0.008	0.005	0.003	0.001	--	--
Central Highlands Water	Newlyn / Springmount	530	100	0.2	--	0.007	0.005	0.005	0.001	--	--
Central Highlands Water	Sebastopol	7,600	100	0.2	0.06	0.010	0.005	0.009	0.001	--	--
Central Highlands Water	Skipton	650	100	2.7	0.05	0.005	0.005	0.001	0.001	--	--
Central Highlands Water	Smythesdale	800	100	0.2	0.05	0.003	0.005	0.006	0.001	--	--
Central Highlands Water	Talbot	700	100	0.2	0.05	0.376	0.005	0.008	0.005	--	--
Central Highlands Water	Timor / Bowenvale	230	100	0.3	0.03	0.338	0.005	0.011	0.004	--	--
Central Highlands Water	Waubra	250	100	0.2	--	0.006	0.005	0.001	0.001	--	--
Central Highlands Water	Wendouree	26,700	100	0.4	0.05	0.005	0.005	0.007	0.001	--	--
Localities and population	38	115,480									
City West Water	Altona	47,321	100	0.4	0.03	0.062	<0.005	0.003	0.011	--	--
City West Water	Coburg	8,308	100	0.5	0.04	0.073	<0.005	0.003	0.008	--	--
City West Water	East Keilor	37,163	100	1.3	0.15	0.047	<0.005	0.006	0.011	--	--
City West Water	Footscray	131,356	100	0.4	0.04	0.055	<0.005	0.003	0.012	--	--
City West Water	North Melbourne	148,743	99.7	0.4	0.04	0.053	<0.005	0.005	0.014	--	--
City West Water	Richmond	13,294	100	0.8	0.08	0.090	<0.005	0.003	0.014	--	--
City West Water	St Albans	32,196	100	0.7	0.04	0.060	<0.005	0.008	0.028	--	--
City West Water	Sydenham	113,733	100	1.2	0.07	0.057	<0.005	0.012	0.016	--	--
City West Water	Tullamarine	9,923	100	1.0	0.05	0.048	<0.005	0.007	0.012	--	--
City West Water	Werribee South	1,732	100	0.4	0.05	0.060	<0.005	0.003	0.009	--	--
City West Water	Werribee	79,633	100	0.5	0.02	0.072	<0.005	0.004	0.021	--	--
Localities and population	11	623,402									
Coliban Water	Axedale	220	100	1.9	1.20	0.480	0.011	0.086	0.068	--	--
Coliban Water	Bealiba	160	98	1.0	0.03	0.260	0.003	0.012	0.004	--	--
Coliban Water	Belvoir Park	100	100	0.5	0.03	0.021	0.003	0.004	0.001	0.01	0.05
Coliban Water	Big Hill	500	100	0.4	0.03	0.038	0.007	0.008	<0.001	0.02	0.05
Coliban Water	Boort	800	100	0.5	0.03	0.084	0.007	0.019	0.016	--	--
Coliban Water	Bridgewater	480	100	1.3	0.10	0.350	0.003	0.008	0.005	--	--
Coliban Water	Castlemaine	8,200	100	0.3	0.03	0.008	0.003	0.007	<0.001	0.01	0.05
Coliban Water	Chewton	540	100	0.5	0.03	0.009	0.003	0.007	<0.001	0.01	0.05
Coliban Water	Cohuna	2,200	100	1.4	0.07	0.061	0.003	0.025	0.025	--	--
Coliban Water	Dunolly	950	100	0.6	0.03	0.052	0.003	0.006	<0.001	--	--
Coliban Water	Echuca	10,000	100	0.5	0.15	0.091	0.003	0.029	0.041	--	--
Coliban Water	Edwards Road	10,000	100	0.4	0.03	0.041	0.003	0.008	0.001	0.01	0.05
Coliban Water	Elmore	900	100	0.8	--	--	--	--	--	--	--
Coliban Water	Fryerstown	160	100	0.3	0.03	0.006	0.006	0.004	<0.001	0.01	0.05
Coliban Water	Goornong	340	100	0.5	0.20	0.360	0.009	0.022	0.028	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Coliban Water	Guildford	210	100	0.4	0.03	0.009	0.007	0.009	<0.001	0.01	0.05
Coliban Water	Gunbower	220	100	0.3	--	0.180	0.003	0.079	0.120	--	--
Coliban Water	Harcourt	570	100	0.4	0.03	0.006	0.003	0.005	<0.001	0.01	0.05
Coliban Water	Heathcote	1,800	100	1.1	4.10	0.130	0.003	0.011	0.005	--	--
Coliban Water	Huntly	2,200	100	1.1	0.03	0.042	0.008	0.010	<0.001	0.01	0.05
Coliban Water	Inglewood	820	98	0.6	0.15	0.570	0.003	0.014	0.005	--	--
Coliban Water	Korong Vale	350	100	0.6	0.09	0.190	0.003	0.010	0.002	--	--
Coliban Water	Kyneton	4,700	100	0.3	0.03	0.005	0.003	0.009	<0.001	0.01	0.05
Coliban Water	Laanecoorie	450	100	1.4	0.03	0.056	0.003	0.005	<0.001	--	--
Coliban Water	Leitchville	50	100	0.6	0.06	0.050	0.003	0.020	0.011	--	--
Coliban Water	Lockington	330	100	1.3	0.10	0.076	0.007	0.017	0.018	--	--
Coliban Water	Maldon	400	100	0.7	0.03	0.011	0.003	0.002	<0.001	0.01	0.05
Coliban Water	Malmsbury	1,650	100	0.5	0.03	0.005	0.003	0.010	<0.001	0.02	0.05
Coliban Water	Marong	400	100	0.4	0.03	0.045	0.007	0.010	0.001	0.02	0.05
Coliban Water	Newstead	180	100	0.3	0.03	0.008	0.006	0.008	<0.001	0.01	0.05
Coliban Water	Park Valley	590	100	0.3	0.03	0.006	0.003	0.010	<0.001	0.02	0.05
Coliban Water	Pyramid Hill	530	100	0.5	0.03	0.068	0.003	0.010	0.011	--	--
Coliban Water	Raywood	160	100	0.6	0.08	0.190	0.009	0.023	0.027	--	--
Coliban Water	Rochester	2,500	100	1.6	0.03	0.097	0.003	0.017	0.025	--	--
Coliban Water	Sandhurst	30,000	100	0.6	0.03	0.042	0.005	0.010	0.001	0.01	0.05
Coliban Water	Serpentine	120	96	1.2	0.03	0.580	0.003	0.024	0.017	--	--
Coliban Water	Specimen Hill	30,000	100	0.5	0.03	0.045	0.003	0.010	<0.001	0.01	0.05
Coliban Water	Strathfieldsaye	800	100	0.3	0.03	0.043	0.006	0.008	0.005	0.02	0.05
Coliban Water	Taradale / Elphinstone	400	100	1.1	0.03	0.009	0.003	0.013	<0.001	0.01	0.05
Coliban Water	Tarnagulla	150	100	0.5	0.03	0.045	0.003	0.002	<0.001	--	--
Coliban Water	Tooborac	70	96	0.4	--	0.480	0.007	0.082	0.230	--	--
Coliban Water	Trentham	670	98	0.4	--	0.003	0.017	0.003	<0.001	0.02	0.05
Coliban Water	Tylden	100	100	0.3	0.03	0.003	0.003	0.006	<0.001	0.01	0.05
Coliban Water	Wedderburn	1,200	100	0.7	0.03	0.069	0.003	0.009	0.005	--	--
Localities and population	44	117,170									
East Gippsland Water	Bairnsdale	13,400	100	1.3	--	0.062	0.005	0.024	0.032	--	--
East Gippsland Water	Bemm River	160	100	1.4	--	--	--	--	--	--	--
East Gippsland Water	Buchan	160	100	3.0	--	0.170	0.005	0.041	0.081	--	--
East Gippsland Water	Cann River	300	98	1.6	--	0.110	0.005	0.041	0.037	--	--
East Gippsland Water	Dinner Plain	30	100	0.5	--	--	--	--	--	--	--
East Gippsland Water	Eagle Point High Level	540	100	1.1	--	0.062	0.005	0.018	0.033	--	--
East Gippsland Water	Kalimna	930	100	0.9	--	0.063	0.005	0.018	0.035	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
East Gippsland Water	Lindenow	510	100	1.4	--	0.077	0.005	0.019	0.029	--	--
East Gippsland Water	Lindenow South	200	100	1.4	--	0.092	0.005	0.030	0.043	--	--
East Gippsland Water	Mallacoota	1,740	100	1.5	0.05	0.210	0.005	0.016	0.040	--	--
East Gippsland Water	Merrangbaur	1,110	100	0.9	--	0.078	0.005	0.007	0.051	--	--
East Gippsland Water	Metung	1,630	100	0.9	--	0.076	0.005	0.010	0.034	--	--
East Gippsland Water	Nicholson - Swan Reach	1,120	100	0.9	--	0.057	0.005	0.017	0.031	--	--
East Gippsland Water	Nowa Nowa	160	100	4.9	--	--	--	--	--	--	--
East Gippsland Water	Ormeo	400	100	4.0	0.17	0.052	0.005	0.011	0.029	--	--
East Gippsland Water	Orbost	3,120	100	0.2	0.09	0.110	0.005	0.034	0.027	--	--
East Gippsland Water	Paynesville - Grandview Road	3,530	100	1.1	--	0.071	0.005	0.019	0.030	--	--
East Gippsland Water	Sarsfield - Bruthen	1,050	100	1.4	--	0.093	0.005	0.028	0.053	--	--
East Gippsland Water	Sunlakes - Toorloo	6,840	100	1.1	--	0.061	0.005	0.020	0.035	--	--
East Gippsland Water	Swifts Creek	200	100	1.4	--	--	--	--	--	--	--
Localities and population	20	37,130									
Gippsland Water	Boisdale	70	100	0.3	0.02	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Boolarra	480	100	0.3	0.05	0.120	0.05	0.05	0.02	--	--
Gippsland Water	Briagolong	470	100	0.3	0.02	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Churchill	4,900	100	0.3	0.40	0.100	0.05	0.05	0.03	--	--
Gippsland Water	Coongulla / Glenmaggie	180	100	0.3	0.04	0.057	0.05	0.05	0.02	--	--
Gippsland Water	Cowwarr	560	100	2.0	0.14	0.128	0.05	0.06	0.09	--	--
Gippsland Water	Drouin	5,820	100	0.3	0.14	0.056	0.05	0.05	0.03	--	--
Gippsland Water	Erica	190	100	0.9	0.16	0.170	0.05	0.05	0.07	--	--
Gippsland Water	Glengarry	690	100	0.3	0.15	0.077	0.05	0.05	0.03	--	--
Gippsland Water	Heyfield	1,440	100	0.2	0.06	0.074	0.05	0.05	0.02	--	--
Gippsland Water	Jumbuk	570	98	1.2	0.37	0.110	0.05	0.05	0.04	--	--
Gippsland Water	Maffra	3,920	100	0.3	0.30	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Mirboo North	1,380	100	0.2	0.07	0.070	0.05	0.05	0.06	--	--
Gippsland Water	Moe	15,120	100	0.4	0.14	0.070	0.05	0.05	0.02	--	--
Gippsland Water	Morwell	12,280	100	0.3	0.31	0.080	0.05	0.05	0.02	--	--
Gippsland Water	Neerim South	530	100	0.3	0.04	0.071	0.05	0.05	0.02	--	--
Gippsland Water	Newborough	4,670	100	0.3	0.08	0.084	0.05	0.05	0.02	--	--
Gippsland Water	Noojee	120	100	0.3	0.02	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Rawson	280	100	1.1	0.17	0.210	0.05	0.21	0.20	--	--
Gippsland Water	Rokeby / Buln Buln	830	100	0.3	0.36	0.058	0.05	0.05	0.02	--	--
Gippsland Water	Rosedale	1,040	100	0.3	0.23	0.150	0.05	0.05	0.08	--	--
Gippsland Water	Sale / Wurruk	12,850	100	0.2	0.03	0.072	0.05	0.05	0.02	--	--
Gippsland Water	Seaspray	210	100	0.4	0.10	0.140	0.05	0.05	0.03	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Gippsland Water	Stratford	1,330	100	0.3	0.30	0.058	0.05	0.05	0.02	--	--
Gippsland Water	Thorpdale	150	100	0.5	0.06	0.096	0.05	0.06	0.08	--	--
Gippsland Water	Toongabbie	460	100	1.9	0.22	0.110	0.05	0.06	0.08	--	--
Gippsland Water	Trafalgar	2,280	100	0.5	0.12	0.096	0.05	0.05	0.02	--	--
Gippsland Water	Traralgon	19,610	100	0.2	0.08	0.056	0.05	0.05	0.02	--	--
Gippsland Water	Traralgon South / Hazelwood North	1,050	100	0.3	0.34	0.093	0.05	0.05	0.03	--	--
Gippsland Water	Tyers	230	100	0.3	0.30	0.160	0.05	0.05	0.03	--	--
Gippsland Water	Warragul	13,200	100	0.3	0.17	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Warragul South / Nilma / Darnum	1,160	100	0.3	0.18	0.069	0.05	0.05	0.02	--	--
Gippsland Water	Willow Grove	190	100	0.2	0.04	0.050	0.05	0.05	0.02	--	--
Gippsland Water	Yallourn North	1,180	100	0.4	0.10	0.110	0.05	0.05	0.02	--	--
Gippsland Water	Yarragon	710	100	0.3	0.09	0.140	0.05	0.05	0.02	--	--
Gippsland Water	Yinnar	550	100	0.3	0.38	0.092	0.05	0.05	0.04	--	--
Localities and population	36	110,700			(see footnote)						
Glenelg Water	Balmoral	200	98	1.8	--	0.480	0.011	0.140	0.280	--	--
Glenelg Water	Casterton	1,670	100	0.5	--	0.100	< 0.005	0.006	0.076	--	--
Glenelg Water	Cavendish	120	100	3.0	--	0.200	< 0.005	0.020	0.021	--	--
Glenelg Water	Coleraine	1,010	98	2.1	--	0.430	< 0.005	0.005	< 0.005	--	--
Glenelg Water	Dunkeld	400	100	0.8	0.12	0.006	< 0.005	< 0.005	< 0.005	--	--
Glenelg Water	Glenthompson	150	100	0.4	0.04	0.300	< 0.005	0.024	0.013	--	--
Glenelg Water	Hamilton	9,450	100	0.2	0.08	0.006	< 0.005	0.009	< 0.005	--	--
Glenelg Water	Macarthur	350	100	0.3	--	0.082	< 0.005	< 0.005	< 0.005	--	--
Glenelg Water	Merino	220	100	3.8	--	0.140	< 0.005	< 0.005	< 0.005	--	--
Glenelg Water	Penshurst	480	100	1.6	0.01	0.019	< 0.005	< 0.005	< 0.005	--	--
Glenelg Water	Sandford	40	100	2.3	--	0.120	< 0.005	0.006	0.006	--	--
Glenelg Water	Tarrington	200	100	0.4	0.09	0.007	< 0.005	0.006	< 0.005	--	--
Localities and population	12	14,290									
Goulburn Valley Water	Alexandra	2,670	100	0.4	0.10	0.052	<0.005	0.03	0.07	--	--
Goulburn Valley Water	Avenel	830	100	0.5	0.14	0.160	<0.005	0.06	0.06	--	--
Goulburn Valley Water	Barmah	260	100	0.7	0.30	0.100	<0.005	0.05	0.05	--	--
Goulburn Valley Water	Bonnie Doon	550	100	4.8	0.04	0.120	<0.005	0.03	0.05	--	--
Goulburn Valley Water	Broadford	3,680	100	1.3	1.10	0.300	0.006	0.10	0.14	--	--
Goulburn Valley Water	Buxton	500	100	1.1	0.08	0.099	<0.005	0.03	0.11	--	--
Goulburn Valley Water	Cobram	5,230	100	0.5	0.16	0.065	<0.005	0.01	0.02	--	--
Goulburn Valley Water	Colbinabbin	150	98	4.4	0.41	0.064	<0.005	0.02	0.03	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Goulburn Valley Water	Dookie	340	100	0.9	0.23	0.057	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Eildon	1,230	100	3.4	0.02	0.089	<0.005	0.04	0.09	--	--
Goulburn Valley Water	Euroa	3,350	100	0.3	0.43	0.110	<0.005	0.04	0.05	--	--
Goulburn Valley Water	Girgarre	260	100	1.3	0.22	0.083	<0.005	0.02	0.03	--	--
Goulburn Valley Water	Katamatite	240	100	1.2	0.19	0.036	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Katandra West	240	100	0.8	0.30	0.048	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Katunga	160	100	0.2	<0.01	0.005	<0.005	<0.01	<0.01	--	--
Goulburn Valley Water	Kilmore	5,830	100	0.8	0.33	0.081	<0.005	0.03	0.04	--	--
Goulburn Valley Water	Kyabram	6,460	100	0.2	0.12	0.059	<0.005	0.01	0.02	--	--
Goulburn Valley Water	Longwood	230	100	0.4	0.30	0.140	<0.005	0.05	0.08	--	--
Goulburn Valley Water	Mansfield	3,900	100	0.4	0.22	0.026	<0.005	0.03	0.04	--	--
Goulburn Valley Water	Marysville	1,220	100	1.2	0.10	0.065	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Merrigum	550	100	0.3	0.05	0.066	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Mooroopna	8,150	100	0.3	0.12	0.140	<0.005	0.04	0.05	--	--
Goulburn Valley Water	Murchison	870	100	0.4	0.09	0.053	<0.005	0.01	0.01	--	--
Goulburn Valley Water	Nagambie	1,630	100	0.3	0.15	0.210	0.005	0.08	0.12	--	--
Goulburn Valley Water	Nathalia	1,650	100	0.8	0.32	0.270	0.009	0.10	0.14	--	--
Goulburn Valley Water	Numurkah	4,340	98	1.5	2.80	0.410	0.015	0.22	0.20	--	--
Goulburn Valley Water	Picola	140	100	0.5	0.04	0.060	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Pyalong	330	100	0.4	<0.01	0.520	0.006	0.04	0.02	--	--
Goulburn Valley Water	Rushworth	1,360	100	0.7	0.08	0.041	<0.005	0.02	0.02	--	--
Goulburn Valley Water	Seymour	7,760	100	0.7	0.20	0.200	<0.005	0.03	0.06	--	--
Goulburn Valley Water	Shepparton	37,580	100	0.3	0.14	0.110	<0.005	0.03	0.03	--	--
Goulburn Valley Water	Stanhope	560	100	1.2	0.17	0.086	<0.005	0.03	0.03	--	--
Goulburn Valley Water	Strathmerton	530	100	0.6	<0.01	0.005	<0.005	0.01	0.03	--	--
Goulburn Valley Water	Tallaroak	300	100	0.4	0.10	0.130	<0.005	0.05	0.05	--	--
Goulburn Valley Water	Tallygaroopna	300	100	0.4	0.10	0.120	<0.005	0.01	0.04	--	--
Goulburn Valley Water	Tatura	3,880	100	0.8	0.15	0.053	<0.005	0.01	0.01	--	--
Goulburn Valley Water	Thornton	220	100	3.0	0.49	0.260	0.009	0.12	0.32	--	--
Goulburn Valley Water	Tongala	1,370	98	0.4	0.21	0.049	<0.005	0.01	0.01	--	--
Goulburn Valley Water	Toolamba	270	100	0.4	0.07	0.130	<0.005	0.02	0.04	--	--
Goulburn Valley Water	Upper Delatite	900	98	1.4	0.07	0.072	<0.005	0.04	0.06	--	--
Goulburn Valley Water	Violet Town	830	100	0.3	0.30	0.120	<0.005	0.04	0.08	--	--
Goulburn Valley Water	Wallan	6,460	100	1.6	0.18	0.092	<0.005	0.05	0.05	--	--
Goulburn Valley Water	"Wandong - Heathcote Junction"	2,010	100	0.6	0.55	0.120	<0.005	0.03	0.06	--	--
Goulburn Valley Water	Waterford Park	330	100	1.2	1.00	0.300	<0.005	0.03	0.09	--	--

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Goulburn Valley Water	Yarroweyah #	110	100	0.5	0.01	0.037	<0.005	<0.01	<0.01	--	--
Goulburn Valley Water	Yea	1,330	100	0.5	0.14	0.092	<0.005	0.08	0.12	--	--
Localities and population	47	121,400									
GWM Water	Ararat	7,000	100	0.3	0.13	0.097	0.005	0.013	0.017	<0.02	<0.1
GWM Water	Beulah	230	100	5.5	0.22	0.440	0.007	0.045	0.038	<0.02	<0.1
GWM Water	Birchip	800	100	0.4	0.28	0.390	0.005	0.016	0.019	--	--
GWM Water	Brim	100	94	2.3	0.05	0.300	0.005	0.013	0.007	<0.02	<0.1
GWM Water	Charlton	1,100	100	0.4	0.07	0.210	0.005	0.010	0.005	<0.02	<0.1
GWM Water	Dimboola	1,560	100	0.2	0.03	0.250	0.005	0.009	0.009	<0.02	<0.1
GWM Water	Donald	1,380	100	2.4	0.03	0.330	0.005	0.018	0.011	<0.02	<0.1
GWM Water	Edenhope	780	100	0.3	0.01	0.027	0.005	0.005	0.005	<0.02	<0.1
GWM Water	Great Western	150	94	0.9	0.05	0.180	0.005	0.028	0.066	<0.02	<0.1
GWM Water	Halls Gap	260	100	0.6	0.23	0.100	0.005	0.025	0.030	<0.02	<0.1
GWM Water	Hopetoun	670	92	2.3	0.30	0.340	0.005	0.011	0.007	<0.02	<0.1
GWM Water	Horsham	12,900	100	0.5	0.09	0.130	0.005	0.033	0.049	<0.02	<0.1
GWM Water	Jung	90	100	12.4	0.17	0.420	0.005	0.032	0.044	<0.02	<0.1
GWM Water	Laibert	100	93	32.3	0.42	0.340	0.005	0.017	0.017	<0.02	<0.1
GWM Water	Manangatang	310	100	73.9	1.80	0.120	0.005	0.040	0.064	<0.02	<0.1
GWM Water	Minyip	470	100	6.9	0.07	0.450	0.005	0.015	0.007	<0.02	<0.1
GWM Water	Murrayville	240	100	0.3	0.01	0.004	0.005	0.005	0.005	<0.02	<0.1
GWM Water	Murtoa	840	100	0.6	0.36	0.400	0.005	0.017	0.012	<0.02	<0.1
GWM Water	Nullawil	100	87	7.6	0.12	0.230	0.005	0.005	0.005	<0.02	<0.1
GWM Water	Ouyen	1,250	100	0.4	0.01	0.120	0.005	0.046	0.082	<0.02	<0.1
GWM Water	Pomonal	150	100	2.7	0.05	0.096	0.005	0.008	0.027	--	--
GWM Water	Quambatook	270	100	7.5	0.04	0.180	0.006	0.035	0.028	<0.02	<0.1
GWM Water	Rainbow	560	100	3.5	0.25	0.250	0.005	0.009	0.005	<0.02	<0.1
GWM Water	Rupanyup	410	100	9.1	0.30	0.260	0.005	0.019	0.013	<0.02	<0.1
GWM Water	Sea Lake	690	93	11.5	0.14	0.160	0.006	0.039	0.062	<0.02	<0.1
GWM Water	St Arnaud	2,640	100	0.3	0.06	0.210	0.005	0.005	0.005	<0.02	<0.1
GWM Water	Stawell	6,270	100	2.6	0.10	0.062	0.005	0.015	0.015	<0.02	<0.1
GWM Water	Taits Lane (Reids Lane)	20	100	1.1	0.09	0.110	0.005	0.024	0.036	<0.02	<0.1
GWM Water	Ultima	190	100	64.3	2.60	0.100	0.005	0.025	0.046	<0.02	<0.1
GWM Water	Walpeup	150	100	4.6	0.42	0.088	0.005	0.029	0.036	<0.02	<0.1
GWM Water	Warracknabeal	2,490	100	1.8	0.43	0.490	0.005	0.033	0.024	<0.02	<0.1
GWM Water	Watchem	170	100	6.8	0.05	0.006	0.031	0.008	0.005	<0.02	<0.1
GWM Water	Woomelang	220	93	15.9	0.12	0.370	0.005	0.023	0.024	<0.02	<0.1

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GWM Water	Wycheproof	730	100	4.4	0.18	0.370	0.005	0.017	0.011	<0.02	<0.1
Localities and population	34	45,290			(see footnote)						
Lower Murray Water	Irymple	1,100	100	0.4	0.09	0.075	<0.005	0.017	0.015	--	--
Lower Murray Water	Kerang	4,000	100	0.5	0.33	0.170	<0.005	0.030	0.034	--	--
Lower Murray Water	Koondrook	850	100	0.5	0.06	0.092	<0.005	0.035	0.036	--	--
Lower Murray Water	Lake Boga	600	100	0.4	<0.05	0.082	<0.005	0.019	0.037	--	--
Lower Murray Water	Merbein	1,800	100	0.6	<0.05	0.079	<0.005	0.010	0.017	--	--
Lower Murray Water	Mildura	29,000	100	0.5	0.05	0.078	<0.005	0.012	0.018	--	--
Lower Murray Water	Murrabit	90	100	0.4	0.06	0.078	<0.005	0.022	0.060	--	--
Lower Murray Water	Nyah	350	100	0.4	<0.05	0.077	<0.005	0.010	0.020	--	--
Lower Murray Water	Nyah West	550	100	0.4	<0.05	0.071	<0.005	0.014	0.023	--	--
Lower Murray Water	Piangli	190	100	0.6	0.21	0.064	<0.005	0.029	0.036	--	--
Lower Murray Water	Red Cliffs	2,800	100	0.4	0.07	0.086	<0.005	0.020	0.021	--	--
Lower Murray Water	Robinvale	2,250	98	0.4	<0.05	0.080	<0.005	0.018	0.028	--	--
Lower Murray Water	Swan Hill	10,500	100	0.3	<0.05	0.035	<0.005	0.018	0.018	--	--
Lower Murray Water	Woorinen South	350	100	0.7	<0.05	0.080	<0.005	0.017	0.018	--	--
Localities and population	14	54,430									
North East Water	Barnawartha	560	100	0.3	--	0.007	0.0025	0.0025	0.0025	--	--
North East Water	Beechworth High Level	2,420	100	0.9	1.2	0.022	0.0025	0.011	0.009	--	--
North East Water	Beechworth Low Level	810	100	0.5	0.5	0.071	0.0025	0.0025	0.0025	--	--
North East Water	Bellbridge	410	100	0.3	0.06	0.03	0.0025	0.017	0.016	--	--
North East Water	Benalla	10,470	100	0.3	0.15	0.01	0.0025	0.019	0.0025	--	--
North East Water	Bright	2,880	100	1.3	--	0.084	0.0025	0.037	0.056	--	--
North East Water	Bundalong	110	100	0.4	0.32	0.12	0.0025	0.044	0.041	--	--
North East Water	Chiltern	1,260	100	0.4	0.31	0.11	0.0025	0.025	0.032	--	--
North East Water	Corryong High Level	310	90	4.8	--	--	--	--	--	--	--
North East Water	Corryong Low Level	1,200	94	6.5	--	--	--	--	--	--	--
North East Water	Cudgewa	140	100	4.8	--	0.041	0.0025	0.019	0.032	--	--
North East Water	Dartmouth	200	98	1.0	--	0.15	0.0025	0.059	0.19	--	--
North East Water	Devenish	110	100	0.2	0.06	0.19	0.0025	0.032	0.038	--	--
North East Water	Ebden	90	100	0.7	0.54	0.007	0.0025	0.0025	0.0025	--	--
North East Water	Glenrowan	340	98	0.3	0.74	0.048	0.0025	0.011	0.013	--	--
North East Water	Goorambat	140	100	0.2	--	0.029	0.0025	0.0025	0.0025	--	--
North East Water	Harrietsville	440	100	2.2	--	0.044	0.0025	0.018	0.028	--	--
North East Water	Kiewa	760	100	0.3	0.06	0.012	0.0025	0.0025	0.0025	--	--
North East Water	Moyhu	240	100	0.9	0.16	0.044	0.0025	0.015	0.022	--	--
North East Water	Mount Beauty	1,410	98	0.3	--	--	--	--	--	0.01	0.2

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
North East Water	Myrtleford	3,450	100	0.9	--	--	--	--	--	--	--
North East Water	Oxley	290	100	2.4	10	0.082	0.0025	0.025	0.026	--	--
North East Water	Porepunkah	720	100	1.2	--	0.046	0.0025	0.017	0.024	--	--
North East Water	Rutherglen	2,420	100	0.3	0.06	0.057	0.0025	0.023	0.023	--	--
North East Water	Springhurst	190	100	1.0	0.97	0.087	0.0025	0.024	0.024	--	--
North East Water	St. James	100	98	2.4	0.37	0.2	0.005	0.047	0.17	--	--
North East Water	Tallangatta	1,100	100	0.4	0.27	0.037	0.0025	0.016	0.025	--	--
North East Water	Tangambalanga	300	98	0.3	0.04	0.007	0.0025	0.0025	0.0025	--	--
North East Water	Tawonga Ranch Road	30	94	0.4	--	--	--	--	--	0.005	0.05
North East Water	Tawonga South	1,170	98	2.0	--	--	--	--	--	0.01	0.05
North East Water	Tawonga	340	97	0.5	--	--	--	--	--	0.01	0.05
North East Water	Tungamah	400	100	4.2	0.47	0.12	0.0025	0.039	0.026	--	--
North East Water	Wahgunyah	860	100	0.5	0.06	0.032	0.0025	0.006	0.008	--	--
North East Water	Walwa	120	100	0.8	0.93	0.053	0.0025	0.034	0.029	--	--
North East Water	Wandiligong	400	100	1.4	--	0.091	0.0025	0.039	0.064	--	--
North East Water	Wangaratta	18,610	100	0.3	0.11	0.047	0.0025	0.02	0.016	--	--
North East Water	Whitfield	120	88	3.7	--	0.002	0.0025	0.0025	0.0025	--	--
North East Water	Wodonga Baranduda	1,200	100	0.3	0.07	0.006	0.0025	0.0025	0.0025	--	--
North East Water	Wodonga High Level	9,900	100	0.4	0.08	0.007	0.0025	0.0025	0.0025	--	--
North East Water	Wodonga Low Level	19,900	100	0.3	0.09	0.009	0.0025	0.006	0.0025	--	--
North East Water	Yackandandah	770	100	0.3	0.18	0.019	0.0025	0.008	0.008	--	--
North East Water	Yarrawonga	6,110	100	0.7	0.35	0.038	0.0025	0.011	0.012	--	--
North East Water	Yarrawonga Woodlands	1,200	100	0.3	0.22	0.055	0.0025	0.01	0.013	--	--
Localities and population	43	94,000									
Portland Coast Water	Dartmoor	300	96	2.8	--	0.014	0.005	0.005	0.005	--	--
Portland Coast Water	Heywood	1,300	100	0.6	--	0.025	0.005	0.005	0.005	--	--
Portland Coast Water	Port Fairy	2,700	100	0.4	--	0.038	0.005	0.007	0.005	--	--
Portland Coast Water	Portland	10,000	99	0.1	--	0.055	0.005	0.005	0.005	--	--
Localities and population	4	14,300									
South East Water	Bunyip	3,591	100	0.5	--	0.063	<0.005	0.008	0.009	--	--
South East Water	Beigrave	39,371	100	1.0	--	0.085	<0.005	0.011	0.046	--	--
South East Water	Berwick	70,963	100	0.8	--	0.048	<0.005	0.006	0.022	--	--
South East Water	Bittern	4,796	100	0.9	--	0.062	<0.005	0.007	0.027	--	--
South East Water	Chelsea	49,857	100	1.1	--	0.057	0.005	0.048	0.061	--	--
South East Water	Cranbourne	64,050	100	0.7	--	0.054	<0.005	0.017	0.026	--	--
South East Water	Dandenong	106,105	100	1.3	--	0.054	<0.005	0.007	0.017	--	--
South East Water	Flinders	3,276	100	0.7	--	0.077	<0.005	0.009	0.044	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
South East Water	Frankston	85,312	100	1.1	--	0.059	<0.005	0.014	0.026	--	--
South East Water	Frankston South	10,862	99.1	0.8	--	0.060	<0.005	0.012	0.024	--	--
South East Water	Hallam	62,519	100	0.9	--	0.047	<0.005	0.013	0.016	--	--
South East Water	Hastings	7,975	100	0.7	--	0.072	<0.005	0.013	0.044	--	--
South East Water	Knox	66,942	100	1.1	--	0.090	<0.005	0.014	0.040	--	--
South East Water	Koo Wee Rup	1,638	100	0.6	--	0.059	<0.005	<0.005	0.007	--	--
South East Water	Lang Lang	1,188	100	0.6	--	0.083	<0.005	0.009	0.014	--	--
South East Water	Malvern	150,944	100	1.1	--	0.079	<0.005	<0.005	0.023	--	--
South East Water	Moorabbin	30,778	100	1.3	--	0.047	<0.005	<0.005	0.022	--	--
South East Water	Mornington	26,986	99.1	0.7	--	0.074	<0.005	0.017	0.041	--	--
South East Water	Mount Eliza	26,134	100	1.0	--	0.081	<0.005	0.024	0.044	--	--
South East Water	Mulgrave	19,232	100	1.3	--	0.085	<0.005	0.008	0.024	--	--
South East Water	Notting Hill	208,998	100	0.9	--	0.055	<0.005	<0.005	0.021	--	--
South East Water	Pakenham	12,647	100	0.7	--	0.066	<0.005	0.013	0.033	--	--
South East Water	Rosebud	94,264	100	0.7	--	0.088	<0.005	0.027	0.048	--	--
South East Water	Rowville	30,714	100	0.8	--	0.067	<0.005	0.010	0.023	--	--
South East Water	Sandringham	30,862	100	0.8	--	0.054	<0.005	0.005	0.024	--	--
South East Water	Somers	5,811	99.0	0.7	--	0.068	<0.005	<0.005	0.032	--	--
South East Water	Somerville	14,735	100	0.7	--	0.053	<0.005	0.011	0.025	--	--
South East Water	St Kilda	180,242	100	0.9	0.09	0.069	<0.005	<0.005	0.017	--	--
South East Water	Tynong	1,086	100	0.6	--	0.068	<0.005	0.006	0.016	--	--
South East Water	Wantirna	22,846	100	1.3	--	0.087	<0.005	0.013	0.039	--	--
Localities and population		30									
South Gippsland Water	Alberton	250	100	0.7	0.03	0.016	< 0.005	0.01	0.01	--	--
South Gippsland Water	Cape Paterson	600	100	0.4	< 0.01	0.239	0.006	0.02	0.01	--	--
South Gippsland Water	Devon North	400	100	0.7	0.08	0.017	< 0.005	0.02	0.01	--	--
South Gippsland Water	Dumbalk	160	100	0.3	0.03	0.242	< 0.005	0.03	0.04	--	--
South Gippsland Water	Fish Creek	200	100	0.3	0.08	0.184	< 0.005	0.02	0.02	--	--
South Gippsland Water	Foster	1,150	100	1.6	0.17	0.281	< 0.005	0.03	0.02	--	--
South Gippsland Water	Inverloch	3,000	100	0.4	< 0.01	0.220	< 0.005	0.02	0.01	--	--
South Gippsland Water	Koonwarra	40	98	0.3	0.20	0.129	< 0.005	0.01	0.01	--	--
South Gippsland Water	Korumburra	3,400	100	0.5	0.31	0.225	< 0.005	0.02	0.03	--	--
South Gippsland Water	Leongatha	4,600	100	0.4	0.33	0.155	< 0.005	0.02	0.02	--	--
South Gippsland Water	Loch	220	100	0.3	0.06	0.020	< 0.005	0.02	0.01	--	--
South Gippsland Water	Meeniyan	420	100	0.3	0.10	0.302	< 0.005	0.02	0.03	--	--
South Gippsland Water	Nyora	400	100	0.3	0.05	0.020	< 0.005	0.02	0.01	--	--
South Gippsland Water	Poowong	360	98	0.3	0.02	0.020	< 0.005	0.01	0.01	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
South Gippsland Water	Port Albert	340	100	0.7	0.02	0.018	< 0.005	0.01	0.01	--	--
South Gippsland Water	Port Franklin	100	96	0.8	0.12	0.076	< 0.005	0.01	0.01	--	--
South Gippsland Water	Port Welshpool	260	100	0.4	0.10	0.106	< 0.005	0.04	0.03	--	--
South Gippsland Water	Toora	640	100	0.7	0.12	0.052	< 0.005	0.02	0.01	--	--
South Gippsland Water	Welshpool	300	98	0.4	0.10	0.082	< 0.005	0.02	0.02	--	--
South Gippsland Water	Wonthaggi	7,000	100	0.3	< 0.01	0.307	< 0.005	0.03	0.02	--	--
South Gippsland Water	Yarram	2,000	100	0.7	0.04	0.019	< 0.005	0.01	0.01	--	--
Localities and population	21	25,840									
South West Water	Allansford	500	100	0.7	0.06	0.01	0.01	0.069	0.120	--	--
South West Water	Camperdown Rural	600	100	0.4	0.10	0.03	0.01	0.013	0.028	--	--
South West Water	Camperdown Urban	3,600	100	0.4	0.11	0.02	0.01	0.012	0.027	--	--
South West Water	Caramut	200	100	0.9	0.05	0.04	0.01	0.003	0.001	--	--
South West Water	Cobden	1,500	100	0.7	0.47	0.15	0.01	0.021	0.059	--	--
South West Water	Derrinallium	300	100	0.7	0.61	0.13	0.01	0.027	0.027	--	--
South West Water	Glenormiston / Noorat	310	100	0.4	0.18	0.23	0.01	0.058	0.067	--	--
South West Water	Koroit	1,400	100	2.7	0.17	0.02	0.01	0.020	0.004	--	--
South West Water	Lismore	400	100	0.4	0.09	0.10	0.01	0.016	0.025	--	--
South West Water	Mortlake	1,400	100	1.1	0.33	0.18	0.01	0.041	0.038	--	--
South West Water	Peterborough	180	100	0.5	0.05	0.02	0.01	<0.001	<0.001	--	--
South West Water	Port Campbell	250	100	0.6	0.05	0.02	0.01	0.004	0.001	--	--
South West Water	Purnim	150	99	2.5	0.05	0.23	0.02	0.089	0.140	--	--
South West Water	Simpson	250	100	1.3	0.06	0.10	0.01	0.032	0.042	--	--
South West Water	Terang	2,500	100	0.5	0.17	0.18	0.01	0.052	0.066	--	--
South West Water	Timboon	900	100	0.5	0.24	0.06	0.05	0.011	0.010	--	--
South West Water	Warnambool	26,000	100	0.5	0.10	0.02	0.01	0.017	0.003	--	--
Localities and population	17	40,440									
Western Water	Bacchus Marsh	17,820	100	0.8	0.17	0.074	0.007	0.025	0.044	--	--
Western Water	Bulla	1,020	100	1.2	0.20	0.041	0.005	0.015	0.018	--	--
Western Water	Diggers Rest	2,530	100	1.2	0.19	0.036	0.005	0.013	0.020	--	--
Western Water	Gisborne	8,500	100	0.8	0.10	0.064	0.005	0.005	0.008	--	--
Western Water	Lancefield	1,890	100	1.0	0.15	0.092	0.005	0.014	0.006	--	--
Western Water	Long Forest	290	100	0.8	0.09	0.088	0.015	0.023	0.033	--	--
Western Water	Macedon	1,830	100	0.7	0.17	0.101	0.005	0.014	0.010	--	--
Western Water	Melton	39,960	100	1.5	0.18	0.050	0.006	0.017	0.027	--	--
Western Water	Mount Macedon	1,480	98	0.6	0.18	0.086	0.005	0.008	0.010	--	--
Western Water	Myrning	320	100	2.9	0.25	0.130	0.042	0.042	0.035	--	--
Western Water	Riddells Creek	3,020	100	1.1	0.10	0.091	0.005	0.026	0.011	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Western Water	Rockbank	1,470	100	1.0	0.17	0.045	0.005	0.018	0.029	--	--
Western Water	Romsey	3,880	100	0.3	0.16	0.011	0.005	0.013	0.002	--	--
Western Water	Sunbury	33,870	100	1.2	0.07	0.029	0.005	0.014	0.016	--	--
Western Water	Tootlem Vale	210	98	0.8	0.20	0.102	0.006	0.025	0.035	--	--
Western Water	Woodend	5,120	100	0.3	0.15	0.020	0.008	0.010	0.002	--	--
Localities and population	16	123,210									
Westernport Water	Bass	240	98	0.7	0.17	0.21	0.007	0.06	0.07	--	--
Westernport Water	Cape Woolamai to Sunderland Bay	900	100	0.3	0.17	0.17	0.003	0.02	0.02	--	--
Westernport Water	Corinella / Coronet Bay / Tenby Point	860	100	0.5	0.19	0.10	0.003	0.01	0.02	--	--
Westernport Water	Cowes	2,600	100	0.3	0.12	0.18	0.003	0.02	0.03	--	--
Westernport Water	Dalyston / Archies Creek	200	100	0.4	0.17	0.16	0.003	0.03	0.04	--	--
Westernport Water	Grantville / Pioneer Bay	650	100	0.5	0.16	0.21	0.008	0.07	0.08	--	--
Westernport Water	Kilcunda	250	100	0.4	0.16	0.16	0.003	0.04	0.05	--	--
Westernport Water	Rhyll	700	100	0.4	0.15	0.17	0.003	0.02	0.02	--	--
Westernport Water	San Remo / Newhaven	1,600	100	0.4	0.16	0.14	0.003	0.01	0.02	--	--
Westernport Water	Ventnor	1,760	100	0.3	0.12	0.16	0.003	0.02	0.03	--	--
Localities and population	10	9,760									
Yarra Valley Water	Broadmeadows Reservoir	46,336	100	1.2	--	0.081	0.003	0.008	0.042	--	--
Yarra Valley Water	Bulleen	59,230	100	1.0	0.10	0.088	0.003	0.016	0.042	--	--
Yarra Valley Water	Coburg	35,312	100	1.1	0.10	0.087	0.006	0.006	0.041	--	--
Yarra Valley Water	Croydon	126,286	100	1.0	--	0.091	0.003	0.018	0.036	--	--
Yarra Valley Water	Doncaster	78,115	100	1.0	--	0.095	0.006	0.027	0.041	--	--
Yarra Valley Water	Eltham	35,006	100	1.0	0.03	0.077	0.003	0.005	0.035	--	--
Yarra Valley Water	Emerald	13,143	99	1.5	--	0.063	0.003	0.018	0.032	--	--
Yarra Valley Water	Epping	50,929	100	1.2	0.10	0.098	0.003	0.008	0.041	--	--
Yarra Valley Water	Glen Waverley	109,284	100	1.1	--	0.091	0.003	0.015	0.039	--	--
Yarra Valley Water	Healesville	8,335	100	1.0	0.09	0.120	0.003	0.032	0.082	--	--
Yarra Valley Water	Keon Park	32,577	99.2	1.0	0.08	0.090	0.003	0.015	0.041	--	--
Yarra Valley Water	Lilydale	41,260	100	1.3	--	0.094	0.003	0.022	0.040	--	--
Yarra Valley Water	Malvern	79,651	100	1.0	0.09	0.093	0.006	0.015	0.038	--	--
Yarra Valley Water	Mernda / Hurstbridge	14,123	100	1.1	0.09	0.098	0.003	0.008	0.035	--	--
Yarra Valley Water	Mitcham Reservoir	109,123	100	1.0	--	0.084	0.003	0.010	0.036	--	--
Yarra Valley Water	Montrose	15,011	100	1.1	--	0.097	0.003	0.020	0.046	--	--
Yarra Valley Water	Mulgrave	14,220	100	1.1	--	0.082	0.003	0.017	0.043	--	--
Yarra Valley Water	Northcote	96,882	99.6	1.2	0.10	0.079	0.003	0.005	0.040	--	--

Water Supplier	Locality	Estimated Population	E. coli % of samples with zero E. coli /100 mL	Turbidity 95% UCL of the mean (NTU)	Aluminium Maximum Concentration (mg/L)	THMs Maximum Concentration (mg/L)	MCA Maximum Concentration (mg/L)	DCA Maximum Concentration (mg/L)	TCA Maximum Concentration (mg/L)	Bromate Maximum Concentration (mg/L)	Formaldehyde Maximum Concentration (mg/L)
Yarra Valley Water	Plenty	35,444	100	1.0	0.10	0.089	0.003	0.012	0.042	--	--
Yarra Valley Water	Preston	80,137	100	1.1	0.10	0.088	0.003	0.007	0.041	--	--
Yarra Valley Water	Richmond	6,209	100	0.9	0.10	0.099	0.003	0.017	0.043	--	--
Yarra Valley Water	Ridge / Monbulk	12,632	100	1.3	--	0.003	0.003	0.018	0.001	--	--
Yarra Valley Water	Seville	5,113	100	1.2	--	0.006	0.003	0.014	0.002	--	--
Yarra Valley Water	Somerton	61,574	100	1.2	--	0.098	0.003	0.015	0.045	--	--
Yarra Valley Water	Surrey Hills	109,225	100	1.0	0.10	0.089	0.003	0.012	0.039	--	--
Yarra Valley Water	Thomastown	68,921	100	1.0	0.08	0.083	0.003	0.009	0.041	--	--
Yarra Valley Water	Tullamarine	50,057	100	1.1	--	0.073	0.003	0.008	0.041	--	--
Yarra Valley Water	Upper Yarra	6,756	100	1.2	--	0.130	0.003	0.014	0.076	--	--
Yarra Valley Water	Wantirna	5,813	100	0.9	--	0.098	0.003	0.015	0.042	--	--
Yarra Valley Water	Warranwood	49,091	100	1.3	--	0.100	0.003	0.011	0.035	--	--
Yarra Valley Water	Watsonia	51,458	100	1.1	0.10	0.088	0.003	0.016	0.043	--	--
Yarra Valley Water	Whittlesea	2,750	100	1.1	0.09	0.120	0.003	0.006	0.035	--	--
Yarra Valley Water	Woori Yallock	5,113	100	1.3	--	0.110	0.003	0.013	0.052	--	--
Yarra Valley Water	Yarra Glen	1,628	100	1.0	0.11	0.180	0.003	0.044	0.095	--	--
Localities and population	34	1,516,744									
Parks Victoria	Tidal River	Seasonal population	100	0.5	--	--	--	--	--	--	--
Falls Creek ARMB	Falls Creek	Seasonal population	100	1.6	--	--	--	--	--	--	--
Lake Mountain ARMB	Lake Mountain	Seasonal population	100	20	--	--	--	--	--	--	--
Mount Baw Baw ARMB	Mount Baw Baw	Seasonal population	77	0.4	--	--	--	--	--	--	--
Mount Buller and Mount Stirling ARMB	Mount Buller - High Level	Seasonal population	100	0.8	--	--	--	--	--	--	--
Mount Buller and Mount Stirling ARMB	Mount Buller - Low Level	Seasonal population	96	1.4	--	--	--	--	--	--	--
Mount Hotham ARMB	Mount Hotham	Seasonal population	94	0.2	--	--	--	--	--	--	--

Appendix C

Visits to water businesses by the Drinking Water Regulatory Unit

Water business	Date of visit
Goulburn Valley Water	3 December 2004
Lake Mountain Alpine Resort	8 December 2004
Mount Buller & Mount Stirling Alpine Resort	9 December 2004
Mount Hotham Alpine Resort	13 December 2004
Falls Creek Alpine Resort	14 December 2004
Western Water	20 December 2004
South East Water	14 January 2005
Melbourne Water (office visit)	20 January 2005
Mount Baw Baw Alpine Resort	24 January 2005
Glenelg Water	1 February 2005
Grampians Wimmera Mallee Water	2 February 2005
North East Water	3 & 4 February 2005
Central Highlands Water	11 February 2005
South Gippsland Water	15 February 2005
Yarra Valley Water	21 February 2005
Gippsland Water	25 February 2005
Portland Coast Water	28 February 2005
South West Water	1 March 2005
Southern Rural Water	9 March 2005
City West Water	18 March 2005
Barwon Water	5 April 2005
Westernport Water	12 April 2005
Melbourne Water (field visit)	20 April 2005
Lower Murray Water	27 April 2005
Coliban Water	28 April 2005
Goulburn Murray Water	29 April 2005

Appendix D

2004-05 Water supplier events and incidents

Water Supplier	Date of Incident	Type of Incident	Location of Incident / Affected Water Suppliers
Mount Hotham	July 2004	<i>E. coli</i> detection	Mt Hotham
Western Water	July 2004	High chlorine residual	Mount Macedon
Barwon Water Lovely Banks	August 2004	Taste/odour complaints	Lovely Banks
North East Water	August 2004	<i>E. coli</i> detection	Glenrowan
North East Water	August 2004	<i>E. coli</i> detection	Whitfield
Yarra Valley Water	August 2004	Dirty water complaints	Whittlesea
Portland Coast Water	August 2004	<i>E. coli</i> detection	Dartmoor
Barwon Water	September 2004	<i>E. coli</i> detection	Winchelsea
Goulburn Valley Water	September 2004	<i>E. coli</i> detection	Stanhope Standpipe
Goulburn Valley Water	September 2004	<i>E. coli</i> detection	Colbinabbin reticulation
GWM Water	September 2004	<i>E. coli</i> detection	Woomelang
GWM Water	September 2004	<i>E. coli</i> detection	Lalbert
Goulburn Valley Water	September 2004	<i>E. coli</i> detection	Upper Delatite
Melbourne Water	September 2004	Disinfection failure	Lusantia Park Treatment Plant
Melbourne Water	October 2004	Dirty water complaints	Montrose Reservoir
Melbourne Water	October 2004	Dirty water complaints	St Albans Reservoir
Melbourne Water	October 2004	Chlorinator failure	Lusantia Park Treatment Plant
Mt Baw Baw	October 2004	<i>E. coli</i> detection	Mt Baw Baw
North East Water	October 2004	Customer complaints - mucilaginous substance present in drinking water	Myrtleford
Portland Coast Water	October 2004	<i>E. coli</i> detection	Dartmoor
South Gippsland Water	October 2004	<i>E. coli</i> detection	Welshpool
South Gippsland Water	October 2004	Contaminated raw water supply	Leongatha
Yarra Valley Water	November 2004	Taste/odour complaints	Thornbury and Northcote
City West Water	November 2004	Taste/odour complaints	Widespread area from Carlton/Parkville extending to Williamstown/Altona
North East Water	November 2004	<i>E. coli</i> detection	Tangambalanga
Central Highlands Water	November 2004	<i>E. coli</i> detection	Tillings Road Tank which supplies water to the Smythesdale Zone within the Ballarat system
South Gippsland Water	November 2004	<i>E. coli</i> detection	Bennison
Yarra Valley Water	November 2004	Chlorinator failure	Greenvale Reservoir
Goulburn Valley Water	November 2004	<i>E. coli</i> detection	Numerkah
Goulburn Valley Water	November 2004	Chlorinator failure	Pyalong Water Treatment Plant

Water Supplier	Date of Incident	Type of Incident	Location of Incident / Affected Water Suppliers
Melbourne Water	November 2004	Taste/odour complaints	Mitcham-Surrey Hills-Preston main
North East Water	November 2004	<i>E. coli</i> detection	Corryong Low Level
Coliban Water	December 2004	<i>E. coli</i> detection	Serpentine
Mt Baw Baw	December 2004	<i>E. coli</i> detection	Mt Baw Baw
Yarra Valley Water	December 2004	Dirty water complaints	Northcote
East Gippsland Water	December 2004	<i>E. coli</i> detection	Cann River
South Gippsland Water	December 2004	<i>E. coli</i> detection	Koonwarra
Barwon Water	December 2004	<i>E. coli</i> detection	Winchelsea
Gippsland Water	December 2004	<i>E. coli</i> detection	Jumbuk
Goulburn Valley Water	December 2004	<i>E. coli</i> detection	Shepparton
South East Water	December 2004	<i>E. coli</i> detection	Mt Eliza
South East Water	December 2004	<i>E. coli</i> detection	Purnim
Glenelg Water	December 2004	<i>E. coli</i> detection	Balmoral
South Gippsland Water	December 2004	<i>E. coli</i> detection	Port Franklin
Melbourne Water	December 2004	Chlorinator failure	Lyrebird Avenue UV disinfection plant in East Warburton
Coliban Water	January 2005	<i>E. coli</i> detection	Bealiba
Mt Baw Baw	January 2005	<i>E. coli</i> detection	Mt Baw Baw
Goulburn Valley Water	January 2005	Faecal streptococci detection	Katunga
Goulburn Valley Water	January 2005	Faecal streptococci detection	Strathmerton
North East Water	January 2005	<i>E. coli</i> detection	Whitfield
North East Water	January 2005	<i>E. coli</i> detection	Corryong High Level
North East Water	January 2005	<i>E. coli</i> detection	Corryong High Level
North East Water	January 2005	<i>E. coli</i> detection	St. James
City West Water	February 2005	Taste/odour complaints	Airport West to St Albans
Coliban Water	February 2005	<i>E. coli</i> detection	Inglewood
Coliban Water	February 2005	<i>E. coli</i> detection	Tooborac
GWM Water	February 2005	<i>E. coli</i> detection	Hopetoun elevated tower
GWM Water	February 2005	<i>E. coli</i> detection	Hopetoun reticulation
Melbourne Water	February 2005	Taste/odour complaints	Silvan-Preston Main
Melbourne Water	February 2005	Taste/odour complaints	Sydenham
Mt Baw Baw	February 2005	<i>E. coli</i> detection	Mt Baw Baw
Western Water	February 2005	Dirty water complaints	Melton and Bacchus Marsh
Yarra Valley Water	February 2005	Taste/odour complaints	Reservoir, Rosanna, Preston, Coburg, Coolaroo, Greenvale, Macleod, Heidelberg and Lalor
Yarra Valley Water	February 2005	<i>E. coli</i> detection	Emerald
Yarra Valley Water	February 2005	<i>E. coli</i> detection	Northcote
Yarra Valley Water	February 2005	<i>E. coli</i> detection	Keon Park
Goulburn Valley Water	February 2005	<i>E. coli</i> detection	Gigarre water tower

Water Supplier	Date of Incident	Type of Incident	Location of Incident / Affected Water Suppliers
Goulburn Valley Water	February 2005	<i>E. coli</i> detection	Kyabram
Goulburn Valley Water	February 2005	<i>E. coli</i> detection	Stanhope
Goulburn Valley Water	February 2005	<i>E. coli</i> detection	Tongala
GWM Water	February 2005	<i>E. coli</i> detection	Hopetoun
Barwon Water	February 2005	<i>E. coli</i> detection	Bannockburn
Coliban Water	February 2005	High aluminium, low pH	Heathcote
Goulburn Valley Water	February 2005	Taste/odour complaints	Wallan
Goulburn Valley Water	February 2005	High turbidity	Tatura
South West Water	February 2005	Dirty water complaints	Purnim
North East Water	March 2005	High aluminium	Oxley
Mt Baw Baw	March 2005	<i>E. coli</i> detection	Mt Baw Baw
North East Water	March 2005	<i>E. coli</i> detection	Corryong High Level
Western Water	March 2005	High volume of water consumption	Myrniong
Lower Murray Water	March 2005	<i>E. coli</i> detection	Robinvale
South Gippsland Water	March 2005	<i>E. coli</i> detection	Poowong
Goulburn Valley Water	March 2005	<i>E. coli</i> detection	Wallan Reservoir
Mt Buller & Mt Stirling	March 2005	<i>E. coli</i> detection	Mt Buller
Glenelg Water	March 2005	Chlorinator failure	Balmoral
South West Water	March 2005	High turbidity	Koroit
Barwon Water	March 2005	Low water pressure complaints	Ocean Grove and Barwon Heads
North East Water	March 2005	<i>E. coli</i> detection	Dartmouth
North East Water	March 2005	<i>E. coli</i> detection	Tawonga
Coliban Water	April 2005	<i>E. coli</i> detection	Tooborac
Mt Baw Baw	April 2005	coli detection	Mt Baw Baw
Western Water	April 2005	Dirty water complaints	Lancefield
Yarra Valley Water	April 2005	Dirty water complaints	Epping
Goulburn Valley Water	April 2005	Elevated fluoride	Shepparton
GWM Water	April 2005	<i>E. coli</i> detection	Brim
Mt Buller & Mt Stirling	April 2005	<i>E. coli</i> detection	Mt Buller
South East Water	April 2005	<i>E. coli</i> detection	Balnarring Tank, which supplies the Somers Zone
GWM Water	April 2005	<i>E. coli</i> detection	Great Western
North East Water	April 2005	<i>E. coli</i> detection	Mt Beauty/Tawonga/Tawonga South
Mt Baw Baw	May 2005	<i>E. coli</i> detection	Mt Baw Baw
Yarra Valley Water	May 2005	Dirty water complaints	Doncaster
GWM Water	May 2005	<i>E. coli</i> detection	Sea Lake
Melbourne Water	May 2005	Chlorinator failure	Greenvale Disinfection Plant
Yarra Valley Water	May 2005	Chlorinator failure	Greenvale Disinfection Plant

Water Supplier	Date of Incident	Type of Incident	Location of Incident / Affected Water Suppliers
City West Water	May 2005	Cryptosporidium detection	Werribee
GWM Water	May 2005	<i>E. coli</i> detection	Nullawil
North East Water	May 2005	<i>E. coli</i> detection	Corryong High Level
North East Water	May 2005	<i>E. coli</i> detection	Tawonga
Mount Hotham	June 2005	<i>E. coli</i> detection	Mt Hotham
Yarra Valley Water	June 2005	Dirty water complaints	Bulleen
South West Water	June 2005	High turbidity	Koroit
Central Highlands Water	June 2005	<i>E. coli</i> detection	Town of Rowsley (Fiskville/ Glenmore)
Mt Buller & Mt Stirling	June 2005	<i>E. coli</i> detection	Mt Buller
Gippsland Water	June 2005	High aluminium	Maffra
Glenelg Water	June 2005	<i>E. coli</i> detection	Coleraine
South East Water	June 2005	<i>E. coli</i> detection	Somers
City West Water	June 2005	<i>E. coli</i> detection	Essendon
City West Water	June 2005	<i>E. coli</i> detection	Little River
South East Water	June 2005	<i>E. coli</i> detection	Somerville
South East Water	June 2005	<i>E. coli</i> detection	Mt Martha (Mornington/Mt Martha zone)
GWM Water	June 2005	<i>E. coli</i> detection	Nullawil
Westernport Water	June 2005	Dirty water complaints	Throughout Westernport Water's drinking water supply area

Appendix E

2004-05 Water storage manager events

Water Supplier Manager	Date of Event	Type of Event	Location of Event / Affected Water Supplies
Goulburn-Murray Water	July 2004	Spill, emissions or dumpings (herbicide, effluent waste)	Murray River 5km downstream of Echuca
Goulburn-Murray Water	September 2004	emissions or dumpings (herbicide, effluent waste)	Knackery holding pond /creek frontage in the Wangaratta region.
Goulburn-Murray Water	September 2004	Spill, emissions or dumpings (herbicide, effluent waste)	Jim Crow Creek
Goulburn-Murray Water	November 2004	Reported illness	Lake Nagambie
Melbourne Water	December 2004	Giardia detection	Maroondah Aqueduct - Yarra Glen
Goulburn-Murray Water	July 2004	Reported illness	Lake Nagambie
Goulburn-Murray Water	February 2005	Stock or wildlife health or sustainability	7/3 channel
Goulburn-Murray Water	February 2005	Stock or wildlife health	Broken Creek
Goulburn-Murray Water	April 2005	Spill, emissions or dumpings (herbicide, effluent, waste)	Jack in the Box Creek, Woodonga
Goulburn-Murray Water	May 2005	Stock or wildlife health or sustainability	Upstream side of the east abutment of the Goulburn Weir
Melbourne Water	June 2005	Giardia detection	Clear Water Channel Inlet to Yan Yean Reservoir

APPENDIX F

Parks Victoria proposed drinking water sites

Number	Park name	Site name
1	Arthurs Seat State Park	Arthurs Seat summit
2	Cape Nelson State Park	Cape Nelson Lightstation
3	Cape Otway Lightstation Reserve	Cape Otway Lightstation
4	Gabo Island Lightstation Reserve	Gabo Island
5	Grampians National Park	Mackenzie Falls
6	Hattah - Kulkylne National Park	Entrance Road
7	Kinglake National Park	Entrance Area
8	Lake Eildon National Park	Lakeside/Candlebark
9	Lower Glenelg National Park	Princess Margaret Rose Caves
10	Mornington Peninsula National Park	Gunnamatta Ocean Beach
11	Mornington Peninsula National Park	Cape Schanck Lighthouse and Kiosk
12	Mount Arapiles - Tooan State Park	Centenary Park
13	Mount Buffalo National Park	The Spring
14	Point Hicks Lightstation Reserve	Point Hicks Lightstation
15	Port Campbell National Park	Twelve Apostles Visitor Facility
16	Wilsons Promontory National Park	Tidal River
17	Wilsons Promontory National Park	Wilsons Promontory Lightstation
18	Wyperfeld National Park	Wonga Campground
19	Yarra Ranges National Park	Ten Mile car park
20	Yarra Ranges National Park	O'Shannassy Lodge

APENDIX G

Parks Victoria proposed non-drinking water sites

Number	Park name	Site name
1	Agnes Falls Scenic Reserve	Agnes Falls Scenic Reserve
2	Alpine National Park	Paradise Falls
3	Alpine National Park	Harrietville
4	Alpine National Park	Johnnies Top Tank
5	Alpine National Park	McNamara Hut (Dinner Plain)
6	Alpine National Park	Bivouac Hut
7	Alpine National Park	MacAlister Springs
8	Alpine National Park	Lovicks Hut
9	Alpine National Park	Rover Chalet
10	Alpine National Park	Red Robin Battery & residence (3 Huts)
11	Alpine National Park	Johnston Hut Camping Area
12	Alpine National Park	Mount Benambra Hut
13	Alpine National Park	Pretty Valley Precinct
14	Alpine National Park	Melbourne University Mountaineering Club Hut
15	Alpine National Park	Bluff Hut
16	Alpine National Park	Cleve Cole Hut Camping Area
17	Alpine National Park	Cope Hut
18	Alpine National Park	JB Plain Hut and Camping Area
19	Alpine National Park	Roper Hut Camping Area
20	Alpine National Park	Barry Saddle - Australian Alps Walking Track
21	Angahook - Lorne State Park	Sheoak Picnic Area
22	Angahook - Lorne State Park	Blanket Leaf Picnic Area
23	Arthurs Seat State Park	Seawinds
24	Avondale Reserve	Avondale Gardens
25	Ballarat - Creswick Regional Park	Slatey Creek Picnic Area No 1
26	Baw Baw National Park	St Gwinear Visitor Area
27	Bay of Islands Coastal Park	Childers Cove Area
28	Bemm River Scenic Reserve	Bemm River Day Visitor Area
29	Brisbane Ranges National Park	Little River Picnic Area & Walk-in Camp Ground
30	Brisbane Ranges National Park	Boar Gully Camping Area
31	Brisbane Ranges National Park	Old Mill Walk-in Camping
32	Bunyip State Park	Mortimer Picnic Ground
33	Bunyip State Park	Dyers Picnic Ground
34	Burrowa - Pine Mountain National Park	Bluff Creek
35	Burrowa - Pine Mountain National Park	Hinces Creek
36	Cape Conran Coastal Park	Sailors Grave Beach
37	Cape Conran Coastal Park	East Cape Beach
38	Cape Conran Coastal Park	Banksia Bluff Campground
39	Cape Liptrap Coastal Park	Bear Gully
40	Cape Nelson State Park	Cape Nelson Picnic Area
41	Castlemaine Diggings National Heritage Park	Vaughan Rotunda Picnic Area
42	Vaughan Springs	House
43	Cherrypool Highway Park	Cherrypool Highway Park
44	Chiltern Box-Ironbark National Park	Honeyeater Picnic Area
45	Colquhoun Regional Park	Colquhoun Regional Park
46	Conglomerate Gully Flora Reserve	Conglomerate Gully
47	Croajingalong National Park	Allans Head
48	Croajingalong National Park	Cape Horn
49	Croajingalong National Park	Captain Creek
50	Croajingalong National Park	Cemetery Bight
51	Croajingalong National Park	Genoa River Fire Track Jetty
52	Croajingalong National Park	Gravelly Point
53	Croajingalong National Park	Sandy Point
54	Croajingalong National Park	Mueller Camp

55	Croajingalong National Park	Shipwreck Creek
56	Croajingalong National Park	Thurra River
57	Croajingalong National Park	Wingan Inlet
58	Croajingalong National Park	Brokewell
59	Dandenong Ranges National Park	Kays Picnic Area
60	Dandenong Ranges National Park	Olinda - Valley Picnic Ground
61	Dandenong Ranges National Park	Doongalla Homestead Site
62	Dandenong Valley Parklands	Nortons Lane Market Garden
63	Days Mill Historic Area	Days Mill Historic Area
64	Dergholm State Park	Bailey's Rocks (In Bogalara Block)
65	Discovery Bay Coastal Park	Bridgewater Lakes
66	Discovery Bay Coastal Park	White Sands
67	Discovery Bay Coastal Park	Lake Mombeong Camp
68	Discovery Bay Coastal Park	Swan Lake Camp
69	Discovery Bay Coastal Park	Swan Lake Day Visit Area
70	Discovery Bay Coastal Park	Mallee Camp
71	Discovery Bay Coastal Park	Springs Camp
72	Discovery Bay Coastal Park	Trewalla Camp
73	Discovery Bay Coastal Park	Lake Mombeong
74	Discovery Bay Coastal Park	Swan Lake Dune Buggy Camp
75	Discovery Bay Coastal Park	Swan Lake Public Camp
76	Errinundra National Park	Errinundra Rainforest Boardwalk
77	Ewing Morass Wildlife Reserve	Corringle Slips
78	French Island National Park	French Island Depot
79	French Island National Park	Tankerton Foreshore
80	French Island National Park	Fairhaven
81	Gippsland Lakes Coastal Park	Barrier Landing
82	Gippsland Lakes Coastal Park	Loch Sport Causeway
83	Gippsland Lakes Coastal Park	Steamer Landing
84	Gippsland Lakes Coastal Park	Entrance Bay
85	Gippsland Lakes Coastal Park	Drews Jetty
86	Gippsland Lakes Coastal Park	Red Bluff
87	Gippsland Lakes Coastal Park	Paradise Beach
88	Grampians National Park	First Wannon Remote Campground
89	Grampians National Park	Ingleton Springs
90	Grampians National Park	Boroka Lookout
91	Grampians National Park	Zumstein
92	Grampians National Park	Bomjinna Campground
93	Grampians National Park	Boreang Campground
94	Grampians National Park	Jimmy Creek Campground
95	Grampians National Park	Kalymna Falls Picnic Ground
96	Grampians National Park	Mafeking Campground
97	Grampians National Park	Strachans Campground
98	Grampians National Park	Wannan Crossing Campground
99	Grampians National Park	Borough Huts Campground
100	Grampians National Park	Smiths Mill Campground
101	Grampians National Park	Hollow Mountain Carpark
102	Grampians National Park	Plantation Campground
103	Grampians National Park	Stapylton Campground
104	Grampians National Park	Troopers Creek Campground
105	Grant Historic Area	Grant Historic Township
106	Hattah - Kulkyne National Park	Lake Mournpall
107	Hepburn Regional Park	Mt Franklin Reserve
108	Howqua Hills Historic Area	Blackbird Flat
109	Howqua Hills Historic Area	Blackbird Depot
110	Jane Duff Highway Park	Jane Duff Highway Park
111	Kinglake National Park	Masons Falls Picnic Area
112	Kinglake National Park	Jehosaphat Gully
113	Kinglake National Park	The Gums Camp
114	Kooyoora State Park	Melville Caves Camping Area
115	Kurth Kiln Park	Kurth Kiln Site
116	Kurth Kiln Park	Kurth Kiln Picnic & Camping Ground
117	Lake Albacutya Park	Western Beach

118	Lake Albacutya Park	Yaapeet Beach
119	Lake Eildon National Park	Taylor's Creek Track
120	Lake Eildon National Park	Coopers Point Camping Area
121	Lake Eildon National Park	Jerusalem Creek Camping Area 1
122	Lake Eildon National Park	Jerusalem Creek Camping Area 2
123	Lake Eildon National Park	Jerusalem Creek Camping Area 3/4
124	Lake Eildon National Park	Jerusalem Creek Camping Area 5/6
125	Lake Eildon National Park	Jerusalem Creek Camping Area 7/8
126	Lake Eildon National Park	Mountaineer Creek Camping Area
127	Lake Eildon National Park	Taylor's Creek Camping Area
128	Lake Eildon National Park	Perfect Cure Creek Cabins
129	Lake Hindmarsh Reserve	Lake Hindmarsh
130	Lake Ratzcastle Reserve	Lake Ratzcastle Lake Reserve
131	Langi Ghiran State Park	Hidden Lagoon Walking Track
132	Langi Ghiran State Park	Picnic and Camping Area
133	Lerderderg State Park	MacKenzie's Flat Picnic Area
134	Lerderderg State Park	O'Briens Crossing
135	Little Desert National Park	Sanctuary Picnic Ground
136	Little Desert National Park	Ackle Bend Campground
137	Little Desert National Park	Horseshoe Bend Campground
138	Little Desert National Park	Kiata Campground
139	Little Desert National Park	Mallee Walkers Camp
140	Little Desert National Park	Yellowgums Walkers Camp
141	Lower Glenelg National Park	Battersbys
142	Lower Glenelg National Park	Forest Camp South
143	Lower Glenelg National Park	Hutchessons
144	Lower Glenelg National Park	Moleside Canoe Camp
145	Lower Glenelg National Park	Pritchards
146	Lower Glenelg National Park	Simsons
147	Lower Glenelg National Park	Georges Rest
148	Lower Glenelg National Park	Murrells
149	Lower Glenelg National Park	Pines Landing
150	Lower Glenelg National Park	Post and Rail
151	Lower Glenelg National Park	Red Gum Landing
152	Lower Glenelg National Park	Wild Dog Bend
153	Lower Glenelg National Park	Patterson Walkers Camp
154	Lower Glenelg National Park	Wilson Hall
155	Lower Glenelg National Park	Bowds
156	Lower Glenelg National Park	Forest Camp North
157	Lower Glenelg National Park	Lasletts
158	Lower Glenelg National Park	McLennans Punt
159	Macedon Regional Park	Harbison Picnic Area
160	Macedon Regional Park	Office/Depot
161	Macedon Regional Park	Lagoon Park
162	Macedon Regional Park	Days Picnic Area
163	Macedon Regional Park	Sanatorium Lake
164	Melba Gully State Park	Melba Gully
165	Mitchell River National Park	Den of Nargun
166	Mitchell River National Park	Billy Goat Bend
167	Mornington Peninsula National Park	Point Nepean - Fort Nepean
168	Mornington Peninsula National Park	Portsea Surf Lifesaving Club
169	Mornington Peninsula National Park	Highfield
170	Morwell National Park	Kerry Road Picnic Area
171	Mount Alexander Regional Park	'Leanganook' Koala Park
172	Mount Buangor State Park	Bailes Picnic Area
173	Mount Buangor State Park	Mount Buangor
174	Mount Buangor State Park	Ferntree Picnic Area
175	Mount Buangor State Park	Middle Creek Camping Area
176	Mount Buffalo National Park	Entrance Station
177	Mount Granya State Park	Cottontree Creek
178	Mount Granya State Park	Mount Granya Summit
179	Mount Richmond National Park	Summit
180	Mount Wills Historic Area	Mt Wills Hut & Camp Area

181	Mount Worth State Park	Moonlight Creek Picnic Area
182	Murray - Sunset National Park	Rock Holes
183	Murray - Sunset National Park	Pink Lakes - Lake Crosbie campground
184	Murray - Sunset National Park	Pink Lakes - Lake Becking campground
185	Murray - Sunset National Park	Mopoke Hut
186	Murray - Sunset National Park	Shearers Quarters
187	Murrindal Cave Reserve	Murrindal Cave Reserve
188	Nooramunga Marine & Coastal Park	McLoughlins Beach
189	Nooramunga Marine & Coastal Park	Snake Island
190	Nyerimilang Park Heritage Park	Nyerimilang Park
191	Organ Pipes National Park	(Area Adjacent) Organ Pipes
192	Otway National Park	Shelly Beach
193	Otway National Park	Blanket Bay
194	Otway National Park	Johanna Beach
195	Paddys Ranges State Park	Picnic Area (adjacent to Settling Ponds Track)
196	Paddys Ranges State Park	Camping Area (adjacent to Karri Track)
197	Peach Tree Creek Reserve	Peach Tree Creek Reserve
198	Peter Francis Points Arboretum Flora Reserve	Peter Francis Points Arboretum
199	Port Campbell National Park	Glenample Homestead
200	Potholes Cave Reserve	Potholes Cave Reserve
201	Powers Lookout Scenic Reserve	Powers Lookout
202	Snowy River National Park	MacKillop Bridge
203	Snowy River National Park	Waratah Flat
204	Snowy River National Park	Balley Hooley
205	St Arnaud Ranges National Park	Teddington Hut
206	Steiglitz Park	Bert Boardman Recreation Reserve
207	Stephenson's Falls Scenic Reserve	Stephenson's Falls
208	Tarra Bulga National Park	Bulga Picnic Area
209	Tarra Bulga National Park	Balook Picnic Area
210	Tarra Bulga National Park	Tarra Valley Picnic Area
211	Terrick Terrick State Park	Grasslands
212	The Lakes National Park	Dolomite Picnic Area
213	The Lakes National Park	Point Wilson
214	The Lakes National Park	Emu Bight
215	The Lakes National Park	Rotamah Island accommodation
216	The Lakes National Park	Rotamah Island campground
217	The Pyramids Cave Reserve	The Pyramids Cave Reserve
218	Tower Hill State Game Reserve	Tower Hill
219	Wannon Falls Scenic Reserve	Wannon Falls Scenic Reserve
220	Warby Range State Park	Pine Gully Picnic Area
221	Warby Range State Park	Ryans Lookout
222	Warby Range State Park	Wenhams Camp
223	Warrandyte State Park	Jumping Creek Reserve
224	Warrandyte State Park	Stanbrae Reserve
225	Werribee Gorge State Park	Quarry Picnic Area
226	Werribee Gorge State Park	Miekles Point Picnic Area
227	Wilsons Promontory National Park	Mount Oberon spring
228	Wilsons Promontory National Park	Stockyard Camp
229	Wilsons Promontory National Park	Halfway Hut
230	Wilsons Promontory National Park	Little Waterloo Bay
231	Wilsons Promontory National Park	Refuge Cove
232	Wilsons Promontory National Park	Sealers Cove
233	Wilsons Promontory National Park	Park Entrance
234	Wyperfeld National Park	Pine Plains
235	Wyperfeld National Park	Wathe Flora & Fauna Reserve
236	Wyperfeld National Park	Work Site Fuel Depot
237	Wyperfeld National Park	Casuarina Campground
238	Wyperfeld National Park	Broken Bucket
239	Yarra Ranges National Park	Cambarville
240	Yellingbo Nature Conservation Reserve	Old Depot Site

APPENDIX H

Contact details for water businesses

Business	Postal Address	Telephone	Website
Barwon Water	PO Box 659 Geelong 3220	(03) 5226 2500	www.barwonwater.vic.gov.au
Gippsland Water	PO Box 348 Traralgon 3844	(03) 5177 4600	www.gippswater.com.au
Central Highlands Water	PO Box 152 Ballarat 3353	(03) 5320 3100	www.chw.net.au
Coliban Water	Box 2770 Bendigo Delivery Centre Bendigo	(03) 5434 1341	www.coliban.com.au
East Gippsland Water	PO Box 52 Bairnsdale 3875	(03) 5150 4444	www.egwater.voic.gov.au
Gleneilg Water	PO Box 107 Hamilton 3300	(03) 5551 0400	www.grwa.com.au
Goulburn Valley Water	PO Box 185 Shepparton 3632	(03) 5832 0445	www.gvwater.vic.gov.au
Grampians Wimmera Mallee Water	PO Box 481 Horsham 3402	(03) 5382 4611	www.gwmwater.org.au
Lower Murray Urban & Rural Water	PO Box 1438 Mildura 3502	(03) 5051 3400	www.lmrwa.vic.gov.au
North East Water	PO Box 863 Wodonga 3689	(02) 6022 0555	www.nrerwa.vic.gov.au
Portland Coast Water	PO Box 1189 Portland 3305	(03) 5522 3500	www.portlandwater.net.au
South Gippsland Water	PO Box 102 Foster 3960	(03) 5682 0444	www.sgwater.com.au
South West Water	PO Box 1158, Warrnambool 3280	(03) 5564 7600	www.southwestwater.com.au
Western Water	Locked Bag 2 Gisborne 3437	(03) 5421 9400	www.westernwater.com.au
Westernport Water	2 Boys Home Road New Haven 3925	(03) 5956 4100	www.westernportwater.com.au
Melbourne Water	PO Box 4342 Melbourne 3001	(03) 9235 7100	www.melbournewater.com.au
City West Water	Locked Bag 350 Sunshine 3020	(03) 9313 8422	www.citywestwater.com.au
South East Water	PO Box 1382 Moorabbin 3189	(03) 9552 3000	www.southeastwater.com.au
Yarra Valley Water	Private Bag 1 Mitcham 3132	(03) 9874 2122	www.yarravalleywater.com.au
Southern Rural Water	PO Box 153 Maffra 3860	(03) 5139 3100	www.srw.com.au
Goulburn - Murray Rural Water	P.O. Box 165 Tatura 3616	(03) 5833 550	www.g-mwater.com.au
Falls Creek Management Board	PO Box 50 Falls Creek 3699	(03) 5758 3224	www.falls creek.com.au
Lake Mountain Management Board	PO Box 40 Marysville 3779	(03) 5963 3288	www.lakemountainresort.com.au
Mt Buller and Mt Stirling Management Board	C/- Post Office Mount Buller 3723	(03) 5777 6077	www.mtbuller.com.au
Mt Baw Baw Management Board	Private Bag Via Noojee 3833	(03) 5165 1136	www.mountainbawbaw.com.au
Mt Hotham Management Board	PO Box 188 Bright 3741	(03) 5759 3550	www.mthotham.com.au
Parks Victoria	Level 10/535 Bourke Street Melbourne 3000	(03) 8627 4699	www.parkweb.vic.gov.au

APPENDIX I:

Localities and towns

Locality	Water supplier	Suburb/Town supplied
Aireys Inlet	Barwon Water	Aireys Inlet, Fairhaven
Alvie	Barwon Water	Alvie
Anakie	Barwon Water	Anakie
Anglesea	Barwon Water	Anglesea
Apollo Bay	Barwon Water	Apollo Bay, Marengo, Skenes Creek
Bannockburn	Barwon Water	Bannockburn
Beeac	Barwon Water	Beeac
Birregurra	Barwon Water	Birregurra
Clifton Springs - Drysdale	Barwon Water	Clifton Springs, Drysdale, Wallington
Colac	Barwon Water	Colac, Elliminyt
Cororooke	Barwon Water	Cororooke
Cressy	Barwon Water	Cressy
Forrest	Barwon Water	Forrest
Gellibrand	Barwon Water	Gellibrand
Gheringhap	Barwon Water	Gheringhap
Grovedale	Barwon Water	Grovedale, Waurin Ponds, Marshall
Highton	Barwon Water	Highton, West Geelong, Newtown, Geelong, South Geelong, East Geelong, Breakwater, Thomson, Newcomb, Whittington, Moolap
Highton High Level	Barwon Water	Highton, Wandana Heights, Ceres
Inverleigh	Barwon Water	Inverleigh
Leopold	Barwon Water	Leopold, Curlewis
Lethbridge	Barwon Water	Lethbridge
Little River	Barwon Water	Little River West
Lorne	Barwon Water	Lorne
Lovely Banks	Barwon Water	Lovely Banks, North Geelong, Hamlyn Heights, Bell Park, Norlane, North Shore, Corio, Lara, Norlane West
Meredith	Barwon Water	Meredith
Montpellier	Barwon Water	Montpellier, Bell-Post Hill, Hamlyn Heights, Herne Hill, Manifold Heights, Highton, Newtown, Batesford, Belmont,
Moriac	Barwon Water	Moriac
Mt Duneed	Barwon Water	Mt Duneed, Fresh Water Creek, Connewarre, Breamlea
Ocean Grove	Barwon Water	Ocean Grove, Collendina, Barwon Heads, Marcus Hill
Portarlington	Barwon Water	Portarlington, St Leonards, Indented Heads
Queenscliff	Barwon Water	Queenscliff, Pt Lonsdale
Shelford	Barwon Water	Shelford
Teesdale	Barwon Water	Teesdale
Torquay	Barwon Water	Torquay, Jan Juc
Winchelsea	Barwon Water	Winchelsea
Alma	Central Highlands Water	Alma, Adelaide Lead, Moonlight
Avoca	Central Highlands Water	Avoca

Locality	Water supplier	Suburb/Town supplied
Ballan	Central Highlands Water	Ballan
Ballarat Central	Central Highlands Water	Alfredton, Ballarat, Ballarat East, Canadian, Golden Point, Mt Pleasant, Redan, Ross Creek, Smythes Creel, Warrenheip, Woodmans Hill
Ballarat Nth HI/Nerrina	Central Highlands Water	Ballarat North
Beaufort	Central Highlands Water	Beaufort
Bet Bet/Simson / Havelock	Central Highlands Water	Betley, Havelock, Bet Bet, Simson
Blackwood/Barrys Reef	Central Highlands Water	Blackwood, Barry's Reef
Bungaree / Wallace	Central Highlands Water	Bungaree, Wallace
Buninyong/Mt Helen	Central Highlands Water	Mt Helen, Buninyong, Mt Clear, Green Hill
Cardigan Village	Central Highlands Water	Cardigan, Cardigan Village
Carisbrook	Central Highlands Water	Carisbrook, Flagstaff
Clunes	Central Highlands Water	Clunes
Creswick	Central Highlands Water	Creswick
Daisy Hill	Central Highlands Water	Daisy Hill
Daylesford High Level	Central Highlands Water	Daylesford
Daylesford Low Level / Hepburn	Central Highlands Water	Hepburn, Daylesford, Musk
Dean	Central Highlands Water	Dean
Enfield	Central Highlands Water	Rokewood, Enfield, Corindhap, Dereel
Fiskville/Glenmore	Central Highlands Water	Fiskville, Glenmore, Rowsley
Gordon / Mount Egerton	Central Highlands Water	Gordon, Mt Egerton
Haddon	Central Highlands Water	Haddon, Snake Valley, Carngham
Kingston/Smeaton	Central Highlands Water	Allendale, Kingston, Smeaton
Lal Lal	Central Highlands Water	Lal Lal, Bungal
Learmonth	Central Highlands Water	Learmonth
Lexton	Central Highlands Water	Lexton
Linton	Central Highlands Water	Linton
Majorca / Craigie	Central Highlands Water	Golden Point, Craigie, Majorca
Maryborough	Central Highlands Water	Maryborough
Napoleons	Central Highlands Water	Woodlands, Napoleons
Newlyn / Springmount	Central Highlands Water	Broomfield, Newlyn, Springmount
Sebastopol	Central Highlands Water	Sebastopol, Magpie
Skipton	Central Highlands Water	Skipton, Pittong
Smythesdale	Central Highlands Water	Newtown, Scarsdale, Smythesdale
Talbot	Central Highlands Water	Talbot
Timor / Bowenvale	Central Highlands Water	Timor, Bowenvale, Timor West
Waubra	Central Highlands Water	Waubra
Wendouree	Central Highlands Water	Browns Hill, Nerrina/Little Bendigo, Invermay, Black Hill, Wendouree, Miners Rest, Mitchell Park, Mt Rowan, Lakes Gardens
Altona	City West Water	Altona, Laverton, Point Cook
Coburg	City West Water	Strathmore
East Keilor	City West Water	Avondale Heights, Essendon, Keilor, Keilor Park, Strathmore
Footscray	City West Water	Braybrook, Footscray, Maribyrnong, Spotswood, Sunshine, Williamstown, Yarraville
North Melbourne	City West Water	Carlton, Collingwood, East Melbourne, Essendon, Fitzroy, Kensington, Melbourne, Parkville

Locality	Water supplier	Suburb/Town supplied
Richmond	City West Water	Abbotsford, Burnley, Richmond
St Albans	City West Water	Cairnlea, Deer Park, Derrimut, St Albans, Sunshine North
Sydenham	City West Water	Caroline Springs, Hillside, Keilor, Kings Park, St Albans, Sydenham, Taylors Lakes
Tullamarine	City West Water	Melbourne Airport, Strathmore, Tullamarine
Werribee South	City West Water	Werribee South
Werribee	City West Water	Hoppers Crossing, Little River, Werribee
Axedale	Coliban Water	Axedale
Bealiba	Coliban Water	Bealiba
Belvoir Park	Coliban Water	Belvoir Park
Big Hill	Coliban Water	Big Hill
Boort	Coliban Water	Boort
Bridgewater	Coliban Water	Bridgewater
Castlemaine	Coliban Water	Castlemaine, Campbells Creek
Chewton	Coliban Water	Chewton, Golden Point
Cohuna	Coliban Water	Cohuna
Dunolly	Coliban Water	Dunolly
Echuca	Coliban Water	Echuca
Edwards Road	Coliban Water	Flora Hill, Kennington, Spring Gully.
Elmore	Coliban Water	Elmore
Fryerstown	Coliban Water	Fryerstown
Goornong	Coliban Water	Goornong
Guildford	Coliban Water	Guildford
Gunbower	Coliban Water	Gunbower
Harcourt	Coliban Water	Harcourt, North Castlemaine
Heathcote	Coliban Water	Heathcote
Huntly	Coliban Water	Ascot, Huntly
Inglewood	Coliban Water	Inglewood
Korong Vale	Coliban Water	Korong Vale
Kyneton	Coliban Water	Kyneton (central and western areas)
Laanecoorie	Coliban Water	Laanecoorie
Leitchville	Coliban Water	Leitchville
Lockington	Coliban Water	Lockington
Maldon	Coliban Water	Maldon
Malmsbury	Coliban Water	Malmsbury
Marong	Coliban Water	Marong, Maiden Gully
Newstead	Coliban Water	Newstead
Park Valley	Coliban Water	Kyneton (eastern areas)
Pyramid Hill	Coliban Water	Pyramid Hill
Raywood	Coliban Water	Raywood
Rochester	Coliban Water	Rochester
Sandhurst	Coliban Water	California Gully, Flora Hill, Golden Square, Kangaroo Flat, Kennington, Long Gully, Quarry Hill, West Bendigo
Serpentine	Coliban Water	Serpentine
Specimen Hill	Coliban Water	Bendigo, California Gully, Eaglehawk, East Bendigo, Epsom, Jackass Flat, Junotoun, Long Gully, Myers Flat, North Bendigo, Sailors Gully, White Hills

Locality	Water supplier	Suburb/Town supplied
Strathfieldsaye	Coliban Water	Strathfieldsaye
Taradale/Elphinstone	Coliban Water	Taradale, Elphinstone
Tarnagulla	Coliban Water	Tarnagulla
Tooborac	Coliban Water	Tooborac
Trentham	Coliban Water	Trentham
Tylden	Coliban Water	Tylden
Wedderburn	Coliban Water	Wedderburn
Bairnsdale	East Gippsland Water	Bairnsdale, Wy Yung (Rural and Urban), Lucknow, East Bairnsdale, Eastwood, Granite Rock
Bemm River	East Gippsland Water	Bemm River
Buchan	East Gippsland Water	Buchan
Cann River	East Gippsland Water	Cann River
Dinner Plain	East Gippsland Water	Dinner Plain
Eagle Point H/Level	East Gippsland Water	Newlands Arm, Banksia Peninsula
Kalimna	East Gippsland Water	Kalimna
Lindenow	East Gippsland Water	Lindenow
Lindenow South	East Gippsland Water	Lindenow South
Mallacoota	East Gippsland Water	Mallacoota, Karbethong, Marlo
Merrangbaur	East Gippsland Water	Merrangbaur, Lake Tyers, Lake Bunga, Lake Tyers Aboriginal Trust
Metung	East Gippsland Water	Metung
Nicholson - Swan Reach	East Gippsland Water	Nicholson, Johnsonville, Swan Reach, Metung, Tambo Upper
Nowa Nowa	East Gippsland Water	Nowa Nowa
Omeo	East Gippsland Water	Omeo
Orbost	East Gippsland Water	Orbost, Newmerella, Marlo
Paynesville - Grandview Rd	East Gippsland Water	Paynesville, Raymond Island, Eagle Point
Sarsfield - Bruthen	East Gippsland Water	Sarsfield, Bruthen, Wiseleigh, Mossiface
Sunlakes - Toorloo	East Gippsland Water	Lakes Entrance, Lake Tyers, Lake Bunga
Swifts Creek	East Gippsland Water	Swifts Creek
Boisdale	Gippsland Water	Boisdale
Boolarra	Gippsland Water	Boolarra
Briagolong	Gippsland Water	Briagolong
Churchill	Gippsland Water	Churchill
Coongulla/Glenmaggie	Gippsland Water	Coongulla, Glenmaggie
Cowwarr	Gippsland Water	Cowwarr
Drouin	Gippsland Water	Drouin, Drouin West, Robin Hood
Erica	Gippsland Water	Erica
Glengarry	Gippsland Water	Glengarry
Heyfield	Gippsland Water	Heyfield
Jumbuk	Gippsland Water	Jumbuk, Jeeralang
Maffra	Gippsland Water	Maffra
Mirboo North	Gippsland Water	Mirboo North
Moe	Gippsland Water	Moe
Morwell	Gippsland Water	Morwell
Neerim South	Gippsland Water	Neerim South
Newborough	Gippsland Water	Newborough
Noojee	Gippsland Water	Noojee

Locality	Water supplier	Suburb/Town supplied
Rawson	Gippsland Water	Rawson
Rokeby/Buln Buln	Gippsland Water	Rokeby, Buln Buln
Rosedale	Gippsland Water	Rosedale
Sale/Wurruk	Gippsland Water	Sale, Wurruk
Seaspray	Gippsland Water	Seaspray
Stratford	Gippsland Water	Stratford
Thorpdale	Gippsland Water	Thorpdale
Toongabbie	Gippsland Water	Toongabbie
Trafalgar	Gippsland Water	Trafalgar
Traralgon	Gippsland Water	Traralgon
Traralgon Sth/Hazelwood Nth	Gippsland Water	Traralgon Sth, Hazelwood Nth
Tyers	Gippsland Water	Tyers
Warragul	Gippsland Water	Warragul
Warragul South/Nilma/Darnum	Gippsland Water	Warragul South, Nilma, Darnum
Willow Grove	Gippsland Water	Willow Grove
Yallourn North	Gippsland Water	Yallourn North
Yarragon	Gippsland Water	Yarragon
Yinnar	Gippsland Water	Yinnar
Alexandra	Goulburn Valley Water	Alexandra
Avenel	Goulburn Valley Water	Avenel
Barmah	Goulburn Valley Water	Barmah
Bonnie Doon	Goulburn Valley Water	Bonnie Doon
Broadford	Goulburn Valley Water	Broadford
Buxton	Goulburn Valley Water	Buxton
Cobram	Goulburn Valley Water	Cobram
Colbinabbin	Goulburn Valley Water	Colbinabbin
Dookie	Goulburn Valley Water	Dookie
Eildon	Goulburn Valley Water	Eildon
Euroa	Goulburn Valley Water	Euroa
Girgarre	Goulburn Valley Water	Girgarre
Katamatite	Goulburn Valley Water	Katamatite
Katandra West	Goulburn Valley Water	Katandra West
Katunga	Goulburn Valley Water	Katunga
Kilmore	Goulburn Valley Water	Kilmore
Kyabram	Goulburn Valley Water	Kyabram
Longwood	Goulburn Valley Water	Longwood
Mansfield	Goulburn Valley Water	Mansfield
Marysville	Goulburn Valley Water	Marysville
Merrigum	Goulburn Valley Water	Merrigum
Mooroopna	Goulburn Valley Water	Mooroopna
Murchison	Goulburn Valley Water	Murchison
Nagambie	Goulburn Valley Water	Nagambie
Nathalia	Goulburn Valley Water	Nathalia
Numurkah	Goulburn Valley Water	Numurkah
Picola	Goulburn Valley Water	Picola
Pyalong	Goulburn Valley Water	Pyalong
Rushworth	Goulburn Valley Water	Rushworth
Seymour	Goulburn Valley Water	Seymour

Locality	Water supplier	Suburb/Town supplied
Shepparton	Goulburn Valley Water	Shepparton, Congupna
Stanhope	Goulburn Valley Water	Stanhope
Strathmerton	Goulburn Valley Water	Strathmerton
Tallarook	Goulburn Valley Water	Tallarook
Tallygaroopna	Goulburn Valley Water	Tallygaroopna
Tatura	Goulburn Valley Water	Tatura
Thornton	Goulburn Valley Water	Thornton
Tongala	Goulburn Valley Water	Tongala
Toolamba	Goulburn Valley Water	Toolamba
Upper Delatite	Goulburn Valley Water	Merrijig, Sawmill Settlement
Violet Town	Goulburn Valley Water	Violet Town Wallan
Yarroweyah	Goulburn Valley Water	Yarroweyah
Yea	Goulburn Valley Water	Yea
Ararat	Grampians Wimmera Mallee Water	Ararat
Beulah	Grampians Wimmera Mallee Water	Beulah
Birchip	Grampians Wimmera Mallee Water	Birchip
Brim	Grampians Wimmera Mallee Water	Brim
Charlton	Grampians Wimmera Mallee Water	Charlton
Dimboola	Grampians Wimmera Mallee Water	Dimboola
Donald	Grampians Wimmera Mallee Water	Donald
Edenhope	Grampians Wimmera Mallee Water	Edenhope
Great Western	Grampians Wimmera Mallee Water	Great Western
Halls Gap	Grampians Wimmera Mallee Water	Halls Gap, Bellfield
Hopetoun	Grampians Wimmera Mallee Water	Hopetoun
Horsham	Grampians Wimmera Mallee Water	Horsham
Jung	Grampians Wimmera Mallee Water	Jung
Lalbert	Grampians Wimmera Mallee Water	Lalbert
Manangatang	Grampians Wimmera Mallee Water	Manangatang
Minyip	Grampians Wimmera Mallee Water	Minyip
Murrayville	Grampians Wimmera Mallee Water	Murrayville
Murtoa	Grampians Wimmera Mallee Water	Murtoa
Nullawil	Grampians Wimmera Mallee Water	Nullawil

Locality	Water supplier	Suburb/Town supplied
Ouyen	Grampians Wimmera Mallee Water	Ouyen
Pomonal	Grampians Wimmera Mallee Water	Pomonal
Quambatook	Grampians Wimmera Mallee Water	Quambatook
Rainbow	Grampians Wimmera Mallee Water	Rainbow
Rupanyup	Grampians Wimmera Mallee Water	Rupanyup
Sea Lake	Grampians Wimmera Mallee Water	Sea Lake
St Arnaud	Grampians Wimmera Mallee Water	St Arnaud
Stawell	Grampians Wimmera Mallee Water	Stawell
Taits Lane	Grampians Wimmera Mallee Water	Taits Lane (also known as Reids Lane)
Ultima	Grampians Wimmera Mallee Water	Ultima
Walpeup	Grampians Wimmera Mallee Water	Walpeup
Warracknabeal	Grampians Wimmera Mallee Water	Warracknabeal
Watchem	Grampians Wimmera Mallee Water	Watchem
Woomelang	Grampians Wimmera Mallee Water	Woomelang
Irymple	Lower Murray Water	Irymple, Cardross
Kerang	Lower Murray Water	Kerang
Koondrook	Lower Murray Water	Koondrook
Lake Boga	Lower Murray Water	Lake Boga
Merbein	Lower Murray Water	Merbein
Mildura	Lower Murray Water	Mildura, Mildura South, Nichols Point, Birdwoodton, Cabarita, Kings Billabong
Murrabit	Lower Murray Water	Murrabit
Nyah	Lower Murray Water	Nyah
Nyah West	Lower Murray Water	Nyah West
Piangil	Lower Murray Water	Piangil
Red Cliffs	Lower Murray Water	Red Cliffs
Robinvale	Lower Murray Water	Robinvale
Swan Hill	Lower Murray Water	Swan Hill
Woorinen Sth	Lower Murray Water	Woorinen South
Barnawartha Supply	North East Water	Barnawartha
Beechworth High Level Supply	North East Water	Beechworth
Beechworth Low Level Supply	North East Water	Beechworth
Bellbridge Supply	North East Water	Bellbridge
Benalla Supply	North East Water	Benalla
Bright Supply	North East Water	Bright
Bundalong Supply	North East Water	Bundalong

Locality	Water supplier	Suburb/Town supplied
Chiltern Supply	North East Water	Chiltern
Corryong High Level Supply	North East Water	Corryong High Level
Corryong Low Level Supply	North East Water	Corryong
Cudgewa Supply	North East Water	Cudgewa
Dartmouth Supply	North East Water	Dartmouth
Devenish Supply	North East Water	Devenish
Ebden Supply	North East Water	Ebden
Glenrowan Supply	North East Water	Glenrowan
Goorambat Supply	North East Water	Goorambat
Harrietville Supply	North East Water	Harrietville
Kiewa Supply	North East Water	Kiewa
Moyhu Supply	North East Water	Moyhu
Mt. Beauty Supply	North East Water	Mt Beauty
Myrtleford Supply	North East Water	Myrtleford
Oxley Supply	North East Water	Oxley
Porepunkah Supply	North East Water	Porepunkah
Rutherglen Supply	North East Water	Rutherglen
Springhurst Supply	North East Water	Springhurst
St. James Supply	North East Water	St James
Tallangatta Supply	North East Water	Tallangatta
Tangambalanga Supply	North East Water	Tangambalanga
Tawonga Ranch Rd Supply	North East Water	Tawonga
Tawonga South Supply	North East Water	Tawonga South
Tawonga Supply	North East Water	Tawonga
Tungamah Supply	North East Water	Tungamah
Wahgunyah Supply	North East Water	Wahgunyah
Walwa Supply	North East Water	Walwa
Wandiligong Supply	North East Water	Wandiligong
Wangaratta Supply	North East Water	Wangaratta
Whitfield Supply	North East Water	Whitfield
Wodonga Baranduda Supply	North East Water	Baranduda, Killara
Wodonga High Level Supply	North East Water	Wodonga High Level
Wodonga Low Level Supply	North East Water	Wodonga
Yackandandah Supply	North East Water	Yackandandah
Yarrawonga Supply	North East Water	Yarrawonga
Yarrawonga Woodlands Supply	North East Water	Yarrawonga Woodlands
Somers	South East Water	Balnarring Beach, Merricks, Merricks Beach, Somers
Belgrave	South East Water	Belgrave Heights/South, Boronia, Ferntree Gully/Upper, Selby, Tecoma, Upwey
Berwick	South East Water	Beaconsfield, Beaconsfield Upper, Berwick, Guys Hill, Harkaway, Narre Warren South, Narre Warren North, Officer
Bittern	South East Water	Bittern/West, Crib Point, HMAS Cerberus
Bunyip	South East Water	Bunyip, Garfield, Longwarry
Chelsea	South East Water	Aspendale Gardens, Bonbeach, Carrum, Chelsea/Heights, Edithvale, Patterson Lakes

Locality	Water supplier	Suburb/Town supplied
Cranbourne	South East Water	Blind Bight, Cannons Creek, Carrum Downs, Clyde/North, Cranbourne/North/South/East, Devon Meadows, Five Ways, Frankston, Langwarrin, Skye, Tooradin, Warnett
Dandenong	South East Water	Bangholme, Dandenong/North/South, Dingley Village, Harrisfield, Keysborough, Noble Park/North, Springvale South
Rosebud	South East Water	Blairstown, Boneo, Cape Schanck, Dromana, McCrae, Point Nepean, Portsea, Rosebud/West/South, Rye, Safety Beach, Sorrento, Tootgarook
Flinders	South East Water	Flinders, Point Leo, Shoreham
Frankston	South East Water	Baxter, Frankston, Frankston North, Langwarrin, Seaford
Frankston South	South East Water	Mt.Eliza, South Frankston
Hallam	South East Water	Dandenong/North/South, Doveton, Endeavour Hills, Eumemmerring, Hallam, Hampton Park, Lynbrook, Lyndhurst, Narre Warren/South
Hastings	South East Water	Hastings/West
Knox	South East Water	Bayswater, Boronia, Ferntree Gully/Upper, Knoxfield, Mountain Gate, Studfield, The Basin, Wantirna/South
Koo Wee Rup	South East Water	Koo Wee Rup
Lang Lang	South East Water	Lang Lang, Monomeith
Malvern	South East Water	Armadale, Balaclava, Carnegie, Caulfield/North/South, Clayton North, Elsternwick, Gardenvale, Glen Huntly, Harrisfield, Hughesdale, Huntingdale, Murrumbeena, Oakleigh, Oakleigh South, Ormond, Prahran, Ripponlea, South Yarra, Springvale, St. Kilda East, To
Moorabbin	South East Water	Braeside, Dingley Village, Mentone, Moorabbin Airport, Mordialloc, Parkdale, Waterways
Mornington	South East Water	Balcombe, Mornington, Mt Eliza, Mount Martha, Osborne
Mt. Eliza	South East Water	Mornington, Mount Martha, Mt.Eliza, Osborne
Mulgrave	South East Water	Dandenong/North/South, Noble Park/North
Notting Hill	South East Water	Bentleigh/East, Brighton/East, Cheltenham, Clarinda, Clayton/South/North, Hampton, Heatherton, Highett, McKinnon, Mentone, Moorabbin, Moorabbin Airport, Oakleigh South, Ormond, Sandown Park, Sandringham, Springvale, Westall
Pakenham	South East Water	Pakenham
Rowville	South East Water	Lysterfield, Rowville
Sandringham	South East Water	Beaumaris, Black Rock, Cheltenham, Mentone, Sandringham
Somerville	South East Water	Moorooduc/South, Pearcedale, Somerville, Tyabb
St.Kilda	South East Water	Albert Park, Balaclava, Elsternwick, Elwood, Fishermens Bend, Garden City, Gardenvale, Melbourne, Middle Park, Port Melbourne, Prahran, Ripponlea, South Melbourne, South Yarra, Southbank, St. Kilda/East/West, Windsor
Tynong	South East Water	Nar Nar Goon, Tynong
Wantirna	South East Water	Knoxfield, Scoresby, Studfield, Wantirna/South
Alberton	South Gippsland Water	Alberton

Locality	Water supplier	Suburb/Town supplied
Cape Paterson	South Gippsland Water	Cape Paterson
Devon North	South Gippsland Water	Devon North
Dumbalk	South Gippsland Water	Dumbalk
Fish Creek	South Gippsland Water	Fish Creek
Foster	South Gippsland Water	Foster
Inverloch	South Gippsland Water	Inverloch
Koonwarra	South Gippsland Water	Koonwarra
Korumburra	South Gippsland Water	Korumburra
Leongatha	South Gippsland Water	Leongatha
Loch	South Gippsland Water	Loch
Meeniyan	South Gippsland Water	Meeniyan
Nyora	South Gippsland Water	Nyora
Poowong	South Gippsland Water	Poowong
Port Albert	South Gippsland Water	Port Albert
Port Franklin	South Gippsland Water	Port Franklin, Bennison
Port Welshpool	South Gippsland Water	Port Welshpool
Toora	South Gippsland Water	Toora
Welshpool	South Gippsland Water	Welshpool, Hedley
Wonthaggi	South Gippsland Water	Wonthaggi
Yarram	South Gippsland Water	Yarram
Balmoral	Glenelg Water	Balmoral
Casterton	Glenelg Water	Casterton
Cavendish	Glenelg Water	Cavendish
Coleraine	Glenelg Water	Coleraine
Dunkeld	Glenelg Water	Dunkeld
Glenthompson	Glenelg Water	Glenthompson
Hamilton	Glenelg Water	Hamilton
Macarthur	Glenelg Water	Macarthur
Merino	Glenelg Water	Merino
Penshurst	Glenelg Water	Penshurst
Sandford	Glenelg Water	Sandford
Tarrington	Glenelg Water	Tarrington
Allansford	South West Water	Allansford
Camperdown Rural	South West Water	Camperdown Rural
Camperdown Urban	South West Water	Camperdown Urban
Caramut	South West Water	Caramut
Cobden	South West Water	Cobden
Derrinallum	South West Water	Derrinallum
Glenormiston\ Noorat	South West Water	Glenormiston, Noorat
Koroit	South West Water	Koroit
Lismore	South West Water	Lismore
Mortlake	South West Water	Mortlake
Peterborough	South West Water	Peterborough
Port Campbell	South West Water	Port Campbell
Purnim	South West Water	Purnim
Simpson	South West Water	Simpson
Terang	South West Water	Terang
Timboon	South West Water	Timboon

Locality	Water supplier	Suburb/Town supplied
Warrnambool	South West Water	Warrnambool
Dartmoor	Portland Coast Water	Dartmoor
Heywood	Portland Coast Water	Heywood
Port Fairy	Portland Coast Water	Port Fairy
Portland	Portland Coast Water	Portland
Bacchus Marsh	Western Water	Bacchus Marsh, Darley, Maddingley, Parwan
Bulla	Western Water	Bulla
Diggers Rest	Western Water	Diggers Rest
Gisborne	Western Water	Gisborne, New Gisborne, South Gisborne
Lancefield	Western Water	Lancefield
Long Forest	Western Water	Long Forest
Macedon	Western Water	Macedon
Melton	Western Water	Melton, Melton South, Melton West, Kurunjang, Hopeton Park
Mount Macedon	Western Water	Mount Macedon
Myrniong	Western Water	Myrniong
Riddells Creek	Western Water	Riddells Creek
Rockbank	Western Water	Rockbank, Plumpton
Romsey	Western Water	Romsey
Sunbury	Western Water	Sunbury, Goonawarra, Jacksons Hill
Toolern Vale	Western Water	Toolern Vale
Woodend	Western Water	Woodend
Bass Woolamai	Westernport Water	Bass, Woolamai
Cape Woolamai to Sunderland Bay	Westernport Water	Woolamai Waters, Cape Woolamai, Smiths Beach, Sunderland Bay, Sunset Strip, Wimbledon Heights
Corinella Coronet Bay Tenby Point	Westernport Water	Corinella, Coronet Bay, Tenby Point
Cowes	Westernport Water	Cowes, Silverleaves
Dalyston	Westernport Water	Dalyston, Archies Creek
Grantville	Westernport Water	Grantville, Pioneer Bay
Kilcunda	Westernport Water	Kilcunda
Rhyll	Westernport Water	Rhyll
San Remo Newhaven	Westernport Water	San Remo, Newhaven
Ventnor	Westernport Water	Ventnor
Broadmeadows Reservoir	Yarra Valley Water	Pascoe Vale, Glenroy, Oak Park, Coburg, Fawkner
Bulleen	Yarra Valley Water	Ivanhoe, Banyule, Eaglemont, Heidelberg, Rosanna, View Bank, Balwyn North, Greythorn, Bulleen, Templestowe Lower, Doncaster, Balwyn East, Box Hill North
Coburg	Yarra Valley Water	Pascoe Vale, Coburg
Croydon	Yarra Valley Water	Donvale, Park Orchards, Wonga Park, Chirnside Park, Blackburn, Forest Hill, Nunawading, Heatherdale, Mitcham, Vermont, Ringwood, Ringwood North, Warranwood, Heathmont, Ringwood East, Croydon, Kilsyth, Mooroolbark, Lilydale, Bayswater, Montrose
Doncaster	Yarra Valley Water	Templestowe, Templestowe Lower, Doncaster, Doncaster East, Donvale, Warrandyte, Forest Hill, Nunawading
Eltham	Yarra Valley Water	Diamond Creek, Yarrambat, Eltham, Research, Wattle Glen, Kangaroo Ground

Locality	Water supplier	Suburb/Town supplied
Emerald	Yarra Valley Water	Seville, Wandin, Woori Yallock, Yellingbo, Menzies Creek, Belgrave, Cockatoo, Avonsleigh, Clematis, Emerald, Macclesfield, Gembrook, Kallista, The Patch, Monbulk, Pakenham
Epping	Yarra Valley Water	Lalor, Epping, Mill Park, South Morang
Glen Waverley	Yarra Valley Water	Forest Hill, Nunawading, Mt Waverley, Syndal, Glen Waverley, Wheelers Hill, Burwood East, Hughesdale, Huntingdale, Oakleigh, Clayton, Notting Hill, Mulgrave
Healesville	Yarra Valley Water	Steels Creek, Yarra Glen, Badger Creek, Chum Creek, Healesville
Keon Park	Yarra Valley Water	Coburg, Keon Park, Reservoir, Thomastown, Bundoora, Kingsbury
Lilydale	Yarra Valley Water	Chirnside Park, Mooroolbark, Don Valley, Launching Place, Seville, Wandin, Woori Yallock, Yellingbo, Lilydale, Montrose, Coldstream, Gruyere, Yering, Olinda, Mt Evelyn
Malvern	Yarra Valley Water	Hawthorn, Burwood, Hawksburn, Toorak, Armadale, Kooyong, Malvern, Caulfield East, Malvern East, Glen Iris, Ashburton, Ashwood, Chadstone, Hughesdale, Huntingdale, Oakleigh, Notting Hill
Mernda/Hurstbridge	Yarra Valley Water	Diamond Creek, Plenty, Yarrambat, Eltham, Research, Wattle Glen, Kangaroo Ground, Arthurs Creek, Hurstbridge, Nutfield, South Morang, Doreen, Mernda, Panton Hill, Smiths Gully
Mitcham Reservoir	Yarra Valley Water	Balwyn, Deepdene, Balwyn North, Greythorn, Burwood, Surrey Hills, Box Hill, Balwyn East, Box Hill North, Blackburn, Forest Hill, Nunawading, Vermont, Mt Waverley, Syndal, Burwood East
Montrose	Yarra Valley Water	Kilsyth, Bayswater, Montrose, Kalorama
Mulgrave	Yarra Valley Water	Mulgrave
Northcote	Yarra Valley Water	Pascoe Vale, Brunswick West, Brunswick, Brunswick East, Coburg, Croxton, Northcote, Thornbury, Northland Centre, Preston, Alphington, Fairfield, Kew
Plenty	Yarra Valley Water	Briar Hill, Greensborough, Diamond Creek, Plenty, Montmorency, Eltham, Research
Preston	Yarra Valley Water	Coburg, Thornbury, Northland Centre, Preston, Keon Park, Reservoir, Heidelberg Heights, Heidelberg West, Bundoora, Kingsbury, Banyule, Eaglemont, Heidelberg, Rosanna, View Bank, Macleod, Yallambie
Richmond	Yarra Valley Water	Hawthorn
Ridge/Monbulk	Yarra Valley Water	Upwey, Menzies Creek, Kalorama, Mt. Dandenong, Tremont, Ferny Creek, Sassafras, Olinda, Sherbrooke, Kallista, The Patch, Monbulk, Burleigh, Silvan, Mt Evelyn
Seville	Yarra Valley Water	Seville, Wandin, Woori Yallock, Yellingbo, Coldstream, Gruyere, Yering, Burleigh, Silvan
Somerton	Yarra Valley Water	Broadmeadows, Dallas, Coolaroo, Meadow Heights, Attwood, Westmeadows, Greenvale, Campbellfield, Somerton, Oaklands Junction, Craigieburn, Mickleham, Roxburgh Park

Locality	Water supplier	Suburb/Town supplied
Surrey Hills	Yarra Valley Water	Kew, Kew East, Balwyn, Deepdene, Balwyn North, Greythorn, Hawthorn, Hawthorn East, Camberwell, Burwood, Canterbury, Surrey Hills, Kooyong, Malvern, Glen Iris
Thomastown	Yarra Valley Water	Thomastown, Lalor, Epping, Mill Park, Bundoora, Kingsbury, Watsonia, Briar Hill, Greensborough
Tullamarine	Yarra Valley Water	Gladstone Park, Tullamarine, Glenroy, Oak Park, Broadmeadows, Dallas, Coolaroo, Meadow Heights, Attwood, Westmeadows, Greenvale, Fawkner, Campbellfield, Oaklands Junction
Upper Yarra	Yarra Valley Water	Don Valley, Launching Place, Seville, Wandin, Woori Yallock, Yellingbo, Yarra Junction, Millgrove, Warburton, Wesburn
Wantirna	Yarra Valley Water	Heathmont, Ringwood East, Bayswater
Warranwood	Yarra Valley Water	Eltham, Research, Kangaroo Ground, Donvale, Warrandyte, Park Orchards, Wonga Park, Ringwood, Ringwood North, Warranwood, Croydon
Watsonia	Yarra Valley Water	Banyule, Eaglemont, Heidelberg, Rosanna, View Bank, Macleod, Yallambie, Watsonia, Briar Hill, Greensborough, Lower Plenty, Montmorency, Eltham, Research
Whittlesea	Yarra Valley Water	Doreen, Mernda, Yan Yean, Whittlesea
Woori Yallock	Yarra Valley Water	Don Valley, Launching Place, Seville, Wandin, Woori Yallock, Yellingbo, Millgrove, Warburton, Wesburn
Yarra Glen	Yarra Valley Water	Steels Creek, Yarra Glen
Falls Creek Reticulation	Falls Creek ARMB	Falls Creek
Mt Baw Baw	Mount Baw Baw ARMB	Mt Baw Baw
Mt Buller - High Level	Mount Buller and Mount Stirling ARMB	Mt Buller Alpine Village
Mt Buller - Low Level	Mount Buller and Mount Stirling ARMB	Mt Buller Alpine Village
Mt Hotham	Mount Hotham ARMB	Mt Hotham
Lake Mountain	Lake Mountain ARMB	Lake Mountain
Tidal River	Parks Victoria	Tidal River