



***Safe Drinking Water Act 2003***

**Water Storage Manager Annual Report 2006/07**

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## **1 Introduction**

This Report, to the Secretary of the Department of Human Services, has been prepared to satisfy the annual reporting requirements of the *Safe Drinking Water Act 2003*.

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## **2 Safe Drinking Water Act 2003 Requirements**

### **2.1 The Act**

Section 26 of the *Safe Drinking Water Act 2003* states:

- (1) A water supplier or water storage manager must give the Secretary a report, in respect of each financial year, on the issues relating to the quality of drinking water and regulated water that are specified by the regulations for the purposes of this section.*
- (2) A water supplier or water storage manager must include in the report any other details that are required by the regulations or by the Secretary under sub-section (3).*
- (3) The Secretary may, by written notice published in the Government Gazette, require water suppliers or water storage managers to include specified details in any report required by this section.*
- (4) The water supplier or water storage manager must give the report to the Secretary no later than 31 October.*
- (5) The water supplier or water storage manager must ensure that copies of the report are made available to the public on or after the day the report is given to the Secretary.*

### **2.2 Safe Drinking Water Regulations**

The *Safe Drinking Water Regulations 2005* Sec 15(2) set out further requirements:

*15. Additional details to be included in annual reports of water suppliers or water storage managers*

*(2) For the purposes of section 26(1) and (2) of the Act, the required contents of the annual report of a water storage manager are—*

*(a) information about actions taken by the water storage manager in respect of each emergency, incident or event that has arisen that has affected—*

- (i) the quality of the water supplied for drinking purposes generally; and*
- (ii) the quality of the water supplied where that supply posed a risk to human health; and*

*(b) any issues that may have arisen out of the taking of the actions referred to in paragraph (a); and*

*(c) a summary of every—*

- (i) exemption under section 8 of the Act and any condition imposed in relation to every exemption; and*
- (ii) written undertaking by the water storage manager accepted by the Secretary under section 30 of the Act; and*

*(d) a summary of the process by which the water supplied by the water storage manager is disinfected or treated and any other processes applied to the water by the water storage manager, and any issues arising out of the application of those processes; and*

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*(e) a list of all the chemicals and other substances, and any processes, used by a water storage manager to disinfect or treat the water supplied, or to be supplied, by it for drinking purposes; and*

*(f) a summary of the findings of the most recent risk management plan audit and any issues that the approved auditor raised during the risk management plan audit.*

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### 3 G-MW as a Water Storage Manager

Goulburn-Murray Water (G-MW) manages the bulk water delivery and transfer for around 70% of Victoria. G-MW operates 17 bulk water storages and an extensive network of water distribution channels pipelines and natural carriers to deliver raw water to its customers. Customers use their own infrastructure to take water from these supply systems via a pump, irrigation wheel or flume gate.

Water supplied by Goulburn-Murray Water is not chlorinated or treated to improve its taste and odour and should never be considered to be fit for human consumption without being properly treated.

Goulburn-Murray Water also provides bulk water in accordance with Bulk Water Entitlement Agreements to urban water authorities for treatment and supply to their customers in 86 towns scattered across northern Victoria and along the River Murray as far downstream as Merbein. The Bulk Water Entitlements deal with quantity of supply rather than quality. See Appendix 1 for a list of towns supplied. G-MW does not operate the reticulated supply systems within these towns. There are some settlements, eg Goulburn Weir and Kirwans Bridge, where residents may hold a water entitlement with G-MW.

Goulburn-Murray Water recognises that water is supplied to Urban Water Authorities for treatment and distribution as potable supply. The commitment to drinking water quality management is reflected in the corporate drinking water quality policy. This Policy requires G-MW to address threats to safe drinking water by the preparation and implementation, as resources allow, of Water Storage Manager Risk Management Plans.

The *Safe Drinking Water Act 2003* (Vic) (The Act) requires water storage managers such as Goulburn-Murray Water to prepare, implement, review and revise risk management plans (RMPs) in relation to its supply of water to any water supplier (in the Victorian context these are Regional Urban Water Authorities).

For the purposes of the Act, a water storage manager supplies water to a water supplier if the water storage manager releases water to the water supplier; or permits the water supplier to take water from the water storage.

A water storage manager is also deemed to supply water to a water supplier if the water supplier has a right to take water from the water storage or from any point downstream of the water storage; and the water storage manager is aware that the water supplier may exercise that right.

Given that water from all G-MW storages is used to supply drinking water somewhere across northern Victoria and along the River Murray the spatial scope of such plans is enormous.

#### **The Water Storage Manager Role**

G-MW as a water storage manager supplies water in a number of different ways to urban water suppliers (Coliban Water, Central Highlands Water, North East Water, Goulburn Valley Water and Lower Murray Water).

Water can be supplied via the following:

- Directly from storages.
- From the outlet of storages (eg Bendigo supply from Lake Eppalock).
- Indirectly from rivers supplied by storages (eg Shepparton from Lake Eildon and the Broken system).
- From channel systems (eg Tatura and towns in the Central Goulburn Irrigation Area) that might receive water supplies directly from storages or on river weirs.

Water storage managers need to consider risk management in terms of risks associated:

- Within the catchment to the storage

- Within the storage
- With the supply of water downstream of storages using natural carriers such as rivers and creeks
- With the supply of water from channel systems to each drinking water off take point.

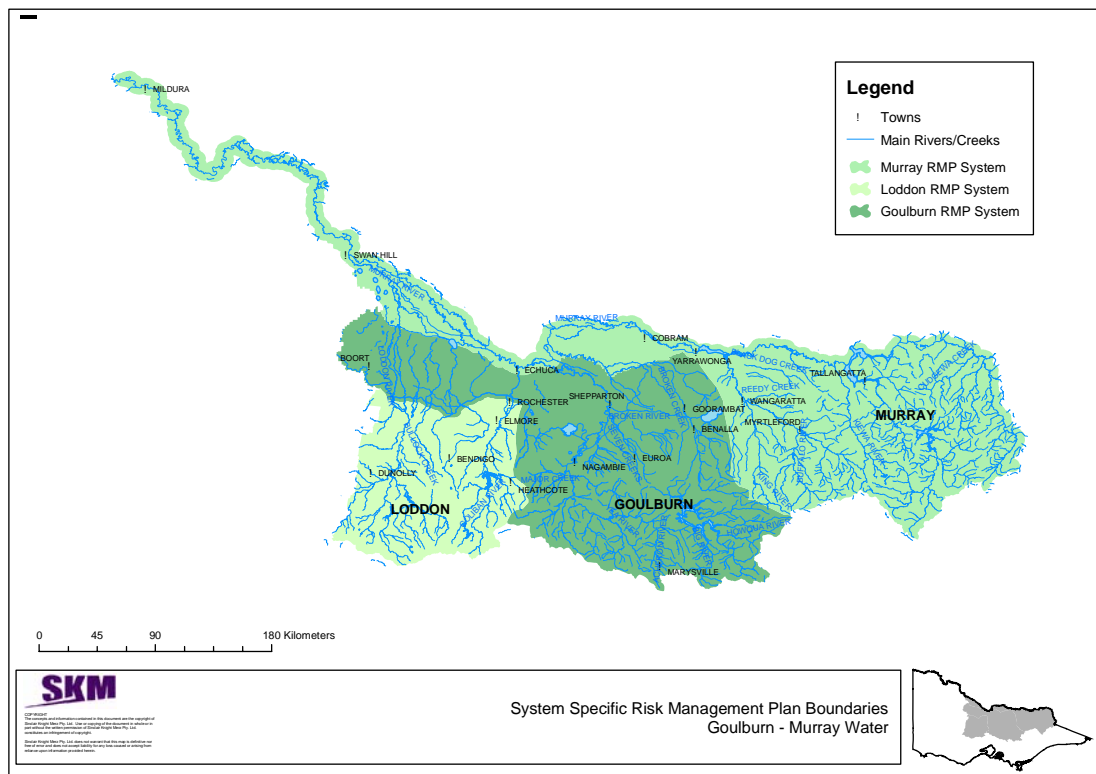
*Safe Drinking Water Act* Water Storage Manager Risk Management Plans (RMPs) have been prepared in accordance with the Act. Four plans have been prepared, namely:

- High Level Risk Management Plan – covering elements that are generic to all system specific plans.
- Three system specific plans for the Murray, Goulburn and Loddon systems, respectively (see Figure 1).

Copies of these plans are available on the G-MW web site <http://www.g-mwater.com.au>

G-MW meets regularly with the urban water suppliers to discuss any issues arising from the above RMPs, including incident response, BGA blooms and water resource management.

**Figure 1 System boundaries for Goulburn-Murray Water Risk Management Plans**



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## 4 Report components required by Regulation

### 4.1 Emergency, incidents or events

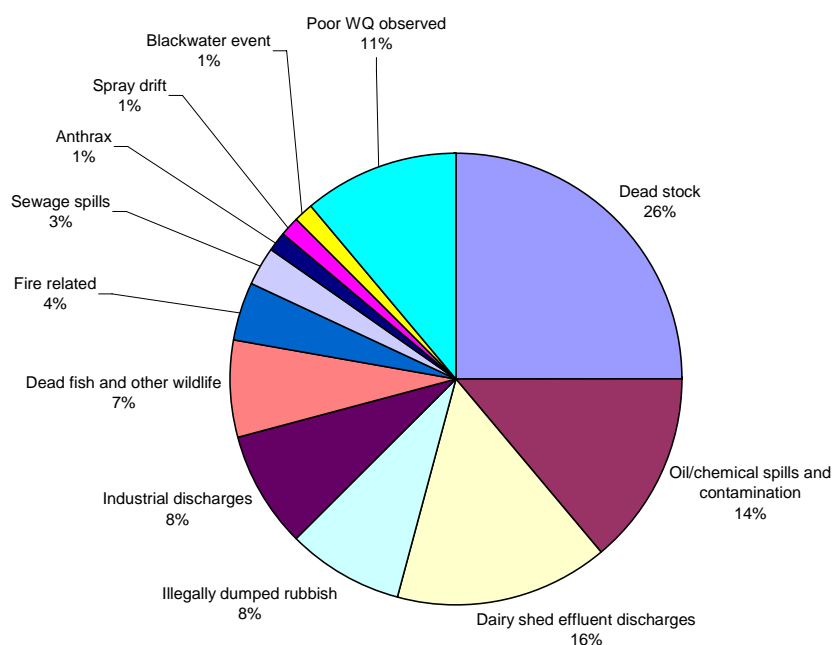
(a) information about actions taken by the water storage manager in respect of each emergency, incident or event that has arisen that has affected—

- (i) the quality of the water supplied for drinking purposes generally; and
- (ii) the quality of the water supplied where that supply posed a risk to human health; and

Goulburn-Murray Water has a procedure that outlines the process for managing environmental incidents. It aims to provide a clear framework for effective response to environmental incidents via the G-MW Environmental Incident Response Guide (Relevant Sections are shown in Appendix 4). Incidents can be classified into four categories based on the potential or actual environmental consequence of the incident and incident response considerations shown in Table B3 in Appendix 4.

Within the 2006/2007 year, G-MW recorded 96 environmental incidents of which 72 incidents were regarded as potentially affecting the quality of water supplied to urban water authorities or potentially posed a risk to human health. These are listed in Appendix 3. None of these incidents were classed as emergencies. Each recorded incident was handled using G-MW's environmental incident procedure which includes formal processes for communicating about, responding to and reviewing the incidents.

Figure 2 shows that the breakdown of incident types for water quality related incidents recorded in 2006/2007.



**Figure 2: Types of environmental incidents reported to G-MW in 2006/2007 that potentially affected the quality of water supplied to urban water authorities or posed a risk to human health**

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The most commonly reported incidents were dumped dead stock, oil and chemical spills or contaminations, and dairy shed effluent discharges followed by illegally dumped rubbish and industrial discharges and fish deaths. There were nine (9) incidents relating to observed poor quality water, ie muddy, discoloured or foamy water where no causes were identified. Sixty-two of the incidents were caused by parties external to G-MW and the remaining ten by G-MW.

When there was a blue-green algae bloom in Lake Eppalock, there was one caravan park that was initially using this water. Once notified of the bloom, the park operators and G-MW discussed options to source alternative supplies of water until the bloom disappeared.

## **4.2 Blue Green Algal (BGA) Blooms**

Blue green algal blooms regularly occur across G-MW's region and have the potential to affect drinking water supplies. G-MW is the local water manager for BGA blooms occurring in its storages. G-MW is also Regional convenor for blooms that affect more than 1 local water manager. Blooms in the River Murray are managed by NSW authorities with input from G-MW.

G-MW has developed its algal response plans in line with the state wide protocols set out in the Blue-Green Algae Circular for 2007/08. Blue Green Algal Response Plans have been prepared for all G-MW managed water bodies and for river basins. These plans provide guidance on the management of any blooms that occur, including notification of relevant stakeholders.

A Blue Green Algal Bloom Status Report is regularly circulated to a broad range of stakeholders including DHS, Urban Water Authorities and Shires.

A summary of all blooms that occurred in 2006/07 is given in Appendix 2. Not all of these had the potential to impact on drinking water supplies. There were no major issues associated with management of these blooms.

In accordance with its 2006/2007 BGA response plans, G-MW advised Department of Human Services of all blue-green algae blooms that potentially affect public health either via drinking water or recreation. The relevant urban water authorities, namely Coliban Water and Central Highlands Water, were also advised of the blooms in Lake Eppalock, and Laanecoorie and Tullaroop Reservoir. The blooms at Lake Boga and Blampieds Lagoon are ongoing blooms due to their extremely low water levels.

## **4.3 Issues arising from emergencies, incidents or events**

*(b) any issues that may have arisen out of the taking of the actions referred to in paragraph (a);*

G-MW is working with the urban water authorities regarding their stakeholder and public notification protocols in the case of emergency discharges from wastewater treatment plants, which has been an issue in the past for G-MW.

## **4.4 Summary of exemptions and undertakings**

*(c) a summary of every—*

*(i) exemption under section 8 of the Act and any condition imposed in relation to every exemption; and*

*(ii) written undertaking by the water storage manager accepted by the Secretary under section 30 of the Act; and*

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No exemptions have been sought and no written undertakings have been made in 2006/07.

#### **4.5 Summary of processes to disinfect or treat water**

*(d) a summary of the process by which the water supplied by the water storage manager is disinfected or treated and any other processes applied to the water by the water storage manager, and any issues arising out of the application of those processes; and*

Goulburn-Murray Water does not disinfect, treat or process any water supplied to its customers, as all water supplied by G-MW is non-potable and customers are aware of this (see also Section 5.5).

#### **4.6 List of chemical or substances**

*(e) a list of all the chemicals and other substances, and any processes, used by a water storage manager to disinfect or treat the water supplied, or to be supplied, by it for drinking purposes; and*

Goulburn-Murray Water does not supply water for drinking purposes and does not disinfect, treat or process any water for this purpose.

It should be noted that G-MW sometimes applies herbicides to vegetation adjacent to channels used to supply urban water. G-MW notifies the relevant urban water authority, if this is to occur.

#### **4.7 RMP audit findings and issues raised**

*(f) a summary of the findings of the most recent risk management plan audit and any issues that the approved auditor raised during the risk management plan audit.*

No audits were undertaken in 2006/2007.

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## 5 Other relevant Information

### 5.1 Preparation of Risk Management Plans

As noted in Section 3, G-MW prepared Safe Drinking Water Risk Management Plans to meet the requirements of the Act. During 2003/04, all the Victorian rural water authorities (including G-MW) commissioned the consultants Water Futures to prepare a Guide for the preparation of safe drinking water risk management plans (RMPs). G-MW worked with the other rural water authorities to develop a streamlined and consistent approach across Water Storage Managers for RMPs across Victoria.

The Guide is structured according to the 12 elements of the Australian Drinking Water Guidelines (ADWG) Framework for the Management of Drinking Water Quality (ADWG Framework).

Using the Guide, high level and system specific risk management plans systems have been prepared for G-MW's region. Copies of these risk management plans are available on G-MW's web site <http://www.g-mwater.com.au>.

Implementation of these plans is underway.

### 5.2 Planning Referrals

Planning controls were identified as a key risk management control during the risk management plan development process. Under Section 55 of the *Planning and Environment Act 1987*, G-MW is a statutory referral authority for developments within any declared Special Water Supply Catchments and the irrigation areas. For all other areas, G-MW is only notified of any development applications as an interested or affected party under Section 52 of the *Planning and Environment Act 1987*.

G-MW assesses a large number of development applications to ensure that potential impacts on water quality are addressed by proponents. In 2006/2007, over 1400 applications were referred and assessed (Table 1). Substantial G-MW resources are applied to this function, and during 2006/07, G-MW was involved in various projects (internal and external) to refine processes and reduce the number of applications referred, while at the same time ensuring that relevant applications receive appropriate scrutiny.

A list of the declared Special Water Supply Catchments can be found in Schedule 5 of the *Catchment and Land Protection Act* and there are several of these catchments in each of the system specific risk management plans.

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**Table 1 Planning Referrals from Municipalities 2004/05 and 2005/06 and 2006/07**

<b>Municipality</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>
Alpine Shire	46	23	105
Ballarat	2	10	13
Benalla	2	4	6
Bendigo	64	33	58
Campaspe	27	27	131
Central Goldfields	20	11	10
DSE (Alpine Resorts)	16	0	2
EPA Works Approval	0	1	3
Gannawarra	14	14	34
Hepburn	279	291	250
Indigo	43	30	18
Loddon	20	13	10
Macedon Ranges	142	95	87
Mansfield	38	18	30
Mildura	2	1	2
Mitchell	9	60	63
Moira	49	49	211
Moorabool	0	0	3
Mount Alexander	91	78	80
Murrundindi	60	34	49
Pyrenees	4	3	11
Shepparton	157	98	197
Strathbogie	46	64	42
Swan Hill	10	12	19
Towong	22	33	48
Wangaratta	1	4	4
Wodonga	16	9	8
<b>Total</b>	<b>1180</b>	<b>1015</b>	<b>1413</b>

### **5.3 Multi Agency Response**

The *Goulburn Broken Interim Framework for a Multi-agency Response to Incidents in Waterways in the Goulburn Broken Catchment* ("The Framework") is an agreement between G-MW and its catchment partners that defines the structures, roles and responsibilities for Goulburn Broken waterway incident response. It provides an agreed incident classification system and incident notification and communication protocols. There are also mechanisms for calling on response capability outside the catchment if a waterway incident exceeds the capacity of the partners to respond.

Similar incident response frameworks have been developed for the North East and North Central catchments.

DSE is reviewing the existing framework and will prepare a new and improved version that is consistent with the existing Victorian emergency management framework. The document will:-

- Implement and be consistent with relevant recommendations of the Goulburn River Audit.
- Have a consistent incident classification and escalation guide.
- Contain a brief outline of the ownership and governance of the Framework.

- 
- Outline arrangements for testing and reviewing the Framework.

Once the new document framework is in place, G-MW will seek to have the North Central, Goulburn Broken and North East agreements consistent reached for the north east and north central catchments.

#### **5.4 Major Storages Water Quality Data Review**

Water quality samples are regularly collected from G-MW storages and analysed in a NATA accredited laboratory. A major review of this data was last undertaken in 2001. Data to the end of 2006 was examined using the simple technique of reviewing data percentiles for five year lumped periods.

In summary:

- Storages within the Murray system generally showed no trends in water quality parameters. Two exceptions were Lake Buffalo, which recorded an increase in nitrogen levels and Yarrowonga Weir, which recorded an increase in chlorophyll-a (an indicator of algal growth) levels.
- Most storages within the Goulburn system also showed no trends in water quality. Some trends recorded include a decrease in salinity levels at Greens Lake, an increase in chlorophyll-a levels for Waranga Basin and decreases in nutrients at Lake Mokoan.
- All Loddon storages continued to increase in many parameters, particularly salinity and chlorophyll-a. Also common were increases in pH and nutrients.
- Ongoing deterioration in water quality for storages in the Loddon System may be due to low rainfall and subsequently low surface water inflows, and higher groundwater inputs to the storages.

The results of this review are being used with Storage Water Quality and Biodiversity plans to direct investigations and management actions.

#### **5.5 Advising Customers and Public about Non-potable Water Supplies**

As all water supplied by G-MW is non-potable, G-MW customers need to be aware of this. Set out below is the management strategy that G-MW has developed to address supply of non-potable water to its customers. In developing this strategy, G-MW has liaised with Grampians-Wimmera Mallee Water and Lower Murray Water. This strategy will be implemented by late November 2007 subject to liaison with the Department of Human Services.

New Actions

- G-MW is developing an information statement regarding the water supplied to its customers (see below). This statement will be on G-MW's website.
- G-MW will include the information statement in its customer newsletters. Customer newsletters are mailed to all customers every couple of months depending on the season.
- G-MW will provide the information statement to any new customers, so that they are informed of the status of the water supplied by G-MW.

Existing Actions or Works

- All water taps on G-MW properties are clearly labelled with no drinking signs.

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- All invoices sent to G-MW customers include the following advice “water supplied by Goulburn-Murray Water should never be considered to be fit for human consumption without being properly treated”.
  - Disclosure statements are also made in G-MW’s annual water quality report under the *Safe Drinking Water Act 2003*.
  - G-MW undertakes water quality monitoring throughout the region, primarily focusing on salinity, nutrients and blue-green algae. As G-MW is part of the regional surface water monitoring partnerships, all results, except BGA at this stage, are routinely made available to the public via the data warehouse ([www.vicwaterdata.net](http://www.vicwaterdata.net)).
  - G-MW notifies relevant Urban Water Authorities, whenever G-MW intends to apply any herbicides in or near channels used to supply urban water authorities. If there are any special users identified on G-MW’s customer database, then they would also be notified.
  - G-MW has developed and implemented houseboat license agreements for both commercial and individual houseboat operators which clearly state “water taken from Lake Eildon is not suitable for human consumption either directly or indirectly without first being properly treated”.
  - Whenever ownership of G-MW leases and licenses is transferred, G-MW provides an information package to the new lease or license holder, which clearly state “water taken from the storage is not suitable for human consumption either directly or indirectly without first being properly treated”.
  - As a statutory referral authority in Special Water Supply Catchments and its irrigation areas, G-MW assesses land use and development applications to ensure that any potential water quality impacts are minimised.
  - G-MW has taken steps to align its activities with those of its catchment partners to minimise any impacts of G-MW operations.
  - G-MW is developing ecological and hydraulic models of our storages to understand how they function under a range of environmental conditions.
  - Goulburn-Murray Water has EMS procedure to manage any environmental incidents that occur in the region whether related to G-MW operations or others. In addition, G-MW is a party to the regional multi-agency response framework in the Goulburn Broken, North East and North Central regions.
  - G-MW continues to liaise with DHS, local councils and other catchment partners about the water supplied by G-MW.

All G-MW customers are advised that the water supplied by G-MW is untreated and is not suitable for drinking or food preparation. This will include any G-MW customers that provide a water supply to residential schemes, syndicates or co-operatives.

Currently there are limitations to the extent that G-MW’s current customer database can be used to identify customers that provide accommodation and/or facilities for employees or tenants. Unless their business name indicates that they operate a motel or accommodation venue, then the customer is not obliged to inform G-MW of how their water is used, or how many dwellings are located on a particular parcel of land. This is unlikely to change given the existing privacy laws. As a result, all G-MW customers are advised of the non-potable nature of the water supplied by G-MW.

The proposed Information Statement will address the following aspects of G-MW’s water supply system:

- Sources of water
- Nature of the catchments.

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- Untreated (or raw) water
  - Suitable uses
  - Temporal changes in water quality
  - Monitoring and data availability.
  - Catchment management
  - Incident response
  - *Safe Drinking Water Act* requirements re customer notifications

In the event of an incident affecting water quality, G-MW notifies downstream customers via letters as well as preparing media statements for the general public. In the past, this approach has been used with other incidents such as BGA blooms and sewage spills.

## 6 Appendix 1 Towns supplied from G-MW storages

### Towns supplied from G-MW managed storages – Murray system

<b>Town</b>	<b>Storage / source</b>	<b>Urban Water Authority</b>
Barmah	River Murray	Goulburn Valley Water
Bellbridge	Lake Hume River Murray	North East Water
Bundalong	Ovens River Lake Mulwala Back Water	North East Water
Cobram	River Murray	Goulburn Valley Water
Cohuna	Gunbower Creek	Coliban Water
Dartmouth	Mitta River	North East Water
Echuca	River Murray	Coliban Water
Gunbower	Taylor's Creek	Coliban Water
Katamatite	MV 7/3 Channel	Goulburn Valley Water
Kerang	River Murray Loddon River TO 14/2 Channel	Lower Murray Water
Leitchville	TO 5/1 Channel Gunbower Creek	Coliban Water
Mildura (7 <sup>th</sup> St WTP)	River Murray	Lower Murray Water
Mildura West	River Murray	Lower Murray Water
Moyhu	King River	North East Water
Murrabit	TO 2/11/4 Channel	Lower Murray Water
Nathalia	Broken Creek	Goulburn Valley Water
Numurkah	Broken Creek	Goulburn Valley Water
Oxley	King River	North East Water
Piangil	River Murray	Lower Murray Water
Picola	MV 9/9/6 Channel	Goulburn Valley Water
Red Cliffs	River Murray	Lower Murray Water
Robinvale	River Murray	Lower Murray Water
Rutherglen	River Murray	North East Water
Swan Hill	River Murray	Lower Murray Water
Tallangatta	Lake Hume Mitta Mitta River	North East Water
Wahgunyah	River Murray	North East Water
Wangaratta	Ovens River King River	North East Water
Wodonga	River Murray	North East Water
Wunghnu	Broken Creek via pipeline from Numurkah	Goulburn Valley Water
Yarrowonga	Lake Mulwala River Murray	North East Water

## Towns supplied from G-MW managed storages – Goulburn system

Town	Storage / source	Urban Water Authority
Alexandra	Goulburn River	Goulburn Valley Water
Avenel	Goulburn River	Goulburn Valley Water
Bonnie Doon	Lake Eildon, Brankeet Arm	Goulburn Valley Water
Boort	Channel	Coliban Water
Colbinabbin	Waranga Western Channel	Goulburn Valley Water
Congupna	Goulburn River	Goulburn Valley Water
Corop	Waranga Western Channel	Goulburn Valley Water
Devenish	Boosey Creek	North East Water
Dingee	Pyramid No 1 Channel	Coliban Water
Dookie	East Goulburn Main Channel	Goulburn Valley Water
Eildon	Lake Eildon	Goulburn Valley Water
Girgarre	CG 7/12/9 Channel	Goulburn Valley Water
Goorambat	Bore	North East Water
Goulburn Weir (#)	Lake Nagambie	Goulburn Valley Water
Jarklin	Serpentine Creek	Coliban Water
Katandra West	Shep 3/25 Channel	Goulburn Valley Water
Kirwans Bridge (#)	Lake Nagambie	Goulburn Valley Water
Kyabram	CG 23/9 Channel	Goulburn Valley Water
Lockington	Campaspe No 24 Channel	Coliban Water
Macorna	Channel	Coliban Water
Merrigum	CG 23/9 Channel via pipeline from Kyabram	Goulburn Valley Water
Mitiamo	Channel	Coliban Water
Molesworth	Goulburn River	Goulburn Valley Water
Mooroopna	Goulburn River via pipeline from Shepparton	Goulburn Valley Water
Murchison	Goulburn River	Goulburn Valley Water
Mysia	Waranga Western Channel	Coliban Water
Nagambie	Lake Nagambie	Goulburn Valley Water
Nathalia	Broken Creek	Goulburn Valley Water
Pyramid Hill	Channel	Coliban Water
Rochester	Waranga Western Campaspe No. 2 Channel Campaspe	Coliban Water
Rushworth	Lake Waranga	Goulburn Valley Water
Seymour	Goulburn River	Goulburn Valley Water
Shepparton	Goulburn River	Goulburn Valley Water
St James	Boosey Creek	North East Water
Stanhope	CG 1/12/9 Channel	Goulburn Valley Water
Tallarook	Goulburn River via pipeline from Seymour	Goulburn Valley Water
Tallygaroopna	Goulburn River via pipeline from Shepparton	Goulburn Valley Water
Tatura	CG 3/5A Channel	Goulburn Valley Water
Tongala	CG 19/28/9 Channel	Goulburn Valley Water

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<b>Town</b>	<b>Storage / source</b>	<b>Urban Water Authority</b>
Toolamba	Goulburn River via pipeline from Shepparton	Goulburn Valley Water
Tungamah	Boosey Creek	North East Water

# part of settlement supplied by G-MW directly with non-potable water.

### **Towns supplied from G-MW managed storages – Loddon system**

<b>Town</b>	<b>Storage / source</b>	<b>Urban Water Authority</b>
Axedale	Campaspe River	Coliban Water
Bendigo	Lake Eppalock	Coliban Water
Bridgewater	Loddon River	Coliban Water
Daylesford	Hepburn Reservoir	Central Highlands Water
Goornong	Campaspe River	Coliban Water
Heathcote	Lake Eppalock	Coliban Water
Jarklin	Serpentine Creek	Coliban Water
Laanecoorie	Loddon River	Coliban Water
Maryborough	Tullaroop Reservoir	Central Highlands Water
Raywood	Lake Eppalock	Coliban Water
Rochester	Campaspe River	Coliban Water
	Campaspe No 2 Channel	
	Waranga Western Channel	
Sebastian	Lake Eppalock	Coliban Water
Serpentine	Serpentine Creek	Coliban Water

## Appendix 2 – Summary of Blue Green Algal Outbreaks during 2006/07

Basin/System	Storage or Waterway	Location	Bloom* Start Date	Bloom* End Date	Duration (days)	Maximum Alert Level
Broken	Lake Mokoan					2
Broken	Lake Nillahcootie					2
Goulburn	Lake Eildon					2
Goulburn	Lake Nagambie					2
Ovens	Lake William Hovell					1
Campaspe	Lake Eppalock#		1-Mar-07	4-Apr-07	34	3
Loddon	Cairn Curran Reservoir					2
Loddon	Laanecoorie Reservoir#		1-Mar-07	4-Apr-07	34	3
Loddon	Tullaroop Reservoir#		19-Jan-07	8-Jun-07	140	3
Loddon	Newlyn Reservoir					2
Loddon	Hepburns Lagoon					2
Upper Murray and Kiewa	Lake Dartmouth					1
Upper Murray and Kiewa	Yarrowonga Weir					2
Upper Murray and Kiewa	Blampied's Lagoon		1-Jul-06	continuing	365+	3
Upper Murray and Kiewa	Lake Moodemere					2
Upper Murray and Kiewa	Murray Valley Irrigation Area					2
Upper Murray and Kiewa	Torgannah Lagoon					2
Torrumbarry Irrigation Area	Kerang Lakes	Reedy Lake	6-Mar-07	6-Apr-07	31	3
Torrumbarry Irrigation Area	Kerang Lakes	Third Lake	6-Feb-07	9-Mar-07	31	3
Torrumbarry Irrigation Area	Kow Swamp System		6-Feb-07	23-Mar-07	45	3
Torrumbarry Irrigation Area	Lake Boga		24-Jan-07	Continuing	158+	3
Torrumbarry Irrigation Area	Macorna Main Channel		6-Feb-07	23-Mar-07	45	3
Lower Murray River	Torrumbarry Weir					2
Lower Murray River	Mildura Weir					1
Lower Murray River	Lake Hawthorn					2

Notes:

\* Blooms are defined as any blue-green algal outbreak that is at alert level 3.

# Waterbodies from which urban water authorities take their water supply.

## Appendix 3 - Environmental incidents related to the quality of water supplied for drinking purposes

Incident #	Incident Date	Incident Title & Location	Urgency Level	Impact location
1	17-Jul-06	Sunk boat in Lake Mulwala	Level 1	Reservoir
2	19-Jul-06	Dairy effluent spill into MV Dr 11/7	Level 2	Drain
3	19-Jul-06	Dairy effluent spill into EG 34	Level 1	Channel
4	20-Jul-06	Raw sewage spill to Happy Valley Creek - Myrtleford	Level 2	Unregulated waterway
5	21-Jul-06	Dead cow in Murray Valley Channel no. 5	Level 1	Channel
6	27-Jul-06	Water quality concerns by contractors at Rices Weir, Broken Creek	Level 1	Regulated waterway
7	02-Aug-06	Dairy effluent discharge to Murray Valley Channel 5/1	Level 2	Channel
8	04-Aug-06	Effluent spill into Murray Valley Dr2/7/6	Level 2	Channel
9	07-Aug-06	Dairy effluent spill into MV 7/6	Level 2	Channel
10	07-Aug-06	Fire in close proximity to Schiers Wier, Broken Creek	Level 2	Regulated waterway
11	09-Aug-06	Dairy effluent seeping into spur off MV channel	Level 1	Channel
12	10-Aug-06	Dead stock in Last Pool of the 11/2 Channel	Level 2	Channel
13	14-Aug-06	Effluent in 16/19/9 channel	Level 1	Channel
14	15-Aug-06	Car batteries, motors and car bodies dumped near Creek - Murrindindi River proximity	Level 2	Unregulated waterway
15	15-Aug-06	White liquid/ foam substance in Casey's Weir	Level 2	Regulated waterway
16	15-Aug-06	Effluent into Drain - Cobram area	Level 2	Channel
17	23-Aug-06	Dead cow (Brown) 5/1/7, Section 11 Torrumbarry Area	Level 1	Channel
18	08-Sep-06	Dead Sheep, Deakin Drain 2787 (Central Goulburn)	Level 1	Drain
19	14-Sep-06	Small diesel spill, Lake Nagambie	Level 2	Reservoir
20	14-Sep-06	Washdown from milk factory discharging into the Campaspe River	Level 2	Regulated waterway
21	27-Sep-06	Spray drift near Rochester	Level 1	G-MW managed asset/owned land
22	29-Sep-06	Dirty fill to reclaim land at caravan park on Goulburn weirpool	Level 2	G-MW managed asset/owned land
23	17-Oct-06	Dead fish in private dam near Trentham	Level 1	Landholder property
24	20-Oct-06	2 kangaroos in Spillway, Eildon	Level 2	Reservoir
25	02-Nov-06	Unknown discharge to Deakin Drain 3/9, Stanhope	Level 2	Drain
26	13-Nov-06	Potential fish kill at Hepburn Lagoon	Level 1	Reservoir
27	17-Nov-06	Dairy Effluent Spill / Discharge from landholders Property into the 16/6 Drain	Level 1	Channel
28	22-Nov-06	Dead sheep in Cobram Main Drain	Level 1	Drain
29	23-Nov-06	Car Battery in channel near Rochester	Level 2	Channel
30	26-Nov-06	Kerosene spill into Murray River	Level 2	Regulated waterway
31	05-Dec-06	Empty chemical drum on channel bank - Swan Hill	Level 1	Channel
32	08-Dec-06	Rubbish dumped in Majors Creek	Level 1	Unregulated waterway
33	11-Dec-06	Illegal building and use of water in Tatura	Level 2	Unregulated waterway






<b>Incident #</b>	<b>Incident Date</b>	<b>Incident Title &amp; Location</b>	<b>Urgency Level</b>	<b>Impact location</b>
34	12-Dec-06	Fire at Mt Buffalo Chalet (Tatura Chalet)	Level 2	Regulated waterway
35	14-Dec-06	Rubbish dumped in Central Goulburn channel 9	Level 1	Channel
36	20-Dec-06	Dead cow in channel CG 14/8 Kyabram	Level 1	Channel
37	20-Dec-06	Black water event in Loddon River near Durham Ox/Boort Road	Level 1	Unregulated waterway
38	02-Jan-07	Stock carcasses on Central Goulburn 3/5 Channel Bank, Pyke Road, Tatura	Level 1	Channel
39	03-Jan-07	Wildfire North East Victoria	Level 2	Other location
40	08-Jan-07	Low water quality discharge to Murrindindi River by fish farms	Level 1	Regulated waterway
41	11-Jan-07	Low dissolved oxygen recorded at Goulburn Weir late 2006	Level 2	Reservoir
42	15-Jan-07	Dead stock in Loddon River near Pyramid Hill	Level 1	Unregulated waterway
43	19-Jan-07	Discoloured water in Delatite River at Booralite	Level 2	Unregulated waterway
44	19-Jan-07	Dead carp in Lake Eppalock	Level 2	Reservoir
45	23-Jan-07	Lake Buffalo Sediment Sludge	Level 2	Unregulated waterway
46	28-Jan-07	Dead stock (cow) dumped into G-MW channel	Level 1	Channel
47	30-Jan-07	Dead carp near Laanecoorie Reservoir	Level 2	Reservoir
48	01-Feb-07	Suspected stock poisoning on Hume Weir	Level 2	Reservoir
49	02-Feb-07	Anthrax outbreak near Stanhope	Level 2	Landholder property
50	13-Feb-07	Fish deaths in the Mokoan Inlet Channel	Level 1	Reservoir
51	19-Feb-07	Dead carp in Shepparton Irrigation Area Channel 11	Level 2	Channel
52	23-Feb-07	Effluent in No 5/2 drain at Woorinen Piped district	Level 1	Drain
53	27-Feb-07	Small oil spill To Maori Creek Woods Point	Level 1	Unregulated waterway
54	01-Mar-07	Dirty water in Goulburn River at Jamieson	Level 1	Regulated waterway
55	01-Mar-07	Nutrient loaded dam water entering creek on Pyalong-Seymour Road	Level 2	Landholder property
56	01-Mar-07	Poor water quality at Lake William Hovell Outlet	Level 2	Reservoir
57	15-Mar-07	Runnymede Diversion Pump Leak	Level 1	Unregulated waterway
58	22-Mar-07	Poor water quality supplied by caravan park on Lake Eppalock	Level 2	Reservoir
59	03-Mar-07	Untreated waste water discharged to Deakin Main drain near Stanhope	Level 1	Drain
60	28-Mar-07	Dead stock in Coram Drain 4 and 2/4	Level 1	Drain
61	02-Apr-07	Dead cow in Goulburn River	Level 2	Unregulated waterway
62	13-Apr-07	Dairy effluent seepage, Nine Mile Creek	Level 2	Regulated waterway
63	17-Apr-07	Malnourished & dead stock near Murchison	Level 2	Unregulated waterway
64	18-Apr-07	Three dead cows in Goulburn River at Murchison East	Level 2	Regulated waterway
65	01-May-07	Dead animal in Waranga Western Channel	Level 2	Regulated waterway
66	10-May-07	Dead stock in creek near Strathbogie	Level 1	Unregulated waterway
67	31-May-07	Silt discharge runoff into Goulburn Weir from earthworks at caravan park site	Level 1	Reservoir

<b>Incident #</b>	<b>Incident Date</b>	<b>Incident Title &amp; Location</b>	<b>Urgency Level</b>	<b>Impact location</b>
68	04-Jun-07	Animal stomach and offal located in Goulburn River	Level 1	Regulated waterway
69	04-Jun-07	Dead cow and effluent in a tributary of Hume Creek	Level 2	Unregulated waterway
70	06-Jun-07	Rubbish dumped in Majors Creek	Level 2	Unregulated waterways
71	25-Jun-07	Direct discharge from dairy shed to G-MW Shepparton drain	Level 2	Drain
72	28-Jun-07	Effluent from piggery to waterway in Warby Ranges	Level 2	Unregulated waterway

## Appendix 4 Incident Response Process (Extracts)

This procedure includes information to aid G-MW employees involved in the management of environmental incidents, particularly those highlighted in Figure 1.

**Figure 1. Incident Response Process Overview**

INCIDENT RESPONSE QUICK GUIDE		INCIDENT RESPONSE PROCESS		DETAILS		
<b>1. RECOGNISE</b> 	<i>Identify an environmental incident</i>	<b>Observed or informed about incident</b>				
		G-MW first contact				
		↓				
<b>2. REPORT</b> 	<i>Notify the right person</i>	<b>Call Environmental Duty Officer (EDO) + submit Environmental Incident Report</b>				
		G-MW first contact				
		↓				
<b>3. RATE</b> 	1. <i>Initially classify and notify relevant person(s)</i>  2. <i>Evaluate (verify) incident details and confirm classification</i>	<b>Determine Incident Level and Contact Relevant G-MW Manager Level 1 &amp; 2: Unit Manager, Level 3 &amp; 4: Environmental Emergency Officer (EEO)</b>		<b>PAGE 2 + APPENDIX A &amp; B</b>		
		EDO				
		↓				
		1	2		3	4
		<b>Verify Incident</b>			<b>Verify Incident</b>	
		Unit Manager			EEO	
<b>4. RESPOND</b> 	<i>Manage the incident</i>	<b>Initiate and manage response to incident</b>	<b>Activate Corporate Environmental Emergency Management Plan</b>	<b>PAGE 3 + APPENDIX A &amp; B</b>		
		Unit Manager	EEO			
		↓	↓			
<b>5. REVIEW</b> 	<i>Assess incident response</i>	1	2	3	4	
		<b>Review</b>		<b>Review</b>		
		EMS Coordinator	Executive Team	Executive Team / Environmental Emergency Steering Committee		
Person responsible						



# ENVIRONMENTAL INCIDENT RESPONSE GUIDE



**Table A1. G-MW Notification Guide**

Incident Type	1 <sup>st</sup> Call	Additional Notification (specific)	Additional Notification (general)
<b>Level 3 &amp; 4 incidents</b>	Environmental Emergency Officer	As per Corporate Environmental Emergency Management Plan	<p><b>OHS issues for G-MW or G-MW contractors</b> OHS Coordinator or OHS officer</p> <p><b>Public Health and Safety</b> Manager Environment</p> <p><b>Significant media, government or public attention</b> Relevant Group Manager, Chief Executive</p> <p><b>Media, government or public attention</b> Manager Planning &amp; Environment</p> <p><b>Water quality issues (eg. discolouration, sewage spill)</b> Manager Water Systems Health</p> <p><b>Cultural, heritage or environmental sensitive areas or species impacts (eg. vegetation removal)</b> Manager Environment</p> <p><b>Breach of EPA licence</b> Licence Manager (see #873299), EMS Coordinator</p> <p><b>Interruption of water supply or flow issues (eg. low flow)</b> Manager Water System Operations, Water Systems Support Centre</p> <p><b>Damage to G-MW assets</b> Relevant Unit Manager</p> <p><b>G-MW Leased Land</b> Manager Property and Legal</p> <p><b>G-MW Herbicide Use Issues</b> Manager Surface Drainage Team Leader Aquatic Plants Services</p>
<b>Dam Safety Involved</b>	Dam safety emergency pager 0438 882 147	Dam Safety	
<b>Blue Green Algae Incident</b>	Monitoring and Drainage Coordinator (WSH)	As per BGA Response Plan	
<b>Dairy Effluent Discharges to Channels and drains</b>	Relevant Irrigation Area Manager	As per Process for Dealing with Dairy Effluent Discharges to Channels & Drains (#1098389)	
<b>Low flow, DO levels or dense azolla mats on Lower Broken Creek (downstream of Katamatite)</b>	Relevant Irrigation Area Manager	<ul style="list-style-type: none"> <li>Monitoring and Drainage Coordinator</li> <li>As per Broken Creek Monitoring and Incident Response Management Manual (#981212)</li> </ul>	
<b>Unlabelled containers</b>	Relevant Irrigation Area or Headworks Manager	As per EQG10-04 Dealing with Containers of Potentially Hazardous Substances (#1435602)	
<b>Level 1-2 Environmental Incidents located at:</b>			
<ul style="list-style-type: none"> <li>Reservoir &amp;/or perimeter land</li> </ul>	Relevant Headworks Manager	PUMS Officer	
<ul style="list-style-type: none"> <li>Downstream releases from reservoirs</li> </ul>	Relevant Headworks Manager	<ul style="list-style-type: none"> <li>Water Systems Operations Manager</li> <li>Water Systems Support Centre</li> </ul>	
<ul style="list-style-type: none"> <li>Unregulated waterway</li> </ul>	Diversions Operations Manager	Customer Services Coordinator	
<ul style="list-style-type: none"> <li>Regulated waterway</li> </ul>	Diversions Operations Manager	<ul style="list-style-type: none"> <li>Customer Services Coordinator</li> <li>Water Systems Operations Manager or Water Systems Support Centre</li> </ul>	
<ul style="list-style-type: none"> <li>Groundwater</li> </ul>	Diversions Operations Manager	Customer Services Coordinator	
<ul style="list-style-type: none"> <li>Channel (incl. reserves or easements)</li> </ul>	Relevant Irrigation Area Manager	<ul style="list-style-type: none"> <li>Customer Services Coordinator</li> <li>Water Systems Operations Manager or Water Systems Control Centre</li> </ul>	
<ul style="list-style-type: none"> <li>Drain (incl. reserves or easements)</li> </ul>	Relevant Irrigation Area Manager	<ul style="list-style-type: none"> <li>Drainage Officer</li> <li>Manager, Surface Drainage</li> <li>Monitoring and Drainage Coordinator (WSH)</li> </ul>	
<ul style="list-style-type: none"> <li>Natural carriers*</li> </ul>	Relevant Irrigation Area Manager	<ul style="list-style-type: none"> <li>Customer Services Coordinator</li> <li>Water Systems Operations Manager or Water Systems Support Centre</li> </ul>	
<ul style="list-style-type: none"> <li>G-MW groundwater salinity control pumps</li> </ul>	Manager Salinity	Manager Subsurface Drainage	



# ENVIRONMENTAL INCIDENT RESPONSE GUIDE



Incident Type	1 <sup>st</sup> Call	Additional Notification (specific)	Additional Notification (general)
• Floodway	Relevant Irrigation Area Manager		
• Loch Garry Flood Protection District	Area Manager Shepparton Irrigation Area	Customer Services Coordinator	
• Kerang Lakes	Area Manager Torrumbarry Irrigation Area	Manager Water Systems Health	
• Salt disposal basins	Manager, Salinity	Manager, Salt Interception	
• Landowner property	Relevant Unit Manager		
<b>After Hours Incidents:</b>	After hours contacts provided in <b>Table 3</b>		

**Table A2: External Party Notification Guide**

Incident Type	External Party Notification														Contact Notes		
	EPA Victoria	DSE	Relevant CMA	DPI	DHS	CFA	Work Cover	Relevant RWA/UWA	Relevant Local Council	Police	Parks Victoria	DVC	NSW EPA or DIPNR	MDBC /River Murray Water		Landowner	Customers
<b>AIR EMISSIONS</b>																	
Toxic or explosive gases	✓						✓						✓				If in Vic (EPA Vic), if in NSW (NSW EPA)
+ Potential for fire or explosion	✓					✓											
Nuisance emissions - salt dust fallout, odours	✓																
Herbicide spray drift (weed spraying)	✓								✓								Local Council = Environmental Health Officer
+ potential or actual impact on urban water supply					✓			✓									
<b>WATER</b>																	
Inland water pollution (eg. industrial or agricultural discharges, spills or dumping to natural waterways, channels and drains)	✓																
+ if it could affect any fish	✓		✓	✓													
+ if could affect native fish	✓	✓	✓	✓													
+ if in natural waterway	✓		✓														
+ if it could affect drinking water	✓				✓			✓									
+ in Murray River													✓				
+ can affect water use (ie. customers)																✓	



## ENVIRONMENTAL INCIDENT RESPONSE GUIDE



Incident Type	External Party Notification														Contact Notes		
	EPA Victoria	DSE	Relevant CMA	DPI	DHS	CFA	Work Cover	Relevant RWA/UWA	Relevant Local Council	Police	Parks Victoria	DVC	NSW EPA or DIPNR	MDBC / River Murray Water		Landowner	Customers
Dairy effluent discharge to channels & drains	✓			✓											✓		Notification as per process flow chart (#1098389)
Changes in conditions (eg: reservoir releases / streams drying out / flow pattern changes)		✓	✓														
Sediment run-off from land into drains or waterways from rural, urban or major infrastructure developments	✓		✓						✓								
Infectious waste (eg. syringes) in channels, drains or waterway	✓				✓				✓								Local Council = Environmental Health Officer
Unlabelled containers	✓					✓	✓		✓								
<b>LAND</b>																	
Dumping of hazardous waste / rubbish to land / littering	✓								✓								
Land / groundwater contamination - G-MW managed / owned or leased land	✓																
+ if hazmat incident						✓											
<b>FAUNA / ANIMALS</b>																	
Fish deaths	✓	✓	✓	✓	✓			✓									
Aquatic plant / biota damage or loss		✓	✓	✓	✓												DSE = Water and Biodiversity Section
Dead stock / animal in natural waterways or banks	✓	✓	✓	✓	✓										✓	✓	DSE = Water and Biodiversity Section
Dead stock / animal in channel or drain	✓			✓	✓										✓	✓	DPI = Regional Veterinary Officer
Domestic animal / stock injury or death or spread of disease or introduction of pests				✓													DPI = Regional Veterinary Officer
Wildlife injury / kills or spread of animal disease		✓															DSE = Water and Biodiversity Section
+ affecting food quality					✓												
+ if due to pollution	✓	✓															
<b>VEGETATION / FLORA</b>																	
Flora / Vegetation Disturbance or Removal or introduction of pest species																	
• In G-MW managed water storage incl. storage foreshore, banks		✓															



## ENVIRONMENTAL INCIDENT RESPONSE GUIDE



Incident Type	External Party Notification														Contact Notes		
	EPA Victoria	DSE	Relevant CMA	DPI	DHS	CFA	Work Cover	Relevant RWA/UWA	Relevant Local Council	Police	Parks Victoria	DVC	NSW EPA or DIPNR	MDBC / River Murray Water		Landowner	Customers
• <i>In natural waterways</i>		✓	✓														
• <i>On crown land (not managed by G-MW)</i>		✓	✓														
• <i>National parks</i>											✓						
• <i>State Forest</i>		✓															
• <i>Landowner properties</i>													✓				
• <i>NSW Waterways (ie. Murray River &amp; Hume Dam)</i>														✓	✓		NSW – DIPNR & MDBC
<b>CULTURAL / HERITAGE</b>																	
Damage to or loss of heritage items and places													✓				DVC – Hume Region - Wangaratta
Damage to or loss of aboriginal archaeological artefacts / sacred sites													✓				
<b>HUMAN / PROPERTY</b>																	
Public health impacts – illness or death (ie. spread of disease)					✓												
Human death due to accidents										✓							
Loss of amenity (eg. noise, aesthetics)	✓								✓								
Extortion / terrorism or criminal activities										✓							
Major Uncontrolled Fire						✓											

CFA – Country Fire Authority CMA – Catchment Management Authority DHS – Department of Human Services DPI – Department of Primary Industries DIPNR – Department of Infrastructure, Planning and Natural Resources DVC – Department of Victorian Communities EPA – Environment Protection Authority MDBC – Murray Darling Basin Commission RWA – Rural Water Authority UWA – Urban Water Authority

✓ Must be contacted by EDO    ✓ Contact by EDO at the discretion of Unit Manager

**Table B1. General**

INCIDENT ELEMENT	PROTOCOL / GUIDE	REFERENCE
Environmental Incident Management Framework	Environmental Incident Management Procedure	#1460260
Classification of environmental incidents	Environmental Incident Quick Reference Guide	#1445332
Lodging an Environmental Incident Report	Process for Lodging and Completing an Environmental Incident Report	#1461200
EDO role	Environmental Duty Officer Role and Responsibilities	#1549697



## ENVIRONMENTAL INCIDENT RESPONSE GUIDE



**Table B2. Specific Environmental Incident Response Guidelines**

INCIDENT ELEMENT	PROTOCOL / GUIDE	REFERENCE
Acrolein Spill or Leak	Refer to Corporate Environmental Emergency Management Manual	#1518662
Blue-Green Algae (BGA) bloom	BGA Response Plan	Being revised
Broken Creek – low flow, low DO and/or dense azolla mats	• Broken Creek Monitoring and Incident Management Manual	#981212
	• G-MW Broken Creek Monitoring Communications Proforma	#1202880
Dairy Shed Effluent Discharges to Channels and Drains	• Dairy Effluent Discharges to Channels and Drains Policy – October 2003	#1026736
	• Template – Letter to Landholder Re: Disposal of Dairy Shed Effluent to Channel / Drain	#978691
	• Dairy Shed Effluent Working Group Process Flowchart – July 2003	#1098389
Environmental Emergency	• Corporate Environmental Emergency Management Manual	#1518662
Lake Eildon – sewage spills from G-MW owned and operated sewerage works	Lake Eildon Sewage Spill Classification Guide	#815448
Lake Eppalock sewage spills	Sewage Spill Classification Guide – Lake Eppalock	#817396
Spill Response	• <a href="#">Spill Response Guideline</a>	#1579206
	• <a href="#">Spill Response Quick Reference Guide</a>	#1538147
	• <a href="#">Oil Spill Monitoring Form</a>	#1572729
Unlabelled containers	• <a href="#">Dealing with Unlabelled Containers of Potentially Hazardous Substances</a>	#1222898
	• <a href="#">Quick Reference Guide for Dealing with Unlabelled Containers of Potentially Hazardous Substances</a>	#1435601

NOTE: Reference in this font colour indicates EMS documents located on G-MW's [myems](#) intranet site

**Table B3. Incident Response Considerations**

Available Information	Considerations
<p><b>How big and bad are the environmental impacts likely to get?</b></p> <ul style="list-style-type: none"> <li>○ Scale</li> <li>○ Severity</li> <li>○ Rate of spread</li> <li>○ Off site impacts</li> <li>○ Public health</li> <li>○ Property</li> <li>○ Natural environment</li> <li>○ Customers</li> </ul> <p><b>What sorts of response actions will be needed?</b></p> <ul style="list-style-type: none"> <li>○ Containment</li> <li>○ Sampling</li> <li>○ Clean up</li> <li>○ Public notification</li> <li>○ Customer notification</li> <li>○ Asset shut down</li> <li>○ Increased/decreased flows</li> </ul> <p><b>What sorts of people and skills will be needed?</b></p> <ul style="list-style-type: none"> <li>○ Technical/scientific</li> <li>○ OHS</li> <li>○ Laboratory analysts</li> <li>○ Operational</li> <li>○ Contractors</li> <li>○ Incident response specialists</li> <li>○ Engineers</li> <li>○ Levels of training</li> </ul> <p><b>What sorts of equipment and materials will be needed?</b></p> <ul style="list-style-type: none"> <li>○ Earthmoving</li> <li>○ Booms</li> <li>○ Skimmers and supersuckers</li> <li>○ Sampling equipment</li> <li>○ Customer databases</li> </ul> <p><b>How soon should response actions start?</b></p>	<p>Level 1 &amp; 2 environmental incidents:</p> <ul style="list-style-type: none"> <li>● Response actions needed</li> <li>● Availability of appropriately trained personnel within the unit or its contractors</li> <li>● Availability of Unit Manager or delegate</li> <li>● Severity and scale of environmental impacts</li> <li>● Will there be impacts outside of the unit's area of responsibility</li> <li>● Potential for incident to escalate rapidly</li> <li>● Timeframe required for response actions</li> <li>● Capability of unit or its contractors to carry out response actions</li> <li>● Existence and availability of relevant routine procedures</li> <li>● Availability of equipment and materials</li> <li>● Familiarity of available personnel with equipment and materials</li> <li>● Level of understanding needed by response crews</li> <li>● Level of involvement of other authorities and agencies</li> <li>● Previous experience of available personnel and contractors in this sort of incident</li> <li>● Availability of external advice</li> <li>● G-MW's level of responsibility for response actions</li> <li>● Unit Manager or delegate's confidence in ability to handle incident</li> </ul>
	<p>Level 3 &amp; 4 environmental incidents:</p> <ul style="list-style-type: none"> <li>● Relevant G-MW unit unable to respond for any reason</li> <li>● Environmental impacts will be experienced over 2 or more G-MW units</li> <li>● Availability of appropriately trained personnel within G-MW or its contractors</li> <li>● Significant environmental impacts</li> <li>● Will there be impacts outside of G-MW's area of responsibility</li> <li>● Potential for incident to escalate rapidly</li> <li>● Immediate response action needed</li> <li>● Capability of G-MW or its contractors to carry out response actions</li> <li>● Availability of equipment and materials</li> <li>● Familiarity of CEECO personnel with equipment and materials</li> <li>● Level of involvement of Control Agencies</li> <li>● Level of potential media interest</li> </ul>



# ENVIRONMENTAL INCIDENT RESPONSE GUIDE



<b>Available Information</b>	<b>Considerations</b>
<ul style="list-style-type: none"><li>○ When will things get worse?</li><li>○ Is immediate action needed?</li><li>○ Can we wait until tomorrow?</li><li>○ Can we wait until next week?</li></ul> <p><b>Who else could be involved?</b></p> <ul style="list-style-type: none"><li>○ Public/customers</li><li>○ Other authority or government agency</li><li>○ Designated Control Agency</li></ul>	<ul style="list-style-type: none"><li>● Previous experience of available personnel and contractors in this sort of incident</li><li>● Political sensitivity</li><li>● G-MW's level of responsibility for response actions</li></ul>