

Department of Human Services

2008-09 Annual report format

Drinking Water Regulation Guidance Note No. 11

June 2009

Introduction

Section 26 of the *Safe Drinking Water Act 2003* (the Act) requires that water suppliers and water storage managers give the Secretary to the Department of Human Services a report each financial year. This report is to cover issues relating to the quality of drinking water and the management of regulated water.

A review of the 2007-08 annual reports found that the majority of water businesses followed the structure set out in the 2007-08 Guidance Note. Reports that followed the guidance note were easier to assess for compliance with the legislation. The Drinking Water Regulatory Section has revised the guidance information for 2008-09, based on the outcome of this review.

What to include in the annual report

The required content of the annual report is set out in section 26 of the Act and regulation 15 of the *Safe Drinking Water Regulations 2005*. The following guidance information provides additional detail on the required content of the report.

Water businesses are also encouraged to use the annual report as an opportunity to describe their risk management processes and systems and to highlight positive aspects of how the quality of drinking water is protected from catchment to tap.

Content

The 2008-09 annual report covers the period from 1 July 2008 to 30 June 2009. The report is required to provide information on the following areas:

- Characterisation of the supply system
- Sources of drinking water
- Water treatment, including disinfection and fluoridation
- Quality of drinking water (*water supplier only*)
- Emergency and incident management
- Complaints relating to water quality (*water supplier only*)
- Audit outcomes
- Undertakings, exemptions or variations under the Act
- Regulated water

Attachment 1 provides guidance for water suppliers and Attachment 2 provides guidance for water storage managers. The information in Attachments 1 and 2 should be considered as a minimum. Water suppliers and water storage managers are encouraged to add additional information that they believe will aid in the understanding of issues related to their management of drinking water quality.

Businesses that are both water suppliers and water storage managers must include all information as required by both Attachments but may do so in the one report.

Annual report compilers are requested to read the guidance note carefully. If you have any queries, please do not hesitate to contact your business's liaison officer.

Lodgement of your annual report

Please submit a draft 2008-09 annual report 4-6 weeks prior to the final lodgement date, to allow for the draft report to be reviewed by the Department for compliance with regulation 15.

The final report must be received by the Department no later than 31 October 2009.

The final report must also be made available to the public on or after the day it is given to the Department. Making the report available to the public primarily means making it available for download from your business's website.

Please submit one hard copy and one electronic copy of the final report in PDF format. Please forward the hard copy annual report to:

Jan Bowman
Assistant Director Environmental Health
Department of Human Services
GPO Box 4057
MELBOURNE VIC 3001

Please email the electronic PDF copy to: dwru@dhs.vic.gov.au

Further information

Phone: your business liaison officer or (03) 9096 5647

Fax: 1300 768 874

Website: www.health.vic.gov.au/environment/water/drinking

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Department of Human Services

Attachment 1

Water supplier 2008-09 annual report content guide
June 2009

1. Introduction

Suggested information for this section may be aims and objectives of the business and/or an overview of your business and its commitment to drinking water quality and the pro-active management of risks.

1.1 Characterisation of the system

Please provide an overview of the drinking water supply systems operated by your business, either from catchment to tap, or for the portion of the water supply system controlled by your business. This should include clear maps or diagrams of the water supply system(s) or your business' area of operation. Detailed process control schematics and information on rarely used infrastructure are not required.

Information on where the water is sourced for each water sampling locality should be provided in a tabulated format as shown in Table 1.1 below.

In some cases, 'Source Water' and 'Storage' may be the same. 'Source Water' and 'Storage' would be separate in the circumstance where raw water is abstracted from a watercourse and placed in a raw water storage area, prior to treatment. If your business does not operate separate raw water storage areas, providing details of the source waters will be sufficient.

Table 1.1: Example table for source of water

Water Sampling Locality	Source Water	Storage	Treatment Plant	Population Supplied

Water sampling localities in this table may be sorted either in alphabetical order or by common source or water treatment plant if that is more convenient. If it is convenient to do so, the information contained in Table 1.1 may be combined with the information requested in Table 2.1 below and presented as a single table.

In the accompanying text, please highlight any major changes between the arrangements for water supply as detailed in the previous year's report as compared to the arrangements detailed in the current report. This section would include alternative water supply or treatment arrangements made under drought management plans.

Regulation 4 of the Safe Drinking Water Regulations 2005 allows for various areas of supply to be specified as water sampling localities. During the reporting period,

there may be several instances where water sampling localities have either been merged or split into separate water sampling localities. Information on the gazettal date of the merger or split is to be included, either as a footnote to the table or in accompanying text.

2. Water treatment and quality management systems

2.1 Water treatment

The sections of regulation 15 that refer to water treatment are:

- 15 (1) (h) "a summary of the process by which the drinking water supplied by the water supplier is disinfected or treated and any other processes applied to the water by the water supplier, and any issues arising out of the application of these processes;"
- 15 (1) (i) "a list of all the chemicals and other substances, and any processes, used by the water supplier to disinfect or treat the drinking water supplied by it;"

Please include information describing the regular treatment processes, along with any periodic treatment activities, for each drinking water supply system, from the point raw water enters the water treatment plant, through to the customer tap.

Information on the treatment processes and the chemicals associated with those processes (including water soluble bags that may be used to add chemicals) should be presented in a tabular form as per Table 2.1 below, along with explanatory text briefly describing the role of each treatment process and chemical additive. The explanatory text may be presented as a glossary of terms at the end of the report.

If it is convenient, the information contained in Table 2.1 below may be combined with the information requested in Table 1.1 above and presented as a single table.

Table 2.1: Example table for water treatment

Water Sampling Locality	Treatment process	Added substance(s)	Comments
Eg. Locality A	Chlorination Fluoridation	Chlorine gas Fluoride	

Water sampling localities in this table may be sorted either in alphabetical order or by common source or water treatment plant if that is more convenient.

In the accompanying text, please highlight any major changes between the water treatment processes detailed in your 2007-08 annual report as compared to the processes detailed in your 2008-09 report. Water supply systems that received fluoridated water for the first time in 2008-09 should be identified, along with the date of commencement of the fluoridated supply.

2.2 Issues

Regulation 15 (1) (h) requires discussion of any issues arising out of the processes used to disinfect or treat drinking water.

Examples of issues arising are if the treatment or disinfection process is inadequate to address an identified water quality risk, or if the treatment process is not capable of always delivering drinking water that complies with the water quality standards. Discussion includes aspects such as describing the effectiveness of any interim and long-term solution to the problem, the timing of any remedial works or activities and the problem's effect on the quality of drinking water supplied.

In the event that an issue identified in this section was reported as a section 22 notification under the Act, this must be included in the Emergency/Incident Management section of the annual report. To minimise duplication, these notifications should be acknowledged in this section and a cross reference made to more detail in the Emergency/Incident Management section of the report.

Water suppliers must also provide an update on any issue or incomplete project identified in the previous annual report (i.e. 2007-08), clearly identifying the progress made since the previous reporting period.

If there were no issues, please indicate that this is the case.

3. Quality of drinking water for 2008-09

Regulation 15 (1) (a) requires information evidencing compliance or non-compliance (as the case requires) with regulations 10, 11 and Schedule 2. Regulation 10 (a) refers to the water quality standards detailed in Schedule 2. Regulation 10 (b) refers to ensuring that the water is free of other toxins, pathogens substances or chemicals that may pose a risk to human health. Regulation 11 refers to collecting samples at the required sampling frequency.

Regulation 10 (a) and Schedule 2

The water analysis results are to be compared with the water quality standard for each parameter as stated in Schedule 2 of the Regulations, as detailed in Table 3.1. Table 3.1 also details the maximum number of decimal places that are to be reported for each parameter. The number of decimal places reported will be subject to the number of decimal places that are reported by the consultant laboratory. All chemical results are to be reported in milligrams per litre (mg/L).

If there are results in the data set that are below the level of detection, and have been recorded as a less than (<) result, then the < result is to be reported.

When presenting the water quality results, the frequency of sampling and the water quality standard for each relevant parameter, as detailed in Schedule 2 of the regulations, must be included, in or above tables of data. Where data for a water sampling locality indicated that the water did not comply with the standard, the results should also be displayed in a format that assists readers in better understanding the meaning of the data. This should be done individually within the sub-heading of each parameter.

Where the maximum result for a parameter appears to exceed the standard but is considered compliant based on the application of the rules for data rounding in the right hand column of Table 3, this should be noted in the report. Text to the effect that the result is considered compliant based on the Department's data handling conventions should be included as a footnote on the same page as the data table.

Please note that all tables in this section must list localities in alphabetical order.

The data for Schedule 2 standards must be the routine data collected pursuant to regulation 11, or as per any varied sampling frequency pursuant to any gazette notice, undertaking or incident investigation endorsed by the Department. Samples from tanks, basins, resamples, incident investigations or other forms of ad hoc or non-routine data must not be included.

Where a particular type of water treatment (for example, treatment with ozone) was not undertaken, but relevant chemicals (for example, formaldehyde or bromate) were still sampled and analysed, this data is to be presented. Where a particular type of water treatment (for example, treatment with aluminium-based chemicals) was not undertaken and no relevant sampling was done, a statement must be included explaining the circumstances and your business's assessment of the risk arising from these chemicals in the water supply.

For localities that have been merged or split, data is to be reported for each separate water sampling locality until the merger/split, and then on the merged or split water sampling localities for the remainder of the reporting period.

Table 3: Drinking Water Quality Standards reporting format for the 2008-09 annual report

Parameter	Relevant sampling frequency per water sampling locality	Water Quality Standard	Presentation of results	Examples of compliance and non-compliance, including rounding
<i>Escherichia coli</i>	Weekly	At least 98% of all samples of drinking water collected in any 12 month period to contain no <i>Escherichia coli</i> per 100mL	Percentages to be expressed to one decimal place.^	97.5% and above is compliant. 97.4% and below is non-compliant.
Chloroacetic acid	Monthly	Must not exceed 0.15 mg/L	Results to be expressed to three decimal places.^	Results of 0.155 mg/L and greater are non-compliant, results of 0.154 mg/L and less are compliant.
Dichloroacetic acid	Monthly	Must not exceed 0.1 mg/L	Results to be expressed to three decimal places.^	Results of 0.145 mg/L and greater are non-compliant, results of 0.144 mg/L and less are compliant.
Trichloroacetic acid	Monthly	Must not exceed 0.1 mg/L	Results to be expressed to three decimal places.^	Results of 0.145 mg/L and greater are non-compliant, results of 0.144 mg/L and less are compliant.
Trihalomethanes	Monthly	Must not exceed 0.25 mg/L	Results to be expressed to three decimal places.^	Results of 0.255 mg/L and greater are non-compliant, results of 0.254 mg/L and less are compliant.
Bromate	Monthly	Must not exceed 0.02 mg/L	Results to be expressed to two decimal places.^	Results greater than 0.02 mg/L are non-compliant, results of 0.02 mg/L and less are compliant.
Formaldehyde	Monthly	Must not exceed 0.5 mg/L	Results to be expressed to one decimal place.^	Results of 0.55 mg/L and greater are non-compliant, results of 0.54 mg/L and less are compliant.
Aluminium	Monthly	Must not exceed 0.2 mg/L	Results to be expressed to two decimal places.^	Results of 0.25 mg/L and greater are non-compliant, results of 0.24 mg/L and less are compliant.

Turbidity	Weekly	95% Upper confidence limit of the mean* of drinking water samples collected in the preceding 12 months must be ≤ 5.0 NTU	Results to be expressed to one decimal place.^ Calculations to be performed on raw data and rounding to one decimal place to occur once the upper confidence limit has been calculated.	95% UCL results of 5.05 NTU and greater are non-compliant, 95% UCL results of 5.04 NTU and less are compliant.
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^ subject to the number of decimal places that are reported by the consultant laboratory.

* To calculate the 95 % upper confidence limit (UCL) of the mean for the previous twelve months turbidity data the following formula can be used:

$$95\% \text{ UCL} = \text{mean} + \frac{t(a) * s}{\sqrt{N}}$$

Where:

s = standard deviation

t(a) = student t statistic where: degrees of freedom is number of samples – 1; and probability is 0.05. This can be calculated from statistical tables using the 2P values for 0.05 (a two-tailed test).

For example: 52 samples equates to a degrees of freedom of 51, and using the 0.05 probability the t value equals 2.008.

N = Number of turbidity samples

When presenting the results for the Schedule 2 water quality parameters measured at customer taps, the following subheadings should be used:

Escherichia coli, chlorine based disinfection by-product chemicals, ozone based disinfection by-product chemicals, aluminium, turbidity.

Information is also required on the frequency of sample collection, as shown in Tables 3.2 to 3.6 on the following pages and why the frequency of sampling may have varied from the frequency specified in Schedule 2 of the Regulations. Variations to sampling frequency that have been gazetted must also be disclosed.

Water suppliers are also required to provide information on the actions they have taken in the event that a standard set out in Table 3.1 has been exceeded during the 2008-09 reporting period and include such information under the subheading – “Actions undertaken in relation to non-compliance” for each parameter.

Non-compliant results that are to be mentioned in the non-compliance sections for each parameter are to include non-compliant results that may form part of either section 22 or section 18 notifications, or are from a water supply system that is subject to an undertaking related to that parameter. To avoid unnecessary duplication of information, as the full details of section 22 notifications and undertakings are to be discussed in greater detail in other sections of the report, where applicable, a cross-reference to the relevant sections will be adequate.

3.1 *Escherichia coli*

3.1.1 Results

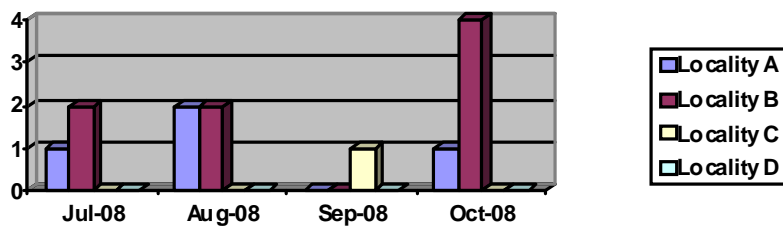
The required information relating to *Escherichia coli* results and their associated sampling frequency is detailed in Table 3.1 below. Data for water sampling localities where the percentage of samples complying was less than 97.5% must also be presented in a graph (X axis representing time and the Y axis the *Escherichia coli* result) – please refer to graph 1 for an example.

Table 3.1: Example table for *Escherichia coli*

Water Sampling Locality	Sampling frequency	No. of Samples	No. of samples containing <i>E. coli</i>	Maximum Result (orgs / 100 mL)	% Samples with no <i>E. coli</i>	Complying (Yes / No)
Eg. Locality A	Twice weekly	104	1	16	99.6%	YES
Eg. Locality B	Weekly	52	3	3	95.1%	NO

- If the % of samples with no *Escherichia coli* is less than 97.5%, then the locality is non-complying
- Localities must be listed in alphabetical order.

Graph 1: Example- Maximum result *Escherichia coli* detections for 2008-09 for non-complying localities



If the number of samples taken during the reporting period for a locality for *Escherichia coli* varied significantly from 52 (i.e. weekly monitoring), this must be explained. This may be in the context of increased sampling frequency as per the guidance information in the 2004 *Australian Drinking Water Guidelines*, or for other reasons.

3.1.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where the required number of regulatory samples was not collected, or were collected but not analysed.

Any *Escherichia coli* detections in customer tap samples that have been reported as section 22 or section 18 notifications under the Act must be included either here or in the Emergency/Incident Management section of the annual report, even if the locality overall complied with the standard for the year. The *Escherichia coli* detections should be acknowledged in this section, with a cross reference to the detail in the Emergency/Incident Management section of the report, or vice versa.

Details of the response for each incident must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

In the event that all drinking water supplies complied with the relevant standard, there were no section 22 notifications relevant to *Escherichia coli* and all required samples were collected and analysed, this section can be left blank.

3.2 Chlorine based disinfection by-product chemicals

3.2.1 Results

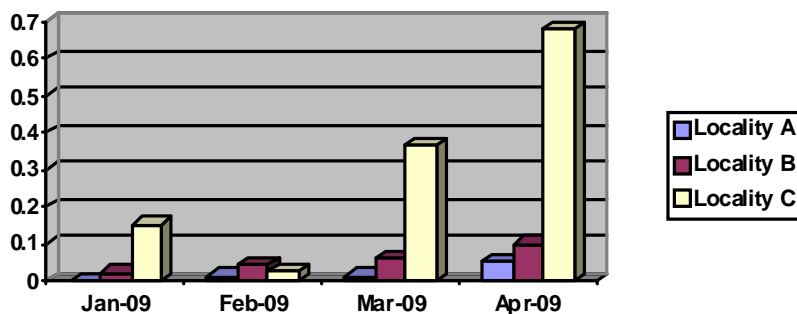
The required information relating to the results for chlorine based disinfection by-product chemicals (chloroacetic acid, dichloroacetic acid, trichloroacetic acid and total trihalomethanes) and their associated sampling frequency is detailed in Table 3.2 below. Data for water sampling localities with non-complying results must also be presented in a graph (X axis representing the time and the Y axis the by-product chemical result) – please refer to graph 2 for an example.

Table 3.2 Example - chlorine based disinfection by-product chemicals - dichloroacetic acid

Water Sampling Locality	Sampling frequency	No. of Samples	No. of Non-complying samples	Max mg/L	Complying (Yes / No)
Eg. Locality A	Monthly	12	1	0.505	NO
Eg. Locality B	Monthly	12	0	0.100	YES

- For chloroacetic acid, if the maximum result is 0.155 mg/L or greater, then the locality is non-complying
- For dichloroacetic acid, if the maximum result is 0.145 mg/L or greater, then the locality is non-complying
- For trichloroacetic acid, if the maximum result is 0.145 mg/L or greater, then the locality is non-complying
- For total trihalomethanes, if the maximum result is 0.255 mg/L or greater, then the locality is non-complying
- Localities must be listed in alphabetical order
- The inclusion of the minimum result for each locality is optional

Graph 2: Example- chlorine based disinfection by-product chemicals for 2008-09 for non-complying localities



A separate table for each chlorine-based disinfection by-product is required.

If the number of samples taken for each chlorine-based disinfection by-product chemical during the reporting period for a locality varied from twelve (i.e. monthly monitoring), this must be explained.

For those localities where disinfection or treatment with chlorine-based chemicals was not undertaken and no relevant sampling was done, a statement must be included explaining the circumstances and your business's assessment of the risk arising from these by-product chemicals in the water supply.

3.2.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where the required number of regulatory samples was not collected, or were collected but not analysed and details of the number of non-complying samples during the reporting period.

Any chlorine based disinfection by-product chemical exceedances in customer tap samples that have been reported as section 22 or section 18 notifications under the Act must be included either here or in the Emergency/Incident Management section of the annual report. The exceedances should be acknowledged in this section, with a cross reference to the detail in the Emergency/Incident Management section of the report, or vice versa.

Details of the response for each incident must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

In the event that all drinking water supplies complied with the relevant standard and all required samples were collected and analysed, this section can be left blank.

3.3 Ozone based disinfection by-product chemicals

3.3.1 Results

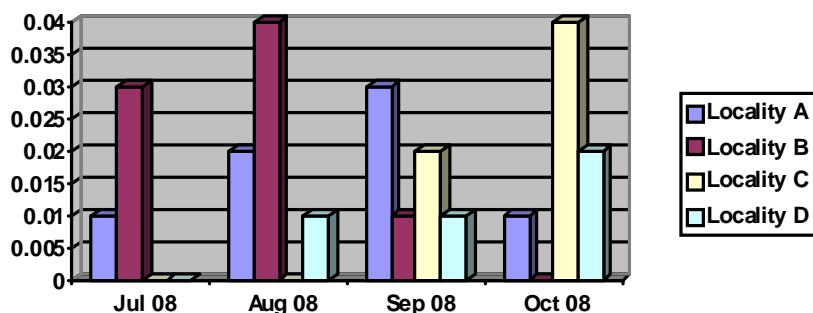
The required information relating to the results for ozone based disinfection by-product chemicals (bromate and formaldehyde) and their associated sampling frequency is detailed in Table 3.3 below. Data for water sampling localities with non-complying results must also be presented in a graph (X axis representing time and the Y axis the by-product chemical result) - refer to graph 3 for an example.

Table 3.3: Example table for ozone based disinfection by-product chemicals e.g. bromate

Water Sampling Locality	Sampling frequency	No. of Samples	No. of Non-complying samples	Max mg/L	Complying (Yes / No)
Eg. Locality A	Monthly	12	0	0.01	YES
Eg. Locality B	Monthly	12	0	0.01	YES

- If the maximum result for bromate is greater than 0.02 mg/L, then the locality is non-complying
- If the maximum result for formaldehyde is 0.55 mg/L or greater, then the locality is non-complying
- Localities must be listed in alphabetical order
- The inclusion of the minimum result for each locality is optional

Graph 3: Example- ozone based disinfection by-product chemicals e.g. bromate for 2008-09 for non-complying localities



A separate table for each ozone-based disinfection by-product chemical is required.

If the number of samples for bromate or formaldehyde taken during the reporting period for a locality varied from twelve (i.e. monthly monitoring), for those localities where monthly monitoring was required, this must be explained.

For those localities where disinfection or treatment with ozone was not undertaken and no relevant sampling was done, a statement must be included explaining the circumstances and your business’s assessment of the risk arising from these by-product chemicals in the water supply.

3.3.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where the required number of regulatory samples was not collected, or were collected but not analysed and details of the number of non-complying samples during the reporting period.

Any ozone based disinfection by-product chemical exceedances in customer tap samples that have been reported as section 22 or section 18 notifications under the Act must be included in the Emergency/Incident Management section of the annual report. Exceedances should be acknowledged in this section, with a cross reference to the Emergency/Incident Management section of the report, or vice versa.

Details of the response for each incident must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

In the event that all drinking water supplies complied with the relevant standard and all required samples were collected and analysed, this section can be left blank.

3.4 Aluminium

3.4.1 Results

The required information relating to the results for acid-soluble aluminium and its associated sampling frequency is detailed in Table 3.4 below. Data for water

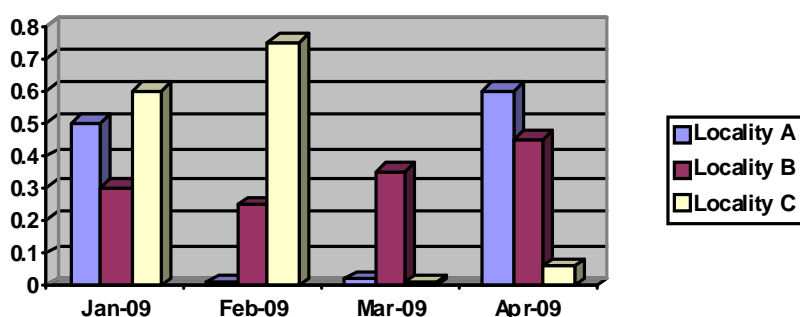
sampling localities with non-complying results must also be presented in a graph (X axis representing time and Y axis the sample result) – please refer to graph 4 for an example.

Table 3.4: Example table for acid-soluble aluminium

Water Sampling Locality	Sampling frequency	No. of Samples	No. of non-complying samples	Max mg/L	Complying (Yes/No)
Eg. Locality A	Monthly	12	0	0.19	YES
Eg. Locality B	Monthly	12	5	0.29	NO

- If the maximum result for acid-soluble aluminium is 0.25 mg/L or greater, then the locality is non-complying
- Localities must be listed in alphabetical order
- The inclusion of the minimum result for each locality is optional

Graph 4: Example- acid-soluble aluminium for 2008-09 for non-complying localities



If the number of aluminium samples taken during the reporting period for a locality varied significantly from 12 (i.e. monthly monitoring), this must be explained.

3.4.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where the required number of regulatory samples was not collected, or were collected but not analysed and details of the number of non-complying samples during the reporting period.

Any acid soluble aluminium exceedances in customer tap samples that have been reported as section 22 or section 18 notifications under the Act must be included either here or in the Emergency/Incident Management section of the annual report. The exceedances should be acknowledged in this section, with a cross reference to the Emergency/Incident Management section of the report, or vice versa.

Details of the response for each incident must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

In the event that all drinking water supplies complied with the relevant standard and all required samples were collected and analysed, this section can be left blank.

3.5 Turbidity

3.5.1 Results

The required information relating to the results for turbidity and its associated sampling frequency is detailed in Table 3.5 below. Data for water sampling localities where the 95th percentile UCL of the mean was 5.05 NTU or greater must be presented in a graph (X axis representing time and the Y axis the sample result) – please refer to graph 5 below. The graph may be for mean or peak turbidity results, depending on what would more clearly indicate the issues in the locality.

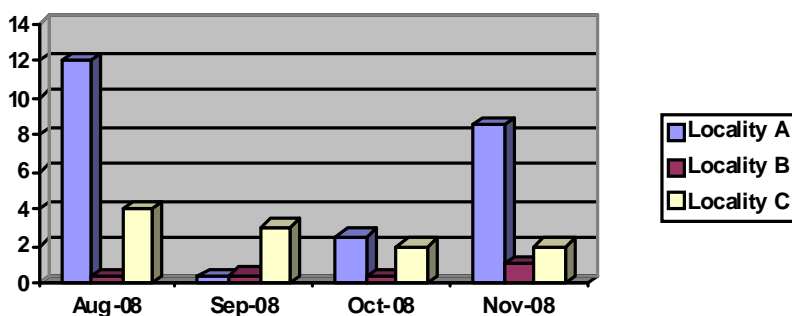
Table 3.5: Example table for turbidity

Water Sampling Locality	Sampling frequency	No. of Samples	Max NTU	95% UCL of mean	Complying (Yes / No)
Eg. Locality A	Weekly	52	16.4	4.5	YES
Eg. Locality B	Twice weekly	104	0.9	0.3	YES

UCL – Upper Confidence Limit NTU – Nephelometric turbidity unit

- If the 95% UCL result for mean turbidity is 5.05 NTU or greater, then the locality is non-complying
- Localities must be listed in alphabetical order.
- The inclusion of the minimum result for each locality is optional

Graph 5: Example- peak turbidity levels for 2008-09 for non-complying localities



If the number of turbidity samples taken during the reporting period for a locality varied significantly from 52 (i.e. weekly monitoring), this must be explained.

3.5.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where the required number of regulatory samples was not collected, or were collected but not analysed.

Any turbidity-related exceedances that have been reported as section 22 or section 18 notifications under the Act must be included in the Emergency/Incident Management section of the annual report. Exceedances should be acknowledged in this section, with a cross reference to the detail in the Emergency/Incident Management section of the report, or vice versa.

Details of the response for each incident must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

In the event that all drinking water supplies complied with the relevant standard, there were no section 22 notifications and all required samples were collected and analysed, this section can be left blank.

3.6 Fluoride

3.6.1 Results

The *Health (Fluoridation) Act 1973* states that the annual average for fluoride in drinking water must not exceed a level of 1 mg/L. If fluoride was monitored in drinking water during the reporting period, either for fluoridated supplies or non-fluoridated supplies where fluoride may be present, the following data for each water sampling locality needs to be provided, as indicated in Table 3.6 below.

Table 3.6: Example table for fluoride

Water Sampling Locality	Sampling frequency	No. of Samples	Max mg/L	Min mg/L	Average mg/L	Complying (Yes /No)
Eg. Locality A	Monthly	12	0.94	<0.01	0.75	YES
Eg. Locality B	Weekly	52	0.97	0.62	0.75	YES

For fluoridated supplies, compliance means all individual sample results are less than or equal to 1.5 mg/L and the annual average does not exceed 1.0 mg/L.

For non-fluoridated supplies, compliance means all individual sample results are less than or equal to 1.5 mg/L.

Please disclose here which localities received fluoridated water for part or all of 2008-09, and which did not, if this has not been disclosed earlier in the report.

3.6.2 Actions in relation to non-compliance

This section is to contain any other matters that may be relevant to issues of non-compliance, including instances where samples required by the Department were not collected, or were collected but not analysed, as well as details of the number of non-complying samples during the reporting period.

Details of the response for each incident or section 22 notification that has been submitted relevant to fluoride must be included. Please also indicate whether any changes to procedures or your risk management plan resulted from the incident.

Please also disclose here when and why fluoride dosing plants owned or operated by or on behalf of your business were taken off-line by prior arrangement with the Department.

3.7 Other algae, pathogen, chemical or substance not specified above that may pose a risk to human health

3.7.1 Results

Regulation 10 (b) requires a water supplier to ensure that drinking water supplied by it to another person does not contain any chemical, toxin, pathogen or substance at levels that may pose a risk to human health. The information is to be presented in the report in either a tabular or graph form.

For each parameter that was monitored, the frequency of sampling, the health-related guideline value for that parameter from the 2004 *Australian Drinking Water Guidelines*, and whether any results representing drinking water supplied to customers exceeded that value during the reporting period, need to be detailed.

In this section, monitoring includes results taken at or near supplies to customers, or, if no such data is available, results from raw water monitoring or monitoring at water treatment plants, where such monitoring is likely to represent the level of that parameter in drinking water supplied to customers.

Data for manganese, lead, copper, arsenic and chlorite (chlorine dioxide disinfection by-product), if monitored in drinking water, must be included for each water-sampling locality as indicated in Table 3.7. [Aesthetic characteristics such as iron, hardness, pH and colour are covered in the next section.]

Table 3.7: Example table for copper

Water Sampling Locality	Sampling frequency	No. of Samples	No. of non-complying results	Max mg/L	Complying ** (Yes / No)
Eg. Locality A	Monthly	12	0	0.19	YES

- ** compliance as measured against the health-related guideline values set out in the 2004 *Australian Drinking Water Guidelines*
- Localities must be listed in alphabetical order.
- The inclusion of the minimum result for each locality is optional

Data for all other chemicals or infrequently monitored parameters, including pesticides, organic chemicals, metals and radiological parameters must be reported, either on a per locality basis or on a per water supply system basis. It must be clear which localities the data pertains to, what parameters are monitored and what the results mean.

Please also describe in general terms the nature, purpose and comprehensiveness of your raw water monitoring program for pesticides, organic chemicals, metals and radiological parameters, including a list of the parameters that were monitored during 2008-09, if it generated further data not presented in tables in this section.

Routine pathogen or blue green algae monitoring data from raw water storages, natural water courses, catchments or reservoirs need not be included, provided you describe in general terms the nature, purpose and comprehensiveness of your

monitoring program for these parameters and provided that this data does not represent the quality of drinking water supplied to customers. Pathogen or blue green algae data relating to individual section 22 notifications should be included in the description of the event or incident in section 4 of the report.

A statement to the effect that customers and members of the public may access drinking water quality data for any parameter by contacting your business must be included. The statement must incorporate a contact number or a web address for your business where the information is available.

Where all drinking water supplies satisfied the health-related guideline values in the 2004 *Australian Drinking Water Guidelines*, a statement stating that this was the case should be included.

3.7.2 Actions in relation to non-compliance

Details of the response for each incident or section 22 notification that has been submitted relevant to the parameters included in this section must be included. Please also indicate whether any changes to procedures or your associated risk management plan resulted from the incident.

3.8 Aesthetics

The section of the Safe Drinking Water Regulations that refers to aesthetics is:

- 15 (1) (j) "a summary of steps taken by the water supplier to manage the aesthetic characteristics of the drinking water supplied by it, including steps taken to manage the taste, odour, clarity and pH of the drinking water supplied;"

Where monitoring takes place at or near customer taps for pH, hardness, iron and colour, data for each water sampling locality should be provided as indicated in Table 3.8. Extra columns or footnotes may be added to provide further information if desired, for example compliance with any benchmarks that may be set by your business for aesthetic criteria. For aesthetic characteristics it must be clear how any compliance criteria shown in the Table were derived (e.g. based on maximum value, mean, confidence limits etc).

Table 3.8: Example table for pH

Water Sampling Locality	Sampling frequency	No. of Samples	Min	Max
Eg. Locality A	Monthly	12	6.7	8.1
Eg. Locality B	Monthly	12	7.1	8.2

- The inclusion of the minimum result for each locality is optional for parameters other than pH, where both a minimum and maximum should be listed.
- Localities must be listed in alphabetical order.

If any issues have arisen with regard to the taste, odour, clarity or pH of the drinking water supplied, or there have been instances where the drinking water did not satisfy any aesthetic guideline values set out in the 2004 *Australian Drinking Water Guidelines* or aesthetic guidelines or benchmarks set by your business, then a short discussion on how your business is managing these issues is required.

Otherwise, if no issues have arisen, please provide a brief summary of steps taken by the water supplier to manage the aesthetic characteristics of the drinking water you have supplied, including steps taken to manage the taste, odour, clarity and pH.

3.9 Analysis of results

Regulation 15 (1) (e) states that *"an analysis of water sample information, data and results relating to the quality of drinking water supplied and a comparison of that information and data, and those results, with water sample information, data and results from the previous two financial years"* must be provided.

This analysis should take the form of a comparison of the 2006-07 and 2007-08 data with the 2008-09 data for the water quality parameters that are listed in Schedule 2 of the Regulations. If a longer data set is available, and is compatible, then additional earlier years can be included in the analysis.

This analysis should take the form of a comparison of the number or percentage of water sampling localities where the drinking water complied with each of the Schedule 2 parameters during each reporting period, as well as an analysis by the percentage of customers supplied with drinking water that complied with the standards. A separate analysis of each parameter is required. If the number of localities has changed between the reporting periods this is to be noted.

The comparison may be presented in either a tabulated or graphical format. For any parameter where the drinking water did not comply with the standards during all reporting periods (i.e. 2006-07 to 2008-09 inclusive), some explanatory text is required. This text is to detail why the performance has improved, decreased or stayed the same over the reporting periods.

No discussion is required for any parameter where the drinking water complied with the standards during all reporting periods.

The analysis of trends over time may be presented as a separate section, or may be included as part of the discussion of each Schedule 2 parameter detailed above.

4. Emergency and incident management

The information required in relation to emergency and incident management, as detailed in regulation 15 (1) (c) of the Regulations, is:

- *"information about actions taken by the water supplier in respect of each emergency, incident or event that has arisen that has affected –*
 - (i) the quality of drinking water supplied generally; and*
 - (ii) the quality of drinking water supplied where that supply posed a risk to human health;"*

The information includes any incidents that have been reported to the Department under section 22 of the Act. Each section 22 notification must be reported on individually.

Any other incidents, issues or events that occurred during the reporting period, that were not reportable under section 22 of the Act, but that had a potential or actual impact on the quality of drinking water, should also be detailed. This is to be done under a separate heading to the section 22 reports. Other issues or events could include wet weather events that affected raw water quality, major changes in raw water quality or algal blooms reported in accordance with the 2008-09 *Blue-Green Algae Circular* published by the Department of Sustainability and Environment, where a section 22 notification was not required.

Each incident or event is to be clearly identified and contained in the main body of the report and not in footnotes. The incidents, issues or events may be tabulated.

The information required for each incident, including section 22 notifications, is:

- date and estimated duration of incident, issue or event
- location of incident, issue or event and affected water sampling locality(ies)
- the nature of the incident, issue or event
- which drinking water supplies were affected, or potentially affected (if any)
- actions taken in response to the incident, issue or event
- the nature of communication with the community or general public

Water suppliers are expected to ensure that reporting of incidents caused by or related to water supplied from a water storage manager has been co-ordinated with that water storage manager and is consistent in each business's report (for example, in relation to disinfection of water supplied to a water supplier).

Please provide information about any issues that may have arisen out of the actions referred to above, as per regulation 15 (1) (d).

Circumstances where fluoride dosing plants owned or operated by or on behalf of your business were taken off-line by prior arrangement with the Department should be disclosed in section 3.6 above.

5. Complaints relating to water quality

Regulation 15 (1) (g) requires “a summary of complaints received by a water supplier relating to the quality of drinking water supplied, a summary of the responses and any analysis of the issues arising from the complaints”.

Data should be presented using the categories indicated in Table 5.1 below.

Table 5.1: Example table for complaints for 2008-09

Type of complaint	No. of Complaints	No. of complaints per 100 customers supplied ^
Discoloured water		
Taste / odour		
Blue Water		
Air in Water		
Suspected illness		
Other		

^ for the purposes of the complaints section, the term “customer” has the same meaning as that used by the Essential Services Commission, that is, a customer = a connection

Any water sampling localities that recorded a total number of complaints greater than 10 complaints per 100 customers supplied in the locality during the reporting period are to be listed separately.

In addition to providing the information detailed in Table 5.1 above, a summary needs to be included that details the corrective actions that were taken in response to large numbers of related customer complaints, or a summary of issues that account for marked increases in customer complaints between this report and the previous report. This should include information about any resulting community or public announcements or media releases made by your business.

A summary of the process by which your business responds to complainants, a summary of how your business manages each type of complaint and a summary of how your business manages any issues associated with customer complaints are also to be included in this section.

6. Findings of the most recent risk management plan audit

Regulation 15 (1) (m) requires a summary of issues and findings of the most recent risk management plan audits to be given.

For water suppliers that were audited during 2008-09 (i.e. post 1 July 2008 in the 2008 round of audits), you must reproduce a copy of your audit certificate (without any attachment) as a full one page item in your report (this may be in an appendix) and briefly describe the findings of the risk management plan audit, including whether your business did or did not comply with the obligations of the Act.

Water suppliers that were audited and did not comply must describe the specific reasons or issues raised by the auditor, actions taken to address these issues and the timetable for resolution that has been agreed to with the Department, including whether this generated any subsequent undertaking. Please also describe specific observations, improvement opportunities or minor non-compliance matters raised by your auditor in the audit report and the actions taken to address these issues.

Water suppliers that were audited during 2008-09 and did comply should describe specific observations, improvement opportunities or minor non-compliance matters raised by your auditor in the audit report (if any) and the actions taken to address these issues.

For water suppliers that were audited during 2007-08, a brief statement must be included indicating how your business has responded to any findings that arose from the audit, including responses to observations, improvement opportunities or minor non-compliances, beyond the information disclosed in your 2007-08 report.

7. Undertakings under section 30 of the Act

This section is to include a summary of current undertakings that your business has with the Department, pursuant to section 30 of the Act, as at 30 June 2009. In addition to current undertakings, the summary must include any undertakings that were commenced or completed during the reporting period and any undertakings from a previous reporting period where there are ongoing activities or issues that are relevant to the current reporting period.

Where undertakings continue from the previous reporting period(s) (i.e. 2007-08), the summary must be written in such a way that identifies the progress made since the previous year.

The summary may be presented in a tabulated form, using information taken from the undertaking, as shown in Table 7.1 below, or as text.

Table 7.1 Example table for undertakings for 2008-09

Water Supply	Nature of Contravention	Proposed actions to be taken to rectify contravention	Interim risk management actions	Start date	End date	Status at 30 June 2009
Eg. Locality A	(as per undertaking)	(as per undertaking)	(## as per undertaking)	(as per undertaking)	(as per undertaking)	E.g. Completed or In Progress

interim risk management actions that are scheduled for a future year do not need to be included.

This section should also include a summary of:

- any other actions in the undertaking in relation to completion of works or interim milestones;
- any identified community or stakeholder consultation activities; and
- any agreed timeframe and any means by which affected customers or interested members of the public may obtain further information.

8. Exemptions under section 20 of the Act

Regulation 15 (1) (f) (ii) requires a summary of every exemption from a water quality standard under section 20 of the Act and any condition imposed under section 21 of the Act to be given. As there were no section 20 exemptions in place nor any section 21 notices issued during the reporting period, this section may be omitted from the report.

9. Variation in aesthetic standards

Regulation 15 (1) (f) (i) requires a summary of every variation in aesthetic standards under section 19 of the Act and any condition imposed under section 21 of the Act to be given. As there were no section 19 variations in place nor any section 21 notices issued during the reporting period, this section may be omitted from the report.

Please note that any gazetted variations to sampling frequency in accordance with regulation 11 should be described under section 3 of the report rather than here.

10. Regulated water

Regulation 15 (1) (k) requires details of any regulated water supplied by the business during the reporting period to be discussed. The details that are required are listed in Table 10.1, however the information may be presented as text.

Table 10.1: Regulated water supplies

Area where regulated water is supplied	Source water	Date of publication of gazette notice	Population supplied with regulated water

An explanation of what regulated water means is to be included in the introduction to this section. The date of publication of the gazette notice is printed on the gazette notice or in correspondence from the Department. This date may be prior to the current reporting period. Where a regulated water declaration related to water that was previously regarded as drinking water, this needs to be explained.

Regulation 15 (1) (l) requires discussion of the steps taken by the water supplier to manage to warn the public about the regulated water, in accordance with section 25 of the Act. Therefore, a summary of the management activities undertaken in relation to the supply of regulated water needs to be provided. This should include information on how your water business manages the following aspects:

- signage warning the public that the regulated water is not fit for drinking.

- how publicly accessible taps are managed so that the regulated water cannot be accidentally consumed.
- details of communication strategies and messages to advise all customers, particularly those operating food premises, accommodation premises, health care facilities and schools that the water is not to be consumed, as well as community stakeholders such as local councils and relevant landholders.
- any other risk management activities evidencing compliance with section 25 of the Act.

If your business manages non-potable water supplies that are not declared as regulated water, then the management and nature of these supplies in relation to the above points should also be included in this section. Non-potable supply-by-agreement arrangements managed by the water supplier should be included in this section. Risk management activities for supplies for irrigation or non-potable water recycling schemes do not need to be included.

If your business does not manage any regulated water or any other non-potable water supplies, as described above, this section may be omitted from the report.

11. Glossary of terms and further information

A glossary of terms should be included in the report if it will provide clarity on some of the technical issues and terms (including acronyms) presented in the report.

Information on how interested readers may obtain further information from your business on any matter relevant to the report should be included here if it has not been included previously. This should include a statement describing how your water business complies with section 23 of the Act, in relation to public disclosure of water quality monitoring information. The statement should incorporate a contact number or a web address where the information is available.

Attachment 2

Water storage manager 2008-09 annual report content guide
June 2009

1. Introduction

Suggested information for this section may be aims and objectives of your business and/or an overview of your business and its commitment to drinking water quality and the pro-active management of risks.

1.1 Characterisation of the system

Please provide an overview of the water supply systems operated by your business and information on where the water for each water supplier is sourced, from catchment to the point of supply to each water supplier. The inclusion of a map of the supply system(s) or your business' area of operation is recommended. Detailed process control schematics and information on rarely used infrastructure are not required.

Presenting the information in a tabulated format, as is shown Table 1.1 below, is recommended. In some cases, 'Source Water' and 'Storage' may be the same. 'Source Water' and 'Storage' would be separate in the circumstance where raw water is abstracted from a watercourse and placed in a raw water storage area, prior to treatment. If the business does not operate separate raw water storage areas, providing details of the source waters will be sufficient.

Table 1.1: Example table for water sources

Source Water	Catchments	Storage

In the accompanying text, please highlight any major changes between the arrangements for water supply as detailed in the previous year's report as compared to the arrangements detailed in the current report.

2. Water treatment and quality management systems

2.1 Water treatment

In relation to water storage managers, the sections of regulation 15 that refer to water treatment are:

- 15 (2) (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 these processes;"

- 15 (2) (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;"*

If it has not been covered in section 1 above, this section should clarify whether water supplied to a water supplier has been treated or disinfected by or on behalf of your business prior to supply, or is supplied in a raw or untreated state.

Where water has been treated, please include information describing the regular treatment processes, along with any periodic treatment activities, for each water supply system, from the point the raw water enters the water treatment plant, through to where your business' responsibility ends, with respect to water treatment.

Information on the treatment processes and the chemicals associated with those processes (including water soluble bags that may be used to add chemicals) should be presented in a tabular form, as per Table 2.1 below, along with explanatory text briefly describing the role of each treatment process and chemical additive. The explanatory text can be presented as a glossary of terms at the end of the report.

If it is convenient, the information contained in Table 2.1 below can be combined with the information requested in Table 1.1 above and presented as a single table.

Table 2.1: Example table for water treatment

Supply	Treatment process	Added substance(s)	Comments
Supply System	Chlorination Fluoridation	Chlorine gas Fluoride	

In the accompanying text, please highlight any major changes between the water treatment processes detailed in the previous year's report as compared to the processes detailed in the current report.

If your business supplies non-potable water to your customers or the public, then the risk management and nature of these supplies in relation to ensuring that this water is not consumed should be included in this section. Non-potable supply-by-agreement arrangements managed by your business should be included in this section. Risk management activities for supplies for irrigation or non-potable water recycling schemes do not need to be included.

2.2 Issues

Regulation 15 (2) (d) requires discussion of any issues arising out of the processes used to disinfect or treat water supplied by a water storage manager. Examples of issues arising are if the treatment or disinfection process is inadequate to address an identified water quality risk, or if the treatment process is not capable of always delivering drinking water that is compliant with the water quality standards.

Discussion includes aspects such as any interim and long-term solution to the problem, the timing of any remedial works or activities and the problem's effect on the quality of drinking water supplied.

In the event that an issue identified in this section was reported as a section 22 notification under the Act, this must be included in the Emergency/Incident Management section of the annual report. To minimise duplication, these notifications may be acknowledged in this section and a cross reference made to more detail in the Emergency/Incident Management section.

Water storage managers must also provide an update on any issue or incomplete project identified in the previous annual report (i.e. 2007-08), clearly identifying the progress made since the previous reporting period.

If there are no issues, please indicate that this is the case.

3. Emergency / incident management

The information required in relation to emergency and incident management, as detailed in regulation 15 (2) (a) of the Regulations, is:

- *"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;"*

The information would include any incidents that have been reported to the Department under section 22 of the Act. All section 22 reports are to be reported under separate headings.

Any other incidents, issues or events that occurred during the reporting period, that were not reportable under section 22 of the Act, but that had a potential or actual impact on the quality of drinking water, should also be detailed. This is to be done under a separate heading to the section 22 reports.

Other issues or events could include wet weather events that affected water quality, major changes in raw water quality or algal blooms reported in accordance with the 2008-09 *Blue-Green Algae Circular* published by the Department of Sustainability and Environment, where a section 22 notification was not required.

Each incident or event is to be clearly identified and contained in the main body of the report and not in footnotes. The incidents, issues or events may be tabulated.

The information required for each incident, including section 22 notifications, is listed overleaf:

- date and estimated duration of incident, issue or event
- location of incident, issue or event and affected water sampling locality(ies)
- the nature of the incident, issue or event
- which drinking water supplies were affected, or potentially affected (if any)
- actions taken in response to the incident, issue or event
- the nature of communication with the community or general public

Water storage managers are expected to ensure that reporting of incidents caused by water you have supplied to a water supplier has been co-ordinated with that water supplier and is consistent in each business's report (for example, in relation to disinfection of water supplied to a water supplier).

Please provide information about any issues that may have arisen out of the actions referred to above, as per regulation 15 (2) (b). Circumstances where fluoride dosing plants owned or operated by or on behalf of your business were taken off-line by prior arrangement with the Department should be disclosed here.

4. Findings of the most recent risk management plan audit

Regulation 15 (2) (f) requires a summary of issues and findings of the most recent risk management plan audits to be given.

For water storage managers that were audited during 2008-09, you must reproduce a copy of your audit certificate (without any attachment) as a full one page item in your report (this may be in an appendix) and briefly describe the findings of the risk management plan audit, including whether your business did or did not comply with the obligations of the Act.

Water storage managers that were audited and did not comply must describe the specific reasons or issues raised by the auditor, actions taken to address these issues and the timetable for resolution that has been agreed to with the Department, including whether this may generate any subsequent undertaking. Please also describe any specific observations, improvement opportunities or minor non-compliance matters raised by your auditor in the audit report and the actions taken to address these issues.

Water storage managers that were audited during 2008-09 and did comply should describe specific observations, improvement opportunities or minor non-compliance matters raised by your auditor in the audit report (if any) and the actions taken to address these issues.

For water storage managers that were audited during 2007-08, a brief statement must be included indicating how your business has responded to any findings that arose from the audit, including responses to observations, improvement opportunities or minor non-compliances, beyond the information disclosed in your 2007-08 report.

5. Exemptions under section 8 of the Act

Regulation 15 (2) (c) requires a summary of every exemption under section 8 of the Act to be given. As there were no section 8 exemptions in place during the reporting period, this section may be omitted from the report.

6. Undertakings under section 30 of the Act

This section is to include a summary of current undertakings that your business has with the Department, pursuant to section 30 of the Act, as at 30 June 2009. In addition to current undertakings, the summary must include any undertakings that were commenced or completed during the reporting period and any undertakings from a previous reporting period where there are ongoing activities or issues that are relevant to the current reporting period.

Where undertakings continue from the previous reporting period(s) (i.e. 2007-08), the summary must be written in such a way that identifies the progress made since the previous year.

The summary may be presented in a tabulated form, using information taken from the undertaking, as shown in Table 5.1 below, or as text.

Table 5.1 Example table for undertakings for 2008-09

Water Supply	Nature of Contravention	Proposed actions to be taken to rectify contravention	Interim risk management actions	Start date	End date	Status at 30 June 2009
Eg. Supply system A	(as per undertaking)	(as per undertaking)	(## as per undertaking)	(as per undertaking)	(as per undertaking)	E.g. Completed or In Progress

interim risk management actions that are scheduled for a future year do not need to be included.

This section should also include a summary of:

- any other actions in the undertaking in relation to completion of works or interim milestones;
- any identified community or stakeholder consultation activities; and
- any agreed timeframe and any means by which affected customers or interested members of the public may obtain further information.

7. Glossary of terms and further information

A glossary of terms should be included in the report if it will provide clarity on some of the technical issues and terms (including acronyms) presented in the report.

Information on how interested readers may obtain further information from your business on any matter relevant to the report should be included here if it has not been included previously. This should include describing the general nature of any water quality monitoring program carried out by your business and how members of the public can obtain data pertaining to drinking water. The statement should incorporate a contact number or a web address where the information is available.