



Independent Pricing and Regulatory Tribunal

Network Operators' Reporting Manual under the *Water Industry Competition Act 2006*

Water — Reporting Manual
May 2010

Amendment Record

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RMWNO	01/07/09	First release
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1 Introduction

Licensees must ensure compliance with all licence conditions and other applicable obligations under the *Water Industry Competition Act 2006* (the Act), the *Water Industry Competition (General) Regulation 2008* (the Regulation) and any Codes of Conduct.¹ Licence conditions are imposed via the Act, the Regulation and the Licence, and may refer to other legislation, statutory instruments or documents.² The nature and extent of compliance measures a licensee will need to establish and maintain will vary depending on the nature, scale and complexity of its business.

IPART has produced reporting manuals for network operators and retail suppliers that:

- ▼ consolidate all licence obligations for each licence type (in summary form)
- ▼ detail the range of performance indicators, and
- ▼ detail the compliance reporting requirements, including the format and the reporting timetable.

The reporting manuals do not reproduce in full the licence obligations for each licence type, and it is still necessary for the licensee to refer to the relevant source document for full details of the obligation (ie, the Act, Regulation or Licence) or to any legislation, statutory instrument or document referred to in the licence obligation (eg, Codes of Conduct, infrastructure operating plans etc).

All compliance reporting under the reporting manuals is exception-based.

¹ For example, the Water Industry Code of Conduct, the Marketing Code of Conduct and the Transfer Code of Conduct.

² For example, licence conditions require compliance with the Codes of Conduct, infrastructure operating plans, water quality plans and sewage management plans, and with aspects of the *Environmental Planning and Assessment Act 1979*, *Protection of the Environment Operations Act 1997*, *Public Health Act 1992*, *Plumbing and Drainage Code of Practice*, *Australian Drinking Water Guidelines* and *Australian Guidelines for Water Recycling*.

1.1 Legislative framework

On or before 31 October in each year, IPART must provide to the Minister a report on the extent to which licensees have complied, or failed to comply, with the conditions imposed on their licences during the 12 months ending on 30 June in that year.³ The Minister must lay the report before both Houses of Parliament as soon as practicable after receiving it.⁴

It is a standard condition of licence imposed on all licensees that the licensee must prepare and submit compliance reports in accordance with the applicable reporting manual (ie, Network Operator's Reporting Manual or Retail Supplier's Reporting Manual).⁵

At the time of being granted a licence, IPART also issues all licensees with a notice in writing directing the licensee to keep any records necessary to report on compliance with the conditions of their licence and to furnish compliance reports to IPART in accordance with the applicable reporting manual.⁶

³ *Water Industry Competition Act 2006*, section 89(1).

⁴ *Water Industry Competition Act 2006*, section 89(2).

⁵ See standard licence condition - Schedule B, clause B5 of your licence.

⁶ The direction is made in accordance with section 87 of the *Water Industry Competition Act 2006*.

2 Compliance reporting requirements

2.1 Classification of conditions

IPART has prioritised compliance reporting by classifying all licence obligations as requiring either 'immediate' or 'annual' reporting based on an assessment of the potential impact of a breach on the Government's policy objectives.

Immediate reporting is limited to those licence obligations where a breach could have serious consequences, for example, the breach could threaten water quality, continuity of supply, public health or safety, or have a critical impact on the Government's policy objective(s).

Annual reporting is required for all other obligations.

Appendix D sets out the reporting frequency allocated to each licence obligation.

2.2 Immediate licence compliance reporting

Where a breach of or non-compliance with a licence condition requires immediate reporting, immediate reporting must be provided by a licensee in the form of a telephone call to IPART's *Director, Water* ((02) 9290 8414) or *Program Manager, Compliance* ((02) 9290 8477) and follow-up written confirmation to IPART's Chief Executive Officer from the Chief Executive Officer (or equivalent)⁷ of the licensee concerned within 5 business days. Reporting must occur as soon as the event occurs, or as soon as a licensee becomes aware that the event is likely to occur. The verbal and written report must include the following details:

- ▼ date and time of event
- ▼ extent and nature of the non-compliance (including whether and how many customers and/or other licensees have been affected)
- ▼ results of any monitoring (where applicable)
- ▼ reasons for non-compliance

⁷ Some licensees may not have CEOs. In these circumstances, an alternative officer who has day-to-day management control of the business may send written confirmation. If there is any doubt about who should send confirmation, licensees are requested to contact the Program Manager, Compliance.

- ▼ actions taken to rectify the breach and to prevent it reoccurring
- ▼ contact person and/or person responsible for managing response to event
- ▼ actual/anticipated date of full compliance.

Licensees are also required, as a standard condition of licence, to immediately notify IPART, the Minister for Health, the Minister for Water and potentially affected licensed network operators, retail suppliers or public water utilities of any incident in the conduct of the licensee's activities that threatens, or could threaten, water quality, public health or safety.⁸ Such incidents may or may not be the result of an apparent licence breach which requires 'immediate' reporting under this Manual. Where a water quality, public health or safety incident does appear to be the result of such a licence breach, it is only necessary to provide immediate incident notification in accordance with the document *Incident Notification by private sector licensees*, available from <http://www.ipart.nsw.gov.au/water/private-sector/licensing/licence-compliance-reporting.asp>. It is not necessary for a licensee to also comply with the immediate licence compliance reporting requirements set out in the above paragraph of this Manual.

For completeness, any breach that is subject to either immediate licence compliance reporting in accordance with this Manual or immediate incident notification in accordance with the document *Incident Notification by private sector licensees* should also be briefly summarised in the annual compliance report (see below), including an update of any further actions taken by the licensee with respect to the breach and an indication of whether any further breaches of the same obligation have occurred.

2.3 Annual Licence Compliance Report

Licensees are required to submit an annual compliance report certifying that the licensee has complied with its licence obligations other than those identified in the report. The annual compliance report must be signed by:

- ▼ the Chief Executive Officer (or equivalent) and
- ▼ the Chairman of the Board or a duly authorised Board member other than the CEO.

Licensees that have breached a licence obligation are required to provide an exception report which details the:

- ▼ date or period of non-compliance
- ▼ extent and nature of the non-compliance (including whether and how many customers and/or other licensees have been affected)
- ▼ results of any monitoring (where applicable)
- ▼ reasons for non-compliance

⁸ See *Water Industry Competition (General) Regulation 2008*, Schedule 1, clause 1(2) for full details.

- ▼ actions taken to rectify the breach and to prevent it re-occurring
- ▼ actual/anticipated date of full compliance.

Annual performance indicators must also be provided as part of the annual compliance report.⁹

Appendix B sets out the format of the annual compliance report.

A template for annual compliance reporting where a licensee has not engaged in any activities authorised by its licence is at Appendix C.

2.4 Annual reporting cycle

The requirement to provide annual compliance reports commences as soon as a licence is granted.

The annual compliance report, covering the previous financial year (ie, ending 30 June each year), must be submitted to the IPART by not later than **31 August** in each year.

Appendix A sets out the checklist for annual reporting.

2.5 How to lodge annual reports

Annual compliance reports or nil returns should be lodged electronically with a follow-up hard copy sent by mail. Name and contact details (phone, fax, email) of the primary contact IPART can liaise with when assessing compliance should also be provided. An alternative contact for those times when the primary contact is unavailable should also be nominated.

Email addressed to: compliance@ipart.nsw.gov.au

Hard copy addressed to:

The Chief Executive Officer
Independent Pricing and Regulatory Tribunal of
NSW PO Box K35
Haymarket Post Shop NSW 1240

2.6 Performance indicators

Network operators are required to submit performance indicators as part of the annual compliance report. The applicable performance indicators and definitions are set out in Appendix E.

⁹ See section 2.6.

The majority of these indicators are indicators developed by the National Water Commission (NWC) as part of the “National Benchmarking Framework for Rural and Urban Water Utilities”, which IPART has determined are appropriate to network operators. However, where necessary, IPART has also made minor modifications to some of these indicators to adapt them to the regulatory regime provided under the Act. IPART collects and audits these indicators on behalf of the NWC who then produce a National Performance Report for water utilities. These indicators are notated as “NWI Indicators” in Appendix E.

IPART has also developed a small number of indicators required in relation to the Act and Regulation. These are notated as “WICA Indicators” in Appendix E.

Where an indicator is not relevant or applicable to a particular licensee’s activities, the licensee should indicate in its annual compliance report either ‘Nil’ or ‘Not applicable’ in relation to the particular indicator. For example, an indicator may not be relevant (ie, reported as ‘Nil’) in a particular reporting period because the infrastructure is being constructed and not yet operating. In order to ensure licensees are clear as to which indicators are applicable to their activities, IPART will determine the particular indicators that are applicable in consultation with the licensee. The licensee will be notified by IPART of the applicable performance indicators at the time of being granted the licence (and subsequently, if there are any significant changes to the activities undertaken). The kinds of indicators likely to apply to different types of licensed activities are illustrated in the examples provided in Appendix F.

2.7 Compliance Audits

The Act and Regulation do not prescribe the frequency for audits that IPART may require as part of its compliance reporting or licence review process. IPART will use a risk-based approach in order to determine when and how often a compliance audit must be conducted, based on the nature, scale and potential impacts of the licensed activity being undertaken. It is possible that compliance audits will be required annually for some licensees. At a minimum, an audit will be required at least every 5 years to assist in the licence review process.

Additionally, the scope and timing of these audits will depend on the results of previous compliance audits and each business’ compliance history. Generic audit scopes for compliance audits appear in IPART’s “Audit Guideline – Water Licence Audits” (currently under development), which can be downloaded from IPART’s website at <http://www.ipart.nsw.gov.au/water/private-sector-licensing/audit-panel.asp>.

2.8 Performance Standards

In reporting on compliance with infrastructure operating and water quality and/or sewage management plans, network operators must also report on the performance standards established in these plans.¹⁰

2.9 Monitoring

Any monitoring of water quality or sewage required to be undertaken by the licensee for the purposes of the Licence, any plans¹¹ and this reporting manual (eg, performance indicators) must be undertaken in accordance with the requirements set out below.

The following records must be kept of any samples collected:

- ▼ the date(s) on which the sample was taken
- ▼ the time(s) at which the sample was collected
- ▼ the point or location at which the sample was taken, and
- ▼ the name of the person who collected the sample.

A laboratory accredited for the specified tests by an independent body acceptable to NSW Health, such as the National Association of Testing Authorities (NATA) or equivalent, shall carry out all analyses of samples.

¹⁰ See Appendix D, Network Operator Table #20, #24, #40 and #44.

¹¹ Such as the infrastructure operating plan, water quality plan and/or sewage management plan licensees are required to prepare and implement under the Regulation.

3 Processes for Revision

Appropriate reporting and auditing requirements for each condition may vary over time to reflect licensees' previous compliance performance and evolving regulatory and government policy objectives.

Changes to the Reporting Manuals, including amendments to the classification of licence obligations may be necessary to:

- ▼ include new licence obligations
- ▼ delete redundant licence obligations
- ▼ reflect new government initiatives
- ▼ rectify problems identified through compliance monitoring and reporting.

Before making any significant revisions to the reporting requirements or operating statistics, IPART will undertake consultation with relevant licensees and other interested stakeholders as appropriate. IPART will then notify the stakeholders of the finalised revisions to the Reporting Manual and the commencement date of any new reporting arrangements. In determining the commencement date for new reporting arrangements, IPART will have regard to licensees' need for a reasonable period to implement new arrangements.



Appendices

A Checklist for annual reporting

A.1 Annual reporting

By no later than 31 August in each year, all licensees must lodge a hard and electronic Annual Compliance Report comprising of the following:

- ▼ Annual Compliance Report Certification.
 - ▼ Non-Compliance schedule.
 - ▼ Performance Indicators.
 - ▼ Name and contact details (phone, fax, email) of the main person IPART can liaise with during September when assessing compliance. Please also nominate an alternative person for those times when the main contact is unavailable.
- } See templates at Appendix B & E

A template for annual compliance reporting where a licensee has not engaged in any activities authorised by its licence is at Appendix C.

B Annual Compliance Report Format

Annual Compliance Report *[Insert Year]*

For 20__/__/__

Submitted by [licensee]

ACN:

To: The Chief Executive Officer
Independent Pricing and Regulatory Tribunal of NSW
PO Box K35
Haymarket Post Shop NSW 1240

[Name] reports as follows:

1. This report documents compliance during [financial year] with all obligations to which [licensee] is subject by virtue of its Network Operator's Licence.
2. This report has been prepared by [licensee] with all due care and skill in full knowledge of conditions to which it is subject and in compliance with IPART's current Network Operator's Reporting Manual under the *Water Industry Competition Act 2006*.
3. Schedule A provides information on all obligations with which [licensee] did not fully comply during [financial year].
4. Other than the information provided in Schedule A, [licensee] has complied with all conditions to which it is subject.
5. Performance Indicators about [licensee's] operations is provided in Schedule B.
6. This compliance report has been approved by the Chief Executive Officer (or equivalent)¹² and the Board of Directors of [licensee] at its meeting on [date].

DATE:

DATE:

Signed

Signed

Name:

Name:

¹² Some licensees may not have CEOs. In these circumstances, an alternative officer who has day-to-day management control of the business may verify the report. If there is any doubt about who should sign the report, businesses are requested to contact the Program Manager, Compliance.

Designation:

Designation:

Schedule A Non Compliances¹³

Table # ^a	List obligations breached, including a brief description of each obligation ^b	Describe:
		<ul style="list-style-type: none"> i Date or period of non-compliance ii Nature and extent of non-compliance (including whether and how many customers and/or other licence holders have been affected) iii Results of any monitoring (where applicable) iv Reasons for non-compliance v Remedial action taken vi Actual/anticipated date of full compliance

^a See Appendix C. Licensees should indicate, for example, Network Operator Table #29.

^b See Appendix C. Licensees should include, for example: WIC (General) Reg cl 9, WIC (General) Reg Schedule 1, cl 1(1) - A network operator must provide the Minister or IPART with such information as required in relation to licensee's activities under licence.

¹³ Licensees should report only non-compliances that were identified during the reporting period.

Schedule B Performance indicators¹⁴

NWI Indicator # or WICA Indicator # ^a	Indicator description ^b	Report in relation to indicator ^c
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See Appendix D, last column. Licensees should indicate, for example: NWI W1 or WICA#3.

See Appendix D, middle column. Licensees should enter short description of indicator, for example: Volume of water sourced – Surface Water (ML).

See Appendix D, Definitions. Licensees should report against the relevant indicator in accordance with the Definitions. Values should be reported as indicated, for example, in ML, minutes, km or other manner indicated in the Definitions. Additional details required under the Definitions should also be reported, for example, WICA#1 requires the nature of the other source or sources to be identified (eg, stormwater, rainwater) and, if there is more than one source, the volume of each source to be specified.

¹⁴ See Appendix D for a full list of Network Operator’s performance indicators. The licensee must report against all applicable indicators, as determined by IPART in consultation with the licensee.

C Annual compliance report format: NIL return

Annual Compliance Report: Nil Return

For 201_/1_

Submitted by [*name of company*]

ACN:

To: The Chief Executive Officer
Independent Pricing and Regulatory Tribunal of NSW
PO Box K35
Haymarket Post Shop
NSW 1240

I make the following declaration for and on behalf of the company:

1. The company currently holds the following New South Wales WIC Act licence(s) (strike out any that do not apply):
 - retail supplier
 - network operator
2. During the reporting period, the company did not engage in any activities authorised under the WIC Act licence/s it holds.

Note: This declaration must be signed and completed by the Chief Executive Officer (or equivalent) of the business.

DATE:

Signed

Name: Designation:

D | Licence obligations – reporting frequency

[Type text here.]

Network operator – all

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
1	WICA section 14(3)	WICA section 14(3)	A network operator must pay the annual licence fee determined by the Minister.	Annual	CEO and Board
2	WICA section 18(2)	WICA section 18(1)	A network operator must comply with any direction of the Minister to take specified action to reduce or eliminate a risk to public health or public safety arising from certain activities.	Immediately	CEO
3	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 1(1)	A network operator must provide the Minister or IPART with such information as required in relation to licensee's activities under licence.	Annual	CEO and Board
4	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 1(2)	A network operator must immediately notify certain persons of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.	Immediately ¹⁵	CEO
5	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 1(3)	A network operator must permit: <ul style="list-style-type: none"> • publication on IPART's website of matters as are required to be recorded on the Register of Licences; • disclosure between government agencies of information the licensee has provided to any one of them; and • disclosure to the general public of information about incidents reported to the Minister or relevant government authority. 	Annual	CEO and Board
6	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 2(1)	A network operator must not bring any new water or sewerage infrastructure into commercial operation without the written approval of the Minister.	Immediately	CEO
7	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 3	A network operator must ensure its water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable	Annual	CEO and Board

¹⁵ Please note that notification of an incident that threatens, or could threaten, water quality, public health or safety must be made in accordance with the document *Incident Notification by private sector licensees*, available from <http://www.ipart.nsw.gov.au/water/private-sector-licensing/licence-compliance-reporting.asp>. However, where a licensee has failed to provide immediate notification of an incident that should have been immediately notified, a breach of this licence obligation has occurred which must be reported immediately in accordance with this Manual – see section 2.2 for further details.

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
			manner and maintained in a proper condition, having regard to certain matters.		
8	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 4	In its activities under the licence, a network operator must comply with the requirements of: <ul style="list-style-type: none"> the <i>Environmental Planning and Assessment Act 1979</i> and any environmental planning instruments under that Act, and the <i>Protection of the Environment Operations Act 1997</i> and any regulations under that Act, in relation to the protection of the environment.	Annual	CEO and Board
9	WIC (General) Reg cl 9	WIC (General) Reg Schedule 1, cl 5	A network operator must comply with any water industry code of conduct, marketing code of conduct and transfer code of conduct.	Annual	CEO and Board
10	Licence, Schedule A - Ministerially-imposed licence conditions	Schedule A, cl A1	The licence authorises the licence holder to undertake certain activities, using specified water industry infrastructure, for specified authorised purposes, to specified persons or classes of persons, within the area of operations specified.	Immediately	CEO
11	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B1	The licence holder must have the technical, financial and organisational capacity to carry out the activities authorised by the licence. The licence holder must report to IPART immediately if it ceases to have this capacity.	Immediately	CEO
12	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B2	Before commencing to carry out activities authorised under the licence, the licence holder must: <ul style="list-style-type: none"> obtain appropriate insurance, demonstrate the insurance is appropriate by providing a report from an Insurance Expert to this effect, and provide a copy of each certificate of currency of insurance obtained to IPART. 	Annual	CEO and Board

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
13	Licence, Schedule B- Standard Ministerially-imposed licence conditions	Schedule B, cl B3	<p>The licence holder must:</p> <ul style="list-style-type: none"> maintain appropriate insurance, from time to time, when requested by IPART, demonstrate the insurance is appropriate by providing a report from an Insurance Expert to this effect, and whenever the type, level or period of insurance held by the licence holder changes, provide a copy of the certificate of currency to IPART within 10 days of the change being made. 	Annual	CEO and Board
14	Licence, Schedule B- Standard Ministerially-imposed licence conditions	Schedule B, cl B4	The licence holder must carry out activities authorised by the licence in compliance with any requirements of NSW Health that IPART has agreed to and as notified from time to time to the licence holder in writing.	Immediately	CEO
15	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B5	The licence holder must prepare and submit reports in accordance with the applicable Reporting Manual issued by IPART.	Annual	CEO and Board
16	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B7	The licence holder must undertake all monitoring in accordance with certain requirements and using a laboratory that is NATA accredited or equivalent to carry out the analyses.	Annual	CEO and Board
17	Licence, Schedule B - Standard Ministerially-imposed licence	Schedule B, cl B8	Whenever the licence holder makes a significant change to its infrastructure operating plan, water quality plan and/or sewage management plan, a copy of the changed plan must be provided to IPART at the same time it is provided to the approved auditor.	Immediately	CEO

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
	conditions				
18	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B9	Where a Water Industry Code of Conduct has not been established and the licence holder's water industry infrastructure is connected to any other water industry infrastructure, the licence holder must establish arrangements in relation to the respective responsibilities of the licence holder and each licensed network operator, licensed retail supplier and/or public water utility that is responsible for the other water industry infrastructure, which must be agreed in writing by a certain time and address certain matters.	Annual	CEO and Board

Network Operators – water infrastructure - all

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
19	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 6(1)	Before commencing to operate water infrastructure commercially, a network operator must prepare and forward to IPART an infrastructure operating plan that indicates the arrangements the licensee has made, or proposes to make, in relation to certain matters.	Immediately	CEO
20	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 6(2)(a)	A network operator must ensure its infrastructure operating plan is fully implemented and kept under regular review and all its activities are carried out in accordance with the plan.	Annual	CEO and Board
21	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 6(2)(b)	A network operator must, if the Minister so directs, amend its infrastructure operating plan in accordance with the Minister's direction.	Annual	CEO and Board
22	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 6(3)	On demand by the Minister or IPART, or if any significant change is made to its infrastructure operating plan, a network operator must provide the Minister or IPART with a report, prepared by an approved auditor, as to the adequacy of its plan and the condition of its infrastructure or pay the Minister's or IPART's costs in conducting an	Annual	CEO and Board

			investigation into the adequacy of its plan or condition of its infrastructure.		
23	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(1)	Before commencing to operate water infrastructure commercially, a network operator must prepare and forward to IPART a water quality plan that specifies certain matters and is consistent with applicable guidelines.	Annual	CEO and Board
24	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(4)(a)	A network operator must ensure its water quality plan is fully implemented and kept under regular review and all its activities are carried out in accordance with the plan.	Annual	CEO and Board
25	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(4)(b)	A network operator must, if the Minister so directs, amend its water quality plan in accordance with the Minister's direction.	Annual	CEO and Board
26	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(5)	On demand by the Minister or IPART, or if any significant change is made to its water quality plan, a network operator must provide the Minister or IPART with a report, prepared by an approved auditor, as to the adequacy of its water quality plan or pay the Minister's or IPART's costs in conducting an investigation into the adequacy of its water quality plan.	Annual	CEO and Board
27	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 8(1)	Any water meter that is connected to a network operator's water main must comply with the requirements of the Plumbing and Drainage Code of Practice.	Annual	CEO and Board
28	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 8(2)(a)	While water is being supplied to premises in respect of which a water meter has been installed, a network operator must ensure that the water meter is properly maintained and periodically tested.	Annual	CEO and Board
29	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 8(2)(b)	While water is being supplied to premises in respect of which a water meter has been installed, a network operator must ensure that the water meter is read at intervals of no more than 4 months.	Annual	CEO and Board
30	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 8(2)(c)	While water is being supplied to premises in respect of which a water meter has been installed, a network operator must ensure that written notice of each meter reading is sent to the relevant licensed retail supplier.	Annual	CEO and Board
31	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 11	A network operator must not allow a customer's installation to be connected to the network operator's water main unless the	Annual	CEO and Board

			installation complies with the Plumbing and Drainage Code of Practice.		
32	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 12	A network operator must have an internet website on which certain matters are available for inspection by members of the public.	Annual	CEO and Board
33	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B6	Whenever certain information changes, the licence holder must provide up-dated information to IPART within 14 days of the change.	Annual	CEO and Board
34	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B10	If the licence holder is proposing to commence supply/distribution of water for an end-use not set out in its water quality plan, must notify IPART at least 3 months prior to commencing supply/distribution.	Immediately	CEO

Obligations specific to network operators of water infrastructure for drinking water

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
35	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(2)	A network operator's water quality plan in relation to water infrastructure for drinking water must be consistent with the Australian Drinking Water Guidelines.	Annual	CEO and Board
36	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 9	<p>A network operator of water infrastructure to supply drinking water must ensure the water supplied is:</p> <ul style="list-style-type: none"> • fit for human consumption; and • complies with any requirements of the licence conditions; and • complies with any requirements under the <i>Public Health Act 1991</i> in relation to the supply of safe drinking water. 	Annual	CEO and Board

Obligations specific to network operators of water infrastructure for non-potable water

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
37	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 7(3)	A network operator's water quality plan in relation to water infrastructure for non-potable water must be consistent with the Australian Guidelines for Water Recycling.	Annual	CEO and Board
38	WIC (General) Reg cl 9(a)	WIC (General) Reg Schedule 1, cl 10	<p>A network operator of water infrastructure to supply non-potable water for a particular purpose must ensure the water supplier is:</p> <ul style="list-style-type: none"> • is fit for that purpose; and • complies with any requirements of the licence conditions. 	Annual	CEO and Board

Network Operators - sewerage infrastructure - all

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
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#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
39	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 13(1)	Before commencing to operate sewerage infrastructure commercially, a network operator must prepare and forward to IPART an infrastructure operating plan that indicates the arrangements the licensee has made, or proposes to make, in relation to certain matters.	Immediately	CEO
40	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 13(2)(a)	A network operator must ensure its infrastructure operating plan is fully implemented and kept under regular review and all its activities are carried out in accordance with the plan.	Annual	CEO and Board
41	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 13(2)(b)	A network operator must, if the Minister so directs, amend its infrastructure operating plan in accordance with the Minister's direction.	Annual	CEO and Board
42	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 13(3)	On demand by the Minister or IPART or if any significant change is made to its infrastructure operating plan, a network operator must provide the Minister or IPART with a report, prepared by an approved auditor, as to the adequacy of its plan and condition of its infrastructure or pay the Minister's or IPART's costs in conducting an investigation into the adequacy of its plan or the condition of its infrastructure.	Annual	CEO and Board
43	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 14(1)	Before commencing to operate sewerage infrastructure commercially, a network operator must prepare and forward to IPART a sewage management plan that indicates certain matters.	Immediately	CEO
44	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 14(3)(a)	A network operator must ensure its sewage management plan is fully implemented and kept under regular review and all its activities are carried out in accordance with the plan.	Annual	CEO and Board
45	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 14(3)(b)	A network operator must, if the Minister so directs, amend its sewage management plan in accordance with the Minister's direction.	Annual	CEO and Board
46	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 14(4)	On demand by the Minister or IPART, or if any significant change is made to its sewage management plan, a network operator must provide the Minister or IPART with a report, prepared by an approved auditor, as to the adequacy of its plan or pay the Minister's or IPART's costs in conducting an investigation into the adequacy of its plan.	Annual	CEO and Board

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
47	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 15	A network operator must not allow a customer's installation to be connected to the network operator's sewer main unless the installation complies with the Plumbing and Drainage Code of Practice.	Annual	CEO and Board
48	WIC (General) Reg cl 9(b)	WIC (General) Reg Schedule 1, cl 16	A network operator must have an internet website on which certain matters are available for inspection by members of the public.	Annual	CEO and Board
49	Licence, Schedule B - Standard Ministerially-imposed licence conditions	Schedule B, cl B6	Whenever certain information changes, the licence holder must provide up-dated information to IPART within 14 days of the change.	Annual	CEO and Board

Network operators – specified licensees only¹⁶

#	Licence Condition	Obligations under condition	Brief description of obligation	Reporting	Verification
#	[Licensee's name], licence number #	Schedule A, cl A#	[Brief description]	[Immediately/Annual]	[CEO/ CEO and Board]
#	[Licensee's name], licence number #	Schedule A, cl A#	[Brief description]	[Immediately/Annual]	[CEO/ CEO and Board]

¹⁶ Some licensees will be subject to non-standard Ministerially-imposed licence conditions specific to their licensed activities. It is IPART's intention to list any such licence obligations here. The Manuals will be updated whenever a new licensee is subject to such conditions. At this point in time, IPART anticipates that non-standard Ministerially-imposed licence conditions will be the exception, rather than the rule.

E | Water Network Operator performance indicators

Important note:

The majority of the following Network Operator performance indicators and their corresponding definitions are developed by the National Water Commission (NWC) as part of the “National Benchmarking Framework for Rural and Urban Water Utilities”. These indicators are notated as “NWI Indicators” below. Where necessary, IPART has made minor modifications to some of the NWI Indicators and their corresponding definitions to adapt them to the regulatory regime provided under the Act. In particular, given the scale of activities licensed under the Act (many of which are anticipated to be small scale), NWI Indicators that use a measure of ‘per 1,000 properties’ are to be reported in actual numbers *or* per 1,000 properties (where possible). NWI Indicators in relation to service interruptions have been modified to apply to ‘connection points’ instead of ‘customers’.

IPART has also developed a small number of indicators and corresponding definitions required in relation to the Act and Regulation. These are notated as “WICA Indicators” below. IPART has endeavoured to define the WICA Indicators in a manner consistent with definitions used for the NWI Indicators, and to build on existing NWI Indicators where possible.

Indicator Set	Indicator	NWI Indicator #. or WICA Indicator #
Sources of water	Volume of water sourced:	
	- Surface Water (ML)	NWI W1
	- Groundwater (ML)	NWI W2
	- Desalination (ML)	NWI W3
	- Recycling (ML)	NWI W4
	- Bulk Supplier (ML)	NWI W5
	- Volume of bulk recycled water purchased (ML)	NWI W6
	- Other (ML)(please specify)	WICA#1
	Total volume of water sourced (ML)	NWI W7
Sewage collected	Volume of sewage collected – residential sewage, non-residential sewage and non-trade waste (ML)	NWI W16
	Volume of sewage collected - trade waste (ML)	NWI W17
	Total volume of sewage collected (ML)	NWI W18
Volume of water supplied (Uses of water supplied)	Volume of water supplied - other (ML)	NWI W10
	Volume of water supplied – On-site (ML)	WICA#2
	Volume of water supplied for environmental flows (ML)	NWI W13
	Volume of bulk water exports (ML)	NWI W14
	Total volume of water supplied (ML)	WICA#3
Volume of recycled water supplied (Uses of recycled water)	Volume of bulk recycled water exports (ML)	NWI W15
	Volume of recycled water supplied - environmental flows (ML)	NWI W23
	Volume of recycled water supplied - on-site (ML)	NWI W24

Indicator Set	Indicator	NWI Indicator #. or WICA Indicator #
	Volume of recycled water supplied – other (ML)	NWI W25
	Total of recycled water supplied (ML)	NWI W26
Infrastructure	Length of water mains (km)	NWI A2
	Length of potable water mains (km)	WICA#4
	Length of non-potable water mains (km)	WICA#5
	Length of sewerage mains and channels (km)	NWI A5
	Number of water treatment plants providing full treatment	NWI A1
	Number of recycled water treatment plants	NWI A7
	Number of sewage treatment plants	NWI A4
Infrastructure performance	Number of water main breaks (per 100km water main)	NWI A8
	Number of sewerage breaks and chokes (per 100km of sewer main)	NWI A12
	Property connection breaks and chokes (per 100 km of sewer main)	NWI A13
	Number of sewage treatment plants compliant at all times (e.g. 5/6)	NWI E5
Service Interruptions	Average duration of unplanned interruption – water (minutes)	NWI C15
	Average duration of planned interruption – water (minutes)	WICA#6
	Average duration of unplanned interruption – potable water (minutes)	WICA#7
	Average duration of planned interruption – potable water (minutes)	WICA#8
	Average duration of unplanned interruption – non-potable water (minutes)	WICA#9
	Average duration of planned interruption – non-potable water (minutes)	WICA#10
	Average sewerage interruption (minutes)	NWI C16
	Average frequency of unplanned interruption – water	NWI C17
	Average frequency of planned interruption –water	WICA#11

Indicator Set	Indicator	NWI Indicator #. or WICA Indicator #
	Average frequency of unplanned interruption – potable water	WICA#12
	Average frequency of planned interruption – potable water	WICA#13
	Average frequency of unplanned interruption – non-potable water	WICA#14
	Average frequency of planned interruption – non-potable water	WICA#15
	Average frequency of unplanned interruption – sewerage	WICA#16
Environmental	Sewer overflows reported to environmental regulator (per 100km of sewer main)	NWI E13
	Percent of sewage volume treated that was compliant (%)	NWI E4
	Compliance with environmental regulator – sewerage (yes/no)	NWI E7
	Percent of biosolids reused	NWI E8
Water quality	Number of zones where microbiological compliance was achieved (e.g. 23/24)	NWI H2
	Percent (%) of population where microbiological compliance was achieved	NWI H3
	Number of zones where chemical compliance was achieved (e.g. 23/24)	NWI H4

Please refer to the applicable “Definitions” below.

F Definitions

Sources of water

Reported indicators	Indicator number
Volume of water sourced from surface water (ML)	W1
Volume of water sourced from groundwater (ML)	W2
Volume of water sourced from desalination (ML)	W3
Volume of water sourced from recycling (ML)	W4
Volume of water received from bulk supplier (ML)	W5
Volume of bulk recycled water purchased (ML)	W6
Volume of water sourced from other sources (ML)	WICA#1
Total sourced water (ML)	W7

RAW DATA COLLECTED

- 1 Volume of water sourced from surface water (ML). (W1)
- 2 Volume of water sourced from groundwater (ML). (W2)
- 3 Volume of water sourced from desalination (ML). (W3)
- 4 Volume of water sourced from recycling (ML). (W4)
- 5 Volume of water received from bulk supplier (ML). (W5)
- 6 Volume of bulk water purchased (ML). (W6)
- 7 Volume of water sourced from other sources (ML). (WICA#1)
- 8 Total sourced water (ML). (W7)

PURPOSE

To report the volumes of water abstracted from various water sources to supply the utility's customers in the reporting period. It may also provide an indication of the diversity of supply sources, potential environmental issues, water treatment issues and a partial explanation for the relative operating and total cost of water of the utility compared to other utilities (e.g. a utility supplied mostly by desalination may have a higher cost structure than one relying mostly on gravity fed water from dams).

DEFINITIONS

W1 - Volume of water sourced from surface water

The total volume of water (potable and non-potable) abstracted by the utility from surface water sources such as dams, rivers or irrigation channels during the reporting period.

W2 - Volume of water sourced from groundwater

The total volume of water (potable and non-potable) abstracted from groundwater during the reporting period.

To avoid double counting this excludes volumes sourced from groundwater supplies that have been artificially recharged using sources of water that have been counted elsewhere i.e.

- rivers
- desalination plants
- sewerage treatment plants (recycling).

Other forms of artificial recharge (i.e. storm water) not counted elsewhere are to be included.

W3 - Volume of water sourced from desalination

The total volume of water (potable and non-potable) sourced from desalination plants during the reporting period.

W4 - Volume of water sourced from recycling

The total volume of water supplied by the water utility sourced from recycled water during the reporting period including recycled water from direct or indirect reuse. This should be the sum of residential, industrial/commercial, municipal irrigation and on-site substitution (where it replaces potable water). Water supplied for agribusiness by the utility should also be included where potable water (or raw supply to the potable system) would normally be used.

Note: This differs from Indicator W26; Total recycled water supplied (ML) where any agricultural and on-site uses are counted.

W5 - Volume of water received from bulk supplier

The total volume of water (potable and non-potable) purchased from another utility or entity outside this utility's geographic area of responsibility. The volume of water will include water which is subsequently exported (sold) to another utility.

W6 - Volume of bulk recycled water purchased

The total volume of recycled water purchased from another utility or another entity outside this utility's geographic area of responsibility.

WICA#1 - Volume of water sourced from other sources

The total volume of water sourced from any other source not listed above. The nature of the source or sources should be identified (eg, stormwater, rainwater) and, if there is more than one source, the volume of each source should also be specified.

W7 - Total sourced water

This is the sum of the volumes reported above as supplied from dams, river extraction, groundwater, desalination, recycling, bulk supplier, stormwater and rainwater.

UNITS

Megalitres (ML).

Uses of water supplied

Reported indicators	Indicator number
Volume of water supplied - Other (ML)	W10
Volume of water supplied – On-site (ML)	WICA#2
Volume of water supplied - Environmental flows (ML)	W13
Volume of bulk water exports (ML)	W14
Total volume of water supplied (ML)	WICA#3
Volume of bulk recycled water exports (ML)	W15

RAW DATA COLLECTED

1. Other water supplied (ML). (W10)
2. Water supplied on-site (ML). (WICA#2)
3. Environmental flows supplied (ML). (W13)
4. Volume of bulk water exports (ML). (W14)
5. Total volume of water supplied (ML). (WICA#3)
6. Volume of bulk recycled water exports (ML). (W15)

PURPOSE

To report the distribution of total water supplied.

DEFINITIONS

W10 - Volume of water supplied -Other

Total metered and estimated non-metered water (potable and non-potable) supplied to other users. This would include, but may not be limited to, an estimate of water used for fire fighting, mains flushing, losses due to customer meter errors, leakage or contractors and any other consumption due to operations.

WICA#2 - Volume of water supplied - On-site

Water used on-site external to the treatment process. (If some volumes are estimated, this should be noted on the data). For each such on-site use, specify the use (eg, on-site irrigation or toilet flushing) and volume involved in that use.

W13 - Volume of water supplied - Environmental flows

Wholesale flow allocations to the environment, generally upstream of the master meter, for the reporting period as specified in the environmental flow management regime generally required by the relevant natural resource management agency. Accidental or unintentional releases should not be included unless they can be incorporated into the environmental flow management regime.

W14 - Volume of bulk water exports

The total volume of water (potable and non-potable) sold to another utility or another entity outside this utility's geographic area of responsibility. The volume of water will include water originated from another source (see example 1).

WICA#3 - Total volume of water supplied (ML)

The total volume of water supplied for environmental flows and of bulk water exports as determined above.

W15 - Volume of bulk recycled water exports

The total volume of recycled water sold to another utility or another entity outside this utility's geographic area of responsibility.

UNITS

Megalitres (ML).

EXAMPLES

- Utility A Bulk supplier sells 100 ML water sourced from surface water to Utility B Retailer who then treats the total volume. Utility B Retailer then sells 60 ML to Utility C Retailer who in turn sells a proportion of this to Utility D Retailer. In this example, Utility A Bulk supplier would include 100 ML water as bulk water exports and would report this water as sourced from surface water. Utility B Retailer would include 100 ML water as bulk of water purchased from a bulk supplier but would not report the water as sourced from surface water.

Sewage collected

Reported indicators	Indicator number
Volume of sewage collected - Residential sewage, non-residential sewage and non-trade waste (ML)	W16
Volume of sewage collected -Trade waste (ML)	W17
Total sewage collected (ML)	W18

RAW DATA COLLECTED

- Residential sewage, non-residential sewage and non-trade waste collected (ML).
- Trade waste collected (ML).
- Total sewage collected (ML).

PURPOSE

To provide an overview of the volume of sewage collected by the utility.

DEFINITIONS

W16 - Volume of sewage collected - Residential sewage, non-residential sewage and non-trade waste

Sewage received from residential, non-residential and non-trade waste sources. This also includes any volumes collected in the sewage system due to stormwater, illegal connection inflow and infiltration to the sewerage system. Residential (domestic) sewage is the water borne waste derived from human origin comprising of faecal matter, urine and liquid household waste from water closet pans, sinks, baths, basins and similar fixtures designed for use in private dwellings.

W17 - Volume of sewage collected - Trade waste

Total volume of estimated and metered trade waste collected and treated by the water utility, or on behalf of the water utility. This includes any volumes of stormwater collected in the trade waste system. Trade waste (industrial waste) is the liquid waste generated from any industry, business, trade, or manufacturing process. It does not include domestic sewage.

W18 - Total sewage collected

Total volume of sewage collected by the utility, measured as treatment plant inflow, plus sewage treated by another business on behalf of the water utility e.g. wholesaler. Where only treatment plant outflow is measured, record this value and comment appropriately. This measure should equal the sum of volumes reported for residential, non-residential and non-trade sewage collected and trade sewage collected.

Note: Residential and non-residential sewage and trade waste are defined as per either *The National Water Management Strategy Guidelines for Sewerage Systems 1994* or state-based legislation.

UNITS

Megalitres (ML).

Uses of recycled water

Reported indicators	Indicator number
Volume of recycled water supplied - Environmental (ML)	W23
Volume of recycled water supplied - On-site (ML)(specify)	W24
Volume of recycled water supplied - Other (ML)	W25
Total recycled water supplied (ML)	W26

RAW DATA COLLECTED

1. Environmental recycled water supplied. (W23)
2. On-site recycled water supplied. (W24)
3. Other recycled water supplied. (W25)

PURPOSE

To report the volume of recycled water supplied. It may also be used to report the distribution of recycled water in the business.

DEFINITIONSW23 - Volume of recycled water supplied - Environmental

Recycled water discharged to a waterway for environmental purposes as prescribed by the environmental regulator. There must be a quality characteristic that is a net benefit to the environment as determined by the relevant regulator. (If some volumes are estimated, this should be noted on the data). i.e. water discharged to rivers, the sea, natural wetlands. This may exclude non harvestable forests and bushland if the regulator determines there is 'disposal' rather than 'beneficial use'.

W24 - Volume of recycled water supplied - On-site

Recycled water used on-site external to the treatment process. (If some volumes are estimated, this should be noted on the data). Total volumes of recycled water supplied within the period i.e. volumes must capture total water supplied in a continuous process irrespective of whether it is re-used within a cycle. For each such on-site use, specify the use and volume involved in that use (eg. on-site irrigation of golf greens – 200ML).

W25 - Volume of recycled water supplied - Other

Total estimated non-metered recycled water supplied to other users. This would include, but may not be limited to, an estimate of water used for fire fighting, mains flushing, losses due to customer meter errors, leakage or contractors and any other consumption due to operations.

W26 - Total recycled water supplied

The sum of all treated effluent that is used by either the water utility itself, or a business supplied by the water utility, or supplied through a third pipe system for urban reuse. Evaporation is excluded. The parameters are the total sewage collected and the volume of effluent recycled (see examples 1, 2, 3 and 4).

Recycled water can be provided for onsite re-use, agriculture, irrigation, industry, potable or other use external to the treatment process.

Note:

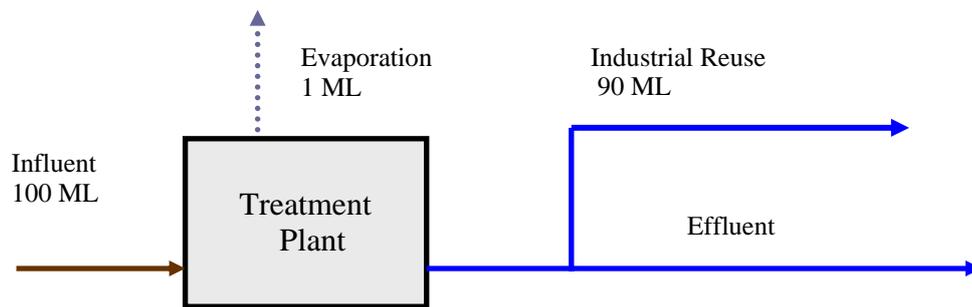
1. Recycled water supplied to clubs, sporting fields, or other businesses is included.
2. Environmental flows are included if they are approved by the EPA and substitute raw water abstraction or are recognised as an environmental flow by regulator/authority.
3. Sewer mining extracted from the utility's mains is an accepted form of recycling.

UNITS

ML

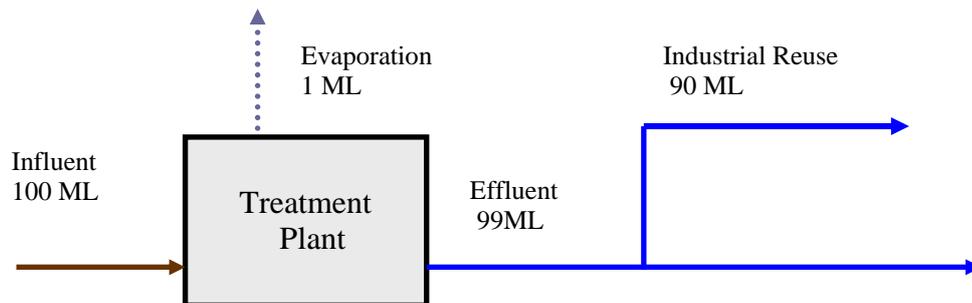
EXAMPLES

1. Recycled water is supplied to industry for use. No onsite re-use occurs.



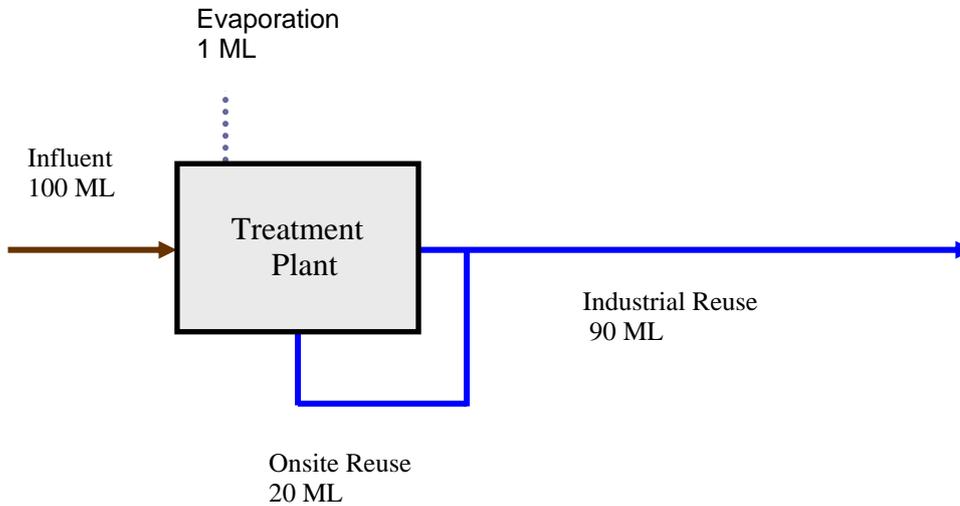
$$\text{Per cent of Water Recycled} = \frac{\text{Volume of Water Recycled}}{\text{Volume of Influent} - \text{Net Evaporation}} = \frac{90}{100-1} = 90.9\%$$

2. Recycled water is supplied to industry for use. No onsite reuse occurs.



$$\text{Per cent of Water Recycled} = \frac{\text{Volume of Water Recycled}}{\text{Volume of Effluent}} = \frac{90}{99} = 90.9\%$$

3. Recycled water is used on site and supplied to industry for use.

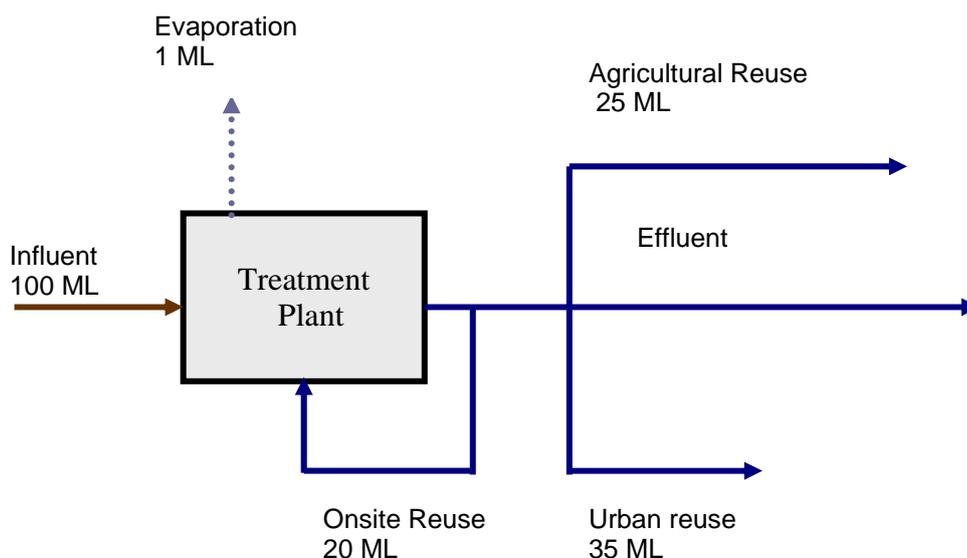


$$\text{Per cent of Water Recycled} = \frac{\text{Vol of Water Recycled}}{\text{Vol of Influent} - \text{Net Evaporation}} = \frac{(20+90)}{(100-1)} = 111.1\%$$

Note:

Where a percentage greater than 100% is achieved please provide a footnote to explain the figure and aid reader understanding of the process.

4. Recycled water is used on site, supplied for agricultural reuse and supplied for urban reuse through a third pipe system to urban households for toilet flushing and garden watering and for irrigation of open space community facilities.



$$\text{Per cent of Water Recycled} = \frac{\text{Vol of Water Recycled}}{\text{Vol of Influent} - \text{Net Evaporation}} = \frac{(20+25+35)}{(100-1)} = 80.8\%$$

5. A market garden historically abstracts 40 ML of river water per year for irrigation purposes. In the reporting period, the water utility supplies 30 ML of recycled water to the market garden, which subsequently abstracts only 10 ML of river water. The volume of recycled water substituting raw water abstraction is 30 ML.
6. Water supplied per residential property within a water utility's service area is 220 kL/a (W12). The water utility supplies 30 000 kL of recycled water to 1000 properties via a third pipe system for toilet flushing and garden watering. Whilst the total water supplied per property remains unchanged, potable water consumption for properties also supplied with recycled water decreases by 30 kL per year (ie. 190 potable + 30 recycled = 220 kL residential water supplied per property). The 30 000 kL of recycled water supplied therefore is included as **BOTH** residential water supplied and total recycled water supplied.

Water treatment plants

Reported indicators	Indicator number
Number of water treatment plants providing full treatment	A1

RAW DATA COLLECTED

1. Number of water treatment plants providing full treatment.

PURPOSE

To report the level of treatment and complexity of treatment provided to bring water quality to an acceptable level for the customer. This indicator can also provide a partial explanation of a utility's relative operating cost and total cost. e.g. a utility providing full treatment for most of its supply would have a significantly higher cost structure than one providing lesser treatment, e.g. disinfection only or 'further treatment'.

DEFINITIONS

Water treatment plant

An individual location receiving raw or partially treated water for treatment and ultimate delivery to customers. There may be more than one water treatment plant at an individual facility. Secondary or booster disinfection plants are not included, even where they have pH correction. Water treatment plants that provide fluoridation only should be classified as disinfection only.

Full treatment

Generally, the water treatment plant is a substantial structure involving multiple treatment methods to achieve high quality water. The treatment plant would generally include processes that remove colour and/or turbidity as well as providing filtration and disinfection. In addition to the above, it may include processes for taste and/or odour reduction, softening, pH correction and the targeted removal of elements and compounds such as iron, manganese, nitrates and pesticides (see example 3).

Note:

1. Secondary disinfection plants should not be counted, even when they have pH correction as well.
2. BOOT schemes should be included.

EXAMPLES

1. Typical disinfection only processes include chlorination, chloramination, ozonation and/or ultraviolet treatment and should be excluded.
2. Typical further treatment processes include pH correction, softening and taste or odour reduction and should be excluded.
3. Typical full treatment processes—generally in addition to pH correction, and/or taste reduction, and/or odour reduction—include coagulation, flocculation, sedimentation, filtration, disinfection, membrane filtration and reverse osmosis.

Other water assets

Reported indicators	Indicator number
Length of water mains (km)	A2
Length of potable water mains (km)	WICA#4
Length of non-potable water mains (km)	WICA#5

RAW DATA COLLECTED

1. Length of water mains (km).
2. Length of potable water mains (km).
3. Length of non-potable water mains (km).

PURPOSE

To report on the scale of the utility's water mains distribution and reticulation network. It also provides an indication of the ease or difficulty of delivery of water to customers and is used as a normaliser for a number of other indicators. It is independent of source assets so as to facilitate comparison of water schemes.

DEFINITIONS

A2 - Length of water mains

The total length of water mains including: all transfer, distribution, reticulation mains and recycled water distribution and reticulation mains delivering water for urban areas. The length of water mains excludes:

- ✗ Mains associated with property water service (mains to meter) connections.
- ✗ Mains delivering recycled water for non-urban uses, e.g. agriculture re-use.
- ✗ Disused pipe lengths should not be counted, even if they are maintained by the water utility for possible future use.
- ✗ Privately owned mains
- ✗ Mains associated with source works e.g. borefield mains
- ✗ Mains and channels associated with sources which transfer water to treatment facilities or from scheme to scheme
- ✗ Mains associated with facilities e.g. mains within pump stations, storage facilities or treatment plants

Note:

1. Utilities that provide water services to a number of urban centre's either within a region, local government, or state-wide and are reporting the performance of these urban centre's as part of the national performance framework either separately or aggregated must also report length of water mains used in providing the services to those urban centre's. If the assets are used for multiple urban centres which are reported separately then they must be apportioned in a manner which is consistent with their use. Apportionment in

line with the volume of water used or consumed by the urban centre reported is an acceptable way to apportion the length of these mains.

2. The definition for length of water mains refers to 'delivery of potable water and non-potable water to customers'. If a bulk water supplier does not treat water to a potable level, these indicators will not be relevant for them.
3. Ferrule is part of the service connection.

WICA#4 - Length of potable water mains

The total length of potable water mains, including potable water distribution and reticulation mains delivering potable water for urban areas, subject to the same exclusions and notes above.

WICA#5 - Length of non-potable water mains

The total length of non-potable water mains, including non-potable water distribution and reticulation mains delivering non-potable water for urban areas, subject to the same exclusions and notes above.

UNITS

Kilometres (km)

Sewerage assets

Reported indicators	Indicator number
Number of sewage treatment plants	A4
Length of sewerage mains and channels (km)	A5

RAW DATA COLLECTED

1. Number of sewage treatment plants.
2. Length of sewerage mains and channels.

PURPOSE

To report on the scale of the utilities sewerage network.

DEFINITIONS

A4 - Number of sewage treatment plants

The total number of sewage treatment plants providing sewage services to customers. This includes all primary, secondary and tertiary level treatment plants.

Note: BOOT schemes should be included.

A5 - Length of sewer mains and channels

The total length of mains and channels, including all trunk, pressure and reticulation mains. It does not include lengths associated with property connection sewers or conduits carrying treated effluent.

Note: Combined sewerage and stormwater mains are included.

Conduits and pipelines, (e.g. feeding paddocks for grass and land filtration), downstream from the treatment plant should be excluded.

UNITS

Kilometres (km).

Recycled water treatment plants

Reported indicators	Indicator number
Number of recycled water treatment plants	A7

RAW DATA COLLECTED

1. Number of recycled water treatment plants.

PURPOSE

This indicator provides information on the assets, level of additional treatment and complexity necessary to bring recycled water quality to an acceptable level for the customer. This indicator can also provide an explanation of relative operating and total costs.

DEFINITIONS

A7 - Recycled water treatment plant

Any processes required in addition to sewage treatment requirements to bring the sewage quality to a level appropriate for recycling to meet the customer needs. If the level required for recycling is equal or less stringent than that required for discharge, i.e. no additional treatment is required; this is not included as a recycled water treatment plant.

A recycled water treatment plant takes sewage exclusively for recycling. In the event the treatment plant has a dual purpose (used both as a sewage treatment plant and as a recycled water treatment plant) then predominant use (>50 per cent) should be used to classify the plant to avoid double counting. Predominant usage may change over time due to upgrades or be driven by demand.

There may be more than one additional process step at an individual facility; however this is treated as one recycling water treatment plant.

EXAMPLES

1. Effluent is discharged from a sewage treatment plant into an inland waterway. The level of treatment required is greater than that required for land application of recycled water. All water recycled from the sewage treatment plant is applied to land, hence the sewage treatment plant IS NOT included in the recycled water treatment plant figure as no additional treatment is required.
2. An inland sewage treatment plant treats effluent to a tertiary standard for discharge to an inland waterway. Fifty per cent of the tertiary treated effluent is further processed through a membrane treatment for reuse by an industrial customer. The membrane treatment unit is a recycled water treatment plant.

Water main breaks

Reported indicators	Indicator number
Water main breaks (per 100 km of water main)	A8

PURPOSE

To report the number of breaks in potable and non-potable water mains, as a proportion of the total length of water main serviced by the water utility. It is a partial indicator of customer service and the condition of the water main network.

Note:

The interpretation and definition of 'main breaks' was changed in the National Performance Report 2005-06 and is now similar to WSAA *facts* 2005, but includes both potable and non-potable water mains. Historical data can be published if in line with this definition.

DEFINITIONS

Total number of water main breaks

The total number of main breaks, bursts and leaks in all diameter mains for the reporting period.

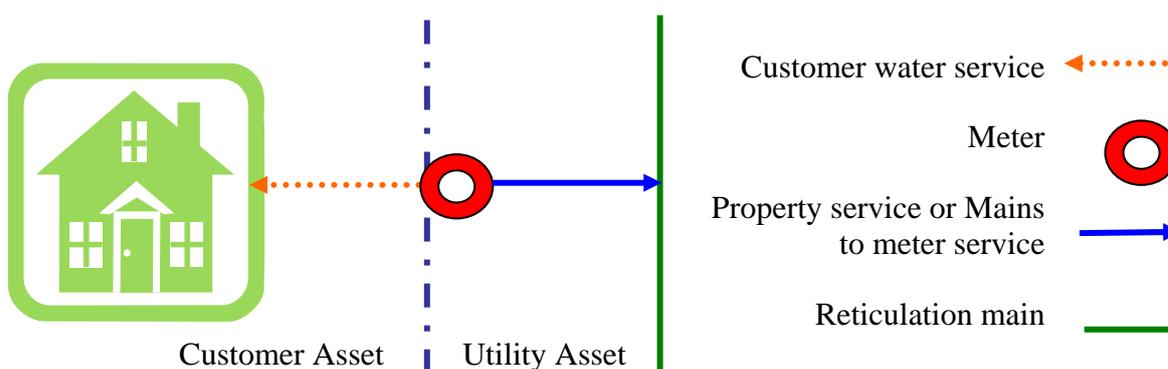
Breaks exclude those in the property service (*i.e.* mains to meter connection) and weeps or seepages associated with above ground mains that can be fixed without shutting down the main.

Note: The "property service" includes any water infrastructure between the water main and the internal plumbing of the property. It may be owned by the water utility, and is often referred to as the "mains to meter" service or connection. All water plumbing downstream of the meter is usually the property owner's asset.

CALCULATIONS

A8 - Water main breaks per 100 km of water main =

$(\text{Total number of water main breaks}) / (\text{Total length of water mains}) \times 100$



Sewerage breaks and chokes

Reported indicators	Indicator number
Sewerage breaks and chokes (per 100 km of sewer main).	A12
Property connection breaks and chokes (per 100 km of sewer main)	A13

RAW DATA COLLECTED

1. Total number of sewerage breaks and chokes. (A12)
2. Total number of property connection breaks and chokes. (A13)

PURPOSE

To report the number of sewerage breaks and chokes (A12) in the sewerage system operated by the water utility. It is a partial indicator of customer service and the condition of the sewerage network and may also be used to compare customer service.

Property connection breaks and chokes are a component of indicator A12 but are also reported separately as they may involve different causes and frequency of breaks.

Note

Definition of sewer mains has been updated; historical data may need to be reviewed by some utilities.

DEFINITIONS

Choke

A confirmed partial or total blockage that may or may not result in a spill to the external environment from the sewer system.

Breaks of leaks

A break or leak is a failure of the sewer main which results in an interruption to the sewerage service.

A12 - Sewerage breaks and chokes

The sewerage breaks and chokes indicator includes:

- ✓ All gravity sewer mains
- ✓ All pressure mains (including common effluent pipelines, rising mains etc)
- ✓ All vacuum system mains of any diameter.
- ✓ Property connection sewers.

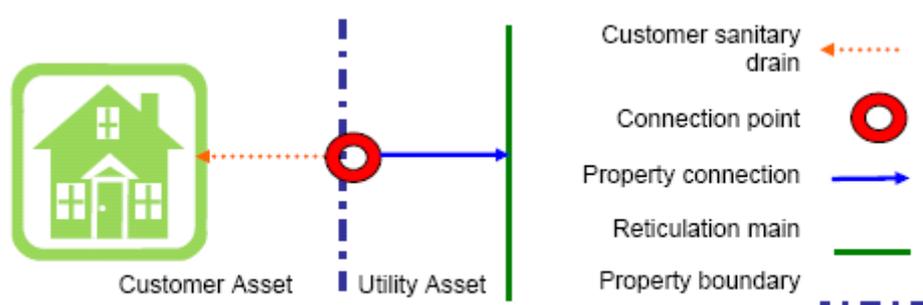
This excludes:

- ✗ Pipelines carrying treated effluent

- × Recycled water distribution and reticulation mains delivering water for urban areas; such mains are to be reported as water mains (Indicator A2).

A13 - Property connection breaks and chokes

The property connection is a short sewer owned and operated by the sewerage agency, which connects the sewer main and the customer sanitary drain. It includes a junction on the sewer main, a property connection fitting, a vertical riser (in some cases) and sufficient straight pipes to ensure the property connection fitting is within the lot to be serviced (refer to the *WSAA 02 Sewerage Code of Australia*).



UNITS

Per 100 km

CALCULATIONS

A12 - Sewerage breaks and chokes (per 100 km of sewer main) =

Total number of sewerage breaks and chokes / (Total length of sewer main (km) / 100)

A13 - Property connection breaks and chokes (per 100 km sewer main) =

Total number of property connection breaks and chokes / (Total length of sewer main (km) / 100)

Note: A13 is a component of A12 (ie, A12 includes property connection breaks and chokes).

Average duration of unplanned water supply interruptions

Reported indicators	Indicator number
Average duration of an unplanned interruption- water (minutes).	C15
Average duration of planned interruption – water (minutes)	WICA#6
Average duration of unplanned interruption – potable water (minutes)	WICA#7
Average duration of planned interruption – potable water (minutes)	WICA#8
Average duration of unplanned interruption – non-potable water (minutes)	WICA#9
Average duration of planned interruption – non-potable water (minutes)	WICA#10

RAW DATA COLLECTED

1. Average duration of an unplanned water supply interruption (hr).
2. Average duration of a planned water supply interruption (hr).
3. Average duration of unplanned potable water supply interruption (hr).
4. Average duration of planned potable water supply interruption (hr).
5. Average duration of unplanned non-potable water supply interruption (hr).
6. Average duration of planned non-potable water supply interruption (hr).

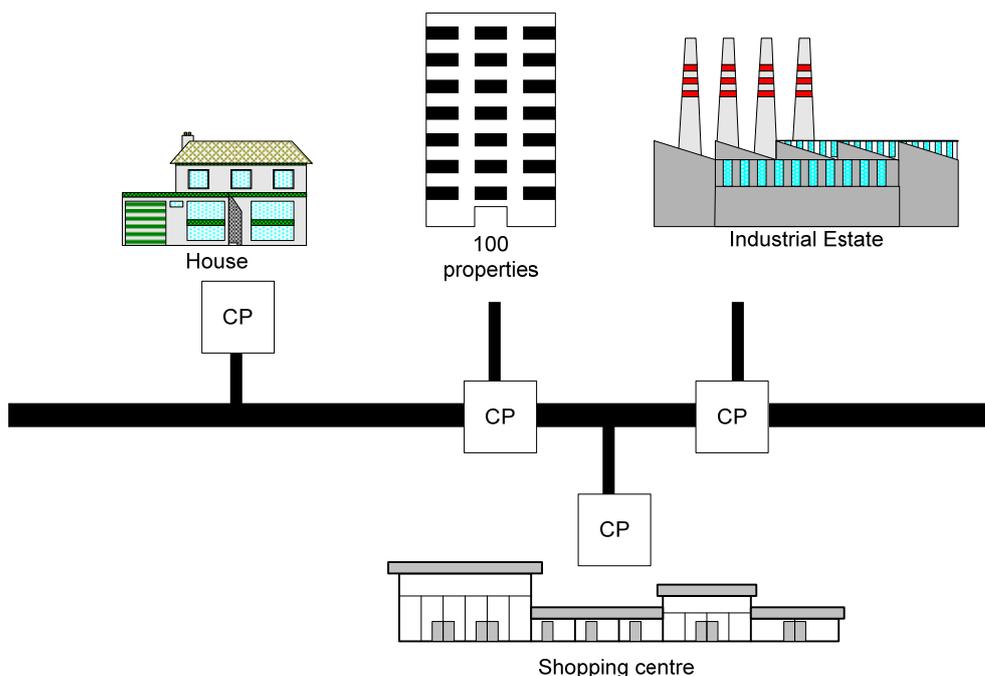
PURPOSE

To report average duration a connection point is without a water supply for the reporting period. It is a partial indicator of the condition of the water network, and how effectively the operation of the network is being managed (e.g. whether operating pressures are too high).

DEFINITIONS

Connection point

A connection point (CP) is the physical connection between one network operator and another network operator or a network operator and a retail supplier. The physical connection point may supply individual or multiple properties.



Water supply interruption (connection points)

A water supply interruption is any event causing a total loss of water supply due to any cause. Interruptions do not include:

- those caused by bursts or leaks in the property service (mains to meter connection), unless the property connections are owned or maintained by the water utility or the burst or leak requires the mains to be shut down for repair.
- in the case of a utility that has contracted with the connection point to provide an interrupted supply (eg, at peak demand periods), those interruptions that are in accordance with the levels of service specified in the contract.

Unplanned water supply interruption

This is when the connection point has **NOT** received at least 24 hours notification (or as otherwise prescribed by regulatory requirements) of the interruption. It also includes situations where the duration of a planned interruption exceeds that which was originally notified. In this circumstance the length of the entire interruption is counted (see example 1). All un-notified interruptions caused by third parties should be included.

Unplanned potable water supply interruption

As above, but in relation to potable water only.

Unplanned non-potable water supply interruption

As above, but in relation to non-potable water only.

Planned water supply interruption

This is when the connection point has received at least 24 hours notification (or as otherwise prescribed by regulatory requirements) of the interruption and the duration of the planned interruption does not exceed that which was originally notified.

Planned potable water supply interruption

As above, but in relation to potable water only.

Planned non-potable water supply interruption

As above, but in relation to non-potable water only.

(a) Duration of an unplanned water supply interruption

An interruption commences when the water utility is aware that 'water is no longer available at the connection point' and ceases 'when "normal" service is restored' (OFWAT Return Reporting Requirements) i.e. when the last valve has been opened (see examples 2 and 3).

Where the utility is aware of a water supply interruption via internal systems alarms, the duration commences when the alarm is raised.

If a connection point notifies the water utility they are without water, the duration commences at the time of notification. If the water utility is responding to a notification of a broken main, unless this notification also indicates a loss of supply, the duration commences once the break is isolated (if repairs are not being done under pressure).

Duration of an unplanned potable water supply interruption

Same as above, but in relation to potable water only.

Duration of an unplanned non-potable water supply interruption

Same as above, but in relation to non-potable water only.

Duration of a planned water supply interruption

An interruption commences when the water utility ceases to supply water to the connection point in accordance with its notification, and ceases 'when "normal" service is restored' (OFWAT Return Reporting Requirements) i.e. when the last valve has been opened, on or before the period which was originally notified.

Duration of a planned potable water supply interruption

Same as above, but in relation to potable water only.

Duration of a planned non-potable water supply interruption

Same as above, but in relation to non-potable water only.

Average duration of an unplanned water supply interruption

The average duration for which a connection point is without supply due to an unplanned interruption.

Average duration of an unplanned potable water supply interruption

The average duration for which a connection point is without supply due to an unplanned interruption.

Average duration of an unplanned non-potable water supply interruption

The average duration for which a connection point is without supply due to an unplanned interruption.

Average duration of a planned water supply interruption

The average duration for which a connection point is without supply due to a planned interruption.

Average duration of a planned potable water supply interruption

The average duration for which a connection point is without supply due to a planned interruption.

Average duration of a planned non-potable water supply interruption

The average duration for which a connection point is without supply due to a planned interruption.

UNITS

Minutes (min).

CALCULATIONS

C15 - Average duration of an unplanned water supply interruption =

Total minutes off water supply/ total number of connection points affected

WICA#6 - Average duration of an unplanned potable water supply interruption =

Total minutes off potable water supply/ total number of connection points affected

WICA#7 - Average duration of an unplanned non-potable water supply interruption =

Total minutes off non-potable water supply/ total number of connection points affected

WICA#8 - Average duration of a planned water supply interruption =

Total minutes off water supply/ total number of connection points affected

WICA#9 - Average duration of a planned potable water supply interruption =

Total minutes off potable water supply/ total number of connection points affected

WICA#10 - Average duration of a planned non-potable water supply interruption =

Total minutes off non-potable water supply/ total number of connection points affected

(see example table below)

EXAMPLES

1. A connection point calls the water utility advising that they have no water. The interruption commences at the time the call is received.
2. A connection point calls the water utility advising of a broken main. The interruption commences when staff arrive at the main and isolate the main break.
3. Mains are shut down due to fire fighting requirements. This interruption is included and commences at the time the mains are shut down.
4. See table below for example of calculation – substitute “connection points” wherever the word “customers” appears in the table below.

Interruption	Minutes of interruption	Number of customers affected	Minutes off supply (i.e. Minutes interruption x number of customers affected)	Average duration of an unplanned interruption (minutes) (i.e. Total Minutes off supply / Number of Customers affected)
A	240	20	4,800	
B	300	1,000	300,000	
C	120	400	48,000	
D	60	2	120	
E	410	35	14,350	
Total		1,457	367,270	252.1

Average sewerage interruption

Reported indicators	Indicator number
Average sewerage interruption (minutes).	C16

RAW DATA COLLECTED

1. Average sewerage interruption (mins).

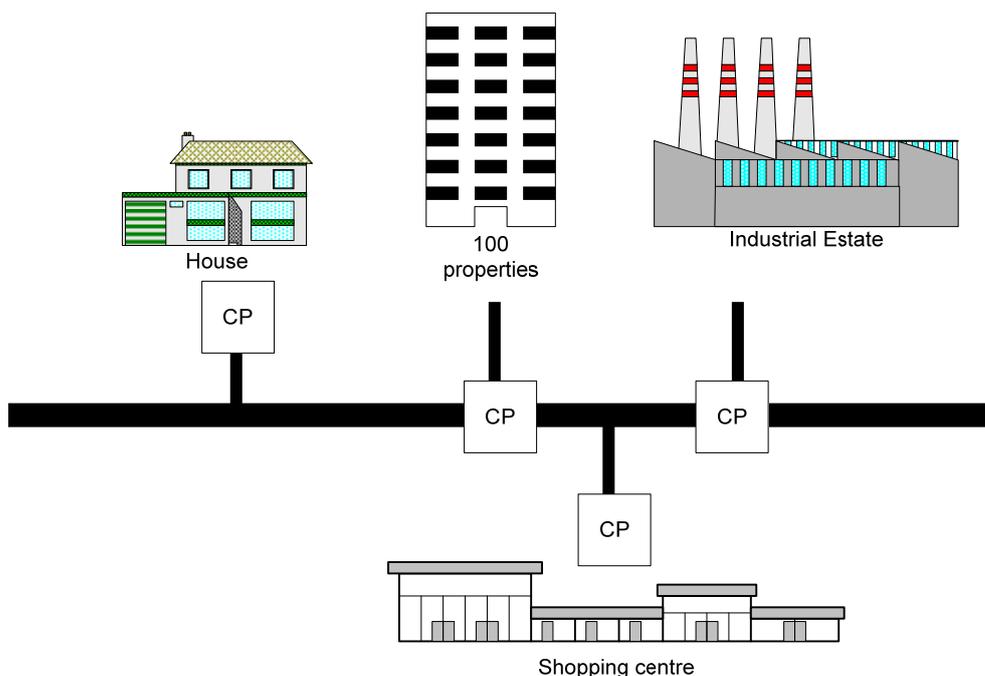
PURPOSE

To report for how long, on average, a connection point is without sewerage services for the reporting period. It is a partial indicator of the condition of the sewerage network.

DEFINITIONS

Connection point

A connection point (CP) is the physical connection between one network operator and another network operator or a network operator and a retail supplier. The physical connection point may supply individual or multiple properties.



Sewerage interruption

A sewerage interruption is any event causing a significant reduction of sewerage service due to any cause. Interruptions exclude those caused by breaks or chokes in the property connection sewer.

Unplanned sewerage service interruption

This is when the connection point has NOT received at least 24 hours notification of the interruption (or as otherwise prescribed by regulatory requirements). It also includes situations where the duration of a planned interruption exceeds that which was originally notified. In this circumstance the length of the entire interruption is counted. All un-notified interruptions caused by third parties should be included.

Duration of an unplanned sewerage service interruption

An interruption commences when the water utility is aware that sewerage services are no longer available and ceases when 'normal' service is restored.

Average sewerage interruption

The average duration for which a connection point is without a sewerage service due to unplanned work.

UNITS

Minutes (min).

CALCULATIONS

C16 - Average sewerage interruption (minutes) =

Total minutes of interruptions / total number of interruptions

Example:

Interruption	Minutes of Interruption
A	240
B	300
C	50
D	70
E	90
Total interruptions = 5	Total minutes of interruptions = 750

Average sewerage interruption = 150 minutes

Connection point interruption frequency

Reported indicators	Indicator number
Average frequency of unplanned interruptions – water	C17
Average frequency of planned interruptions – water	WICA#11
Average frequency of unplanned interruptions – potable water	WICA#12
Average frequency of planned interruptions – potable water	WICA#13
Average frequency of unplanned interruptions – non-potable water	WICA#14
Average frequency of planned interruptions – non-potable water	WICA#15

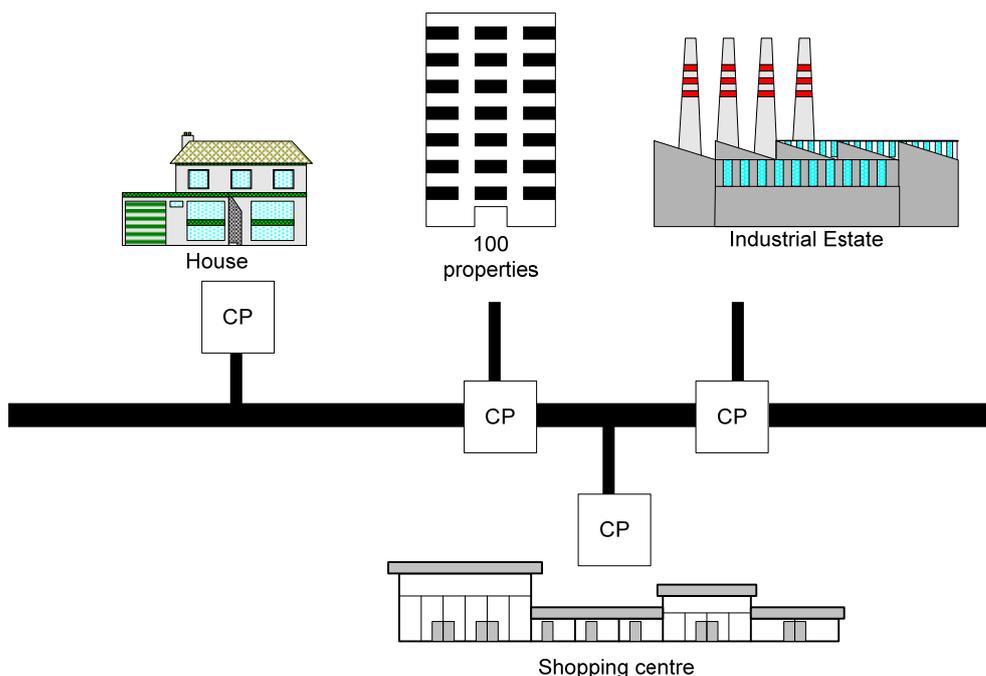
PURPOSE

To report how frequently connection points are without access to the water supply service. It is a partial indicator of service quality and reliability.

DEFINITIONS

Connection point

A connection point (CP) is the physical connection between one network operator and another network operator or a network operator and a retail supplier. The physical connection point may supply individual or multiple properties.



Average frequency of unplanned interruptions

Average connection point-interruption frequency.

A water supply connection point-interruption is a loss of water supply to an individual connection point due to an unplanned water supply interruption. For example, a water supply interruption which causes loss of supply to 100 connection points is 100 connection point-interruptions.

Includes:

- ✓ Each occurrence of unplanned interruptions to supply

Excludes:

- ✗ mains to meter interruptions unless the burst or leak requires the mains to be shut down for repair
- ✗ some reduction to the level of service but where normal activities (shower, washing machine, toilet flushing etc.) are still possible, breaks in house connection branches or planned interruptions

Interruption: Where the connection point is without a service due to any cause.

Unplanned Interruption: An interruption caused by a fault in the utility's system.

Planned Interruption: An interruption for which the utility has provided at least 24 hours' advanced notification (or as otherwise prescribed by regulatory requirements or in accordance with the levels of service specified in the contract with the connection point).

CALCULATIONS

C17 - Average frequency of unplanned interruptions (per connection point) =
Total number of unplanned interruptions / Total number of water connection points

WICA#11 - Average frequency of planned interruptions (per connection point) =
Total number of planned interruptions / Total number of water connection points

WICA#12 - Average frequency of unplanned interruptions – potable water (per connection points) =
Total number of unplanned interruptions – potable water only / Total number of potable water connection points

WICA#13 - Average frequency of planned interruptions – potable water (per connection points) =
Total number of planned interruptions – potable water only / Total number of potable water connection points

WICA#14 - Average frequency of unplanned interruptions – non-potable water (per connection points) =
Total number of unplanned interruptions – non-potable water only / Total number of non-potable water connection points

WICA#15 - Average frequency of planned interruptions – non-potable water (per connection points) =
Total number of planned interruptions – non-potable water only / Total number of non-potable water connection points

Connection point interruption frequency - sewerage

Reported indicators	Indicator number
Average frequency of unplanned interruptions – sewerage	WICA#16

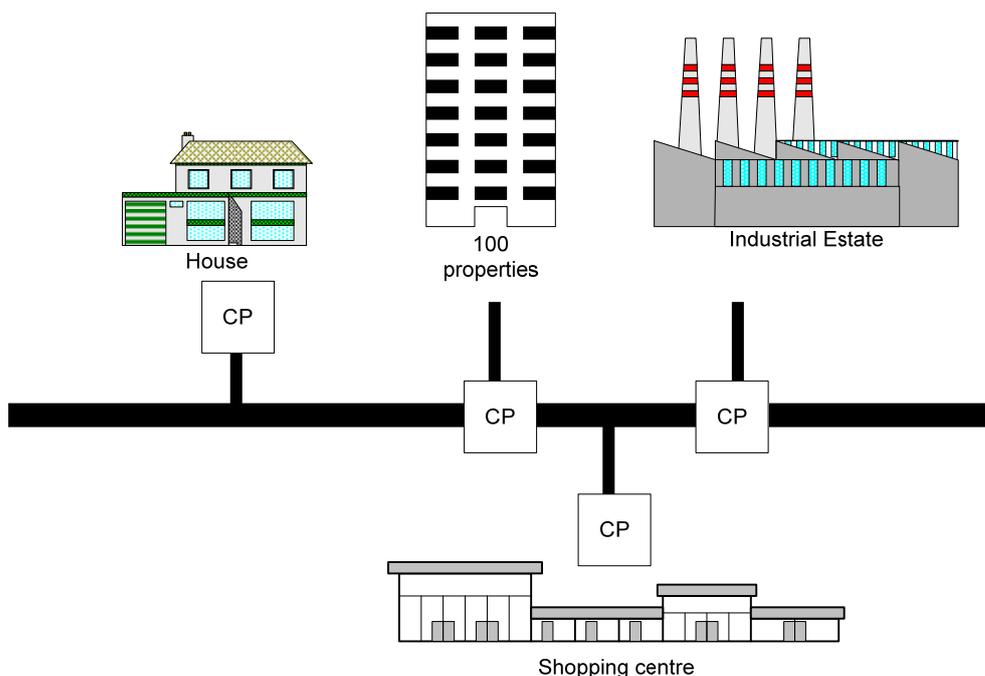
PURPOSE

To report how frequently connection points are without access to the sewerage service. It is a partial indicator of service quality and reliability.

DEFINITIONS

Connection point

A connection point (CP) is the physical connection between one network operator and another network operator or a network operator and a retail supplier. The physical connection point may supply individual or multiple properties.



Average frequency of unplanned interruptions

Average connection point-interruption frequency.

A sewerage services connection point-interruption is a loss of sewerage services to an individual connection point due to an unplanned sewerage service interruption. For example, a sewerage service interruption which causes loss of services to 10 connection points is 10 connection point-interruptions.

Includes:

- ✓ Each occurrence of unplanned interruptions to the service

Excludes:

- ✗ some reduction to the level of service but where normal activities (toilet flushing etc.) are still possible, breaks in house connection branches or planned interruptions

Interruption: Where the connection point is without a service due to any cause.

Unplanned Interruption: An interruption caused by a fault in the utility's system.

Planned Interruption: An interruption for which the utility has provided at least 24 hours' advanced notification (or as otherwise prescribed by regulatory requirements).

CALCULATIONS

WICA#16 - Average frequency of unplanned interruptions (per connection point)
=

Total number of unplanned interruptions / Total number of sewer connection points

Sewage treatment plant compliance

Reported indicators	Indicator number
Per cent of sewage volume treated that was compliant (%)	E4

RAW DATA COLLECTED

- Per cent of sewage volume treated that was compliant (ML)

PURPOSE

Reporting of sewage treatment plant compliance against the licence limits demonstrates the water utility's ongoing commitment to protection of the environment to which the treatment plant discharges.

Sewage treatment plants are generally licensed to ensure that effluent discharges are compatible with receiving waterways or land based re-use. Three approaches are used by environmental regulators in regard to the setting of licence limits. These take into account:

- ✓ potential toxicity of effluent contaminants
- ✓ the overall environmental load and the capacity of the receiving environment to accept additional loads of nutrients, and
- ✓ treatment plant performance (operating practices).

Toxicity is generally addressed by setting definitive maximum limits.

Load limits are generally set for a period of time and often relate to particular nutrients. These limits may be to prevent eutrophication in receiving waters. In this case percentile and median limits are often applied.

Regulators also apply percentile limits to take into account the variability of operation of a sewage treatment plant and their expectations of treatment plant performance.

DEFINITIONS**Sewage treatment plant compliance**

The sewage treatment plant compliance is the number of scheduled samples that complied in the reporting period divided by the total number of scheduled samples in the reporting period (see examples 1, 2 and 3).

The sampling schedule is that specified in the utility's licence.

UNITS

Megalitres (ML), per cent (%).

CALCULATIONS

E4 - Sewage treatment plant compliance per reporting period (%) =

(No. of scheduled samples complying with licence limits) / Total No. of scheduled samples in reporting period

Note: Where the licence limit specifies a 90th percentile limit for the treatment plant for the reporting period and the number of samples complying divided by the total number of scheduled samples is greater than 90%, then as compliance for that treatment plant is greater than the licence limit, compliance is deemed to be 100%.

Compliance for a utility with more than one treatment plant is calculated as the weighted average of sewage treated at all treatment plants that complied per reporting period =

(STP1 compliance x volume treated + STP2 compliance x volume treated +) / Total volume treated for all treatment plants in reporting period

EXAMPLES1. Treatment plant A

For treatment plant (A), the sewage treatment plant licence specifies routine sampling at twice per month over a 12 month period and specifies a 90th percentile limit for the year.

Of the 24 samples taken over the 12 month period, three exceed the 90th percentile limit. The compliance for treatment plant (A) is therefore 21/24 i.e. compliance is 87.5%.

2. Treatment plant B

For treatment plant (B), the sewage treatment plant licence specifies routine sampling at twice per month over a 12 month period and specifies a 90th percentile limit for the year.

Of the 24 samples taken over the 12 month period, one exceeds the limit (i.e. 96% of samples comply). The compliance for treatment plant (B) is therefore 100% as it meets the 90th percentile limit for the 12 month period.

3. Treatment plant C

For treatment plant (C), the sewage treatment plant licence specifies routine sampling at once per month and specifies a maximum limit for any scheduled sample taken over the 12 month period.

Of the 12 samples taken over the 12 month period, one exceeds the maximum limit for the parameter. Treatment plant (C) is therefore compliant for 11/12 months i.e. compliance is 92%.

4. Limits for separable sections of the treatment plant specified in licence

Where the licence specifies limits for separable sections of the treatment plant, the following approach should be adopted:

Sample 'y' is non-compliant and was taken from a separable section of the treatment plant. In this case, a reasonable estimate of the affected volume of

sewage should be made, with assumptions documented for the purposes of auditing.

5. Utility with two treatment plants

A utility has two treatment plants (STP-B) and (STP-C).

The licence for STP-B specifies a 90th percentile limit for the 12 month period. Over this period, STP-B treated a volume of 1000 ML for which 11 samples out of 12 (i.e. 96%) complied. Therefore the compliance for STP-B is 100% as it meets the 90th percentile limit under the licence conditions.

The licence for STP-C specifies a maximum limit for any scheduled sample taken over the 12 month period. STP-C treated a volume of 3000 ML for which 11 out of 12 samples complied (i.e. 92%). Therefore the compliance for STP-C is 92%.

For this utility, compliance for the 12 month period is calculated as the weighted average of the percentage of sewage treated that was compliant for each treatment plant. This is calculated for this utility as follows:

$$\text{Compliance} = (100\% \times 1000\text{ML} + 92\% \times 3000\text{ML}) / (1000\text{ML} + 3000\text{ML}) = 94\%$$

Number of sewage treatment plants compliant at all times

Reported indicators	Indicator number
Number of sewage treatment plants compliant at all times.	E5

PURPOSE

To report on the number of sewage treatment plants which were compliant with the licence conditions related to sewage treatment plant effluent at all times during the reporting period. This gives an indication of the overall performance of the utility's sewage treatment and, if problems exist, whether they are localised or widespread. This indicator, together with NWI indicators C2, E4, E6 and E7 provides information on how well the utility is managing its treatment facilities.

DEFINITIONS

Sewage treatment plants

Refer to sewerage assets. Note: BOOT schemes should be included.

Compliance

Compliance is where the sewage treatment works effluent meets the licence condition prescribed by the environmental regulator. Non-compliance is where the sewage treatment works effluent does not meet such standards or where a financial (greater than \$10,000 per incident) or other penalty has been imposed or where the business has had any successful litigation against it by the environmental regulator.

UNITS

Number of sewage treatment plants compliant at all times as a ratio of total number of sewage treatment plants (indicator A4) e.g. '5 of 6'.

Compliance with environmental regulator – sewerage

Reported indicators	Indicator number
Compliance with environmental regulator – sewerage (yes/no)	E7
Brief explanation if no	

RAW DATA COLLECTED

1. Compliance with environmental regulator – sewerage (yes/no).
2. Brief explanation if no.

PURPOSE

To report whether the compliance requirements of the environmental regulator were met for the entire sewerage system.

DEFINITIONSSewerage System

Includes the collection, conveyance and treatment of wastewater and the disposal of treated effluent.

Compliance

Compliance is where the utility meets the licence conditions prescribed by the environmental regulator. Non-compliance' is where the utility does not meet such standards, or has received a financial (greater than \$10,000 per incident) or other penalty, or had any successful litigation against it by the environmental regulator (or equivalent) or its representative.

Examples

1. Infringements that may not result in non-compliance include (subject to state regulation); losing a sample or reporting a sample late.
2. Infringements that result in non-compliance may include (subject to state regulation); a spill or discharge contrary to regulatory limits.

The water utility may provide a brief summary to detail any non-compliance. The actual incident may have occurred in a previous financial year to the penalty.

UNITS

Yes/No.

Biosolids reuse

Reported indicators	Indicator number
Per cent of biosolids reused	E8

RAW DATA COLLECTED

1. Per cent of biosolids reused.

PURPOSE

To report on the level of reuse of biosolids.

DEFINITIONS

Biosolids

The stabilised organic solids derived from sewage treatment processes.

Biosolids reuse

Reuse involves managing biosolids safely and sustainably to beneficially utilise their nutrient, energy, or other values. This may include biosolids beneficially used for agriculture (e.g. fertiliser), soil conditioning, mine rehabilitation, and other applications recognised as reuse.

The dry weight of biosolids reused may be greater than the dry weight of biosolids produced if the business is also reusing existing stockpiles.

Total dry weight tonnes of biosolids produced

For mechanical or other sewage treatment processes where the biosolids are available for reuse within a short time frame (e.g. less than one month) the volumes produced for the financial year should be included.

For sewage treatment processes where the biosolids are NOT available for reuse within a short time frame (e.g. lagoon processes of 10-30 years) the water utility should account for the accumulation of solids over a financial year. It is suggested that the volume accumulated be calculated using one of the following methodologies:

- a) Using appropriate sampling techniques, determine the volume of solids entering the lagoon process (or equivalent) per annum. After accounting for those solids consumed due to biological activity, determine the total accumulation of solids for the financial year.
- b) Assess the existing depth of accumulated solids in all lagoons to determine an average annual rate of accumulation. This average figure should then be used.

UNITS

Per cent (%).

CALCULATIONS

E8 - Per cent of biosolids reused =

(Total dry weight tonnes of biosolids reused / Total dry weight tonnes of biosolids produced) x 100%

Sewer overflows

Reported indicators	Indicator number
Sewer overflows reported to environmental regulator (per 100km of sewer main)	E13

RAW DATA COLLECTED

1. Number of sewer overflows reported to environmental regulator
2. Length of sewer main

PURPOSE

To report sewer overflows which have been reported to the environmental regulator.

The number of overflows may be used as a partial indicator of the condition of the sewerage network, as an indication of how effectively the network is being managed and may also be used to compare customer service.

It is acknowledged that different states/territories may have different licence agreements and varying reporting requirements to their environmental regulator, therefore sewer overflows reported to environmental regulator may not be directly comparable across jurisdictions.

DEFINITIONS**Number of sewer overflows reported to environmental regulator**

When untreated sewage spills or discharges and escapes from the sewerage system (i.e. pumping stations, pipes, maintenance holes or designed overflow structures) to the external environment, and is required to be reported to the environmental regulator as per the utility's licence.

Overflows are those caused by system faults originating in the system under the water utility's responsibility.

This includes:

- ✓ Property service connections that are owned or maintained by the utility

This does **NOT** include:

- × spills that are not reported to the environmental regulator
- × spills, discharges or overflows contained within emergency storages where no pollution of the environment occurs e.g. an emergency storage tunnel.

External environment

External environment is the area surrounding the infrastructure (e.g. pump station) from which a spill occurs, regardless of whether the external environment is owned by the water utility. An overflow structure from which a spill does not escape is not in the external environment.

CALCULATIONS

E13 - Number of sewer overflows reported to environmental regulator per 100km of sewer main =

Total number of sewer overflows reported to environmental regulator / (Total length of sewer mains / 100)

Water quality compliance

Reported indicators	Indicator number
Number of zones where microbiological compliance was achieved (e.g. 23/24)	H2
% of population where microbiological compliance was achieved	H3
Number of zones where chemical compliance was achieved (e.g. 23 / 24)	H4

RAW DATA COLLECTED

1. Microbiological verification achieved in zones (e.g. 23/24). (H2)
2. Microbiological verification (% population compliant). (H3)
3. Health related chemical / radiological verification achieved (e.g. 23/24). (H4)

PURPOSE

To report on the number of water treatment plants which were compliant with the Water Quality Plan required under a licence granted under the *Water Industry Competition Act 2006*. This gives an indication of the overall performance of the utility's water treatment and, if problems exist, whether they are localised or widespread. NWI indicators H2, H3 and H4 provide information on how well the utility is managing its water treatment facilities.

Water quality systems and the guidelines or standards to which a water utility is required to report compliance may significantly influence the level of capital investment and operating costs.

DEFINITIONS

Number of zones where Microbiological Compliance achieved

Assessment with the microbiological requirements of the water quality guidelines/standard in each zone of the water supply system. For example, report as 9/11.

Percentage population served where microbiological compliance was achieved

Similar criterion to NWI H2 above, but based on the percentage of the total population served being within the complying zones—e.g. 95 per cent.

Health-related chemical compliance achieved

Verification assessment with health related parameters of the water quality guideline/standard for each zone of the water supply system.

Water supply system and water supply zones

A water supply zone will generally be defined by each water business using criteria such as:

- A discrete area of similar water quality, e.g. served by one water treatment plant.
- An area able to be described by its boundaries.
- The nature and design of the water supply system (including the location of service reservoirs, pump stations, tanks, and trunk systems etc).
- The source and nature of the source of the drinking supply.
- The treatment components of the supply system.
- the Water Quality Plan required under a licence granted under the *Water Industry Competition Act 2006*.

UNITS

For microbiological verification state the number of zones where the defined criteria have been achieved (e.g. 23/24).

For health-related chemical/radiological verification state the number of zones where the defined criteria have been achieved (e.g. 23/24).

CALCULATIONS

Generally the methodology for calculating microbiological and health related chemical/radiological criteria used for determining compliance is specified by the health regulator in each jurisdiction and if so, this should be used.

In the absence of such specification, the guidance in the Water Quality Plan required under a licence granted under the *Water Industry Competition Act 2006* (which must address and implement the 12 elements of the framework for the management of drinking water quality detailed in the *Australian Drinking Water Guidelines* or for the management of recycled water in the *Australian Guidelines for Water Recycling*, as appropriate).

The guidance in the *Australian Drinking Water Guidelines (2004)* should be used as interpreted below:

Microbiological compliance

For each zone, at least 98% of routinely monitored samples contain no *E.coli*¹⁷ per 100ML of water over the 12 month period.

Note: The *Australian Drinking Water Guidelines (2004)* use *E.coli* as the indicator of faecal contamination and for utilities using these guidelines for

¹⁷ The 2004 ADWG use the indicator *E.coli* interchangeably with Thermotolerant Coliforms.

verification of performance, *E. coli* is the required assessment indicator. Total coliforms were removed as an indicator of faecal contamination in the 2004 guidelines; however some water businesses may still have requirements for verification of water quality using the combination of total coliforms and *E. coli*. If this is the case, compliance against total coliforms and *E. coli* should be reported.

Health-related physical or chemical compliance

It is neither physically nor economically feasible to test on an ongoing basis for all substances in a water supply system. Each water supply system will have its own key characteristics and based on carrying out a risk assessment of those characteristics, a routine monitoring program for these characteristics will be determined.

It is therefore common for water businesses to monitor regularly for contaminants such as disinfection by-products whereas a wide range of other non key characteristics will only be monitored irregularly—or when changes in the supply system (e.g. seasonal) warrant increased routine monitoring frequency.

Some chemical parameters are likely to be monitored in each zone, while others may be monitored in source or treated waters supplying a number of zones.

Chemical contaminants in a water supply system are generally a chronic issue—with ingestion above a guideline value for long time periods required before harm is caused. *Australian Drinking Water Guidelines (2004)* therefore suggest that for health related parameters ‘each excursion beyond a guideline value should be a trigger for further action¹⁸’—and this generally means more extensive sampling to confirm contaminant levels above the guideline level. While the ADWG is not definitive they also state that ‘for all health related characteristics, a reasonable objective is to be confident that the 95th percentile of results over the preceding 12 months should be less than the guideline value.’ This means that the upper bound of the 95th confidence interval for the percentile should be less than the guideline value¹⁹.

For very regularly (minimum 30 data points) monitored data, the upper bound of the 95th percentile approximates the 95th percentile value and takes into account an occasional excursion above the guideline value (which could be due to sampling error, laboratory error etc). For contaminants where 30 data points are available, WSAA is therefore adopting the 95th percentile value of a series of monitoring assessments for assessment of verification against the *Australian Drinking Water Guidelines (2004)* level.

The less the parameter is monitored, the greater the statistically uncertainty of the upper bound number. For irregularly monitored data points (e.g. <30 per year), the upper bound of the 95th percentile may be considerably higher than the maximum reading detected. If this system is used, this may result in water businesses publicly reporting exceedences of guideline levels when no monitored sample value exceeds the

¹⁸ Section 6.3.4, *Australian Drinking Water Guidelines 2004*.

¹⁹ Section 10.7.1, *Australian Drinking Water Guidelines 2004*.

guideline limit, and would be very difficult to explain to the public. There are further uncertainties in using this mechanism for assessment as some of the assumptions about the underlying statistical principles (normality of data etc.) may not hold and the mechanisms for deriving most guideline values use assumptions that also have significant error in their estimation.

For these reasons, for irregularly monitored data points, the maximum value of the data should be used for assessment against the guideline value.

In summary, for health-related chemical/radiological parameters:

- For contaminants sampled 30 or greater times during the year, the 95th percentile reading of each health related monitored physical-chemical parameter should be used for assessments against *Australian Drinking Water Guidelines (2004)* guideline levels.
- For contaminants sampled less than 30 times during the year, the maximum reading should be used for assessment of each health related monitored physical-chemical parameter against *Australian Drinking Water Guidelines (2004)* guideline levels.
- In some jurisdictions health regulatory agencies will specify to the utility the performance requirements necessary. If this is the case, this should be used rather than the ADWG guidance (the performance requirements must be footnoted in the report).

These should be assessed across each zone in a system and reported as the fraction of zones meeting requirements (e.g. 23/24).

EXAMPLES

1. Water quality standards include National Health and Medical Research Council (NHMRC) 1987, *Australian Drinking Water Guidelines (ADWG) 1996*, *Australian Drinking Water Guidelines (ADWG) 2004* and World Health Organisation (WHO) 1984.

2. Approved quality systems include Hazard Analysis and Critical Control Point (HACCP), ISO9001 and The WSAA *National Water Quality Framework Continuous Improvement Tool*.

3. Evaluation of disinfection by-product data (12 THM readings in 12 months in ug/L) (295, 250, 209, 222, 214, 211, 138, 143, 87, 93, 90, 200).

As there are less than 30 readings, the maximum value is taken which is 295 ug/L. As 295ug/L exceeds the *Australian Drinking Water Guidelines (2004)* limit of 250 ug/L. This sample set would be assessed as non compliant.

4. Evaluation of disinfection by-product data (32 THM readings in 12 months in ug/L) (295, 250, 209, 222, 214, 211, 138, 143, 87, 93, 90, 200, 209, 222, 214, 211, 138, 143, 87, 93, 90, 200, 209, 222, 214, 211, 138, 143, 87, 93, 90, 200).

As there are greater than 30 readings in the 12-month period, the 95th percentile is taken which is 234 ug/L. As this 234 ug/L does not exceed the ADWG limit of 250 ug/L, this sample set would be assessed as compliant.

5. Evaluation of a system with 30 zones shows that there is a failure of THM's in two zones and a failure of selenium in a source water supplying six zones (one of which overlaps with the zone failing THM's), making a total of seven zones failing (five zone with THM's only, one zone with selenium only and one zone failing both THM's and Selenium).

Results would be reported as 23/30 zones meeting requirements.

G Illustrative examples – applicable performance indicators

As noted earlier in this Reporting Manual, IPART will determine the indicators that are applicable to a particular licensee, in consultation with the licensee. The licensee will be notified by IPART of the applicable performance indicators at the time of being granted the licence (and subsequently, if there are any significant changes to the activities undertaken).

The following are illustrative examples to assist licensees to understand which performance indicators are likely to be applicable to their particular licensed activities.

Example 1: Network Operator's licence for a golf course to recycle sewage via sewer mining to use on-site to irrigate golfing greens

Such an activity would involve the collection of sewage from a sewer (NWI W18); the use of recycled water on-site (NWI W24); and the infrastructure would be likely to include sewerage mains, water mains and treatment plants (so the 'infrastructure' set of indicators and related 'infrastructure performance' and 'service interruptions' indicators would be applicable). Such systems are also likely to have environmental and water quality issues requiring monitoring, so the 'environmental' and 'water quality' indicators are also likely to be applicable.

Indicators in relation to 'sources of water' would not apply, as 'sewage' does not come within the definition of 'water'. There is potential for some doubling-up in reporting under the indicators, for example the total volume of water (which includes potable and non-potable water) could be the same as the total volume of recycled water supplied, or where all recycled water is used on-site, there would be a double-up between reporting the volume supplied on-site (NWI W24) and the total volume supplied (NWI W26). In such a case, IPART is likely to indicate to the licensee that reporting is only necessary in relation to the most appropriate indicator or indicators (eg, NWI W24).

Example 2: Bundled Network Operator and Retail Supplier receiving treated effluent from sewage treatment plant to provide recycled water to industrial/commercial customers only

Indicators in relation to ‘sources of water’ and not ‘sewage collected’ would be applicable to such an activity, as the Network Operator is receiving treated effluent (which comes within the definition of ‘water’) and not untreated or raw sewage. The total volume of recycled water supplied indicator (NWI W26) would be applicable, but indicators in relation to the specific volumes of recycled water supplied for industrial or commercial uses would be reported under the Retail Supplier’s licence. There is potential for some doubling-up in reporting under the indicators, for example the total volume of water supplied (which includes potable and non-potable water)(WICA#2) could be the same as the total volume of recycled water supplied (NWI W26). In such a case, IPART is likely to indicate to the licensee that reporting is only necessary in relation to the most appropriate indicator or indicators (eg. NWI W26).

The infrastructure would include water mains and treatment plants, so the ‘infrastructure’ set of indicators and related ‘infrastructure performance’ and ‘service interruptions’ indicators would be applicable. Such an activity would also be likely to have water quality issues requiring monitoring, so the ‘water quality’ indicators are also likely to be applicable.

(**Note:** See Appendix E of the Retail Supplier’s Reporting Manual for an illustrative example of the Retail Supplier indicators likely to be applicable for a bundled Network Operator and Retail Supplier receiving treated effluent to provide recycled water to industrial/commercial customers only.)

Example 3: Network Operators licence for a recycled water treatment plant receiving treated effluent from a sewage treatment plant for further treatment and supply to a licensed retail supplier

Indicators in relation to ‘sources of water’ and not ‘sewage collected’ would be applicable to such an activity, as the Network Operator is receiving treated effluent (which comes within the definition of ‘water’) and not untreated or raw sewage. There is potential for some doubling-up in reporting under the indicators, for example the volume of bulk water exports (NWI W14) could be the same as the volume of bulk recycled water exports (NWI W15), and the total volume of water supplied (which includes potable and non-potable water)(WICA#2) could be the same as the total volume of recycled water supplied (NWI W26). In such a case, IPART is likely to indicate to the licensee that reporting is only necessary in relation to the most appropriate indicator or indicators (eg, NWI W15).

The infrastructure would only include the treatment plant and not the mains used to distribute the recycled water, so the 'infrastructure' set of indicators and related 'service interruptions' indicators would be applicable (but the 'infrastructure performance' indicators would not apply). Such a treatment system is likely to have water quality issues requiring monitoring, so the 'water quality' indicators are also likely to be applicable.

Glossary

WICA Water Industry Competition Act 2006

WIC (General) Reg Water Industry Competition (General) Regulation 2008