Guidelines for Non-drinking Water in South Australia

Part 2: On-site Plumbing
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Part 2: On-site Plumbing

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Introduction

Purpose
The aim of these Guidelines is to provide advice and assistance to the plumbing and water industry for the correct installation and ongoing operation of non-drinking water systems that are acceptable to the Technical Regulator and deemed to comply with the *Water Industry Act 2012* (Act), *Water Industry Regulations 2012* (Regulations), and technical standards, i.e. *National Construction Code* (NCC), Volume Three.

The intention is to improve awareness, understanding of the installation requirements for non-drinking water systems and the associated regulatory responsibilities within the plumbing and water industries.

Scope
These Guidelines present the current requirements for the technically safe and reliable installation and operation of non-drinking water systems in South Australian.

These Guidelines do not introduce any additional legislative requirements to current prerequisites.

These Guidelines apply to new installations as well as alternations, additions and repairs to existing installations.

Beneficiaries
These Guidelines have been developed for water industry entities’ personnel, plumbing contractors, irrigation contractors, engineers, planners, consultants, developers, local government and State government agencies. Specific sections of the Guidelines are also relevant to individual landowners and community groups.

Normative References
These Guidelines contain both legislative (normative) and informative information for use. The normative references include:

- *Water Industry Regulations 2012*.
- *Plumbing, Gasfitters and Electricians Act 1995*.
- *Plumbing, Gasfitters and Electricians Regulations 2010*.
- AS/NZS 3500.1 – Water Services.

In all cases, non-drinking water should not be used for purposes other than those specified in relevant legislation or an applicable approval.

Licensing Requirement
The Plumbers, Gasfitters and Electricians Act 1995 and Plumbers, and Gasfitters and Electricians Regulations 2010 determine who can carry out work on non-drinking water systems. There is specific work that Plumbing and Irrigation Contractors and Workers can carry out. For the purposes of the guidelines the wording “appropriately licensed persons” will be used.

For clarification on the specific licensing conditions contact Consumer Business Services on www.cbs.sa.gov.au.

These Guidelines include licensing requirements for the installation of non-drinking systems and who can undertake work associated with non-drinking water installations.
The wording within the Guidelines will be “the appropriate licensed person/s”.

**Structure**

These Guidelines are structured in a manner consistent with similar documents in the plumbing and water industries. The focus is placed on safe and reliable installations and ongoing operation for people and plant to ensure a safe and reliable service to customers.

The Guidelines are presented in Parts as follows:

- **Part 0 – Glossary of Terms, Abbreviations and References** provides assistance in interpreting terminology and abbreviations used in the parts of these Guidelines.

- **Part 1 – Infrastructure** overviews non-drinking water as an alternative water supply, and the requirements associated with non-drinking water infrastructure. Information included in this Part includes legislative requirements, planning and design, implementation, monitoring, management, reporting and auditing for non-drinking water infrastructure.

- **Part 2 – On-site Plumbing** provides detailed information related to on-site non-drinking water installations.
1. Legislative Requirements

1.1 Legislation and Guidelines

There is a number of key legislation applicable to on-site non-drinking water plumbing installations, operations and management, as summarised in Table 1-1.

<table>
<thead>
<tr>
<th>Table 1-1 Legislation related to non-drinking water</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local Government Act 1999</strong></td>
</tr>
<tr>
<td><strong>Plumbers, Gas Fitters and Electricians Act 1995</strong></td>
</tr>
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<td><strong>Plumbers, Gas Fitters and Electricians Regulations 2010</strong></td>
</tr>
<tr>
<td><strong>South Australian Public Health Act 2011</strong></td>
</tr>
<tr>
<td><strong>South Australia Public Health (Wastewater) Regulations 2013</strong></td>
</tr>
<tr>
<td><strong>Water Industry Act 2012</strong></td>
</tr>
<tr>
<td><strong>Water Industry Regulations 2012</strong></td>
</tr>
</tbody>
</table>


1.2 Licensing Requirements

The **Plumbers, Gas Fitters and Electricians Act 1995 and Plumbers, Gas Fitters and Electricians Regulations 2010** determine who can carry out work on drinking and non-drinking water systems, and the type of work performed. For the purposes of the guidelines, the wording appropriately licensed person/s is used.


1.3 Plumbing Regulatory Framework in South Australia

Figure 1-1 demonstrates how the National Construction Code Volume Three, Plumbing Code of Australia (PCA) fits into the regulatory framework within South Australia.
1.4 Roles and Responsibilities

1.4.1 Designer

The designer of a non-drinking water system requires extensive knowledge of the regulatory framework (Federal, State and Local Government), standards, guidelines and codes relating to non-drinking water.

Further information regarding the responsibilities of designers is included in Part 1 – Infrastructure of the Guidelines for Non-Drinking Water in South Australia.

1.4.2 Responsibilities of Appropriately Licensed Persons

 Appropriately licensed persons are required to have sound knowledge of all relevant legislative requirements, standards, guidelines and codes relating to the installation of non-drinking water services.

They must ensure that all installations are in accordance with the PCA, AS/NZS 3500.1, and the following:

- Contact the OTR to book in all in-ground and in-wall installations.
- Conduct cross connection tests on all non-drinking water installations.
• Contact the water industry entity that supplies the non-drinking water to book a cross connection test. Complete and forward a Certificate of Compliance to the OTR and property owner within seven days of completing the work.

1.4.3 OTR Responsibilities

The OTR administers the certificate of compliance scheme to ensure that appropriately licensed persons comply with legislation requirements relating to the plumbing work that they have carried out.

Overall, the responsibilities of the OTR relating to on-site non-drinking water plumbing installations are:

• To ensure on-site non-drinking water services comply with the objective and performance requirements of the PCA.
• Audit in-wall and in-ground non-drinking water installations.
• Audit water industry entity/water supplier and appropriately licensed person (where applicable) for documentation but not limited to safety management plans, cross connection tests and site visits.
• Performance reporting.

Further information relating to OTR responsibilities and requirements are available on the OTR Website.

1.4.4 Water Industry Entity

The legislative responsibilities of a water industry entity are included in Section 68 of the Water Industry Act 2012. As a minimum, a water industry entity must ensure:

• All infrastructure, equipment, products or materials used by the entity comply with and are used in accordance with, technical and safety requirements specified by relevant standards.
• Only appropriately licensed persons can install non-drinking water services and conduct cross connection testing/audits.
• On-site non-drinking water connections are appropriately activated, including conducting the cross connection test, and record and retain all relevant documentation.
• A Safety, Reliability, Maintenance and Technical Management Plan is prepared for all retail water supply services (including non-drinking services) for approval by the OTR.

Water industry entities are responsible for managing any risks associated with the drinking water supply through appropriate measures, such as ensuring no cross connections exist by undertaking 5-yearly audits and/or an audit on the sale of properties that are serviced with non-drinking water.

1.4.5 Customer

The legislative responsibilities of a customer supplied with a retail non-drinking water service are included in Section 69 of the Water Industry Act 2012.

A customer should have basic knowledge of non-drinking water uses and risks associated with its use, and as a minimum must ensure:

• Only appropriately licensed persons can install and maintain non-drinking water services.
• All on-site non-drinking water pipework and equipment located on their property complies with any technical and safety requirements.
• All on-site non-drinking water pipework and equipment located on their property is identifiable and operates in a technically safe and reliable manner.
• Certificates of compliance are received for all installations or maintenance performed.
• Non-drinking water is used for its intended uses.

1.5 Design Standards

1.5.1 General

The key objective when designing non-drinking water systems is to ensure that the equipment and installation can provide continuing technical safety and reliability.

The design of a non-drinking water system must comply with relevant codes and standards in the following sections.

1.5.2 National Construction Code Volume Three (Plumbing Code of Australia) (PCA)

The Technical Regulator regulates on-site plumbing installations including non-drinking water to ensure they comply with the plumbing standard published under Section 66 of the Water Industry Act 2012 (see Appendix B).

The PCA Part B3 Non-Drinking Water Services states the objectives and performance requirements that must be achieved for the installation of non-drinking water systems.

The objectives of this part are to:

a) Safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a non-drinking water installation.

b) Ensure that a non-drinking water installation (including an installation provided for the use by people with a disability) is suitable.

c) Conserve water and energy.

d) Safeguard the environment.

e) Safeguard public and private infrastructure.

f) Ensure that a non-drinking water installation throughout its serviceable life will continue to satisfy the requirements of objectives a) to e).

The performance requirements are:

• A non-drinking water supply must only be connected to outlets clearly identified for non-drinking water use and must be limited to the uses specified in B3.3.

• A non-drinking water service is not to have a cross connection with a drinking water service.

• Pipes, outlets, fittings, storage and holding tanks that form part of a non-drinking water service must be clearly identified.

A non-drinking water service must be designed, constructed and installed in such a manner as to:

• Avoid the likelihood of contamination of drinking water.

• Provide non-drinking water to fixtures and appliances at flow rates and pressures which are required for the correct functioning of those fixtures and appliances under normal conditions and, in a manner that does not create undue noise.

• Avoid the likelihood of leakage or failure including uncontrolled discharges.

• Allow access, as required for maintenance of mechanical components and operational controls.

• Allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance.
Non-drinking water services provided for people with a disability must have taps or other operational controls that are accessible, convenient and suitable for use.

1.5.3 WaterMark Certification

Materials and Products used in a non-drinking water service must meet the requirements of Part A2 of the PCA.

1.5.3.1 Backflow prevention and cross connection control

PCA BP3.1. Part B1 – Cold Water Services includes the deemed to satisfy provisions for cross connection control (B1.4), where a property is served by a non-drinking water supply:

a) A backflow prevention device suitable for the degree of hazard and sized to suit the capacity of the drinking water service must be fitted to the drinking water service at:

   i. The meter; or

   ii. The point of connection, where a meter is not installed; and

b) A low hazard backflow prevention device must be fitted to each external drinking water hose tap outlet.

1.5.4 Australian Standards

AS/NZS 3500 Part 1 provides deemed to satisfy provisions to meet the performance requirements of the PCA to install non-drinking water services including the requirements for installing backflow prevention for containment and interconnection of water services.

There are also other Standards relevant to non-drinking water, including but not limited to:

- AS/NZS 1547 2012 for on-site recycled water reuse.
- AS/NZS 1546.3 for AWTS incorporating treatment systems for recycled water reuse.
- AS/NZS 1546.4 for greywater reuse systems (draft).
- AS 2700 for colour coding of pipework.

1.5.5 Deemed to Satisfy Solutions

For additional information regarding meeting the performance requirements refer to Part A0 of the PCA.
2. Installation Requirements

2.1 Non-drinking Water Supply Connection - Meters

Non-drinking water meters must be coloured purple in accordance with AS 2700.

Non-drinking water meters are supplied and installed by the water industry entity or water supplier.

For domestic and commercial premises, a connection size of 20mm and greater is provided. If a property is located within an area that has a dual water supply system, it may be a prerequisite by the water industry entity to have both a drinking water connection and non-drinking water connection, whether either supply is utilised or not.

Further information regarding non-drinking water meters and their installation is included in Part 1 – Infrastructure of the Guidelines for Non-Drinking Water in South Australia.

2.2 Pipework and Equipment

All non-drinking water pipework and equipment must be appropriately identified and installed in accordance with the PCA and AS/NZS 3500.1.

All pipes shall be identified by a purple colour in accordance with AS 2700 being no darker than P24 Jacaranda or P12 Purple, and no lighter than P23 Lilac. Where pipes are not coloured purple, identification may be achieved by means of close-fitting durable purple coloured sleeving, netting or spirally wrapped tape.

All buried pipes shall have an identification tape complying with AS/NZS 2648.1, and marked with the following:

a) Contrasting purple lettering installed on top of the pipe, running longitudinally, and fastened to the pipe at not more than 3m intervals.

b) Statement in accordance with AS 1345 –

"RECYCLED OR RECLAIMED WATER-DO NOT DRINK"

Identification of directionally bored pipework must meet the performance requirements of the PCA.

Above ground non-drinking water systems shall be marked in accordance with AS 1345 and placed at spacings not exceeding 8 metres and adjacent to branches, valves and wall and floor penetrations.

Although all pipework shall be coloured purple in accordance with AS 2700, it is not necessary to use purple coloured service fittings.

External hose tap outlets, other than those installed as part of a fire service, shall comply with the following:

a) They shall be clearly marked with either a warning sign in accordance with Figure 2-4 or prohibition sign in accordance to AS1319. See Section 0.

b) They shall be be of a type that has a removable handle, except where the outlet is installed 1200 mm or more above the finished surface level.

c) They shall be colour-coated purple permanently.

All other outlets (including fire services) shall be clearly marked with either a warning sign or prohibition sign in accordance with AS 1319. See Section 0.
For proximity to other services, the following requirements apply:

a) Above-ground installations of non-drinking water services shall not be installed within 100mm of any parallel drinking or non-drinking water service except when installed in a duct or structurally separated.

b) Below ground installations of non-drinking water services shall not be installed within 300mm of any parallel drinking water supply and 100mm from any non-drinking water supply.

2.3 Pipework Installation

The installation of non-drinking water pipework shall be in accordance with the requirements of drinking water in terms of:

- Materials and products (WaterMarked).
- Sizing requirements (Flow, pressure, velocity, pipe size limitations).
- Cross-connection control and backflow prevention.
- Installation requirements (Proximity to other services, bedding, backfill, depth of cover).
- Testing and commissioning.

Figure 2-3 shows a compliant plumbing installation showing in-wall drinking water and non-drinking water pipework.

Figure 2-1 In-wall non-drinking and drinking water pipework
2.4 Non-drinking Water/Alternative Water Supply Installation Requirements

AS/NZS 3500\textsuperscript{1} Clause 4.2.4 for alternative water supplies states that:

“Alternative water supplies shall comply with the following requirements:

a) Where water supplied from one source is connected to another water source, appropriate backflow prevention shall be provided.

b) Where an alternative supply is non-drinking water, piping shall be clearly and permanently identified in accordance with Clause 9.3.2.

c) Where the non-drinking alternative supply is installed below ground, the service shall have a continuous marker tape, installed in the trench above the service, which shall state the following:

\textbf{THE PIPE BELOW IS NON-DRINKING WATER}

d) Piping conveying water for non-drinking water applications downstream of a backflow prevention device installed for high or medium hazard protection, other than used for containment, shall be clearly and permanently labelled in accordance with Clause 9.3.2.

2.5 Signage

2.5.1 General

All non-drinking water plumbing installations require appropriate warning and prohibition signage indicating that the non-drinking water is not suitable (fit) for human consumption in accordance with AS 1319 as shown in Figure 2-4.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{warning_sign.png}
\caption{Non-drinking water warning sign and prohibition sign}
\end{figure}

2.5.2 Signage for Outlets

Signage is required at all outlets of a non-drinking water installation as shown in Figure 2-5. These examples of signage for non-drinking water installations show a connection to a toilet cistern, and external hose tap with removal handle (located less than 1200mm from finished surface level).

\textsuperscript{1} Copied by the SA Office of the Technical Regulator with the permission of Standards Australia under Licence 1606-c139
2.5.3 Signage for Recreational Sites

Warning signage is required for non-drinking water irrigation installations. The signage must be placed in a prominent position and clearly indicate, in English (and any other primary language predominantly spoken in that area) that non-drinking water is being used for irrigation purposes and that it is not suitable for drinking purposes, i.e. Recycled Water – Do Not Drink. An example of a non-drinking water irrigation installation is included in Figure 2-6.

All recreation sites shall be signed according to the relevant regulatory authority or licence conditions.

In addition, non-drinking water detention basins and storage areas may contain appropriate prominent warning signage indicating that the water is not suitable for drinking or swimming, i.e. Stormwater Detention Basin – Do Not Drink or Swim.
2.6 Backflow Prevention

2.6.1 General

Non-drinking water must be supplied through plumbing installations in a way that: avoids the likelihood of inadvertent contamination of any drinking water service; and minimise any adverse impact on building occupants, the water industry entity/water supplier’s infrastructure, property and the environment.

AS/NZS 3500.1 Water Services Clause 9.5 states: *non-drinking water services installations shall be designed installed and maintained to prevent a cross connection with the drinking water supply.*

The requirements for protection of cross connections for non-drinking water shall be the same as for drinking water and comply with AS/NZS 3500.1 Section 4.

Cross connection control and backflow prevention requirements apply to both drinking and non-drinking water supplies and will vary depending on the type of water, quality, and use.

2.6.2 Backflow Hazard Ratings

Cross connections are rated using three degrees of hazard as follows:

1) **High hazard**, any condition, device or practice that, in connection with the water supply system, has the potential to cause death.

2) **Medium hazard**, any condition, device or practice that, in connection with the water supply system, has the potential to endanger health.

3) **Low hazard**, any condition, device or practice that, in connection with the water supply system constitute a nuisance but does not endanger health or cause injury.

The backflow hazard rating required is dependent on the quality of the non-drinking water and may be determined in accordance with AS/NZS 3500.1, as detailed below in Table 2-1.

The hazard rating is determined to be high, if the irrigation system is injected with fertilizers, herbicides, nematicides, and insecticides or similar.

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Table 2-1  Backflow hazard ratings for non-drinking water sources

<table>
<thead>
<tr>
<th>Non-drinking Water Sources</th>
<th>Type of Use</th>
<th>Backflow Hazard Rating (minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Wastewater suitable for restricted irrigation(^{(1,2,3)})</td>
<td>All Buildings</td>
<td>High</td>
</tr>
<tr>
<td>Recycled Wastewater suitable for unrestricted irrigation(^{(1,2,3)})</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Low</td>
</tr>
<tr>
<td>Recycled Wastewater suitable for dual reticulation(^{(4)})</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Low</td>
</tr>
<tr>
<td>Bore Water</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Medium(^{(5)})</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Medium(^{(5)})</td>
</tr>
<tr>
<td>Stormwater, ASR &amp; MAR Water – suitable for dual reticulation(^{(4)})</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Low</td>
</tr>
<tr>
<td>Stormwater, ASR &amp; MAR Water – suitable for municipal irrigation</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Low</td>
</tr>
<tr>
<td>Rainwater</td>
<td>Commercial Buildings (Class 3 – 9 Buildings)</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>Low</td>
</tr>
</tbody>
</table>

Notes

(1) A recycled water (non-drinking water) supply suitable for restricted or unrestricted irrigation is determined by its quality. If the quality of the recycled water (non-drinking water) is not known, contact the water industry entity, i.e. SA Water.

(2) Restricted irrigation is typically subject to on-site preventative measures, such as access, application type, application time, buffer controls, spray drift control etc.

(3) Unrestricted irrigation is typically not subject to on-site preventative measures.

(4) Dual reticulation refers to properties which are supplied or have access to both standard drinking water and recycled water.

(5) Hazard rating may be reduced to low if water quality testing has been undertaken and results comply with the Australian Drinking Water Guidelines.

Table 2-1 can also be applied to recreational ovals, parks and gardens.

2.6.3  Types of Backflow Device

There are several devices that provide backflow prevention including:

- High hazard rating – reduced pressure zone devices (Figure 2-7), registered air gaps and break tanks.
- Medium hazard rating – double check valve assemblies.
- Low hazard rating – dual check valves.
2.6.4 Backflow Prevention Requirements for Properties with Non-Drinking Water

Where a property is serviced by a non-drinking water supply, a backflow prevention device suitable for the degree of hazard and sized to suit the capacity of the supply must be fitted to the drinking water service at the meter or the point of connection if a meter is not fitted.

A low hazard backflow prevention device must be fitted to each external drinking water hose tap outlet.

Backflow protection shall be appropriate to the cross connection hazard rating. This can be achieved by the selection of the appropriate device as per AS/NZS 3500.1 Section 4.

Testable backflow prevention devices shall be fitted with a line strainer upstream to prevent particles and corrosion products from the pipework rendering the device ineffective.

2.6.4.1 Backflow Prevention Requirements for Residential Class 1a

For residential Class 1a housing sites, the backflow prevention device on the drinking water is usually supplied as part of the water meter assembly by the water industry entity. If not, the appropriately licensed person must install a low hazard backflow prevention device located as close as practicable to the water meter on the drinking water supply.

2.6.4.2 Backflow Prevention Requirements for Commercial Properties

For all other sites a testable backflow prevention device must be installed where a non-drinking water supply is installed. The device shall be located as close as practicable to the water meter on the drinking water supply.

In lieu of installing a testable device, there is the option of installing a registered break tank which must have the appropriate sized air gap and overflow pipe (Refer to AS/NZS 3500.1 Clause 8.4.4).

Examples of non-drinking water backflow installations are available in Appendix B.
2.7 Testing and Commissioning of Non-drinking Water Systems

2.7.1 Non-drinking Water Plumbing Installations Testing and Reporting Requirements

Testing and reporting requirements are essential to ensure the correct installation and operation of non-drinking water systems. AS/NZS 3500 sets out clear requirements for the testing of all non-drinking water plumbing installations.

All non-drinking water installations including those within a Class 1a building are to be tested in accordance with AS/NZS 3500.1\(^1\), and require a cross connection test to be conducted. The procedure for conducting the cross connection test for Class 1a buildings is detailed in Table 2-2.

Table 2-2 Cross connection test procedure for Class 1a buildings

<table>
<thead>
<tr>
<th>TASK</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Check that the non-drinking water supply to the property is turned off at the meter (or the isolating valve if looped to the drinking water supply), check that the drinking water supply is turned on at the meter (or by isolating the valve downstream of the loop).</td>
</tr>
<tr>
<td>2.</td>
<td>Turn on all hot and cold tapware including appliances (one by one). All tap outlets including appliances are to be operational.</td>
</tr>
<tr>
<td>3.</td>
<td>Flush all toilets. The toilets will not fill provided they are connected to the non-drinking water service. The inlet for the toilet shall be clearly identified with appropriate warning/prohibition signs.</td>
</tr>
<tr>
<td>4.</td>
<td>Turn on all outside taps. Taps that continue to run are connected to the drinking water service and taps that run dry are connected to the non-drinking water service. All external hose tap outlets connected to the non-drinking water shall be coloured purple, have removable handles and shall be clearly marked with appropriate warning/prohibition signs.</td>
</tr>
<tr>
<td>5.</td>
<td>Turn off the drinking water supply at the meter (or isolating valve downstream of the loop) and turn on the non-drinking water supply at the meter (or isolating valve if looped to the drinking water supply).</td>
</tr>
<tr>
<td>6.</td>
<td>Turn on all hot and cold tapware including appliances (one by one). All tap outlets including appliances are to be non-operational.</td>
</tr>
<tr>
<td>7.</td>
<td>Flush all toilets, the toilets should now fill.</td>
</tr>
<tr>
<td>8.</td>
<td>Turn on all outside taps, the drinking water taps will run dry and the non-drinking water taps will be operational.</td>
</tr>
<tr>
<td>9.</td>
<td>Turn on the drinking water meter slowly and turn on the tap connected to the drinking water service that is located furthest away from the meter so that all the air will purge from the pipeline while it is being charged.</td>
</tr>
</tbody>
</table>

A cross connection test must be conducted by the appropriately licensed person who installs the pipework on the property.

An additional cross connection test must also be carried out by an appropriately licensed person in conjunction with the water industry entity or water supplier who supplies the non-drinking water. This occurs when the non-drinking water service is activated. The results of this cross connection test must be retained by the water industry entity or water supplier.

The cross-connection test shall be conducted at the isolation valves located adjacent to the drinking and non-drinking water services as shown in Figure 2-8.

\(^1\) Copied by the SA Office of the Technical Regulator with the permission of Standards Australia under Licence 1606-c139
2.7.2 Booking non-drinking water audits and issuing certificates of compliance

For all non-drinking water installations connected to connection points, the appropriately licensed person must book an audit for the in ground and in-wall non-drinking water pipework with the OTR on 1300 884 055 or www.plumbbooking.sa.gov.au. This includes non-drinking water irrigation installations on commercial and recreational sites.

Following the completion of the installation and compliant cross connection test, the licensed person/s is required to provide a certificate of compliance within 7 days of completion of the work to the OTR and owner of the property.

Certificates of compliance are used by the plumbing industry to verify to customers and water industry entities that the installation and equipment (including water services) installed on the customer’s property is compliant with the Plumbing Standard published by the Technical Regulator under the Water Industry Act 2012.

The certificate of compliance also verifies that the work falls within the terms of the contractor’s licence and the worker’s registration.

Further information on certificates of compliance can be found at the OTR Website - Certificates of Compliance Section.

2.7.3 Backflow Device Commissioning, Testing, Maintenance and Reporting Requirements

AS/NZS 3500 requires “Testable backflow prevention devices shall be commissioned and tested after installation and prior to service. They shall be maintained in working order and tested for operational function at intervals not exceeding 12 months. Reduced pressure zone devices, double check valve assemblies, pressure type vacuum breakers, registered break tanks and registered air gaps shall only be used with a maintenance program for device registration and test certification.”

Testable backflow prevention devices and registered break tanks must be commissioned and tested annually by an appropriately licensed person.

A completed Commission, inspection and maintenance report and a certificate of compliance (if applicable) must be sent to the OTR by the appropriately licensed person within seven days of completing the work.

1 Copied by the SA Office of the Technical Regulator with the permission of Standards Australia under Licence 1606-c139
2.7.4 Test Gauge Kit for Backflow Prevention

The test kits used for testing backflow prevention valves are precision instruments and need to be treated with appropriate care. They need to be calibrated and certified every 12 months in compliance with AS 2845.3. The OTR monitor test kits for current (up-to-date) calibration/certification.

2.8 Irrigation Installation Requirements

2.8.1 General

For irrigation sites, a plumbing hydraulic design showing all drinking water and non-drinking water reticulation pipework including backflow prevention details must be submitted to the OTR prior to commencement of the water service installation on the site.

Consideration should be given to ensuring that dedicated playgrounds and BBQ areas are not irrigated by non-drinking water and appropriate separation distances are provided in case of spray drift.

Further information on lodging plumbing hydraulic designs is available in the Plumbing Advisory Note on the OTR website.

Figure 2-9 shows the backflow setup for an irrigation site which uses drinking water as a back-up or supplementary supply.

![Backflow setup for irrigation sites using drinking water as a backup supply](image)

Examples of non-drinking water irrigation installations are available in Appendix B.

2.8.2 Irrigation Installations Testing and Reporting Requirements

The appropriately licensed person must book an audit with the OTR for all non-drinking water irrigation installations at recreation, commercial and residential sites. Bookings can be made on 1300 884 055 or www.plumbbooking.sa.gov.au.
Appendix A  Published Plumbing Standard under *Water Industry Act 2012*
WATER INDUSTRY ACT 2012

Plumbing Standard

Technical Regulator

This Standard is published by the Technical Regulator pursuant to sections 66 and 67 of the Water Industry Act 2012 (the Act).

This Standard comes into effect on the date on which it is gazetted.

This Standard replaces the Plumbing Standard published in the Gazette on 20 December 2012.

For the purposes of section 67(3)(a) of the Act, the work to which section 67(1) of the Act applies is the work referred to in paragraphs (a) and (b) hereof.

For the purposes of section 67(3)(b) of the Act, the persons to whom section 67(2) of the Act applies are:

(1) if a licensed plumbing contractor (under the Plumbers, Gas Fitters and Electricians Act 1995) or licensed building work contractor (under the Building Work Contractors Act 1995) has employed or engaged a registered plumbing worker to personally carry out plumbing to the licensed plumbing contractor or licensed building work contractor; or

(2) if a registered plumbing worker who personally carries out plumbing has not been employed or engaged to do so by a licensed plumbing contractor or licensed building work contractor to the registered plumbing worker.

A person who designs, installs, inspects, alters, repairs, maintains, removes, disconnects or decommissions equipment and plumbing within the meaning of the Water Industry Act 2012, including plumbing or equipment on the customer’s side of any connection point, must comply with:

(a) Relevant components of the National Construction Code Volume 3 (Plumbing Code of Australia) (including any standards referred to therein) as amended from time to time, as follows:

(i) Section A General Provisions, Parts AO, A1, A2 and A3;
(ii) Section B Water Services, Parts B1, B2, B3 and B4;
(iii) Section C Sanitary Plumbing and Drainage Systems, Parts C1 and C2;
(iv) Section F On-Site Wastewater Systems Parts F1 and F2;
(v) Section G Materials and Products Certification and Authorisation Part G1;
(vi) Appendix South Australia- Sections A-F.

(b) The requirements outlined in the document South Australian Water Heater Installation Requirements prepared by the Technical Regulator, as amended from time to time, which may be viewed at http://sa.gov.au/otrplumbing
The Technical Regulator may grant an exemption from this Standard, or specified provisions of this Standard (with or without conditions) as the Technical Regulator considers appropriate.

Dated 6 January 2014

R. FAUNT
TECHNICAL REGULATOR
## Appendix B  Case Studies (including Typical Drawings)

<table>
<thead>
<tr>
<th>Drawing No.</th>
<th>Final Drawings Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TYPICAL REQUIREMENTS FOR A NON-DRINKING WATER IRRIGATION SYSTEM</td>
</tr>
<tr>
<td>2</td>
<td>RESIDENTIAL PROPERTY SUPPLIED WITH NON-DRINKING WATER AND SEPARATE RAINWATER SUPPLIES</td>
</tr>
<tr>
<td>3</td>
<td>RESIDENTIAL PROPERTY SUPPLIED WITH SEparate NON-DRINKING WATER AND DRINKING WATER SUPPLIES</td>
</tr>
<tr>
<td>4</td>
<td>RESIDENTIAL PROPERTY (MULTIPLE DWELLING) SUPPLIED WITH SEparate NON-DRINKING WATER AND DRINKING WATER SUPPLIES</td>
</tr>
<tr>
<td>5</td>
<td>RESIDENTIAL PROPERTY (MULTI-STOREY) SUPPLIED WITH NON-DRINKING WATER AND DRINKING WATER SUPPLIES THROUGH REGISTERED BREAK TANK (INCLUDING BACK-UP DRINKING WATER SUPPLY)</td>
</tr>
<tr>
<td>6</td>
<td>COMMERCIAL PROPERTY SUPPLIED WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES</td>
</tr>
<tr>
<td>7</td>
<td>MUNICIPAL PARKS AND GARDENS SUPPLIED WITH NON-DRINKING WATER SUPPLY ONLY (NO DRINKING WATER SUPPLY TO SITE)</td>
</tr>
<tr>
<td>8</td>
<td>MUNICIPAL PARKS AND GARDENS SUPPLIED WITH NON-DRINKING WATERS AND BACK-UP DRINKING WATER SUPPLIES</td>
</tr>
<tr>
<td>9</td>
<td>MUNICIPAL PARK SUPPLIED WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES AND SEPARATE DRINKING WATER SUPPLY TO SITE</td>
</tr>
<tr>
<td>10</td>
<td>MUNICIPAL PARK SUPPLIED WITH SEparate NON-DRINKING AND DRINKING WATER SUPPLIES (INCLUDING BACK-UP DRINKING WATER SUPPLY TO IRRIGATION)</td>
</tr>
<tr>
<td>11</td>
<td>MUNICIPAL PARK SUPPLIED WITH SEparate NON-DRINKING AND DRINKING WATER SUPPLIES THROUGH REGISTERED BREAK TANKS (INCLUDING BACK-UP DRINKING WATER SUPPLY)</td>
</tr>
<tr>
<td>12</td>
<td>MUNICIPAL PARK SUPPLIED WITH SEparate NON-DRINKING AND DRINKING WATER SUPPLIES (INCLUDING BACK-UP DRINKING WATER SUPPLY TO IRRIGATION)</td>
</tr>
<tr>
<td>13</td>
<td>MUNICIPAL PARK SUPPLIED WITH MULTIPLE NON-DRINKING WATERS AND DRINKING WATER SUPPLIES THROUGH REGISTERED BREAK TANKS</td>
</tr>
<tr>
<td>14</td>
<td>VITICULTURAL PROPERTY WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES AND SEPARATE DRINKING WATER SUPPLY TO SITE</td>
</tr>
<tr>
<td>15</td>
<td>EXAMPLE OF A HYDRAULIC DESIGN SUBMISSION</td>
</tr>
<tr>
<td>16</td>
<td>LEGEND</td>
</tr>
</tbody>
</table>

**Note:** All typical drawings provided are diagrammatic for information purposes only. All installations must comply with the relevant legislation.
Backflow Device (as required by Water Industry Entity) Requires installation by appropriately licensed plumber

Cross connection test required by Water Industry Entity, where drinking and non-drinking water is supplied

Legend:
- NDW: Non-drinking water meter
- Non-drinking water service
- Master valve
- Isolating Valve
Notes

Signage Requirements
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.
Legend:

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
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<td>Drinking water service</td>
</tr>
<tr>
<td></td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>X</td>
<td>Hose tap</td>
</tr>
<tr>
<td>S</td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td>IDT</td>
<td>Identification tape</td>
</tr>
<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
</tr>
</tbody>
</table>

Signage Requirements:
External hose tap outlets, and all other outlets shall be clearly marked with an approved warning or prohibition sign.

Dual check valve incorporated within the drinking water meter or installed separately.
**Notes**

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.

- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

**Signage Requirements**

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

---

**Legend**

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</tr>
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<td>Non-drinking water meter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drinking water service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-drinking water service</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Private drinking water meter</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Private non-drinking water meter</td>
<td></td>
</tr>
<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
<td></td>
</tr>
<tr>
<td>IDT</td>
<td>Identification tape</td>
<td></td>
</tr>
<tr>
<td>$s$</td>
<td>Separation (&gt;300mm)</td>
<td></td>
</tr>
<tr>
<td>＊</td>
<td>Hose tap</td>
<td></td>
</tr>
</tbody>
</table>
Notes

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap.

Signage Requirements

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
<thead>
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<th>Symbol</th>
<th>Description</th>
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</thead>
<tbody>
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<td>DW</td>
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<tr>
<td>NDW</td>
<td>Non-drinking water meter</td>
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<td>DW</td>
<td>Drinking water service</td>
</tr>
<tr>
<td>DW</td>
<td>Rain water service</td>
</tr>
<tr>
<td>S</td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td>– IDT –</td>
<td>Identification tape</td>
</tr>
<tr>
<td>– IDT –</td>
<td>Automated control valve</td>
</tr>
<tr>
<td>– IDT –</td>
<td>Isolating valve</td>
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<tr>
<td>– IDT –</td>
<td>Testable backflow prevention valve</td>
</tr>
<tr>
<td>– IDT –</td>
<td>Float valve</td>
</tr>
</tbody>
</table>
Notes

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.

- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.

- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located.

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
<thead>
<tr>
<th>DW</th>
<th>Drinking water meter</th>
<th>NDW</th>
<th>Non-drinking water meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking water service</td>
<td>Non-drinking water service</td>
<td></td>
<td></td>
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<td>Testable backflow prevention valve</td>
<td>Separation (&gt;300mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not for drinking warning sign</td>
<td>– IDT –</td>
<td>Identification tape</td>
<td></td>
</tr>
</tbody>
</table>
Notes

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
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<th>Symbol</th>
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<td>Master valve</td>
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<tr>
<td></td>
<td>Non-drinking water service</td>
<td>×</td>
<td>Non-drinking water tap</td>
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<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
<td>– IDT –</td>
<td>Identification tape</td>
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</tbody>
</table>
Notes

- Refer to Table 2 1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.

- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.

- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
<thead>
<tr>
<th>DW</th>
<th>Drinking water meter</th>
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<tbody>
<tr>
<td></td>
<td>Drinking water service</td>
<td></td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>▶▶</td>
<td>Testable backflow prevention valve</td>
<td>▶ S</td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td>– IDT –</td>
<td>Identification tape</td>
<td></td>
<td>Not for drinking warning sign</td>
</tr>
</tbody>
</table>
Notes

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap.

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
<thead>
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<td>NDW</td>
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<tr>
<td>NDW RBT</td>
<td>Non-drinking water Registered Break Tank</td>
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<td>Isolating valve</td>
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<td>Master valve</td>
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<td>Identification tape</td>
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<tr>
<td>Pump</td>
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</tr>
<tr>
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</table>
**DRAWING NO. 10 – MUNICIPAL PARK SUPPLIED WITH SEPARATE NON-DRINKING AND DRINKING WATER SUPPLIES (INCLUDING BACK-UP DRINKING WATER SUPPLY TO IRRIGATION)**

**Legend**

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<td>Non-drinking water service</td>
</tr>
<tr>
<td>DF</td>
<td>Drinking water fountain</td>
<td></td>
<td>Non-drinking water tap</td>
</tr>
<tr>
<td></td>
<td>Testable backflow prevention</td>
<td></td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td></td>
<td>Master valve</td>
<td></td>
<td>Identification tape</td>
</tr>
<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap.

**Signage Requirements**

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.
- All hazard backflow prevention devices shall have warning tape stating “Not for Drinking”.
Legend

<table>
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<th>NDW</th>
<th>Non-drinking water meter</th>
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<td>---</td>
<td>Drinking water service</td>
<td>-----</td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>DW RBT</td>
<td>Drinking water Registered Break Tank</td>
<td>NDW RBT</td>
<td>Non-drinking water Registered Break Tank</td>
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<td>Pump</td>
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</tr>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap.

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.
Notes

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend

<table>
<thead>
<tr>
<th></th>
<th>Drinking water meter</th>
<th></th>
<th>Non-drinking water meter</th>
</tr>
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<tbody>
<tr>
<td>DW</td>
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<td>NDW</td>
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<tr>
<td></td>
<td>Drinking water fountain</td>
<td></td>
<td>Non-drinking water tap</td>
</tr>
<tr>
<td>DF</td>
<td>Testable backflow prevention valve</td>
<td>S</td>
<td>Separation (&gt;300mm)</td>
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<td></td>
<td>Master valve</td>
<td>IDT</td>
<td>Identification tape</td>
</tr>
<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Notes**

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap.

**Signage Requirements**

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

**Legend**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
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<tbody>
<tr>
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<td>Non-drinking water meter</td>
</tr>
<tr>
<td>DW</td>
<td>Drinking water service</td>
</tr>
<tr>
<td>NDW</td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>DF</td>
<td>Drinking water Registered Break Tank</td>
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<tr>
<td>SND</td>
<td>Non-drinking water Registered Break Tank</td>
</tr>
<tr>
<td>DF</td>
<td>Drinking water fountain</td>
</tr>
<tr>
<td>RW</td>
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<tr>
<td>CI</td>
<td>Rain water Registered Break Tank</td>
</tr>
<tr>
<td>Bore</td>
<td>Rain water service</td>
</tr>
<tr>
<td>SGN</td>
<td>Not for drinking warning sign</td>
</tr>
<tr>
<td>Bore</td>
<td>Bore water service</td>
</tr>
<tr>
<td>IDT</td>
<td>Chemical Injection</td>
</tr>
</tbody>
</table>
**Notes**

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.

- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.

- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

**Signage Requirements**

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

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**Legend**

- **DW** Drinking water meter
- **NDW** Non-drinking water meter
- **IDT** Identification tape
- **DF** Drinking water fountain
- **S** Separation (>300mm)
- **SGN** Not for drinking warning sign

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**DRAWING NO. 14 – VITICULTURAL PROPERTY WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES AND SEPARATE DRINKING WATER SUPPLY TO SITE**

Entity Supply

Office / Cellar Door

Vineyard

Entity Supply
**Legend**

<table>
<thead>
<tr>
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<tbody>
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<td>DW</td>
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<tr>
<td>DF</td>
<td>Drinking water fountain</td>
</tr>
<tr>
<td>NDW</td>
<td>Non-drinking water meter</td>
</tr>
<tr>
<td></td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>SGN</td>
<td>Identification tape</td>
</tr>
<tr>
<td></td>
<td>RPZ backflow assembly</td>
</tr>
<tr>
<td></td>
<td>Non return valve</td>
</tr>
<tr>
<td></td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td></td>
<td>Not for drinking warning sign</td>
</tr>
</tbody>
</table>

**Notes**

- Refer to Table 2.1 Backflow Hazard Ratings for Non-drinking Water Sources for details relating to hazard ratings for backflow prevention.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

**Signage Requirements**

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.
### Legend

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Symbol</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>DW</td>
<td>Drinking water meter</td>
<td>NDW</td>
<td>Non-drinking water meter</td>
</tr>
<tr>
<td></td>
<td>Drinking water service</td>
<td></td>
<td>Non-drinking water service</td>
</tr>
<tr>
<td>RBT</td>
<td>Drinking water Registered Break Tank</td>
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<td>Non-drinking water Registered Break Tank</td>
</tr>
<tr>
<td>DF</td>
<td>Drinking water fountain</td>
<td></td>
<td>Non-drinking water tap</td>
</tr>
<tr>
<td>M</td>
<td>Private drinking water meter</td>
<td>M</td>
<td>Private non-drinking water meter</td>
</tr>
<tr>
<td>RWT</td>
<td>Rain water service</td>
<td>CI</td>
<td>Chemical Injection</td>
</tr>
<tr>
<td></td>
<td>Rain water tank</td>
<td></td>
<td>Hose tap</td>
</tr>
<tr>
<td>IDT</td>
<td>Identification tape</td>
<td></td>
<td>Separation (&gt;300mm)</td>
</tr>
<tr>
<td></td>
<td>- Master valve</td>
<td></td>
<td>Isolating valve</td>
</tr>
<tr>
<td></td>
<td>- Testable backflow prevention valve</td>
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<td>Diaphragm valve</td>
</tr>
<tr>
<td></td>
<td>- Double check non testable backflow prevention valve</td>
<td></td>
<td>Floating valve</td>
</tr>
<tr>
<td></td>
<td>- Pump</td>
<td></td>
<td>Not for drinking warning sign</td>
</tr>
</tbody>
</table>
# Appendix C  Frequently Asked Questions

The following questions are commonly asked questions regarding non-drinking systems and supplies that are received from the water and plumbing industries, and general public.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What legislation regulates how to install non-drinking water pipework?</td>
<td>The <em>Water Industry Act 2012</em> calls up the National Construction Code Volume Three (PCA) and AS/NZS 3500.</td>
</tr>
<tr>
<td>Do I have to be a plumber to install non-drinking water pipework?</td>
<td>Appropriately licensed persons, including plumbers and plumbing contractors must install all non-drinking water pipework including backflow prevention devices up to the master valve on irrigation systems. Pipework installed downstream of a master valve must be installed by appropriately licensed person (including plumbers, plumbing contractors, irrigation workers etc.).</td>
</tr>
<tr>
<td>Do I have to submit a hydraulic design for non-drinking water installations?</td>
<td>Yes. A plan showing the hydraulic design of the drinking water and non-drinking water system (including backflow prevention devices) must be submitted to the OTR other than for domestic installations (i.e. Class 1a).</td>
</tr>
<tr>
<td>Who conducts the cross-connection test on non-drinking water pipework?</td>
<td>The appropriately licensed person conducts a cross-connection test when the plumbing work has been completed. Then the water industry entity or water supplier that supplies the non-drinking water must conduct an additional cross-connection test when the non-drinking water is activated and document the results.</td>
</tr>
<tr>
<td>Are audits required to be booked with the OTR for non-drinking water pipework?</td>
<td>Yes. All in-ground and in-wall pipework is required to be booked with the OTR, including irrigation sites.</td>
</tr>
<tr>
<td>What type of backflow prevention device is required to be installed on drinking water supplies where the property is also served by non-drinking water?</td>
<td>For residential properties, a low hazard backflow prevention device is to be installed at the water meter (some water industry entities, i.e. SA Water, incorporate the valve in the water meter assembly. The appropriately licensed person is required to install a low hazard backflow prevention device on all drinking water hose taps. For commercial, industrial and recreational sites a testable backflow prevention device suitable to the degree of hazard must be installed, i.e. minimum double check-valve testable device.</td>
</tr>
<tr>
<td>Where should the non-drinking water meter be installed?</td>
<td>It is recommended that the non-drinking water meter is located 300mm to the left of the drinking water meter when facing the property from the street. Further information about non-drinking water meter installation is provided in Section 2.1.2.</td>
</tr>
</tbody>
</table>