



Supplement to the Water Supply Code of Australia

WSA 03-2011-3.1

MRWA Edition version 2.0

Document Control

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Specific changes on this version

This document was created to reflect Coliban Water specific changes to the Water Supply code of Australia (WSA03-2011-3.1 MRWA V2). This review was undertaken with subject matter experts from various departments and incorporates lessons learned from the challenges encountered in previous project delivery activities

Contents

DOCUMENT CONTROL	2
Specific changes on this version	2
CONTENTS.....	3
INTRODUCTION	6
PREFACE	7
PART 0: GLOSSARY OF TERMS, ABBREVIATIONS AND REFERENCES	7
I Glossary of Terms	7
PART 1: PLANNING AND DESIGN	8
1 GENERAL	8
1.2 PLANNING AND DESIGN	8
2 SYSTEM PLANNING	9
2.5 SYSTEM HYDRAULICS.....	9
2.5.3 Operating Pressures	9
3 HYDRAULIC DESIGN.....	9
3.1 SIZING	9
3.1.2 Minimum pipe sizes	9
3.1.5 Fire Flows.....	9
3.3 PRESSURE CLASS OF SYSTEM COMPONENTS	10
4 PRODUCTS AND MATERIALS	10
4.3 DUCTILE IRON PIPELINE SYSTEMS	10
4.3.2 Sizes and configurations	10
4.4 PVC PIPELINE SYSTEMS	10
4.5 PE PIPELINE SYSTEMS	10
5 GENERAL DESIGN.....	11
5.2 RETICULATION DESIGN FOR WATER QUALITY	11
5.2.4 Reduced size mains.....	11
5.4 LOCATION OF WATER MAINS	12
5.4.4 Water mains in easements	12
5.4.9 Crossings	12
5.4.14 Water mains on curved alignments	12
5.11 PROPERTY SERVICES.....	13
5.11.2 Connections to Water mains.....	13
5.11.3 Services, outlets and meters	13
5.13 Disused or redundant pipelines.....	13
6 SYSTEM PRESSURE MANAGEMENT	13
6.2 IN-LINE PRESSURE BOOSTER PUMPING STATIONS.....	13
6.2.9 Control and telemetry system	14
7 STRUCTURAL DESIGN.....	14
7.4 EXTERNAL FORCES	14

7.4.2 Pipe cover.....	14
8 APPURTENANCES	14
8.2 STOP VALVES	14
8.2.3 Stop valves for reticulation mains	15
8.2.6 BYPASS OF STOP VALVE	15
8.8 HYDRANTS.....	15
8.8.4 Hydrant types	15
8.8.8 Hydrant spacing	15
9 DESIGN REVIEW AND DRAWINGS	15
9.1 DESIGN REVIEW	15
9.2 DESIGN DRAWINGS	16
9.2.2 Composition of Design Drawings	16
9.2.4 Contents of Design Drawings.....	16
9.4 RECORDING OF WORK AS CONSTRUCTED INFORMATION	16
PART 2: CONSTRUCTION	17
10 GENERAL.....	17
10.3 QUALITY ASSURANCE	17
10.4 PROJECT MANAGEMENT PLAN/CONSTRUCTION METHODOLOGY	17
11 GENERAL CONSTRUCTION	18
11.2 Order of Construction, testing and commissioning	18
11.4 CUSTOMER FOCUS	18
11.4.1 General.....	18
13 EXCAVATION.....	18
13.13 TUNNELING.....	18
15 PIPE LAYING, JOINTING AND CONNECTING	19
15.5 UNDER PRESSURE CUT-IN CONNECTION TO PRESSURE PIPES >DN 80	19
15.5.7 Recording and reporting.....	19
15.8 TAPPING OF MAINS, PROPERTY SERVICES AND WATER METERS.....	19
15.15 BORED PIPES UNDER ROADS, DRIVEWAYS AND ELSEWHERE	19
15.21 WELDING OF PE PIPELINES.....	19
16 PIPE EMBEDMENT AND SUPPORT.....	19
16.1 General.....	19
19 ACCEPTANCE TESTING	20
19.4 HYDROSTATIC PRESSURE TESTING	20
19.4.3 Property Services	20
19.4.4 Under Pressure Cut-In Connections	20
19.7 WATER QUALITY TESTING.....	20
19.7.2 Test Procedure	20
19.7.3 Satisfactory Water Quality Test	20
20 DISINFECTION	21
20.1 APPLICATION.....	21
20.2 FLUSHING OF DISINFECTION WATER	21

ANNEXURE 1..... 22

Introduction

This supplement outlines Coliban Water's specific requirements in relation to the design, construction and acceptance testing of water supply works.

The information in this document is to be read in conjunction with the Water Supply Code of Australia (WSA 03-2011-3.1, Melbourne Retail Water Agencies Edition, version 2.0), further referred to as "The Code".

Where this supplement conflicts with The Code, this supplement shall take precedence.

This supplement is applicable to:

- All new works undertaken by Coliban Water appointed contractors (Capital Investment Projects) and Developer Installed Works.
- Operation and Maintenance works on existing assets including asset replacement works.

This supplement provides a mixture of mandatory requirements and informative statements presented in the same way as The Code; that is, the informative text is italicised to enable clear differentiation from mandatory requirements.

This supplement commences on 1 May 2026.

Please refer to separate Transition Arrangements for Developer Installed Works issued with a letter of conditions and Capital Investment Projects in the design phase or construction phases prior to the commencement date.

Preface

Concept Plan. Page 6

Add the following:

Refer to the definition of Concept Plan in this supplement.

PART 0: GLOSSARY OF TERMS, ABBREVIATIONS AND REFERENCES

I Glossary of Terms

Add the following:

Term	Definition
The Code	Water Supply Code of Australia (WSA 03-2011-3.2, Melbourne Retail Water Agencies Edition)
Capital Investment Project	Design and construction of water infrastructure managed directly by Coliban Water
Developer Installed Works	Design and construction of water infrastructure managed by a developer.
Case Manager	Coliban Water appointed person assisting developers with the design and construction of works.
Preliminary Design Plans	The first design plans submitted by a land developer's consultant showing proposed pipe layout and pipe sizes.
Superintendent	Add the following sentence: The consultant is considered the Superintendent for Developer Installed Works, unless otherwise specified in the Developer Works Deed.
Products catalogues	Coliban Water's Preferred Equipment Manufacturers List is available on the MRWA web portal. The portal provides a checklist of makes and models for site and plant equipment. The products tab allows you to refine a search by ticking Coliban Water to search for all products we accept. See also WSAA Product specifications for Product and Materials.
Split service	Add Coliban Water does not permit split services.
Concept Plan	Replace the definition with: A package of information provided to the designer by Coliban Water to enable the appropriate planning / design of the water system. For Developer Installed Works a Concept Plan refers to the initial design submission with a Mains Extension application.

Trafficable area	<p>Replace the definition with:</p> <p>Means the entire road reserve and any area where vehicular traffic is likely.</p>
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PART 1: PLANNING AND DESIGN

1 GENERAL

1.2 PLANNING AND DESIGN

1.2.3 *Concept plan format*

Delete:

- (a) Satisfy requirements of relevant OH&S, environmental and security Legislation / Act and/or regulations;

Delete:

- (A) Heritage and archaeological aspects.

Add:

The designer is responsible for compliance with relevant OH&S, Environmental legislation / Act and or Regulations and considering heritage and archaeological aspects.

Add the following:

1.2.5 *Detailed Design*

1.2.5.2 *Requirements to be addressed.*

Add:

The designer shall obtain a servicing plan from Coliban Water’s Asset Maps before commencing design.

Coliban Water does not require pre-laid property services from the water main to the property. However, developers may install these, with Coliban Water Approval, in Township and General Residential Zone subdivisions where there is a low risk of the residential owner wishing to relocate the connection point.

Coliban Water will not permit pre-laid property services from a water main to the property in subdivisions within Low Density Residential Zones and Rural Living Zones due to risk of the residential owner wishing to relocate the connection point.

If conduits are required by council for provision of property services beneath roads or paths then their locations should be clearly marked on as constructed drawings. When conduits are provided from the water main to both sides of the road then conduits are required to be offset to avoid conflict of tapping fittings. It is Coliban Water’s preference for conduits to be centrally located to the lot frontage.

2 SYSTEM PLANNING

2.5 SYSTEM HYDRAULICS

2.5.3 Operating Pressures

Replace table 2.3 with the following:

SERVICE PRESSURE LIMITS FOR DRINKING WATER SINGLE SUPPLY

Pressure	Application	
	Domestic	Industrial / commercial
Maximum allowable service pressure ³	80 m head	80 m head
Desirable Maximum Service pressure ²	50 m head	50 m head
Minimum Allowable service pressure ¹	20 m head	20 m head
Desirable Minimum Service pressure	20 m head	20 m head

Note 1. The designer must confirm, with Coliban Water, the minimum allowable and minimum desirable pressures applicable to small town systems supplied from elevated storage tanks which may be lower in height than these limits.

Coliban Water may elect to provide a supply by agreement to new customers proposing to connect where the minimum service pressures at the meter will be less than 20 m.

Note 2. AS/NZS 3500.1 requires that the maximum static pressure at any outlet, other than fire service outlet, within a building does not exceed 500 kPa.

Note 3. Maximum pressures exceeding 800 kPa require Coliban Water approval.

3 HYDRAULIC DESIGN

3.1 SIZING

3.1.2 Minimum pipe sizes

Coliban Water's minimum acceptable pipe diameter is DN63PE. Reduced diameter mains are not permitted outside of court bowls or supply by agreement areas where the existing main is <100mm

Refer to Drawings MRWA-W-108 and MRWA-W-109, and Coliban Water requires that all PE sub mains (<DN100) shown to be constructed in DN63PE.

Notes: Coliban Water require a flushing point at the end of a DN63 main in a court bowl

3.1.5 Fire Flows

Delete the first paragraph and replace with:

Fire flows shall be connected to the drinking water system unless otherwise directed by the Water Agency. Irrigation only non-drinking water systems may operate with less reliability and pressure and may not be suitable for fire flow connections.

3.3 PRESSURE CLASS OF SYSTEM COMPONENTS

Add:

Pipes and fittings with a pressure rating less than PN16 or equivalent SDR are not permitted in Coliban Water's region.

The designer should consult with Coliban Water on acceptable pressure limits where test pressures exceed 1600 kPa and a PN16 pipeline system may be insufficient.

PVC- 0 is not permitted in Coliban Water's region regardless of PN Class.

4 PRODUCTS AND MATERIALS

This section is to be read in conjunction with the Product Appraisals section on the Water Services Association of Australia website (www.wsaa.asn.au) and the Melbourne Retail Water Agencies (MRWA) products portal (<http://www.mrwa.com.au>).

4.3 DUCTILE IRON PIPELINE SYSTEMS

4.3.2 Sizes and configurations

Coliban Water has not mandated installation of property services from the main to the property.

Delete subsections (a) and (b).

Add:

Where pre-laid property services from a water main to the property are permitted Coliban Water requires connection to main using mechanical tapping bands.

The tapping bands must be pressure tested before drilling into the pipe if installed on an empty pipe.

Coliban Water has not mandated installation of property services from the main to the property.

4.4 PVC PIPELINE SYSTEMS

Add:

PVC – 0 is not permitted in Coliban Water's region.

The designer should ignore reference to PVC-0 on Drawing MRWA – W- 103.

Delete subsections (a) and (b).

Add:

Where pre-laid property services from a water main to the property are permitted Coliban Water requires connection to main using mechanical tapping bands.

The tapping bands must be pressure tested before drilling into the pipe if installed on an empty pipe.

Coliban Water has not mandated installation of property services from the main to the property.

4.5 PE PIPELINE SYSTEMS

Note: Where pre-laid property services from a water main to the property are permitted, Coliban Water requires electrofusion tapping saddles in preference to mechanical tapping bands in accordance with The Code.

5 GENERAL DESIGN

5.2 RETICULATION DESIGN FOR WATER QUALITY

5.2.4 Reduced size mains

Delete:

Reticulation layouts that incorporate reduced size mains generally are not permitted. However, for a dead-end situation where other options are not feasible and the front boundary of the furthest lot is not more than 100 m or the maximum distance specified by the relevant fire authority from a hydrant on a DN 100 or larger main, a reduced size main may be permitted by the Water Agency.

Add:

Reticulation layouts that incorporate reduced size mains generally are not permitted. However, for a dead-end situation where other options are not feasible and the front boundary of the furthest lot is not more than 50 m or the maximum distance specified by the relevant fire authority from a hydrant on a DN 100 or larger main, a reduced size main may be permitted by the Water Agency.

Add:

Reduced size water mains shall be greater than or equal to DN63 and be sized assuming the maximum multi-unit development potential of each lot, not the current subdivision layout.

Coliban Water require a flushing point at the end of a DN63 main in a court bowl.

Refer to Drawings MRWA-W-108 and MRWA-W-109, and Coliban Water requires that all PE sub mains (<DN100) shown to be constructed in DN63PE in alignment with GWW.

Replace Table 5.1 with the following:

DESIGN REQUIREMENTS FOR REDUCED SIZE DRINKING WATER MAINS IN COURT BOWLS, CUL-DE-SACS AND DEAD-ENDS

PE Reduced sized main DN	Max length of reduced size main m	Limiting factor ¹		
		Length m	Or	Number of property connections DN20
63	50	50	Or	5

Remove:

- (a) determine the service pressure i.e. ≤ 50 m head or > 50 m head;
- (c) commencing at the end of the reduced sized main, select smallest diameter reduced sized main based on the service pressure;
- (e) select the next smallest diameter reduced sized main based on service pressure.

Add:

- (f) reduced diameter mains are not permitted outside of court bowls or supply by agreement areas where the existing main is < 100 mm without Water Agency approval.

5.4 LOCATION OF WATER MAINS

5.4.4 Water mains in easements

Add to paragraph 1:

Reticulation pipework shall not be located in private property.

Replace Table 5.2 with the following:

DEFAULT EASEMENT GUIDELINES

WATER MAINS		PREFERRED LAND TENURE ACTION
Land Use	Pipe Size	Note: Based on single pipe in easement
Private Property	All sizes	Permanent mains shall not be located within private property
	Temporary mains \leq DN 150 (including permanent mains located within subdivision "super lots")	Temporary mains may be located within private property and within an easement. Minimum 5.0 m easement subject to Water Agency approval. Easements may be removed when no longer required
	Temporary mains $>$ DN 150 (including permanent mains located within subdivision "super lots")	Temporary mains may be located within private property and within an easement. Minimum 6.0 m easement subject to Water Agency approval. Easements may be removed when no longer required
Municipal Reserve	\leq DN 150	Minimum 5.0 m easement
	$>$ DN 150 - \leq DN 600	Minimum 6.0 m easement
Municipal Reserve (cont.)	$>$ DN 600	Easement size to be determined in consultation with the Water Agency
Owners Corporation or Body Corporate Common Property	\leq DN 150	Water Agency mains not permitted common property. Private servicing in accordance with Water Agency requirements.

5.4.9 Crossings

5.4.9.1 General

Add:

PN16 HDPE is required under all road pavements. Joints under road pavements are to be avoided or minimised. Where unavoidable, joints should be butt welded.

5.4.14 Water mains on curved alignments

Replace the last paragraph with:

The use of pre tapped connectors are not permitted in Coliban Water's region.

5.11 PROPERTY SERVICES

5.11.2 Connections to Water mains

Delete the fourth paragraph and replace with:

Connections to properties shall only be allowed on tapping mains. Conditional Tapping mains required water Agency approval.

Add:

Please note that:

- Coliban Water does not require property services to be laid from the main to the meter during construction. However, these may be permitted in Township and General Residential Zone subdivisions where there is a low risk of the residential owner wishing to relocate the connection point.
- Where pre-laid property services from a water main to the property are provided, they shall be installed in accordance with section 4 of this supplement and MRWA Water and Metering Guidelines. Refer also to section 15.8 in this supplement.
- If conduits are required by council for provision of property services beneath roads or paths then their locations should be clearly marked on as constructed drawings. When conduits are provided from the water main to both sides of the road then conduits are required to be offset to avoid conflict of tapping fittings. It is Coliban Water's preference for conduits to be centrally located to the lot frontage.

5.11.3 Services, outlets and meters

This section is to be read as an informative guideline for individual landowners to follow when connecting the property to drinking and non-drinking water supply systems. Coliban Water does not require dry tapings.

5.13 Disused or redundant pipelines

Add:

(f) Any specific action required to redundant water mains shall comply with WorkSafe Victoria or Environment Protection Authority Victoria guidelines.

6 SYSTEM PRESSURE MANAGEMENT

6.2 IN-LINE PRESSURE BOOSTER PUMPING STATIONS

6.2.2.6 Maintainability

Add:

(f) Electrical and SCADA systems shall be in accordance with Coliban Water's requirements.

6.2.3.3 Commissioning

Delete the fourth paragraph and replace with:

A Coliban Water representative shall participate during the commissioning process. Coliban Water requires a minimum 10 days notice period before the commissioning date.

6.2.5.8 Booster pipework and manifold design

Add:

(d) A flow meter monitored by SCADA

6.2.9 Control and telemetry system

6.2.9.1 General

The electrical design shall incorporate the requirements in Coliban Water's Electrical and SCADA design standards available upon request.

7 STRUCTURAL DESIGN

7.4 EXTERNAL FORCES

7.4.2 Pipe cover

Add the following:

Coliban Water's minimum pipe cover requirements are specified in Table B.

Table B

Location	Nominal Pipe Diameter		
	≤ 100	150	225-750
Minor Road	900mm	900mm	900mm
Major Road	1200mm	1200mm	1200mm
Nature Strip	600mm	600mm	750mm

Coliban Water's cover requirements provide:

- Adequate cover over tapping under pressure fittings installed on mechanical tapping bands; and
- Compliance with Vic Roads and local council normal requirements.

Coliban Water has not mandated installation of property services from the main to the property.

8 APPURTENANCES

8.2 STOP VALVES

The following take precedence over the standard drawing MRWA -W-105 and section 8.2.2.2 Gate valves.

Rotation of Valves.

- All key operated (buried) valves shall be anti-clockwise closing:
- All valves in pits, buildings or above ground shall be clockwise closing with the direction of closing indicated on the valve.

8.2.2.2 Gate Valves

Delete the first sentence and refer to the rotation of valves in section 8.2 of this supplement.

8.2.3 Stop valves for reticulation mains

Replace table 8.2 with the following:

STOP VALVING SPACING CRITERIA

Water main size DN	Number of property services connected (nominal)	Maximum spacing m
≤150	25	300*
200-300	100	750
375	150	1000

* In rural areas, the maximum spacing shall be 500 m.

8.2.6 BYPASS OF STOP VALVE

Replace paragraph 2 with the following:

A bypass shall be provided around all valves on mains greater than or equal to DN 400 and around greater than or equal to DN300 valves on mains where pipework will experience a maximum operating pressure greater than 108 metres head.

By passes are required in high pressure areas to equalise forces on the valve gate that would otherwise restrict its movement. Coliban Water has expressed the threshold for requiring a by-pass in terms of pressure not pipe class.

8.8 HYDRANTS

8.8.4 Hydrant types

Delete point (c) and replace with:

(c) Pillar hydrants are not permitted in Coliban Water's region.

Add:

Combination Valve/Hydrants are not permitted in Coliban Water's region

8.8.8 Hydrant spacing

Add:

Hydrants are required at termination points of the system on DN100 or greater pipes.

Coliban Water requires that all hydrants are to be installed on tees – even at the end of a line

9 DESIGN REVIEW AND DRAWINGS

9.1 DESIGN REVIEW

Add to subsection (d)

Minimum velocity shall be 0.6 metres per second or as agreed by Coliban Water.

9.2 DESIGN DRAWINGS

9.2.2 Composition of Design Drawings

Add

Coliban Water requires all design drawings to be submitted in accordance with the template drawings MRWA-W-101, MRWA -W-102A and MRWA -102B.

The location of pre laid services shall be dimensioned from the left-hand side of the property looking into the property.

9.2.4 Contents of Design Drawings

Add the following to subclauses (m) and (n).

...were pre-laid property services from a water main to the property are permitted by Coliban Water.

9.4 RECORDING OF WORK AS CONSTRUCTED INFORMATION

The MRWA Survey Manual is not adopted by Coliban Water.

Replace section 9.4 with

Details of Coliban Water's As Constructed Drawings and submission requirements are detailed in the Geographic Information System – Spatial Data Technical Specification, Section 4 & 5 linked here: [GIS Spatial Data Specification](#)

PART 2: CONSTRUCTION

10 GENERAL

The MRWA Code does not include Personnel Qualifications and Quality Assurance requirements as Water Agency supplier accreditation requirements (for contractors) take precedence. Sub sections 10.3 and 10.4 are added as Coliban Water has not implemented a Supplier Accreditation System.

Add subsection:

10.3 QUALITY ASSURANCE

For Developer Installed Works where the subdivision comprises of more than five lots, the following applies:

The Contractor shall establish and implement a management system to achieve compliance with the contract and to document such compliance. The Management System will include OH&S, environment and quality. Accepted management systems or components thereof are:

- Civil Contractors Federation (CCF) Integrated Management System;
- AS 9001: Quality Management Systems;
- AS 14001: Environmental Management Systems;
- AS 4801: Occupational Health and Safety Management Systems;
- SafetyMap;
- Subby Pack OHS Contractor Management Tool
- Other equivalent systems.

Add subsection:

10.4 PROJECT MANAGEMENT PLAN/CONSTRUCTION METHODOLOGY

For works where service interruption of existing customers is likely a Project Management Plan or Construction Methodology must be submitted to the Superintendent/Case Manager.

Examples include water main renewals, upsizing and or main lowering works.

These plans should include details of but not limited to,

- Impact to customers
- Required Water Main shutdowns and timeframes
- Service continuity plans
- Connection details to existing mains
- Swabbing and Disinfection methodology

11 GENERAL CONSTRUCTION

11.2 Order of Construction, testing and commissioning

Add:

Coliban Water's preferred process is as follows, with any deviation from this process to be referred to Coliban Water for approval:

- (i) Install all works in accordance with the Design drawings and the Specification and collect Work as constructed information as work proceeds.
- (ii) Clean all mains in accordance with Section 4.3 of Appendix I Disinfection of Water mains - Water Quality Compliance specification.
- (iii) Conduct acceptance testing
- (iv) Disinfect water mains in accordance with Appendix I Disinfection of Water mains - Water Quality Compliance specification.
- (v) Connect the main (s).
- (vi) Charge and commission the new water main (s); and
- (vii) Provide as constructed information in accordance with section 9.4 of this Supplement.

11.4 CUSTOMER FOCUS

11.4.1 General

Add:

Coliban Water's "Requirements for customer service" are outlined in the Urban Customer Charter and Rural Customer Charter. These documents can be found on the Coliban Water website at www.coliban.com.au and indexed at [customer charters](#).

13 EXCAVATION

13.13 TUNNELING

Add:

Trenchless construction may have been specified to avoid native vegetation and or endangered species habitat. Any proposal to change the design to open trenching must be accompanied by evidence of statutory approvals obtained to remove native vegetation and habitat and evidence of native vegetation and habit offsets purchase.

15 PIPE LAYING, JOINTING AND CONNECTING

15.5 UNDER PRESSURE CUT-IN CONNECTION TO PRESSURE PIPES >DN 80

15.5.7 Recording and reporting

Replace paragraph two with:

With the exception of asbestos cement pipe, the removed coupon should be supplied to the Superintendent/Case Manager (for passing on to the Asset management team in Coliban Water) regardless of the condition of the pipe. Asbestos cement coupons shall be disposed of in accordance with the relevant regulations.

Coliban Water does not want to receive asbestos cement coupons for Occupational Health and Safety reasons.

15.8 TAPPING OF MAINS, PROPERTY SERVICES AND WATER METERS

Replace this section with:

Coliban Water does not require property services to be laid from the main to the meter during construction. However, these may be permitted, with Water Agency approval, in high density subdivisions where there is a low risk of the owner wishing to relocate the connection point.

Connections to Coliban Water's water supply system are completed by Coliban Water's approved contractor. This includes tapping of the water main, installation of the property service connection and supply and installation of the water meter and digital device used for remote meter reading.

15.15 BORED PIPES UNDER ROADS, DRIVEWAYS AND ELSEWHERE

HDPE is required for all under road pavements.

15.21 WELDING OF PE PIPELINES

Add the following to subsections MRWA 15.21.2 Butt welding, MRWA 15.21.3 Electrofusion welding and MRWA 15.21.4 Extrusion welding:

Coliban Water does not accept alternative qualifications.

16 PIPE EMBEDMENT AND SUPPORT

16.1 General

Add:

For bedding and backfill material specifications, refer to WSAA Product Specifications for Product and Materials.

Coliban Water's Preferred Equipment manufacturers list R10E Technical Specification does not address bedding and backfill materials.

19 ACCEPTANCE TESTING

19.4 HYDROSTATIC PRESSURE TESTING

19.4.3 Property Services

This subsection applies to:

- any pre-laid property services approved by Coliban Water to be installed in conjunction with the new water main; and
- any property services renewed as part of water main renewal works.

19.4.4 Under Pressure Cut-In Connections

Add:

Under pressure tapplings are only to be undertaken by a competent contractor.

Inline stops must be used to avoid disruption of water supply to our customers, and their locations must be clearly detailed on preliminary, verified, and as-constructed plans. Isolation valves constructed during previous works must only be operated by Coliban Water staff, therefore a planned shutdown is required for this proposal.

Applications for planned shutdowns can be arranged by completing a "Water Main Shutdown Application" via the [Builders & Developers](#) page of the [Coliban Water](#) website.

Under pressure tapping are not permitted for main replacement or main lowering works as maximum supply flow must be maintained.

19.7 WATER QUALITY TESTING

Coliban Water has not adopted the MRWA Water Quality Compliance specification and has more specific water quality requirements to Appendix I – Disinfection of Water Mains and Water Quality Compliance Specification.

19.7.2 Test Procedure

Replace item (b) with:

b) Sampling of new and existing water mains can only be undertaken by contractors approved by Coliban Water. The person taking the sample needs to provide evidence of relevant competencies. Any samples submitted by a non-registered person will not be accepted. A list of approved contractors is available on the website.

19.7.3 Satisfactory Water Quality Test

Replace section 19.7.3 with:

A section of water main is accepted when the results fall within the water quality parameter limits specified in Appendix I – Disinfection of Water Mains and Water Quality Compliance Specification.

The water quality parameter test results in the test section of water main can be no worse than the test results measured by testing an influent sample of existing mains water, provided that the influent sample was collected at the same time as the water sample from the test section of water main was collected.

20 DISINFECTION

New water mains can only be chlorinated, and samples can only be taken by contractors with adequate competencies. Coliban Water publishes a list of approved disinfection contractors on its website.

20.1 APPLICATION

Replace subsection 20.1 with:

Disinfect all the following drinking water mains by adding a disinfectant to the water drawn from the water distribution system as follows:

- (a) New water mains before they are placed in service, even if the new main will not be providing water to properties immediately after being placed in service.
- (b) Existing water mains that are taken out of service during construction.
- (c) Renewed, including relined, water mains.

Disinfect in accordance with WSA 03-2011-3.1 Appendix I - [Disinfection of Water Mains and Water Quality Compliance Specification](#).

Where it is not practicable to disinfect pipes, fittings and appurtenances used to connect an existing water main to a new water main, clean each connecting item and spray or swab with a 1% solution of sodium or calcium hypochlorite immediately before installation. During the disinfection process:

- (i) Operate all valves, hydrants, water meter ball valves (where fitted) and other fittings to ensure complete disinfection.
- (ii) Take measures to protect the environment.

Accept a disinfected water main that complies with replacement Clause 19.7.3 herein when subjected to a bacteriological test in accordance with Clause 19.7.2. When using, handling and storing disinfecting agents comply with the applicable occupational health and safety legislation, regulations and requirements.

Coliban Water requires a copy of water chlorination disinfection results from the Nata Accredited Laboratory, where the test results must comply prior to the new works being linked with the existing water main. Disinfection or sampling of water mains must be carried out by a registered [Water mains disinfection contractor](#).

The result must be received and assessed by Coliban Water and if deemed compliant, Coliban Water will provide its consent to the proposed linking up of the new water main.

20.2 FLUSHING OF DISINFECTION WATER

Add:

Water used in the disinfection process contains high levels of chlorine and cannot be disposed of in stormwater drains. Disinfection water can be disposed of through the sewer system. Where no sewer is available, the contractor needs to take measures to reduce chlorine levels before releasing the water into the environment.

APPENDIX I — DISINFECTION OF WATER MAINS AND WATER QUALITY COMPLIANCE SPECIFICATION

ANNEXURE 1

Replace the table

DRINKING WATER QUALITY PARAMETERSAMPLE TOLERANCE LIMITS

with:

Parameter	Units See notes 3 to 9	Sample set A Existing main Default limits	Sample set B New main Default limits	ADWG ¹ Recommended limits
PHYSICAL PARAMETERS				
pH		As measured > 6.5 and < 9.2	Within ADWG limits & "A" ± 0.5 (Note 2)	> 6.5 and <8.5 (Note 2)
Apparent colour	PCU	As measured and within ADWG limits ≤ 15	Within ADWG limits & <("A" + 5)	≤ 15
Turbidity	NTU	As measured and within ADWG limits ≤ 5	Within ADWG limits & <("A" + 0.5)	≤ 5
EC	µS/cm	As measured and within ADWG limits ≤ 950	Within ADWG limits & <("A" + 50)	≤ 950
CHEMICAL PARAMETERS				
Free chlorine residual health	mg/L	As measured and with ADWG limits < 5 and > 1	Within ADWG limits & "A" ± 0.2	< 5
Free chlorine residual aesthetic	mg/L	As measured and with ADWG limits < 0.6	Within ADWG limits & "A" ± 0.2	< 0.6
Total chlorine residual	mg/L	As measured and with ADWG limits < 5	Within ADWG limits & "A" ± 0.2	< 5
MICROBIOLOGICAL PARAMETERS				
E.coli	orgs/100ml	As measured and within ADWG limits < 1	Within ADWG limits	<1
Total coliforms	cfu/100ml	As measured < 25	Same as "A"	Recommended limit <1 (Note 10)
Heterotropic plate count	cfu/ml	As measured < 500	Same as "A"	Recommended limit <100 (Note 10)