



**Supplementary Manual to the
WSAA Water Supply Code
(WSA 03-2011:3.1)**

Melbourne Retail Water Agencies Edition V2.0

ACKNOWLEDGEMENTS

Central Highlands Water acknowledges the following source of documents in the preparation of this standard:

Water Reticulation Code of Australia WSA 03-2011:3.1 MRWA Edition V2.0

DISCLAIMER

“Central Highlands Water excludes all liability to all persons and all conditions and warranties, which are expressed or implied at law (including under statute).

Where liability and conditions and warranties cannot be excluded at law, the liability of Central Highlands Water is limited at their choice, to resupplying the Supplementary Manual or paying the cost of resupplying the Supplementary Manual.”

Please note that the Supplementary Manual or information contained within the Supplementary Manual must only be used in conjunction with the Water Reticulation Code of Australia WSA 03-2011:3.1-MRWA Edition V2.0, of the Water Services Association of Australia.

Further, the Supplementary Manual may be periodically updated.

INFORMATION

For information and advice and to advise of possible errors, omissions and changes required for future revisions, please contact Mr. Adam Parr by email at adam.parr@chw.net.au.

INTENDED AUDIENCE

This Central Highlands Water Supplementary Manual is intended for CHW personnel, consultant engineers and contractors engaged in the design, construction and maintenance of CHW’s water supply system.

REVISION CONTROL

Version	Approved by	Approval Date	Issue Date	Comments
2	A. Parr/Brad Smith	4/7/2011		Update 19.5.3 Water Quality Parameter Limits
3	G.Holt	5/4/2012		General additions
4	P. Donald	21-8-2012		Upgrade to new WSA 03-2011-3.1
5	Brad Smith	4-6-2013		Update 19.7.2 Test Procedure
6	A. Parr	16/12/2013		Inserted reduced size mains

PREFACE TO CHW SUPPLEMENT

This Supplement complements the Water Reticulation Code of Australia, WSA 03-2011:3.1-MRWA Edition V2.0 (the Code) and contains additional (supplementary) information to cover:

- ▶ CHW detailed requirements for specific matters, which the Code anticipates individual water agencies will address.
- ▶ Variations to the Code where its requirements are not compatible with CHW current requirements.

TABLE OF CONTENTS

PART 1 – PLANNING & DESIGN	4
3.8 PIPELINE COMPONENTS MINIMUM PRESSURE CLASS	4
5.2 RETICULATION DESIGN FOR WATER QUALITY	4
5.6 SHARED TRENCHING	4
5.12 OBSTRUCTIONS AND CLEARANCES	4
8.2 STOP VALVES	4
8.2.4 Stop valves for reticulation mains (<300)	4
8.2.7 Stop valves – location and arrangements	4
8.8 HYDRANTS	4
8.8.3 Hydrant operations principles	4
8.8.7 Hydrant size	7
8.8.8 Hydrant spacing	5
PART 2 - CONSTRUCTION	7
12.6 SUPPLY OF WATER TO THE WORKS.....	7
19.7 WATER QUALITY TESTING	7
19.7.2 Test Procedure	7
19.7.3 Satisfactory water quality test	7
20 Disinfection.....	15
22.6 MAINTENANCE OF EXISTING SUPPLY	8
22.7 SERVICE INTERRUPTION	8
PART 4 – STANDARD DRAWINGS	9
.....	

Part 1 – Planning & Design

3.8 Pipeline Components Minimum Pressure Class

Minimum Pressure Class

Replace 1st sentence of 2nd paragraph with the following

Designers shall adopt the Water Agency's minimum class of PN12 for all pipework and fittings within the Water Agency's system except where PE pipes are installed as sub-mains within court bowls, cul-de-sacs and dead end streets.

5.6 Shared trenching

Add the following:

To prevent cross contamination in the event of failure, sewer mains and water mains shall not be constructed together in a shared trench without the approval of the Water Agency. If approval is given then the trench must be backfilled with 2% cement stabilised crushed rock up to 100mm of the invert of the water main. Clearances between mains shall be in accordance with Table 5.5 of the WSA code except for minimum vertical clearance for water mains greater than 375mm dia. shall be 500mm.

5.12 Obstructions and Clearances

Add the following clause:

5.12.2 Surface obstructions

Clearance from trees shall be in accordance with the relevant governing Authorities requirements. Allowance should also be made for the provision of water services in to the property.

5.2 Reticulation Design for Water Quality

5.2.4 Reduced Sized Mains

Replace Table 5.1 with the following:

Reduced size main (mm)	Minimum Service Pressure (m)	Max Number of Properties	Max length of reduced main (m)
63	<25	0	0
	26 to 30	5	50
	31 to 40	7	65
	41 to 50	9	80
	>50	10	100

8.2 Stop Valves

8.2.4 Stop valves for reticulation mains

Add the following note to Table 8.2

CHW shall adopt 40 as the number of property service connections (nominal) for water mains \leq DN150.

8.2.7 Stop valves – location and arrangements

Replace item (ii) with the following:

Isolate 150mm or smaller reticulation mains from 225mm or larger mains.

8.8 Hydrants

6.8.2 Siting principles

Add the following paragraph:

The consultant is responsible for notifying the Council and Fire Authority of the proposed work, including the location of the hydrants for fire fighting purposes based on the recommended spacing. Agreement must be obtained from both the Council and the Fire Authority for the location of the fire hydrants and the consultant may need to negotiate any additional fire hydrant requirement.

8.8.8 Hydrant spacing

Add the following:

CHW's requirements for hydrant spacing are as follows:

Residential areas	200m
Commercial and Industrial areas	120m
Central Business Districts	50m
Rural areas	500m

Part 2 – Products & Materials

8.1 Purpose

Add the following:

Unless otherwise specifically agreed, only products endorsed in the MRWA approved products list shall be used.

Part 3 - Construction

12.6 Supply of Water to the Works

CHW shall supply to the Contractor, free of charge, at any existing water main, water necessary for the proper conduct of the works. If in the opinion of CHW, water is wasted by the Contractor, CHW may curtail the supply as appropriate in the circumstances and further, the Contractor shall have no claim for any compensation or damages arising from any interruption, failure or curtailment of the water supply for any reason. The contractor shall obtain a permit for the use of a metered stand pipe to obtain water from the water supply system.

19.7 Water Quality Testing

19.7.2 Test Procedure

Replace (b) with the following:

(b) Engage a Recognised Testing Laboratory accredited for the tests required to collect representative water samples from the test section of water main. Alternatively, a CHW Network Technician that has received appropriate training in water sampling is able to collect these samples. In addition, where this reference to 'Laboratory Sampling' appears in the MRWA Water Quality Compliance Specification, the same alternative sampling practice can apply.

19.7.3 Satisfactory water quality test

Replace (a) with the following:

- (a) The test results fall within the water quality parameter limits defined in the following table:

WATER QUALITY PARAMETER LIMITS

Parameter	Units	Sample Set A Existing Main	Sample Set B New Main	ADWG Recommended Limits
Physical Parameters				
pH	Units	Between 6.5 and 9.2	Within ADWG limits & "A" ± 0.5	Between 6.5 and 9.2
True Colour	Pt.Co. Units	≤15	Within ADWG limits & < ("A" + 5)	15
Turbidity	NTU	≤5	Within ADWG limits & < ("A" + 1.0)	5
EC	µS/cm	-	< ("A" + 50)	~1000
Chemical Parameters				
Free chlorine (chlorinated system)	mg/L	-	Within ADWG limits	5 (health)
Total Chlorine (chloraminated system)	mg/L	-	Within ADWG limits	4.1 (health - monochloramine by DPD as chlorine equivalent)

Microbiological Parameters				
<i>E. coli</i>	MPN/100mL	0	0	0
Total coliforms	MPN/100mL	0	0	0 #
Heterotrophic Plate Count	CFU/mL	≤10 >10	≤100 < (10 x "A")	100 #

Notes:

ADWG = Australian Drinking Water Guidelines

"A" = the actual test result for the relevant parameter for Sample Set No A (existing main)

= these limits are advisory as there is no specific recommended limits in ADWG

Replace (c) with the following:

- (c) The independent laboratory can provide the Consultant with a statement of compliance regarding the water quality parameter limits specified in (a) above for the New Main (Sample Set B).

20 DISINFECTION

MRWA 20.1.1 Application

Replace (a) with the following:

- (a) Disinfect all new water mains in the Central Highlands Water Regional Area before they are placed in service.

Insert new clauses as follows:

22.6 Maintenance of Existing Supply

Alternative temporary arrangements for water and sewerage services may require to be maintained in any case where the works involve the disconnection of any such services.

Where works involve service interruptions, arrangements shall be required to minimise the number, length and impact of such interruptions having particular regard to special need customers (i.e. Hospitals, industry, schools, special health need customers etc).

22.7 Service Interruption

In any case where the works involve the interruption of water supply, fire service or sewerage services to any person or property the Contractor shall:

- ▶ Ensure the maximum time for service interruptions be 4 hours;
- ▶ Ensure that such interruptions only occur between the hours of 9.00am until 3.30pm on Tuesday or Thursday and 9.00am until 12 noon on a Friday unless prior written authority for an interruption outside of these hours has been provided by CHW;
- ▶ In no case allow an interruption unless 5 days prior written notice has been provided to the CHW; and
- ▶ In no case allow any interruption unless prior notice has been provided to affected persons and property not less than 48 hours prior to any proposed interruption

In no case allow an interruption of any kind on a day:

- ▶ That has been declared a Total Fire Ban day by the Country Fire Authority in respect of the area where the site is located; or
- ▶ With a forecast maximum temperature of 35° Celsius or more.

Part 4 – Standard Drawings

MRWA Standard Drawings are located on the internet refer to <http://mrwa.com.au/Pages/Standards.aspx>

WAT 1108-V has been replaced with MRWA-W-518

Add the following note:

- ▶ Water Tappings ferrule and bend shall be installed in the vertical (depth restrictions permitting) Saddle clamp bolts to be installed in the horizontal.

Crimp type fittings shall not used on water services in the Central Highland Water Region

WAT 1201-V has been replaced with MRWA-W-201

Replace note 3 with the following:

- ▶ Embedment, trench fill and compaction to meet the requirement of design drawings, WSA02 Part 3 MRWA edition, road owner's requirements and the MRWA Backfill Specification No. 04-03.1.

WAT 1211 has been replaced with MRWA-W-210

Add the following note:

- ▶ Creek crossings to be in accordance with the governing body requirements.

WAT 1207 has been replaced with MRWA-W-207

Add the following note:

- ▶ Socketed valves are the preferred option.

WAT 1302 has been replaced with MRWA-W-302

Add the following note:

- ▶ Asphalt premix seal not required.

Replace Note 7 with the following:

- ▶ Provide ventilation to air valve chamber with adequate air volume for air valve intake.

WAT 1300-V has been replaced with MRWA-W-300

- ▶ Drawing to be replaced with CHW-W01
- ▶ Marker Post shall be made of 90mm (min.) X 90mm (min.) redgum or recycled plastic painted in approved colours.

WAT 1302, WAT 1303, WAT 1304, WAT 1305-V, WAT 1306 has been replaced with MRWA-W-302 and W303

Add the following notes:

- ▶ Asphalt premix seal not required.
- ▶ Concrete support ring may be replaced with recycled plastic or red gum:
- ▶ Minimum size of shrouds to be 200mm and shall not be longer than 500mm

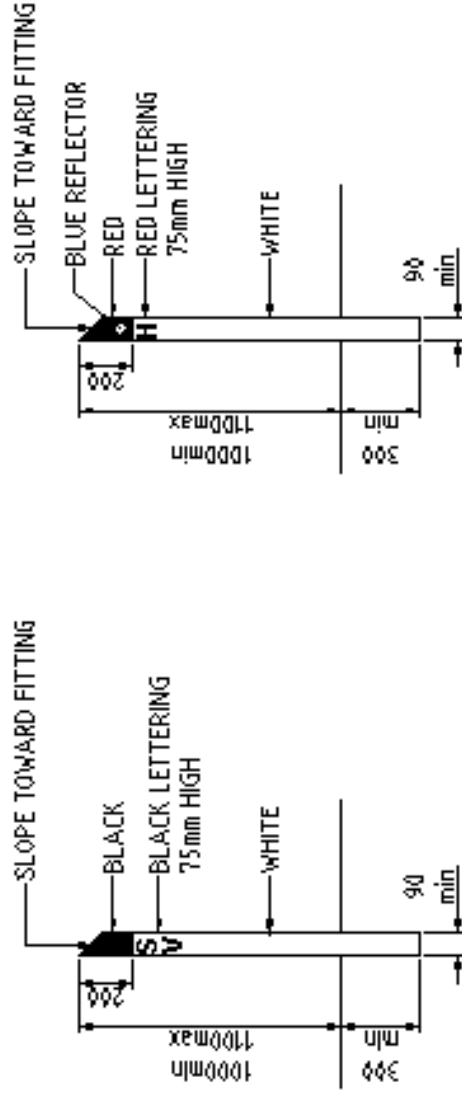
WAT 1307 has been replaced with MRWA-W-307

- ▶ Drawing to be replaced with CHW-W02

Additional Drawings

Notes

- 1 All dimensions are in millimetres.
- 2 The marker post shall be placed on the property boundary.
- 3 Slope shall be facing toward the fitting.
- 4 Blue reflective marker to be provided in accordance with the detail shown.

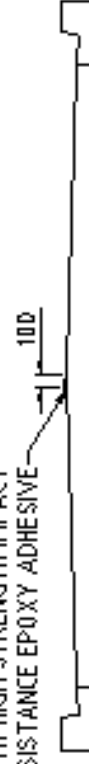


VALVE MARKER POST

HYDRANT MARKER POST

S	Stop Valve	A	Air Valve
V		V	
H		H	Hydrant
C	Scour Valve		
V			

FIX REFLECTOR TO ROAD SURFACE
WITH HIGH STRENGTH IMPACT
RESISTANCE EPOXY ADHESIVE



HYDRANT REFLECTIVE ROAD MARKER

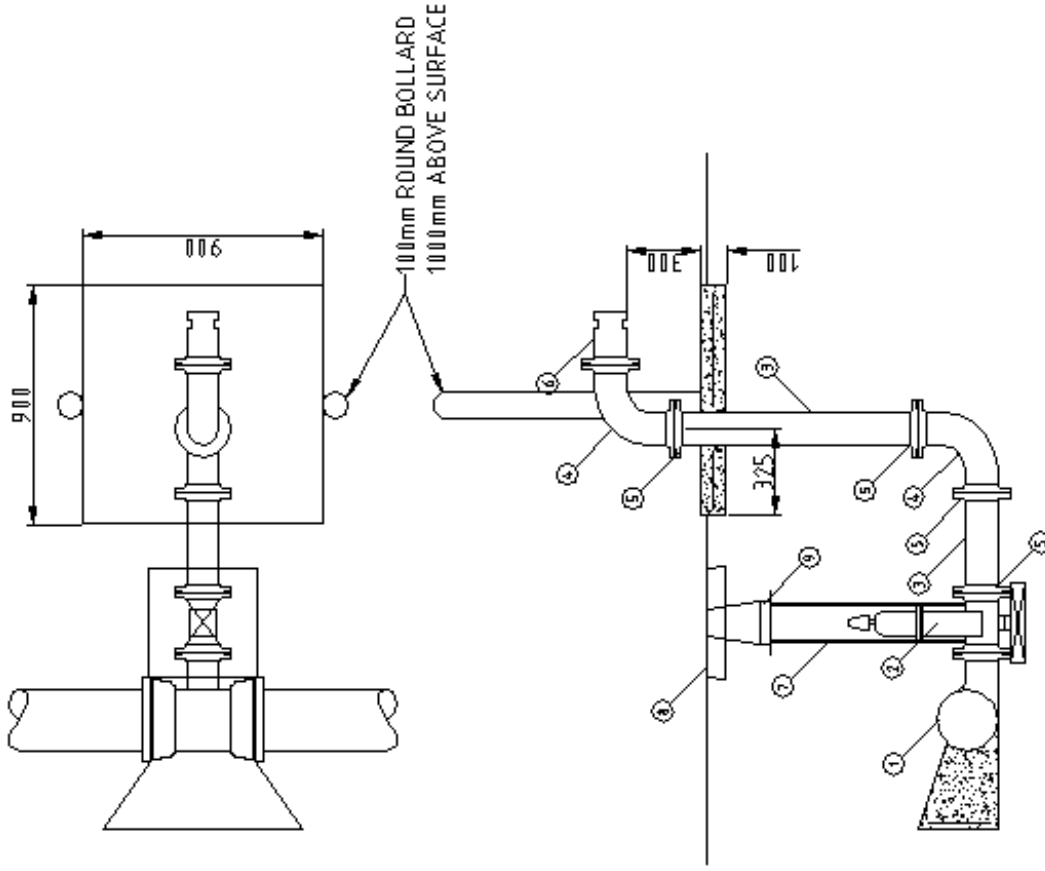
TYPICAL MARKER POST INDICATORS

7 Learmonth Road
Mansfield Victoria 3915
PO Box 53 Learmonth
Victoria 3963 Australia
Telephone 03 525281
Facsimile 03 525289

CENTRAL
HIGHLANDS
WATER

LOCATION MARKERS
FOR VALVES AND HYDRANTS
TYPICAL ARRANGEMENT

CHW-W01
NOT TO SCALE



NOTES

- 1 All dimensions are in millimetres.
- 2 Appropriate marker post to be placed adjacent to the fitting.
- 3 Corrosion protection required for all bolts and flanges.
- 4 Cast iron covers and concrete surrounds to be used in areas prone to fire.
- 5 Bollards to be painted white and constructed with conical top.

1	SCOUR TEE TO SUIT	1
2	100 FL-FL VALVE	1
3	100 SP-SP DIEL TO SUIT	
4	100x90° FL-FL BEND	2
5	100 UNI FLANGE	4
6	100 FL CAMLOCK	1
7	SURROUND PIPE	1
8	APPROVED VALVE SURROUND	1
9	APPROVED VALVE COVER	1
No.	DESCRIPTION	QTY

SCOUR ASSEMBLIES
FOR WATER MAIN DIAMETRES
200mm TO 375mm

CHW-W02

NOT TO SCALE



7 Leamonth Road
Wandoora Victoria 3385
PO Box 62 Ballarat
Victoria 3353 Australia
Telephone 053 213111
Facsimile 053 213299

CENTRAL
HIGHLANDS
WATER