

Water Quality Summary - June 2023 (amended 19.07.2023 to include Mn results)

Hunter Water provides safe and reliable drinking water to over half a million customers in the Lower Hunter. The drinking water we supply is routinely tested throughout our water supply systems.

Whole of Hunter Water Distribution System

Drinking water results for the distribution system are based on samples representative of water supplied to customer's taps. Distribution system results for microbiological and key physical/chemical parameters are summarised below.

Whole of Hunter Water Distribution System - key health analytes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1	st results <1		Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5		0.96	1.00	Yes
Chlorine	mg/L	5.0		0.94	1.71	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.007	0.016	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.000	0.001	Yes
Manganese	mg/L	0.5		0.002	0.010	Yes
Trihalomethanes	mg/L	0.25		0.063	0.142	Yes

Whole of Hunter Water Distribution System - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes

Whole of Hunter Water Distribution System - key aesthetic analytes

Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3		0.025	0.027	Yes
Aluminium	mg/L	0.2		0.037	0.044	Yes
Copper	mg/L	1.0	Average of test results less than	0.007	0.006	Yes
Zinc	mg/L	3.0	respective ADWG aesthetic guideline	0.004	0.003	Yes
Manganese	mg/L	0.1	value	0.002	0.004	Yes
Turbidity	NTU	5.0		0.2	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
рН	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.57	7.60	Yes

Brief explanation of key parameters: Key Physical, Chemical and Microbiological Parameters				
A 95th percentile is a statistical method to evaluate the long-term performance standard for Health Drinking Water Guidelines 2011 (ADWG).	related analytes. Additional information is available in Section 10.3.2 and Information Sheet 3.3 of the Australian			
For more detail please refer:	Australian Drinking Water Guidelines 2011			
Map showing water quality zones:	Water Quality Zones at Hunter Water			

Water Quality Zones						
Anna Bay and Nelson Bay Zone - key l	health analytes					
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performanc standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performanc standard
Fluoride	mg/L	1.5		1.00	1.10	Yes
Chlorine	mg/L	5.0		1.45	2.30	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.006	0.028	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.000	0.001	Yes
Manganese	mg/L	0.5		0.002	0.009	Yes
Trihalomethanes Anna Bay and Nelson Bay Zone - PFO	mg/L S PEHYS & PEOA	0.25		0.020	0.083	Yes
Allila Bay and Nelson Bay Zone - PPO	3, FFIIX3 & FF0A					
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performanc standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Anna Bay and Nelson Bay Zone - key a						
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performanc standard
Iron	mg/L	0.3		0.030	0.033	Yes
Aluminium	mg/L	0.2		0.038	0.045	Yes
Copper	mg/L	1.0	Average of test results less than	0.006	0.009	Yes
Zinc Manganese	mg/L	3.0	respective ADWG aesthetic guideline value	0.003	0.004	Yes Yes
Turbidity	NTU	5.0	-	0.002	0.003	Yes
Colour-True	HU	15.0		5	5	Yes
рН	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.36	7.47	Yes
Chichester Zone - key health analytes Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12	Met performance
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		months 100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5		0.91	1.00	Yes
Chlorine	mg/L	5.0		0.99	1.41	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.005	0.007	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.000	0.000	Yes
Manganese Trihalomethanes	mg/L mg/L	0.5		0.002	0.004	Yes Yes
Chichester Zone - PFOS, PFHxS & PFO		0.25		0.051	0.090	res
omenester zone 1100,1111x0 a 11						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the	Met performanc standard
					last 12 months	
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004		Yes
	ug/L ug/L		100% of test results less than respective ADWG health guideline value	<0.004 <0.002	last 12 months	Yes Yes
PFOA	ug/L	0.07			last 12 months <0.004	
PFOS + PFHxS PFOA Chichester Zone - key aesthetic analyt	ug/L	0.07			last 12 months <0.004	
PFOA Chichester Zone - key aesthetic analyt Analyte	ug/L tes Units of measure	0.07 0.56 ADWG aesthetic guideline value	respective ADWG health guideline value Performance standard (assessment	<0.002 Average for Month	last 12 months <0.004 <0.002 12 month average result	Yes Met performano standard
PFOA Chichester Zone - key aesthetic analyt Analyte Iron	ug/L tes Units of measure mg/L	0.07 0.56 ADWG aesthetic guideline value 0.3	respective ADWG health guideline value Performance standard (assessment	<0.002 Average for Month 0.018	last 12 months	Yes Met performanc standard Yes
PFOA Chichester Zone - key aesthetic analyt Analyte Iron Aluminium	ug/L Units of measure mg/L mg/L	0.07 0.56 ADWG aesthetic guideline value 0.3 0.2	Performance standard (assessment over previous 12 months)	<0.002 Average for Month 0.018 0.035	last 12 months	Met performand standard Yes Yes
PFOA Chichester Zone - key aesthetic analyt Analyte	ug/L tes Units of measure mg/L	0.07 0.56 ADWG aesthetic guideline value 0.3	Performance standard (assessment over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	<0.002 Average for Month 0.018	last 12 months	Yes Met performanc standard Yes
PFOA Chichester Zone - key aesthetic analyt Analyte Iron Aluminium Copper	ug/L Units of measure mg/L mg/L mg/L	0.07 0.56 ADWG aesthetic guideline value 0.3 0.2 1.0	Performance standard (assessment over previous 12 months) Average of test results less than	<0.002 Average for Month 0.018 0.035 0.005	last 12 months <0.004 <0.002	Met performand standard Yes Yes Yes
PFOA Chichester Zone - key aesthetic analyte Iron Aluminium Copper Zinc Manganese Turbidity	ug/L Units of measure mg/L mg/L mg/L mg/L mg/L ng/L NTU	0.07 0.56 ADWG aesthetic guideline value 0.3 0.2 1.0 3.0 0.1 5.0	Performance standard (assessment over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	<0.002 Average for Month 0.018 0.035 0.005 0.003 0.002 0.2	last 12 months <0.004 <0.002	Met performand standard Yes Yes Yes Yes Yes
PFOA Chichester Zone - key aesthetic analyt Analyte Iron Alluminium Copper Zinc Manganese	ug/L tes Units of measure mg/L mg/L mg/L mg/L mg/L mg/L	0.07 0.56 ADWG aesthetic guideline value 0.3 0.2 1.0 3.0 0.1	Performance standard (assessment over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	<0.002 Average for Month 0.018 0.035 0.005 0.003 0.002	last 12 months <0.004 <0.002	Met performand standard Yes Yes Yes Yes Yes Yes

Grahamstown Zone - key health analytes						
Granamstown Zone - key fleatin analytes			Bud and a second second		% of E. coli	
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.89%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12	Met performance standard
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		months	
Fluoride	mg/L	1.5		0.97	1.00	Yes
Chlorine	mg/L	5.0		0.79	1.45	Yes
Copper	mg/L	2.0	95th percentile of test results less than respective ADWG health guideline value	0.009	0.016	Yes
Manganese	mg/L	0.01		0.000	0.001	Yes Yes
Trihalomethanes	mg/L	0.25		0.002	0.176	Yes
Grahamstown Zone - PFOS, PFHxS & PFOA	g -	0.20		0.073	0.170	163
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Grahamstown Zone - key aesthetic analytes	1992	0.30		40.002	Q0.002	103
Granamstown Zone - key destrictic analytes						
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3		0.026	0.025	Yes
Aluminium	mg/L	0.2		0.039	0.055	Yes
Copper	mg/L	1.0	Average of test results less than	0.009	0.005	Yes
Zinc	mg/L	3.0	respective ADWG aesthetic guideline	0.004	0.003	Yes
Manganese	mg/L	0.1	value	0.002	0.005	Yes
Turbidity	NTU	5.0		0.3	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
рН	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.55	7.55	Yes
Gresford Zone - key health analytes						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Chlorine	mg/L	5.0	95th percentile of test results less than respective ADWG health guideline value	1.14	1.33	Yes
Gresford Zone - PFOS, PFHxS & PFOA						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month #	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Gresford Zone - key aesthetic analytes		1				
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Turbidity	NTU	5.0	Average of test results less than respective ADWG aesthetic guideline value	0.1	0.2	Yes

Lemon Tree Passage Zone - key health	n analytes					
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5		0.93	1.00	Yes
Chlorine	mg/L	5.0		1.17	1.89	Yes
Copper	mg/L	2.0	95th percentile of test results less than respective ADWG health guideline value	0.003	0.010	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.004	0.010	Yes
Trihalomethanes	mg/L	0.25		0.070	0.135	Yes
Lemon Tree Passage Zone - PFOS, PF	HxS & PFOA					
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Lemon Tree Passage Zone - key aesth	etic analytes					
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3		0.029	0.045	Yes
Aluminium	mg/L	0.2	1	0.038	0.039	Yes
Copper	mg/L	1.0	Average of test results less than	0.003	0.005	Yes
Zinc	mg/L	3.0	respective ADWG aesthetic guideline	0.003	0.003	Yes
Manganese	mg/L	0.1	value	0.004	0.005	Yes
Turbidity	NTU	5.0	1	0.2	0.3	Yes
Colour-True	HU	15.0	1	5	5	Yes
			Average of test results between 6.5-9.2			

PFOS, PFHxS and PFOA Results for Clear Water Tanks - June 2023

Clear water tanks (CWTs) are the final point at each water treatment plant before water enters the distribution system for delivery to customers. Maximum drinking water results in the CWTs of the water treatment plants monitored during the month are summarised below.

Analyte	Units of measure	ADWG health guideline value	Grahamstown CWT
PFOS + PFHxS	ug/L	0.07	<0.004
PFOA	ug/L	0.56	<0.002

PFOS, PFHxS and PFOA Results for Raw Waters - June 2023

Raw water monitoring points are representative of water received at the water treatment plants, prior to any treatment occurring. Maximum raw water results of the water treatment plants monitored during the month are summarised below.

Analyte	Units of measure	ADWG health guideline value	Grahamstown Raw - East Main ^	Grahamstown Raw - West Main	Lemon Tree Passage WTP - Raw Water
PFOS + PFHxS	ug/L	0.07	<0.004	0.007	<0.004
PFOA	ug/L	0.56	<0.002	<0.002	<0.002

^ Water sourced from the Tomago Borefield -when operational -is delivered to Grahamstown WTP via the East'Main. When the Tomago Borefield is not being used as part of the drinking water supply mix for the Lower Hunter, the East'and West'monitoring points are both representative of water sourced from Grahamstown Dam.

^{*} Gresford WTP can be supplied from either the Allyn or Paterson Rivers. The plant was supplied from the Paterson River for the month.

[#] One sample is collected per month in the Gresford Zone