



## Water Quality Summary - August 2019

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 customers' 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
<i>E. coli</i>	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.94%	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	95th percentile of test results less than respective ADWG health guideline value	0.90	1.03	Yes
Chlorine	mg/L	5		0.63	1.24	Yes
Copper	mg/L	2		0.006	0.020	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.007	0.011	Yes
Trihalomethanes	mg/L	0.25		0.062	0.138	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	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	µg/L	0.56		<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	Average of test results less than respective ADWG aesthetic guideline value	0.035	0.029	Yes
Aluminium	mg/L	0.2		0.037	0.050	Yes
Copper	mg/L	1		0.006	0.008	Yes
Zinc	mg/L	3		0.003	0.005	Yes
Turbidity	NTU	5		0.3	0.2	Yes
True colour	HU	15		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	7.60	7.59	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-related analytes. Additional information is available in Section 10.3.2 and Information Sheet 3.3 of the Australian Drinking Water Guidelines 2011 (ADWG).

For more detail please refer:

[Australian Drinking Water Guidelines 2011](#)

Map showing water quality zones:

[Water Quality Zones at Hunter Water](#)

# Water Quality Zones

## 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 months	Met performance standard
<i>E. coli</i>	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.79%	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	95th percentile of test results less than respective ADWG health guideline value	0.72	1.01	Yes
Chlorine	mg/L	5		0.85	1.22	Yes
Copper	mg/L	2		0.008	0.013	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.004	0.008	Yes
Trihalomethanes	mg/L	0.25		0.054	0.158	Yes

## Chichester 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	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.006	Yes
PFOA	µg/L	0.56		<0.002	<0.002	Yes

## Chichester Zone – 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	Average of test results less than respective ADWG aesthetic guideline value	0.026	0.025	Yes
Aluminium	mg/L	0.2		0.044	0.058	Yes
Copper	mg/L	1		0.008	0.005	Yes
Zinc	mg/L	3		0.006	0.004	Yes
Turbidity	NTU	5		0.4	0.3	Yes
True colour	HU	15		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	7.64	7.69	Yes

## Grahamstown Zone - key health analytes

Analyte	Units of Measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	% of E. coli results < 1 over the last 12 months	Met performance standard
<i>E. coli</i>	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	95th percentile of test results less than respective ADWG health guideline value	0.97	1.04	Yes
Chlorine	mg/L	5		0.56	1.24	Yes
Copper	mg/L	2		0.005	0.024	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.010	0.012	Yes
Trihalomethanes	mg/L	0.25		0.068	0.130	Yes

### Grahamstown 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	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	µg/L	0.56		<0.002	<0.002	Yes

### Grahamstown Zone – 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	Average of test results less than respective ADWG aesthetic guideline value	0.044	0.031	Yes
Aluminium	mg/L	0.2		0.043	0.051	Yes
Copper	mg/L	1		0.005	0.008	Yes
Zinc	mg/L	3		0.003	0.005	Yes
Turbidity	NTU	5		0.3	0.2	Yes
True colour	HU	15		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	7.57	7.54	Yes

### Lemon Tree Passage Zone - key health analytes

Analyte	Units of Measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	% of E. coli results < 1 over the last 12 months	Met performance standard
<i>E. coli</i>	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	95th percentile of test results less than respective ADWG health guideline value	1.02	1.03	Yes
Chlorine	mg/L	5		0.51	1.44	Yes
Copper	mg/L	2		0.002	0.011	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.002	0.008	Yes
Trihalomethanes	mg/L	0.25		0.062	0.105	Yes

### Lemon Tree Passage 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	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	µg/L	0.56		<0.002	<0.002	Yes

### Lemon Tree Passage Zone - 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	Average of test results less than respective ADWG aesthetic guideline value	0.023	0.027	Yes
Aluminium	mg/L	0.2		0.033	0.040	Yes
Copper	mg/L	1		0.002	0.006	Yes
Zinc	mg/L	3		0.002	0.004	Yes
Turbidity	NTU	5		0.2	0.2	Yes
True colour	HU	15		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	7.55	7.54	Yes

### Anna Bay / Nelson Bay Zone - key health analytes

Analyte	Units of Measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	% of E. coli results < 1 over the last 12 months	Met performance standard
<i>E. coli</i>	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	95th percentile of test results less than respective ADWG health guideline value	1.00	1.03	Yes
Chlorine	mg/L	5		0.36	1.21	Yes
Copper	mg/L	2		0.005	0.009	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.006	0.009	Yes
Trihalomethanes	mg/L	0.25		0.049	0.088	Yes

### Anna Bay / Nelson Bay 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	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.006	Yes
PFOA	µg/L	0.56		<0.002	<0.002	Yes

### Anna Bay / Nelson Bay Zone - 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	Average of test results less than respective ADWG aesthetic guideline value	0.026	0.038	Yes
Aluminium	mg/L	0.2		0.037	0.050	Yes
Copper	mg/L	1		0.005	0.007	Yes
Zinc	mg/L	3		0.003	0.004	Yes
Turbidity	NTU	5		0.1	0.3	Yes
True colour	HU	15		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	7.51	7.51	Yes

### Gresford Zone - key health analytes

Analyte	Units of Measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	% of E. coli results < 1 over the last 12 months	Met performance standard
<i>E. coli</i>	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	95th percentile of test results less than respective ADWG health guideline value	1.01	1.27	Yes

### Gresford Zone - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month <sup>2</sup>	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	µg/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	<0.004	Yes
PFOA	µg/L	0.56		<0.002	<0.002	Yes

### Gresford Zone - 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
pH	pH units	6.5-9.2	Average of test results between 6.5 - 9.2 pH units	8.24	8.00	Yes
Turbidity	NTU	5	Average of test results less than ADWG aesthetic guideline value	0.10	0.24	Yes

## PFOS, PFHxS and PFOA Results for Clear Water Tanks (CWT) – August 2019

Clear water tanks (CWTs) are the final point at each water treatment plant before water enters the distribution system for delivery to customers. Drinking water results in the CWT for each water treatment plant are summarised below.

Analyte	Units of Measure	ADWG health guideline value	Grahamstown CWT	Dungog CWT	Nelson Bay CWT	Anna Bay CWT	Lemon Tree Passage CWT	Gresford CWT
PFOS + PFHxS	µg/L	0.07	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
PFOA	µg/L	0.56	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

## PFOS, PFHxS and PFOA Results for Raw Waters – August 2019

Raw water monitoring points are representative of water received at the water treatment plants, prior to any treatment occurring. Raw water results for each water treatment plant are summarised below.

Analyte	Units of Measure	ADWG health guideline value	Grahamstown (West <sup>1</sup> ) WTP	Grahamstown (East <sup>1</sup> ) WTP	Dungog WTP	Nelson Bay WTP	Anna Bay WTP	Lemon Tree Passage WTP	Gresford (Allyn river <sup>3</sup> ) WTP	Gresford (Paterson river <sup>3</sup> ) WTP
PFOS + PFHxS	µg/L	0.07	0.012	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
PFOA	µg/L	0.56	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

<sup>1</sup> 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.

<sup>2</sup> One sample is collected per month in the Gresford Zone.

<sup>3</sup> Gresford WTP can be supplied from either the Allyn or Paterson Rivers. The plant was supplied from the Paterson River for the month.