



# Quarterly Rouse Hill Recycled Water Quality System Report

1 April 2024 to 30 June 2024

## Recycled water management

We supply you with high quality recycled water – managed under our Recycled Water Quality Management Plan.

The Recycled Water Management Plan describes how Sydney Water has implemented the framework for management of recycled water quality and use set out in the *Australian Guidelines for Water Recycling*. It describes the common systems and processes for the management of recycled water across all of Sydney Water's schemes and covers all end uses of recycled water including residential water supplies such as in Rouse Hill. This includes ensuring that recycled water scheme design, operation and management is undertaken using appropriately skilled resources in consultation with key stakeholders to protect public health and the environment.

**During this quarter, our monitoring confirmed that the recycled water we delivered to you complied with the Australian Guidelines for Water Recycling.**

## Rouse Hill Residential Recycled Water Scheme

The Rouse Hill Recycled Water Scheme is located in the Blacktown and Baulkham Hills local government areas and provides recycled water to the suburbs of Glenwood, Stanhope Gardens, Acacia Gardens, Parklea, Kellyville Ridge, Rouse Hill, Beaumont Hills, The Ponds, Kellyville and a small part of Castle Hill.

Tertiary treated recycled water from the Rouse Hill Water Resource Recovery Facility is further treated by UV disinfection and superchlorination and stored in three reservoirs from which it is supplied to customers by gravity through a network of mains. If the demand for recycled water exceeds the production rate, recycled water is supplemented with drinking water to meet the demand.

The Rouse Hill Water Resource Recovery Facility operated within its critical control points through the quarter.

The intended end use for the residential recycled water in Rouse Hill is:

- irrigation of gardens
- washing cars and driveways
- filling ornamental ponds
- flushing toilets
- washing laundry in a washing machine only
- watering fruit and vegetables (The NSW Food authority recommends that all fruit and vegetables are washed in cool tap water immediately before eating)
- fire fighting.

The water is NOT intended for drinking or other direct potable uses.

## Testing for recycled water quality

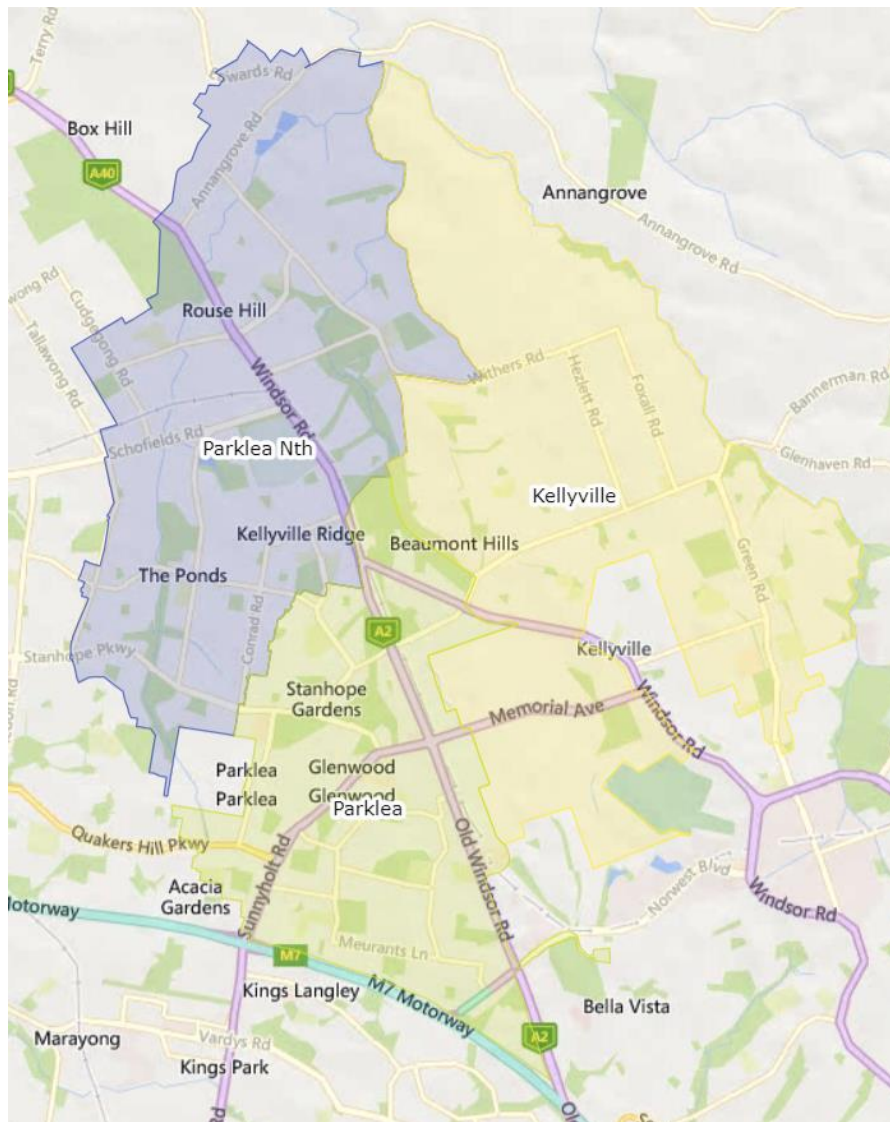
Our aim is to provide you with high quality, safe recycled water treated to meet the *Australian Guidelines for Water Recycling*. Our Recycled Water Quality Management System applies the frameworks to manage recycled water quality and testing recycled water quality is one part of this system.

We take water samples from outlet of water resource recovery facility, from the three Rouse Hill recycled water reservoirs and customers' recycled water taps and test for up to 33 different characteristics including:

- micro-organisms
- heavy metals
- pesticides and herbicides
- chemical content.

Table 1 presents key recycled water quality data from the analysis of samples we collected in the Rouse Hill water supply network. All results from monitoring were within the *Australian Guidelines for Water Recycling* limits for Jan to March quarter.

Our laboratories use internationally accredited methods for all our testing.



**Table 1 Recycled Water Quality Health Characteristics for Rouse Hill – typical results leaving the plant (last 12 months)**

Parameter	Units	Performance requirements	Rouse Hill (10 <sup>th</sup> – 90 <sup>th</sup> percentile range)
<b>Microbiological Characteristics</b>			
E.coli	orgs/100mL	<1 orgs/100mL	<1
Total Coliforms (Colilert)	orgs/100mL	<10 orgs/100mL	<1
<b>Physical Characteristics</b>			
True Colour (400nm)	CU	<15 CU	<2
Turbidity	NTU	<0.5 NTU	0.20 - 0.45
Total Dissolved Solids	mg/L	<600 mg/L	450 – 476 #
pH	pH Units	6.5 - 8.5 pH Units	6.83 - 7.13
Conductivity	uS/cm	n/a	745 - 816
Total Hardness	mgCaCO <sub>3</sub> /L	n/a	0.1 - 96 #
Alkalinity (Total)	mgCaCO <sub>3</sub> /L	n/a	54 – 64 #
Temperature	°C	n/a	19.2 - 27.6
UV Transmittance (unfiltered)	%Trans	n/a	78.8 - 82.0
<b>Disinfectants</b>			
Free Chlorine	mg/L	>=4.6 mg/L	5 - 8
Total Chlorine	mg/L	n/a	6.1 - 8.0
<b>Disinfection By-product</b>			
Total Trihalomethanes	mg/L		0.230 #
<b>Inorganic Chemicals</b>			
CBOD <sub>5</sub>	mg/L	n/a	<2
TOC	mg/L	n/a	6.3 - 8.3 #
Nitrate	mg/L	n/a	3.94 - 5.43 #
Nitrite	mg/L	n/a	0.001 - 0.001 #
Oxidised Nitrogen	mg/L	n/a	3.94 - 5.43 #
Total Aluminium	mg/L	<5.0 mg/L	0.052 – 0.126 #
Total Antimony	mg/L	n/a	0.0004 - 0.0004 #
Arsenic	mg/L	<0.1 mg/L	<0.0002 - 0.0004 #
Total Beryllium	mg/L	<0.1 mg/L	<0.0005 #
Boron	mg/L	<0.5 mg/L	0.058 – 0.070 #
Total Cadmium	mg/L	<0.01 mg/L	<0.0001 #
Total Calcium	mg/L	n/a	23.0 - 25.7 #
Chloride	mg/L	n/a	130 – 140 #
Total Chromium	mg/L	<0.1 mg/L	0.0002 #
Total Cobalt	mg/L	<0.05 mg/L	0.0003 - 0.0004 #
Total Copper	mg/L	<0.20 mg/L	0.0026 - 0.0044 #
Total cyanide	ug/L	n/a	<5 #
Total Iron	mg/L	<1.0 mg/L	0.022 – 0.038 #
Total Lead	mg/L	<0.20 mg/L	<0.0001 #

Parameter	Units	Performance requirements	Rouse Hill (10 <sup>th</sup> – 90 <sup>th</sup> percentile range)
Total Lithium	mg/L	<2.5 mg/L	0.004 – 0.007 #
Total Magnesium	mg/L	n/a	9.26 - 10.6 #
Total Manganese	mg/L	<2.0 mg/L	0.0285 - 0.0419 #
Mercury	mg/L	<0.002 mg/L	<0.00001 - 0.00001#
Molybdenum	mg/L	<0.010 mg/L	0.0006 - 0.0009 #
Total Nickel	mg/L	<0.200 mg/L	0.0017 - 0.0018 #
Total Potassium	mg/L	n/a	21.4 - 22 #
Selenium	ug/L	<0.02 mg/L	<0.0002 #
Total Sodium	mg/L	n/a	101 – 106 #
Total Strontium	mg/L	n/a	0.073 #
Sulphate	mg/L	n/a	84 – 93 #
Zinc	ug/L	<2.0 mg/L	0.023 – 0.024 #
<b>Organic Compounds</b>			
m-p-Xylenes	ug/L	n/a	<0.4 #
2-chlorophenol	ug/L	n/a	<10 #
Organochlorine Pesticides (Total)	ug/L	n/a	<0.2 #
Organophosphate Pesticides (Total)	ug/L	n/a	<2.5 #

Note: data presented covers the period 1 July 2023 – 30 June 2024

Performance requirements are based on the requirements set out in the Australian Guidelines for Water Recycling (2006) as well as the criteria required in the Rouse Hill Recycled Water Quality Management Plan as agreed with NSW Health

n/a = no published guideline

# Insufficient sample numbers to calculate the percentile range. Minimum and maximum values are shown.

**Table 2 Recycled Water Quality Health Characteristics at customer taps for Rouse Hill**

Parameters	Performance targets	1 April – 30 June 2024					1 July – 30 June 2024				
		Samples	Exceptions	Min	Mean	Max	Samples	Exceptions	Min	Mean	Max
<b>E. coli</b>	< 1 Org/100mL (50%ile)	18	0	<1	<1	<1	72	0	<1	<1	<1
<b>Total Coliforms (Colilert)</b>	< 25 Org/100mL (95%ile)	18	0	<1.0	<1.0	<1.0	72	0	<1.0	<1.0	<1.0
<b>Free Chlorine</b>	< 5 mL/L (Max)	18	0	0.76	1.67	2.80	72	0	<0.05	1.71	4.60
<b>pH</b>	6.5 - 8.5 pH Units (95%ile)	18	0	7.02	7.48	7.80	72	0	7.01	7.39	7.82
<b>Conductivity</b>	uS/cm	18	0	245.70	465.63	796.40	72	0	207.90	555.83	813.80

Note: Delivery system samples are taken from representative customer taps in the recycled water network