

## 48 Richmond STP

### 48.1 Activity and report details

Activity name	Richmond STP		
Activity address	Commercial Road, Richmond		
Permit number	9698	Date of issue	--
EPN	7371/1	Date of issue	7/09/2017
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	236 kL/day		
Key Influent Source	Residential		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 48-1: Richmond Sewage Treatment Plant



## 48.2 Monitoring and compliance summary

### 48.2.1 Flow data

Table 48-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	N/A	Effluent Reuse Scheme - Ag Irrigation
Coordinates	E 535792 N 5267404	N/A	E 535987 N 5267403
Method of Measurement	In line meter	N/A	In line meter
Date of last Calibration/Validation (if applicable).	28/06/2023	N/A	28/06/2023

Table 48-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 94212	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	197	18.0	0.00	5.35
August 2022	247	73.6	0.00	9.50
September 2022	255	50.4	0.00	9.50
October 2022	247	100.2	0.00	9.50
November 2022	213	64.6	0.00	6.58
December 2022	225	67.4	0.00	6.98
January 2023	209	11.2	0.00	6.47
February 2023	89	39.0	0.00	3.79
March 2023	84	21.6	0.00	4.13
April 2023	197	19.8	0.00	5.28
May 2023	194	18.8	0.00	5.16
June 2023	162	43.4	0.00	6.20
Annual 2022-23	194	528.0	0.00	78.43
% of Total Discharge	--	--	0.0%	100.0%

Note: Richmond STP does not have an outfall to a waterway, this is a full reuse site

2022-23 monthly flow data was submitted directly to the EPA.

### 48.2.2 Bypass events

There were no bypass events associated with the STP during the reporting period.

### 48.3 Discharge compliance with permit limits

There are no set limits for effluent discharge for this STP as there is no discharge to waterways. See reuse performance below.

### 48.4 Reuse Annual Reporting

The Rokeby, Rosny, Cambridge and Richmond STP's supply recycled water for irrigation purposes to the Clarence recycled water scheme. Currently twenty-two properties in the Coal Valley and Seven Mile Beach area are supplied recycled water. The scheme operates under the current 2019–2024 Environmental Management Plan.

Table 48-C: Reuse Compliance Summary

Parameter	BOD5	pH	E coli
Permit/EPN limit	mg/L	Units	MPN/100ml
Maximum	50	9.0	10000
90th percentile	--	--	--
50th Percentile	--	--	1000
Minimum	--	5.5	--
Samples analysed			
Number required	12	12	12
Number analysed	12	12	12
Statistical summary			
Max	71	10.6	292
90th percentile	50	10.0	213
50th percentile	39	8.5	10
Min	28	7.7	10
Summary of results			
% compliance with Maximum	92%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	100%
% compliance with pH range	--	58%	--

Table 48-D: Performance analysis (Discharge to reuse)

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
BOD	22/12/2022	This BOD non-compliance coincides with high algae levels suggesting algae to be the root cause.	No specific actions undertaken
pH	14/11/2022 22/12/2022 16/01/2023 1/03/2023	Algae is believed to be the primary reason for elevated pH. Algae is a source of oxygen and is fundamental to lagoon treatment. The	No specific actions undertaken

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
	20/04/2023	non-compliant result was in a warm month when algal blooms are more likely to occur.	

No other parameters have had exceedances in reporting period.

Annual soil sampling was completed at thirty-four sites on twenty properties across the Clarence RWS in late June and July 2022. The distribution of the sampling sites was based on the established sampling program and consideration of the irrigation application rates for the past irrigation and proposed coming irrigation season. One site (36 BEL) was removed as no recycled water irrigation occurred for two consecutive years. Annual compliance audits were completed at twenty-two properties in late June and July 2022.

Table 48-E: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status	<ul style="list-style-type: none"> <li>Recycled water irrigation outside IEMP requirements (withholding times and/or buffer zones):               <ul style="list-style-type: none"> <li>Llanherne Golf Club - immediate measures in place whilst pumping infrastructure upgrades are completed.</li> <li>Royal Hobart Golf Club - immediate measure in place to address risk</li> <li>Tasmania Golf Club - immediate measures in place with future infrastructure upgrades currently being considered to address non-compliance.</li> </ul> </li> <li>Riversdale: (Outstanding) Discharge of recycled water from pipeline flushing and filter back flushing to address water quality issues outside IEMP.</li> <li>Craigow: Recycled water location of and irrigation method outside IEMP and inadequate backflow prevention on a connected but unused line. Immediate measures in place to address irrigation requirements.</li> </ul>	<p>Average EC<sub>se</sub> and Cl levels fluctuate between years, ranging from non-saline to slightly saline. There is no long-term trend.</p> <p>Average EC<sub>se</sub> and Cl levels in 2022 are similar to the previous year. There is no long-term trend.</p> <p>ESP level dropped below 5% in 2021 (4.3%) for the first time since the monitoring program began and remains unchanged in 2022. No long-term trend identified.</p> <p>6% sites considered saline, 9% sites considered slightly saline and 85% sites within recommended range. 21% sites considered sodic, 9% sites considered borderline sodic and 71% sites within recommended range.</p> <p>No long-term trend in average S.</p> <p>Increasing long-term trend in average P and K since 2014, with P increasing at a slower rate than K. Average P and K levels remain similar to the previous year.</p> <p>Average P level is high, average K level is moderate, and average S level is low to moderate.</p>

Comments		
	<p>Adequate signage remains the main non-compliance across the scheme.</p> <p>Golf Club interim measures are currently in place. Any changes to pumping infrastructure are likely to require an update to the site IEMP to permanently address change in practices.</p> <p>Management of the outstanding matter at Riversdale has occurred during the reporting period with a reduction of frequency of practice and IEMP will be required to reflect practice and management requirements.</p> <p>A number of TasWater owned recycled water meters are inoperable, faulty or leaking. TasWater are currently replacing meters under a metering program. Meters have been procured and installation scheduled under the program.</p>	<p>Overall, soil health and fertility do not appear to be adversely impacted through recycled water irrigation.</p> <p>From a soil structure perspective, sodicity is the main soil concern, however this is not due to recycled water application, it is naturally occurring and can be best managed through appropriate land management practices.</p> <p>The elevated nutrient levels are attributed to fertiliser application with intensification of land use, not recycled water irrigation.</p> <p>Rainfall in the year prior to sampling was above average and higher than the previous year which likely resulted in the leaching of salts.</p> <p>Five yearly soil metals analysis was completed in 2020. Next sampling is due in 2025.</p>

Key: ECse = Electrical Conductivity at saturation extent, Cl = Chloride, ESP = Exchangeable sodium percentage, P = Phosphorous, K = Potassium, S = Sulphur

#### RWS groundwater site status: Amber

The Clarence RWS groundwater monitoring network currently consists of thirty-two monitoring bores across sixteen properties. Four bores (ID's CL-RRPGW9, CL-SHGW2, CL-TGCGW3 and CL-RHCGW4) are associated with recycled water storage dams. One round of sampling was completed in August and September 2022. Due to resource and timing constraints the second round of sampling was unable to be completed in 2023. Monitoring bore CL-UFGW8 has been removed from the monitoring program due to irreparable damage and bore ID CL-RPGW7 could not be sampled due to access constraints.

Groundwater chemistry appears to be generally consistent with previous years. Seven properties recorded at least one monitoring bore which exceeded a guideline criterion although unlikely attributed to recycled water irrigation. The significant issue identified in previous report was investigation with a piper plot analysis showing the irrigation water is chemically different from groundwater. Nine properties recorded no evidence or limited evidence recycled water impacting groundwater.

Biannual monitoring will continue at all monitoring bores during the 2023-24 monitoring program.

#### 48.5 Ambient monitoring program

Ambient monitoring is not required for this site as it does not discharge to waterways.

#### 48.6 Groundwater monitoring

No groundwater monitoring program associated with the STP.

#### 48.7 Inflow and infiltration (I&I)

The latest revision to the TasWater Inflow and Infiltration Management Plan includes details of the actions undertaken statewide to address I&I issues. Update to the actions completed will be provided in the next revision due September 2024.

A Multi Criteria Assessment was undertaken by TasWater in 2022 to prioritise I&I investigation and works state-wide. This catchment was ranked 16 out of 79 in priority (high).

#### 48.8 Sludge and Biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period, the most recent sludge profiling results, and upcoming annual desludging program.

This STP was fully compliant with the 2022-23 SSMP.

No stockpiling occurs at this site.

Table 48-F: Desludging status and comments

Desludging Status	Comments
High Priority	Desludging scheduled to occur in FY23-24, as per the current prioritization planning schedule.

#### 48.9 Non-compliance with other permit requirements

Table 48-G: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF2 Effluent quality limits for discharge to a reuse scheme	Reuse compliance limits	See section 48.4 Reuse Annual Reporting and Performance Analysis
OP1 Operational Procedures and Maintenance Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMs currently being developed. First version to be implemented in FY24.
WM2 Desludging required to 30 % of lagoon volume	Sludge survey results indicate sludge levels not below 30%	Desludging to be undertaken in FY24.

#### 48.10 Complaints and incident reporting

Table 48H: Incidents

Date	Category	Details	Mitigation Actions
15/08/2022	Odour	Strong sewer odour from the sewer ponds	Crews have inspected. Checked surrounding manholes and spoke to neighbouring residents. Checked pump station and investigated down at the settling ponds and no smell was detected there.
18/01/2023	Odour	Strong sewer odour from the sewer ponds	As above.
7/02/2023	Odour	Strong sewer odour from the sewer ponds	As above.
22/02/2023	Odour	Strong sewer odour from the sewer ponds	As above.
20/02/2023	Odour	Strong sewer odour from the sewer ponds	As above.

20/02/2023	Odour	Strong sewer odour from the sewer ponds	As above.
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Table 481: Incidents

Date	Category	Details	Mitigation Actions
20/12/2022	Spill	At approx. 16:30 19 December 2022, TasWater's Recycled Water Scheme Manager discovered a leak on the Clarence recycled water scheme, just prior to the end of the scheme pipeline in Richmond and adjacent to the Coal River	Repairs undertaken to the recycled water main. An estimated 56 ML of fully treated recycled water from the Clarence Reuse scheme (from effluent Rosny and Richmond STPs) was spilt to the surrounding area. E.coli and Enterococci levels very low when sample results received.

#### 48.11 Any other relevant information

For further information on the Richmond STP please contact TasWater on 13 6992

[www.taswater.com.au](http://www.taswater.com.au)