

## 53. Rosebery STP

### 53.1 Activity and report details

Activity name	Rosebery STP		
Activity address	Off Chester Ave, Rosebery		
Permit number	Permit Conditions Environmental - 8847	Date of issue	4/11/2014
EPN	--	Date of issue	--
Treatment level	Tertiary Treatment		
Authorised dry weather flows	242 kL/day		
Key influent source	Residential/Industrial		
Contact person	Kate Westgate (Manager Environmental Performance)		
Report author	Jake Crisp (Environmental Scientist)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

Figure 53-1: Rosebery STP



## 53.2 Monitoring and compliance summary

### 53.2.1 Flow data

**Table 53-A: Flow monitoring summary**

	Influent	Effluent	Reuse
Location name	Sewer Inlet	Stitt River	No reuse scheme
Coordinates	E 377795 N 5373664	E 379440 N 5373185	NA
Method of measurement	In line meter	In line meter	NA
Date of last calibration/validation (if applicable).	21/07/23	21/07/23	NA

**Table 53-B: Annual flow and rainfall data**

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 97093	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	2,238	308.6	34.10	--
August 2023	2,048	229.4	36.47	--
September 2023	1,827	169.4	32.92	--
October 2023	1,787	187.0	27.28	--
November 2023	1,544	57.4	24.45	--
December 2023	1,630	99.6	3.71	--
January 2024	1,849	163.0	18.30	--
February 2024	1,650	43.2	26.06	--
March 2024	1,614	84.6	26.87	--
April 2024	1,770	151.0	31.97	--
May 2024	1,542	89.6	33.66	--
June 2024	1,824	140.6	31.75	--
Annual 2023-24	1,783	1723.4	327.54	--
% of total discharge	--	--	100.0%	--

2023-24 monthly flow data was submitted directly to the EPA.

### 53.3 Bypass events

The STP was designed to bypass high flow events during wet weather. Due to the amount recorded, specific dates can be provided on request.

**Table 53-C: Bypass events summary for RSBST01-ON-1**

<b>Bypass ID:</b>	RSBST01-ON-1	
<b>Bypass description:</b>	Inlet Pump Station overflow to outfall	
<b>Treatment bypassed:</b>	Secondary Treatment, Filtration, Disinfection (UV)	
<b>Treatment level of impacted effluent:</b>	Screened	
<b>Flows exceeding:</b>	1.1 ML/d	
<b>Discharge location:</b>	Stitt River: 377875E, 5373831N (GDA94)	
<b>Total number of bypasses</b>	<b>Total volume (ML)</b>	<b>Mitigation Measures</b>
93	67.0	No specific actions undertaken

### 53.4 Discharge compliance with permit limits

**Table 53-D: Compliance summary**

Parameter	Ammonia	BOD5	Chlorine	Nitrogen	Oil and grease	pH	Phosphorous	E coli	Total suspended solids
Permit/EPN limit	mg/L	mg/L	mg/L	mg/L	mg/L	Units	mg/L	MPN/100mL	mg/L
Maximum	5.0	15	--	15.0	10.0	8.5	3.0	200	20.0
90th percentile	2.0	10	--	10.0	5.0	--	1.0	--	15.0
50th percentile	1.0	5	--	7.0	2.0	--	0.5	--	10.0
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	--	12	12	12	12	12	12
Number analysed	12	12	--	12	12	12	12	12	12
Statistical summary									
Maximum	0.6	5	--	10.2	1.0	7.6	2.3	279	30.0
90th percentile	0.4	5	--	8.8	1.0	7.5	1.7	107	12.4
50th percentile	0.1	5	--	6.2	1.0	7.2	1.1	10	4.0
Minimum	0.1	5	--	3.4	1.0	6.8	0.2	10	4.0
EPN limit compliance									
% compliance with maximum	100%	100%	--	100%	100%	--	100%	92%	92%
% compliance with 90th percentile	100%	100%	--	92%	100%	--	50%	--	92%
% compliance with 50th percentile	100%	100%	--	67%	100%	--	25%	--	83%
% compliance with pH range	--	--	--	--	--	100%	--	--	--

**Table 53-E: Mass loads to the environment**

Parameter	EPN limit	Frequency	2023-24 result
Nitrogen (kg)	--	Annual	2150.6
Phosphorous (kg)	--	Annual	324.1
Method	Time weighted/grab sample method		

**Table 53-F: Performance Analysis (Discharge to environment)**

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Phosphorus	12 months 90 <sup>th</sup> percentile limit exceedance	The non-compliant phosphorus is due to increased influent concentration and the PAC dosing being offline.	The PAC dosing location was changed from upstream of the filters to the bioreactor. Further PLC works are required to allow dosing in the bioreactor.
	12 months 50 <sup>th</sup> percentile limit exceedance		
E. coli	2/10/2023	The non-compliant E. coli is likely due to low UV intensity in those time periods.	No specific actions.
TSS	2/10/2023	The non-compliant TSS could be due to variations in influent loading, with no indication of process upsets.	No specific actions.

No other parameters had exceedances in the reporting period.

### 53.5 Reuse annual reporting

No Recycled Water Scheme associated with this STP.

### 53.6 Ambient monitoring program

**Table 53-G: Program details**

<b>Program</b>	Rosebery AMP
<b>Status</b>	Biannual seasonal (spring and autumn) ambient water quality and biological monitoring as described within PCE 8847 (2014).
<b>Update</b>	Biannual seasonal, spring (October) 2023 and autumn (April) 2024 ambient water quality monitoring completed during the reporting period. Biannual seasonal spring (November) 2023 and autumn (March) 2024 biological monitoring completed during the reporting period.
<b>Comments</b>	<p>An Ambient Monitoring Report (AMR) detailing the findings of the 2023–24 ambient water quality monitoring has been completed and submitted to the EPA for review. Key outcomes of the AMR are summarised below:</p> <ul style="list-style-type: none"> <li>• Ambient monitoring examined physical water quality parameters, nutrient and heavy metal concentrations at ten ambient monitoring sites in the Stitt River, Lake Pieman and Rosebery Creek.</li> <li>• Elevations in nitrogen species and total phosphorus in the receiving environment occurred both upstream and downstream of the outfall site.</li> <li>• Elevations in nutrients were observed at the site immediately 30m downstream of the outfall but were low within 100 m downstream of the outfall so that any elevations did not appear to persist in the environment. Nutrient elevations in the Stitt River did not result in an increase in algae (measured as chlorophyll a) or total suspended solids which showed no increase in the vicinity of the Rosebery STP effluent discharge.</li> <li>• Microbial contamination (<i>E. coli</i> and enterococci) in the receiving environment was generally low. <i>E. coli</i> concentrations were elevated both upstream and at the outfall site but not at sites in between, revealing an impact of the STP effluent discharge in the immediate receiving environment but suggesting there are other contaminant sources in the Stitt River.</li> <li>• Metal concentrations were very high upstream at site and in Rosebery Creek resulting in elevated metal concentrations at the Stitt River sites downstream of these two sampling sites. Elevation of metal contaminants in the Stitt River cannot be attributed to the Rosebery STP effluent discharges, but more likely to mine-related run off in the area.</li> <li>• The Rosebery STP effluent discharges into the Stitt River do not compromise the protected environmental values (PEVs) of the receiving environment</li> </ul> <p>A Biological Monitoring Report detailing the findings of the 2023–24 biological monitoring has been completed and submitted to the EPA for review. Key outcomes of the Biological Monitoring Report are summarised below:</p> <ul style="list-style-type: none"> <li>• Based on AUSRIVAS analyses, the macroinvertebrate fauna in the lower Stitt River was in consistently better condition in autumn 2024 compared to spring 2023. AUSRIVAS analyses placed all Stitt River sites in impairment band B ('significantly impaired') in spring 2023, while in autumn 2024 all three Stitt River sites were placed in impairment band A ('equivalent to reference'). Rosebery Creek was placed in impairment band D ('extremely impaired') in both seasons.</li> <li>• Trends in AUSRIVAS indicators and TRCI results indicate no consistent pattern in either season that could be related to the Rosebery STP effluent discharge.</li> <li>• There was an increase in total abundance of macroinvertebrates downstream of the Rosebery STP outfall in both seasons, that is consistent with moderate nutrient enrichment and increased in-stream productivity downstream of the STP outfall.</li> <li>• In both seasons, there was also a significant increase in chlorophyll-a density between the site immediately upstream and the site downstream of the Rosebery STP outfall, again suggesting a degree of increased in-stream productivity downstream of the STP outfall.</li> </ul>

### 53.7 Groundwater monitoring

No groundwater monitoring program associated with the STP.

### 53.8 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 2024 to prioritise I&I investigation and works state-wide. This catchment was ranked 24 out of 108 in priority. Actions in the period included:

- Relined 1,560m of sewer mains
- Desk top analysis including source of heavy metal contaminants to inform field investigations

### 53.9 Sludge and biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period.

This STP is fully compliant with the 2023–24 SSMP.

Biosolids are removed regularly from site, no stockpiling occurs. Biosolids from this STP exceed Grade B contamination levels for Zinc, Lead and Cadmium and are therefore classified as contaminated waste. Dulverton Landfill is the only suitable disposal location for this product.

**Table 53-H: Biosolids sludge classification summary**

	Number of samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant classification
Arsenic	5	38.8	29.8	25.1	41.0	B
Cadmium	5	66.8	47.3	31.9	72.9	UC
Chromium	5	31.9	29.4	27.8	32.7	A
Copper	5	1120.0	931.6	827.0	1208.5	B
Lead	5	1030.0	780.0	572.0	1108.3	UC
Mercury	5	1.1	0.5	0.3	1.2	B
Nickel	5	103.0	86.6	71.2	111.9	B
Zinc	5	19900.0	14580.0	10400.0	21731.8	UC

**Table 53-I: Volume and disposal destination**

Quantity (DST)	Average solids content	Stabilisation method	Stabilisation grade	Contamination grade	Biosolids classification	End use destination
11.2	10.94%	None	U/C	U/C	U/C	Dulverton Landfill

Notes: DST = Dry solid tonne. U/C =Unclassified

## 53.10 Non-compliance with other permit requirements

**Table 53-J: EPN non-compliances**

EPN condition	Description of non-conformance	Future actions to be taken
Q1 Regulatory Limits	ADF exceeds ADWF EPN limit of 242kl/d. Therefore, EPA requested submission of a hydraulic capacity review for this condition.	TasWater is currently deliberating on a suitable approach to address this ongoing non-compliance, which remains subject to further internal discussions.
EF2 Effluent quality limits for discharge to	Discharge compliance with permit limits	See section 53.4 Discharge Compliance with Permit Limits.

## 53.11 Complaints and incident reporting

No complaints received or incidents occurred in the 2023-24 reporting period.

## 53.12 Any other relevant information

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

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