

51 Riverside STP

51.1 Activity and report details

Activity name	Riverside STP		
Activity address	Benson Court, Riverside, Launceston		
Permit number	Licence to Operate – 3595	Date of issue	31/07/1989
EPN	8106/1	Date of issue	12/06/2013
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	2800 kL/day		
Key Influent Source	Residential/Industrial		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 51-1: Riverside Sewage Treatment Plant



51.2 Monitoring and compliance summary

51.2.1 Flow data

Table 51-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Plant Inlet	Tamar River	Riverside Golf Club
Coordinates	E 509511 N 5414834	E 509557 N 5414876	E 509170 N 5415140
Method of Measurement	In line meter	Level Sensor	In line meter
Date of last Calibration/Validation (if applicable).	26/09/2022	2/06/2022	28/04/2022

Table 51-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91237	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	1,426	27.6	44.21	--
August 2022	1,426	75.5	67.64	--
September 2022	1,769	49.2	53.08	--
October 2022	2,108	116.2	65.35	--
November 2022	1,692	59.8	50.77	--
December 2022	1,408	42.6	43.65	--
January 2023	1,319	41.2	40.89	--
February 2023	1,350	23.3	37.79	--
March 2023	1,533	72.0	47.51	--
April 2023	1,578	27.6	47.33	--
May 2023	1,509	23.5	46.79	--
June 2023	2,129	119.0	63.87	--
Annual 2022-23	1,604	677.5	608.88	--
% of Total Discharge	--	--	100.0%	--

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

51.2.2 Bypass events

Table 51-C: Bypass events summary

Bypass ID:	RIVST01-OP				
Bypass description:	Primary effluent overflow to outfall				
Treatment bypassed:	Secondary Treatment, Disinfection (Chlorine)				
Treatment level of impacted effluent:	Screened, Primary Treatment				
Flows exceeding:	100L/s (Approximate)				
Discharge location:	Tamar River: 509655E, 5414775N (GDA94)				
Start date / time	End date / time	Duration	Volume estimate	Cause	Response actions
04/08/22 03:20	04/08/22 05:02	1.7 h	8 kL	Rainfall Event	No specific actions undertaken
13/10/22 18:02	13/10/22 20:32	2.5 h	10 kL	Rainfall Event	No specific actions undertaken
22/10/22 13:32	23/10/22 15:18	25.8 h	6 kL	Rainfall Event	No specific actions undertaken
18/01/23 03:22	18/01/23 04:02	0.7 h	5 kL	Rainfall Event	No specific actions undertaken
31/05/23 15:56	01/06/23 10:07	18.2 h	6 kL	Rainfall Event	No specific actions undertaken
18/06/23 21:19	18/06/23 23:32	2.2 h	10 kL	Rainfall Event	No specific actions undertaken

51.3 Discharge compliance with permit limits

Table 51-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	--	40	1.5	55	10	8.5	12	1000	60
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
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									
Max	--	92	1.95	55.3	17.5	7.8	7.3	24196	47.0
90th percentile	--	87	1.71	48.2	12.6	7.5	6.9	7015	43.8
50th percentile	--	36	1.40	39.5	6.2	7.2	5.9	210	26.0
Min	--	30	0.12	29.5	3.6	4.6	3.8	10	13.0
EPN Limit Compliance									
% compliance with Maximum	--	58%	75%	92%	83%	--	100%	67%	100%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	92%	--	--	--

Table 51-E: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	25075.4
Phosphorous (kg)	--	Annual	3535.1
Method	Flow weighted/Composite method		

Table 51-F: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli	14/09/2022 9/11/2022	22/03/2023 10/05/2023	The chlorine contact tank is undersized to achieve necessary contact times at high flows. Limitations in flow paced chlorine dose control also results in poor performance when dose rates cannot be automatically adjusted to demand.
Chlorine	13/07/2022 18/01/2023 22/03/2023	Chlorine non-compliances typically correlate with high catchment flows due to wet weather events. Decreased residence time in the undersized chlorine contact tank results in poor consumption of chlorine.	Regular monitoring of chlorine residual to ensure optimal chlorine dose rate. Investigate options for an additional chlorine contact tank analyser to improve automatic dose control. Improvement actions to be explored as part of LSIP.
BOD	10/08/2022 14/09/2022 9/11/2022	12/04/2023 14/06/2023	Trickling filter effluent contains high particulate solids (biofilm accumulation on the media surface) which is difficult to control and capture in the humus tank. These solids contribute to elevated BOD.
O&G	10/08/2022 9/11/2022	Limited controls for Oil and Grease removal	Improvement actions to be considered as part of LSIP.

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Nitrogen	9/11/2022	Riverside STP is not designed to remove nitrogen. The non-compliance event correlates high effluent TSS and BOD, indicating the contribution of accumulated nitrogen compounds in trickling filter particulate solids.	
pH	22/03/2023	Highly likely the result of a measurement error or incorrect probe calibration, as operator testing on the same day indicated effluent pH of between 7.4 (morning) and 7.5 (afternoon).	No specific action

No other parameters had exceedances in the reporting period.

51.4 Reuse Annual Reporting

The Riverside STP supplies treated effluent for irrigation purposes to the Riverside recycled water scheme (RWS) at the Riverside Golf Club. No recycled water has been supplied to the Golf Club for two consecutive years. As such Riverside Golf Course was excluded from the annual soil sampling and compliance audit program for the 2022-23 reporting period. Historic non-compliances of inadequate buffer zones and signage will be reviewed with Golf Course prior to provision of recycled water in the coming period.

51.5 Ambient monitoring program

Table 51-H: Program details

Program Required	NA – No requirement for ambient monitoring in the reporting period
Status (e.g. commenced, not yet commenced)	NA
Update	NA
Comments	NA

51.6 Groundwater monitoring

No groundwater monitoring program associated with the STP.

51.7 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 36 out of 79 in priority.

51.8 Sludge and Biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period. This STP was fully compliant with the 2022-23 Sewage Sludge Management Plan.

Following a centrifuge failure in September 2022 digested biosolids are transferred to Ti Tree Bend STP. The sludge volume produced after September 2022 is captured at the end use Ti Tree Bend STP.

Table 51-I: Biosolids sludge classification

Month	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Arsenic	5	4.3	2.9	2.1	4.6	A
Cadmium	5	14.3	3.9	1.0	15.5	B

Month	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Chromium	5	36.8	29.2	23.5	40.9	A
Copper	5	332.0	281.0	224	369.8	B
Lead	5	35.3	31.0	26.7	37.4	A
Mercury	5	15.7	4.0	1.0	17.1	C*
Nickel	5	30.9	21.6	17.4	32.3	A
Zinc	5	1640.0	1356.0	1060.0	1782.3	B

* November 2022 result 15.7mg/kg - skewing the BACC – sludge was sent to Ti Tree Bend for further processing due to centrifuge failure.

Table 51-J: Volume and disposal destination

Quantity (DST)	Average solids content	Stabilisation method	Stabilisation Grade	Contamination Grade	Biosolids Classification	End use destination
10.80	12.5%	Anaerobic digestion	B	B	B	Dulverton Composting

Notes: DST = Dry solid tonne. Table represents volumes before November 2022.

51.9 Non-compliance with other permit requirements

Table 51-K: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF2 Effluent quality limits for discharge to the Tamar River	Discharge compliance with permit limits	See section 51.3 Discharge compliance with permit limits and Performance Analysis
EM3 Discharge Management Plan	Discharge Management Plan overdue.	Plan in development for DMP submission dates following on from agreed format between TasWater and EPA.
OP2 Operational Procedures Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMs currently being developed. First version to be implemented in FY24

51.10 Complaints and incident reporting

51-L: Complaints reporting

Date	Category	Details	Mitigation Actions
8/12/2022	Odour	Odour reported from STP	TasWater investigated and found no process upsets attributable to elevated odour. Therefore, no specific actions undertaken.

51-M: Incident reporting

Date	Category	Details	Mitigation Actions
18/11/2022	Trickling filter	The rotating influent distributor on top of the trickling filter media has failed and was therefore unable to spray influent onto the media of the filter.	A temporary bypass pump was installed so that the influent could still be passed through the media of the trickling filter. Communications sent to EPA.

23/11/2022	Spill to environment	The bypass pump setup for the trickling filter failed causing more than 50kL of sewage to be spilled to the environment (within STP boundary and to Tamar River)	Clean up included VAC trucks and a disinfection process. Bypass pump connection repaired to prevent any further spilling until trickling filter was repaired. Communications sent to EPA.
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51.11 Any other relevant information

Table 51-N: Projects or significant operational events that occurred in FY 2022-23

Project or significant operational event	Progress
Launceston Sewerage Improvement Program (LSIP)	Riverside is currently being investigated for rationalisation to Ti-Tree Bend within LSIP.

For further information on the Riverside STP please contact TasWater on 13 6992 or www.taswater.com.au.