

70. Triabunna STP

70.1 Activity and report details

Activity name	Triabunna STP		
Activity address	Freestone Point Rd, Triabunna		
Permit number	6236	Date of issue	27/08/2002
EPN	8554/1	Date of issue	29/05/2019
Treatment level	Secondary Treatment		
Authorised dry weather flows	253 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 2024		

Figure 70-1: Triabunna Sewage Treatment Plant



70.2 Monitoring and compliance summary

70.2.1 Flow data

Table 70-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Sewer Inlet	Vicary's Inlet	Rostrevor property
Coordinates	E 575926 N 5293809	E 575650 N 5293875	E 575945 N 5294098
Method of measurement	In Line meter	In Line meter	In Line meter (on Customer)
Date of last calibration/validation (if applicable).	01/03/2024	14/03/2022	14/03/2022

Table 70-B: Annual flow and rainfall data

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 92157	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	156	0.4	4.84	0.00
August 2023	139	0.2	4.30	0.00
September 2023	143	Not available	4.30	0.00
October 2023	151	32.4	4.67	0.00
November 2023	160	31.8	4.79	0.00
December 2023	170	30.4	5.28	0.00
January 2024	165	45.4	0.00	5.11
February 2024	139	1.4	0.00	4.03
March 2024	142	13.2	0.00	4.41
April 2024	151	27.0	0.00	4.52
May 2024	182	28.8	0.00	5.63
June 2024	149	12.4	0.00	4.46
Annual 2023-24	154	223.4	28.17	28.16
% of total discharge	--	--	50.0%	50.0%

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

70.3 Bypass events

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

70.4 Discharge compliance with permit limits

Table 70-C: 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	21.0	50	--	32.0	2.0	8.5	10.0	1500	50.0
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									
Maximum	29.5	77	--	38.7	1.0	8.7	13.1	1246	114.0
90th percentile	29.1	59	--	37.1	1.0	8.6	12.2	548	67.0
50th percentile	23.9	19	--	32.6	1.0	8.1	10.1	63	35.0
Minimum	1.7	5	--	11.2	1.0	7.7	6.9	10	6.5
EPN limit compliance									
% compliance with maximum	42%	83%	--	42%	100%	--	50%	100%	67%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	83%	--	--	--

Table 70-D: Mass loads to the environment

Parameter	EPN limit	Frequency	2023-24 result
Nitrogen (kg)	--	Annual	946.8
Phosphorous (kg)	--	Annual	236.8
Method	Time weighted/grab sample method		

Table 70-E: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	13/12/2023	Algae is believed to be the primary reason for elevated pH and TSS. Algae is a source of oxygen and is fundamental to lagoon treatment.	No specific actions
TSS	8/11/2023		
Ammonia	20/07/2023	Lagoons have lower Ammonia and Nitrogen removal rates at lower temperatures.	
	16/08/2023		
	13/09/2023		
Nitrogen	19/10/2023		
	8/11/2023		
	20/07/2023		
	16/08/2023		
Phosphorus	13/09/2023		
	19/10/2023		
	8/11/2023		

Note: Non-compliances only identified for the times STP discharged to water

No other parameters have had exceedances in reporting period.

70.5 Reuse annual reporting

The Triabunna STP supplies recycled water for irrigation purposes to the Triabunna recycled water scheme to the located at the Rostrevor property.

Table 70-F: 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			
Maximum	77	8.7	1246
90th percentile	59	8.6	548
50th percentile	19	8.1	63
Minimum	5	7.7	10
Summary of results			
% compliance with maximum	83%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	92%
% compliance with pH range	--	100%	--

Table 70-G: Performance analysis (discharge to reuse)

Reuse compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
BOD	8/02/2024 4/03/2024	Algae is believed to be the primary reason for occasional elevated pH and BOD. Algae is a source of oxygen and is fundamental to lagoon treatment.	No Specific Actions

Note: Non-compliances only identified for the times STP has discharged to reuse

Annual soil sampling was completed at two sites (Site 1 and Site 2) at the RWS in December 2023 and included the 5-yearly heavy metal soil sampling program. The field component of the annual compliance audit was completed in conjunction with the soil sampling with a follow up phone call in December. A summary of the findings of the programs is provided in the below table.

Table 70-H: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status	Compliant	<p>Soil salinity and sodicity increased at both sites but remained within historical range. Both sites remain non-saline. Both sites are now classified as sodic.</p> <p>Phosphorous levels remain excessive at Site 1 and now high at Site 2. Levels are comparable to historic data.</p> <p>Heavy metal concentrations were within the adopted maximum levels.</p>
Comments	Audit noted that irrigation can (not common) extend over a section of a drain near southern property boundary. IEMP does allow for irrigation in this area but states a 10m buffer distance. Although practice not in accordance with current IEMP it is considered a low environmental risk as irrigation only occurs when drainage dry.	<p>Recycled water quality data suggests a slight to moderate risk of soil permeability loss from recycled water irrigation.</p> <p>Elevated phosphorous levels are attributed to fertiliser application not recycled water irrigation.</p>

Reuse groundwater site status: Green

Triabunna RWS groundwater monitoring network consists of two monitoring bores, ID's TRBGW4 and TRBGW5. Bore ID TRBGW5 is in the southwest of the irrigation area and before the ephemeral creek that drains into Vicary's Rivulet estuary. Bore ID TRBGW4 is located southeast of the irrigation area and considered upgradient. One round of sampling was completed at bore ID TRBGW5 in February 2024. Due to timing and resourcing constraints, the scheduled second (annual) sampling was not completed. TasWater has put measures in place for the 2024-25 sampling program to address the scheduling and resourcing delays that impacted the reduced sampling frequency.

Bi-annual sampling of extended suite is scheduled to continue at TRBGW5, with annual sampling at the standard analytical suite scheduled to continue at bore ID TRBGW4 during the 2024-25 monitoring program.

70.6 Ambient monitoring program

Table 70-I: Program details

Program	Seasonal Discharge Program - Routine monitoring during discharge to water.
Status	Ambient monitoring completed during discharge events within the reporting period.
Update	Ongoing ambient monitoring during seasonal discharge events
Comments	<p>Ambient water quality monitoring occurred during discharges to the Vicarys Rivulet receiving environment during July 2023 to December 2023. Key findings from the ambient water quality data review were:</p> <ul style="list-style-type: none"> • The Default Guideline Value (DGV) for ammonia was not exceeded at either the upstream or downstream sample site. • Upstream total nitrogen was higher than downstream on every sampling occasion. • Nitrate levels were below the DGVs at the downstream site. Upstream results were consistently higher than downstream. • Total phosphorous levels were consistently higher at the upstream site.

- Upstream enterococci results were always higher than downstream. The downstream site was always below the DGV for primary contact recreation.

70.7 Groundwater monitoring

Site status: Amber – (2022–23 Report)

Triabunna STP's groundwater monitoring network consists of seven monitoring bores, ID's TRBGW1–3 and TRBGW5–7). Monitoring bore (ID TRBGW5) is located to the south and is also associated with the RWS. One round of sampling was completed across the network in February 2024. The scheduled second round of sampling (annual) was not completed. TasWater has put measures in place for the 2024–25 sampling program to address the scheduling and resourcing delays that impacted the reduced sampling frequency.

The groundwater monitoring report for the 2023–24 sampling event is due October 2024. The 2022–23 report identified potential groundwater impacts identified at bore ID's 1 and 2 through elevated groundwater levels and total phosphorous concentrations. Minion total phosphorous exceedances were observed in bore ID's TRGW5–7 with bore ID TRGW7 exceeding an adopted guideline criterion for nitrate. Bore ID TRGW6 recorded increasing trend in total nitrogen.

Bi-annual sampling at the extended analytical suite is scheduled to continue across the monitoring network during the 2024–25 groundwater monitoring program.

70.8 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 1 out of 110 in priority. Actions in the period included:

- Smoke Testing and Manhole Audit of the entire catchment
- Field investigation and defect identification commenced and will continue into FY2024–25

70.9 Sludge and biosolids

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

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

No stockpiling occurs at this site.

Table 70–J: Desludging status and comments

Desludging status	Comments
Low Priority	Desludging is outside of the current prioritisation planning schedule.

70.10 Non-compliance with other permit requirements

Table 70–K: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent quality limits for discharge to Vicarys Inlet	Discharge compliance with permit limits.	See section 70.4 Discharge compliance with permit limits and Performance Analysis.
EF3 Effluent quality limits for discharge to a reuse scheme	Discharge compliance with reuse permit limits.	See section 70.5 Reuse Annual Reporting and Performance Analysis.
M4 Flow meters	No recent flow meter validations.	Scheduled for rectification

70.11 Complaints and incident reporting

There were no incidents recorded during the 2023–2024 reporting period.

Table 70–N: Complaints reporting

Date	Category	Details	Mitigation actions
27/09/2024	Blue Green Algae	EPA received a complaint about BGA in Vicary's Rivulet	Further investigation did not identify high levels of BGA in the treatment lagoon. Unlikely to have been caused by effluent discharge.

70.12 Any other relevant information

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

www.taswater.com.au