8 Brighton STP

8.1 Activity and report details

Activity name	Brighton STP		
Activity address	William Street, Brighton & Cove Hill Rd, Honeywood Hobart		
Permit number	Licence to Operate - 3612	**Date of issue**	17/01/1989
EPN	7059/2	**Date of issue**	6/04/2020
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	650 kL/day		
Key Influent Source	Residential/Industrial 1 x Category 3 Customer		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 8-1: Brighton Sewage Treatment Plant

8.2 Monitoring and compliance summary

8.2.1 Flow data

Table 8-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Andrew St PS, Inlet	Green Point STP	Brighton Reuse Scheme
Coordinates	E 521646 N 5272175	E 519482 N 5267582	E 521496 N 5270188
Method of Measurement	In Line	Influent less reuse	Estimate based on influent
Date of last Calibration/Validation (if applicable).	02/04/2023	NA	NA

Table 8-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 94233	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	619	19.0	0.00	19.19
August 2022	834	83.6	0.00	25.84
September 2022	727	50.6	0.00	21.81
October 2022	820	76.0	0.00	25.39
November 2022	770	48.6	0.00	23.06
December 2022	760	65.8	0.00	23.55
January 2023	627	5.4	0.00	19.43
February 2023	646	32.6	0.00	18.08
March 2023	662	26.6	0.00	20.51
April 2023	647	23.8	0.00	19.42
May 2023	651	17.4	0.00	20.18
June 2023	695	43.6	0.00	20.85
Annual 2022-23	705	493.0	0.00	257.32
% of Total Discharge	--	--	0.0%	100.0%

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

8.2.2 Bypass events

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

8.3 Discharge compliance with permit limits

This STP does not discharge directly to the environment, when effluent cannot be directed to reuse it is sent through Green Point STP.

8.4 Reuse Annual Reporting

The Green Point and Brighton STP's supply recycled water for irrigation purposes to twelve properties across the Bridgwater area. One property (Rosewood subdivision) commenced recycle water irrigation during 2021-22.

Table 8-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	194	8.2	24196
90th percentile	145	8.1	4511
50th percentile	87	7.5	1870
Min	24	7.1	10
Summary of results			
% compliance with Maximum	17%	--	92%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	50%
% compliance with pH range	--	100%	--

Table 8-D: Performance analysis (Discharge to reuse)

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli	21/11/2022	Modelling suggests disinfection capacity is currently marginal. At peak flows the plant can have	No specific actions undertaken in reporting period.

Reuse Compliance Parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
	12-month 50th percentile limit exceeded		issues with hydraulic retention time, which can result in non/compliant E. coli.	Investigate relocation of the inlet to the primary lagoon to prevent short circuiting. Brighton STP will be included in the Hobart (Northern) Strategy - due to be undertaken during the next PSP period.
BOD	14/07/2022 10/08/2022 01/09/2022 17/10/2022 21/11/2022	07/12/2022 16/01/2023 01/03/2023 20/04/2023 25/05/2023	The plant is currently overloaded which results in elevated BOD. The BOD levels are further escalated due to presence of algae.	No specific actions undertaken in reporting period. Brighton STP will be included in the Hobart (Northern) Strategy - due to be undertaken during the next PSP period.

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

Annual soil sampling was completed at nineteen sites on eleven properties across the Brighton RWS in late June, July and August 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. As such, two new sampling sites (BRI CRE 05 and BRI KEL 01) were included into the program, with four sites (BRI BER 01, BRI CRE 04, BRI GLE 01 and BRI THR 02) were removed. Annual compliance audits were completed at twelve properties in July and August 2022. Mostly completed by phone, field observations were conducted in conjunction with the soil sampling. Annual sampling of the nine privately owned customer recycled water storage dams supplied by the scheme was completed in October 2022. This sampling was completed as part of the annual sampling program implemented in 2016, on direction from the EPA. A summary of the findings of the programs is provided in the below table.

Table 8-E: Annual recycled water scheme compliance audit and soil monitoring report and dam sampling summary

Program	Compliance audit	Soil monitoring	Dam sampling
Compliance status	Two properties fully compliant. Main non-compliance: inadequate signage on property entrance, boundaries and taps. Major non-compliances: Strathallan: Inadequate fencing around storages (ongoing non-compliance issue). Livestock located within a recycled water storage dam boundary. Cremorne: No IEMP	Average ECse and Cl levels fluctuate between years, ranging from non-saline to low-level saline. No long-term trend. Levels in 2022 are slightly higher than the previous year. Average ESP levels fluctuate between years, ranging from non-sodic to borderline sodic. No long-term trend. ESP level remain similar to 2020 and 2021. Average P level is excessive, average K is high and average S level is moderate. Increasing long-term trend in average P and K. P increasing at a slower rate than K. Average P and K levels remain slightly below 2019 peak. No long-term trend in average S.	Recycled water quality in all customer dams (at 12 October 2022) was compliant with class B recycled water standards. All other water quality indicators generally satisfactory. Soil sodicity indicators were acceptable and suited to irrigation. Nutrient concentrations typical of recycled water.
Comments	Aspects of original Site Management Plans are	Overall soil health and fertility do not appear to be adversely	Throughout the reporting period additional sampling was completed

	outdated for numerous properties. TasWater will be looking to review the current Brighton EMP during the 2023-24 reporting period and work with customers to address updating customer IEMPs following EMP review. Strathallan have been advised of fencing requirements of storages.	impacted through recycled water irrigation. Review of recycled water quality indicates a very slight risk of soil permeability loss resulting from application of recycled water. Therefore, considered highly unlikely future sodicity issues will develop due to application of recycled water schemes. Long-term average P and K trend levels have stabilised and trend correlates with sources other than recycled water application. Average levels are strongly influenced by excessive levels at a few sites where known nutrient inputs are significant.	at customer dams as part of the customer risk management and notification framework for elevated exceedances of *E.Coli* from the Scheme. The October 2022 dam review highlighted this framework continues to be an effective means of managing risk to customers associated with recycled water quality.

Key: K= Potassium; P=Phosphorous; S = Sulphur; ECse = Elecrtical conductivity of the saturated extract; ESP =Exchangeable sodium percentage.

The Brighton RWS groundwater monitoring network consists of ten monitoring bores located across eight properties. Five bores (BR-THGW1, BR-HWGW3, BR-STGW1, BR-STGW3 and BR-RIGW1) are associated with recycle water storage dams. Biannual sampling was completed at nine bores in August 2022. Due to time and resource constraints three bores (higher risk bores) were sampled during the annual sampling round in April 2023.

Three properties identified moderate issues that are considered unlikely to be linked to recycled water use. No evidence of impact of groundwater quality found at three properties. One property identified a significant issue (elevated total nitrogen concentrations above guideline criteria) although slight decrease in levels over last three groundwater monitoring events. All other properties recorded no or minor issues.

Two bores (BR-ROGW3 and BR-HWGW3) require repair and maintenance work or replacement. TasWater will review it's maintenance requirements across the state in 2023-24.

Biannual sampling will continue at all bores during the 2023-24 groundwater monitoring program. Three bores (bore ID's BRGW-Manton, BR-GQGW1 and BR-RIGW1) will be sampled at the extended analytical suite to investigate identified trends. Private recycled water storage associated with BR-GQGW1) will be sampled so that chemical characterisation can be completed. As per previous report total alkalinity will be included in the standard sampling suite across the groundwater sampling program.

8.5 Ambient monitoring program

Table 8-F: Program details

Program	NA – No requirement for ambient monitoring as no direct discharge to water.

8.6 Groundwater monitoring

Site status: Amber – Likely STP impacts.

Brighton STP groundwater monitoring network consists of three bores. Bore ID's BRGW4-6 are located at the Primary Lagoon on William Street, whilst Bore ID's BRGW1-3 are located at the Brighton Lagoons at Cove Hill Road. Annual sampling was completed at two bores (BRGW4 and 5) in September 2022, the STP lagoons and adjacent unnamed creek. Bore ID BRGW6 was unable to be

sampled due to a blockage. Biannual sampling was unable to be completed at the site due to timing and resourcing constraints.

Several nutrient parameters remain elevated above guideline levels (at BRGW4; total phosphorous, and BRGW5; total nitrogen and nitrate). Overall elevated nutrients at BRGW4 and 5 continue to present indications of leakage from the primary lagoon, with total nitrate the main concern. Water quality monitoring at the lagoons and receiving water of the unnamed creek found no material difference in analyte concentrations observed indicating little impact to the creek at present.

Biannual sampling at the extended analytical suite will continue at all monitoring bores at the extended analytical suite. 2022-23 report outstanding recommendation to investigate additional groundwater monitoring bores required for the network and investigate a review into groundwater flow direction will commence in 2023-24.

8.7 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 78 out of 79 in priority.

8.8 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.

Desludging was postponed to 2024 to allow further investigation of infrastructure changes to facilitate desludging. The STP was fully compliant with all other aspects of the 2022-23 SSMP.

No stockpiling occurs at this site.

Table 8-G: Desludging status and comments

Desludging Status	Comments
High Priority	Desludging scheduled to occur in 2024 as per the current prioritisation planning schedule.

8.9 Non-compliance with other permit requirements

Table 8-H: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF2 Effluent quality limits for discharge to the Brighton Reuse Scheme	Reuse effluent quality limits	See section 8.4 Reuse Annual Reporting and Performance Analysis
OP2 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.

8.10 Complaints and incident reporting

Table 8-I: Incident Reporting

Date	Category	Details	Mitigation Actions
9/03/2023	Spill	Due to a TasNetworks Power outage a spill occurred from the lagoon at 8pm till 9pm. Approx 10-15kL may have gone to the Jordan River but exact volume is unknown.	Pumps reset so lagoon pumps to Tree Plantation (reuse area).

No complaints during the reporting period.

8.11 Any other relevant information

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

www.taswater.com.au