1 Beaconsfield STP

1.1 Activity and report details

Activity name	Beaconsfield STP		
Activity address	Jetty Road, Beaconsfield		
Permit number	Licence to Operate - 3597	**Date of issue**	1/07/1992
EPN	7934/3	**Date of issue**	2/10/2012
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	400 kL/day		
Key Influent Source	Residential/Industrial 1 x Category 3 Customers		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 1-1: Beaconsfield Sewage Treatment Plant

1.2 Monitoring and compliance summary

1.2.1 Flow data

Table 1-A Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	Brandy Creek to Tamar Estuary	Tree Farm (TW owned)
Coordinates – Discharge Location	E 484968 N 5439960	E 485040 N 5440160	E 485916 N 5439696
Method of Measurement	In line meter	In line meter	In line meter
Date of last Calibration/Validation (if applicable).	21/07/22	NA	28/04/22

Table 1-B Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91001	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	402	39.9	0.00	12.45
August 2022	626	123.5	0.00	19.30
September 2022	291	49.9	0.00	9.14
October 2022	491	182.7	0.00	16.99
November 2022	471	96.3	0.00	16.57
December 2022	211	11.6	0.00	3.58
January 2023	232	57.4	0.00	4.57
February 2023	180	38.4	0.00	3.67
March 2023	197	75.4	0.00	7.12
April 2023	226	67.0	0.00	5.53
May 2023	290	83.1	0.00	8.05
June 2023	409	116.9	0.00	12.73
Annual 2022-23	337	942.1	0.00	119.70
% of Total Discharge	--	--	0.0%	100.0%

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

1.2.2 Bypass events

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

1.3 Discharge compliance with permit limits

Table 1-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	30	30	--	30	10	8.5	10	500	50
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	24.0	131	--	35.5	3.6	9.8	6.7	24196	140.0
90th percentile	15.2	90	--	29.8	2.5	9.8	6.6	748	130.5
50th percentile	9.7	51	--	19.3	1.4	9.0	3.7	220	63.0
Min	0.1	8	--	10.7	1.0	7.3	2.6	20	5.5
EPN Limit Compliance									
% compliance with Maximum	100%	33%	--	83%	100%	--	100%	67%	42%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	42%	--	--	--

Note: Percentages reflective of complete data set for the year

Table 1-D Mass loads

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	0.0
Phosphorous (kg)	--	Annual	0.0
Method	Time weighted/Grab sample method		

No parameters have had exceedances in the FY period when discharging to the environment.

1.4 Reuse Annual Reporting

The Beaconsfield sewage treatment plant discharges to a dam which supplies recycled water to irrigate a 30 ha Eucalyptus globulus irrigation scheme. This scheme continues to operate in accordance with design.

Table 1-E Reuse Compliance Summary

Parameter	BOD5	pH	E coli
Permit/EPN limit	mg/L	Units	MPN/100mL
Maximum	80	9.0	--
90th percentile	--	--	--
50th Percentile	--	--	10000
Minimum	--	6.0	--
Samples analysed			
Number required	12	12	12
Number analysed	12	12	12
Statistical summary			
Max	52	10.6	2187
90th percentile	38	9.5	992
50th percentile	20	7.8	20
Min	5	7.4	10
Summary of results			
% compliance with Maximum	100%	--	--
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	100%
% compliance with pH range	--	83%	--

Table 1-F Performance Analysis (Discharge to reuse)

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	13/02/2023 18/01/2023	Algae is believed to be the primary reason for elevated pH due to CO_2 uptake during photosynthesis. Most of the non-compliance results were in warmer months when algal blooms occur. Algae is a source of oxygen and is fundamental to lagoon treatment.	No specific actions undertaken in reporting period.

Annual soil sampling was completed in April 2023 at five sites (Beaconsfield 1 – Beaconsfield 5). The annual compliance audit was completed in conjunction with the soil sampling. A summary of the findings of the programs are provided in the table below.

Table 1-G Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status	Minor non compliance: No signage on smaller access gates at southern end of Whites Road. Additional signage required on boundary fence near neighbouring residences.	Salinity and sodicity results are within the recommended ranges and nutrient levels are low. Exception is site Beaconsfield 1 which is classed as borderline sodic, but remain stable with no clear upwards trend.
Comments	Following the 2021-22 audit additional signage was provided to and installed by TasWater's Service Delivery. TasWater experienced ongoing issues with the removal of signage from the site. The irrigation area is well fenced with access gates locked at all times. A review of signage (placement and security) will be completed during 2023-24.	No issues associated with soil salinity, sodicity or nutrient accumulation identified.

RWS groundwater status: Amber – Minor issue located at 1 bore

The recycled water groundwater monitoring network consists of five bores; ID numbers BFGW1-4 and BFGW6 which is located downstream of the recycled water storage dam.

Annual groundwater sampling at all five bores occurred in June 2023. Bore ID numbers BFGW1-3 show no evidence of impact. Bore ID BFGW6 recorded a decrease in total phosphorous levels and is now just above the long-term guideline irrigation limit. Limited analysis at this bore means a robust data set is not available. Groundwater chemistry (low total N concentrations) suggests recycled water storage not impacting on groundwater. Bore ID BFGW4 also recorded a decrease in total phosphorous levels and remains above irrigation guideline limit.

Annual sampling at the standard analytical suite will continue at all five bores in 2023-24 groundwater monitoring program.

1.5 Ambient monitoring program

Table 1-H Program Details

Program	Seasonal Discharge Program - Routine monitoring during discharge to water.
Status	No ambient monitoring conducted.
Update	No discharge occurred during reporting period.
Comments	No ambient monitoring conducted during the monitoring reporting period as no discharges to receiving environment occurred.

1.6 Groundwater monitoring

STP Site Status: Green - No sign of STP Impact (2022 report)

Beaconsfield STP groundwater monitoring network consists of three groundwater bores (bore numbers: BFGW5, BFGW8 and BFGW9). Annual sampling was completed at bore ID BFGW5 and BFGW 8 and 9 in June and July 2023 respectively. Due to time and resourcing constraints biannual sampling was unable to be completed at bore ID's BFGW8 and 9.

Following delays, the 2022-23 report will be finalised and available by October 2023. Any actions to address identified potential issues will be determined following the hydrogeological review.

Sampling at the standard analytical suite will continue at all sites during the 2023-24 monitoring program.

1.7 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 2020 to prioritise I&I investigation and works state-wide. This catchment was ranked 69 out of 79 in priority.

1.8 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 1-I Desludging status and comments

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

1.9 Non-compliance with other permit requirements

Table 1-K EPN Non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF2 Effluent quality limits for discharge to environment	Environment compliance limits	See Table 1G
EF3 Effluent quality limits for discharge to a reuse scheme	Reuse compliance limits	See Table 1F
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.

1.10 Complaints and incident reporting

No complaints or incidents reported during the FY2022-23 reporting period.

1.11 Any other relevant information

None.

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

www.taswater.com.au