

68. Swansea STP

68.1 Activity and report details

Activity name	Swansea STP		
Activity address	Maria St, Swansea		
Permit number	6234	Date of issue	04/09/2002
EPN	8552/1	Date of issue	29/05/2019
Treatment level	Secondary Treatment		
Authorised dry weather flows	430 kL/day		
Key influent source	Residential		
Contact person	Kate Westgate		
Report author	Luisa Romero (Environmental Scientist)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

Figure 68–1: Swansea Sewage Treatment Plant



68.2 Monitoring and compliance summary

68.2.1 Flow data

Table 68-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Sewer Inlet	Saltwater Creek	Effluent Reuse Scheme - Ag Irrigation
Coordinates	E 586935 N 5335446	E 587392 N 5335439	E 586857 N 5335787
Method of measurement	In line meter	Influent less Reuse	In line meter (on Customer)
Date of last calibration/validation (if applicable).	01/02/2024	NA – meter to be installed	27/02/2023

Table 68-B: Annual flow and rainfall data

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 92148	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	300	5.8	2.33	6.98
August 2023	265	25.4	2.05	6.16
September 2023	271	13.2	2.03	6.10
October 2023	295	35.2	2.29	6.86
November 2023	299	28.9	2.24	6.72
December 2023	327	58.2	2.54	7.61
January 2024	371	31.0	2.88	8.63
February 2024	138	8.6	1.00	3.01
March 2024	287	13.8	2.22	6.66
April 2024	286	50.0	2.14	6.43
May 2024	260	42.2	2.02	6.05
June 2024	231	24.8	5.08	1.85
Annual 2023-24	279	337.1	28.81	73.06
% of total discharge	--	--	28.3%	71.7%

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

68.3 Bypass events

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

68.4 Discharge compliance with permit limits

Table 68-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	16.0	50	--	33.0	3.0	8.5	8.0	2000	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	13.3	193	--	115.9	1.0	9.6	12.9	4359	1226.0
90th percentile	12.9	31	--	19.7	1.0	9.4	5.8	756	88.5
50th percentile	8.3	10	--	15.4	1.0	8.2	4.7	239	6.6
Minimum	0.1	5	--	6.6	1.0	7.5	3.0	10	4.0
EPN limit compliance									
% compliance with maximum	100%	92%	--	92%	100%	--	92%	92%	83%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	83%	--	--	--

Table 68-D: Mass loads to the environment

Parameter	EPN limit	Frequency	2023-24 result
Nitrogen (kg)	--	Annual	626.4
Phosphorous (kg)	--	Annual	150.1
Method	Time weighted/grab sample method		

Table 68-E: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	14/03/2024 8/04/2024	Algae is believed to be the primary reason for elevated pH, TSS and BOD. Algae is a source of oxygen and is fundamental to lagoon treatment. Most of the non-compliant results were in a warmer month when algal blooms occur.	No specific actions
TSS	14/03/2024		
E. coli	8/04/2024	High levels of Algae prevent the natural UV penetrating into the effluent, resulting in a decrease in the disinfection effectiveness.	No specific actions

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

No other parameters had exceedances in the reporting period.

68.5 Reuse annual reporting

The Swansea STP supplies treated effluent for irrigation purposes to the Swansea recycled water scheme located at Redbanks property. During the 2023–24 reporting period recycled water was not applied to the Swansea recycled water irrigation area, only held within the reuse dam. The annual compliance audit was postponed and no soil monitoring was completed.

A review of the current scheme and irrigation design is scheduled for 2024–25 reporting period.

Table 68-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	193	9.6	4359
90th percentile	31	9.4	756
50th percentile	10	8.2	239
Minimum	5	7.5	10
Summary of results			
% compliance with maximum	92%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	92%
% compliance with pH range	--	83%	--

Table 68-G: Performance analysis (discharge to reuse)

Reuse compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
BOD	6/05/2024	Algae is believed to be the primary reason for elevated BOD. Most non-compliant results were in warmer months when algal blooms occur. Algae is a source of oxygen and is fundamental to lagoon treatment.	No specific actions.
pH	14/03/2024 8/04/2024		

No other had exceedances in the FY period.

Reuse groundwater status: Amber – (2022–23 Report)

Swansea recycled water groundwater monitoring network consists of two bores (ID's SWGW2 and 3) and are located to the north and north-east of the irrigation area respectively. Annual sampling was completed at both bores in June 2024.

The groundwater monitoring report for the 2023–24 sampling event is due October 2024. The 2022–23 report found, elevated total nitrogen and nitrate concentrations above the adopted guideline criteria identified at bore ID SWGW2. Elevated total Nitrogen concentrations identified at bore ID SWGW3 but trend generally decreasing.

Annual sampling at the standard analytical suite is scheduled to continue at all monitoring bores during the 2024–25 groundwater monitoring program.

68.6 Ambient monitoring program

Table 68-H: Program details

Program	Seasonal Discharge Program
Status	Ambient monitoring completed during May–December
Update	Ongoing ambient water quality monitoring
Comments	<p>Discharge to waters occurred in every month, however at a much-reduced volume to the previous reporting period (28% rather than 100%). Ambient monitoring was undertaken downstream in Duck Park (no suitable upstream monitoring location) in July – December and again in May and June. It should be noted that the Duck Park sample point is a significant distance from the effluent discharge but has been selected as it is the closest location where public recreation can occur. The effluent discharges into Saltwater Creek and runs through private property receiving run-off before entering Duck Park so it is difficult to differentiate between effluent or other impacts.</p> <p>The results from Duck Park show:</p> <ul style="list-style-type: none"> • Enterococci levels at the downstream monitoring location exceeded the recreational guideline values on all but two sampling occasions. • Ammonia results were less than laboratory detection or very low. • Total Nitrogen exceeded the DGVs during July and August 2023 and May and June 2024. • The Nitrate DGV was exceeded during July and August however this did not correlate with high levels in the effluent. • Total Phosphorus results were all above the DGV

68.7 Groundwater monitoring

Site status: Green – (2022–23 Report)

Swansea STP groundwater monitoring network consists of one monitoring bore, ID number SWGW1, and is located directly east of the STP. Annual sampling was completed in June 2024.

Following delays, the 2023–24 report will be finalised and available in October 2024. Any actions to address identified potential issues will be determined following the hydrogeological review. TasWater has put measures in place for the 2024–25 sampling program to address scheduling and resourcing delays experienced in recent years. Previous monitoring reported total phosphorous concentrations increasing but below

guideline values. Overall, the risk to groundwater uses and the receiving environment are considered low based on the results of bore SWGW1.

Annual sampling at the standard analytical suite will continue during the 2024–25 groundwater monitoring program.

68.8 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 28 out of 108 in priority (high).

Works this FY:

- Targeted field investigation completed
- Defect inspections completed

68.9 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 68-I: Desludging status and comments

Desludging status	Commentary
Medium Priority	Desludging of lagoon 1 scheduled to occur in 2025–26, as per the current prioritisation planning schedule.

68.10 Non-compliance with other permit requirements

Table 68-J: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent quality limits for discharge to Saltwater Creek	Discharge compliance with permit limits	See section 68.3 Discharge compliance with permit limits and Performance Analysis

68.11 Complaints and incident reporting

No complaints or incidents reported during FY2023–24 reporting period.

68.12 Any other relevant information

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

www.taswater.com.au