

## 42. Port Sorell STP

### 42.1 Activity and report details

Activity name	Port Sorell STP		
Activity address	Larooma Rd, Hawley Beach		
Permit number	Licence to Operate - 3661	Date of issue	30/11/1988
EPN	10200/1	Date of issue	26/11/2020
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	961 kL/day		
Key Influent Source	Residential/Industrial No major trade waste or tankered waste sources		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 0-1: Port Sorell STP



## 42.2 Monitoring and compliance summary

### 42.2.1 Flow data

Table O-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	Bass Strait	No reuse scheme
Coordinates	E 461330 N 5446691	E 461467 N 5447274	NA
Method of Measurement	In line meter	NA	NA
Date of last Calibration/Validation (if applicable).	2/08/2023	NA	NA

Table O-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91126	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	1,117	26.0	34.63	--
August 2022	1,117	95.9	40.37	--
September 2022	1,154	46.4	32.83	--
October 2022	1,117	147.0	40.37	--
November 2022	1,451	79.8	43.52	--
December 2022	1,135	10.8	35.17	--
January 2023	1,088	22.6	33.74	--
February 2023	1,361	24.0	38.10	--
March 2023	979	54.7	30.35	--
April 2023	1,377	44.9	41.30	--
May 2023	953	21.7	29.55	--
June 2023	1,105	116.8	33.15	--
Annual 2022-23	1,160	690.6	433.08	--
% of Total Discharge	--	--	100.0%	--

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

### 42.2.2 Bypass events

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

### 42.3 Discharge compliance with permit limits

Table O-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	25	40	1.0*	40	10	8.5	8	1000	60
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	0	12	12	12	12	12	12
Number analysed	12	12	0	12	12	12	12	12	12
Statistical summary									
Max	39.7	212	--	62.9	3.2	8.9	11.5	24196	162.0
90th percentile	38.7	164	--	52.4	2.9	8.6	9.9	24196	122.6
50th percentile	26.1	54	--	38.7	1.1	7.9	6.3	17697	52.5
Min	11.2	13	--	20.4	1.0	7.2	3.9	1223	4.8
EPN Limit Compliance									
% compliance with Maximum	42%	25%	--	50%	100%	--	75%	0%	58%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	75%	--	--	--

\*Chlorine limit effective from 1 February 2023. Note that chlorine is not used at this STP.

Table 0-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	16924.9
Phosphorous (kg)	--	Annual	2950.9
Method	Time weighted/Grab sample method		

Table 0-E: Performance Analysis (Discharge to environment)

Effluent Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli*	15/02/2023 15/03/2023 12/04/2023 21/06/2023	The plant relies on natural light and the polishing pond to achieve disinfection and does not have UV or chlorine disinfection installed. Polishing lagoon is inadequately sized for satisfactory disinfection.	TasWater is developing a strategic business case for Pardoe Sewerage Improvement Strategy (PARSIP) which involves options assessment for Port Sorell STP. Rationalisation of the plant to Pardoe STP and a major plant upgrade with discharge to reuse or environment are the options considered.
BOD	3/08/2022 7/09/2022 16/11/2022 7/12/2022 18/01/2023	An issue with plant control philosophy resulted in incomplete treatment of influent resulting in high BOD, suspended solids, ammonia, and nitrogen.	A project is currently underway to improve the control philosophy of the plant and improve monitoring of control parameters.
TSS	15/02/2023 15/03/2023 17/05/2023		
Ammonia	3/08/2022 15/03/2023 12/04/2023		
	6/07/2022 3/08/2022 5/10/2022 18/01/2023		
Nitrogen	3/08/2022 15/02/2023		

Effluent Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
	5/10/2022 18/01/2023	15/03/2023 12/04/2023	
Phosphorus	18/01/2023 15/03/2023 17/05/2023	The STP is not equipped to provide sufficient nutrient removal of Phosphorus.	No specific actions, awaiting PARSIP assessment.
pH	7/09/2022 15/02/2023 17/05/2023	There is no pH correction within the catchment for the Port Sorell STP. Non-compliance is likely due to algae within the polishing lagoon.	No specific actions.

\*E.coli limits effective from 1 February 2023, exceedances only reported after this date.

No other parameters had exceedances in the reporting period.

#### 42.4 Reuse Annual Reporting

No Recycled Water Scheme associated with this STP.

#### 42.5 Ambient monitoring program

Table 0-F: Program details

<b>Program</b>	Port Sorell AMP.
<b>Status</b>	Ongoing annual monthly (recreational period) ambient water quality and biennial biological monitoring
<b>Update</b>	Ambient water quality monitoring and biological monitoring was undertaken from November 2022 through to April 2023.
<b>Comments</b>	<p>A six-month ambient monitoring program (AMP) was undertaken from November 2022 to April 2023 to establish the impacts of the effluent discharge on the Bass Strait receiving environment over the summer recreational period. Summarised findings of the AMP were:</p> <ul style="list-style-type: none"> <li>• Effluent discharges had minimal impact on field-measured parameters (temperature, salinity, dissolved oxygen).</li> <li>• Nutrients (including ammonia, nitrate and dissolved reactive phosphorus) were elevated in the immediate vicinity of the STP outfall, and total phosphorus was elevated up to 50 m from the outfall.</li> <li>• The eutrophication risk of elevated nutrients and algal growth due to discharge from the outfall dissipates rapidly into the receiving environment.</li> <li>• Enterococci concentrations around the outfall exceeded the EPA guidelines for primary contact on several occasions during the monitoring program and exceeded the secondary contact limit at the outfall and 50 m NW of the outfall on two occasions.</li> <li>• Effluent discharges had minimal effect on metal contaminants in the ambient receiving environment, except where zinc was elevated in the immediate vicinity of the outfall.</li> <li>• The benthic habitat in the vicinity of the outfall consists of mobile, reworked coarse sand which supports low infauna diversity, dominated by deposit feeders (polychaete worms).</li> <li>• Intertidal assemblages were dominated by <i>Galeolaria</i> tube worms and <i>Xenostrobus</i> mussels with difference in species distribution and abundance to the southeast of the outfall compared to the northwest but with little evidence of an impact from effluent discharges.</li> </ul> <p>An Ambient Monitoring Report detailing the results of ambient water quality and biological monitoring is in preparation and will be provided later in 2023.</p>

#### 42.6 Groundwater monitoring

Site status: Amber – Potential STP impact

Port Sorell groundwater monitoring network consists of four groundwater monitoring bores, ID numbers PSGW1-4. Biannual sampling was completed at three of the four groundwater monitoring bores; PSGW1, PSGW2 and PSGW3 in October 2022 and annual sampling in May 2023. Monitoring bore PSGW4 was unable to be sampled due to requiring repairs.

The analytical results found evidence of potential STP impact in bore ID PSGW2 with exceedances of total nitrogen and nitrate in biannual monitoring round. Decreased ammonia and nitrogen concentration was recorded at bore ID's PSGW1 and 2 and decreased levels of nitrate in bore ID PSGW3, which also recorded a spike increase in biological indicator.

Following completion of the 2022-23 sampling program additional groundwater sampling was completed in response to concerns regarding private groundwater bores, see section 42.10 for further details.

Site Status: Amber – Potential STP impact

Biannual sampling at the extended analytical suite is planned for the 2023-24 sampling program. Sampling from STP ponds to assist in correlating trends between groundwater and STP will also be completed during the annual round at the extended analytical suite.

#### 42.7 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 6 out of 79 in priority (14 in previous 2020 ranking).

#### 42.8 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 0-G: Desludging status and comments

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

#### 42.9 Non-compliance with other permit requirements

Table 0-H: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF2 – Effluent quality limits for discharge to Bass Strait	Discharge compliance with permit limits	See Section 42.3 for more details on effluent non-compliances.
OP3 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.
M6 Installation of Automated Treated Effluent Composite Sampling Equipment	Automated treated effluent composite sampling equipment has not been installed	Electrician attended site to establish the feasibility of electrical cabling at the determined location (outfall compliance sample point). Given PARSIP, TasWater will investigate and work with the EPA to determine feasibility of establishing electrical cabling for composite sampling equipment.
EM3/EM1 Discharge Management Plan	Discharge Management Plan overdue.	Submission timeframe TBC. DMP submission date to be finalised on agreement with EPA on path forwards. Discharge management options to be confirmed following PARSIP assessment and decision on potential rationalisation.

A1 Odour Management	Odour emanating from IDEAL tanks on two occasions. The first incidence of odour can be attributed to reduced MLSS levels in IDEAL tanks due to the WAS pumps being turned on. Second incidence of odour can be attributed to insufficient aeration as a result of one IDEAL lagoon being in DO mode and the other in TIME mode.  EPA issued Environmental Infringement Notice in August 2023.	Appropriate actions were implemented to help mitigate odour for complainants. Operators will continue to monitor the performance of the IDEAL tanks to help prevent odour.
M2 Groundwater Monitoring	Groundwater Monitoring not as per specific requirements	Improve monitoring program for FY23/24 to meet compliance

#### 42.10 Complaints and incident reporting

Table O-I: Complaint Reporting

Date	Category	Details	Mitigation Actions
20/01/2023 28/02/2023 29/03/2023 30/03/2023 11/04/2023 18/04/2023 27/04/2023 5/05/2023	Odour	Strong odour from STP. Affected aeration cycle times attributed to underperforming DO probes and SCADA performance. This resulted in low DO levels and attributed elevated odour emanating from the IDEAL lagoons. Sludge transfer from the IDEAL lagoons to the polishing lagoon was contributing to sludge accumulation in southwestern corner. Sludge accumulation also contributed to odour from the STP. A formal non-compliance against Condition A1 Odour Management was issued from EPA on 29 March 2023.	On 4 April 2023, TasWater commenced an odour mitigation program at Port Sorell, mitigation actions include: <ul style="list-style-type: none"> <li>• Condition assessment of electrical switchboards and overall site electrical assessment by contractor</li> <li>• Functional description and P&amp;ID of current equipment and electrical setup</li> <li>• Polishing lagoon sludge profiling report provided to EPA.</li> <li>• Asset upgrade/replacements of DO probes on a mono crane, including associated infrastructures, including new rotork valves.</li> <li>• IDEAL lagoon draining, condition assessment, and associated maintenance. Including repair to lagoon lines and cleaning aerators to help facilitate optimal performance.</li> <li>• Completion date for all actions: November 2023</li> </ul>
29/04/2023	Groundwater	Complainant expressed concern that lagoon leakage was contaminating neighbouring groundwater bores	Independent hydrogeologist consultant engaged to complete groundwater sampling at GW bores in August 2023.

No incidents reported during 2022-23 reporting period.



#### 42.11 Any other relevant information

Table 0-J: Projects or significant operational events that occurred in FY 2022-23:

Project or significant operational event	Progress
Pardoe Sewer Improvement Plan (PARSIP)	Port Sorell is currently being investigated for rationalisation to Pardoe within PARSIP. A PARSIP Strategic Business Case and strategic Options Report will be completed in FY 2023-24.

For further information on the Port Sorell STP please contact TasWater on 13 6992

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