

## 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 (Manager Environmental Performance)		
Report author	Jake Crisp (Environmental Scientist)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

**Figure O-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	Estimate based on influent	NA
Date of last calibration/validation (if applicable).	13/10/2023	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 2023	1,170	70.6	36.27	--
August 2023	1,261	65.2	39.08	--
September 2023	1,048	27.1	31.43	--
October 2023	1,137	37.9	35.26	--
November 2023	902	16.4	27.07	--
December 2023	997	60.8	30.89	--
January 2024	1,097	78.2	34.00	--
February 2024	911	10.6	26.43	--
March 2024	898	6.7	27.84	--
April 2024	944	60.2	28.31	--
May 2024	854	29.9	26.47	--
June 2024	882	54.4	26.47	--
Annual 2023-24	1,012	518.0	369.50	--
% of Total Discharge	--	--	100.0%	--

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

### 42.3 Bypass events

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

## 42.4 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	25.0	40	--	40.0	10.0	8.5	8.0	1000	60.0
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									
Max	35.2	179	--	51.9	9.5	8.7	9.7	24196	169.2
90th percentile	31.1	131	--	48.3	6.5	8.5	9.3	24196	99.7
50th percentile	23.4	78	--	34.9	1.1	8.0	6.8	7355	57.5
Min	8.4	9	--	20.2	1.0	7.5	4.1	160	7.2
EPN Limit Compliance									
% compliance with Maximum	58%	25%	--	67%	100%	--	75%	17%	50%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	83%	--	--	--

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

**Table O-D: Mass loads to the environment**

Parameter	EPN Limit	Frequency	2023-24 result
Nitrogen (kg)	--	Annual	13195.6
Phosphorous (kg)	--	Annual	2533.5
Method	Time weighted/Grab sample method		

**Table O-E: Performance analysis (discharge to environment)**

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli	20/09/2023 25/10/2023 23/11/2023 13/12/2023 10/01/2024	21/02/2024 20/03/2024 24/04/2024 27/05/2024 14/06/2024	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 due for desludging (refer to Section 42.9 for further detail).
BOD	13/07/2023 20/09/2023 25/10/2023 23/11/2023 13/12/2023	10/01/2024 21/02/2024 20/03/2024 14/06/2024	In 2023, TasWater bypassed reactor basins for capital work upgrades, leading to reduced treatment capacity and therefore increased BOD, TSS, Ammonia and Nitrogen.  BOD, TSS, Ammonia and Nitrogen exceedances are likely also attributed to the currently overloaded polishing lagoon.
TSS	25/10/2023 23/11/2023 13/12/2023	10/01/2024 21/02/2024 20/03/2024	
Ammonia	20/09/2023 25/10/2023 10/01/2024	24/04/2024 27/05/2024	
Nitrogen	25/10/2023 23/11/2023	10/01/2024 27/05/2024	
Phosphorus	25/10/2023 10/01/2024	21/02/2024	The STP process is not designed for biological or chemical Phosphorous removal
			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.  The capital works enhanced the plant's control philosophy and improved the monitoring of key control parameters.  Desludging of overloaded polishing lagoon scheduled for FY2024-25.  No specific actions, awaiting PARSIP assessment.

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	23/11/2023 13/12/2023	There is no pH correction within the catchment for the Port Sorell STP. Non-compliance is likely due to algae blooms within the polishing lagoon.	No specific actions.

No other parameters had exceedances in the reporting period.

## 42.5 Reuse Annual Reporting

No Recycled Water Scheme associated with this STP.

## 42.6 Ambient monitoring program

**Table O-F: Program details**

<b>Program</b>	Port Sorell AMP.
<b>Status</b>	Ongoing annual monthly ambient water quality during the recreational period (November – April) and biennial seasonal (spring and autumn) biological monitoring (intertidal and benthic habitat surveys, sediment and benthic infauna assessments).
<b>Update</b>	Ambient water quality monitoring was undertaken from November 2023 through to April 2024.
<b>Comments</b>	<p>A six-month ambient monitoring program was undertaken from November 2023 to April 2024 to understand the risks associated with the STP effluent discharges into the Bass Strait/Rubicon Estuary receiving environment. An Ambient Monitoring Report (AMR) detailing the results of ambient water quality monitoring has been provided to the EPA. The summarised findings of the AMR were:</p> <ul style="list-style-type: none"> <li>• Effluent discharges from the Port Sorell STP outfall had minimal impact on <i>in situ</i> field measured parameters (salinity, dissolved oxygen, temperature, pH and turbidity).</li> <li>• Concentrations of nutrients were elevated in the immediate vicinity of the outfall with elevations observed up to 100 m away on some occasions. Chlorophyll (a measure of algal concentration) showed a clear signal from the STP outfall on all sampling occasions and was generally at background levels within 100 m of the outfall.</li> <li>• Microbial pathogens (<i>E. coli</i> and enterococci) were highly elevated at the STP outfall site and exceeded the EPA low risk guideline values for waters with current or potential recreational use. Concentrations of <i>E. coli</i> exceeded the EPA low risk guideline values up to 100 m from the outfall on numerous sampling occasions. Enterococci concentrations were elevated above the EPA low risk guideline values at the outfall site on four sampling occasions and at sites within 100m of the outfall.</li> <li>• Concentrations of pathogens observed at the outfall site were significantly higher than those observed during the 2022–2023 ambient monitoring program, however comparable to or lower than those observed during the 2021–2022 monitoring program.</li> <li>• Both <i>E. coli</i> and enterococci concentrations from rockpool sites sampled on a single occasion in April 2024 were detected but were within the EPA low risk guideline values for recreational water quality</li> <li>• Elevations of nitrogen and enterococcus were often observed at the reference site indicating the possibility of additional inputs into the environment at this location.</li> </ul> <p>Due to elevated microbial pathogen concentrations observed throughout the 2023–24 ambient water quality monitoring program, the Port Sorell STP effluent discharge impacts on the PEVs of the area, specifically recreational and aesthetic water quality (including swimming, boating and kayaking).</p>

## 42.7 Groundwater monitoring

Site status: Amber

Port Sorell groundwater monitoring network consists of four groundwater monitoring bores, ID numbers PSGW1–4 with bores situated around the southeast, eastern and northeastern perimeter of the STP lagoon. One round of sampling (6-monthly) was completed across the network in March 2024. The second (annual) sampling round was not completed. TasWater has put measures in place for the 2024–25 sampling program to address scheduling and resourcing delays experienced in recent years.

The 2023–24 groundwater monitoring event report results suggest the STP is likely impacting groundwater quality due to elevated nitrate and total nitrogen concentrations and their fluctuations between monitoring events particularly near bore ID’s PSGW1–2 and to a lesser extent PSGW3.

6-monthly sampling at the extended analytical suite is scheduled to continue during the 2024–25 groundwater monitoring program.

#### 42.8 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 27 out of 108 in priority.

#### 42.9 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 deemed non-compliant with the 2023–24 SSMP due to further clarification being required regarding desludge priority sites.

No stockpiling occurs at this site.

**Table O-G: Desludging status and comments**

Desludging status	Comments
High Priority	Desludging scheduled to occur in 2024–25, as per the current prioritisation planning schedule.

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

**Table O-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 42.4 for more details on effluent non-compliances. TasWater submitted an effluent improvement plan to the EPA detailing interim and long-term commitments to work towards addressing these non-compliances.
EF3 – Bacteriological and chlorine effluent quality limits		
EM1 – Effluent Management EM3 – Discharge Management Plan	Discharge Management Plan overdue.	TasWater acknowledges the non-compliance associated with the DMP condition. We are working towards the intent of the EPN condition to prioritise discharge risk reduction projects in line with our EPA endorsed Wastewater Risk Management Plan and Price and Service Plan process.

EPN condition	Description of non-conformance	Future actions to be taken
		Discharge management options to be confirmed following PARSIP assessment and decision on potential rationalisation.
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.
WM1 – Sewage sludge management plan	Insufficient detail in SSMP regarding desludge priorities.	Refer to Section 42.9 for details on steps taken to address this non-compliance.

## 42.11 Complaints and incident reporting

**Table O-I: Complaint reporting**

Date	Category	Details	Mitigation actions
02-Jan-2024 03-Apr-2024 08-Feb-2024 28-Dec-2023 05-Dec-2023	Odour	Reports of strong odour from STP.	TasWater attended site to complete de-ragging of the aerators. Project to mitigate odour from the STP was completed in November 2023. Since then, the number of odour complaints have decreased significantly.

**Table O-J: Incident reporting**

Date	Category	Details	Mitigation actions
9/01/2024	STP process issue	Sequence error in ideal lagoons resulted in an electrical fault.	TasWater engaged electrical team to rectify the issue. EPA were notified of potential risk of elevated odour during this time. Issue has now been rectified.

## 42.12 Any other relevant information

**Table O-K: Projects or significant operational events that occurred in FY 2022-23:**

Project or significant operational event	Progress
Pardoe Sewerage Improvement Plan (ParSIP)	Port Sorell is currently being investigated for rationalisation within the ParSIP. A ParSIP Strategic Business Case has been completed identifying preferred options and priorities. Work package Detailed Business Cases for specific prioritised options will be developed within PSP4/5 period

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

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