

## 63. St Helens STP

### 63.1 Activity and report details

Activity name	St Helens		
Activity address	Georges Bay, Esplanade Rd, St Helens		
Permit number	Licence to Operate - 7199	Date of issue	22/11/1988
EPN	10225/1	Date of issue	22/05/2020
Treatment level	Tertiary Treatment		
Authorised dry weather flows	1500 (650 ADF) kL/day		
Key influent source	Residential/Industrial		
Contact person	Kate Westgate		
Report author	Luisa Romero (Environmental Scientist)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

**Figure 63-1: St Helens Sewage Treatment Plant**



## 63.2 Monitoring and compliance summary

### 63.2.1 Flow data

**Table 63-A: Flow monitoring summary**

	Influent	Effluent	Reuse
Location name	Inlet	Georges Bay	No reuse scheme
Coordinates	E 605380 N 5424805	E 606680 N 5424195	NA
Method of measurement	In line meter	In line meter	NA
Date of last calibration/validation (if applicable).	03/05/2023	03/05/2023	NA

**Table 63-B: Annual flow and rainfall data**

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 92120	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	536	9.6	22.64	--
August 2023	462	34.8	13.92	--
September 2023	438	5.2	13.46	--
October 2023	448	43.8	13.56	--
November 2023	457	35.4	13.41	--
December 2023	516	89.8	15.72	--
January 2024	545	20.8	16.08	--
February 2024	608	157.6	17.90	--
March 2024	604	25.0	20.81	--
April 2024	571	64.0	18.93	--
May 2024	633	78.2	19.31	--
June 2024	814	66.6	23.37	--
Annual 2023-24	554	630.8	209.10	--
% of total discharge	--	--	100.0%	--

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

### 63.3 Bypass events

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

### 63.4 Discharge compliance with permit limits

**Table 63-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	1.0	10	--	--	5.0	8.5	--	10	10.0
90th percentile	0.8	5	--	8.0	--	--	1.0	--	5.0
50th percentile	0.7	--	--	5.0	--	--	0.5	--	4.0
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	0.8	5	--	2.8	1.2	9.0	1.6	1	4.0
90th percentile	0.7	5	--	2.4	1.0	7.8	0.3	1	4.0
50th percentile	0.2	5	--	1.5	1.0	7.3	0.1	1	4.0
Minimum	0.1	5	--	1.0	1.0	7.0	0.1	1	4.0
EPN limit compliance									
% compliance with maximum	100%	100%	--	--	100%	--	--	100%	100%
% compliance with 90th percentile	100%	100%	--	100%	--	--	92%	--	100%
% compliance with 50th percentile	92%	--	--	100%	--	--	92%	--	100%
% compliance with pH range	--	--	--	--	--	92%	--	--	--

Minimum detection limit for BOD is 5 mg O<sub>2</sub>/L.

**Table 63-D: Mass loads to the environment**

Parameter	EPN limit	Frequency	2023-24 result
Nitrogen (kg)	1886	Annual	335.4
Phosphorous (kg)	118	Annual	50.7
Method	Time weighted/grab sample method		

**Table 63-E: Performance analysis (discharge to environment)**

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	16/01/2024	Anomalous result potentially the result of sampling error. Site monitoring detected pH below 8 for that date, with no faults with the onsite caustic dosing reported. Potential contamination by stormwater lagoon effluent, which typically has elevated pH during summer due to algae.	No specific actions taken

No other parameters have had exceedances in the FY period.

### 63.5 Reuse annual reporting

No Recycled Water Scheme associated with this STP.

### 63.6 Ambient monitoring program

**Table 63-F: Program details**

<b>Program</b>	St Helens AMP and in accordance with EPN Conditions.
<b>Status</b>	Monitoring not required during the reporting period.
<b>Update</b>	Monitoring scheduled for Spring 2024 and Autumn 2025.
<b>Comments</b>	-

### 63.7 Groundwater monitoring

Site status: Red – (2022–23 report)

St Helens STP groundwater monitoring network consists of eight bores, ID numbers SHGW1–8. One round of sampling was completed across the network in May 2024. TasWater has put measures in place for the 2024–25 sampling program to address scheduling and resourcing delays experienced in recent years.

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. Previous monitoring has noted nutrient levels exceed the adopted environmental protected value guideline criterion at most of the bores across the Site. Increasing concentrations of Total Phosphorous noted at bore ID SHGW3 with increasing concentrations of Ammonia noted at bore ID SHGW4.

Biannual sampling at the extended analytical suite is scheduled to continue across the network in the 2024–25 groundwater monitoring program.

### 63.8 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 24 out of 108 in priority.

Works this FY:

- CCTV of 4,900m sewer mains
- Jason Street and Esplanade SPS upgrades
- Rising main replacements

### 63.9 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 mismatch between disposal sites reported between AER and SSMP and no Biosolids Management Plan or stabilisation verification report.

Biosolids are removed regularly from site, no stockpiling occurred.

**Table 63-G: Biosolids sludge classification**

Parameter	Number of samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant classification
Arsenic	12	5.2	4.3	3.4	5.6	A
Cadmium	12	1.0	0.7	0.5	1.0	B
Chromium	12	25.4	19.4	16.6	24.5	A
Copper	12	408.0	216.8	137.0	363.1	B
Lead	12	19.3	13.4	11.4	17.7	A
Mercury	12	0.7	0.4	0.2	0.8	A
Nickel	12	20.1	18.0	16.1	20.8	A
Zinc	12	531.0	464.5	362.0	579.5	B

**Table 63-H: Volume and disposal destination**

Quantity (DST)	Average solids content	Stabilisation method	Stabilisation grade	Contamination grade	Biosolids classification	End use destination
53.6	12.67%	Aerobic digestion	B	B	2	Lynd Farm

**Table 63-I: Desludging comments**

Desludging status	Comments
Low Priority	St Helens STP 'flow equalisation' lagoons 1&2 are not part of the BAU plant process. The lagoons are utilised to buffer stormwater inflows during heavy rainfall events.

### 63.10 Non-compliance with other permit requirements

**Table 63-J: EPN non-compliances**

EPN condition	Description of non-conformance	Future actions to be taken
M2 Flow Monitoring Equipment	Flow monitoring equipment not verified since 03/05/2023	The verification of the St Helens flow meters has been rescheduled due to equipment repairs required on the verification unit. Verifications to occur in FY2024.

EPN condition	Description of non-conformance	Future actions to be taken
M3 Monitoring Requirements	Total residual chlorine not gathered in discharged effluent and temperature in groundwater measurements.	Although chlorine is not dosed, Total Residual Chlorine has been added to the routine monthly effluent monitoring sampling. Temperature is now noted within the groundwater monitoring sampling.
WM2 Sewage Sludge Management Plan	This STP was deemed non-compliant with the 202-23 SSMP due to mismatch between disposal sites reported between AER and SSMP and no Biosolids Management Plan or stabilisation verification report.	Ensure BMP and evidence of council approval are included in 2023-24 SSMP. An interim stabilisation verification report has been submitted to the EPA.
Q1: Regulatory limits	Based on an average of flow data submitted for the 12 months previous (D23-173368), the plant received an average of 798.3397 kL/day of wastewater. This is above the permitted flow, but not the design flow of the plant.	The design flow limit of the plant is 1.5ML per day. Discharge results indicate 100% compliance with maximum quality parameters for FY23-24. TasWater will continue to monitor the average daily flows into the site. As current results indicate there is no significant impact in the receiving environment, TasWater intends not to prioritise outfall extension investigations during PSP 4.
EF2: Signage of discharge location	During an EPA audit it was noted the outfall sign did not state the proximity to the outfall, and was likely too small to be meaningfully observed from the water.	Outfall sign has been raised and enlarged as per photo evidence provide to EPA on 3 August 2023.
M5: Signage of monitoring points	SHGW7 label not legible during an EPA audit. The label had been written in a dark marker at some point but had since rubbed off.	Rectification of signage for SHGW7 will occur in FY2024.
OP2: Operational Procedures and Maintenance Manual	No Operational Procedures and Maintenance Manual (OPMM) sighted during EPA audit.	TasWater will roll out OPPMs for all Level 2 STPs in FY2024.
WM1: Controlled Waste Register	A number of gaps identified in the controlled waste register during EPA audit.	Destination records will be updated and recorded in the ongoing Controlled Waste Register for FY2024.

### 63.11 Complaints and incident reporting

No complaints reported during the FY2023-24 reporting period.

### 63.12 Any other relevant information

For further information on the St Helens STP please contact TasWater on 13 6992  
[www.taswater.com.au](http://www.taswater.com.au)