

30. Legana STP

30.1 Activity and report details

Activity name	Legana STP		
Activity address	Griffiths Lane, Legana, Launceston		
Permit number	Licence to Operate - 3593	Date of issue	15/12/1988
EPN	7688/2	Date of issue	12/10/2011
Treatment level	Secondary Treatment		
Authorised dry weather flows	540 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 2025		

Figure 30.-1: Legana Sewage Treatment Plant



30.2 Monitoring and compliance summary

30.2.1 Flow data

Table 30-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Inlet	Unnamed tributary to the Tamar River	Lovely Banks
Coordinates	E 504843 N 5421288	E 505180 N 5421145	E 505010 N 5421340
Method of measurement	In line meter	Influent less Reuse	In line meter
Date of last calibration/validation (if applicable).	18/03/2025	NA – to be installed	31/10/2024

Table 30-B: Annual flow and rainfall data

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 91340	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2024	1,877	143.6	58.19	0.00
August 2024	1,681	154.8	52.10	0.00
September 2024	1,996	108.8	59.87	0.00
October 2024	1,169	54.6	18.70	17.54
November 2024	740	107.8	0.74	21.46
December 2024	1,216	103.2	19.46	18.24
January 2025	1,002	32.4	0.00	31.05
February 2025	979	19.4	0.00	27.41
March 2025	976	24	0.00	30.26
April 2025	911	30.6	0.00	37.34
May 2025	1,039	57.8	0.00	32.21
June 2025	1,161	102.8	0.00	34.83
Annual 2024–25	1,231	939.8	209.05	250.32

2024–25 monthly flow data was submitted directly to the EPA.

30.3 Bypass events

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

30.4 Discharge compliance with permit limits

Table 30-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	50	--	40	10	8.5	10	1000	50
90th percentile	--	--	--	--	--	--	--	--	--
50th percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	--	12	12	12	12	12	12
Number analysed	15	15	--	15	15	15	15	15	15
Statistical summary									
Maximum	29.8	132.0	0.0	43.9	3.3	9.0	7.2	24196.0	74.0
90th percentile	24.7	84.0	0.0	41.0	2.4	8.7	6.2	24196.0	69.8
50th percentile	18.8	48.0	0.0	35.4	1.3	7.3	5.1	1187.0	46.0
Minimum	3.9	5.0	0.0	19.5	1.0	6.6	2.6	173.0	9.1
EPN limit compliance									
% compliance with Maximum	100%	53%	--	73%	100%	80%	100%	47%	53%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	80%	--	--	--

Note: Percentages reflective of complete data set for the year.

Table 30-D: Mass loads to the environment

Mass Loads	EPN limit	Frequency	2024-25 result
Nitrogen (kg)	--	Annual	6121.2
Phosphorous (kg)	--	Annual	797.7
Method	Time weighted/grab sample method		

Table 30-E: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Nitrogen	10/07/2024	The main nitrogen removal process in lagoon systems is ammonia stripping which occurs at high temperature and pH levels. In colder months when the lagoons pH and temperature drop, ammonia stripping rate drops which can result in effluent non-compliance. Lagoons have a very limited capacity for total nitrogen removal through denitrification.	No specific actions undertaken in reporting period. Aerdisc aerators have significantly reduced nitrogen and odour.
BOD	10/07/2024 16/10/2024	Non-compliant BOD samples also correlate to periods of high rainfall. Decreased HRT within the lagoons reduces BOD removal capacity.	Lagoon 2 was desludged in June 2025.
E. coli	10/07/2024 15/08/2024 16/10/2024	There is a clear seasonal trend with elevated E. coli in winter months due to elevated rainfall (decreasing lagoon HRT due to l/l) and decreased UV exposure due to shorter days.	

No other parameters had exceedances in the reporting period.

30.5 Reuse annual reporting

The Legana STP supplies recycled water for irrigation purposes to the Legana recycled water scheme located at one property 'Lovely Banks'.

Table 30-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	15	15	15
Statistical summary			
Maximum	132.0	9.0	24196
90th percentile	84.0	8.7	24196
50th percentile	48.0	7.3	1187
Minimum	5.0	6.6	173
Summary of results			
% compliance with maximum	53%	--	60%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	47%
% compliance with pH range	--	93%	--

Note: Percentages reflective of complete data set for the year

Table 30-G: Performance analysis (discharge to reuse)

Reuse compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli	24/06/2025 18/06/2025 11/06/2025 5/06/2025	14/04/2025 7/04/2025 10/07/2024	10/07/2024 – Overloaded lagoon struggling with decreased treatment capacity due to winter temperature and elevated flows. Lagoon 2 desludging works done from 7/04/2025 to 30/06/2025
BOD	5/06/2025 28/05/2025 20/05/2025 14/05/2025 14/04/2025 7/04/2025	20/03/2025 12/02/2025 25/11/2024 16/10/2024 10/07/2024	Non-compliance in warmer months is likely caused by algal blooms. Non-compliant BOD samples also correlate to periods of high rainfall. Decreased HRT within the lagoons reduces BOD removal capacity. Lagoon 2 desludging works done from 7/04/2025 to 30/06/2025

Annual soil sampling was completed at five long-term monitoring sites (Site ID LA1, LA2, LA3, LA4 and LA5) at the RWS in June 2025. The annual compliance audit was completed in conjunction with the soil sampling. A summary of the program findings is provided in the below table.

Table 30-H: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Outcomes	Compliant	All sites generally show significant improvement in salinity and sodicity compared to previous years and is potentially due to sources other than the application of recycled water.
Comments	It was noted that the fencing around the recycled water storage fencing is marginal and requires repair.	Sodicity and salinity levels continue to be high at site LA1 and continues to record more than one nutrient level is above the recommended guidelines at site LA1. Elevated levels of salinity and at site LA1 has previously been attributed to the location of the site located on the river flat inundation area of kanamaluka/Tamar River and is considered unsuitable for the application of recycled water.

RWS groundwater site status: Amber

Legana RWS groundwater monitoring network consists of six monitoring bores, ID numbers LEGW1-5 and LEGW7. Monitoring bore ID LEGW5 is located downslope of the Legana STP and on-farm recycled water storage.

Annual sampling at the standard analytical suite was completed at bore ID's LEGW1-2, LEGW4-5 and LEGW7. Sampling was completed at the extended analytical suite for bore ID's LEGW2, LEGW5 and LEGW7 and at the standard suite for bore ID's LEGW1, LEGW4 as scheduled. Bore ID LEGW3 could not be located and was not sampled. This bore has not been sampled since 2020.

The 2024-25 groundwater monitoring event recorded concentrations for key analytes below adopted guideline criterion for bore ID's LEGW1-3 and LEGW5. Bore ID LEGW7 continued to record elevated concentrations of several key analytes but was identified as chemically different when compared to recycled water. Bore ID LEGW4 continued to record elevated concentrations and increasing trends of several analytes with the chemical characterisations remaining chemically different from recycled water.

Annual sampling at the extended analytical suite is scheduled at bore ID's LEGW2, LEGW5 and LEGW7 in addition to the Legana recycled water storage to further investigate chemical characterisation and comparison of groundwater to recycled water at these bores. Annual sampling at standard analytical suite is scheduled for bore ID's LEGW1 and LEGW3. Bore ID LEGW4 has been removed from the monitoring program due to continued influence of activities outside the recycled water scheme and does not provide a representative sample.

30.6 Ambient monitoring program

Table 30-I: Program details

Program	Seasonal ambient monitoring as required under EPA permit variation 18/01/2024.
Status	Ambient monitoring completed.
Update	Ambient water quality monitoring conducted seasonally to capture discharge to water events
Comments	<p>Monthly ambient water quality monitoring of the unnamed tributary of the Tamar Estuary (the creek) was conducted between July and December 2024 and again in June 2024. No sampling could be conducted in May 2025 as there was no flow in the creek.</p> <p>Effluent discharges occurred from July to October 2024 and again in December 2024. Key findings from the ambient water quality monitoring data review were:</p> <ul style="list-style-type: none"> • The Default Guideline Value (DGV) for ammonia as a toxicant was exceeded at the downstream monitoring location during discharges. • Nitrate toxicant DGVs were not exceeded during the reporting period. Nitrate levels recorded upstream and downstream were greater than the EPA DGV for the Tamar Estuary Catchment on occasions. Results obtained at the downstream site were generally higher than the upstream result. • Total nitrogen and total phosphorus levels were consistently elevated at the downstream monitoring location and exceeded the EPA DGV. • Enterococci and <i>E. coli</i> values exceeded the NHMRC low risk recreational guideline value and stock watering guideline values. Results were generally higher at the downstream location compared to upstream, irrespective of whether the STP was discharging on the sample date. • Suspended solids results consistently showed an increase at the downstream sites during August to October. • No toxin producing species of blue-green algae (BGA) were detected in the effluent or ambient in the reporting period. However, potentially toxic BGA was detected in the recycled water storage on multiple occasions during the reporting period. <p>As in previous years, there is a measurable impact to the unnamed tributary of the Tamar Estuary during discharge to water periods. The Legana RWS is reducing the impact to the environment during the irrigation season.</p>

30.7 Groundwater monitoring

Site status: Amber

Legana STP groundwater monitoring network consists of three bores, ID numbers LEGW8-10. Bore ID's LEGW8 and 9 are located directly south of the STP lagoons with LEGW10 located to the east.

Bi-annual sampling at the extended analytical suite was completed at all three monitoring bores in December 2024 and April 2025 as scheduled.

The 2024-25 groundwater monitoring event (GME) recorded limited signs of STP impact with exceedance of one chloride concentrations above an adopted guideline criteria at all the three bores. Bore ID LEGW10 also recorded elevated concentration of total phosphorous and increasing trends of key analytes requiring additional monitoring. The GME report also identified a data gap for the surface waters of the STP Lagoon.

Bi-annual sampling at the extended analytical suite is scheduled to continue at all three monitoring bores during the 2025-26 groundwater monitoring program. Surface water

sampling at the STP Lagoons and adjacent waterway is also scheduled for bi-annual sampling at the extended suite.

30.8 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.

A Multi Criteria Assessment was undertaken by TasWater in 2024 to prioritise I&I investigation and works state-wide. This catchment was ranked 37 out of 108 in priority.

30.9 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 assessed as compliant with the 2024-25 SSMP.

Sludge at this STP is captured within the three treatment lagoons, which will be periodically desludged as required. No stockpiling occurs at this site.

Lagoon 2 was successfully desludged in June 2025. The liquid sludge was transferred to a decommissioned lagoon at Longford STP for further drying. Once sufficiently dried the sludge will be tested, classified and applied to farmland (provided it meets Class 2 biosolids requirements).

Table 30-J: Desludging status and comments

Desludging status	Comments
Low Priority	Lagoon 2 was desludged in June 2025. Lagoons 1 and 2 are unlikely to require desludging again for the next 10 years.

30.10 Non-compliance with other permit requirements

Table 30-K: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF3 Effluent quality limits for discharge to water	Discharge compliance with permit limits	See section 30.4 Discharge compliance with permit limits and Performance Analysis.
EF5 Effluent quality limits for discharge to a reuse scheme	Discharge compliance with reuse permit limits	See section 30.5 Reuse Annual Reporting and Performance Analysis. TasWater is preparing an Effluent Improvement Plan in accordance with the audit requirements.
A1 Odorous gases	See section 30.10 Complaints and incident reporting	Improvement to aeration in Lagoon 1 and Lagoon 2 desludging works were completed during FY2024-25 which will improve the performance and reduced odour impacts. The network odour monitoring plan has been finalised and submitted to the EPA for review. The investigation is scheduled to be conducted in November 2025, with the final

EPN condition	Description of non-conformance	Future actions to be taken
		outcomes to be submitted to the EPA before Christmas.
Q1 Regulatory limits	Plant is hydraulically overloaded. ADWF limit – 540kL/d. Avg. flow is 1231 kL/day	Taswater submitted the Hydraulic capacity review assessment in October 2024. Cross connection between Lagoon 2 and 3 upgraded in July 2025
G9 Wastewater Reuse EMP review	A review of the Wastewater reuse EMP and its operation must be undertaken and updated.	TasWater acknowledged the non-compliance due to the outdated EMP and will work with the customer to address the requirements.
M4 Flow meters	No recent flow meter validations.	Scheduled for rectification

30.11 Complaints and incident reporting

Table 30-L: Complaints Reporting

Date	Category	Details	Mitigation actions
20/06/2025	Odour	During Lagoon 2 desludging works odour complaint received from customer.	<ul style="list-style-type: none"> An SMS notification was sent to the closest residential customer to provide information about the ongoing works at the Legana Sewage Treatment Plant (STP). Desludging works at Lagoon 2 of the Legana STP were completed on 30 June 2025.
14/10/2024 24/10/2024	Odour	Strong odour from lagoons	<ul style="list-style-type: none"> Crew attended to ensure STP process was performing correctly. 3 New Aerdisc aerators installed in Lagoon 1.

Table 30-M: Incidents Reporting

Date	Category	Details	Mitigation actions
23/07/2024 27/08/2024	Weather event	Due to weather event Legana STP experienced increased inflow, resulting in lagoon short-circuiting. Inlet pipes have larger diameter than the outlet pipe, limiting the discharge capacity.	Several mitigation actions, including: <ul style="list-style-type: none"> Hydraulic capacity review assessment done for Legana STP in October 2024, to identify the issues and proposed short- and long-term solutions. In progress: Cross-connections pipes size between L2 and L3 upgraded. In progress: Installation of emergency spillways to protect the embankments from future overtopping during heavy rainfall events.
30/09/2024	Mechanical	The bung that was blocking the Lagoon 2 weir came loose, resulting in the lagoon discharging to the environment for approximately 48 hours.	A new weir plate was installed and fully secure to stop the flow.

30.12 Any other relevant information

Table 30-N: Projects or significant operational events that occurred in FY 2024-25:

Project or significant operational event	Progress
Meander Tamar Sewerage Regional Master Plan	The Meander Tamar Sewerage Regional Master Plan has been completed and includes the short term and long-term considerations for the Legana STP with the ultimate decommissioning of the STP and transfer of sewage to the Ti Tree Bend STP.
Hydraulic capacity review assessment	Completed – September 2024
Installation of Aerdisc aerators in Lagoon 1	Completed – October 2024
Lagoon 2 desludging	Completed – June 2025
Emergency Spillway installation between lagoons	In progress
Lagoon cross connection upgrade	Completed – July 2025

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

www.taswater.com.au