

31. Lilydale STP

31.1 Activity and report details

Activity name	Lilydale STP		
Activity address	Golconda Road, Lilydale		
Permit number	Licence to Operate - 3379	Date of issue	21/01/1986
EPN	471/2	Date of issue	6/11/2008
Treatment level	Secondary Treatment		
Authorised dry weather flows	135 kL/day		
Key influent source	Residential		
Contact person	Kate Westgate		
Report author	Luisa Romero (Environmental Scientists)		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2024		

Figure 31-1: Lilydale Sewage Treatment Plant



31.2 Monitoring and compliance summary

31.2.1 Flow data

Table 31-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Inlet	McGowan's Creek	Hollybanks property
Coordinates	E 518093 N 5434232	E 517940 N 5434381	E 517946 N 5434394
Method of measurement	In line meter	Estimate based on influent	In line meter
Date of last calibration/validation (if applicable).	26/10/2023	NA – to be installed	14/06/2024

Table 31-B: Annual Flow and Rainfall Data

Month	Average Daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 91053	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2023	261	89.8	8.09	0.00
August 2023	229	69.0	7.23	0.00
September 2023	192	31.2	5.94	0.00
October 2023	167	41.6	5.17	0.00
November 2023	164	48.2	1.64	3.28
December 2023	120	80.6	0.00	3.85
January 2024	80	58.8	0.00	1.89
February 2024	76	14.6	0.00	2.18
March 2024	78	14.8	0.00	2.41
April 2024	97	58.0	0.00	2.88
May 2024	92	23.6	0.00	2.76
June 2024	96	51.6	0.00	2.98
Annual 2023-24	138	581.8	28.07	22.21
% of total discharge	--	--	55.8%	44.2%

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

31.3 Bypass events

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

31.4 Discharge compliance with permit limits

Table 31-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	30.0	50	--	40.0	10.0	8.5	10.0	1000	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	1.7	51	--	7.5	1.8	9.9	2.4	8164	101.0
90th percentile	0.5	40	--	7.2	1.0	9.7	2.2	2412	78.6
50th percentile	0.2	8	--	3.9	1.0	8.7	1.4	253	11.1
Minimum	0.1	5	--	1.8	1.0	7.1	0.6	10	4.0
EPN limit compliance									
% compliance with Maximum	100%	92%	--	100%	100%	--	100%	67%	83%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	42%	--	--	--

Table 31-D: Mass loads to the environment

Parameter	EPN limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	102.6
Phosphorous (kg)	--	Annual	24.0
Method	Time weighted/grab sample method		

No parameters had exceedances in the reporting period when discharging to the environment.

31.5 Reuse annual reporting

Lilydale STP supplies treated effluent to one customer on the Lilydale recycled water scheme (RWS) located at the Hollybanks property.

Table 31-E: 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	51	9.9	8164
90th percentile	40	9.7	2412
50th percentile	8	8.7	253
Minimum	5	7.1	10
Summary of results			
% compliance with maximum	92%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	67%
% compliance with pH range	--	75%	--

Table 31-F: Performance analysis (discharge to reuse)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
pH	13/11/2023 25/01/2024 7/05/2024	Algae is believed to be the primary reason for elevated pH. Algae is a source of oxygen and is fundamental to lagoon treatment. The non-compliant result was during a warmer month when algal blooms typically occur.	No specific actions
BOD	4/06/2024	Excessive plant flows caused by rainfall (31/05 – 3/06) decrease lagoon detention time and effective BOD treatment,	No specific actions

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

No other parameters had exceedances in the reporting period.

Annual soil sampling was completed at two sites (Primary and Secondary) at the RWS in April 2024. The annual compliance audit was completed in conjunction with the soil sampling. A summary of the findings of the programs is provided in the below table.

Table 31-G: Annual recycled water scheme compliance audit and soil monitoring summary

Program	Compliance audit	Soil monitoring
Compliance status	Compliant	Soil salinity remained elevated at sites Primary and Secondary with both sites classified as saline. Site Primary is classified as sodic and within recommended range at site Secondary. Elevated levels of a number of nutrients were recorded at one or both sites and are considered consistent to previous years.
Comments	Landowner noted very little irrigation at soil sampling site Secondary due to leak in underground pipework to this site.	Elevated nutrient levels at this property are likely attributed to supplementary fertiliser application and not recycled water irrigation based on the low application rates and lower nutrient levels supplied by recycled water irrigation. Soil data has been provided to customer.

RWS groundwater site status: To be determined

Lilydale groundwater monitoring network consists of one bore, LDGW1. The bore was repaired (bent well casing) in August 2021. No sampling was completed in 2023-24 monitoring program. TasWater has put measures in place for the 2024-25 sampling program to address scheduling and resourcing delays experienced in recent years.

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

31.6 Ambient monitoring program

Table 31-H: Program details

Program	Seasonal Discharge Program – Routine monitoring during discharge to water.
Status	Ambient monitoring completed.
Update	Ambient water quality monitoring conducted seasonally to capture discharge to water events.
Comments	<p>Monthly ambient water quality monitoring occurred between July and December 2023 and again between May to June 2024. Effluent was discharged to McGowans Creek between July and October 2023. Key findings from the ambient water quality data review were:</p> <ul style="list-style-type: none"> • Ammonia and nitrate levels upstream and downstream within McGowans Creek were within the Default Guideline Values (DGVs) but occasionally exceed the EPA Pipers Catchment DGV, irrespective of whether the STP was discharging. • Results for total nitrogen exceeded the EPA DGV at upstream and downstream sites. During discharge events, the downstream result was occasionally greater than the upstream result. • Similar to total nitrogen, total phosphorus levels downstream were elevated compared with upstream during discharge to water events and often the upstream and downstream site exceeded the EPA DGV. • There was a marginal increase downstream for suspended solids during discharge events, with the increase notably larger during September and October 2023. • Enterococci levels at the downstream monitoring location were slightly elevated compared with upstream during discharge events. However, on one occasion, in October 2023, the upstream site was approximately 5 times higher than the downstream site, indicating an upstream source of bacteriological impacts. Both upstream and downstream levels exceeded the low risk NHMRC recreational GV. • Blue-green algae was not detected in the ambient environment during effluent discharges into McGowans Creek.

Ambient monitoring indicates a marginal impact to levels of total nitrogen, total phosphorus and suspended solids during discharge events. The Lilydale recycled water scheme is reducing the impact to the environment during the irrigation season.

31.7 Groundwater monitoring

Site status: Green – (2022–23 report)

Lilydale STP groundwater network consists of four monitoring bores, ID numbers LDGW4, LDGW6–8. One round of sampling (6-monthly) was completed at monitoring bore ID LDGW7 in May 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.

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.

Biannual sampling at the standard analytical suite is scheduled for bore ID's LDGW7–8 in 2024–25 monitoring program. Annual sampling at the standard suite is scheduled for bore ID's LDGW4 and LDGW6.

31.8 Inflow and infiltration (I&I)

The latest revision to the TasWater Inflow and Infiltration Management Plan includes details of the actions undertaken state-wide 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 99 out of 108 in priority.

31.9 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 31-I: Desludging status and comments

Desludging Status	Comments
Low Priority	Desludging is outside of the current prioritisation planning schedule.

31.10 Non-compliance with other permit requirements

Table 31-J: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF6 Effluent quality limits for discharge to a Reuse Scheme	Discharge compliance with reuse permit limits	See section 31.4 Reuse Annual Reporting and Performance Analysis

31.11 Complaints and incident reporting

No complaints or incidents reported during the FY2023-24 reporting period.

31.12 Any other relevant information

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

www.taswater.com.au