28. Kempton STP

28.1 Activity and report details

Activity name	**Kempton STP**		
Activity address	Lonsdale Lane, Kempton		
Permit number	Licence to Operate – 5135	**Date of issue**	8/12/1992
EPN	7956/1	**Date of issue**	7/03/2018
Treatment level	Secondary Treatment		
Authorised dry weather flows	135 kL/day		
Key influent source	Residential		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2025		

Figure 28-1: Kempton Sewage Treatment Plant

28.2 Monitoring and compliance summary

28.2.1 Flow data

Table 28-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location name	Inlet	Green Ponds Rivulet	Kempton Reuse Scheme
Coordinates	E 515489 N 5291721	E 515335 N 5291907	E 515377 N 5291884
Method of measurement	In line meter	Estimate based on influent	Estimate based on influent
Date of last calibration/validation (if applicable).	9/08/2024	NA – to be installed	NA – to be installed

Table 28-B: Annual flow and rainfall data

Month	Average daily influent volume (kL/day)	Rainfall (mm/month) BOM Station ID 94001	Discharge to waters total effluent volume (ML)	Discharge to reuse total effluent volume (ML)
July 2024	132	74	0.00	4.09
August 2024	132	93.2	0.00	4.09
September 2024	136	68.4	0.00	4.09
October 2024	132	34	0.00	4.09
November 2024	82	38.8	0.00	2.46
December 2024	106	84.8	0.00	3.28
January 2025	106	33.2	0.00	3.28
February 2025	117	13.8	0.00	3.28
March 2025	106	10.6	0.00	3.28
April 2025	109	36	0.00	3.28
May 2025	106	45.2	1.64	1.64
June 2025	109	26.6	1.64	1.64
Annual 2024-25	114	558.6	3.28	38.46
% of total discharge	--	--	7.8%	92.2%

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

28.3 Bypass events

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

28.4 Discharge compliance with permit limits

Table 28-C: Discharge compliance with permit limits

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	--	40	10	8.5	10	2000	40
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	13.2	59.0	0.0	17.6	1.7	8.2	13.0	3873	47.0
90th percentile	12.8	51.9	0.0	16.1	1.1	7.7	11.7	2151.9	32.9
50th percentile	4.4	26.5	0.0	10.0	1.0	7.5	9.2	677	22.5
Minimum	1.9	5.0	0.0	6.6	1.0	6.8	2.8	20	4.0
EPN limit compliance									
% compliance with maximum	--	58%	--	100%	100%	100%	75%	83%	92%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	100%	--	--	--

Table 28-D: Mass loads to the environment

Mass Loads	EPN limit	Frequency	2024-25 result
Nitrogen (kg)	--	Annual	30.4
Phosphorous (kg)	--	Annual	27.1
Method	Time weighted/Grab sample method		

Table 28-E: Performance analysis (discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
BOD	11/07/2024 5/08/2024 5/09/2024	16/01/2025 10/04/2025	Full disinfection and BOD removal capacity of the plant is not utilised at this location as further treatment is achieved in lagoon 3 (reuse dam). Elevated Algae contributes to high E.coli, BOD, TSS, pH and phosphorus.	No specific actions.
E. coli	11/07/2024 5/09/2024			
TSS	16/01/2025			
Phosphorus	13/02/2025 19/03/2025 10/04/2025			

No other parameters had exceedances in the reporting period.

28.5 Reuse annual reporting

The Kempton STP supplies treated effluent to the Kempton recycled water scheme (RWS) for irrigation purposes to one customer at Oakmore Farm.

Table 28-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	12	12	12
Statistical summary			
Maximum	59.0	8.2	3873
90th percentile	51.9	7.7	2152
50th percentile	26.5	7.5	677
Minimum	5.0	6.8	20
Summary of results			
% compliance with maximum	75%	--	100%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	67%
% compliance with pH range	--	100%	--

Table 28-G: Performance analysis (discharge to reuse)

Reuse compliance parameter	Date(s) of elevated parameter	Reasons	Actions to improve performance
BOD	10/04/2025 5/09/2024 5/08/2024	See Table 28-E.	See Table 28-E.

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

Annual soil sampling was completed at one location (Site 2) at the RWS in December 2024. The field component of the annual compliance audit was completed in conjunction with the soil sampling program with a follow up phone audit in January 2025. A summary of the findings of the two programs are provided in **Error! Reference s ource not found.**-H.

Error! Reference source not found.**Table 28-H: Annual recycled water scheme compliance a udit and soil monitoring**

Program	Compliance Audit	Soil Monitoring
Compliance status / summary	Compliant	Soil salinity and sodicity within historic values. Elevated levels phosphorous and potassium levels are attributed to fertiliser application and not recycled water irrigation

Comments	Site specific buffer zones and irrigation management measures exist at this site	

RWS Groundwater Status: Green

The Kempton RWS groundwater network consists of three bores, ID numbers KMTGW1 - 3. KMTGW1 is located up flow of the recycled water irrigation area and may be considered a reference bore.

Annual sampling at the standard analytical suite was completed at bore ID numbers KMTGW2-3 as scheduled. Bore ID KMTGW1 was unable to be located and was not sampled.

The 2024-25 groundwater monitoring event recorded no evidence of impact on groundwater quality with all analytes below adopted criterion.

Annual sampling of the standard analytical suite is scheduled to be completed at all three monitoring bores during the 2025-26 groundwater monitoring program.

28.6 Ambient monitoring program

Table 28-I: Program details

Program	**Seasonal ambient monitoring as required under EPA permit variation 18/01/2024**
Status	Ambient monitoring completed during discharge events within the reporting period.
Update	Ambient water quality monitoring from July - December 2024 and May – June 2025 completed during the reporting period. Ongoing ambient monitoring during seasonal discharge events.
Comments	Ambient monitoring of Green Ponds Rivulet occurred from July – December and again in June (regardless of whether the STP was discharging or not). Effluent discharge to water occurred in May and June however samples were unable to be collected in May due to no flow in the creek. The key findings are: • The toxicant default guideline value (tDGV) for ammonia was exceeded at the downstream sample site on four occasions (August, October, December and June), however, out of those months, the STP was only discharging in June. Ammonia levels upstream were below the DGV on all occasions. • Total nitrogen levels were highly variable at the downstream site and exceeded the DGV on all occasions except for in November. Upstream levels were generally much lower than downstream and more consistent. Interestingly, the highest result (8.82 mg/L) was recorded downstream in August when there was no effluent discharge to the environment. • Nitrate levels downstream were above the DGV in winter and early spring. The result from June was the highest and correlated with STP discharge. However, nitrate levels in the effluent were lower than the downstream levels, suggesting additional nutrient sources. • The total phosphorus level downstream was highest in June (5.2 mg/L) when the STP was discharging. The upstream result, although it exceeded the DGV, was significantly lower at 0.02 mg/L. • The enterococci levels in June, when the STP was discharging, were relatively low (both sites <200 MPN/100mL). Some high results were recorded in July and August when the STP was not discharging. This is likely related to rainfall causing runoff from agricultural land into the rivulet.

28.7 Groundwater monitoring

Site status: Green

Kempton STP groundwater monitoring network consists of four groundwater monitoring bores, ID numbers KMTGW1, KMTGW2, KMTGW4 and KMTGW5. Bore ID's KMTGW5 and 4 are situated on the eastern boundary of the STP lagoons with bore ID KMTGW1 further to the east. Bore ID KMTGW2 is located to the immediately north of the STP. A

Annual sampling was completed at monitoring bore ID's KMTGW2 and KMTGW4-5 in March 2025. Bore ID KMTGW1 was unable to be located and was not sampled.

2024-25 groundwater monitoring event recorded no increasing trends in bores sampled. However, bore ID KMTGW4 a likely increasing trend in concentration levels of total nitrogen with levels remaining well below all adopted guideline values.

Annual sampling at the standard analytical suite is scheduled to continue at all four monitoring bores during the 2025-26 groundwater monitoring program.

28.8 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 68 out of 108 in priority.

28.9 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.

Table 28-J: Desludging status and comments

Desludging status	Comments
Medium Priority	Lagoons 1 and 2 are likely to require desludging within next 5 to 10 years.

28.10 Non-compliance with other permit requirements

Table 28-K: EPN non-compliances

EPN condition	Description of non-conformance	Future actions to be taken
EF4 Effluent quality limits for discharge to water	Discharge compliance with permit limits	See section 28.4 Discharge compliance with permit limits and Performance Analysis.

EPN condition	Description of non-conformance	Future actions to be taken
EF2 Effluent quality limits for discharge to a reuse scheme	Discharge compliance with reuse permit limits	See section 28.5 Reuse Annual Reporting and Performance Analysis.
Flow Meter Validation	Flow meters not installed or validated.	Flow Meter Installation Program to be progressed.
Annual Environmental Review 2023-2024	Overdue capacity assessment report	Report delayed until TasWater has completed detailed capacity assessment of the sewer network. These assessments are prioritised based on STP risk.

28.11 Complaints and incident reporting

No complaints and incidents reported during 2024-25 reporting period.

28.12 Any other relevant information

Table 28-L: Projects or significant operational events that occurred in FY 2024-25

Project or significant operational event	Progress
Derwent Hobart Sewerage Regional Master Plan	The Derwent Hobart Sewerage Regional Master Plan has been completed and includes the short term and long-term considerations for the Kempton STP.

For further information on Kempton STP please contact TasWater on 13 6992

www.taswater.com.au