

75 Westbury STP

75.1 Activity and report details

Activity name	Westbury STP		
Activity address	Meander Valley Road, Westbury		
Permit number	DA 101/2004	Date of issue	13/12/1988
EPN	10265/1	Date of issue	4/10/2021
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	600 kL/day		
Key Influent Source	Residential/Industrial 1 x Category 3 Customers		
Contact person	Kate Westgate		
Report author	Jayden Taylor		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 75-1: Westbury Sewage Treatment Plant



75.2 Monitoring and compliance summary

75.2.1 Flow data

Table 75-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Plant Inlet	Quamby Brook	No reuse
Coordinates	E 395351 N 5460296	E 485806 N 5403256	NA
Method of Measurement	In line meter	In line meter	NA
Date of last Calibration/Validation (if applicable).	12/07/2022	12/07/2022	NA

Table 75-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 91236	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	567	29.4	17.82	--
August 2022	567	134.7	26.41	--
September 2022	1312	48.3	38.06	--
October 2022	1122	168.6	17.96	--
November 2022	1414	76.9	35.19	--
December 2022	552	24.5	17.10	--
January 2023	203	21.9	12.04	--
February 2023	376	19.6	10.51	--
March 2023	455	72.0	14.11	--
April 2023	471	45.4	14.29	--
May 2023	395	26.7	12.28	--
June 2023	901	102.4	7.96	--
Annual 2022-23	694	770.4	223.71	--
% of Total Discharge	--	--	100.0%	--

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

75.2.2 Bypass events

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

75.3 Discharge compliance with permit limits

Table 75-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	5	15	--	15	10	8.5	3	200	20
90th percentile	2	10	--	10	5	--	1	--	15
50th Percentile	1	5	--	7	2	--	0.5	--	10
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	--	12	12	12	12	12	12
Number analysed	24	24	--	24	12	24	24	24	24
Statistical summary									
Max	25.3	150	--	61.9	1.9	8.6	5.550	24196	143.0
90th percentile	24.2	71	--	31.4	1.4	8.1	4.613	9384	95.4
50th percentile	12.4	17	--	20.7	1.0	7.2	1.190	447	20.2
Min	1.5	5	--	2.0	1.0	6.6	0.023	1	4.0
EPN Limit Compliance									
% compliance with Maximum	13%	46%	--	29%	100%	--	79%	25%	50%
% compliance with 90th percentile	4%	42%	--	8%	100%	--	46%	--	33%
% compliance with 50th percentile	0%	29%	--	8%	100%	--	38%	--	29%
% compliance with pH range	--	--	--	--	--	96%	--	--	--

Table 75-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	1970	Annual	4532.5
Phosphorous (kg)	210	Annual	303.1
Method	Time weighted/Grab sample method		

Table 75-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance		Reasons for non-compliance	Actions to improve performance
Nitrogen	21/07/2022	5/04/2023	The plant is not designed to remove nitrogen	No specific actions
	11/10/2022	3/05/2023		
	7/02/2023	7/06/2023		
	8/03/2023			
	12-month 90 th percentile limit exceeded			
	12-month 50 th percentile limit exceeded			
	12-month mass load limit exceeded			
Ammonia	21/07/2022	7/02/2023	The plant is not designed to remove ammonia	
	8/09/2022	8/03/2023		
	11/10/2022	5/04/2023		
	1/11/2022	3/05/2023		
	6/12/2022	7/06/2023		
	12-month 90 th percentile limit exceeded			
	12-month 50 th percentile limit exceeded			
Phosphorus	7/02/2023		The plant has some phosphorus removal capability, although the system is undersized to treat all influent flows.	
	8/03/2023			

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
	12-month 90 th percentile limit exceeded		
	12-month 50 th percentile limit exceeded		
	12-month mass load limit exceeded		
TSS	18/08/2022 8/09/2022 1/11/2022	7/02/2023 8/03/2023 7/06/2023	High solids and BOD are associated with algae
	12-month 90 th percentile limit exceeded		
	12-month 50 th percentile limit exceeded		
BOD	18/08/2022 8/09/2022 6/12/2022	7/02/2023 8/03/2023 7/06/2023	
	12-month 90 th percentile limit exceeded		
	12-month 50 th percentile limit exceeded		
E. coli	21/07/2022 8/09/2022 1/11/2022 6/12/2022 7/02/2023	8/03/2023 5/04/2023 3/05/2023 7/06/2023	In wet periods, the lagoons are hydraulically overloaded and there is lower UV from the sun, causing poor E. coli removal. In warmer months, algal blooms prevent light and UV penetration.

No other parameters had exceedances in the reporting period.

75.4 Reuse Annual Reporting

No recycled water was supplied to the Westbury RWS during the 2022-23 reporting period. Following advice from the recycled water customer, the scheme is no longer in operation. Prior to July 2021, the Westbury STP had supplied recycled water for irrigation purposes to the Westbury recycled water scheme located at Meander Valley Road under EPN 10265/1. Following the submission and approval of an updated Recycled Water Irrigation and Environmental Management Plan in December 2021, the EPN was extended to 31 May 2022. Temporary approval to discharge to recycled water scheme was provided during Lagoon upgrade works though no water was provided to the scheme.

Due to possibility of temporary discharge to reuse during upgrade works annual soil sampling was completed at one site, ID number W1, at the RWS in April 2023. No compliance audit was completed as the scheme has ceased operation and no recycled water was applied to the site.

Soil salinity and sodicity on this scheme remained within recommended levels, with site remaining as non-saline and non-sodic. Phosphorus levels at the site slightly decreased but remain slightly elevated. Potassium levels have decreased but remain recommended range for agricultural production.

75.5 Ambient monitoring program

Table 75-F: Program details

Program Required	Routine monitoring during discharge to water. Routine monitoring in accordance with Westbury STP Interim Upgrade Project Plan.
Status	Ambient water quality and biological monitoring completed during the reporting period.
Update	Ongoing weekly ambient water quality and biannual (seasonal) biological monitoring completed within the Quamby Brook receiving environment during the reporting period.
Comments	<p>Weekly ambient water quality and autumn (March) 2022 and spring (October) 2022 biological monitoring has been undertaken within the Quamby Brook receiving environment during the reporting period. Additional ambient water quality monitoring, including an additional downstream location, and autumn 2023 biological monitoring was completed during the Westbury STP Upgrade Project (lagoon maintenance and lagoon desludging).</p> <p>A Receiving Environment Monitoring Report will be submitted separately in FY 2023/24 describing the outcomes of ambient water quality and biological monitoring completed during the reporting period.</p>

75.6 Groundwater monitoring

Site status: Amber - Potential STP impact

Westbury STP groundwater monitoring network consists of three monitoring bores, ID numbers WBGW1, WBGW2 and WBGW3, located south, east and north-east respectively. Sampling was completed at all bores and STP Lagoon 2 in June 2023. Due to timing and resourcing constraints biannual sampling was not completed. No sample was collected from STP lagoon 1 due to ongoing upgrade works.

Total phosphorous concentrations exceeded adopted guideline criterion for bore ID's WBGW1-2. Ammonia concentrations at bore ID WBGW1 also exceeded guideline values and an increasing trend

in concentrations identified at bore ID WBGW2. Probable trend in increasing total nitrogen was identified at bore ID WBGW3.

Biannual sampling at the extended analytical suite is scheduled to recommence at all bores during the 2023-24 groundwater monitoring program. Annual surface water sampling at the extended analytical suite at the STP Lagoons will be reviewed to assist in water classification assessment.

75.7 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 2022 to prioritise I&I investigation and works state-wide. This catchment was ranked 36 out of 79 in priority.

75.8 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 2022-23 SSMP.

No stockpiling occurred at this site.

Table 75-G: Desludging status and comments

Desludging Status	Comments
Partially completed FY22-23	Lagoon 1 and 2 desludging works were undertaken in FY2022-23 as part of the Westbury STP Interim Upgrade Project Plan. Lagoon 1 partially desludged. Lagoon 2 desludging continued into and will be completed in FY2023-24.

Table 75-H: Desludging solids end use

Quantity (DST)	Average solids content	Stabilisation method	Stabilisation Grade	Contamination Grade	Biosolids Classification	End use destination
126	8 %	Anaerobic digestion	B	B	2	Exton House

75.9 Non-compliance with other permit requirements

Table 75-I: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF3 Current and future effluent quality limits for discharge to water	Discharge compliance with permit limits	See table 75-E Discharge compliance with permit limits and Performance Analysis
EF5 Mass load limits	Mass load limits exceeded in FY2022-23.	TasWater to progress investigations and project implementation to improve STP compliance and reduce environmental risks, as outlined in Westbury STP Discharge Management Plan

OP5 Lagoon maintenance	Lagoon lining in poor condition	CDO project is currently in progress to undertake lagoon repairs, project will be completed in FY2023-24.
WM3 Sewage Sludge Water Cap	Lagoons 1 and 2 require desludging	A CDO project has completed the de-sludging of lagoon 2, full project will be completed FY2024.
A1 Odorous Gases	See table 75-M Complaints Reporting	A project has been approved to construct infrastructure that allows for the routine maintenance of the odorous assets. This project is yet to be scheduled.
OP1 Operational Procedures Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMs currently being developed. First version to be implemented by FY 2024.

75.10 Complaints and incident reporting

Table 75-J: Complaints Reporting

Date	Category	Details	Mitigation Actions
30/03/2023	27/03/2023	Ongoing sewer odour from the STP.	Desludging of the DAF drying beds when required throughout the year.
29/03/2023	27/03/2023		
24/03/2023	24/03/2023		
10/03/2023	23/03/2023		
06/03/2023	14/03/2023		
27/03/2023	13/02/2023		
27/03/2023	30/01/2023		

75.11 Any other relevant information

Table 75-K: Projects or significant operational events that occurred in FY 2022-23

Project or significant operational event	Progress
Westbury STP lagoon repair and desludging project (TasWater CDO)	STP interim upgrade project was initiated in April 2022 with Lagoon 2 desludged and a component of Lagoon 1 desludged. Civil works to repair Lagoon 2 and discharge arrangements will be completed in late 2023.
Meander Valley Sewerage Strategy (MVSS)	Westbury is currently being reviewed for rationalisation within MVSS. A MVSS Strategic Business Case and Strategic Options Report will be completed in FY 2023-24.

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

www.taswater.com.au