

73 Turriff Lodge STP

73.1 Activity and report details

Activity name	Turriff Lodge STP		
Activity address	New Norfolk		
Permit number	Licence to Operate – 3611	Date of issue	17/01/1989
EPN	8543/1	Date of issue	15/04/2013
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	4100 kL/day		
Key Influent Source	Residential/Industrial		
Contact person	Kate Westgate		
Report author	George Fitzgibbon		
Contact details	Environment@taswater.com.au		
Date of submission	30 September 2023		

Figure 73-1: Turriff Lodge Sewage Treatment Plant



73.2 Monitoring and compliance summary

73.2.1 Flow data

Table 73-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Plant Inlet	Derwent River	No reuse scheme
Coordinates	E 506104 N 5264298	E 506133 N 5264442	NA
Method of Measurement	Level sensor	Level sensor	NA
Date of last Calibration/Validation (if applicable).	29/11/2022	29/11/2022	NA

Table 73-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)	Rainfall (mm/month) BOM Station ID 95081	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	2,210	19.0	68.51	--
August 2022	2,718	59.2	84.27	--
September 2022	2,372	36.0	71.17	--
October 2022	2,345	69.0	72.69	--
November 2022	2,212	49.8	66.35	--
December 2022	1,908	43.0	59.15	--
January 2023	1,881	17.4	58.32	--
February 2023	1,944	26.2	54.45	--
March 2023	1,940	39.8	60.13	--
April 2023	1,981	19.2	59.43	--
May 2023	1,888	26.2	58.51	--
June 2023	1,910	63.6	57.30	--
Annual 2022-23	2,110	468.4	770.25	0.00
% of Total Discharge	--	--	100.0%	0.0%

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

73.2.2 Bypass events

No bypass events recorded in the period.

73.3 Discharge compliance with permit limits

Table 73-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	26	38	1.0	35	10	8.5	8	200	39
90th percentile	--	--	--	--	--	--	--	--	--
50th Percentile	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	6.5	--	--	--
Samples analysed									
Number required	12	12	12	12	12	12	12	12	12
Number analysed	12	12	12	12	12	13	12	12	12
Statistical summary									
Max	33.0	77	1.04	40.4	7.2	8.2	7.1	247	28.0
90th percentile	28.8	64	0.92	40.0	6.8	8.1	6.2	200	16.3
50th percentile	23.4	35	0.58	32.7	4.2	7.5	5.3	10	12.3
Min	18.0	19	0.22	23.8	2.5	7.2	3.9	10	7.0
EPN Limit Compliance									
% compliance with Maximum	75%	58%	92%	75%	100%	--	100%	83%	100%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	100%	--	--	--

Table 73-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	6742.0
Phosphorous (kg)	--	Annual	1071.2
Method	Time weighted/Grab sample method		

Table 73-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
Nitrogen	30/01/2023 18/05/2023 19/06/2023	The plant is a trickling filter process, not designed to remove ammonia or nitrogen.	No specific actions
Ammonia	30/01/2023 18/05/2023 19/06/2023		
BOD	24/08/2023 26/10/2022 30/01/2023	20/04/2023 19/06/2023 Wet weather events and elevated TSS	No specific actions
E. coli	30/01/2023 8/02/2023	The chlorine control is limited (flow paced) leading to low chlorine results during some periods.	No specific actions
Chlorine	19/06/2023	Chlorine was only slightly above the discharge limit at 1.04 mg/L	

No other parameters had exceedances in the reporting period.

73.4 Reuse Annual Reporting

No Recycled Water Scheme associated with this STP.

73.5 Ambient monitoring program

Table 73-F: Program details

Program	Turriff Lodge Post New Outfall Commissioning – Ambient Monitoring Plan (PNOC-AMP).
Status	Ambient water quality and biological monitoring in accordance with the PNOC-AMP is currently in progress.
Update	The PNOC-AMP is currently being implemented since the commissioning of the new outfall at Turriff Lodge.
Comments	<p>A new outfall and multipoint diffuser was commissioned in late April 2023. The PNOC-AMP is currently being implemented to assess the impacts on the Derwent River Estuary receiving environment.</p> <ul style="list-style-type: none"> • An initial plume dilution study (winter, incoming tide) was completed in April 2023 and will be repeated under summer and outgoing tide scenarios. • Ambient water quality monitoring has been undertaken in May and June 2023 as part of a 12-month water quality monitoring program. • Biological monitoring upstream and downstream is scheduled to begin in August 2023. • Chlorine fate investigations to understand the impact of chlorinated effluent in fresh and estuarine water is underway.

73.6 Groundwater monitoring

No groundwater monitoring program associated with the STP.

73.7 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 13 out of 79 in priority.

73.8 Sludge and Biosolids

The latest revision to the Sewage Sludge Management Plan includes full details of the actions undertaken state-wide in accordance with the Management Plan.

There are no sludge/biosolids dewatering facilities at this site, with sludge transferred via liquid sludge transport to an alternative STP. Sludge volume produced for this site is captured at the end use/dewatered STP. Turriff Lodge sludge is transported to Prince of Wales Bay STP or Cameron Bay STP.

This STP was fully compliant with the 2022-23 Sewage Sludge Management Plan.

Table 73-G: Biosolids sludge classification summary

Month	Number of Samples	Maximum (mg/kg)	Mean (mg/kg)	Minimum (mg/kg)	BACC (mg/kg)	Contaminant Classification
Arsenic	6	4.0	2.9	1	5.3	A
Cadmium	6	5.2	2.0	0.5	5.3	B
Chromium	6	77.6	46.6	20.5	90.0	B
Copper	6	508.0	333.2	109	593.3	B
Lead	6	85.3	55.5	28.5	98.3	A
Mercury	6	2.5	1.2	0.44	2.8	B
Nickel	6	29.9	21.1	11.2	34.1	A
Zinc	6	1750.0	1179.0	419	2236.5	B

73.9 Non-compliance with other permit requirements

Table 73-H: 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 73.3 Discharge compliance with permit limits and Performance Analysis.
OP1 Operational Procedures Manual	No contemporary Operational Procedures Manual	New SharePoint based solution for OPMMs currently being developed. First version to be implemented in FY24.

73.10 Complaints and incident reporting

No complaints or incidents reported during the reporting period.

73.11 Any other relevant information

Table 73-I: Projects or significant operational events that occurred in FY 2022-23:

Project or significant operational event	Progress
Turriff Lodge STP Digester Upgrade	EPA notified of Digester Upgrade project completion on 8 August 2023.
Turriff Lodge Outfall Relocation Project	Turriff Lodge STP new outfall and multiport diffuser commissioned late April 2023. Turriff Lodge STP Tynwald Park wetlands decommissioned August 2023. Landscaping plan is currently being implemented. EPA notified of Turriff Lodge STP Outfall Relocation and Wetland Decommissioning project completion on 8 August 2023.

For further information on Turriff Lodge STP please contact TasWater on 13 6992

www.taswater.com.au