

## 37 Oatlands STP

### 37.1 Activity and report details

Activity name	Oatlands STP		
Activity address	Church Street, Oatlands		
Permit number	Licence to Operate – 6254	Date of issue	4/03/1977
EPN	7972/1	Date of issue	7/03/2018
Treatment level	Secondary Treatment		
Authorised Dry Weather Flows	136 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 37-1: Oatlands Sewage Treatment Plant



## 37.2 Monitoring and compliance summary

### 37.2.1 Flow data

Table 37-A: Flow monitoring summary

	Influent	Effluent	Reuse
Location Name	Inlet	Dulverton Rivulet, via Reuse Storage Dam	Oatlands Golf Club and Bennett property
Coordinates	E 530366 N 5317462	E 530204 N 5317506	E 530244 N 5317394
Method of Measurement	Level Sensor	Influent less Reuse	In line meter
Date of last Calibration/Validation (if applicable).	16/06/2022	NA	16/06/2022

Table 37-B: Annual flow and rainfall data

Month	Average Daily Influent Volume (kL/day)*	Rainfall (mm/month) BOM Station ID 93014	Discharge to Waters Total Effluent Volume (ML)	Discharge to Reuse Total Effluent Volume (ML)
July 2022	418	12.6	22.20	0.00
August 2022	472	81.2	0.00	14.64
September 2022	535	39.2	22.40	0.00
October 2022	579	150.9	37.20	0.00
November 2022	526	88.2	25.90	0.00
December 2022	472	42.2	15.20	0.00
January 2023	420	19.0	0.00	13.01
February 2023	419	44.4	0.00	11.72
March 2023	410	41.4	0.00	12.72
April 2023	429	34.0	0.00	12.88
May 2023	426	19.2	0.00	13.22
June 2023	484	68.4	1.45	13.07
Annual 2022-23	466	640.7	124.35	91.26
% of Total Discharge	--	--	57.7%	42.3%

\*Known Inlet Flow meter fault. To be rectified.

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

### 37.2.2 Bypass events

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

### 37.3 Discharge compliance with permit limits

Table 37-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	--	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									
Max	11.1	37	--	21.9	2.3	8.9	5.8	24196	58.5
90th percentile	11.0	37	--	20.3	1.6	8.2	4.4	3618	46.9
50th percentile	2.3	25	--	9.6	1.0	7.7	3.1	130	33.0
Min	0.3	5	--	6.5	1.0	7.2	0.7	10	10.6
EPN Limit Compliance									
% compliance with Maximum	--	75%	--	100%	100%	--	100%	67%	58%
% compliance with 90th percentile	--	--	--	--	--	--	--	--	--
% compliance with 50th percentile	--	--	--	--	--	--	--	--	--
% compliance with pH range	--	--	--	--	--	92%	--	--	--

Table 37-D: Mass loads to the environment

Parameter	EPN Limit	Frequency	2022-23 result
Nitrogen (kg)	--	Annual	1809.0
Phosphorous (kg)	--	Annual	356.7
Method	Time weighted/Grab sample method		

Table 37-E: Performance Analysis (Discharge to environment)

Effluent compliance parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
TSS	26/09/2022	Algae is believed to be the primary reason for elevated BOD, and suspended solids. Algae is a source of oxygen and is fundamental to lagoon treatment. Some of the non-compliant results occurred in colder months when less algae levels are expected. This can be due to long HRT and residual lagoon algae from previous months.	Desludging completed in 2022. No future actions planned.
BOD	2/11/2022		

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

No other parameters had exceedances in the reporting period.

### 37.4 Reuse Annual Reporting

The Oatlands STP supplies treated effluent for irrigation purposes to the Oatlands recycled water scheme (RWS) which consists of two properties; Weedings Lagoon Golf Course (referred to as the Oatlands Golf Club) and Bennett property on Interlaken Road.

Table 37-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			
Max	37	8.9	24196
90th percentile	37	8.2	3618
50th percentile	25	7.7	130
Min	5	7.2	10
Summary of results			
% compliance with Maximum	100%	--	92%
% compliance with 90th percentile	--	--	--
% compliance with 50th percentile	--	--	67%
% compliance with pH range	--	100%	--

Table 37-G: Performance analysis (Discharge to reuse)

Reuse Compliance Parameter	Date(s) of non-compliance	Reasons for non-compliance	Actions to improve performance
E. coli	24/01/2023	Unknown	No specific actions

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

No other non-compliances were identified for the times the STP discharged to reuse.

Annual soil sampling was completed at two sites (Site 5 and 6) at the Oatlands Golf Club, and one site (Site 7) at the Bennett property in November 2022. The annual compliance audits at both properties were completed in conjunction with the soil sampling with additional phone audits in December 2022. A summary of the findings of the programs for the Golf Club in Table 37-H and Bennett property in Table 37-I.

Table 37-H: Annual recycled water scheme compliance audit and soil monitoring summary – Oatlands Golf Club

<b>Program</b>	Compliance audit	Soil monitoring
<b>Compliance status</b>	Nil observed	Soil salinity and sodicity at both sites and remain non-saline and non-sodic. Phosphorous level is excessive at Site 5 and below historical highs and high at Site 6 (similar to historical data).
<b>Comments</b>	Nil	Elevated phosphorous levels are not unexpected as there is a low level of nutrient loss. The amount of phosphorous applied to recycled water potentially exceeds soil factor losses at typical recycled water application rates.

Table 37-I: Annual recycled water scheme compliance audit and soil monitoring summary - Bennett property

<b>Program</b>	Compliance audit	Soil monitoring
<b>Compliance status</b>	No Site Irrigation and Environmental Management Plan (No irrigation of recycled water occurred in the past 12 months at date of audit.)	Soil salinity and sodicity levels similar to historic levels. Site remains non-saline and non-sodic. Nutrient levels remain generally within recommended range.
<b>Comments</b>	During the audit the landowner advised no irrigation with recycled water occurred in the past 12 months. Bennett property originally utilised as an emergency irrigation area. TasWater will engage landholder regarding the development of an IEMP. In the interim an Irrigation Management Map has been developed and will be provided to the landowner to address risk.	No irrigation of recycled water occurred in the past 12 months at date of sampling.

RWS groundwater status: Amber – moderate issue identified.

Oatlands RWS groundwater monitoring network consists of one bore (ID OATGW2) located at the Oatlands Golf Course. Annual monitoring was completed at OATGW2 in April 2023.

Amber status is a result of historic elevated phosphorous concentrations. In 2022-23 monitoring program Total phosphorous concentrations decreased but remain slightly above guideline criterion. It was considered unlikely that recycled water is impacting the groundwater quality with concentrations based on the low irrigation rates at the golf course.

Annual sampling of the standard analytical suite will continue at bore ID OATGW2 during the 2023-24 groundwater monitoring program. A review of the groundwater monitoring network will be completed during the next reporting period.

### 37.5 Ambient monitoring program

Table 37-J: Program details

<b>Program</b>	Seasonal Discharge Program - Routine monitoring during discharge to water.
<b>Status</b>	Ambient monitoring completed during seasonal discharge events within the reporting period.
<b>Update</b>	Ongoing ambient monitoring during seasonal discharge events.

## Comments

Ambient water quality monitoring occurred during discharges to Dulverton Rivulet in July, September, October, November, December 2022 and June 2023. Key findings from the ambient water quality data review were:

- The Default Guideline Value (DGV) for ammonia was exceeded at the downstream sample site on five monitoring occasions during discharge events. The upstream site was always well below the DGV.
- Total nitrogen levels were elevated downstream compared to upstream and exceeded the DGV on most monitoring occasions.
- Nitrate levels were below the DGVs at the upstream monitoring location but elevated downstream.
- Total phosphorous levels downstream were equal to or exceeded upstream levels in all discharge events. The downstream site significantly exceeded the DGV.
- There was no clear difference between upstream and downstream enterococci results. High levels of enterococci were recorded at both monitoring locations in October 2022 (particularly downstream), however the levels in the effluent were low.

Ambient water quality data indicates there is poor dilution in Dulverton Creek.

### 37.6 Groundwater monitoring

Site status: Green – Limited sign of STP impact

Oatlands STP groundwater monitoring network consists of one groundwater monitoring bore, OATGW1. Biannual sampling was completed the monitoring bore in October 2022, with annual sampling completed in April 2023. Annual sampling was also completed at the three STP lagoons in April 2023.

All analytical results were reported within the adopted protected environmental value groundwater quality guidelines and generally within historical ranges. Total phosphorous concentrations continue to fluctuate and an increase in total phosphorous trends continue.

Biannual sampling at the standard analytical suite is scheduled to continue at bore ID OATGW1 during the 2023-24 groundwater monitoring program. A review of the groundwater monitoring network will be completed during the next reporting period.

### 37.7 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 2024 to prioritise I&I investigation and works state-wide. This catchment was ranked 76 out of 79 in priority.

### 37.8 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 occurs at this site.

Table 37-K: Desludging status and comments

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

### 37.9 Non-compliance with other permit requirements

Table 37-L: EPN non-compliances

EPN Condition	Description of non-conformance	Future Actions to be taken
EF1 Effluent Discharge Locations	Discharge to environment occurs into a stormwater drain with public access prior to Dulverton River.	No future actions underway.
EF3 Effluent quality limits for discharge to the Dulverton Rivulet	Discharge compliance with permit limits.	See section 37.3 Discharge compliance with permit limits and Performance Analysis.
Q1 Regulatory Limits	ADWF exceeds EPN limit.	No future actions underway.
OP2 Operational Procedures and Maintenance Manual	No contemporary Operational Procedures Manual.	New SharePoint based solution for OPMMs currently being developed. First version to be implemented by FY24
M4 Flow Monitoring Equipment	Influent flow meter requires repairs.	Works planned to rectify this issue in FY24.

### 37.10 Complaints and incident reporting

There were no complaints or incidents recorded in the 2022-23 reporting period.

### 37.11 Any other relevant information

Table 37-M: Projects or significant operational events that occurred in FY 2022-23:

Project or significant operational event	Progress
Oatlands Inlet Flow Meter Issue	In March 2022, the reported inlet flow results were found to be excessively high for the town's ETs. Further investigation identified that the flow meter is currently recording incorrectly. Works are underway to remediate this issue in FY2024.

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

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