

57. Selfs Point STP

57.1 Activity and report details

| | | | |
|------------------------------|--|---------------|---|
| Activity name | Selfs Point STP | | |
| Activity address | Self's Point Road, Newtown, Hobart | | |
| Permit number | Licence to Operate - 3513 | Date of issue | 5 December 1995 |
| EPN | 9797/1 10344/1 8548 | Date of issue | 16/08/2018 15/01/2020 05/02/20213 |
| Treatment level | Tertiary Treatment | | |
| Authorised Dry Weather Flows | 13000 kL/day | | |
| Key Influent Source | Residential/Industrial 5 x Category 3 Customers, 1 x Category 4 Customers | | |
| Contact person | Kate Westgate | | |
| Report author | George Fitzgibbon | | |
| Contact details | Environment@taswater.com.au | | |
| Date of submission | 30 September 2024 | | |

Figure 57-1: Selfs Point Sewage Treatment Plant



57.2 Monitoring and compliance summary

57.2.1 Flow data

Table 57-A: Flow monitoring summary

| | Influent | Effluent | Reuse |
|--|-----------------------|-----------------------|-----------------------|
| Location name | Sewer Inlet | Derwent River | Effluent Reuse Scheme |
| Coordinates | E 526076 N 5256001 | E 526078 N 5256057 | NA |
| Method of measurement | In line meter | In line meter | NA |
| Date of last calibration/validation (if applicable). | 15/04/24 | 15/04/24 | NA |

Table 57-B: Annual flow and rainfall data

| Month | Average daily influent volume (kL/day) | Rainfall (mm/month) BOM Station ID 94030 | Discharge to waters total effluent volume (ML) | Discharge to reuse total effluent volume (ML) |
|----------------------|--|---|--|---|
| July 2023 | 9,518 | 22.5 | 224.47 | 0.00 |
| August 2023 | 9,356 | 11.6 | 222.96 | 0.00 |
| September 2023 | 9,582 | 32.1 | 220.59 | 0.00 |
| October 2023 | 8,869 | 62.7 | 228.44 | 0.00 |
| November 2023 | 9,274 | 29.0 | 222.14 | 0.00 |
| December 2023 | 9,007 | 37.2 | 218.17 | 0.00 |
| January 2024 | 9,158 | 41.0 | 214.27 | 0.00 |
| February 2024 | 9,129 | 6.9 | 191.99 | 0.00 |
| March 2024 | 9,069 | 11.4 | 210.77 | 0.00 |
| April 2024 | 8,930 | 35.3 | 211.11 | 0.00 |
| May 2024 | 9,698 | 29.2 | 226.00 | 0.00 |
| June 2024 | 8,900 | 35.8 | 212.56 | 0.00 |
| Annual 2023-24 | 9,233 | 354.7 | 2,603.46 | 0.00 |
| % of total discharge | -- | -- | 100.0% | 0.0% |

2023-24 monthly flow data was submitted directly to the EPA.

57.3 Bypass events

Table 57-C(i): Bypass events summary for SELST01-OFD

| | | | | | |
|--|---|-----------------|------------------------|----------------|--------------------------------|
| Bypass ID: | SELST01-OFD | | | | |
| Bypass description: | Overflow to short outfall from final effluent wet well AND/OR from contact tank inlet channel | | | | |
| Treatment bypassed: | Disinfection (UV & Chlorine) <i>This bypass has 2 overflow points, one before and one after disinfection. The resulting bypass flow will be partially disinfected</i> | | | | |
| Treatment level of impacted effluent: | Screened, Primary Treated, Secondary Treatment (Only if SELST01-BPD is NOT active), Partial Disinfection (UV & Chlorine, see above) | | | | |
| Flows exceeding: | ~230L/s | | | | |
| Discharge location: | Derwent Estuary short outfall: 526908E, 5256119N (GDA94) | | | | |
| Start date / time | End date / time | Duration | Volume estimate | Cause | Response actions |
| 22/10/23 02:56 | 22/10/23 05:46 | 2.8 h | 756 kL | Rainfall Event | No specific actions undertaken |

Table 57-C(ii): Bypass events summary for SELST01-OND-1

| | | | | | |
|--|--|-----------------|------------------------|----------------|--------------------------------|
| Bypass ID: | SELST01-OND-1 | | | | |
| Bypass description: | Inlet pump station overflow to short outfall | | | | |
| Treatment bypassed: | Primary Treatment, Secondary Treatment, Disinfection | | | | |
| Treatment level of impacted effluent: | Screened | | | | |
| Flows exceeding: | ~ 450 – 570 L/s | | | | |
| Discharge location: | Derwent Estuary short outfall: 526908E, 5256119N (GDA94) | | | | |
| Start date / time | End date / time | Duration | Volume estimate | Cause | Response actions |
| 22/10/23 00:02 | 22/10/23 04:11 | 4.2 h | Unknown | Rainfall Event | No specific actions undertaken |
| 14/12/23 03:53 | 14/12/23 04:34 | 0.7 h | Unknown | Rainfall Event | No specific actions undertaken |
| 25/03/24 22:35 | 25/03/24 23:04 | 0.5 h | Unknown | Rainfall Event | No specific actions undertaken |

* The volume of this bypass cannot be calculated as it occurs BEFORE the plant inlet flow meter

57.4 Discharge compliance with permit limits

Table 57-D: 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 | 2.0 | 15 | 1.0 | 10.0 | 5.0 | 8.5 | 3.0 | 750 | 20.0 |
| 90th percentile | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 50th percentile | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Minimum | -- | -- | -- | -- | -- | 6.5 | -- | -- | -- |
| Samples analysed | | | | | | | | | |
| Number required | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| Number analysed | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| Statistical summary | | | | | | | | | |
| Maximum | 9.8 | 34 | 2.20 | 18.9 | 2.1 | 7.8 | 7.3 | 5172 | 12.2 |
| 90th percentile | 1.6 | 12 | 1.26 | 12.0 | 1.0 | 7.5 | 5.2 | 1211 | 8.8 |
| 50th percentile | 0.3 | 5 | 0.48 | 7.6 | 1.0 | 7.3 | 1.8 | 122 | 4.3 |
| Minimum | 0.1 | 5 | 0.14 | 1.9 | 1.0 | 6.4 | 0.1 | 10 | 4.0 |
| EPN limit compliance | | | | | | | | | |
| % compliance with maximum | 90% | 98% | 85% | 83% | 100% | -- | 73% | 75% | 100% |
| % compliance with 90th percentile | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| % compliance with 50th percentile | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| % compliance with pH range | -- | -- | -- | -- | -- | 98% | -- | -- | -- |

Table 57-E: Mass loads to the environment

| Parameter | EPN limit | Frequency | 2023-24 result |
|------------------|--------------------------------|-----------|----------------|
| Nitrogen (kg) | -- | Annual | 20058.2 |
| Phosphorous (kg) | -- | Annual | 5707.6 |
| Method | Flow weighted/composite method | | |

Table 57-F: Performance Analysis (Discharge to environment)

| Effluent compliance parameter | Date(s) of non-compliance | Reasons for non-compliance | Actions to improve performance | |
|-------------------------------|---|--|---|---|
| E. coli | 24/10/2023 31/10/2023 14/11/2023 28/11/2023 16/01/2024 23/01/2024 6/02/2024 | 19/03/2024 26/03/2024 3/04/2024 9/04/2024 16/04/2024 30/04/2024 | <p><i>E.coli</i> exceedances likely due to low chlorine residual.</p> <p>Some instances of high chlorine are related to elevated ammonia, since chlorine decays more slowly in the presence of ammonia. This is a particular issue due to the limited contact time in the chlorine contact tank.</p> <p>The system is not capable of automatically adjusting the chlorine dose rate in order to achieve a target chlorine residual concentration.</p> <p>The chlorine concentration at the environmental discharge point is expected to be significantly lower (~10 km pipeline).</p> | Chlorine control is included in the scope of the Selfs point upgrade project. |
| Chlorine | 1/08/2023 22/08/2023 5/09/2023 12/09/2023 | 19/09/2023 5/12/2023 12/12/2023 4/06/2024 | <p>The chlorine concentration at the environmental discharge point is expected to be significantly lower (~10 km pipeline).</p> | |
| BOD | 9/04/2024 | The BOD failures can be associated with a wet weather event. Reduced hydraulic retention time in the aeration tank and increased hydraulic load on the clarifier causes increased BOD. | No specific actions undertaken. | |
| Ammonia | 12/09/2023 19/09/2023 31/10/2023 | 5/12/2023 27/12/2023 | Ammonia failures are typically associated with lower dissolved oxygen concentrations in the aeration tanks caused by increases in organic loading on the process. | Regular process adjustments to minimise ammonia and nitrogen exceedances. |

| Effluent compliance parameter | Date(s) of non-compliance | | Reasons for non-compliance | Actions to improve performance |
|-------------------------------|--|--|--|---------------------------------|
| Nitrogen | 19/09/2023 24/10/2023 13/02/2024 20/02/2024 27/02/2024 | 5/03/2024 12/03/2024 9/04/2024 7/05/2024 | Increases in the aerobic fraction in the aeration tanks provides good ammonia removal, however, prevents sufficient denitrification from occurring | |
| Phosphorus | 1/08/2023 19/09/2023 10/10/2023 17/10/2023 24/10/2023 7/11/2023 28/11/2023 | 30/01/2024 13/02/2024 20/02/2024 27/02/2024 5/03/2024 12/03/2024 3/04/2024 | Increased phosphorus load to the secondary treatment process causes increased effluent phosphorous | No specific actions undertaken. |
| pH | 5/03/2024 | | Minor exceedance | No specific actions undertaken. |

No other parameters had exceedances in the reporting period.

57.5 Reuse annual reporting

The Selfs Point STP previously supplied recycled water for irrigation of sporting grounds at the Selfs Point recycled water scheme located Friends School Sports Ground. Supply to the scheme ceased during FY2022–23. During FY2023–24 reporting period TasWater became aware that recycled water irrigation at the Cornelian Bay sports ground, which had previously ceased, had been switched on and in operation during summer months (weather dependant). All irrigation of recycled water ceased in November 2023.

Table 57–G: Reuse Compliance Summary

| Parameter | BOD5 | pH | E coli |
|-----------------------------------|------|-------|-----------|
| Permit/EPN limit | mg/L | Units | MPN/100ml |
| Maximum | 10 | 9.0 | -- |
| 90th percentile | -- | -- | -- |
| 50th percentile | -- | -- | 10 |
| Minimum | -- | 5.5 | -- |
| Samples analysed | | | |
| Number required | 52 | 52 | 52 |
| Number analysed | 52 | 52 | 52 |
| Statistical summary | | | |
| Maximum | 34 | 7.8 | 5172 |
| 90th percentile | 12 | 7.5 | 1211 |
| 50th percentile | 5 | 7.3 | 122 |
| Minimum | 5 | 6.4 | 10 |
| Summary of results | | | |
| % compliance with maximum | 79% | -- | -- |
| % compliance with 90th percentile | -- | -- | -- |
| % compliance with 50th percentile | -- | -- | 17% |
| % compliance with pH range | -- | 100% | -- |

Water exceeded Class A Recycled Water quality

Soil sampling and annual compliance audit was completed at the Cornelian Bay Sports Ground in December 2023. In summary a review of soil sampling data and recycled water quality suggests any elevated nutrient levels is related to ground management (fertiliser) and not recycled water irrigation. The audit found the scheme is non-compliant.

57.6 Ambient monitoring program

Table 57–J: Program details

| | |
|----------------|--|
| Program | NA – No requirement for ambient monitoring in the reporting period |
| Status | NA |

| | |
|-----------------|----|
| Update | NA |
| Comments | NA |

57.7 Groundwater monitoring

The Sels Point groundwater monitoring network consisted of one groundwater monitoring bore (ID CBGW1) which was located at a historic recycled water irrigation customer. This bore has been lost and no longer included in the groundwater monitoring program. TasWater will investigate the monitoring requirements of this STP and RWS going forward.

57.8 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. 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 43 out of 108 in priority.

Works this FY:

- Flow monitoring of New Town catchment. Review of next steps is in progress.

57.9 Sludge and biosolids

The latest revision to the Sewage Sludge Management Plan (SSMP) includes full details of the actions undertaken during the reporting period.

This STP was deemed non-compliant with the 2023-24 SSMP due to missing Biosolids Management Plans and no evidence that council approval was obtained.

Biosolids are removed regularly from site, no stockpiling occurs.

Table 57-K: Biosolids sludge classification

| Parameter | Number of samples | Maximum (mg/kg) | Mean (mg/kg) | Minimum (mg/kg) | BACC (mg/kg) | Contaminant classification |
|-----------|-------------------|-----------------|--------------|-----------------|--------------|----------------------------|
| Arsenic | 12 | 2.5 | 1.7 | 1.3 | 2.4 | A |
| Cadmium | 12 | 1.0 | 0.7 | 0.4 | 1.0 | B |
| Chromium | 12 | 14.2 | 12.0 | 7.5 | 16.0 | A |
| Copper | 12 | 667.0 | 412.3 | 165.0 | 688.7 | B |
| Lead | 12 | 14.6 | 9.9 | 4.9 | 15.8 | A |
| Mercury | 12 | 0.6 | 0.3 | 0.2 | 0.6 | A |
| Nickel | 12 | 15.9 | 10.8 | 8.9 | 14.9 | A |
| Zinc | 12 | 446.0 | 284.4 | 179.0 | 447.9 | B |

Table 57-L: Volume and disposal destination

| Quantity (DST) | Average solids content | Stabilisation method | Stabilisation grade | Contamination grade | Biosolids classification | End use destination |
|----------------|------------------------|----------------------|---------------------|---------------------|--------------------------|--|
| 943.0 | 21.83% | Hydrated Lime | B | B | 2 | Coronation Hotel, Whitemarsh farm, Delmore farm, Old Mill farm, Strathallan farm |

Notes: DST = Dry solid tonne.

57.10 Non-compliance with other permit requirements

Table 57-M: EPN non-compliances

| EPN condition | Description of non-conformance | Future actions to be taken |
|--|---|---|
| EF2 Effluent quality limits for discharge to water | Discharge compliance with permit limits | See section 57.4 Discharge compliance with permit limits and Performance Analysis |
| EM3 Discharge Management Plan | Discharge Management Plan overdue. | To be resolved during FY2025. The EPA Board approved the upgrade of Sels Point which construction is due to commence during FY2025. |
| WM2 Sewage Sludge Management Plan | Missing Biosolids Management Plans and no evidence that council approval was obtained | Ensure BMPs and evidence of council approval are included in 2023-24 SSMP |

57.11 Complaints and incident reporting

No complaints received or incidents reported during 2023-24 reporting period.

57.12 Any other relevant information

Table 57-O: Projects or significant operational events that occurred in FY 2023-24:

| Project or significant operational event | Progress |
|---|---|
| Sels Point STP Upgrade (this includes the decommissioning and transfer of flows from Macquarie Point STP) | EPA Board granted a permit for the new Sels Point STP. Subsequently, Hobart City Council issued a planning permit. Construction of the STP is expected to commence in September 2024. |

For further information on the Sels Point STP please contact TasWater on 13 6992

www.taswater.com.au.