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|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Licence number</b>              | L8807/2013/2                                                                                                                                                                                                                                                      |
| <b>Licence holder</b>              | Rottnest Island Authority                                                                                                                                                                                                                                         |
| <b>Registered business address</b> | Level 1, E-Shed Victoria Quay<br>FREMANTLE WA 6160                                                                                                                                                                                                                |
| <b>DWER file number</b>            | ILS2013/000004-1                                                                                                                                                                                                                                                  |
| <b>Duration</b>                    | 20/01/2023 to 19/01/2043                                                                                                                                                                                                                                          |
| <b>Date of issue</b>               | 18/01/2023                                                                                                                                                                                                                                                        |
| <b>Date of amendment</b>           | 27/10/2025                                                                                                                                                                                                                                                        |
| <b>Premises details</b>            | Rottnest Island Wastewater Treatment Plant<br>Kingsway, The Basin<br>ROTTNEST ISLAND WA 6161<br><br>Legal description -<br>Part Lot 10976 on Deposited Plan 216860<br>Certificate of Title Volume LR3096 Folio 976<br>As defined by the coordinates in Schedule 2 |

| Prescribed premises category description<br>(Schedule 1, <i>Environmental Protection Regulations 1987</i> ) | Assessed design capacity |
|-------------------------------------------------------------------------------------------------------------|--------------------------|
| Category 54: Sewage facility                                                                                | 500 m <sup>3</sup> /day  |

This licence is granted to the licence holder, subject to the attached conditions, on 27 October 2025, by:

**Grace Heydon**  
**Manager, Waste Industries**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

## Licence history

| Date       | Reference number | Summary of changes                                                                                                                                                                                                  |
|------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20/01/2014 | L8807/2013/1     | New licence issued due to cessation of the previous licence following non-payment of annual fee.                                                                                                                    |
| 13/10/2017 | L8807/2013/1     | Amendment notice 1 to incorporate infrastructure constructed under works approval W5857/2015/1.                                                                                                                     |
| 08/01/2018 | L8807/2013/1     | Amendment notice 2 to change the extent of the premises boundary.                                                                                                                                                   |
| 06/05/2020 | L8807/2013/1     | Changes to the extent of the premises boundary and addition of septage waste for acceptance and treatment at the premises.                                                                                          |
| 15/12/2021 | L8807/2013/1     | Amendment for the installation of a standby flow balance system and other administrative updates to the licence.                                                                                                    |
| 18/01/2023 | L8807/2013/2     | Licence renewal version 2.                                                                                                                                                                                          |
| 28/04/2023 | L8807/2013/2     | Department initiated amendment to correct errors.                                                                                                                                                                   |
| 27/10/2025 | L8807/2013/2     | Licence amendment to install a 50 m <sup>3</sup> chlorine contact tank, a portable building to house a tank 6 chlorination system (including associated civil works) and to amend the prescribed premises boundary. |

## Interpretation

In this licence:

- (a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
  - (i) if dated, refers to that particular version; and
  - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

**NOTE:** This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

## Licence conditions

The licence holder must ensure that the following conditions are complied with:

### Waste acceptance

1. The licence holder must only accept onto the premises waste of a waste type, which does not exceed the corresponding rate at which waste is received, and which meets the corresponding acceptance specification set out in Table 1.

**Table 1: Types of waste authorised to be accepted onto the premises**

| Waste type | Controlled waste code | Rate at which waste is received                                          | Acceptance specification                                                                                               |
|------------|-----------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Sewage     | K130                  | Combined total of no more than 500 m <sup>3</sup> /day.                  | Accepted via sewer inflows at the Sewage Input as shown in Schedule 1: Figure 2.                                       |
| Septage    | K210                  | Septage waste acceptance must be less than 100 tonnes per annual period. | Accepted via carrier load with a fixed hose connection to the Septage Input Sump Pump as shown in Schedule 1: Figure 2 |

2. The licence holder must ensure where waste does not meet the acceptance criteria set out in condition 1, it is removed from the premises by the delivery vehicle, or where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

### Waste processing

3. The licence holder must ensure that the waste types specified in Table 2 are only subjected to the corresponding process(es), subject to the corresponding process limits and/or specifications.

**Table 2: Waste processing**

| Waste type                        | Process(es)                                          | Process limits and specifications                                                                                           |
|-----------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sewage                            | Screening and grit removal                           | (a) Screenings must be discharged to screening bins located above a concrete hardstand and enclosed once full;              |
|                                   | Biological, chemical and physical treatment          | (b) Screenings must be disposed of to an appropriately licensed waste facility;                                             |
|                                   |                                                      | (c) Screened wastewater must be directed to a flow balance tank prior to entering the treatment train; and                  |
| Septage                           | Disinfection                                         | (d) Treatment of sewage and septage must not exceed 500 m <sup>3</sup> /day.                                                |
| Sludge and waste activated sludge | Chemical treatment, dewatering and temporary storage | (a) Sludge must be discharged to sludge storage bins located above a concrete hardstand and enclosed once full; and         |
|                                   |                                                      | (b) Sludge must be disposed from the premises to an appropriately licensed waste facility using a Controlled Waste Carrier. |

## Infrastructure and equipment

### Operations

4. The licence holder must ensure that the site infrastructure and equipment listed in Table 3 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 3

**Table 3: Infrastructure and equipment requirements**

|    | Infrastructure and equipment | Operational requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Infrastructure location                                 |
|----|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1. | Primary Screens              | (a) Must be connected to the Odour Scrubbing Unit; and<br>(b) In the event of an overflow, wastewater must be directed to the Emergency Storage Basin.                                                                                                                                                                                                                                                                                                                                                                       | Labelled 'Primary Inlet Screen' in Schedule 1: Figure 3 |
| 2. | Primary Flow Balance Tank    | (a) Must have a capacity of at least 0.5 ML;<br>(b) Must be connected to the Odour Scrubbing Unit;<br>(c) Level sensors and a high-level alarm connected to the Telemetry and Control System must be maintained;<br>(d) A jet mixer must be used to keep solids in suspension and to prevent short-circuiting within the flow balance tank; and<br>(e) In the event of an overflow, wastewater must be directed to the Emergency Storage Basin.                                                                              | As depicted in Figure 2                                 |
| 3. | Standby Flow Balance System  | Must have a capacity of at least 150 kL;<br>(a) Must be connected to the Odour Scrubbing Unit;<br>(b) Level sensors and a high-level alarm connected to the Telemetry and Control System must be maintained on all tanks;<br>(c) In the event of an overflow or high-level alarm being triggered in the Standby Flow Balance tanks, wastewater must be directed to the Emergency Storage Basin; and<br>(d) Plant Sump outputs must be diverted to the Secondary Screens during operation of the Standby Flow Balance System. | As depicted in Figure 2 and Figure 3                    |
| 4. | Emergency Storage Basin      | (a) Must be lined with a 1.5 mm HDPE liner to achieve a permeability less than $1 \times 10^{-9}$ m/s; and<br>(b) Wastewater directed to the Emergency Storage Basin must be pumped back to the Primary Flow Balance Tank for treatment when there is available capacity to do so.                                                                                                                                                                                                                                           | Labelled 'Emergency Overflow Basin' in Figure 2         |
| 5. | Infiltration Basin           | (a) Only to be used when treated wastewater reuse or storage options are not available.                                                                                                                                                                                                                                                                                                                                                                                                                                      | As depicted in Figure 2                                 |

## Department of Water and Environmental Regulation

|     | Infrastructure and equipment | Operational requirement                                                                                                                                                                                                                                                                                                                                                                                         | Infrastructure location              |
|-----|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| 6.  | Secondary Screens            | (a) Must be connected to the Odour Scrubbing Unit.                                                                                                                                                                                                                                                                                                                                                              | As depicted in Figure 2 and Figure 3 |
| 7.  | Biological Reactor Trains    | (a) Each train must be comprised of a 105 kL anoxic tank, 210 kL aerobic tank and a 35 kL post anoxic tank;<br>(b) Tanks must be provided with mixers;<br>(c) Mixers must be used to suspend solids and provide good contact between the incoming wastewater and the mixed liquor; and<br>(d) Overflow from the biological reactor must be directed via gravity to the plant sump.                              | Labelled 'MBR' in Figure 2           |
| 8.  | Membrane Filtration Trains   | (a) Membrane permeability must be maintained by: <ul style="list-style-type: none"> <li>(i) Aeration at the base of the membrane to dislodge solids from the membrane surface;</li> <li>(ii) Periodic relaxing and back-pulsing of the membranes;</li> <li>(iii) Periodic chemical cleaning of the membranes; and</li> </ul> (b) Membrane performance must be continuously monitored via the site SCADA system. |                                      |
| 9.  | Chlorine Disinfection System | (a) Residual free chlorine levels must be monitored to ensure sufficient disinfection.                                                                                                                                                                                                                                                                                                                          | N/A                                  |
| 10. | Recycled Water Tank          | (a) Must have a capacity of at least 1 ML; and<br>(b) Residual free chlorine levels must be monitored to ensure sufficient disinfection.                                                                                                                                                                                                                                                                        | As depicted in Figure 2              |
| 11. | Tank 6                       | (a) Must have a capacity of at least 9.1 ML;<br>(b) Fitted with an alarm to shut off treated wastewater intake when the tank is at 98% capacity; and<br>(c) In the event of an overflow treated wastewater must be diverted to Tank 3.                                                                                                                                                                          | N/A                                  |
| 12. | Tank 3                       | (a) Must be operated as backup treated wastewater storage if the capacity of Tank 6 is exceeded; and<br>(b) Must have a capacity of at least 2.5 ML.                                                                                                                                                                                                                                                            | N/A                                  |
| 13. | Chemical Storage Tanks       | (a) Must be sufficient in size to hold chemical volumes for 30 days of continuous operation of the wastewater treatment plant and be located in separate bunded areas in accordance with <i>AS3780:2023 Storage and handling of corrosive substances</i> ; and<br>(b) Duty/standby pumps must be provided for process dosing systems.                                                                           | N/A                                  |

## Department of Water and Environmental Regulation

|     | Infrastructure and equipment | Operational requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Infrastructure location                    |
|-----|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 14. | Odour Scrubbing Unit         | <ul style="list-style-type: none"> <li>(a) Must be comprised of a biological scrubber and activated carbon filter;</li> <li>(b) Treated air must be discharged from a 3m high vent; and</li> <li>(c) Must be operational when screening activities are taking place and/or the Flow Balance Tanks contains wastewater.</li> </ul>                                                                                                                                                                                                                                                                                                            | As depicted in Figure 4                    |
| 15. | Sludge Dewatering Facility   | <ul style="list-style-type: none"> <li>(a) Filter presses to be located in a 7.5 m x 4.5 m area bunded with one row of 90 mm x 190 mm x 390 mm concrete blocks that drains to the Plant Sump;</li> <li>(b) Polymer storage tank to be located within a concrete bunded area 4.6 m x 3.6 m and bunded with one row of 90 mm x 190 mm x 390 mm concrete blocks;</li> <li>(c) Sludge must be discharged to sludge storage bins located above a concrete hardstand with a 600 mm wide x 50 mm high roll over bund and drain to the Plant Sump; and</li> <li>(d) Full sludge storage bins must be sealed and secured prior to storage.</li> </ul> | Labelled 'Dewatering Building' in Figure 2 |
| 16. | Plant Sump                   | <ul style="list-style-type: none"> <li>(a) Must be covered at all times, excluding during an active carrier connection.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Labelled 'Sump Pump' in Figure 2           |
| 17. | Vehicle Washdown Area        | <ul style="list-style-type: none"> <li>(a) Controlled Waste Carrier vehicle washdown must take place above a bunded hardstand; and</li> <li>(b) Vehicle washwater must be directed to the Plant Sump and pumped to the Flow balance tank.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                         | As depicted in Figure 2                    |
| 18. | WWTP Underground Pipework    | <ul style="list-style-type: none"> <li>(a) Must be housed in concrete culverts and laid to fall to the Plant Sump.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A                                        |
| 19. | Telemetry and Control System | <ul style="list-style-type: none"> <li>(a) The system is to have remote monitoring capabilities allowing operators to be notified of alarms off-site and provide control capability from off-site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                | N/A                                        |
| 20. | Irrigation System            | <ul style="list-style-type: none"> <li>(a) Sprinklers are to be operated to ensure wastewater is evenly distributed to the designated irrigation areas;</li> <li>(b) Each sprinkler to have an electric valve-in-head and be able to be operated on an individual basis or simultaneously activated; and</li> <li>(c) Scour valves must be provided to allow draining of the system for maintenance.</li> </ul>                                                                                                                                                                                                                              | Labelled 'Irrigation areas' in Figure 5    |

|     | Infrastructure and equipment                                                                                                                                           | Operational requirement                                                                                                                                                                                                                                                                                                                                                                                                 | Infrastructure location                               |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 21. | WWTP groundwater monitoring bores<br><br>(MB001, MB002, MB003, MB006, MB007, MB008, MB009 and MB010)                                                                   | (a) Must be maintained in good working order to allow representative water samples to be taken                                                                                                                                                                                                                                                                                                                          | As depicted in Figure 6                               |
| 22. | Golf course and oval irrigation monitoring sites<br><br>(OV1, GC1, GC2, GC3, GC4, REF28-90, GC5s, GC5i, GC5d, GC6s, GC6i, GC6d, GC7s, GC7i, GC7d, GC8s, GC8i and GC8d) | (a) Must be maintained in good working order to allow representative water samples to be taken                                                                                                                                                                                                                                                                                                                          | As depicted in Figure 7 and Figure 8                  |
| 23. | Chlorine contact tank                                                                                                                                                  | (a) Level sensors and a high-level alarm connection to the SCADA Telemetry and Control System must be maintained.<br>(b) Treated wastewater directed only to the Recycled Water Tank for irrigation to the golf course.<br>(c) Residual free chlorine levels must be monitored to ensure sufficient disinfection.<br>(d) Tank and all pipework including fittings and joins maintained to be free of leaks and defects. | As depicted in Figure 10 and Figure 11 of Schedule 1. |
| 24. | Tank 6 chlorination system<br>(within chlorination building)                                                                                                           | (a) All pipework, fittings and joins are to be maintained to be free of leaks and defects.<br>(b) System must be maintained in good working order at all times.<br>(c) Chlorine to be stored and handled in accordance with AS 2927:2019.                                                                                                                                                                               | As depicted in Figure 11 and Figure 12 of Schedule 1. |

## Emissions and discharges

### Environmentally hazardous materials

5. The licence holder must immediately recover, or remove and dispose of, spills of environmentally hazardous materials within the boundary of the prescribed premises including wastewater, fuel, oil, or other hydrocarbons, whether inside or outside an engineered containment system.
6. The licence holder must ensure that all material used for the recovery, removal, and/or disposal of environmentally hazardous materials is stored in an impermeable container prior to disposal at an appropriately authorised facility.

### Final effluent quality

7. The licence holder must ensure that treated wastewater is only discharged to the discharge locations specified in Table 4 and that the parameters listed in Table 4 do not exceed the corresponding discharge limit.

**Table 4: Treated wastewater quality criteria**

| Discharge location                                                                                                                     | Parameter                 | Limit   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------|
| Infiltration Basin as depicted in Figure 2<br>Golf course and sports oval – labelled 'Irrigation/ infiltration basin areas in Figure 5 | Total Suspended Solids    | 10 mg/L |
|                                                                                                                                        | Biochemical Oxygen Demand | 10 mg/L |
|                                                                                                                                        | Total Nitrogen            | 10 mg/L |
|                                                                                                                                        | Total Phosphorus          | 1 mg/L  |

### Treated wastewater irrigation

8. The licence holder must ensure that treated wastewater that is irrigated at the golf course and sports oval does not exceed the nutrient loading limits specified in Table 5.

**Table 5: Irrigation loading limits**

| Discharge point                                                                            | Parameter        | Loading limit |
|--------------------------------------------------------------------------------------------|------------------|---------------|
| Golf course and sports oval – labelled 'Irrigation / infiltration basin areas' in Figure 5 | Total nitrogen   | 99 kg/ha/yr   |
|                                                                                            | Total phosphorus | 11.6 kg/ha/yr |

9. The licence holder must establish baseline field capacity measurements for the soil sampling locations detailed in Table 16 before irrigation of treated wastewater commences.
10. The licence holder must ensure that irrigation of treated wastewater does not take place when the soil moisture content (v%) is equal to or greater than the baseline field capacity as determined by condition 9.

## Monitoring

### Waste inputs

11. The licence holder must record the total amount of waste accepted onto the premises, for each waste type listed in Table 6, in the corresponding unit, and for each corresponding time period, as set out in Table 6.

**Table 6: Monitoring of inputs**

| Waste type    | Unit                 | Averaging period | Frequency                          | Method                           |
|---------------|----------------------|------------------|------------------------------------|----------------------------------|
| Sewage waste  | m <sup>3</sup> /day  | Monthly          | Continuous measurement             | Flow metering device             |
| Septage waste | m <sup>3</sup> or kL |                  | Each load arriving at the premises | Controlled Waste Tracking System |

### Effluent discharge quality

12. The licence holder must monitor emissions in accordance with the requirements specified in Table 7 and record the results of all such monitoring.

**Table 7: Monitoring of treated wastewater**

| Monitoring location                         | Parameter                                      | Unit                | Averaging period | Frequency  | Method                                     |
|---------------------------------------------|------------------------------------------------|---------------------|------------------|------------|--------------------------------------------|
| Recycled Water Tank as depicted in Figure 2 | pH <sup>1</sup>                                | -                   | Spot Sample      | Continuous | AS/NZS 5667.1:1998 and AS/NZS 5667.10:1998 |
|                                             | TDS                                            | mg/L                |                  | Monthly    |                                            |
|                                             | TSS                                            |                     |                  |            |                                            |
|                                             | BOD <sub>5</sub>                               |                     |                  |            |                                            |
|                                             | NH <sub>4</sub> -N                             |                     |                  |            |                                            |
|                                             | NO <sub>3</sub> -N                             |                     |                  |            |                                            |
|                                             | NO <sub>2</sub> -N                             |                     |                  |            |                                            |
|                                             | TN                                             |                     |                  |            |                                            |
|                                             | TP                                             |                     |                  |            |                                            |
|                                             | <i>E. coli</i>                                 |                     |                  |            |                                            |
|                                             | Cumulative volume irrigated to the oval        | m <sup>3</sup> /day | Monthly          | Continuous | Flow metering device                       |
|                                             | Cumulative volume irrigated to the golf course |                     |                  |            |                                            |

## Department of Water and Environmental Regulation

| Monitoring location               | Parameter                                               | Unit | Averaging period | Frequency | Method                    |
|-----------------------------------|---------------------------------------------------------|------|------------------|-----------|---------------------------|
| Recycled Water Tank overflow line | Cumulative volume disposed of to the infiltration basin |      |                  |           | Water balance calculation |

Note 1: In-field non-NATA accredited analysis permitted.

13. The licence holder must ensure that all non-continuous sampling and analysis undertaken pursuant to condition 12 is undertaken by a holder of a current accreditation from NATA for the methods of sampling and analysis relevant to the corresponding relevant parameter.

### Ambient monitoring program

14. The licence holder must conduct an ambient monitoring program in accordance with the requirements specified in Schedule 3: Monitoring program and record the results of all monitoring activity conducted under that program.
15. The licence holder must adhere to the field quality assurance and quality control procedures specified in Schedule 3: Monitoring program for the monitoring required by condition 14.
16. All sample analysis must be undertaken by laboratories with current accreditation from NATA for the relevant parameters, unless otherwise specified in Schedule 3: Monitoring program.

## Records and reporting

### Records

17. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:
- (a) the calculation of fees payable in respect of this licence;
  - (b) the Controlled Waste Carrier, registration number of the transport vehicle and details of the waste facility used for the disposal of sludge in the course of complying with condition 3 of this licence;
  - (c) the works conducted in accordance with condition 23 of this licence;
  - (d) any maintenance of infrastructure that is performed in the course of complying with condition 4 of this licence;
  - (e) monitoring programs undertaken in accordance with conditions 11, 12, 14 and 27 of this licence; and
  - (f) complaints received under condition 19 of this licence.
18. The books specified under condition 17 must:
- (a) be legible;
  - (b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
  - (c) be retained by the licence holder for the duration of the licence; and
  - (d) be available to be produced to an inspector or the CEO as required.

## Department of Water and Environmental Regulation

- 19.** The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the department or another party) about any alleged emissions from the premises:
- (a) the name and contact details of the complainant, (if provided);
  - (b) the time and date of the complaint;
  - (c) the complete details of the complaint and any other concerns or other issues raised; and
  - (d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

## Reporting

- 20.** The licence holder must:
- (a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
  - (b) prepare and submit to the CEO an Annual Audit Compliance Report in the approved form by 30 September each year.
- 21.** The licence holder must:
- (a) prepare an Environmental Report that provides information in accordance with Table 8 for the preceding annual period; and
  - (b) submit that Environmental Report to the CEO by 30 September each year.

**Table 8: Environmental Report requirements**

| Condition     | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7, 8, 12 & 13 | <p>Wastewater discharge volumes, quality criteria and monitoring:</p> <ul style="list-style-type: none"> <li>(a) Summary of wastewater discharge volumes to respective discharge areas; golf course, oval and infiltration basin;</li> <li>(b) volume (in m<sup>3</sup> or kL) of treated wastewater applied daily to each irrigation area, and monthly cumulative volumes presented in table format;</li> <li>(c) treated wastewater monitoring data in tabulated and graphical form including the sampling date;</li> <li>(d) tabulated monthly and annual loadings of nitrogen and phosphorus applied to each irrigation area, including an explanation of the basis for determining loading rates;</li> <li>(e) summary of moisture content (v%) with respect to operational irrigation requirements specified in Conditions 9 and 10 (field capacity);</li> <li>(f) an assessment and interpretation of the data, including comparison to historical trends and loading limits; and</li> <li>(g) copies of laboratory sample analysis reports.</li> </ul> |
| 11            | <p>Wastewater intake volumes:</p> <ul style="list-style-type: none"> <li>(a) Summary of daily intake volumes (m<sup>3</sup> /day) of waste entering the premises; and</li> <li>(b) Data should be presented in tabulated form within the report.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Condition                                      | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14, 15 & 16 and Schedule 3: Monitoring program | <p>Monitoring program:</p> <ul style="list-style-type: none"> <li>(a) a clear statement of the scope of work carried out;</li> <li>(b) a description of the field methodologies employed;</li> <li>(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;</li> <li>(d) copies of the field monitoring records and field QA/QC documentation;</li> <li>(e) an assessment of reliability of field procedures and laboratory results;</li> <li>(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;</li> <li>(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);</li> <li>(h) an interpretive summary and assessment of results against previous monitoring results;</li> <li>(i) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the AMCS Guideline; and</li> <li>(j) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.</li> </ul> |
| 17 & 19                                        | Complaints – summary of records and actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

22. The licence holder must comply with a CEO Request, within 7 days from the date of the CEO Request or such other period specified in the CEO Request.

## Specified actions

### Tank 6 chlorination system construction / installation

23. The licence holder must construct and/or install the infrastructure listed in Table 9, in accordance with;
- (a) the corresponding design and construction requirement/installation requirement; and
  - (b) at the corresponding infrastructure location; and
  - (c) within the corresponding timeframe,
- as set out in Table 9.

**Table 9: Design and construction requirements/installation requirements**

|    | Infrastructure                                               | Design and construction / installation requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Infrastructure location                               |
|----|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 1. | Chlorination building                                        | <ul style="list-style-type: none"> <li>(a) Installation of a 6 m x 3 m portable building on compacted Bitumen Stabilised Limestone (BSL);</li> <li>(b) Must have a partition installed between the chlorination room and the pump room that is compliant with AS 2927:2019;</li> <li>(c) Building to be ventilated with an exhaust system; and</li> <li>(d) All associated pipework including fittings and joins to be constructed of impervious material and are to be free of leaks and defects.</li> <li>(e) Chlorination building footings (weld plate to concrete disc footings) constructed/installed as shown in Figure 10, Figure 13 and Figure 14 of Schedule 1.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | As depicted in Figure 10 of Schedule 1.               |
| 2. | Tank 6 chlorination system<br>(within chlorination building) | <ul style="list-style-type: none"> <li>(a) The equipment, piping, valves, instrumentation, electrical cabling and control equipment to be fitted within the chlorination building and Factory Acceptance Tested (FAT) prior to delivery on-site.</li> <li>(b) A Site Acceptance Test (SAT) must be conducted on-site following installation.</li> <li>(c) The gas chlorination system must include: <ul style="list-style-type: none"> <li>(i) A chlorinator, associated interconnections, flow tubes, pressure switches and automated valves;</li> <li>(ii) Dual sensor chlorine gas leak detector.</li> <li>(iii) Automatic shut-off system.</li> <li>(iv) Chlorine drum shut-off valve and emergency shutdown devices.</li> <li>(v) Chlorine injector and associated equipment.</li> <li>(vi) Chlorine monitoring gas analyser.</li> <li>(vii) Chlorine sensor.</li> <li>(viii) Chlorine analyser package consisting of a Dialog series Dulcometer multi parameter controller (or equivalent) to monitor free chlorine.</li> <li>(ix) Connection to a Telemetry and Control System.</li> <li>(x) Located within the chlorination building only.</li> </ul> </li> <li>(d) All associated pipework including fittings and joins to be constructed of impervious material and are to be free of leaks and defects.</li> <li>(e) Chlorine to be stored and handled in accordance with AS 2927:2019.</li> </ul> | As depicted in Figure 11 and Figure 12 of Schedule 1. |

## Department of Water and Environmental Regulation

|    |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |
|----|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 3. | Chlorine contact tank | <ul style="list-style-type: none"> <li>(a) Enclosed 50 m<sup>3</sup> poly tank (Polymaster or equivalent).</li> <li>(b) To be fitted with a level sensor and high-level alarm connected to the existing telemetry and control system.</li> <li>(c) To be fitted with a recirculation pump.</li> <li>(d) Must be designed and manufactured according to AS/NZS 4766:2020 and the structural integrity must be certified by a suitably qualified civil or structural engineer.</li> <li>(e) To be installed on compacted Bitumen Stabilised Limestone (BSL).</li> <li>(f) All associated pipework, fittings and joins to be constructed of impervious material and to be free of leaks and defects.</li> </ul> | As depicted in Figure 10 and Figure 11 of Schedule 1. |
|----|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

**24.** The licence holder must within 30 calendar days of each item of infrastructure required by condition 23 being constructed:

- (a) undertake an audit of their compliance with the requirements of condition 23; and
- (b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

**25.** The Environmental Compliance Report required by condition 24, must include as a minimum the following:

- (a) certification by a suitably qualified civil or structural engineer that the items of infrastructure or component(s) thereof, as specified in condition 23, have been constructed in accordance with the relevant requirements specified in condition 23;
- (b) A suitably qualified civil or structural engineer must provide confirmation of permeability specifications for the following:
  - (i) hardstand beneath the chlorine contact tank; and
  - (ii) hardstand beneath the chlorination building;
- (c) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 23;
- (d) labelled photographic evidence of the installation of infrastructure; and
- (e) be signed by a person authorised to represent the licence holder and contains the printed name and position of that person.

### Environmental Commissioning

**26.** Prior to operation of the Tank 6 chlorination system and the chlorine contact tank, the licence holder must undertake the following environmental commissioning activities:

- (a) hydrostatic testing of the chlorine contact tank;
- (b) leak and functional testing of tank, pipelines, joins and fittings;
- (c) pressure testing and visual inspection of pipelines;
- (d) functional testing of manual and automated valves and pumps; and

- (e) testing of level sensors alarms, high tank level alarms, automatically activated equipment and associated telemetry and control systems.

27. The licence holder must monitor chlorine contact tank outflow for the first 5 days of environmental commissioning in accordance with Table 10.

**Table 10: Emissions and discharge monitoring during environmental commissioning**

| Monitoring location                                       | Parameter          | Frequency | Averaging Period | Unit | Method                                     |
|-----------------------------------------------------------|--------------------|-----------|------------------|------|--------------------------------------------|
| Chlorine contact tank outflow point as shown in Figure 12 | pH <sup>1</sup>    | Daily     | Spot sample      | -    | AS/NZS 5667.1:1998 and AS/NZS 5667.10:1998 |
|                                                           | TDS                |           |                  | mg/L |                                            |
|                                                           | TSS                |           |                  |      |                                            |
|                                                           | BOD <sub>5</sub>   |           |                  |      |                                            |
|                                                           | NH <sub>4</sub> -N |           |                  |      |                                            |
|                                                           | NO <sub>3</sub> -N |           |                  |      |                                            |
|                                                           | NO <sub>2</sub> -N |           |                  |      |                                            |
|                                                           | TN                 |           |                  |      |                                            |
|                                                           | TP                 |           |                  |      |                                            |
|                                                           | <i>E. coli</i>     |           |                  |      |                                            |

Note 1: In-field non-NATA accredited analysis permitted

28. The licence holder must record the results of all monitoring activity required by condition 27.
29. The licence holder must ensure that all non-continuous sampling and analysis undertaken pursuant to condition 27 is undertaken by a holder of a current accreditation from NATA for the methods of sampling and analysis relevant to the corresponding relevant parameter.
30. The licence holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of Environmental Commissioning.
31. The Environmental Commissioning Report required by condition 30, must include as a minimum the following:
- a summary of the Environmental Commissioning activities undertaken;
  - a summary of the environmental performance of each item / activity listed in conditions 26 (a) to (e); and
  - laboratory testing of chlorine contact tank outflow for the first five days of operation as outlined in condition 27.

## Definitions

In this licence, the terms in Table 11 have the meanings defined.

**Table 11: Definitions**

| Term                                  | Definition                                                                                                                                                                                        |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACN                                   | Australian Company Number                                                                                                                                                                         |
| AMCS Guideline                        | means the document titled Assessment and management of contaminated sites published by the Chief Executive Officer of the Department of Environment Regulation, as amended from time to time.     |
| Annual Audit Compliance Report (AACR) | means a report submitted in a format approved by the CEO (relevant guidelines and templates are available on the Department's website).                                                           |
| annual period                         | a 12 month period commencing from 1 July until 30 June of the immediately following year.                                                                                                         |
| AS 2927:2019                          | means the Australian Standard AS 2927:2019 <i>The storage and handling of liquefied chlorine gas</i> .                                                                                            |
| AS 4482.1:2005                        | means the Australian Standard AS 4482.1:2005 <i>Guide to the investigation and sampling of sites with potentially contaminated soil – Non-volatile and semivolatile compounds</i> .               |
| AS/NZS 4766:2020                      | means the Australian Standard AS/NZS 4766:2020 <i>Polyethylene storage tanks for water and chemicals</i> .                                                                                        |
| AS/NZS 5667.1:1998                    | means the Australian Standard AS/NZ 5667.1:1998 <i>Water quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i> . |
| AS/NZS 5667.4:1998                    | means the Australian Standard AS/NZS 5667.4:1998 <i>Water quality – Sampling – Guidance on sampling from lakes, natural and man-made</i> .                                                        |
| AS/NZS 5667.10:1998                   | means the Australian Standard AS/NZS 5667.10:1998 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i> .                                                                        |
| AS/NZS 5667.11:1998                   | means the Australian Standard AS/NZS 5667.11:1998 <i>Water quality – Sampling – Guidance on sampling of groundwaters</i> .                                                                        |
| ASC NEPM                              | National Environment Protection (Assessment of Site Contamination) Measure                                                                                                                        |
| Assessment levels                     | means the Tier 1 assessment levels as defined in the AMCS Guideline.                                                                                                                              |
| BOD <sub>5</sub>                      | 5 day biochemical oxygen demand                                                                                                                                                                   |

| Term                                | Definition                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| books                               | has the same meaning given to that term under the EP Act.                                                                                                                                                                                                                                                                 |
| CEO                                 | means Chief Executive Officer of the department.<br>“submit to / notify the CEO” (or similar), means either:<br>Director General<br>Department administering the <i>Environmental Protection Act 1986</i><br>Locked Bag 10<br>Joondalup DC WA 6919<br>or:<br><a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a> |
| Composite soil sample               | has the same meaning given to that term in AS 4482.1:2005.                                                                                                                                                                                                                                                                |
| Controlled Waste Carrier            | has the same meaning given to that term under the Controlled Waste Regulations                                                                                                                                                                                                                                            |
| Controlled Waste Regulations        | <i>Environmental Protection (Controlled Waste) Regulations 2004</i> (WA)                                                                                                                                                                                                                                                  |
| department;<br>DWER                 | means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.                                                                                                              |
| discharge                           | has the same meaning given to that term under the EP Act.                                                                                                                                                                                                                                                                 |
| EC                                  | Electrical conductivity                                                                                                                                                                                                                                                                                                   |
| <i>E. coli</i>                      | <i>Escherichia coli</i>                                                                                                                                                                                                                                                                                                   |
| emission                            | has the same meaning given to that term under the EP Act.                                                                                                                                                                                                                                                                 |
| environmentally hazardous materials | means material which if discharged into the environment, from or within the premises, may cause pollution or environmental harm.                                                                                                                                                                                          |
| environmental commissioning         | means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.                                                              |
| Environmental Commissioning Report  | means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.                                                                                                            |
| Environmental Compliance Report     | means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the licence.                                                                                                                                                              |

| Term                                            | Definition                                                                                                                                                                                                                |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EP Act                                          | <i>Environmental Protection Act 1986 (WA)</i>                                                                                                                                                                             |
| EP Regulations                                  | <i>Environmental Protection Regulations 1987 (WA)</i>                                                                                                                                                                     |
| field capacity                                  | means the amount of moisture or water content held in soil without loss to infiltration and the capacity of vegetation and soil to assimilate nutrients and absorb metals.                                                |
| FRP                                             | Filterable reactive phosphorus                                                                                                                                                                                            |
| licence                                         | refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.                                                          |
| licence holder                                  | refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.                                                                       |
| mAGL                                            | metres above ground level                                                                                                                                                                                                 |
| mAHD                                            | metres Australian height datum                                                                                                                                                                                            |
| mBGL                                            | metres below ground level                                                                                                                                                                                                 |
| NATA                                            | National Association of Testing Authorities                                                                                                                                                                               |
| NH <sub>4</sub> -N                              | Ammonium as nitrogen                                                                                                                                                                                                      |
| NO <sub>2</sub> -N                              | Nitrite as nitrogen                                                                                                                                                                                                       |
| NO <sub>3</sub> -N                              | Nitrate as nitrogen                                                                                                                                                                                                       |
| PBI                                             | Phosphorus buffering index                                                                                                                                                                                                |
| premises                                        | refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 and coordinates table (Table 10) in Schedule 2 to this licence. |
| prescribed premises                             | has the same meaning given to that term under the EP Act.                                                                                                                                                                 |
| Recycled Water Tank                             | refers to the Recycled Water Tank (RWT) as shown in Figure 2 in Schedule 1 to this licence. RWT is also referred to as Recycled Water Storage Tank (RWST).                                                                |
| SCADA                                           | Supervisory control and data acquisition                                                                                                                                                                                  |
| suitably qualified civil or structural engineer | An individual who holds a Bachelor of Engineering and has a minimum of five (5) years demonstrated experience working in the relevant discipline                                                                          |

| Term  | Definition                                                |
|-------|-----------------------------------------------------------|
| TDS   | Total dissolved solids                                    |
| TKN   | Total kjeldahl nitrogen                                   |
| TN    | Total nitrogen                                            |
| TP    | Total phosphorus                                          |
| TSS   | Total suspended solids                                    |
| Waste | has the same meaning given to that term under the EP Act. |
| WWTP  | wastewater treatment plant                                |

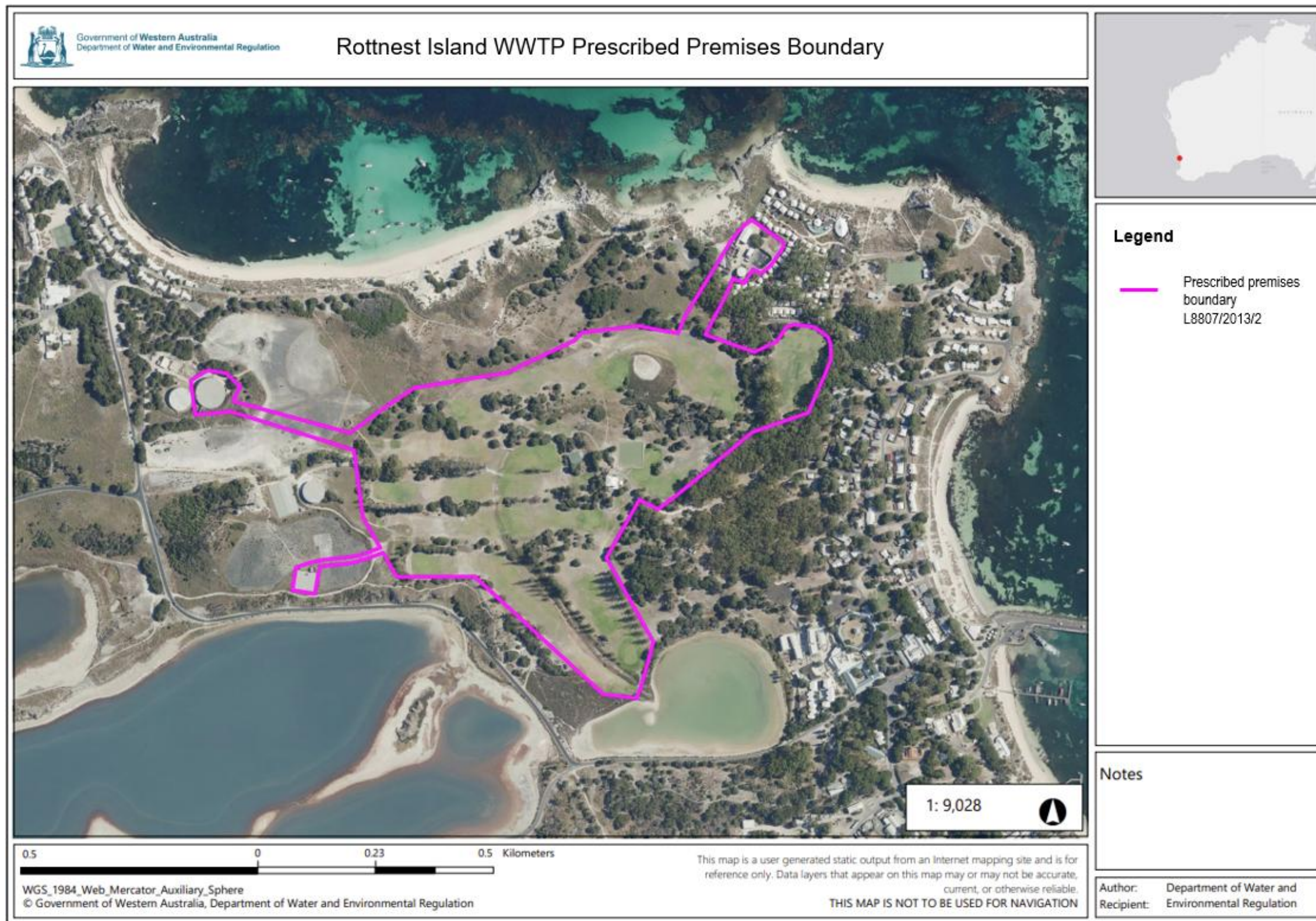
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**END OF CONDITIONS**

## Schedule 1: Maps

### Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).



**Figure 1: Map of the boundary of the prescribed premises**

[L8807/2013/2 \(Amended 27/10/2025\)](#)

IR-T06 Licence template (v10.0) (May 2024)

## WWTP site plans and schematics

**Figure 2: WWTP site plan**

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

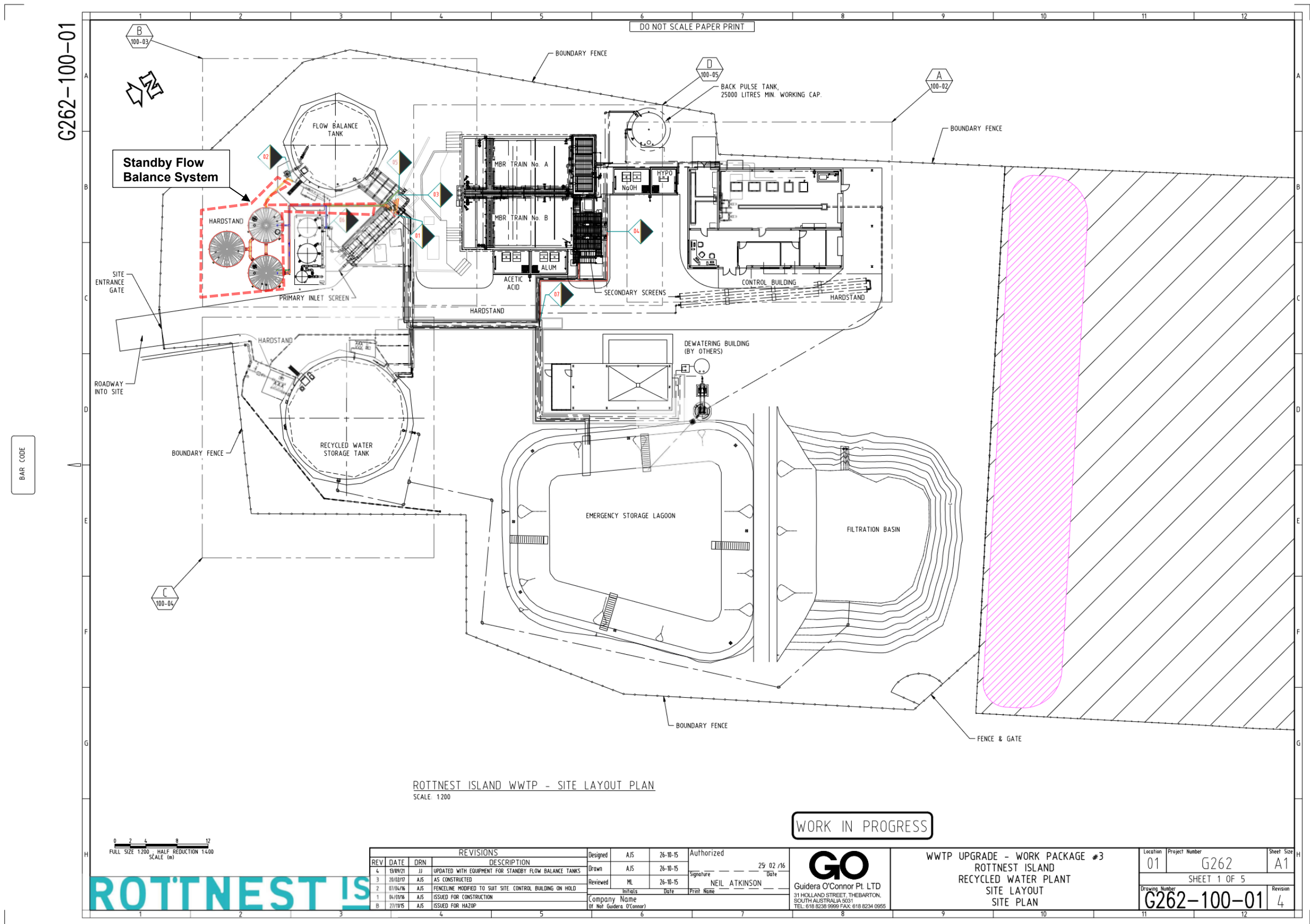


Figure 3: WWTP schematic

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

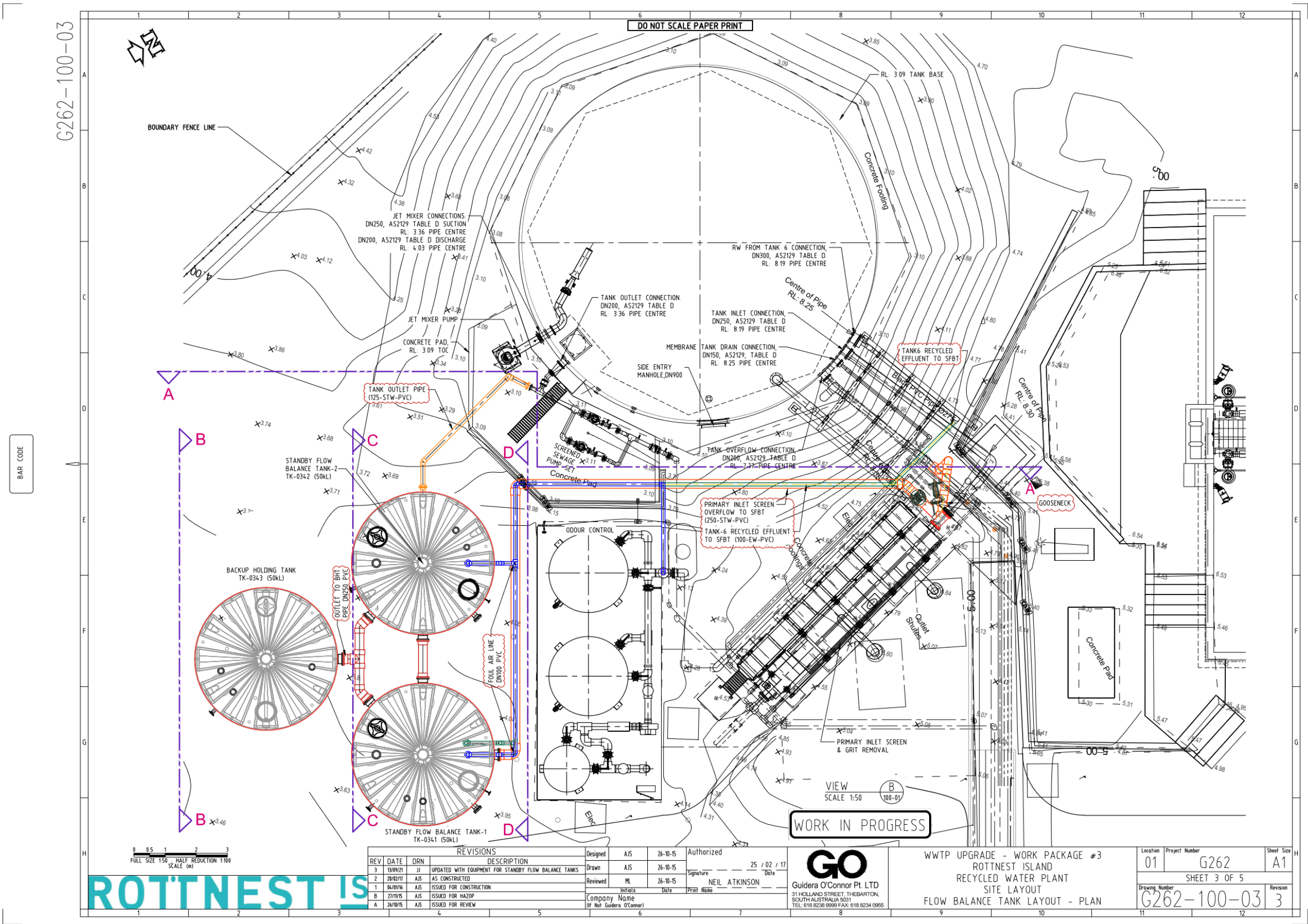


Figure 4: Standby flow balance system layout

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

## Irrigation area



**Figure 5: Golf course and oval irrigation areas**

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

## Monitoring bores

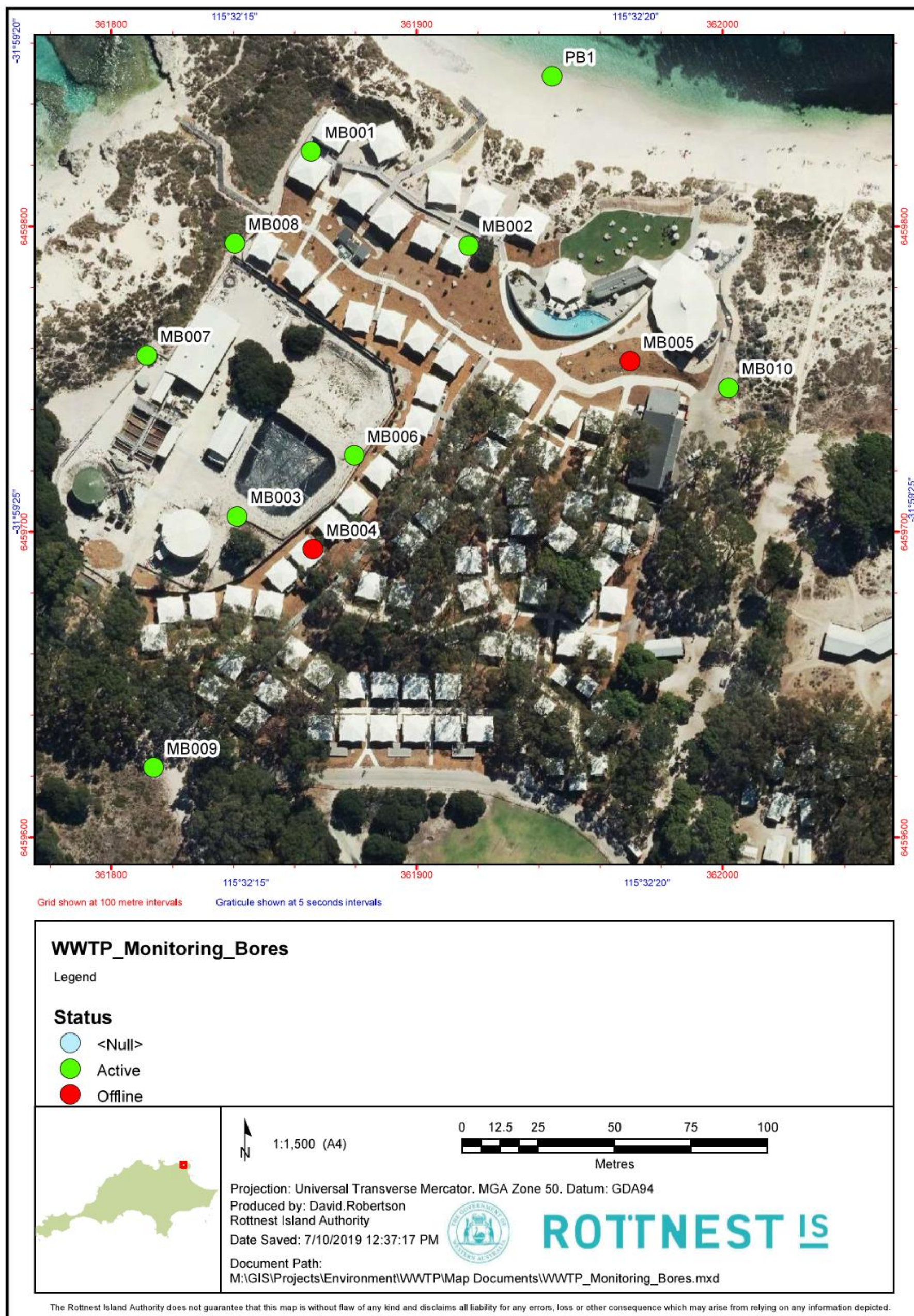


Figure 6: Groundwater monitoring locations for the WWTP

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

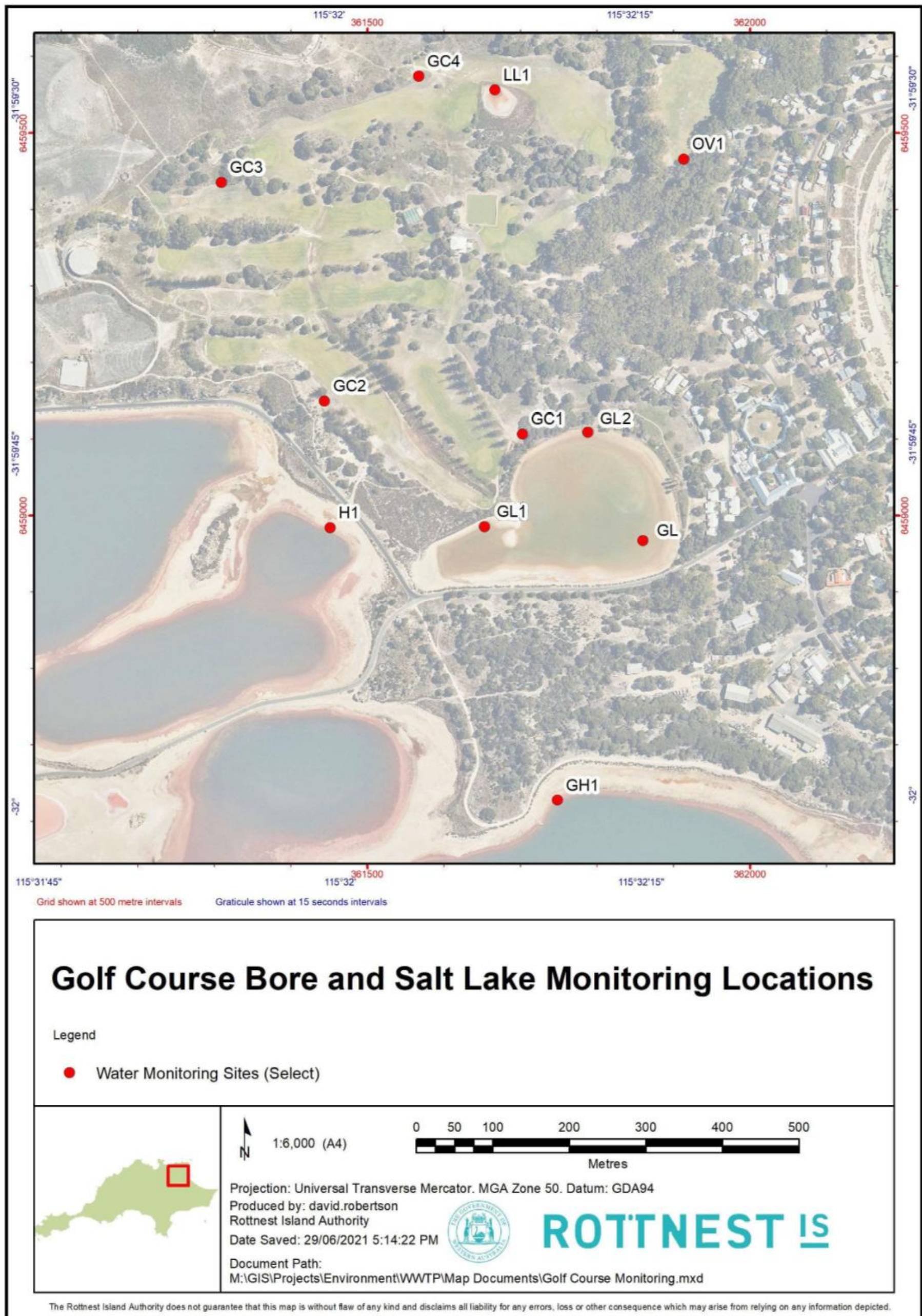


Figure 7: Groundwater and surface water monitoring locations for the irrigation areas

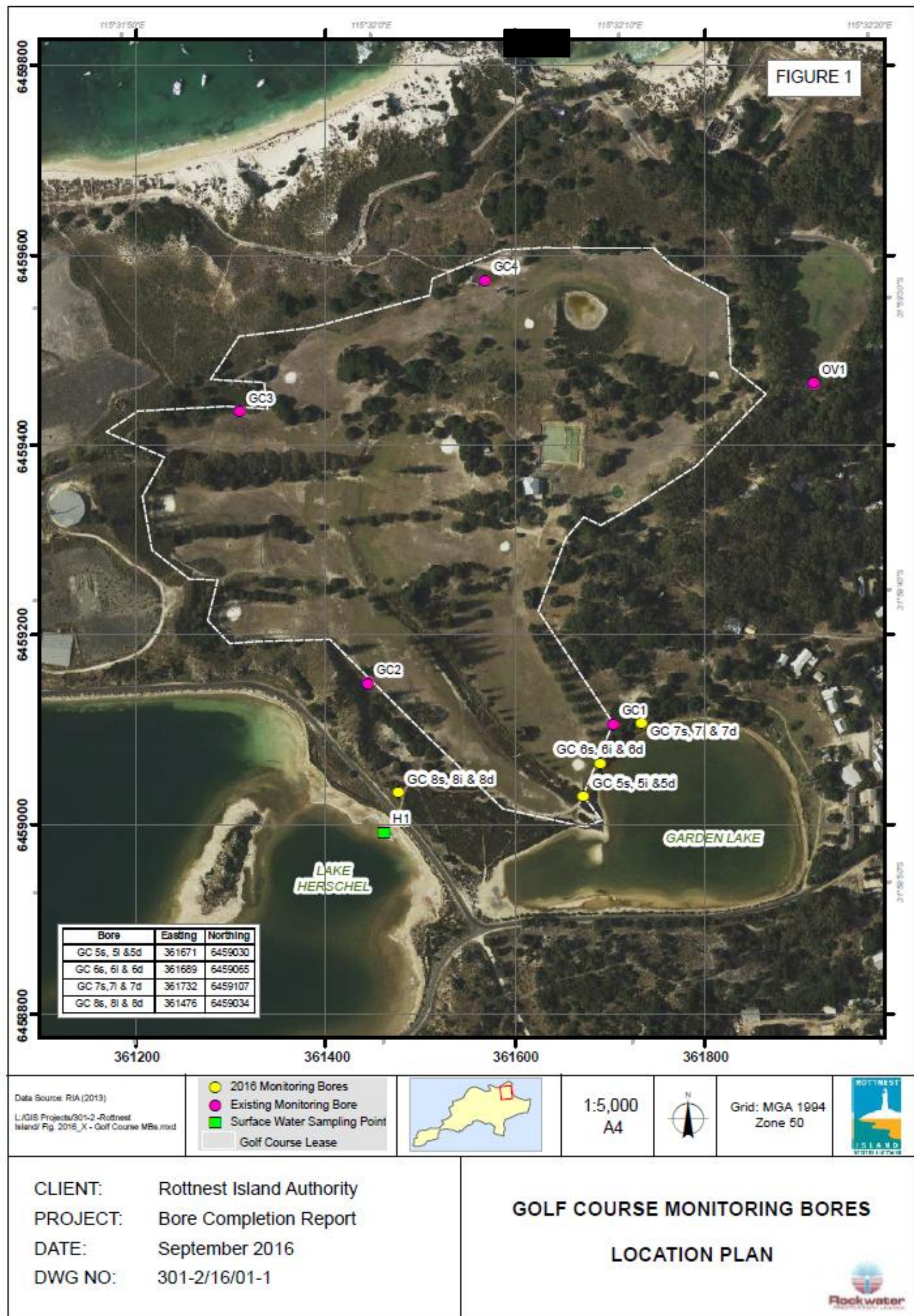


Figure 8: Fresh groundwater lens/hyporheic zone monitoring locations for the irrigation areas

## Soil bores



Figure 9: Soil monitoring locations for the irrigation areas

L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)

Tank 6 chlorination system

25

Figure 10: Tank 6 chlorination system project - site layout showing location of infrastructure and drainage.

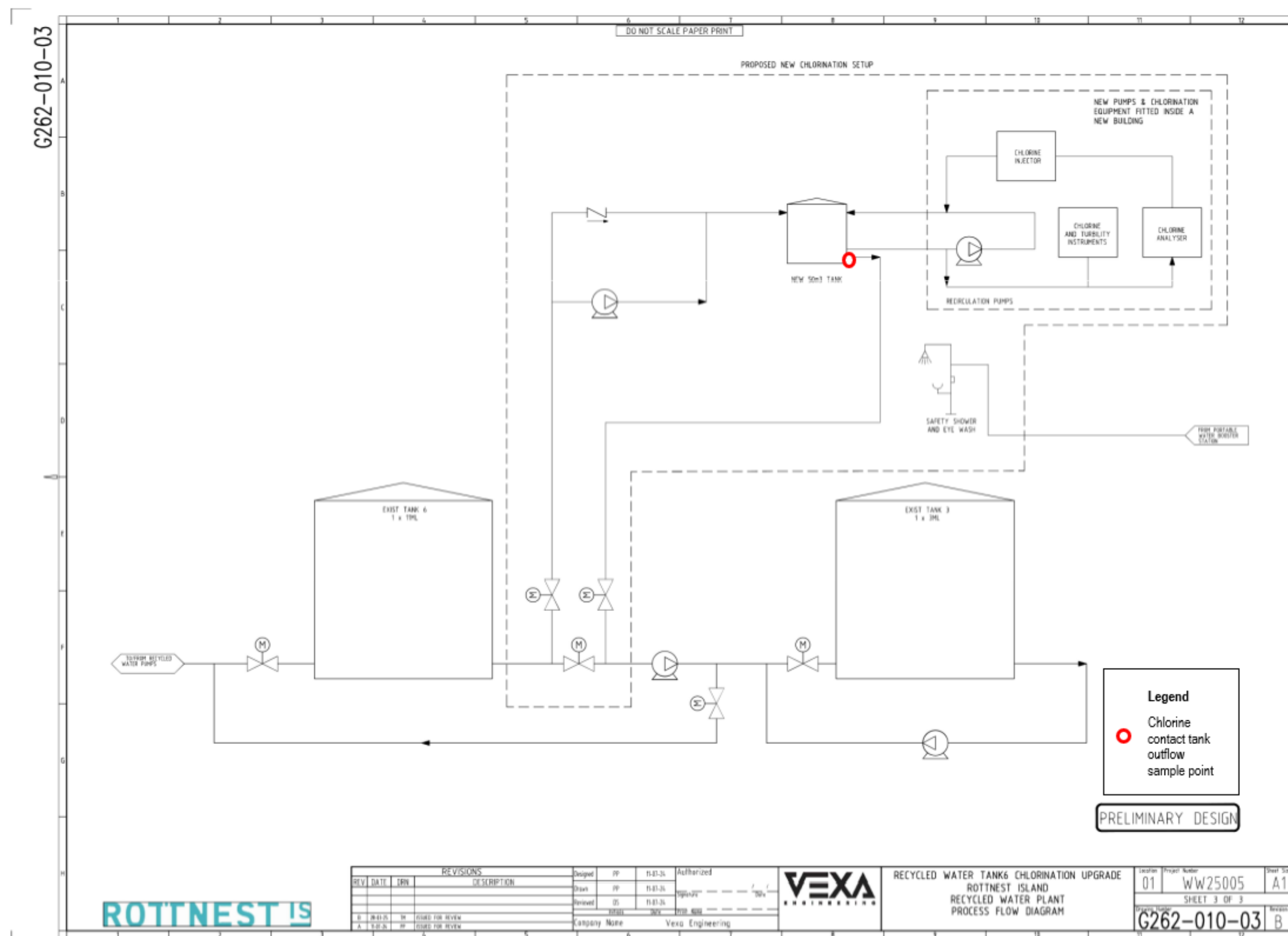
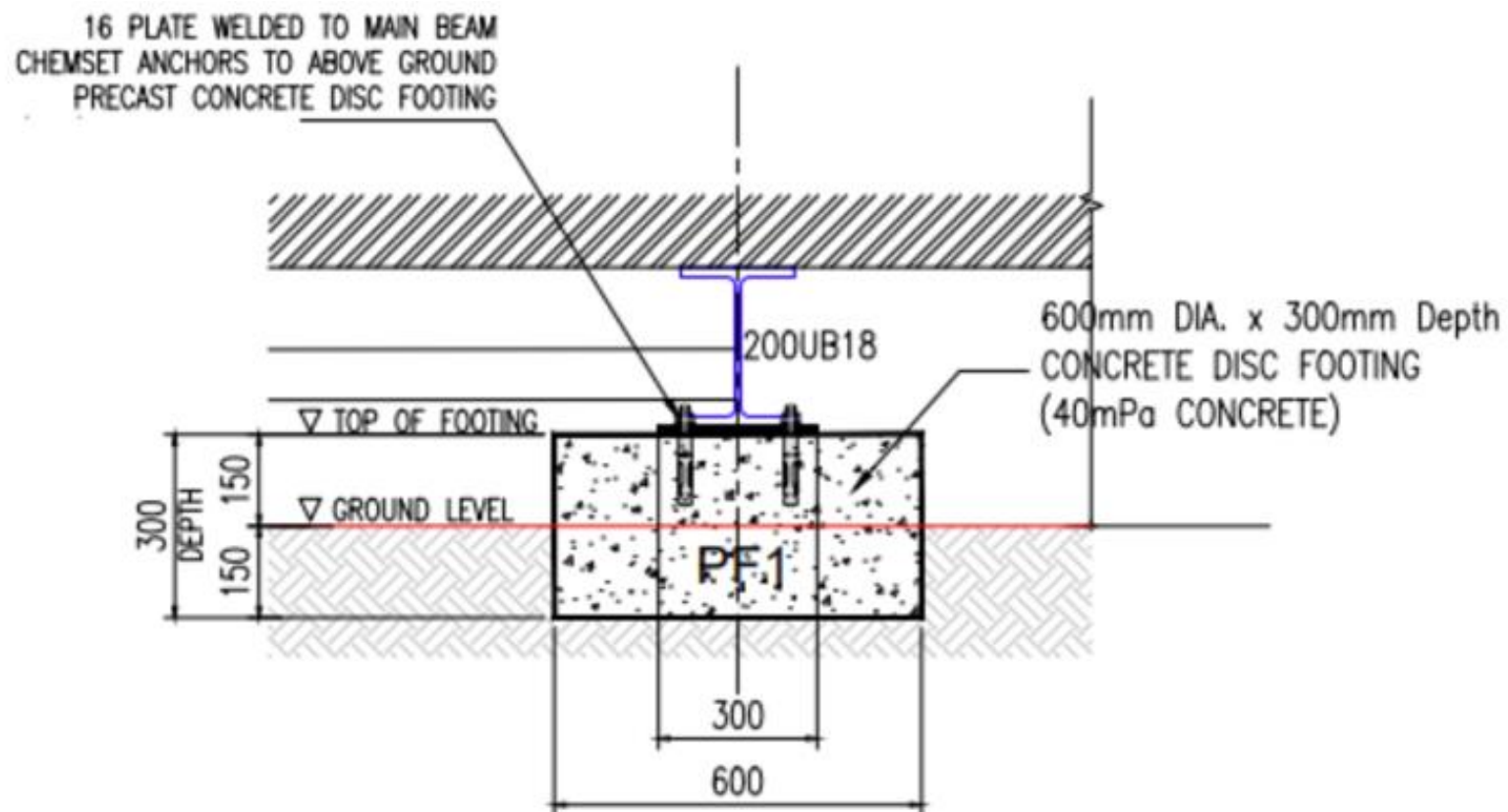


Figure 11: Tank 6 chlorination system - process flow diagram

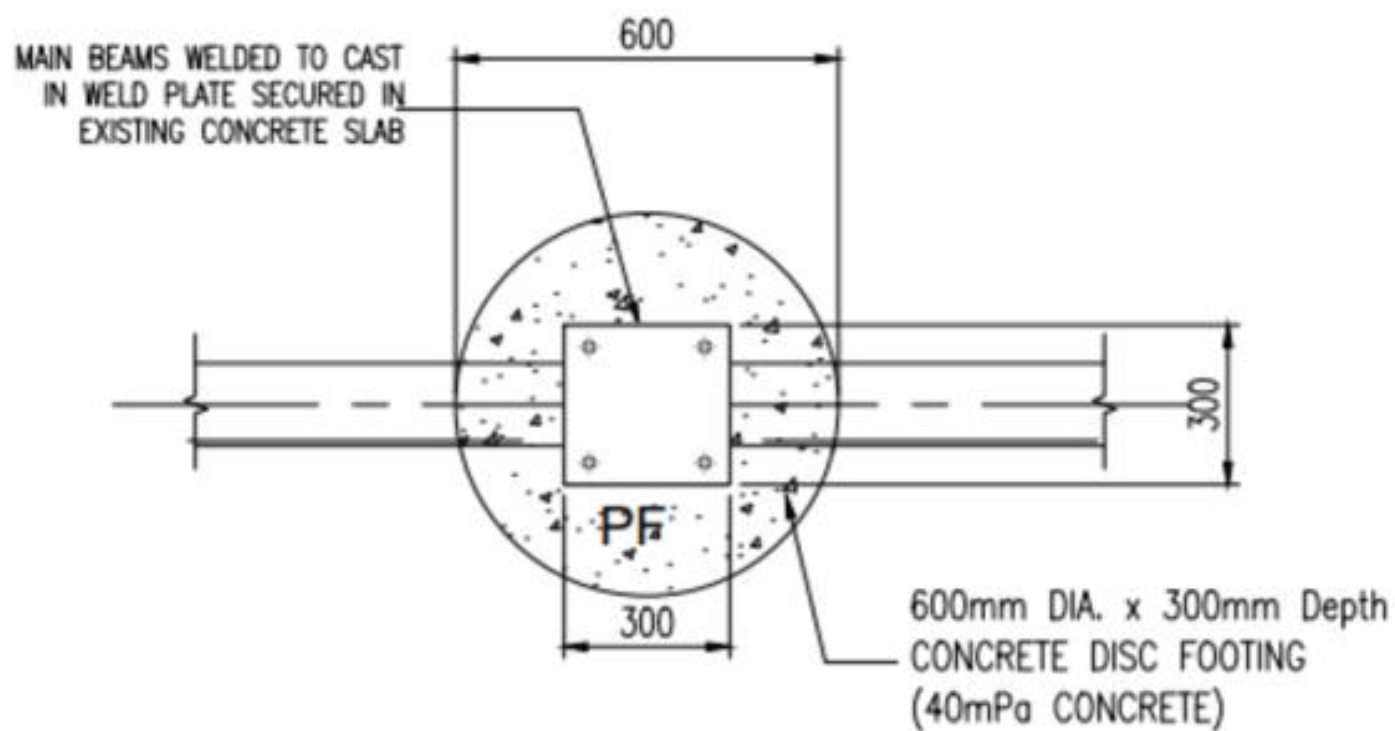
L8807/2013/2 (Amended 27/10/2025)

IR-T06 Licence template (v10.0) (May 2024)





SCALE 1 : 20



| FOOTING SCHEDULE |                 |
|------------------|-----------------|
| FOOTING MARK     | FOOTING SIZE    |
| PF               | 600 DIA. x 300H |

Figure 13: Chlorination building footing (weld plate to concrete disc footing) design drawings.

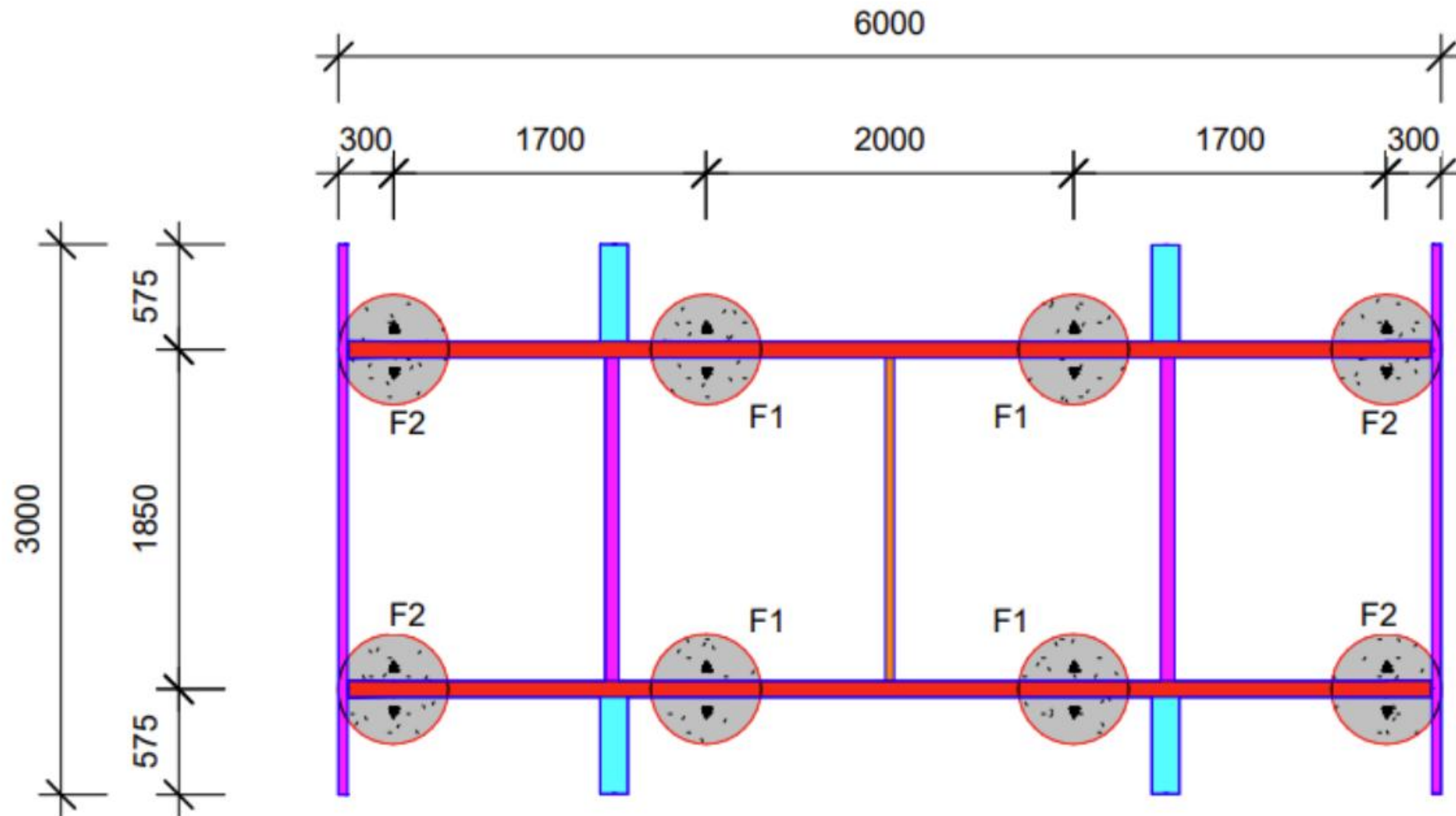


Figure 14: Chlorination building concrete footing layout

## Schedule 2: Premises boundary

The premises boundary is defined by the coordinates listed in Table 12.

**Table 12: Premises boundary coordinates (GDA2020 MGA Zone 50)**

| Point | Easting    | Northing    | Point | Easting    | Northing    |
|-------|------------|-------------|-------|------------|-------------|
| 1.    | 361840.125 | 6459785.424 | 2.    | 361892.12  | 6459749.893 |
| 3.    | 361893.321 | 6459742.493 | 4.    | 361893.321 | 6459742.493 |
| 5.    | 361873.168 | 6459711.719 | 6.    | 361856.569 | 6459697.962 |
| 7.    | 361843.433 | 6459704.771 | 8.    | 361829.531 | 6459681.926 |
| 9.    | 361811.093 | 6459688.974 | 10.   | 361799.887 | 6459662.26  |
| 11.   | 361766.366 | 6459596.635 | 12.   | 361847.475 | 6459569.346 |
| 13.   | 361884.24  | 6459587.16  | 14.   | 361899.78  | 6459611.417 |
| 15.   | 361912.092 | 6459615.032 | 16.   | 361944.9   | 6459611.857 |
| 17.   | 361968.184 | 6459595.981 | 18.   | 361972.417 | 6459584.34  |
| 19.   | 361973.475 | 6459559.998 | 20.   | 361965.009 | 6459536.715 |
| 21.   | 361937.309 | 6459471.468 | 22.   | 361845.871 | 6459438.323 |
| 23.   | 361695.133 | 6459312.348 | 24.   | 361663.383 | 6459327.164 |
| 25.   | 361610.466 | 6459231.914 | 26.   | 361689.841 | 6459095.389 |
| 27.   | 361670.791 | 6459023.422 | 28.   | 361663.383 | 6459003.314 |
| 29.   | 361608.35  | 6459008.605 | 30.   | 361394.566 | 6459198.047 |
| 31.   | 361266.507 | 6459195.931 | 32.   | 361243.422 | 6459235.026 |
| 33.   | 361222.915 | 6459227.424 | 34.   | 361198.579 | 6459219.15  |
| 35.   | 361172.782 | 6459214.77  | 36.   | 361147.959 | 6459212.579 |
| 37.   | 361139.684 | 6459211.118 | 38.   | 361132.14  | 6459166.583 |
| 39.   | 361095.149 | 6459171.938 | 40.   | 361100.503 | 6459209.172 |
| 41.   | 361116.786 | 6459215.257 | 42.   | 361136.034 | 6459220.611 |
| 43.   | 361163.048 | 6459224.26  | 44.   | 361188.844 | 6459227.181 |
| 45.   | 361206.367 | 6459230.832 | 46.   | 361238.639 | 6459243.125 |
| 47.   | 361209.312 | 6459292.793 | 48.   | 361193.482 | 6459400.19  |

| Point      | Easting     | Northing    | Point      | Easting     | Northing    |
|------------|-------------|-------------|------------|-------------|-------------|
| <b>49.</b> | 360990.282  | 6459460.515 | <b>50.</b> | 360931.5147 | 6459454.242 |
| <b>51.</b> | 360923.4349 | 6459510.244 | <b>52.</b> | 360950.7833 | 6459527.513 |
| <b>53.</b> | 360981.815  | 6459522.957 | <b>54.</b> | 360993.457  | 6459477.448 |
| <b>55.</b> | 361235.816  | 6459465.806 | <b>56.</b> | 361290.968  | 6459503.285 |
| <b>57.</b> | 361443.249  | 6459530.365 | <b>58.</b> | 361553.056  | 6459584.119 |
| <b>59.</b> | 361565.335  | 6459597.281 | <b>60.</b> | 361657.879  | 6459609.62  |
| <b>61.</b> | 361721.591  | 6459598.098 | <b>62.</b> | 361733.233  | 6459627.732 |
| <b>63.</b> | 361806.258  | 6459749.44  | <b>64.</b> | 361825.308  | 6459773.782 |
| <b>65.</b> | 361004.838  | 6459501.338 | <b>66.</b> | 361186.811  | 6459428.162 |

## Schedule 3: Monitoring program

### Groundwater monitoring

- The licence holder must monitor groundwater for concentrations of the identified parameter(s) in accordance with Table 13.

**Table 13: Groundwater monitoring of ambient concentrations**

| Monitoring location                                                                           | Parameter                                                | Unit          | Frequency   | Method                                     |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------|-------------|--------------------------------------------|
| MB001, MB002, MB003, MB006, MB007, MB008, MB009 and MB010 as depicted in Schedule 1: Figure 6 | Standing water level                                     | mAHD and mBGL | Monthly     | AS/NZS 5667.1:1998 and AS/NZS 5667.11:1998 |
|                                                                                               | pH <sup>1</sup>                                          | -             |             |                                            |
|                                                                                               | TN                                                       | mg/L          |             |                                            |
|                                                                                               | TP                                                       |               |             |                                            |
|                                                                                               | TDS                                                      |               |             |                                            |
|                                                                                               | Thermotolerant coliforms                                 | cfu/100mL     | Six monthly |                                            |
|                                                                                               | Dissolved metals (aluminium, copper, lead, nickel, zinc) | mg/L          |             |                                            |
| OV1, GC1, GC2, GC3, GC4 and REF28-90 as depicted in Schedule 1: Figure 7                      | Standing water level                                     | mAHD and mBGL | Monthly     |                                            |
|                                                                                               | EC <sup>1</sup>                                          | µS/cm         |             |                                            |
|                                                                                               | pH <sup>1</sup>                                          | -             |             |                                            |
|                                                                                               | Temperature <sup>1</sup>                                 | ° celsius     |             |                                            |
|                                                                                               | Dissolved oxygen <sup>1</sup>                            | mg/L          |             |                                            |
|                                                                                               | TDS                                                      |               |             |                                            |
|                                                                                               | TN                                                       |               |             |                                            |
|                                                                                               | TKN                                                      |               |             |                                            |
|                                                                                               | NH <sub>4</sub> -N                                       |               |             |                                            |
|                                                                                               | NO <sub>3</sub> -N                                       |               |             |                                            |
|                                                                                               | TP                                                       |               |             |                                            |
|                                                                                               | FRP                                                      |               |             |                                            |
|                                                                                               | Chloride                                                 |               |             |                                            |
|                                                                                               | BOD <sub>5</sub>                                         |               |             |                                            |

| Monitoring location | Parameter                                                                                             | Unit      | Frequency   | Method |
|---------------------|-------------------------------------------------------------------------------------------------------|-----------|-------------|--------|
|                     | Thermotolerant coliforms                                                                              | cfu/100mL |             |        |
|                     | <i>E. coli</i>                                                                                        |           |             |        |
|                     | Sodium                                                                                                | mg/L      | Six monthly |        |
|                     | Potassium                                                                                             |           |             |        |
|                     | Calcium                                                                                               |           |             |        |
|                     | Magnesium                                                                                             |           |             |        |
|                     | Sulphate                                                                                              |           |             |        |
|                     | Fluoride                                                                                              |           |             |        |
|                     | Bicarbonate                                                                                           |           |             |        |
|                     | Dissolved metals (aluminium, arsenic, cadmium, chromium, copper, lead, nickel, selenium, zinc, boron) |           |             |        |

Note 1: In-field non-NATA accredited analysis permitted.

## Surface water monitoring

2. The licence holder must monitor surface water for concentrations of the identified parameter(s) in accordance with Table 14.

**Table 14: Surface water monitoring of ambient concentrations**

| Monitoring location                                           | Parameter                     | Unit          | Frequency | Method                                    |
|---------------------------------------------------------------|-------------------------------|---------------|-----------|-------------------------------------------|
| LL1, H1, GL and GH1 as depicted in Schedule 1: Figure 7       | Standing water level          | mAHD and mAGL | Monthly   | AS/NZS 5667.1:1998 and AS/NZS 5667.4:1998 |
| LL1, H1, GL1, GL2 and GH1 as depicted in Schedule 1: Figure 7 | EC <sup>1</sup>               | µS/cm         |           |                                           |
|                                                               | pH <sup>1</sup>               | -             |           |                                           |
|                                                               | Temperature <sup>1</sup>      | °C            |           |                                           |
|                                                               | Dissolved oxygen <sup>1</sup> | mg/L          |           |                                           |
|                                                               | TDS                           |               |           |                                           |
|                                                               | TN                            |               |           |                                           |
|                                                               | TKN                           |               |           |                                           |
|                                                               | NH <sub>4</sub> -N            |               |           |                                           |
|                                                               | NO <sub>3</sub> -N            |               |           |                                           |
|                                                               | TP                            |               |           |                                           |
|                                                               | FRP                           |               |           |                                           |
|                                                               | Chloride                      |               |           |                                           |
|                                                               | BOD <sub>5</sub>              | cfu/100mL     |           |                                           |
|                                                               | Thermotolerant coliforms      |               |           |                                           |
|                                                               | <i>E. coli</i>                |               |           |                                           |
| Sodium                                                        | mg/L                          | Six monthly   |           |                                           |
| Potassium                                                     |                               |               |           |                                           |
| Calcium                                                       |                               |               |           |                                           |
| Magnesium                                                     |                               |               |           |                                           |
| Sulphate                                                      |                               |               |           |                                           |
| Fluoride                                                      |                               |               |           |                                           |
| Bicarbonate                                                   |                               |               |           |                                           |

| Monitoring location | Parameter                                                                                                | Unit | Frequency | Method |
|---------------------|----------------------------------------------------------------------------------------------------------|------|-----------|--------|
|                     | Dissolved metals<br>(aluminium, arsenic, cadmium, chromium, copper, lead, nickel, selenium, zinc, boron) |      |           |        |

Note 1: In-field non-NATA accredited analysis permitted.

## Fresh groundwater lens/hyporheic zone monitoring

3. The licence holder must monitor surface water for concentrations of the identified parameter(s) in accordance with Table 15.

**Table 15: Hyporheic zone monitoring of ambient concentrations**

| Monitoring location                                                                                           | Parameter                     | Unit          | Frequency | Method                                     |
|---------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|-----------|--------------------------------------------|
| GC5s, GC5i, GC5d, GC6s, GC6i, GC6d, GC7s, GC7i, GC7d, GC8s, GC8i and GC8d as depicted in Schedule 1: Figure 8 | Standing water level          | mAHD and mAGL | Monthly   | AS/NZS 5667.1:1998 and AS/NZS 5667.11:1998 |
|                                                                                                               | EC <sup>1</sup>               | µS/cm         |           |                                            |
|                                                                                                               | pH <sup>1</sup>               | -             |           |                                            |
|                                                                                                               | Temperature <sup>1</sup>      | °C            |           |                                            |
|                                                                                                               | Dissolved oxygen <sup>1</sup> | mg/L          |           |                                            |
|                                                                                                               | TDS                           |               |           |                                            |
|                                                                                                               | TN                            |               |           |                                            |
|                                                                                                               | TKN                           |               |           |                                            |
|                                                                                                               | NH <sub>4</sub> -N            |               |           |                                            |
|                                                                                                               | NO <sub>3</sub> -N            |               |           |                                            |
|                                                                                                               | TP                            |               |           |                                            |
|                                                                                                               | FRP                           |               |           |                                            |
|                                                                                                               | Thermotolerant coliforms      | cfu/100mL     |           |                                            |
|                                                                                                               | <i>E. coli</i>                |               |           |                                            |
|                                                                                                               | Chloride                      | mg/L          |           |                                            |
| BOD <sub>5</sub>                                                                                              |                               |               |           |                                            |

Note 1: In-field non-NATA accredited analysis permitted.

## Soil monitoring

4. The licence holder must monitor soil for concentrations of the identified parameter(s) in accordance with Table 16.

**Table 16: Soil monitoring of ambient concentrations**

| Monitoring location                                                                                                                        | Parameter                        | Unit  | Frequency                                    | Method                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GCS01, GCS02, GCS03, GCS04, GCS05, HA01, HA02, HA03, HA04, HA05, HA06, HA07, HA08, HA09, HA10 and HA11 as depicted in Schedule 1: Figure 9 | PBI                              | -     | Annually                                     | AS 4482.1:2005<br><br>A composite soil sample shall be collected from each monitoring location.<br><br>Each composite sample must be derived from five cores at four depth intervals to one metre, within a five metre diameter plot. The four depths should fall within 0–20, 20–40, 40–70 and 70–100 cm depth increments, and be positioned within major soil horizons or layers. |
|                                                                                                                                            | EC <sup>1</sup>                  | µS/cm |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | pH <sup>1</sup>                  | -     |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | TN                               | mg/L  |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | TKN                              |       |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | NO <sub>3</sub> -N               |       |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | NO <sub>2</sub> -N               |       |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                            | TP                               |       |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |
| GCS02, GCS03, HA01, HA02, HA03 and HA11 as depicted in Schedule 1: Figure 9                                                                | v% moisture content <sup>1</sup> | -     | Daily between September and April            | Water potential probe                                                                                                                                                                                                                                                                                                                                                               |
| GCS01, GCS04, GCS05, HA04, HA05, HA06, HA07, HA08, HA09 and HA10 as depicted in Schedule 1: Figure 9                                       |                                  |       | 2 times per week between September and April |                                                                                                                                                                                                                                                                                                                                                                                     |

Note 1: In-field non-NATA accredited analysis permitted.

## Quality assurance and quality control requirements

5. The licence holder must adhere to the following field quality assurance and quality control procedures, as specified in Schedule B2 of the ASC NEPM, and must include as a minimum;
- (a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;
  - (b) field instrument calibration for instruments used on site;
  - (c) blind replicate samples and rinse blanks must be collected in the field and sent to the primary laboratory to determine the precision of the field sampling and laboratory analytical program;
  - (d) completed field monitoring sheets / sampling logs for each sample collected, showing:
    - (i) time of collection
    - (ii) location of collection
    - (iii) initials of sampler
    - (iv) sampling method
    - (v) field analysis results
    - (vi) duplicate type/location (if relevant)
    - (vii) site observations and weather conditions; and
  - (e) chain-of-custody documentation must be completed which details the following information:
    - (i) site identification
    - (ii) the sampler
    - (iii) nature of the sample
    - (iv) collection time and date
    - (v) analyses to be performed
    - (vi) sample preservation method
    - (vii) departure time from site
    - (viii) dispatch courier(s)
    - (ix) arrival time at the laboratory.