Licence number	L8050/1991/4
Licence holder	Water Corporation
ABN	28 033 434 917
Registered business address	629 Newcastle Street Leederville, WA 6007
DWER file number	2010/003526-1~5
Issue Date	30/10/2023
Amendment date	22/08/2024
Duration	1/11/2023 to 31/10/2043
Premises details	Jurien Bay Wastewater Treatment Plant Lot 11300 (Crown Reserve 40417) Airstrip Road, JURIEN BAY WA 6516 Legal description - Lot 11300 on Deposited Plan 185509 As defined in Schedule 1, Figure 1.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 54: Sewage facility premises – (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	300 cubic metres per day
Category 61: Liquid waste facility – premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	32,700 tonnes per annum

This licence is granted to the licence holder, subject to the attached conditions, on 22 August 2024, by:

Grace Heydon

Digitally signed by Grace Heydon
Date: 2024.08.22 13:16:48 +08'00'

Grace Heydon
A/MANAGER WASTE INDUSTRIES - REGULATORY SERVICES
Officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
20/06/2001	W3151/1991/1	Works Approval
25/10/2005	L8050/1991/1	Licence re-issue
09/05/2008	L8050/1991/1	Licence amendment
17/09/2009	L8050/1991/2	Licence re-issue
16/10/2014	L8050/1991/3	Licence reissue and amendment to new format
16/01/2014	W5495/2014/1	Works Approval for premises upgrade
12/11/2015	L8050/1991/3	Licence amendment on completion of works upgrade
12/02/2019	L8050/1991/3	Amendment Notice 1
26/03/2021	L8050/1991/3	Licence amendment for the discharge of saline waste via infiltration for a period of six months
30/10/2023	L8050/1991/4	Licence renewal granted with a twenty-year duration.
22/08/2024	L8050/1991/4	Licence amendment granted to extend approval period for the disposal of saline reverse osmosis wastewater from the Jurien Bay Water Treatment Plant, as well as the correction of waste acceptance tables and monitoring details, and insertion of new premises maps.

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	Quantity limit	Acceptance specification
Sewage	N/A	300 cubic metres per day	Accepted through sewer inflow(s) only.
Sewage waste from the reticulated sewerage system	K130		Tankered in from pump-stations or other off-site Water Corporation infrastructure only.
Waste from grease traps	K110	100 tonnes per annum	Tankered onto the premises and discharged directly into the primary pond via the 'septage discharge point' as depicted in Figure 2.
Septage wastes	K210	500 tonnes per annum	
Non-toxic salts	D300	32,100 tonnes per annum	Accepted via controlled waste tankers only between 18/03/2022 and 31/12/2026. Limited to desalination wastewater from the Jurien Bay Water Treatment Plant only. Limited to a maximum volume of 150 cubic metres per day.

Note 1: Additional requirements for the acceptance of controlled waste are set out in the *Environmental Protection (Controlled Waste) Regulations 2004.*

Waste processing

2. 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/or specifications
Sewage	Physical and biological treatment via the facultative, maturation and infiltration pond system.	Treatment of sewage waste shall be maintained at or below the treatment capacity of 300 cubic metres per day.
Sewage waste from the reticulated sewerage system	Physical and biological treatment via the facultative, maturation and infiltration	Not applicable.

Waste type	Process(es)	Process limits and/or specifications
Septage wastes	pond system.	
Waste from grease traps		
Non-toxic salts	Disposal by infiltration.	Limited to a maximum volume of 150 cubic metres per day.

Infrastructure and equipment

3. 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.

Site infrastructure and equipment	Operational requirement	Infrastructure location
Pond 1 – Primary	Wastewater	Clay lined to achieve a permeability of less than 10^{-9} m/s or equivalent.
Pond 1B – Primary	Wastewater	Clay lined to achieve a permeability of less than 10^{-9} m/s or equivalent.
Pond 2 – Secondary	Wastewater	Clay lined to achieve a permeability of less than 10^{-9} m/s or equivalent.
Pond 2B – Secondary	Wastewater	Clay lined to achieve a permeability of less than 10^{-9} m/s or equivalent.
Infiltration pond 1	Wastewater, Desalination wastewater	Base unlined, in-situ soils; geotextile embankments.
Infiltration pond 2	Wastewater, Desalination wastewater	Base unlined, in-situ soils; geotextile embankments.
Infiltration Pond 3	Wastewater, Desalination wastewater	Unlined, in-situ soils.
Sewage sludge compound	Sewage sludge	Temporary or permanent infrastructure to consist of a bunded hardstand or lined area (lined to achieve a coefficient of permeability of less than 1 x 10^{-9} m/s), capable of preventing surface run-off of leachate and sludge, and which includes a leachate collection system. The sewage sludge geobag laydown area should be managed such that: (a) stormwater runoff is prevented from entering the area; (b) discharges/leachate from the area are directed to the primary ponds.

4. The licence holder must take all reasonable and practicable measures to prevent stormwater run-off becoming contaminated by the activities and operations undertaken at the premises.

5. The licence holder must manage all wastewater treatment and infiltration ponds such that:

   (a) overtopping of the ponds does not occur;

   (b) a freeboard equal to, or greater than, 300 mm is maintained;

   (c) the integrity of the containment infrastructure is maintained;

   (d) trapped overflows are maintained on the outlet of ponds to prevent carry-over of surface floating matter; and

   (e) vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments.

6. The licence holder must manage the infiltration of treated wastewater such that:

   (a) treated wastewater is evenly distributed over the infiltration area; and

   (b) wastewater disposal is to be rotated between the infiltration areas on a regular basis to minimise soil erosion and surface ponding and allow the soils to dry between disposal; and

   (c) sludges are removed from the base of the pond to maintain the infiltration performance;

7. The licence holder must:

   (a) implement security measures at the site to prevent as far as is practical unauthorised access to the site; and

   (b) undertake regular inspections of all security measures and repair damage as soon as practicable; and

   (c) ensure the entrance gates are closed and locked when the site is closed or unmanned.

Emissions and discharges

8. The licence holder must ensure that the emissions specified in Table 4, are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 4: Authorised discharge points.

Emission	Discharge point	Description
Discharge of wastewater from secondary pond 2B and 2 to infiltration ponds 1, 2 and 3	L1 and L2 as shown in Schedule 1: Map of emission and monitoring locations	Discharge of wastewater from secondary pond 2B and 2 to infiltration ponds 1, 2 and 3
Discharge of desalination wastewater	L1 and L2 as shown in Schedule 1: Map of emission and monitoring locations	Discharge of desalination wastewater to infiltration ponds 1, 2 and 3

Monitoring

General monitoring

9. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;

(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;

(d) all microbiological samples are collected and preserved in accordance with AS/NZS 2031;

(e) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table;

(f) monitoring equipment referred to in any condition of the Licence is calibrated in accordance with the manufacturer's specifications and the requirements of the Licence and any relevant Australian Standard; and

(g) where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

10. The licence holder must ensure that:

(a) monthly monitoring is undertaken at least 15 days apart; and

(b) quarterly monitoring is undertaken at least 45 days apart.

Monitoring of emissions to land

11. The licence holder must undertake emission to land monitoring as specified in Table 5 according to the corresponding specifications.

Table 5: Monitoring emissions to land.

Emission point reference	Monitoring location	Parameter	Unit	Frequency	Averaging period
M2	Monitoring outfall flume facility (from secondary treatment ponds '2 and 2B' prior to entering infiltration ponds) as depicted in Figure 3	pH[1]	pH	Quarterly	Spot sample
		Biochemical Oxygen Demand	mg/L		
		Total Dissolved Solids			
		Total Suspended Solids			
		Nitrate + Nitrite-nitrogen			

Emission point reference	Monitoring location	Parameter	Unit	Frequency	Averaging period
		Ammonium-nitrogen			
		Total Nitrogen			
		Total Phosphorus			
		Escherichia coli[2]	mg/L cfu/100 mL		

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Actual units are to be reported except where the result is greater than the highest detectable level of 24,000 cfu/100mL. In this case the reporting of the highest detectable level is permitted.

Input and output monitoring

12. The licence holder must undertake emission to land monitoring as specified in Table 6 according to the corresponding specifications.

Table 6: Monitoring of input and output.

Emission point reference	Monitoring location	Parameter[1]	Units	Averaging period	Frequency
Sewage - Inlet Flow	Derived[2] volume (M1)	Volumetric flow rate (cumulative)	m^3/day	Monthly	Continuous
Tankered waste	Septage discharge point (M3)	Volume received	m^3/day	Monthly	Each load to the facility
Treated wastewater discharged to onsite infiltration ponds 1,2 and 3	Outflow meter (M2)	Volumetric flow rate (cumulative)	m^3/day	Monthly	Continuous
Desalination wastewater	Tankered desalination wastewater receival point	Volume received	m^3/day	Monthly	Each load to the facility

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Derived Inflow is calculated from sum of magflow at the three pump stations: (Jurien SPS No 1 Magflow Meter – Consumption/Flow Since Last Rdg) + (Jurien SPS No 5 Magflow Meter – consumption/Flow Since Last Rdg) + (Jurien SPS Hamersley St Magflow Meter – Consumption/Flow Since Last Rdg)

Groundwater monitoring

13. The licence holder must monitor groundwater for concentrations of the identified parameter(s) in accordance with Table 7.

Table 7: Groundwater monitoring of ambient concentrations.

Monitoring well location	Parameter	Unit	Frequency	Averaging period
Monitoring wells 2/97, 5/97, 4/14, 5/14, 1/18,3/18, 4/18 and 6/18A as shown in Figure 4, Schedule 1 of the Licence	Standing water level[1]	m(AHD)	Quarterly	Spot sample, in accordance with AS/NZS 5667.11
	pH[1]	pH unit		
	Electrical conductivity[1]	µS/cm		
	Redox potential[1]	Eh		
	Total nitrogen	mg/L		
	Total phosphorus			
	Total dissolved solids			
	Dissolved oxygen[1]			
	Major cations and anions: calcium, magnesium, potassium, sodium, chloride, bicarbonate and sulphate			

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

Records and reporting

14. 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.

15. 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 1 October each year.

16. 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) any maintenance of infrastructure that is performed in the course of complying with condition 3 of this licence;

(c) groundwater concentration monitored in accordance with condition 13 of this licence; and

(d) complaints received under condition 14 of this licence.

17. The books specified under condition 16 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.

18. The licence holder must:

(a) prepare an environmental report that provides information in accordance with Table 8 for the preceding two annual periods, and

(b) submit the environmental report to the CEO by 1 October 2024 and biennially thereafter.

Table 8: Annual Environmental Report.

Condition	Requirement
-	Any relevant process, production or operational data recorded;
-	An assessment of the information contained within the report against previous monitoring results and Licence limits.
-	Include copies of original monitoring reports submitted to the licence holder by third parties
Condition 2	Summary of any treatment capacity exceedances and any action taken
Condition 5	Summary of any freeboard exceedances and any action taken
Condition 11, Table 5	Monitoring of emissions to land
Condition 12, Table 6	Monitoring of inputs and outputs
	Methodology and calculations used to estimate the daily volumetric flow rate of treated wastewater gravity fed to infiltration ponds 1, 2 and 3, and results of those calculations
Condition 13, Table 7	Monitoring of ambient groundwater quality
Condition 14	Complaint's summary

19. The licence holder must provide to the CEO by 30 June 2025, a subterranean fauna assessment of the premises groundwater monitoring bore network (as depicted in Figure 4), undertaken in accordance with EPA Technical Guidance *Subterranean Fauna Survey for Environmental Impact Assessment* (December 2021).

20. The licence holder must provide to the CEO by 1 June 2026 an updated monitoring data review (2015 – 2026) detailing the impacts of wastewater infiltration at the premises, including:

(a) Revised aquifer transmissivity calculations using:

(i) appropriate methodology for unconfined aquifers, such as such as Neuman's

method, Boulton's method (if any delay yield is suspected), Moench Method, or Jacob's Corrections for drawdowns in thin unconfined aquifers, and

(ii) a saturated thickness of ~15.5m (not just 5m as given and used in pump test analysis),

(b) Visual representation (Piper diagram and Durov/extended-Durov diagrams) of saline mixing with local groundwater illustrating the inferred site infiltration using data with a clear legend and date of samples to confirm assumptions in the diagram. Diagrams shall incorporate :

(i) local groundwater initial chemistry and time series data, and

(ii) samples from M2 and blended TWW and saline waste.

(c) Time series data of the groundwater levels for the monitoring network bores for the monitoring period presented as an appendix in the report,

(d) Laboratory analyses of brine tankered to the premises for disposal, and

(e) Revised infiltrated water salinity calculations based on testing of both tankered brine, and direct conductivity measurements from blended treated wastewater and saline waste in infiltration basins.

Notification

General monitoring

21. The Licensee must ensure that the parameters listed in Table 9 are notified to the CEO in accordance with the notification requirements as set out in Table 9.

Table 9: Notification requirements.

Condition	Parameter	Notification requirement[1]	Format
-	Taking process equipment offline for maintenance works that may result in increased odour emissions	No less than 72 hours in advance of works	None specified
-	Removal of sewage sludge from a treatment pond, wastewater treatment vessel, sewage sludge storage pond or Geobag	No less than 14 days in advance of works[3]	None specified
-	Groundwater bores being de-commissioned or rendered useless	Within 14 days	None specified
Condition 9	Calibration report	As soon as practicable.	None specified

Note 3: Notification requirements in the Licence shall not negate the requirement to comply with Section 72 of the EP Act.

22. The licence holder must, within 7 days of becoming aware of any non-compliance with condition 2 of this licence, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which condition was not complied with;

(b) the time and date when the non-compliance occurred;

(c) if any environmental impact occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(d) the details and result of any investigation undertaken into the cause of the non-compliance;

(e) what action has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(f) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

Definitions

In this licence, the terms in Table 10 have the meanings defined.

Table 10: Definitions.

Term	Definition
ACN	Australian Company Number
AHD	means the Australian height datum
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be 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/NZS 2031	means the Australian Standard AS/NZS 2031 *Selection of containers and preservation of water samples for microbiological analysis*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*
averaging period	means the time over which a limit is measured or a monitoring result is obtained;
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Controlled waste	has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*;
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;
Geobag	means a geotextile dewatering bag that allows solids to dewater over time while containing the solid component.
hardstand	means a surface with a permeability of 10^{-9} metres/second or less;
In-situ soils	means soils that are in place and have not been moved from their original place of deposition;
leachate	means liquid released by or water that has percolated through waste and which contains some of its constituents.

Term	Definition
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.
NATA	means the National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
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 in Schedule 1 to this licence.
quarterly	means the 4 inclusive periods from 1 July to 30 September, 1 October to 31 December and in the following year 1 January to 31 March, and 1 April to 30 June
sewage	means waste containing faecal matter or urine
spot sample	means a discrete sample representative at the time and place at which the sample is taken
usual working day	means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

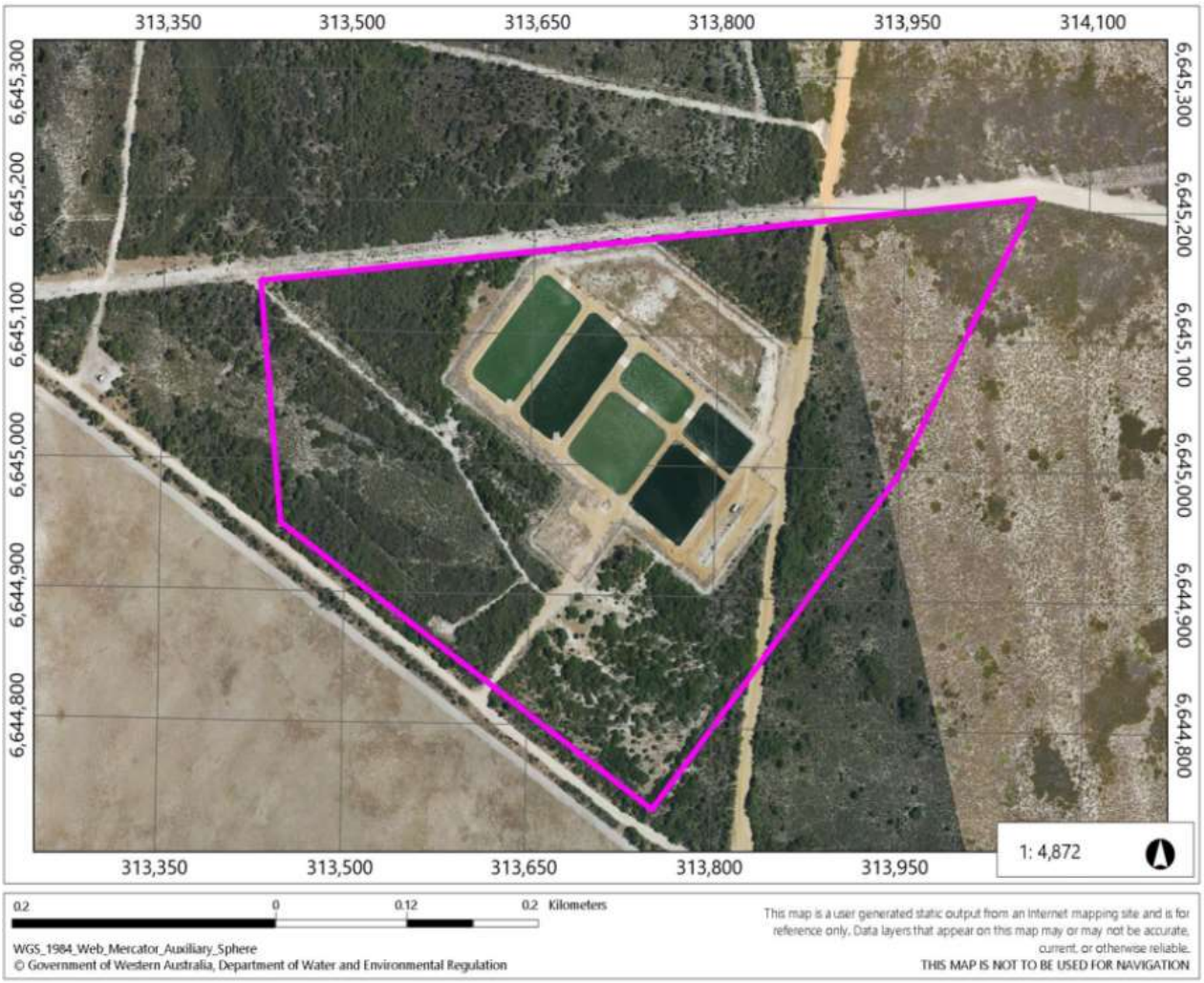
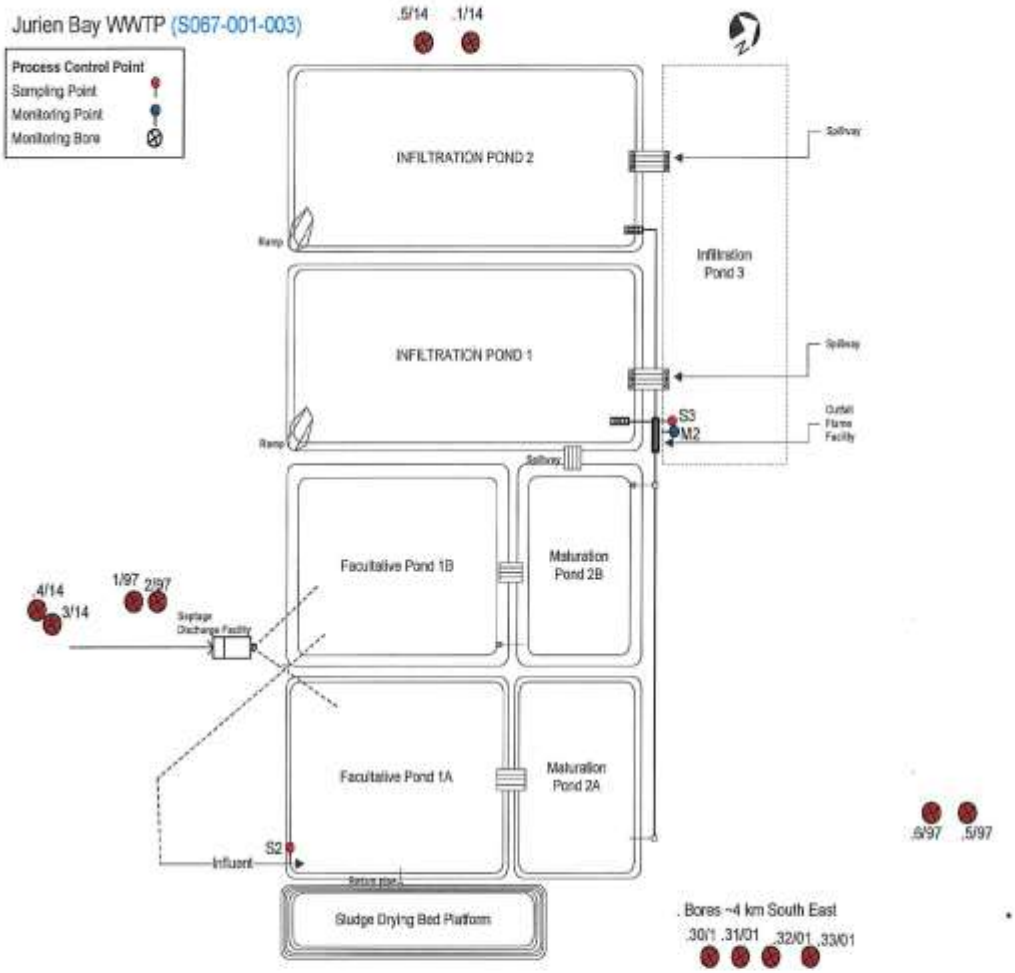


Figure 1: Map of the boundary of the prescribed premises.

Site layout

The site layout is shown in the map below (Figure 2).



Monitoring Points			Sampling Points		
M1	S067-001-003-INFLOW	Jurien WWTP Derived Inflow	S1	S4004747	SP POND 1A TANKERED SEWERAGE JURIEN
M2	S4009305	Flume infiltration WWTP Jurien Bay	S2	S4000071	SP Jurien Inlet Channel
			S3	S4000072	SP POND 2A SECONDARY WWTP JURIEN BAY

Figure 2: Site layout.

Emission and monitoring locations

The locations of the emission and monitoring points are shown below in Figure 3 below.

Figure 3: Emission and monitoring locations.

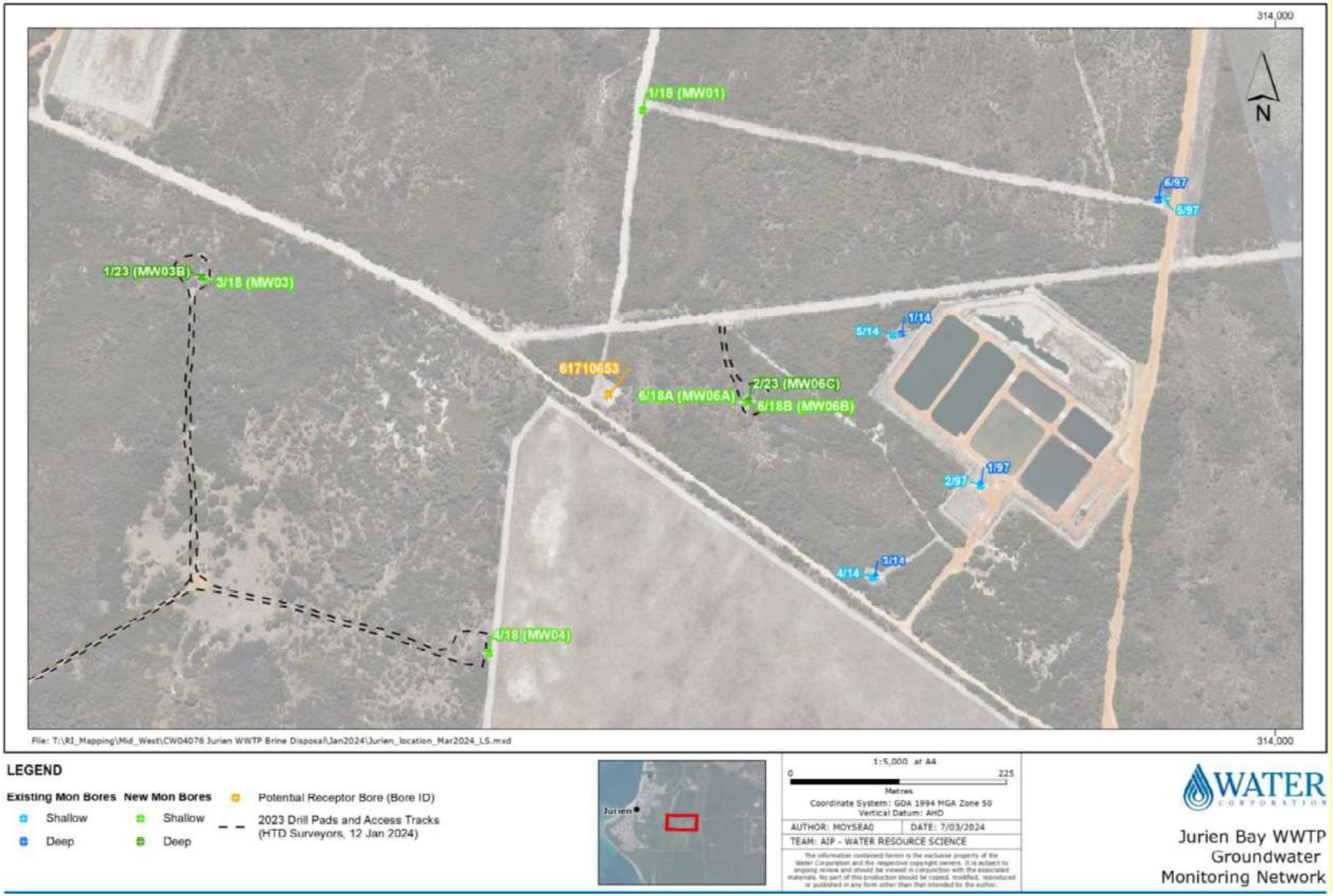


Figure 4: Groundwater monitoring network.