Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6932/2024/1
Works approval holder	Rhodes Ridge Management Services Pty Ltd
ACN	662 895 927
Registered business address	Level 18, Central Park 152-158 St Georges Terrace Perth WA 6000
DWER file number	DER2024/000200/APP-0031698
Duration	27/09/2024 to 26/09/2028
Date of issue	26/09/2024
Date of amendment	04/03/2026
Premises details	Rhodes Ridge Legal description - Part of Mining Tenement TR 70/4882 As defined by the premises map in Schedule 1 and the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production 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.	294 m^3 per day

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 4 March 2026, by:

Grace Heydon

Digitally signed by Grace Heydon
Date: 2026.03.04 08:44:39 +08'00'

MANAGER WASTE INDUSTRIES
Officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Works approval history

Date	Reference number	Summary of changes
26/09/2024	W6932/2024/1	Works approval granted. Issue of original works approval for construction of the following: - Wastewater Treatment Plant (WWTP) with a design throughput of 75m^3/day; and - irrigation sprayfield (2.28ha).
08/08/2025	W6932/2024/1	Amendment for the discharge criteria for Total Nitrogen (TN) from <30 mg/L to <40mg/L to align with designed WWTP output and increasing the prescribed premise boundary
04/03/2026	W6932/2024/1	Amendment to: • Increase approved wastewater treatment plant 1 (WWTP 1) throughput from 75m^3/day to 94.25m^3/day to allow for the addition of 19.25 m^3/day reverse osmosis (RO) reject water (post treatment) to the sprayfield; • Increase to WWTP 1 sprayfield from 2.28ha to 2.86ha to support this increase; • Addition of WWTP 2 (design throughput of 199m^3/day – 142 m^3/day wastewater and 57m^3/day RO reject water); • Addition of a 6.05ha sprayfield irrigation area to service WWTP 2 (in addition to the WWTP 1 sprayfield); • Amendment from category 85 to category 54 to support the increase (293.25m^3/day); • Amend condition 12 (a) and/or (b) of W6932 to reflect the need for an extended time limited operation (TLO) timeframe for WWTP 1 infrastructure (to align with the licence application occurring post WWTP 2 TLO); and • Extension of expiry date by 12 months (new expiry 26/09/2028) to allow for WWTP 2 construction, commissioning and TLO.

Interpretation

In this works approval:

(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 works approval:

(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 works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) install the infrastructure and/or equipment;

(b) in accordance with the corresponding installation requirements; and

(c) at the corresponding infrastructure location;

as specified in Table 1.

Table 1: Infrastructure and equipment requirements

Infrastructure	Design and construction / installation requirements	Infrastructure location
Wastewater Treatment Plant 1 (WWTP 1)	(a) WWTP consisting of; (i) a balance tank (50kL); (ii) a sedimentation tank (38 kL); (iii) a Mixed Liquor Recycle (MLR)/anoxic tank (38 kL); (iv) three Rotating Biological Contactor (RBC) tanks (combined 75 m^3); (v) a break tank (4.5 kL); (vi) a lamella clarifier (30 m^2 plate area); (vii) two irrigation tanks (combined 18 kL); (b) Above ground infrastructure located on a hardstand within an earthen bund; (c) WWTP able to treat up to 94.25m^3 of sewage per day; (d) WWTP able to treat sewage to the following discharge criteria: (i) 5-day Biochemical Oxygen Demand (BOD_5) <20 mg/L (ii) Total suspended solids (Total suspended solids) <30 mg/L (iii) Total nitrogen <40 mg/L (iv) Total phosphorus <10 mg/L (v) E coli ≤1000 colony forming units (CFU)/100 ml (vi) Residual free chlorine 0.2-2.0 mg/L (e) Flow meter installed to monitor volume discharged to the irrigation sprayfield; and (f) Alarm system installed to notify the operator of (i) pump fails; (ii) high tank levels; and (iii) tank overflows.	As depicted in Figure 1 and Figure 2 of Schedule 1

Infrastructure	Design and construction / installation requirements	Infrastructure location
WWTP 1 Irrigation spray field	The irrigation field must be designed and constructed to meet the following specifications: (a) Minimum 2.86 ha irrigation spray field with above ground sprinkler units; (b) Bund surrounding the perimeter; (c) Fenced with a vehicle access gate; and (d) Warning signage fixed to all sides of the fence advising the area is used for the disposal of treated wastewater.	As depicted in Figure 1 of Schedule 1
Wastewater Treatment Plant 2 (WWTP)	(a) WWTP consisting of; (i) a sewage pump station (13m^3) (ii) inlet bar screen (2.0mm Bar Space) (iii) balance tank x 2 (50kL); (iv) sedimentation tank (50kL); (v) mixed liquor recycle (MLR)anoxic tank (50kL); (vi) rotating biological contactor (RBC) tanks (6 x 5.5m^3 each); (vii) a break tank (9kL); (viii) lamella clarifier x 2 (30m^2 plate area x 2); (ix) irrigation tanks x 2 (50kL); (b) Above ground infrastructure located on a hardstand within an earthen bund; (c) WWTP able to treat up to 199m^3 of sewage per day; (d) WWTP able to treat sewage to the following discharge criteria: (i) 5-day Biochemical Oxygen Demand (BOD_5) <20 mg/L (ii) Total suspended solids (Total suspended solids) <30 mg/L (iii) Total nitrogen <40 mg/L (iv) Total phosphorus <10 mg/L (v) E coli ≤1000 colony forming units (CFU)/100 ml (vi) Residual free chlorine 0.2-2.0 mg/L (e) Flow meter installed to monitor volume discharged to the irrigation sprayfield; and (f) Alarm system installed to notify the operator of (i) pump fails; (ii) high tank levels; and (iii) tank overflows.	As depicted in Figure 1 of Schedule 1
WWTP 2 Irrigation spray field	The irrigation field must be designed and constructed to meet the following specifications: (a) Minimum 6.05 ha irrigation spray field with above ground sprinkler units; (b) Bund surrounding the perimeter; (c) Fenced with a vehicle access gate; and (d) Warning signage fixed to all sides of the fence advising the area is used for the disposal of treated wastewater.	As depicted in Figure 1, Figure 2 and Figure 3 of Schedule 1

Infrastructure	Design and construction / installation requirements	Infrastructure location
All infrastructure and equipment	(a) All sewage storage and treatment tanks, vessels, pipework, fittings, and joints are to be constructed of impervious material and free from leaks and/or defects; (b) All sewage storage and treatment tanks, vessels, pipework, fittings, and joins must be designed and constructed to ensure that stormwater does not enter the sewage treatment system and treated wastewater storage infrastructure; and (c) All pipework, fittings and pumps must be hydraulically tested to the required pressure and visually inspected for any defects to ensure infrastructure is fit for purpose prior to use.	As depicted in Figure 1, Figure 2 and Figure 3 of Schedule 1

Compliance reporting

2. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a suitably qualified, competent engineer that the items of infrastructure and components thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

(c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

4. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 1 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 and 3 of this works approval.

5. The works approval holder must ensure that environmental commissioning activities undertaken for an item of infrastructure specified in Table 2 are only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

as specified in Table 2.

Table 2: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
WWTP 1, WWTP 2 and pipeline	(a) Disposal of treated effluent to the irrigation sprayfield shall not commence until sampling confirms that treated effluent is able to meet the expected discharge criteria specified in Table 1. (b) Volumetric flow meters are maintained on the WWTP outlet to the irrigation sprayfield. (c) Bunding is maintained around the WWTP perimeter. (d) Sludge is contained within sealed sludge tanks prior to removal by a licensed waste carrier for disposal to a licensed disposal facility. (e) Chemicals are stored in accordance with Australian Standard AS3780-2008 Storage and Handling of Corrosive Substances. (f) In the event of a leak/spill, the source will be isolated, and any contaminated soil remediated or disposed of to an appropriately licensed facility.	A period not exceeding 90 calendar days in aggregate
Irrigation sprayfield 1 and 2	(a) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield. (b) Bunding is maintained around the irrigation sprayfield perimeter	

6. During environmental commissioning, the works approval holder must ensure that the emission specified in Table 3, is discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location as specified in Table 3.

Table 3: Authorised discharge points during commissioning

Emission	Discharge point	Discharge point location
Treated effluent	(a) At the outlet of the WWTP1 and WWTP2, for removal offsite via a licenced waste contractor; or (b) Sprinklers within the irrigation sprayfield.	Irrigation spray field as depicted in Figure 1 of Schedule 1

Monitoring during environmental commissioning

7. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 4.

Table 4: Emissions monitoring during environmental commissioning

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit
Irrigation sprayfield	WWTP 1 and WWTP 2 outlets	E coli	Fortnightly	N/A	cfu or MPN /100 ml
		BOD_5			mg/L
		Total suspended solids			
		Total dissolved solids			
		Total nitrogen			
		Total phosphorus			
		pH[1]	Daily or continuous online		-
		Residual chlorine[1]	Daily or continuous online		mg/L
		Cumulative flow volume discharged to sprayfield[1]	Continuous	Weekly	m^3/day

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

8. For the monitoring activity required by condition 7, the works approval holder must:

(a) record the results;

(b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with AS 5667.1 and AS 5667.10; and

(c) have analysis conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified.

Environmental Commissioning Report

9. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 2.

10. The works approval holder must ensure the Environmental Commissioning Report required by condition 9 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of wastewater processed;

(b) a summary of treated effluent monitoring results recorded in accordance with condition 7;

(c) copies of laboratory reports for treated effluent monitoring results recorded in accordance with condition 7;

(d) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes:

(i) a comparison of the treated effluent monitoring results against discharge criteria specified in condition 1;

(ii) assessment of the irrigation sprayfield performance against operational requirements in condition 5;

(e) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(f) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

11. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1 where the Environmental Commissioning Report for that item of infrastructure as required by condition 9 has been submitted by the works approval holder; and

12. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 13:

(a) for a period not exceeding 360 calendar days from the day the works approval holder meets the requirements of condition 11 for that item of infrastructure; or

(b) until such time as a registration or licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986* and only where this occurs prior to the time period specified in sub provision 12(a).

Time limited operations requirements and emission limits

13. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirements	Infrastructure location
WWTP 1, WWTP 2 and pipeline	(a) Treated effluent that meets design specifications listed in condition 1 may be disposed of to the irrigation field. (b) Treated effluent that does not meet design specifications listed in condition 1 is to be: (i) removed by a licensed Controlled Waste Carrier for disposal to premises authorised by the department to accept the waste; or (ii) re-circulated back through the WWTP. (c) Volumetric flow meters are maintained on the WWTP inlet and outlet to the irrigation spray field. (d) Bunding is maintained around the WWTP perimeter. (e) Sludge is contained within sealed sludge tanks prior to removal by a licensed waste carrier for disposal to a licensed disposal facility. (f) Chemicals are stored in accordance with Australian Standard AS3780-2008 Storage and Handling of Corrosive Substances. (g) In the event of a leak/spill, the source will be isolated, and any contaminated soil remediated or disposed of to an appropriately licensed facility.	As depicted in Figure 1, Figure 2 and Figure 3 of Schedule 1
WWTP 1 Irrigation sprayfield	(a) No more than 94.25 m^3 per day of treated effluent is discharged to the irrigation sprayfield. (b) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield. (c) Bunding is maintained around the irrigation sprayfield perimeter.	As depicted in Figure 1 of Schedule 1
WWTP 2 Irrigation sprayfield	(a) No more than 199 m^3 per day of treated effluent is discharged to the irrigation sprayfield. (b) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield. (c) Bunding is maintained around the irrigation sprayfield perimeter.	As depicted in Figure 1 of Schedule 1

14. During time limited operations, the works approval holder must ensure that the emission specified in Table 6 is discharged only from the corresponding discharge points and only at the corresponding discharge point location, as specified in Table 6.

Table 6: Authorised discharge points during time limited operations

Emission	Discharge point	Discharge point location
Treated effluent	(a) At the outlet of the WWTP 1 and WWTP 2, for removal offsite via a licenced waste contractor; or (b) Sprinklers within the irrigation sprayfield.	As depicted in Figure 1 of Schedule 1

Monitoring during time limited operations

15. The works approval holder must monitor emissions during time limited operations in accordance with Table 7.

Table 7: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit
Irrigation sprayfield	WWTP 1 and WWTP 2 outlet	E coli	Monthly during time limited operations phase	Spot sample	cfu or MPN /100 mL
		BOD_5			mg/L
		Total suspended solids			
		Total nitrogen			
		Total phosphorus			
		pH[1]			
		Total dissolved solids			
		pH[1]	Daily or continuous	N/A	-
		Residual chlorine[1]			mg/L
		Cumulative flow volume discharged to sprayfield[1]	Continuous	Daily	m^3/day

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

16. For the monitoring activity required by condition 15, the works approval holder must:

(a) record the results;

(b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with AS 5667.1 and AS 5667.10; and

(c) have analysis conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified.

17. The licence holder must ensure that treated wastewater piped to the irrigation spray field specified in Column 1 does not exceed the limits specified in Columns 2 and 3, in Table 8.

Table 8: Emission limits

Discharge point	Total Nitrogen Limit (kg per year)	Total Phosphorous Limit (kg per year)
WWTP 1 irrigation spray field	480 kg/ha/year	120kg/ha/year
WWTP 2 irrigation spray field	480 kg/ha/year	120kg/ha/year

Compliance reporting

18. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

19. The works approval holder must ensure the report required by condition 18 includes the following:

(a) a summary of the time limited operations, including date(s) for commencement of time limited operations, timeframes and amount of wastewater processed;

(b) a summary of monitoring parameter results obtained during time limited operations under condition 15;

(c) copies of laboratory reports for treated effluent monitoring results recorded in accordance with condition 15;

(d) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes:

(i) a comparison of the treated effluent monitoring results against discharge limits specified in condition 1;

(ii) assessment of the spray irrigation field performance against operational requirements in condition 13;

(e) a review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(f) where the specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

20. The works approval holder must record the following information in relation to complaints received by the works approval 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 works approval holder to investigate or respond to any complaint.

21. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with conditions 5 and 13;

(c) monitoring programmes undertaken in accordance with conditions 7 and 15; and

(d) complaints received under condition 20.

22. The books specified under condition 21 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 works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table have the meanings defined.

Table 9: Definitions

Term	Definition
AS3780-2008	means *Australian Standard AS3780-2008 Storage and Handling of Corrosive Substances*
AS 5667.1	means *Australian Standard 5667.1 Water quality - Sampling*
AS 5667.10	means *Australian Standard 5667.10 Water quality - Sampling Guidance on sampling of waste waters*
BOD_5	5-day Biochemical Oxygen Demand
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
cfu	colony forming units
condition	means a condition to which this works approval is subject under s.62 of the EP Act.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
DWER	Department of Water and Environmental Regulation
emission	has the same meaning given to that term under the EP Act.
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 equipment has been installed in accordance with the works approval.
EP Act	means the *Environmental Protection Act 1986* (WA).

Term	Definition
EP Regulations	means the *Environmental Protection Regulations 1987* (WA).
ha	hectare
Inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
kg	kilogram
m^2	square metres
m^3	cubic metres
mg/L	milligrams per litre
ml	Millilitre
MPN	most probable number
NATA	National Association of Testing Authorities
NATA accreditation	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 works approval applies, as specified at the front of this works approval and as shown on the map in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
suitably qualified, competent engineer	means a person who: a) holds a Bachelor's degree recognised by Engineers Australia; and b) has a minimum of five years of experience working in a supervisory role in civil, structural, environmental or wastewater engineering; and c) is employed by an independent third party external to the Works Approval Holder's business; or is otherwise approved in writing by the CEO to act in this capacity.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under s.54 of the EP Act, subject to the conditions.

Term	Definition
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.
WWTP	Wastewater Treatment Plant

END OF CONDITIONS

Schedule 1: Maps

Premises map

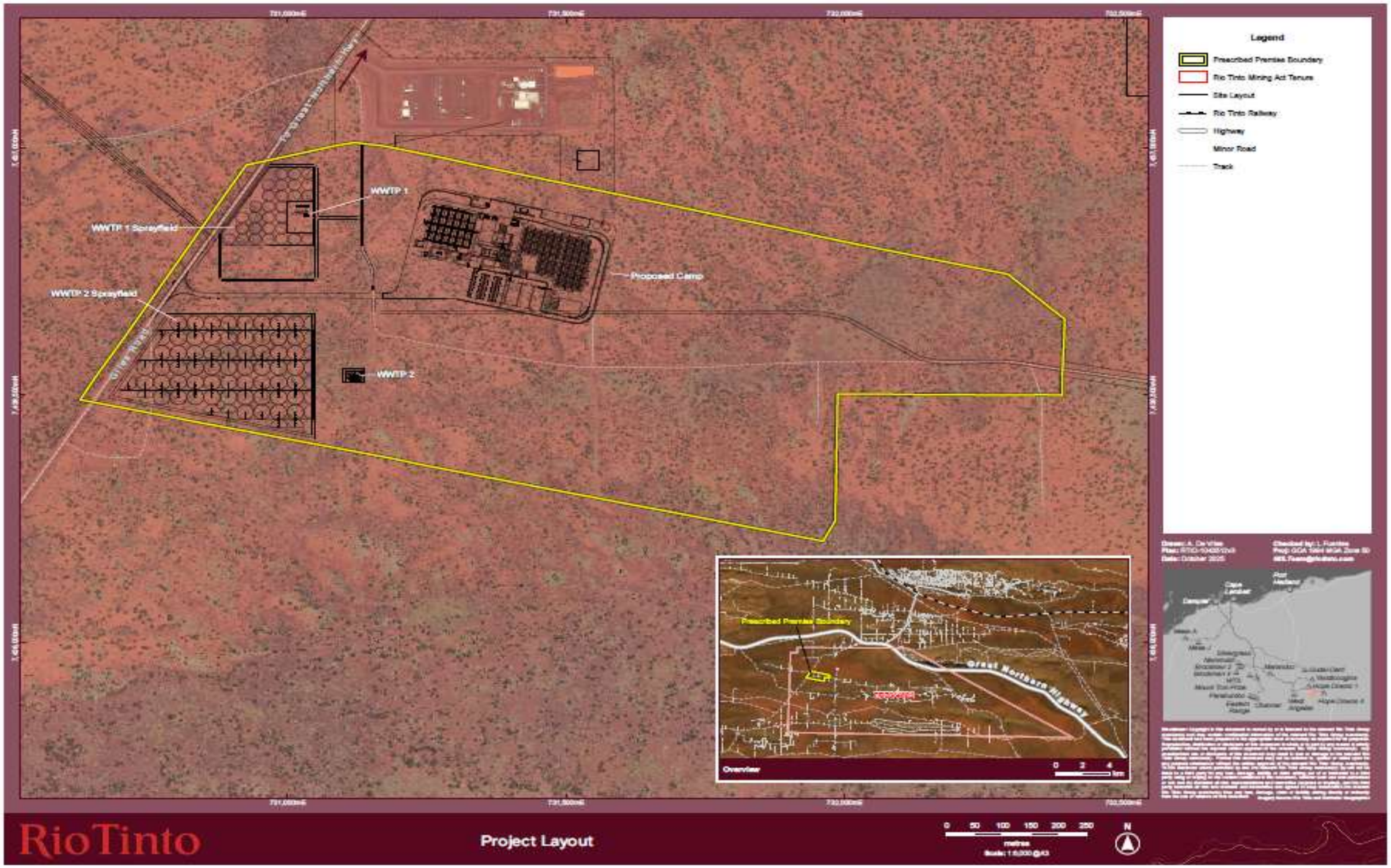
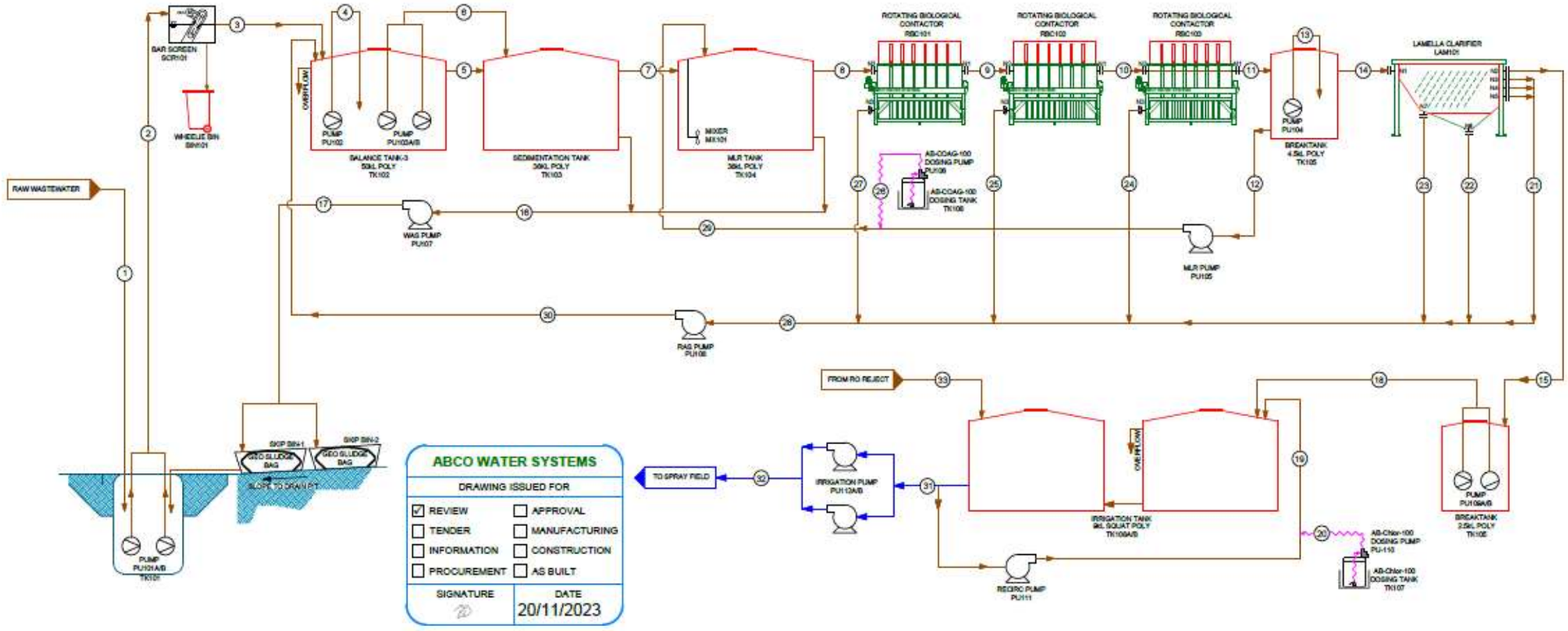


Figure 1: Map of the boundary of the prescribed premises



ABCO WATER SYSTEMS

DRAWING ISSUED FOR

☑ REVIEW	☐ APPROVAL
☐ TENDER	☐ MANUFACTURING
☐ INFORMATION	☐ CONSTRUCTION
☐ PROCUREMENT	☐ AS BUILT

SIGNATURE | DATE 20/11/2023

Figure 2: WWTP 1 process and flow diagram

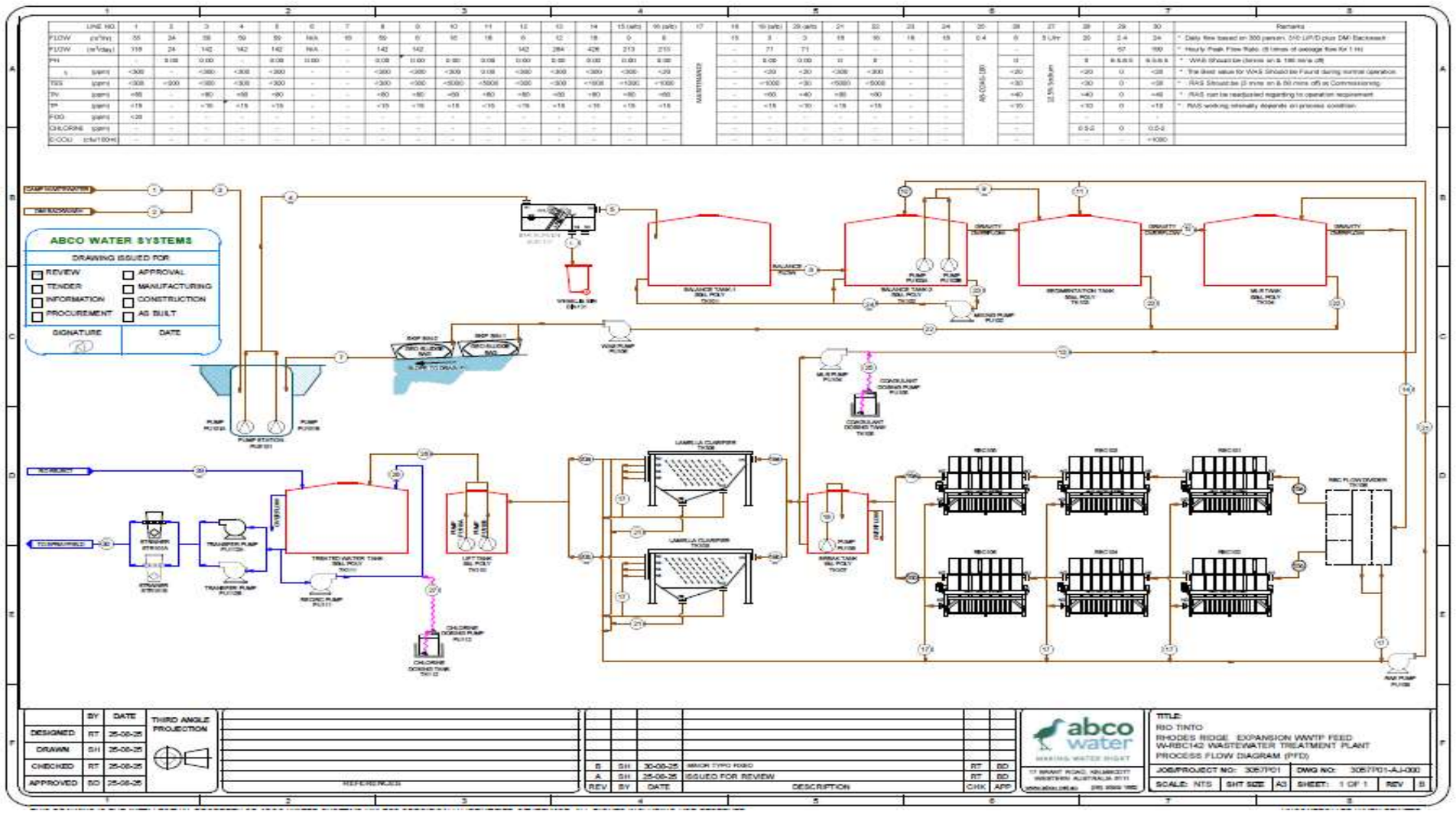


Figure 3: WWTP 2 process and flow diagram

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 9.

Table 9: Premises boundary coordinates (GDA2020 MGA Zone 94)

	Easting	Northing
1.	731119	7437013
2.	732299	7436747
3.	732395	7436654
4.	732391	7436502
5.	731988	7436502
6.	731985	7436247
7.	731961	7436206
8.	730627	7436493
9.	730926	7436967