



Works approval number	W6524/2021/1
Works approval holder	Mardie Minerals Pty Ltd
ACN	152 574 457
Registered business address	Level 2 1 Altona Street WEST PERTH WA 6005
DWER file number	DER2021/000126
Duration	05/07/2021 to 05/07/2024
Date of issue	05/07/2021
Premises details	Mardie Project Wastewater Treatment Plant Part of the Exploration Tenement E08/1849 and E08/2740 As defined by the coordinates in Schedule 1

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed design capacity
<i>Category 85: Sewage facility: premises –</i> <i>(a) On which sewage is treated (excluding septage tanks); or</i> <i>(b) From which treated sewage is discharged onto land or into waters</i>	<i>60 m³ per day</i>

This works approval is granted to the works approval holder, subject to the attached conditions, on 5 July 2021, by:

Abbie Crawford
Senior Environmental Officer, Industry Regulation

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

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

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

Construction phase

Infrastructure and equipment

1. The works approval holder must:
 - (a) construct and/or install the infrastructure and/or equipment;
 - (b) in accordance with the corresponding design and construction / installation requirements; and
 - (c) at the corresponding infrastructure location;as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	WWTP	<p>Two new treatment trains which will replicate the existing Activated Sludge Bioreactor (ASBR) WWTP and increase capacity of the existing WWTP from less than 20 m³/day to a peak daily capacity of 60 m³/day and which must include:</p> <ul style="list-style-type: none">• containment of treatment infrastructure to be within sealed shipping container/s;• 2 x Inlet screening unit and balance tanks fitted with low level and high level alarms as well as malfunction alarm;• 2 x FRP bioreactor units consisting of an aerobic zone with submersible aerator, clarifier with scum removal system;• Transfer and circulation pumps;• Sludge tank with supernatant sampling points and discharge valves;• Supernatant sump with submersible pump;• Irrigation pump;• Associated High Density Polyethylene (HDPE) pipelines;• Chlorine dosing unit;• Sludge dewatering system;• All pipelines must be HDPE with welded joints;• Tanks must be fitted with malfunction alarms;• WWTP tanks are to be installed on impermeable concrete pads;	Figure 1 – WWTP

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		<ul style="list-style-type: none"> • WWTP to include process alarms and volumetric meters to notify the operator of system upsets; • All storage components of the WWTP are to be impermeable and free of leaks and defects; • Perimeter fence is to be located around the boundary of the WWTP and spray field; and • Designed and constructed to meet the following emission standards: BOD - <20 mg/L TSS - <30 mg/L TN - <40 mg/L TP - <10 mg/L pH - 6.5 - 8.5 <i>E.coli</i> - <1000 coliform forming units per 100 mL (cfu/100mL) 	
2.	Irrigation field	<ul style="list-style-type: none"> • The irrigation field must be sized in accordance with WPQN 22; • Designed for even dispersion of up to 60 m³ per day of treated wastewater; • Flow meter installed to record the volume of treated water discharged to the irrigation area; • HDPE pipelines with welded joints; • Install above ground sprinklers; • Safety/warning signage; and • Spray field to be fully fenced and should be a minimum of five metres from any sprinkler spray drift. 	Within the area designated as spray area in Figure 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 following the construction works as specified in Table 1.
3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:
 - (a) certification by a suitably qualified civil engineer that the items of infrastructure or component(s) thereof, as specified in Condition 1, have been constructed in accordance with the relevant requirements specified in Condition 1;

- (b) copies of any data, information and/or analysis used to characterise soil properties at the sprayfield site;
- (c) an explanation as to how the sizing of the irrigation area was determined in accordance with WQPN22;
- (d) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and
- (e) 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

4. The works approval holder may only commence environmental commissioning of the WWTP and irrigation field identified in condition 1 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 of this works approval.
5. The works approval holder shall undertake environmental commissioning of the WWTP and irrigation field for a period of no longer than 1 month, following submission of the report required by condition 2.
6. Any environmental commissioning activities undertaken for an item or infrastructure specified in Table 2 may only be carried out:
 - (a) in accordance with the corresponding commissioning requirements; and
 - (b) for the corresponding authorised commissioning duration.
7. Effluent treated during environmental commissioning must not be disposed of, and must be recirculated back into the WWTP system, unless the measured parameters meet the expected wastewater quality as shown in Table 2.

Table 2: Authorised Emissions table

Discharge point	Parameter	Level
Irrigation field discharge point	pH	6.5 - 8.5 ¹
	Biochemical Oxygen Demand	<20 mg/L ¹
	Total suspended solid	<30 mg/L ¹
	Total Nitrogen	<40 mg/L
	Total Phosphorus	<10 mg/L
	Total Chlorine	0.2 - 2.0 mg/L ¹
	E. coli	<1000 cfu/100ml ¹

Note 1: Guidelines for Non-potable uses of recycled Water in Western Australia 2011, Department of Health

Monitoring during environmental commissioning

8. The works approval holder must ensure that:
 - (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.
9. The works approval holder shall undertake the monitoring specified in Table 3 during the environmental commissioning period.

Table 3: Emissions and discharge monitoring during environmental commissioning

Monitoring point reference	Parameter	Units	Averaging period	Frequency
Final effluent discharge sampling location	<i>E.coli</i>	cfu/100ml	Spot sample	Weekly NATA accredited testing for verification purposes.
	Total Nitrogen	mg/L		
	Total Phosphorous			
	Biochemical Oxygen Demand			
	Total suspended solids (as turbidity) ¹			
	pH	pH units	N/A	Weekly (in-field non-NATA accredited analysis permitted)
	Volumetric flow rate	m ³ /day	24 hours	Continuous

Environmental commissioning report

10. The works approval holder must submit to the CEO an Environmental Commissioning Report within 14 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 1.
11. The works approval holder must ensure the Environmental Commissioning Report required by condition 10 of this works approval includes the following:
 - (a) a summary of the environmental commissioning activities undertaken, including timeframes;
 - (b) the emissions monitoring results recorded in accordance with condition 9 with comparison against the authorised emissions specified in condition 7;
 - (c) a summary of the environmental performance of each item of infrastructure or equipment as constructed or installed;
 - (d) a review of the works approval holder's performance and compliance against the conditions of this works approval; and
 - (e) 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
12. All monitoring equipment used on the premises to comply with the conditions of this works approval is calibrated in accordance with the manufacturer's specifications.

Records and reporting (general)

13. 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 condition 1; and
 - (c) monitoring programmes undertaken in accordance with condition 9;
14. The books specified under condition 13 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 5 have the meanings defined.

Table 5: Definitions

Term	Definition
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> 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.
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/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA).
premises	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 to this works approval.
prescribed premises	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

Term	Definition
	approval by the CEO under section 54 of the EP Act, subject to the conditions.
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.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

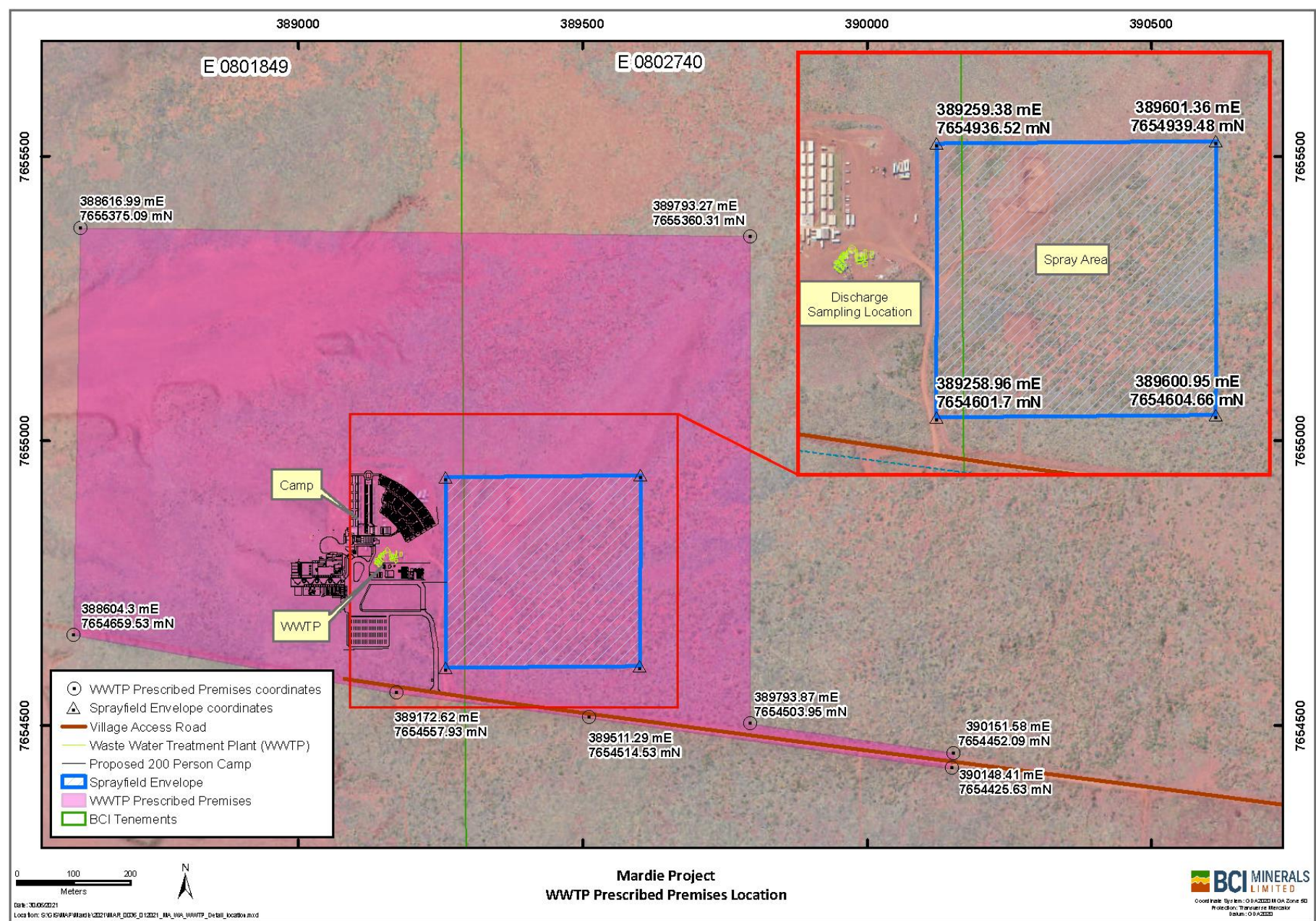


Figure 1: Map of the boundary of the prescribed premises

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 6.

Table 6: Premises boundary coordinates

Latitude	Longitude
388615.97mE	7655373.6mN
388603.7mE	7654712.98mN
388600.58mE	7654689.42mN
389064.49mE	7654562.91mN
389796.06mE	7654466.34mN
390134.66mE	7654419.29mN
390149.17mE	7654438.43mN
389795.16mE	7654488.63mN
389792.25mE	7655358.82mN