



Works approval number W6752/2022/1

Works approval holder De Grey Mining Ltd  
ACN 094 206 292

Registered business address Ground Floor  
2 Kings Park Road  
WEST PERTH WA 6005

DWER file number DER2022/000465

Duration 19/07/2023 to 18/07/2028

Date of issue 19/07/2023

Premises details Wingina Exploration Mining Camp and Coreyard  
Indee Road  
PORT HEDLAND WA 6721  
Legal description -  
Miscellaneous lease L45/578  
As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i> )	Assessed design capacity
Category 85: 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.	35 cubic metres per day <sup>1</sup>

Note 1: Maximum daily volume. Discharge is limited to 15 cubic metres per day (annual average) due to sizing of irrigation area.

This works approval is granted to the works approval holder, subject to the attached conditions, on 19 July 2023, by:

Adam Green

A/MANAGER, WASTE INDUSTRIES  
REGULATORY SERVICES

*Officer delegated under section 20 of the Environmental Protection Act 1986*

## Works approval history

Date	Reference number	Summary of changes
19/07/2023	W6752/2022/1	Works approval granted.

## 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) install the infrastructure and equipment;
  - (b) in accordance with the corresponding installation requirements; and
  - (c) at the corresponding infrastructure location as set out in Table 1.

**Table 1: Design and installation requirements**

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Influent screen, balance tanks, aerobic tank, submersible aerator, clarifier sludge tank, storage waste bin, treated effluent tank, concrete pad and plant room.	<ol style="list-style-type: none"><li>(a) Upgrade WWTP;</li><li>(b) All sewage storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects;</li><li>(c) Stormwater to be prevented from entering the sewage treatment system and storage infrastructure;</li><li>(d) WWTP able to treat up to 35 m<sup>3</sup> of sewage per day;</li><li>(e) WWTP able to treat sewage to the following discharge limits;<ul style="list-style-type: none"><li>• pH 6.5 – 8.5</li><li>• 5-day Biochemical Oxygen Demand (BOD) &lt;20 mg/L</li><li>• Residual chlorine 0.2 to 2 mg/L</li><li>• Total suspended solids (TSS) &lt;30 mg/L</li><li>• Total nitrogen &lt;62 mg/L</li><li>• Total phosphorus &lt;7 mg/L</li><li>• Thermotolerant coliforms &lt;1000 colony forming units (CFU)/100ml</li></ul></li><li>(f) Flow meter installed to discharge outlet pipe to monitor volumes discharged to sprayfield; and</li><li>(g) Incorporate an alarm system for:<ul style="list-style-type: none"><li>• air compressor failure</li><li>• discharge pump failure</li><li>• high tank levels</li><li>• tank overflows</li></ul></li></ol>	Figure 1 and Figure 2 of Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location
2.	Sprayfield	<ul style="list-style-type: none"> <li>(a) No more than 15 m<sup>3</sup> of treated wastewater to be irrigated per day, as an annual average;</li> <li>(b) At least 14 sprinklers to be installed over a 1.67 ha area;</li> <li>(c) Sprinklers with low drift fan-spray nozzles with an even spray radius to be installed;</li> <li>(d) Sprinkler spray zones to be capable of isolation and rotation to prevent/manage waterlogging and pooling;</li> <li>(e) Irrigation system designed to irrigate treated wastewater evenly over the entire irrigation area;</li> <li>(f) Pipelines must be impermeable and free of leaks or defects;</li> <li>(g) Stock proof fencing installed around WWTP compound; and</li> <li>(h) Warning signage to be installed on all sides of fencing advising the area is used for the disposal of treated wastewater.</li> </ul>	Sprayfield sprinklers in Figure 2 of Schedule 1

## Compliance reporting

2. The works approval holder must within 30 calendar days of the completion of construction or installation of infrastructure or equipment required by condition 1:
  - (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 qualified and experienced 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) 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

4. The works approval holder may only commence environmental commissioning of the infrastructure listed in condition 5 once the Environmental Compliance Report has been submitted in accordance with condition 2 of this works approval.

5. Any environmental commissioning activities undertaken for an item of 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.

**Table 2: Environmental commissioning requirements**

Infrastructure	Commissioning requirements	Authorised commissioning duration
WWTP and pipeline	<ul style="list-style-type: none"> <li>(a) Volumetric flow meter is maintained on the WWTP outlet to the irrigation sprayfield;</li> <li>(b) Spills of wastewater or chemicals outside of a vessel/container/pipeline are cleaned up immediately;</li> <li>(c) All storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be free of leaks or defects;</li> <li>(d) WWTP facility to be hydrostatically tested with potable water prior to accepting sewage; and</li> <li>(e) Sealed connection point for pumping out tank sludge.</li> </ul>	A period not exceeding 120 calendar days for each stage in aggregate
Irrigation sprayfield	<ul style="list-style-type: none"> <li>(a) No more than 15 m<sup>3</sup> of effluent per day is discharged to the irrigation sprayfield<sup>1</sup>;</li> <li>(b) No more than 180 kg/ha/yr of total nitrogen and 20 kg/ha/yr of total phosphorus is discharged to the irrigation sprayfield per year;</li> <li>(c) Irrigation managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield; and</li> <li>(d) Reverse osmosis reject water from Reverse Osmosis Plant not to be discharged to the irrigation sprayfield.</li> </ul>	

Note 1: As annual average.

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

**Table 3: Authorised discharge points during commissioning**

Emission	Discharge point	Discharge point location
Treated effluent from WWTP	Sprinklers within the irrigation sprayfield	Figure 2 of Schedule 1 as irrigation sprinklers in sprayfield

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	Unit	Frequency	Averaging period
Irrigation sprinkler in sprayfield	WWTP outlet pipe	Thermotolerant coliforms	CFU/100 ml	Monthly	Spot sample
		pH <sup>1</sup>	pH units		
		BOD <sub>5</sub>	mg/L		
		TSS			
		Residual chlorine <sup>1</sup>			
		Total nitrogen			
		Total phosphorus			
	Cumulative flow volume discharge to sprayfield <sup>1</sup>	m <sup>3</sup>	Continuous	N/A	

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

8. The works approval holder must:
- (a) record the results for the monitoring activity required by condition 7;
  - (b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with *Australian Standard 5667:1:1998 Water Quality – Sampling*; 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 the 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 8(a);
  - (c) copies of laboratory reports for treated effluent monitoring results obtained in accordance with condition 8(c);
  - (d) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at a minimum includes:
    - (i) a comparison of the treated effluent monitoring results against discharge limits specified in condition 1;
    - (ii) assessment of the irrigation sprayfield performance against commissioning requirements outlined 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

### Time limited operations requirements and emission limits

- 11.** The works approval holder may only commence time limited operations for the infrastructure identified in condition 1 where the Environmental Commissioning Report as required by condition 9 has been submitted by the works approval holder.
- 12.** The works approval holder may conduct time limited operations for the infrastructure specified in condition 13:
- (a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 11 for the infrastructure; or
  - (b) until such time as a licence for the infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986* and only where this occurs prior to 180 calendar days from the day the works approval holder meets the requirements of condition 11 for that item of infrastructure.
- 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**

Infrastructure	Operational requirements	Infrastructure location
WWTP and pipeline	<p>(a) Volumetric flow meter is maintained on the WWTP outlet to the irrigation sprayfield.</p> <p>(b) Treated effluent discharged from the WWTP complies with the following discharge limits:</p> <ul style="list-style-type: none"> <li>• 5-day Biochemical Oxygen Demand (BOD5) &lt;20 mg/L</li> <li>• Residual chlorine 0.2-2 mg/L</li> <li>• Total suspended solids (TSS) &lt;30 mg/L</li> <li>• Total nitrogen &lt;62 mg/L</li> <li>• Total phosphorus &lt;7 mg/L</li> <li>• pH 6.5 – 8.5</li> <li>• Thermotolerant coliforms &lt;1000 colony forming units (CFU)/100ml.</li> </ul> <p>(c) Spills of wastewater or chemicals outside of a vessel/container/pipeline are cleaned up immediately;</p> <p>(d) All wastewater storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks or defects; and</p> <p>(e) Sealed connection point for pumping out tank sludge.</p>	Figure 1 of Schedule 1
Irrigation sprayfield	<p>(a) No more than 15 m<sup>3</sup> of effluent is discharged to the irrigation sprayfield per day<sup>1</sup>;</p> <p>(b) No more than 180 kg/ha/yr of total nitrogen and 20 kg/ha/yr of total phosphorus is discharged to the irrigation sprayfield per year;</p> <p>(c) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation sprayfield; and</p> <p>(d) Reverse osmosis reject water from Reverse Osmosis Plant not to be discharged to the irrigation sprayfield.</p>	Irrigation sprinkler in Figure 2 of Schedule 1

Note 1: As annual average.

- 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.

**Table 6: Authorised discharge points during time limited operations**

Emission	Discharge point	Discharge point location
Treated effluent from the WWTP	Sprinklers within the irrigation sprayfield	Sprinkler location as shown in Figure 2 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: Treated effluent monitoring during time limited operations**

Discharge point	Monitoring location	Parameter	Unit	Frequency	Averaging period
Irrigation sprayfield	WWTP outlet pipe	Thermotolerant coliforms	CFU/100 ml	Quarterly	Spot sample
		pH <sup>1</sup>	pH units		
		BOD <sub>5</sub>	mg/L		
		TSS			
		Residual chlorine <sup>1</sup>			
		Total nitrogen			
		Total phosphorus			
		Cumulative flow volume discharge to sprayfield <sup>1</sup>	m <sup>3</sup>	Continuous	N/A

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

16. The works approval holder must;
- (a) record the results for the monitoring activity required by condition 15;
  - (b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with *Australian Standard 5667:1:1998 Water Quality – Sampling*; and
  - (c) have analysis conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified.

## Compliance reporting

17. 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.
18. The works approval holder must ensure the report required by condition 17 includes the following:
- (a) a summary of treated effluent monitoring results recorded in accordance with condition 16(a);
  - (b) copies of laboratory reports for treated effluent monitoring results obtained in accordance with condition 16(c);
  - (c) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at a minimum includes:
    - (i) a comparison of the treated effluent monitoring results against discharge limits specified in condition 13; and
    - (ii) assessment of the irrigation sprayfield performance against operational requirements outlined in condition 13.

## Records and reporting (general)

- 19.** 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.
- 20.** 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 13;
  - (c) monitoring programmes undertaken in accordance with conditions 8 and 16; and
  - (d) complaints received under condition 19.
- 21.** The books specified under condition 20 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 8 have the meanings defined.

**Table 8: Definitions**

Term	Definition
AS5667.1:1998	means Australian Standard 5667.1:1998 <i>Water Quality – Sampling</i>
books	has the same meaning given to that term under the EP Act.
CFU	means colony forming units.
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 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
condition	means a condition to which this works approval is subject under s.62 of the EP Act.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
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 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>

Term	Definition
ha	means hectare.
m <sup>3</sup>	means cubic meters.
mg/L	means milligrams per litre.
monthly period	means a one-month period from the first day of a month until the last day of that same month.
NATA	means 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	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.
Qualified and Experienced Engineer	<p>means a person who:</p> <ul style="list-style-type: none"> <li>a) holds a Bachelor of Engineering recognised by the Institute of Engineers;</li> <li>b) has a minimum of five years of experience working in a supervisory area of structural or mechanical engineering; and</li> <li>c) is employed by an independent third party external to the Works Approval Holder's business</li> </ul> <p>or is otherwise approved in writing by the CEO to act in this capacity.</p>
Quarterly	means the 4 inclusive periods from 1 April to 30 June, 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March.
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.
TSS	means total suspended solids
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 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.

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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).

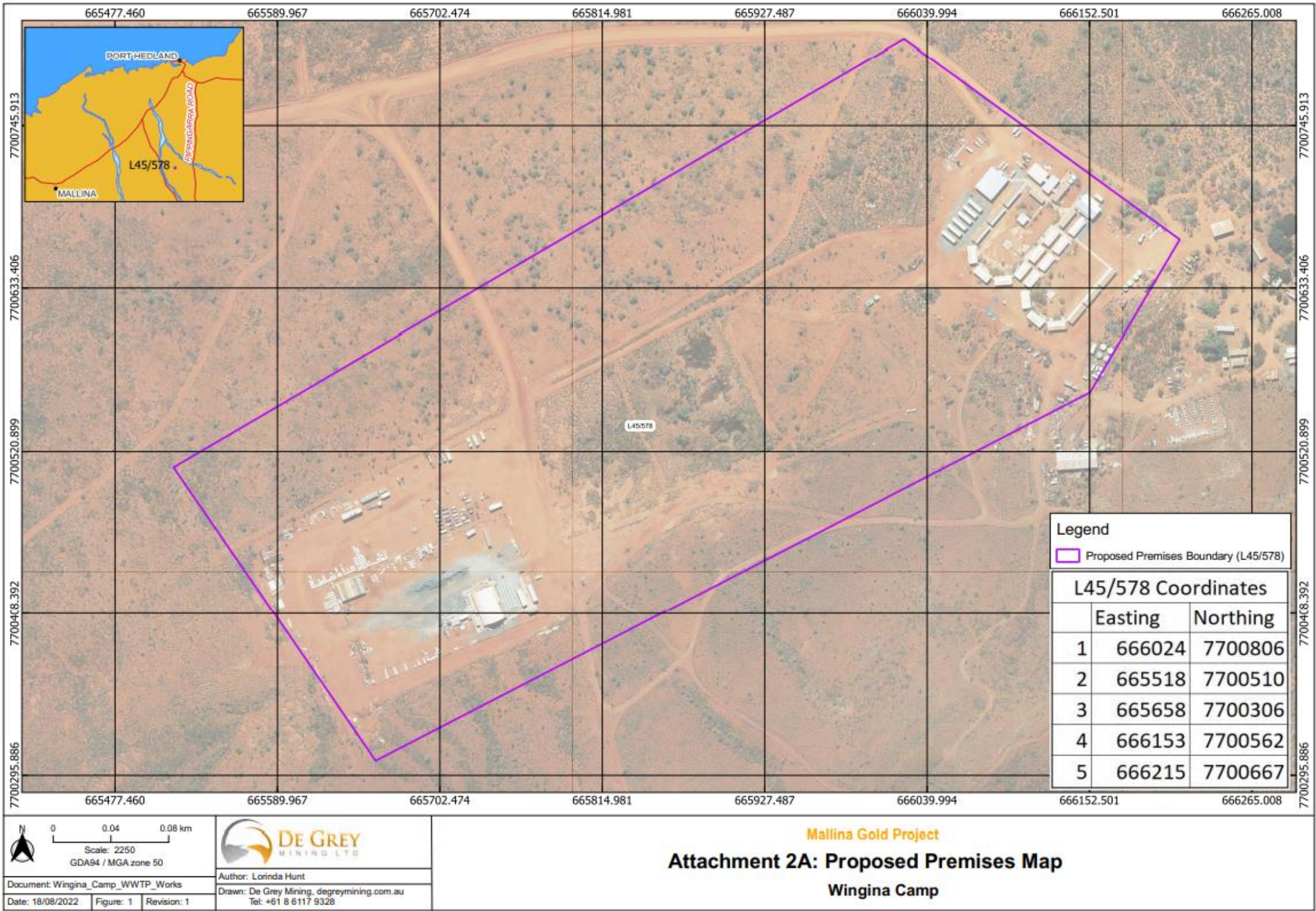


Figure 1: Map of the boundary of the prescribed premises



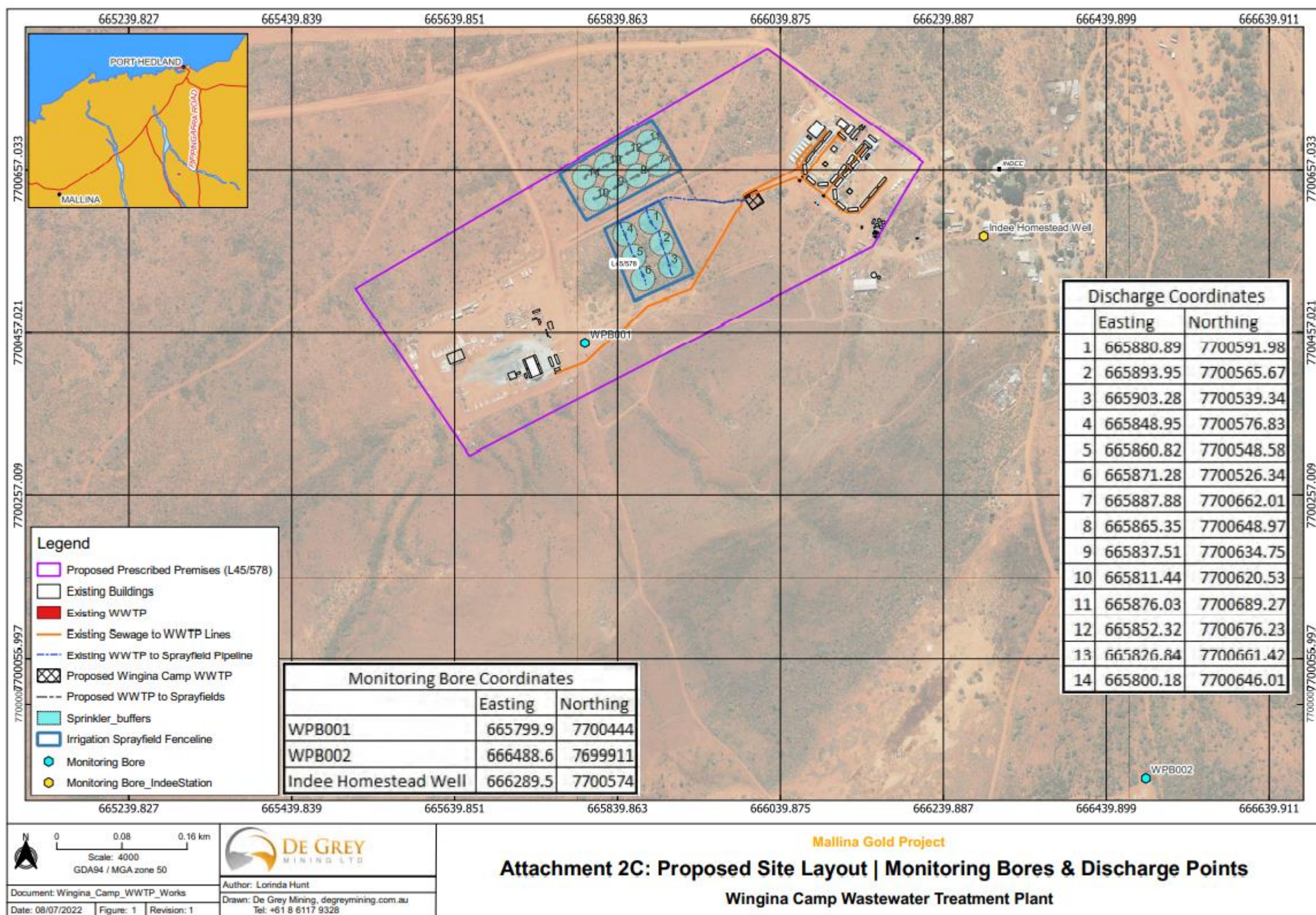


Figure 2: Map of monitoring bores and discharge points at the prescribed premises

## Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 1.

**Table 1: Premises boundary coordinates (GDA2020 Zone 50)**

	<b>Easting</b>	<b>Northing</b>
1.	666024	7700806
2.	665518	7700510
3.	665658	7700306
4.	666153	7700562
5.	666215	7700667