



<b>Works approval number</b>	W5443/2013/1
<b>Works approval holder</b>	WA Kaolin Ltd
<b>ACN</b>	083 187 017
<b>Registered business address</b>	3 Ward Road Rockingham WA 6168
<b>DWER file number</b>	2013/002439-1
<b>Duration</b>	24/02/2014 to 23/08/2023
<b>Date of issue</b>	20/02/2014
<b>Date of amendment</b>	7 June 2022
<b>Premises details</b>	<p>Kaolin Mine and Process Plant</p> <p>Legal description - Mining tenement M70/1143, general purpose licence L70/251 and miscellaneous licence M70/156 WICKEPIN WA 6370</p> <p>As defined by the coordinates in Schedule 1.</p>

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i> )	Assessed production capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore.	1,250,000 tonnes per annual period.

This works approval is granted to the works approval holder, subject to the attached conditions, on 7 June 2022, by:

**A/SENIOR ENVIRONMENTAL OFFICER, RESOURCE INDUSTRIES  
REGULATORY SERVICES**

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

## Works approval history

Date	Reference number	Summary of changes
20/02/2014	W5443/2013/1	Works approval granted.
15/02/2019	W5443/2013/1	Amendment Notice 1, amendment to: <ul style="list-style-type: none"> <li>• Extend expiry date by four years;</li> <li>• Increase Category 5 production capacity to 1,250,000 tonnes per annual period;</li> <li>• Addition of Improvement Reference 6 (IR6); and</li> <li>• Administrative changes</li> </ul>
07/06/2022	W5443/2013/1	Amendment to include time-limited operation and extend expiry date to authorise time-limited operation. Updated to latest format.

## 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 shall construction the works in accordance with the documentation detailed in Table 1:

**Table 1: Construction requirements**

Document <sup>1</sup>	Parts	Date of document
Works Approval Application Form	All	23 May 2013
Works Approval WA Kaolin Wickepin	All, including Drawings and Appendices	April 2013
Email from Dr Alan Tingay to DER (Margaret Redfern) with subject: <i>WA Kaolin</i>	All, including Drawings and Appendices	26 November 2013
Email from Dr Alan Tingay to DER (Margaret Redfern) with subject: <i>re: WA Kaolin Works Approval application</i>	All	10 December 2013

Note 1: Where the details and commitments of the documents listed in condition 1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

2. The works approval holder shall ensure that environmentally hazardous materials are stored in accordance with the code of practice for the storage and handling of dangerous goods.

## Compliance reporting

3. The works approval holder shall submit a compliance document to the CEO, following the construction of the works and prior to commencing commissioning.
4. The compliance document shall:
  - (a) certify that the works were constructed in accordance with the conditions of the works approval;
  - (b) be signed by a person authorised to represent the works approval holder and contain the printed name and position of that person within the company; and
  - (c) where departure from the required design and/or construction has occurred, provide to the CEO a description of, and explanation for, the departure, along with the certification. Departure from the required design and/or construction must not increase risks to public health, public amenity or the environment.

## Environmental commissioning phase

5. The works approval holder shall submit a commissioning plan to the CEO for approval three months before commissioning commences.
6. The works approval holder shall undertake commissioning in accordance with the commissioning plan for the premises infrastructure and equipment listed in Table 2

and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding requirement set out in Table 2

**Table 2: Infrastructure and equipment requirements during environmental commissioning**

Site infrastructure and equipment	Commissioning requirement	Infrastructure location
<p>Wickepin de-gritting plant, comprising:</p> <ul style="list-style-type: none"> <li>• Feed hopper;</li> <li>• Rotary kiln;</li> <li>• Air separator;</li> <li>• Dust collectors; and</li> <li>• Exhaust stacks.</li> </ul>	<p><b>Pre-commissioning</b></p> <ul style="list-style-type: none"> <li>• Inspection of areas to undertake construction verification and pre-commissioning checks.</li> </ul> <p><b>Dry commissioning</b></p> <ul style="list-style-type: none"> <li>• Check logical operation of control equipment, including local control station and starters associated with a particular drive with the control power energised only; and</li> <li>• Energisation and calibration of infrastructure, where appropriate.</li> </ul> <p><b>Wet commissioning</b></p> <ul style="list-style-type: none"> <li>• Completion of instrument calibrations, where appropriate;</li> <li>• Verification of interlocks and process control operation;</li> <li>• Verification of process services and utilities within the Processing Unit, system or sub-system;</li> <li>• Water leak testing of water service lines, reagent lines, hoppers, tanks and vessels;</li> <li>• Pipeline flushing and air blows for plant and instrument air lines and reagent lines;</li> <li>• Water testing of water and process pumps;</li> <li>• Sequence testing of circuits using water;</li> <li>• Pressure testing of nominated pipe work and ancillary equipment, where required;</li> <li>• Testing modes of operation, including manual and automatic operation, where applicable;</li> <li>• Testing of control loops and basic loop tuning;</li> <li>• Testing of plant crash stop operation and rectifying the problem, if required; and</li> <li>• Elimination of any unacceptable vibrations in structures or excessive noise levels, where practical.</li> </ul> <p><b>Feed clay commissioning</b></p> <ul style="list-style-type: none"> <li>• Initial start-up and stabilisation of plant under load, following approved WA Kaolin Ltd standard operating procedures;</li> <li>• Running of plant for a reasonable continuous period without major spillage, recurring faults or shutdowns;</li> <li>• Undertaking re-tensioning of drive belts and checking</li> </ul>	<p>As shown in Figure 4, Schedule 1.</p>

Site infrastructure and equipment	Commissioning requirement	Infrastructure location
	lubrication levels; <ul style="list-style-type: none"> <li>• Re-checking, calibrating and rectifying (if required) weightometers, level gauges and density meters, and the verification of sequence controls and interlocks (if applicable);</li> <li>• Building up and maintaining of plant throughput;</li> <li>• Manual sampling measurements;</li> <li>• Product quality assessment; and</li> <li>• Process mass balance.</li> </ul>	

7. The works approval holder shall commission the Premises for a period not exceeding three months.

### Improvements

8. The works approval holder shall complete the improvements in Table 3 by the date of completion in Table 3.

**Table 3: Improvement program**

Improvement reference	Improvement	Date of completion
IR1	<p>The works approval holder shall, prior to commencing commissioning of the Kaolin Mine and Process Plant, submit a commissioning plan for approval by the CEO. The commissioning plan shall include details relating to:</p> <ul style="list-style-type: none"> <li>(a) the commissioning stages and expected timescales for commissioning;</li> <li>(b) expected emissions and discharges during commissioning and environmental implications of the emissions;</li> <li>(c) how emissions and discharges will be managed during commissioning;</li> <li>(d) the monitoring that will be undertaken during the commissioning period;</li> <li>(e) how accidents and malfunctions will be managed;</li> <li>(f) start up and shut down procedures; and</li> <li>(g) reporting proposals including accidents, malfunctions and reporting against the commissioning plan.</li> </ul> <p>Commissioning shall be carried out in accordance with the commissioning plan as approved.</p>	Three months before commencing commissioning
IR2	<p>The works approval holder shall undertake a noise assessment of the Premises during commissioning. A report on the noise assessment shall be prepared, in accordance with Part 3 of the <i>Environmental Protection (Noise) Regulations 1997</i> (Noise Regulations). The report shall be submitted to the CEO for approval and shall include:</p> <ul style="list-style-type: none"> <li>(a) methods used for monitoring and modelling of noise;</li> </ul>	Before operation

Improvement reference	Improvement	Date of completion
	(b) an assessment of whether noise emissions from the Premises comply with the assigned noise level in the Noise Regulations; and (c) where they are not met, proposed measures to reduce noise emissions to assigned levels together with timescales for implementing the proposed measures.	
IR3	The works approval holder shall establish and undertake ambient water quality monitoring at the minesite and Wedin Railway Siding to determine pH, TDS, TSS and depth to groundwater, in accordance with the relevant part of the Australian Standard AS 5667.	Before operation
IR4	The works approval holder shall submit to the CEO a site drainage plan of the mine and process plant.	Before commissioning
IR5	The works approval holder shall install a sampling port in the exhaust chimney, in accordance with the Australian Standard AS 4323.1 and undertake sampling to verify the air emissions, including NO <sub>x</sub> , SO <sub>x</sub> , CO <sub>2</sub> , CO and PM <sub>10</sub> , in accordance with the relevant parts of the Australian Standards AS 3580.  These results shall be compared to relevant air quality standards in a report submitted to the CEO.	30 days after commissioning

## Compliance reporting

9. The works approval holder must ensure that the parameters listed in Table 4 are notified to the CEO in accordance with the notification requirements of the table.

**Table 4: Notification requirements**

Condition or table (if relevant)	Parameter	Notification requirement	Format or form
Condition 4	Commencement of commissioning	7 days prior to commencement	None specified
	Completion of commissioning	7 days after completion	None specified

10. The works approval holder shall submit an Environmental Commissioning Report for the Kaolin Mine and Process Plant to the CEO for approval within two months of the completion of commissioning.
11. The works approval holder shall ensure the report includes:
- a summary of the monitoring results recorded under condition 8;
  - a list of any original monitoring reports submitted to the works approval holder from third parties for the commissioning period;
  - a summary of the environmental performance of the Kaolin Mine and Process Plant as installed, against the design specification set out in the works approval application;
  - a review of performance against the works approval conditions; and

- (e) where they have not been met, measures proposed to meet the design specification and/or works approval conditions, together with timeframes for implementing the proposed measures.

## Time limited operations phase

### Commencement and duration

12. The works approval holder may only commence time limited operations for an item of infrastructure listed in Table 2:
- (a) where the item of infrastructure is located at the Wickepin de-gritting plant, within mining tenement M70/1143; and
  - (b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 6, the Environmental Commissioning Report for that item of infrastructure, as required by condition 10, has been submitted by the works approval holder.
13. The works approval holder may conduct time limited operations for an item of infrastructure listed in Table 2:
- (a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 12; or
  - (b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before the end of the period specified in condition 12(a).

### Time limited operations requirements and emission limits

14. 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 requirement	Infrastructure location
1	<p>Wickepin de-gritting plant, comprising:</p> <ul style="list-style-type: none"> <li>• Feed hopper;</li> <li>• Rotary kiln;</li> <li>• Air separator;</li> <li>• Dust collectors; and</li> <li>• Exhaust stacks.</li> </ul>	<ul style="list-style-type: none"> <li>• De-gritting infrastructure must be located indoors during operation;</li> <li>• Ore transfer points must utilise dust suppression sprays and dust collection equipment to minimise dust emissions;</li> <li>• Visible dust at the premises must be controlled using water carts for dust suppression;</li> <li>• Stockpiles are maintained at optimal moisture or wetted down, if stored outdoors;</li> <li>• Kaolin product is bagged and sealed to prevent fugitive dust emissions;</li> <li>• Infrastructure must be maintained as per manufacturer's specifications;</li> <li>• Records maintained of volume of</li> </ul>	As shown in Figure 2, Figure 3 and Figure 4 Schedule 1.

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		material processed during operation; <ul style="list-style-type: none"> <li>• Earthen bunds and drainage must be maintained around the de-gritting plant to redirect runoff to stormwater pond.</li> </ul>	
2	Stormwater pond	<ul style="list-style-type: none"> <li>• Maintain an operational freeboard of 300 mm;</li> <li>• Maintain a floating surface bund at the entrance of the pond; and</li> <li>• If hydrocarbon sheen is observed on surface, water to be pumped out and disposed offsite by a licensed contractor.</li> </ul>	As shown in Figure 2, Schedule 1.

15. During time limited operations, the works approval must ensure that the emissions specified in Table 6 are discharged only from the corresponding discharge points and only at the corresponding discharge point locations.

**Table 6: Authorised emission locations**

Emission Point	Source	Emission point height	Discharge point location
Kiln Baghouse	Rotary kiln	At least 3 m above the height of the Wickepin de-gritting plant.	As shown in Figure 4, Schedule 1.
Separation Dust Collector Exhaust 1	Dust collectors		
Separation Dust Collector Exhaust 2			
Separation Dust Collector Exhaust 3			

16. The works approval holder must take all practicable measures to prevent stormwater run-off becoming contaminated by activities and operations undertaken at the premises.
17. The works approval holder must ensure that:
- all unsealed access roads;
  - all product and waste stockpiles, unless sealed and bagged; and
- are wetted down with water at all times during operation.

### Monitoring during time limited operation

18. The works approval holder must monitor emissions:
- from each discharge point;
  - at the corresponding monitoring location;
  - for the corresponding parameter; and
  - at the corresponding frequency;
  - for the corresponding averaging period;



- (f) in the corresponding unit; and
- (g) using the corresponding method,
- as set out in Table 7.

**Table 7: Emissions and discharge monitoring during time limited operation**

Discharge point	Monitoring location	Parameter	Frequency	Averaging period <sup>1</sup>	Unit	Method
Rotary kiln stack	Kiln Baghouse	Stack velocity	Quarterly	Stack test (60 minutes)	m/s	USEPA Method 2
		CO			mg/m <sup>3</sup>	USEPA Method 10
		CO <sub>2</sub>				USEPA Method 3
		NO <sub>x</sub>				USEPA Method 7E
		PM <sub>10</sub>				USEPA Method 201A or Particle Size Analysis
Dust collector stack	Separation Dust Collector Exhaust 1; Separation Dust Collection Exhaust 2; Separation Dust Collection Exhaust 3	PM <sub>10</sub>			mg/m <sup>3</sup>	USEPA Method 201A or Particle Size Analysis

Note 1: Monitoring shall be undertaken to reflect normal operating conditions.

19. The works approval holder must ensure that all non-continuous sampling and analysis undertaken pursuant to condition 18 is undertaken by a holder of a current accreditation from the National Association of Testing Authorities (NATA) for the methods of sampling and analysis relevant to the corresponding relevant parameter.
20. The works approval holder must ensure that monitoring is undertaken in each quarterly period such that there are at least 45 days in between the days on which samples are taken in successive quarters.

### Compliance reporting

21. 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.
22. The works approval holder must ensure the report required by condition 21 includes the following:

- (a) a summary of the time limited operations, including timeframes and amount of material processed;
- (b) a summary of stack sampling results obtained during time limited operations under condition 18;
- (c) a review of operational performance and compliance against the conditions of the works approval; and
- (d) where the manufacturer's design 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

- 23.** 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.
- 24.** 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, 6, 8 and 14;
  - (b) any maintenance of infrastructure that is performed in the course of complying with condition 14;
  - (c) monitoring programmes undertaken in accordance with condition 18;
  - (d) complaints received under condition 23.
- 25.** The books specified under condition 24 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
annual period	a 12 month period commencing from 24 February until 23 February of the immediately following year.
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 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
CO	Carbon monoxide.
CO <sub>2</sub>	Carbon dioxide.
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.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA).
NO <sub>x</sub>	Nitrogen oxides.
PM <sub>10</sub>	Particulate matter 10 micrometres or less.

Term	Definition
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.
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 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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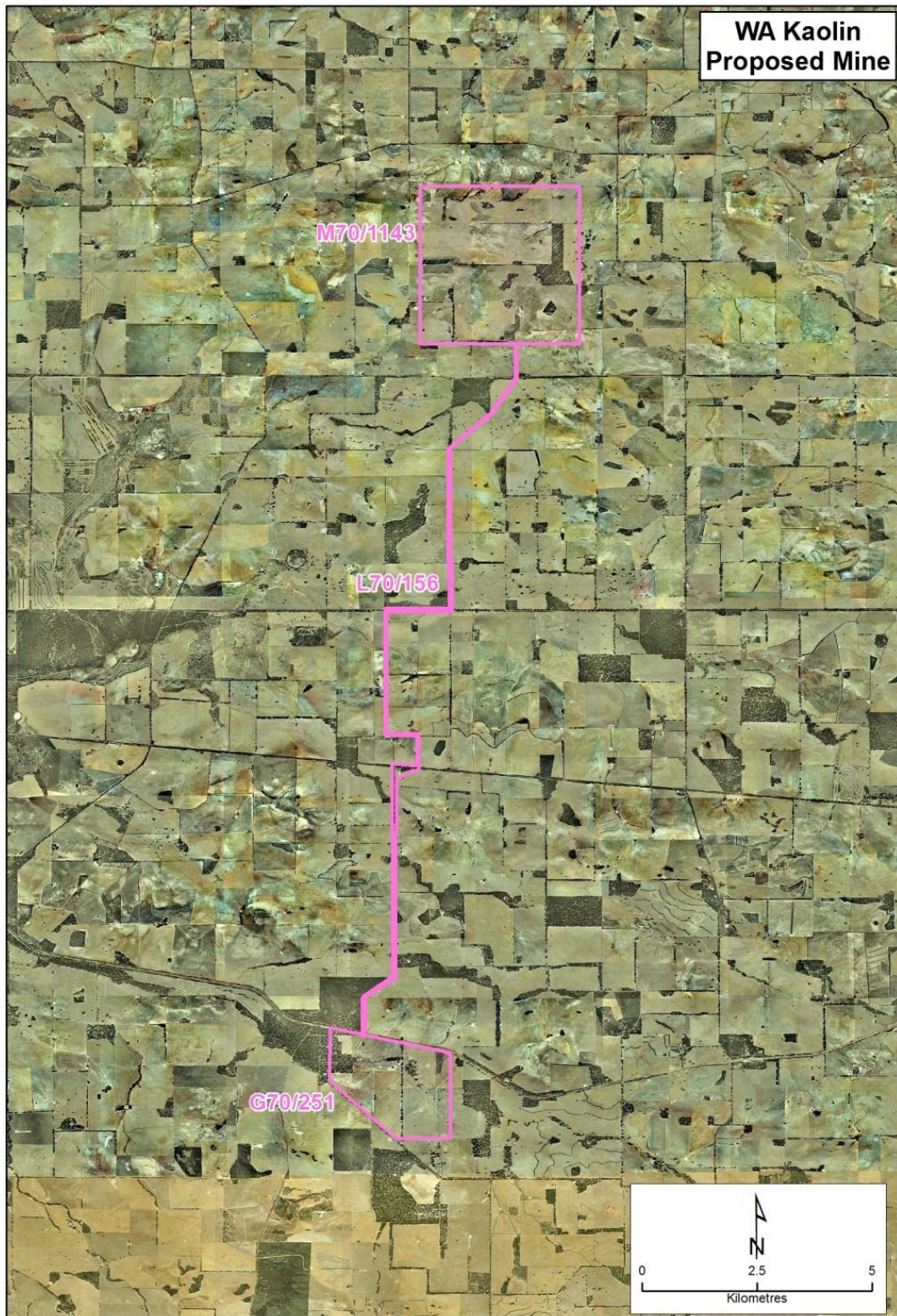
**END OF CONDITIONS**



# Schedule 1: Maps

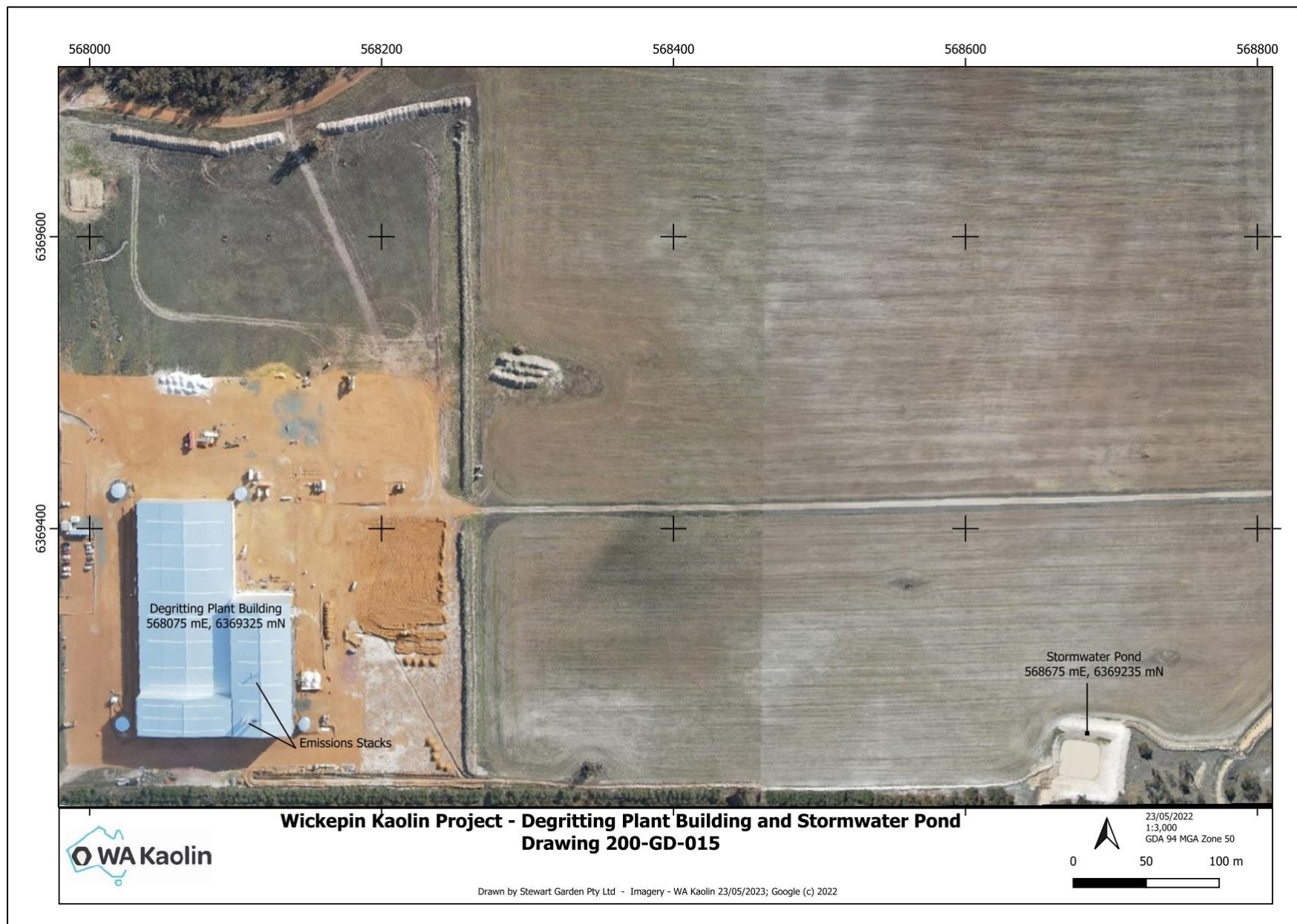
## Premises map

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



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





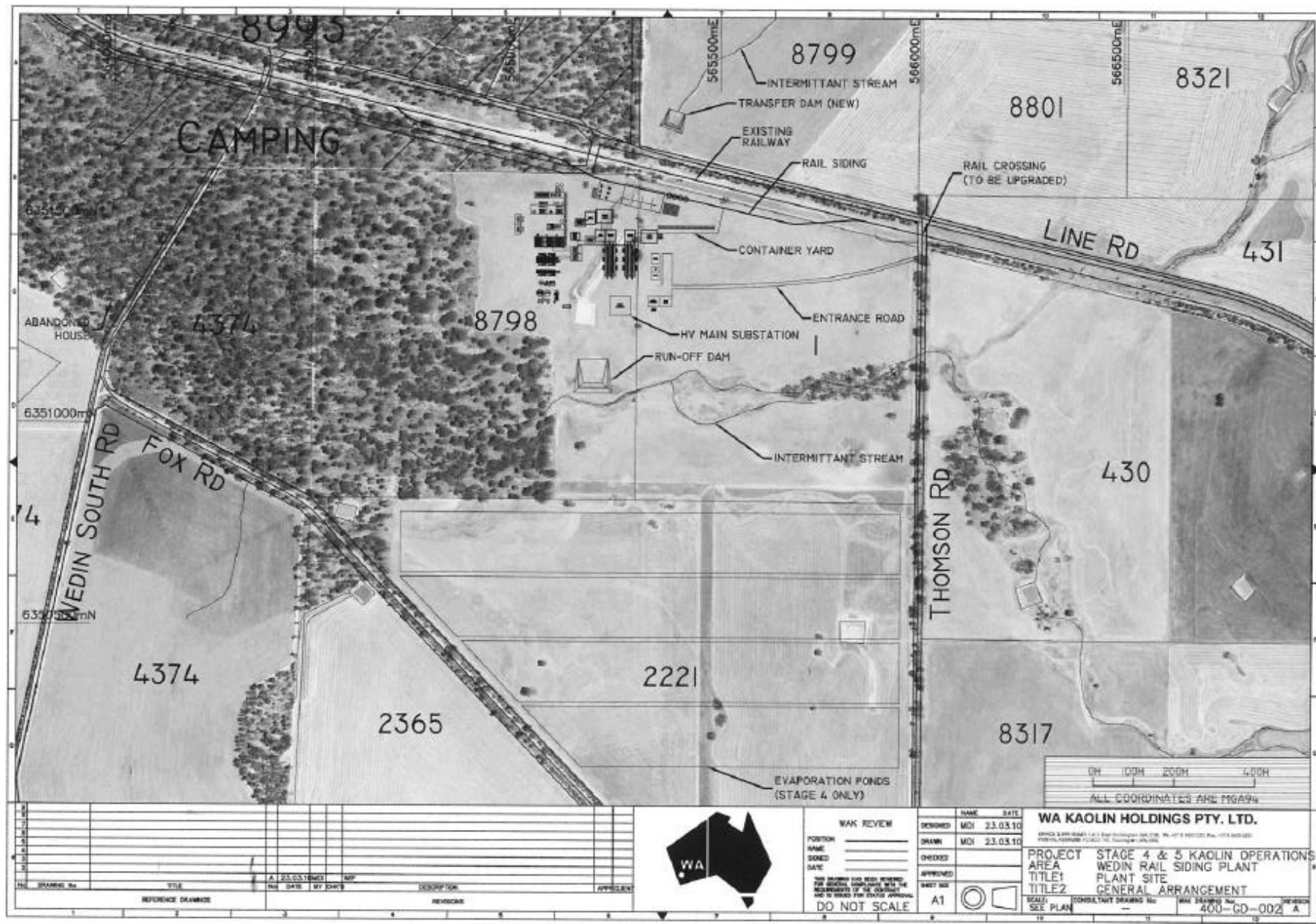
**Figure 2: Site map – Location of Wickein process plant**

W5443/2013/1 (20 February 2014 / latest update: 7 June 2022)  
IR-T05 Works approval template (v5.0) (February 2020)









**Figure 5: Location of Wedin Railway Siding process plant.**

W5443/2013/1 (20 February 2014 / latest update: 7 June 2022)  
 IR-T05 Works approval template (v5.0) (February 2020)



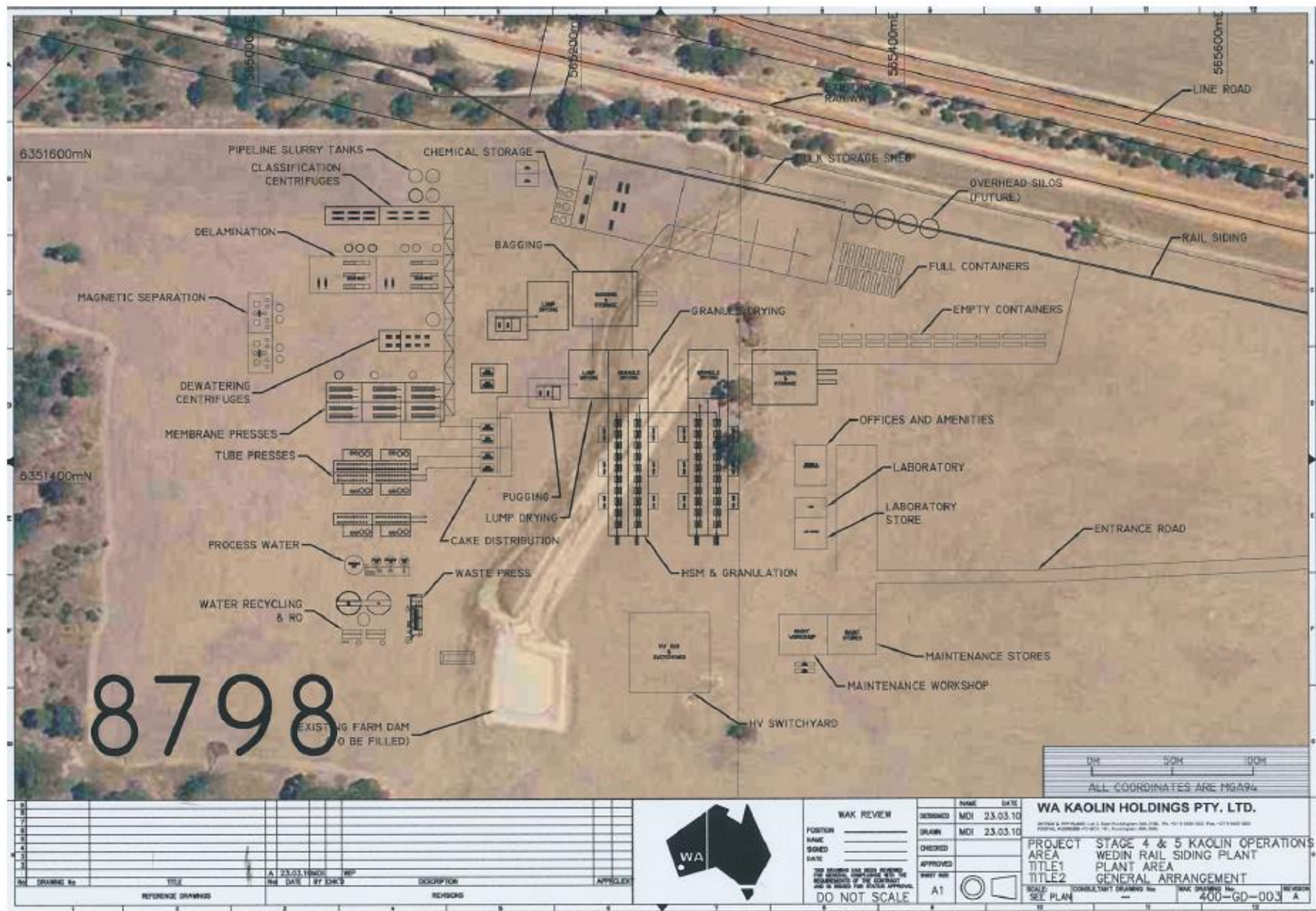


Figure 6: Detailed site plan for the Wedin Railway Siding Processing Plan.

W5443/2013/1 (20 February 2014 / latest update: 7 June 2022)  
IR-T05 Works approval template (v5.0) (February 2020)