



## Application for Licence Amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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<b>Licence Number</b>	L6145/1983/11
<b>Licence Holder</b>	GMA Garnet Pty Ltd
<b>ACN</b>	009 344 227
<b>File Number</b>	DER2014/001258-1
<b>Premises</b>	GMA Garnet Narngulu 122 Goulds Road NARNGULU WA 6532 Being Lot 141 on Diagram 79746 As defined by the Premises map attached to the Revised Licence
<b>Date of Report</b>	4 August 2023
<b>Decision</b>	Revised licence granted

**A/MANAGER, RESOURCE INDUSTRIES  
REGULATORY SERVICES**

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

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## 1. Decision summary

Licence L6145/198/11 is held by GMA Garnet Pty Ltd (Licence Holder) for the GMA Garnet Narngulu (the Premises), located at Lot 141 on Diagram 79746, NARNGULU.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Revised Licence L6145/1983/11 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary

On 11 January 2023, the Licence Holder submitted an application to the department to amend Licence L6145/1983/11 (Licence) under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The Licence relates to the operation of an *Environmental Protection Regulations 1987* Category 8: Mineral sands mining or processing facility (Premises) located within the Narngulu industrial area at the City of Greater Geraldton.

The Premises has operated since 1983 and treats garnet sand concentrate sourced from the Licence Holders open cut alluvial garnet mine in Port Gregory (Garnet Mine) located approximately 100 km north of the City of Greater Geraldton. The Premises treats more than 300,000 tonnes per year of garnet sands to produce graded garnet and a small quantity of Ilmenite through a process of drying, followed by separation through a series of screens and magnets. Tailings from the process are then further refined to produce Zircon Rutile Concentrate. The products are stored onsite either in bulk or within packaging before being transported offsite for sale.

The Licence Holder does analysis of drill samples at the Premises which are sourced from the Garnet Mine. The samples are wet screened to separate coarse/rocks and fine particles from sands. The wet screening process creates tailings consisting of fine particles and water which is currently outsourced to a third party for removal. No chemicals are used in the process.

#### **In-pit tailings storage facility (solar drying pond)**

The Licence Holder is now proposing to construct and operate a small below ground tailings solar drying pond (pond) at the Premises to store drill sample tailings produced by the onsite laboratory. The below ground pond will be located within a vacant section at the Premises positioned between two driveways and will have a disturbance footprint of approximately 470 m<sup>2</sup> (see Figure 1).

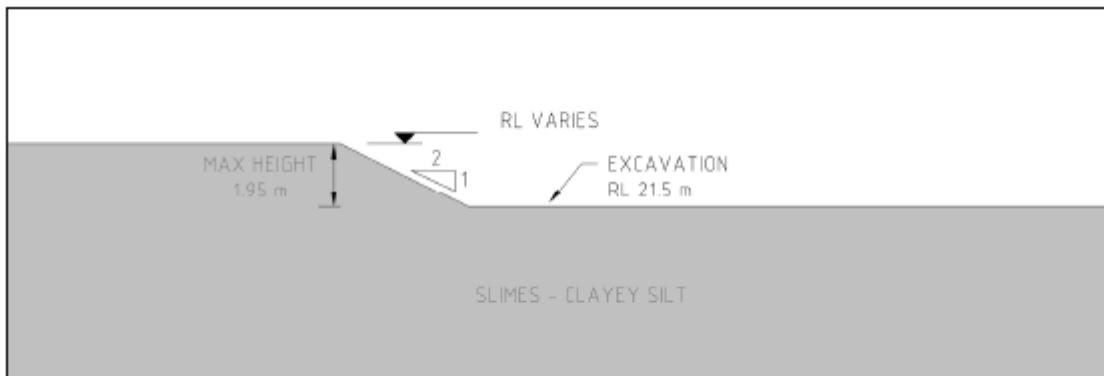


**Figure 1: Solar drying pond (In-pit Tailings Facility)**

The pond will be located within historically disturbed soils which mainly contain remnants of decommissioned slim pits that were part of the historical milling operations. Construction of the pond is expected to take approximately three months and consists of:

- Site preparation works.
- Excavation from the natural ground within the footprint of the pond to a depth of 1.95 metres.
- The excavated material will form a bund around the perimeter of the solar drying pond and any excess material temporarily stockpiled onsite.

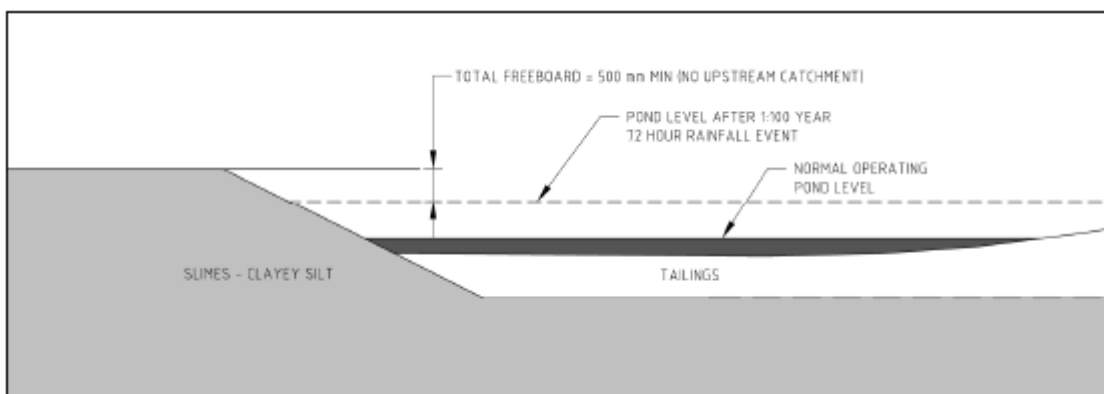
The embankments of the pond will be built into the natural sloping landform to a maximum depth of 1.95 metres below ground level (mbgl) with an internal slope horizontal distance to vertical rise of 1V:2H m (see Figure 2 below).



**Figure 2: Solar Drying Pond configuration (Critical Section)**

The tailings will be transferred via a pipeline from the wet screening process and discharged into an existing concrete sump which was previously used in milling operations at the Premises. A fixed pipe located in the southern end of the sump will then transfer the tailings to the pond via an underground pipeline (see Figure 1 above). Tailings will be discharged from a single discharge point into the pond.

The Licence Holder has designed the pond to accommodate a 1:100-year AEP 72-hour storm event of approximately 158 mm while maintaining a minimum total freeboard of 500mm (see Figure 3 below).



**Figure 3: Solar Drying Pond freeboard**

The Licence Holder anticipates 6,600 drill samples will be processed each year. The wet screening of the drill samples will produce approximately 200 m<sup>3</sup> of tailings slurry per annum which consists of 197 m<sup>3</sup> of slurry water and approximately 3.2 tonnes of clay fines. The pond is designed with a storage capacity of 209 m<sup>3</sup> which will provide 12 months of storage (based upon average dry density of 1.45 t/m<sup>3</sup>). The pond will be operated on an ongoing yearly cycle with dried tailings being excavated at least once a year and then returned to the Garnet Mine for backfilling.

The Licence Holder does not propose to recover slurry water from the pond as all the slurry



water is expected to be removed through evaporation and seepage. An underdrainage or basal liner have not been proposed for this facility.

The Licence Holder proposes to install two standing pipes (groundwater wells) to monitor for any potential impacts on the superficial groundwater aquifer. The proposed locations are shown in Figure 4 below.



**Figure 4: Proposed Groundwater monitoring wells**

The Licence Holder has received development approval from the City of Greater Geraldton for the Solar Drying Pond (TP22/182, 2/9/2022). A condition of the approval was the requirement to fence the pond area.

### **Diesel fuel storage facility**

The Applicant is also seeking to amend the licence by removing conditions relating to emissions to land and monitoring requirements for the Diesel Storage Bunded Area and the Washdown Bay.

Diesel fuel is currently stored in a 2,000 litre tank within a bunded area which is designed to capture spillage during refuelling. The Licence Holder is proposing to upgrade the diesel fuel storage area with a new 4,000 litre diesel storage tank and a trafficable spill grate which will be positioned in front of the diesel tank. The replacement facility will be located immediately south of the current facility. Once the new diesel fuel storage facility is completed and commissioned, the existing facility will be decommissioned and removed from the Premises.

## **2.3 Consolidation of Licence**

As part of this amendment package the department has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table 11.

**Table 1: Licenses consolidated in this amendment**

<b>Instrument</b>	<b>Issued</b>	<b>Summary of approval</b>
L6145/1983/11	31/07/2014	Licence reissue and REFIRE format conversion

Instrument	Issued	Summary of approval
L6145/1983/11	26/04/2016	Notice of Amendment of Licence Expiry Dates (2016)
L6145/1983/11	16/05/2022	Notice of Amendment of Amended Reporting Conditions (2022)

The obligations of the Licence Holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 2 of the previous licence and advise the Licensee to obtain the form from the department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The full consolidation of licence conditions as they relate to this Revised Licence are detailed in Section 5.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

### 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

#### 3.1 Source-pathways and receptors

##### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Licence Holder controls**

Emission	Sources	Potential pathways	Proposed controls
Dust	Generated during the construction of the solar drying pond and new diesel bunded storage area.	Air/windborne pathway	Use of water cart during construction activities.
	Generated from drying tailings	Air/windborne pathway	Shade cloth fitted to the solar drying pond perimeter fence to reduce wind strength



Emission	Sources	Potential pathways	Proposed controls
			and dust emissions.
Noise	Construction activities	Air/windborne pathway	All onsite machinery fitted with mufflers.
Seepage of tailings water	Storage of tailings	Seepage through the pond embankment and base to the underlying soils	Ensure the tailings only consist of screening water and fine particles from the drill sample screening process and are free from any external pollutants or contaminants.
Tailings	Overtopping of pond embankment	Direct discharge to land	Earthen bund around the perimeter of the pond.  Pond designed to retain a 1:100-year AEP 72-hour storm event of approximately 158 mm while maintaining a minimum total freeboard of 500mm.
Hydrocarbon contaminated stormwater	Trafficable spill grate	Direct discharge to land	Regular maintenance undertaken to minimise the build-up of sand/dirt within the spill grate to ensure the maximum volume is maintained.

### 3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

**Table 3: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Residential premises (semi-rural)	Approximately 1 km northeast of the Premises
Environmental receptors	Distance from prescribed activity
<p>Groundwater</p> <p>Saline with a TDS ranging from 3,000 to 7,000 mg/L.</p> <p>Flow at the premises is west/south-west towards the Indian ocean located approximately 5 km away.</p> <p>Surface run-off is unlikely to occur at the Premises with rainfall rapidly infiltrating</p>	<p>Surficial aquifer approximately 17.5 mbgl at the Premises.</p> <p>The surficial aquifer is underlain by the Cadda Formation which is described as shale, siltstone, and sandstone with shelly sandy limestone. Due to the limestone and siltstone formations located in the upper portions of the Cadda Formation, it is likely this formation is hydrogeologically separated from the</p>

through the porous sand to groundwater.  
No nearby groundwater users due to poor water quality and surrounding industrial land uses.

surficial aquifer (REC,2021).



**Figure 5: Distance to sensitive receptors**

## 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Licence L6145/1983/11 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. category 8 activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

**Table 4. Risk assessment of potential emissions and discharges from the Premises during construction and operation**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
<b>Construction</b>								
<p>Construction of a small in-pit tailings storage facility (solar drying pond).</p> <p>Construction of upgraded diesel storage bunded area and washdown bay.</p> <p>Earth moving and vehicle movements.</p>	Dust	Air/windborne pathway causing impacts to health and amenity	Residence 1km northeast of premises.	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Conditions <b>1, 2, 3</b> , 11, 12, 13, 14, and 15	<p>Construction activities for the Pond and upgraded diesel storage facility generally located as identified in the submitted application.</p> <p>Standard administrative and reporting requirements for construction activities.</p> <p>The provisions of the <i>Environmental Protection Act 1986</i> regarding Pollution and Environmental Harm apply.</p>
	Noise			Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Conditions <b>1, 2, 3</b> , 11, 12, 13, 14 and 15	<p>Construction activities for the Pond and upgraded diesel storage facility generally located as identified in the submitted application.</p> <p>Standard administrative and reporting</p>

Licence: L6145/1983/11

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								requirements for construction activities.  The provisions of the <i>Environmental Protection (Noise) Regulations 1997</i> apply.
<b>Operation</b>								
Storage of tailings	Seepage of tailings water	Seepage through soil causing contamination of the underlying groundwater	Groundwater	Refer to Section 3.1	C = Slight L = Possible <b>Low Risk</b>	Y	Conditions <b>1, 2, 3, 6, 8, 9, 10</b> , 11, 12, 13, 14 and 15	Refer to section 3.3 for detailed risk assessment.
	Dust generated from dried tailings in the pond.  Dust generated from dried tailings caused from accidental discharges to land as a result of pond overtopping and pipeline failure	Air/windborne pathway causing impacts to health and amenity	Residence 1km northeast of premises.	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions <b>1, 2, 3, 4, 5, 6</b> , 11, 12, 13, 14 and 15	The Premises processes 300,000 tpa of garnet sands which contain trace amounts of minerals which emit radiation. The Licence Holder is approved by the Radiological Council and holds Registration RS 57/2009 189 for the Premises which is regulated by DMIRS. The Licence Holder must manage dust levels as part of the ongoing Registration process.

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								<p>Fugitive dust emissions from the tailings are not expected due to the tailing's high moisture content.</p> <p>Licence Holder controls included as standard operational requirements for maintaining dust screening on pond fencing, pipeline integrity and pond freeboard daily inspections.</p> <p>Standard recording and reporting conditions apply.</p> <p>The provisions of the <i>Environmental Protection Act 1986</i> regarding Pollution and Environmental Harm apply.</p>
	Tailings due to overtopping of the pond embankment	Direct discharge to surrounding soils causing contamination of the underlying groundwater	Groundwater	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions <u>1</u> , <u>2</u> , <u>3</u> , <u>4</u> , <u>5</u> , <u>6</u> , 12, 13, 14 and 15	Applicant controls and inspections included as standard operational conditions.
	Tailings due to pipeline failure and concrete sump				C = Slight L = Possible <b>Low Risk</b>	Y	Conditions <u>1</u> , <u>2</u> , <u>3</u> , <u>4</u> , <u>5</u> , <u>6</u> , 12, 13, 14 and 15	Standard recording and reporting conditions apply.

Licence: L6145/1983/11



Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
	overflow due to blockage in the gravity flow pipeline							The provisions of the <i>Environmental Protection Act 1986</i> regarding Pollution and Environmental Harm apply.
Operation of fuel facility and wash down bay	Hydrocarbons Hydrocarbon contaminated stormwater	Seepage through soil causing contamination of the underlying groundwater.	Groundwater	Refer to Section 3.1	C = Slight L = Rare <b>Low Risk</b>	Y	Condition 4, 5, 11, 12, 13, 14 and 15	The storage and handling of dangerous goods is managed by DMIRS through the <i>Dangerous Goods Safety Act 2004</i> .  The provisions of the <i>Environmental Protection Act 1986</i> regarding Pollution and Environmental Harm apply.  The provisions of the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> apply.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

### 3.3 Detailed risk assessment – Storage of tailings in the Pond

#### 3.3.1 Description of seepage from the Pond

Seepage from tailings stored in the Solar Drying Pond impacting on groundwater quality in the surficial aquifer.

#### 3.3.2 Identification and general characterisation of emission

The wet sample process involves wet screening samples over a shaker to separate coarse/rocks and fine particles from sands. The only solution used in the separation process is potable water from the City of Geraldton's scheme water supply. The potable water and fine particles pass through sieves as undersize and create a slurry which will be deposited into the Pond for drying. The solid content (clay particles) makes up only a small fraction of the total tailings material with the solid content only expected to be approximately 1.1% which equates to a total of 3.2 tonnes annually. Therefore, most of the tailing's material consists of potable water.

The clay particles found in the tailings mainly consist of carbonate minerals which are predominately less than 75µm in size. The tailings were characterised in 2021 (REC, 2021) with the results shown in Figure 6 below. The tailings primarily consisting of Carbonate minerals, some Halite and Quartz, with traces of other crystalline minerals present (Feldspar, Mica, Garnet, Hematite, Muscovite, Bassanite, Ilmenite, Zircon and Rutile). Due to the carbonate content, the sand is typically alkaline. Associated with the trace amounts of the secondary products Ilmenite and zircon, are small amounts of uranium and thorium, however the percentage is very small and is typically much less than 0.1% by weight. The Licence Holder is registered with the Radiological Council due to the processing of 300,000 tpa of garnet sands at the premises and holds registration RS 57/2009 189.

Client Sample ID			DRILL SAMPLE_01_2 0210128
Sample Matrix			Water
Eurofins Sample No.			P21-Fe00584
Date Sampled			Jan 28, 2021
Test/Reference	LOR	Unit	
Chloride	1	mg/L	850
Conductivity (at 25°C)	10	uS/cm	2100
pH (at 25 °C)	0.1	pH Units	8.2
Sulphate (as SO4)	5	mg/L	87
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	940
Hardness mg equivalent CaCO3/L	5	mg/L	200
<b>Alkalinity (speciated)</b>			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	100
Carbonate Alkalinity (as CaCO3)	20	mg/L	< 20
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	100
<b>Alkali Metals</b>			
Calcium	0.5	mg/L	35
Magnesium	0.5	mg/L	27
Potassium	0.5	mg/L	12
Sodium	0.5	mg/L	300

**Figure 6: Geochemical analysis of tailings**

The Pond has been designed to achieve or exceed a target in-situ dry density of 1.45 t/m<sup>3</sup>. To achieve this target, water will be removed from the pond via seepage through the permeable base of the pond (approximately 42%) and by evaporation (approximately 57%). A small fraction (less than 1%) will be retained within the tailing's material. Figure 7 below presents a summary of the water balance for the Pond.

Water Balance	Quantity	Unit
Rainfall	17	m <sup>3</sup> /month
Volume of Slurry Water	17	m <sup>3</sup> /month
<b>Total Water to be Removed</b>	<b>34</b>	<b>m<sup>3</sup>/month</b>
Evaporation	84	m <sup>3</sup> /month
Retention in the tailings	1	m <sup>3</sup> /month
Water removed via seepage	62	m <sup>3</sup> /month
<b>Total Water Removed</b>	<b>147</b>	<b>m<sup>3</sup>/month</b>
<b>Net Water Balance</b>	<b>-113</b>	<b>m<sup>3</sup>/month</b>

**Figure 7: Summary of Pond water balance**

### 3.3.3 Description of potential adverse impact from the emission

The seepage from the tailings which mainly consists of potable water (less than 1,000 mg/L TDS) and a very small fraction of Carbonate mineral sands (quartz and shell) is not expected to alter the groundwater quality at the location of the Premises.

### 3.3.4 Applicant controls

See section 3.1 above for proposed applicant controls.

### 3.3.5 Consequence

If seepage reaches the underlying groundwater which is saline (3,000 to 7,000 mg/L TDS) and has no nearby groundwater users, the onsite impacts would be considered minimal. Therefore, the consequence would be considered **Slight**.

### 3.3.6 Likelihood of Risk Event

The likelihood of seepage reaching the underlying groundwater which is located beneath well drained red duplex soils at a depth of approximately 17 mbgl could occur at some time. Therefore, the likelihood is considered **Possible**.

### 3.3.7 Overall rating of spills of processing reagents during operations

Comparison of consequence and likelihood ratings described above with the risk rating matrix determines the overall rating of risk for seepage from the solar drying pond impacting on groundwater quality to be **Low**.

## 4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

**Table 5: Consultation**

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 7/07/2023	Received 31/7/2023. 'Condition 1 Table 1: Dot point 4 stipulates the following: Fitted with a fixed tailings deposition pipe located in the southern end for the transfer of tailings to the solar drying pond. GMA confirms the deposition point will be in the north-western corner of the Solar drying pond.'	Noted. Licence updated

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

**Table 6: Summary of licence amendments and consolidation of existing licence**

Existing condition	Condition summary	Revised licence condition	Conversion notes
N/A	Expiry Date: 30 September 2019	Expiry Date: 30 September 2034	In accordance with the Notice of Amendment of Licence Expiry Dates (29/04/2016)
N/A	Prescribed Premises Category table	N/A	Revised to current licensing format.
1.1.1 1.1.2	Interpretation and definitions	Interpretation section, Definitions and Table 7	Redundant condition. Revised to current licensing format.
1.1.3	Australian or other standard	Interpretation section, Definitions and Table 7	Redundant condition. Revised to current licensing format.
1.1.4	Reference to code of practice	Interpretation section, Definitions and Table 1	Redundant condition. Revised to current licensing format.
1.2.1	Emissions	Condition 6, Table 4	Redundant condition. Revised to current licensing format.
1.2.2	Pollution control and monitoring equipment	Condition 4, Table 2	Redundant condition. Adequately covered by alternative existing conditions and proposed new conditions. Deleted from licence.

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.2.3 and 1.3.2	Storage of environmentally hazardous materials	N/A	Redundant conditions. Adequately regulated by the Dangerous Goods Safety Act 2004. Deleted from licence.
1.2.4 and 1.3.3	Recovery and removal of spills	N/A	Redundant condition. Adequately covered by EP (Unauthorised Discharges) Regulations 2004 and s.49 of the EP Act 1986. Deleted from licence.
1.2.5	Prevention of contamination and containment of contaminated stormwater	Condition 4, Table 2 and Condition 5, Table 3	Redundant condition. Adequately covered by alternative existing conditions and proposed new conditions. Deleted from licence.
1.3.1 Table 1.3.1	Containment infrastructure	Condition 6, Table 4	Revised to current licensing format. Also updated to include the authorised discharge of tailings to the Solar Drying Pond.
2.1.1	Record and investigate exceedances of limits or targets	N/A	Redundant condition. Deleted from licence.
2.5.1, 2.5.2 and 3.5.1	Emissions to land and monitoring of emissions to land	N/A	Emissions to land no longer occur at the Premises. Deleted from licence.
2.6.1 and 2.6.2	Dust emissions	Condition 4, Table 2 and Condition 5, Table 3	Redundant conditions. Adequately covered by s.49 of the EP Act 1986 and proposed new conditions. Deleted from licence.
4.1.1 and 4.1.2	Improvements	N/A	The improvements required by these conditions have been completed. Deleted from licence.
5.1.1	Records	Conditions 15 and 16	New numbering and updated to latest wording format.
5.1.2	Knowledge of conditions	N/A	Redundant condition. Deleted from licence.
5.1.3	Annual Audit Compliance Report	Condition 12	New numbering and updated to latest wording format
5.1.4	Complaints	Condition 11	New numbering and updated to latest wording format
5.1.5	Recording Incidents and provide summary in AER.	Condition 13, Table 6	New numbering and revised to current licensing format.
5.2.1	Annual Environmental Report	Condition 13, Table 6	New numbering and revised to current licensing format.
5.2.2	Non-Annual reporting	Condition 13, Table 6	Providing third party reports a requirement of the AER. New

Existing condition	Condition summary	Revised licence condition	Conversion notes
			numbering and revised to current licensing format.
5.3.1	Notification of any failure or malfunction which has caused or likely to cause pollution.	N/A	Redundant condition. Deleted from licence. Reporting incidents resulting in or likely to result in Pollution or environmental harm is a requirement under s72 of the EP Act 1986.
Schedule 1 Maps: Premises Map. Figure 1	Updated map of the boundary.	N/A	New updated map
Schedule 1 Maps: Figure 2	Updated map of the infrastructure locations	N/A	New updated map
Schedule 2 Reporting & notifications	Annual Audit Compliance Report Form N1 Notification	N/A	Redundant attachment. Deleted from Licence Forms accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
New condition 1	Inclusion of new standard condition for the construction/installation requirements for the Solar Drying Pond, tailings pipeline and groundwater monitoring bores.	N/A	N/A
New condition 2 and 3	Inclusion of new standard conditions requiring the Licence Holder to conduct an audit of the constructed infrastructure and then prepare and submit an audit report to the CEO.	N/A	N/A
New condition 4	Inclusion of new standard condition for the operation of the Solar Drying Pond and for maintaining the existing washdown bay collection sump.	N/A	N/A
New condition 5	Inclusion of new standard condition requiring the Licence Holder to conduct routine inspections of the Solar Drying Pond.	N/A	N/A
New condition 7	Licence Holder proposed ambient groundwater monitoring included as a new standard condition.	N/A	N/A
New condition 8	Inclusion of new standard condition requiring the Licence Holder to record	N/A	N/A



Existing condition	Condition summary	Revised licence condition	Conversion notes
	the results from the monitoring undertaken in condition 7.		
New condition 9	Inclusion of new standard condition requiring the Licence Holder to send samples to a NATA accredited laboratory for analysis.	N/A	N/A
New condition 10	Inclusion of new standard condition requiring the Licence Holder to undertake a monthly water balance for the operation of the Solar Drying Pond.	N/A	N/A
Schedule 1 Figures 3 and 4	New figures showing the layout and cross sections for the Solar Drying Pond	N/A	N/A
Schedule 1 Figure 5	New Figure 1 showing the location of the two new groundwater monitoring wells at the Solar Drying Pond.	N/A	N/A

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. GMA, *Attachment 3B Licence Amendment Supporting Information*, December 2022
5. GMA, Jessica Gillespie, *Email to DWER in response to a request for further information*, 20 March 2023
6. REC 2021, Resource Engineering Consultants Pty Ltd, *Tailings Storage Facility Design Report, Narngulu Operations, Western Australia GMA Garnet Pty Ltd*, 10 November 2021

## Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY				
Application type				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L6145/1983/11	
		Relevant works approval number:		N/A <input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:		None <input type="checkbox"/>
Date application received		11 January 2023		
Applicant and Premises details				
Applicant name/s (full legal name/s)		GMA Garnet Pty Ltd		
Premises name		GMA Garnet Narngulu		
Premises location		122 Goulds Road, Narngulu WA		
Local Government Authority		City of Greater Geraldton		
Application documents				
HPCM file reference number:		DER2014/001258-1		
Key application documents (additional to application form):		<ul style="list-style-type: none"> <li>Attachment 3B, Licence Amendment Supporting Information, December 2022, GMA</li> <li>Attachment 2 - Licence Amendment Application, Premises Maps</li> <li>Attachment 6A – Emissions and Discharges, Emissions and Discharges Map, GMA</li> </ul>		

	<ul style="list-style-type: none"> <li>Attachment 7 – <i>Sitting and Location, Map of Sitting and Location</i></li> </ul>	
<b>Scope of application/assessment</b>		
Summary of proposed activities or changes to existing operations.	<p>The Applicant proposes to construct and operate a small in-pit tailings storage facility (solar drying pond) to temporarily store drill sample tailings produced by the onsite Laboratory. The wet screening of drill samples will produce approximately 200m<sup>2</sup> of tailings per year, which equates to 3.2 tonnes of solids per annum.</p> <p>The Applicant is also seeking to amend the licence by removing conditions relating to emissions to land and monitoring requirements for the Diesel Storage Bunded Area and the Washdown Bay.</p>	
<b>Category number/s (activities that cause the premises to become prescribed premises)</b>		
<b>Table 1: Prescribed premises categories</b>		
<b>Prescribed premises category and description</b>	<b>Assessed production or design capacity</b>	<b>Proposed changes to the production or design capacity (amendments only)</b>
Category 8: Mineral sands mining or processing:	3,000,000 tonnes per annual period	No change
<b>Legislative context and other approvals</b>		
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input checked="" type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: TP22/182 Expiry date: N/A If N/A explain why? No expiry date provided on the development approval.

Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Type: N/A Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office: Mid-West Gascoyne
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/landuse compatible with the PDWSA (refer to <a href="#">WQPN 25</a> )? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i> )	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Dangerous Goods Safety Act 2004
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Classification: N/A Date of classification: N/A</p>
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