



Application for Licence Amendment

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

Licence Number L4432/1989/14

Licence Holder Pilbara Ports Authority

File Number DER2014/000636-3~4

Premises Eastern Operations

Legal description –

Portion of Lot 400 on Plan 407880 The Esplanade

PORT HEDLAND, WA, 6721

As defined by the [Premises map] attached to the Revised Licence

Date of Report 23 September 2022

Decision Revised licence granted

Clarrie
Green

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Clarrie Green
MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES

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

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1. Decision summary

Licence L4432/1989/14 is held by Pilbara Ports Authority (Licence Holder) for the Eastern Operations facility in Port Hedland (the Premises), as defined on the cover page of this Amendment Report.

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 operation of the Premises. As a result of this assessment, Revised Licence L4432/1989/14 has been granted.

2. Scope of assessment

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (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>.

2.1 Application summary

On 1 April 2022, the Licence Holder submitted an application to the department to amend Licence L4432/1989/14 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- an increase in the total allowed volume of bulk material (combined spodumene and copper) exports from 1,170,000 to 2,560,000 tonnes per annum.
- an increase in the allowed volume of spodumene concentrate from 610,000 to 2,000,000 tonnes per annum exported.
- authorisation for the storage and loading of bulk spodumene concentrate onto vessels at berth PH1 utilising the existing ship loader, conveyor system and storage facilities, which are currently only approved for handling of copper concentrate.

No additional, or alterations to, infrastructure or equipment is proposed in relation to this licence amendment and there are no changes proposed to the copper concentrate handling and export processes or volumes. Spodumene concentrate will continue to be handled on site via the existing container storage, handling and ship loading method, and will also utilise the storage sheds, ship loading infrastructure and dust controls that have been historically used for the storage and export of copper concentrate.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
58/58A	610,000 tonnes per year (export volume of spodumene concentrate)	2,000,000 tonnes per year (export volume of spodumene concentrate)	Triggers category 58 under Schedule 1 of the Environmental Protection Regulations 1987 (EP Regulations) (100 tonnes or more per day)
	1,170,000 tonnes per year (total export volume)	2,560,000 tonnes per year (total export volume)	

2.1.1 Spodumene Concentrate

The particle size distribution of spodumene concentrates handled at the premises are typically

in the coarser fractions (greater than 10 micron in diameter). The Department of Health has previously advised the department that these particles are too large to be inhaled and is not aware of any adverse health effects to the general public (Department of Health, January 2018).

Although spodumene concentrate contains PM₁₀ and PM₄ size particles (refer to Table 2), the products with higher fractions of fine particles have historically been received at the premises with a moisture content well above the Dust Extinction Moisture (DEM) level (PPA 2021). Ensuring all distinct bulk spodumene concentrate received at the premises has a moisture content above DEM is the licence holder's primary control for minimising fugitive dust emissions. Engineering controls for shiploading also exist, as described in Table 3.

Through annual reporting, required by the existing licence, the Licence Holder has provided dust potential characteristics for each ore exported (copper and spodumene concentrates) including DEM, particle size distribution and average moisture content (Table 2).

The licence holder is also required to report on the quantity of potentially hazardous materials, muscovite and silica quartz, within each distinct bulk spodumene concentrate shipment.

Table 2: 2020/21 Annual ore monitoring - dust potential characteristics

Product	Volume exported (tonnes)	DEM	Compliance with DEM (%)	PM ₁₀ ¹ fraction (%)	PM ₄ ² fraction (%)	Average moisture content ³	
						min	max
Copper concentrate							
Newcrest	279,183	5.5	99.45	-	-	7.48	13.23
Sandfire		6.0				7.04	11.72
Spodumene concentrate							
Altura blend 50/50	403,641	1.38	100	0.45	0.17	3.7	6.7
Altura coarse		0.5		0.40	0.14	2	2.57
Altura fines		3.5		5.20	2.06	8.67	10.25
Pilbara Minerals blend		4.8		1.40	<0.01	6.3	9.86
Pilbara Minerals fines		5.5		2.60	0.40	8.92	8.96
Pilbara Minerals course		1.4		<0.01	0.83	2.32	2.42

Note 1: Particulate matter with equivalent aerodynamic diameter of less than 10 microns.

Note 2: Particulate matter with equivalent aerodynamic diameter of less than 4 microns.

Note 3: Average moisture content range, product sampled in shed on arrival to Port Hedland over 2020/2021 reporting period

Ambient monitoring is conducted frequently at monitoring points on the premises border and outside the premises, in addition to during each ship loading event. As Lithium (Li) is present in spodumene, it is monitored using high volume air samplers (HVAS) to provide an indicator of potential dust generation from spodumene concentrate handling activities.

Annual reporting shows lithium (as PM₁₀) is detected in low concentrations, averaging 0.002µg/m³ in the 2020/21 reporting period. There are also other possible contributions from the nearby Utah Point premises that handles spodumene ore.

2.2 Risk assessment

Table 3. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event		Potential emission	Potential pathways and impact	Receptors ²	Licence Holder controls	Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions of licence	Justification for additional regulatory controls/no additional controls applied
Source/Activities									
Storage of copper and spodumene concentrate in concentrate storage sheds or container storage areas and ship loading via either: <ul style="list-style-type: none"> partially closed conveyor system from bulk cargo to a ship loader at Berth 1; or crane-based container system, tipping container contents directly into the vessel hold. 	Dust		Air/windborne pathway causing impacts to health and amenity	<p>Pier Hotel – located 60 m east</p> <p>Closest zoned residential premises – 910 m to the north east</p> <p>Marine ecosystem (located within)</p> <p>Mangrove community located to the south west approximately 500-650 m</p>	<p>For details on all Licence Holder controls, refer to Section 6.3.6 of Decision Report (DWER 2019).</p> <p>For existing controls relevant to the proposed amendments:</p> <ul style="list-style-type: none"> Enclosed concentrate storage shed with air/dust extraction filter system and ceiling mounted sprinkler network. All handling of material is done with doors closed, concentrate loaded onto the conveyor via an internal hopper. Fully or partially enclose conveyors with mist sprays operated during loading and regular cleaning after ship loading activities. Covered transfer chutes equipped with block chute sensors and a dust extraction system. Bulk loading equipment controls including fully sealed and banded area for handling material and spillage prevention via restricted feed speed and deflector plate. Frequent cleaning of infrastructure and equipment and vacuum trucks available for spill recovery. Monitoring of moisture content of material to ensure above DEM 	<p>C = Moderate</p> <p>L = Unlikely</p> <p>Medium Risk</p>	Y	No additional conditions	<p>The premises has proactively implemented a high standard of dust emission controls that prioritise containment and product moisture management, followed by capture/collection, and suppression, supported by process monitoring and management systems.</p> <p>Current boundary monitoring indicates that spodumene concentrate has a low dust potential based on current product quality and existing controls.</p> <p>Current monitoring and management of product moisture conditions continue to apply and are expected to maintain dust risks from the premises at acceptable levels.</p>
Operation of existing shiploading equipment	Noise		Air/windborne pathway causing impacts to health and amenity	<p>Pier Hotel – located 60 m east</p> <p>Closest zoned residential premises – 910 m to the north east</p>	<p>For details on all Licence Holder Controls, refer to Section 6.4.5 of Decision Report (DWER 2019).</p>	<p>C = Moderate</p> <p>L = Possible</p> <p>Medium Risk</p> <p>(Risk unchanged)</p>	Y	No additional conditions	<p>Noise levels in Port Hedland are currently exceeding Assigned Levels of the Environmental Protection (Noise) Regulations 1997 (Noise Regulations). However, no construction and operation of new infrastructure is required for proposed spodumene throughput increases. As a result there is no expected increase to maximum noise levels from the premises.</p> <p>The department is currently investigating the feasibility of approvals under Regulation 17 of the Noise Regulations where the prescribed noise standard cannot be met by individual premises.</p>
Direct discharges to surface water (spills) and discharges from stormwater/wash water runoff following spodumene concentrate loading activities	Discharge of contaminated water		Overland runoff causing ecosystem disturbance or impacting surface water quality	<p>Marine ecosystem (located within)</p> <p>Mangrove community located to the south west approximately 500-650 m</p>	<p>For details on all Licence Holder Controls, refer to Section 6.6.5 of Decision Report (DWER 2019).</p>	<p>C = Minor</p> <p>L = Possible</p> <p>Medium Risk</p> <p>(Risk unchanged)</p>	Y	No additional conditions	<p>Risks associated with stormwater and washwater discharges will be acceptably managed through existing controls implemented by the licence holder.</p> <p>The general provisions of the <i>Environmental Protection Act 1986</i> and <i>Environmental Protection Regulations 2004</i> (Unauthorised Discharges) apply during operations.</p>

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

Note 2: Determination of receptors are detailed in the *Guideline: Environmental Siting* (DWER 2020).

3. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website (17/05/2022)	None received	N/A
Local Government Authority advised of proposal (17/05/2022)	The Town of Port Hedland replied on 18/05/2022 advising that there are no objections to the proposal.	N/A
Department of Health (DOH) advised of proposal (17/05/2022)	DOH replied on 3/06/2022 advising there are no concerns about the proposal, provided that DWER is satisfied that appropriate modelling has been undertaken.	The department has identified that there is an acceptable level of risk with the proposal.
Dampier Salt Limited (DSL) via Department of Jobs, Tourism, Science and Innovation (JTSI) advised of proposal (17/05/2022)	DSL replied on 3/06/2022 requesting further consultation regarding the use of Berth 1, 2 and 3 by other third parties, and Berth schedule modelling that considers DSL's requirements.	Comment is beyond the scope for this assessment, discussions to be held between Pilbara Ports Authority and Dampier salt.
Pilbara Development Commission, Care for Hedland Environmental Association, Port Hedland Industries Council and Community Stakeholders advised of proposal (17/05/2022)	None received	N/A
Licence Holder was provided with draft amendment on 2 September 2022	The Licence Holder noted required updates to the infrastructure requirements table to reflect current infrastructure and improvements to operation. Minor administrative amendments were also requested.	Requested changes noted and accepted.

4. 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.

The applicant has demonstrated appropriate management of moisture content, ensuring those products with greater proportion of fines have a significantly greater moisture content than

DEM. Current handling practices are adequate to control and minimise dust emissions and have been conditioned in the Licence. Monitoring requirements in place will be continued.

The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format. This includes the removal of conditions that duplicate the EP Act.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Health (DOH) 2018, *Request for Advice – Amendment to Licence (L4476/1984/12)*, (DWER Reference: A1604566)
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2019, *Amended Licence L4432/1989/14 and Decision Report for Pilbara Ports Authority - Eastern Operations*, revised 30/05/2019
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. Pilbara Ports Authority (PPA) 2021, *Annual Audit Compliance Report and Attachments* (DWER Reference: A1933228)