Government of Western Australia
Department of Water and Environmental Regulation

Amendment Notice 3

Licence Number	L8148/2006/4
Licence Holder	Koolan Iron Ore Pty Ltd
ACN	099 455 277
File Number:	DER2014/000374
Premises	Koolan Island Iron Ore Mine and Port Facility Mining Tenements M04/416, M04/417 and L04/29 KOOLAN ISLAND (BUCCANEER ARCHIPELAGO)
Date of Amendment	**12 September 2018**

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Alana Kidd

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Date: 2018.09.12 08:48:33 +08'00'

Alana Kidd

Manager, Resource Industries

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

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Amendment
km	kilometres

Licence Holder	Koolan Iron Ore Pty Ltd
m^3	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
tpa	tonnes per annum

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 5, 58 and 73. No changes to the aspects of the original Licence or Amendment Notice 1 or 2 relating to Category 12 or 54 have been requested by the Licence Holder.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015);*
- *Guidance Statement: Setting Conditions (October 2015);*
- *Guidance Statement: Decision Making (February 2017);*
- *Guidance Statement: Risk Assessment (February 2017);* and
- *Guidance Statement: Environmental Siting (November 2016).*

Amendment description

On 29 June 2018, the Licensee submitted an application to amend the Koolan Iron Ore Mine and Port Facility (Premises) Licence L8148/2006/4. The Licence Holder has advised that the Premises is coming out of care and maintenance, and is seeking to have the Licence amended to enable mining and ship loading to recommence at the site.

The Licence Holder has applied to make the following changes:

1. Increase the Category 5 production capacity from 50,000 tpa to 4,000,000 tpa;
2. Increase the Category 58 production capacity from 100 tonnes per day to 75,000 tonnes per day; and
3. Increase the Category 73 design capacity to reflect total volume stored on site.

Table 2 below outlines the proposed changes to the Licence.

Table 2: Proposed design capacity changes requested in amendment.

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
5 – Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes per annum	4,000,0000 tonnes per annum	Recommencement of mining in the Main Pit.
58 – Bulk material loading or unloading	100 tonnes per day	72,000 tonnes per day	Recommencing of mining in the Main Pit and loading of product onto vessels.
73 – Bulk storage of chemicals	1,000 cubic metres in aggregate	1,200 cubic metres in aggregate	Recommencement of mining and ship loading activities requires utilisation of fuel storage

Increase in Category 5 design capacity

In November 2014, a section of the engineered seawall on the Main Pit collapsed, resulting in the inundation of the Main Pit; the main source of hematite usually mined and shipped for export at Koolan Island. As a result, the mining rate at Koolan Island was reduced and in early 2016, mining operations at the Premises entered into a formal period of care and maintenance. At this time, Licence L8148/2006/4 was amended to reduce the design capacities of Category 5, 6, 12, 58, 64 and 73, consistent with the scaling back of operations at the site.

The Licence Holder has made the decision to reconstruct the seawall, and intends to recommence the mining operations in the Main Pit during 2018. Design and rebuild of the seawall, as well as the associated removal and discharge of seawater from the inundated pit, was approved by the EPA under section 45C of the EP Act on 13 April 2018 (Attachment 7 to MS 715). As the seawall reconstruction nears completion, seawater entrained within the Main Pit will be pumped out over the sea wall and returned to the ocean to allow mining or iron ore and waste rock materials from the Main Pit to commence. Dewatering of the Main Pit will occur in two stages:

Phase 1 dewatering occurs concurrently with completion of the reconstruction of the seawall, over a period of six months. Approximately 25 gigalitres of entrained water will be pumped directly to the ocean. If water pumped from the Main Pit exceeds the trigger levels specified in the Marine Management Plan, the water will be placed in a settling pond and discharged to the sea via a diffuser when the trigger levels are met. The Marine Management Plan is a requirement of condition 7 of MS715, and has been updated to include provisions relating to the management of potential direct and indirect effects of the proposal for partial reconstruction of the seawall and dewatering. The Delegated Officer notes that the removal of the inundated seawater from the pit to facilitate the reconstruction of the seawall does not meet the definition of Category 6. During phase 1 the removal of water is for construction purposes (seawall), not strictly to mine ore.

Phase 2 involves dewatering immediately prior to or for routine mine operations and is regulated under the Existing Licence.

Once mining recommences, any water discharged thereafter would occur in accordance with the requirements of Licence L8148/2006/4, which specifies a Category 6 mine dewatering production capacity of 5,000,000 tpa.

The existing Licence specifies point source emission points from which mine dewater is discharged to the marine environment, via the established settlement pond and marine diffuser. The settlement pond is used to reduce the sediment load of discharge waters to below 20 mg/L total suspended solids or equivalent measure of turbidity (>6 Nephelometric Turbidity Unit (NTU)). Water from the settlement pond is then decanted into an outflow pipe and gravity fed to the diffuser outlet 70 m offshore (on the sea floor). No changes to the Category 6 design capacity, or associated Licence conditions are being considered at this time.

Existing crushing and screening infrastructure will be used to process the mined ore. No additional capacity or redevelopment of the plant is required. Some infrastructure may need to be refurbished prior to start up, however design and throughput rates will not change. Mined material from the Main Pit is to be blasted, excavated and loaded onto haul trucks and transported to either a designated waste dump or to the Run of Mine (ROM) stockpile, located to the east of the Main Pit. Ore material from the ROM stockpile is loaded by front end loaders into the processing plant, comprising of a jaw and cone crusher, a double deck vibrating screen and a lump and fines stacker. Only dry processing is undertaken.

Once the material has been processed, it is stored in either the fines or lump stockpiles. The material is then fed by front end loaders into mobile reclaim hoppers onto conveyor belts for transport to the ship loading facility at Mangrove Inlet. The Licence Holder is seeking to increase the Category 5 design capacity from 50,000 tpa to 4,000,000 tpa.

Increase in Category 58 design capacity

The Licence Holder is seeking to increase the Category 58 design capacity to allow vessels to be loaded with ore for export. Annual wet metric export tonnage is forecast at up to 4,000,000 tpa to match the rate of mined ore production.

Unladen vessels berth at Koolan Island's port at a rate of approximately one to two per week. Up to 75,000 tonnes per day of ore can be loaded onto each vessel, which are typically Cape size and are berthed and loaded over the course of a day or two. Loading typically occurs onto fifty or sixty ships per year.

Components of the ship loading facility include an access jetty, ship loader service platform, mooring dolphins and connecting walkway. Iron ore is transferred from the stockpiles at the crushing and screening plant along the ship loading feed conveyor to the feed hopper. The ore travels from the feed hopper along the ship loading boom conveyor into the discharge chute that delivers the lump and fines evenly into the hold of the ship.

Increase in Category 73 design capacity

The bulk hydrocarbon storage facility (BHSF) at Koolan Island has a total maximum capacity of 1,191,500 litres and comprises of:

- double skinned self bunded tanks capable of containing a maximum of 89,500 litres of fuel;
- a day tank for the power station capable of containing a maximum of 28,000 litres;
- a concrete floor and bund, including a concrete headwall for spill containment and protection against vehicle interaction. The containment capacity volume of the bunded concrete area exceeds 110% of the largest tank and is graded to allow for stormwater collection; and
- a hydrocarbon separator unit, treated water tank and stand pipe.

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 3.

Table 3: Relevant approvals

Legislation	Number	Approval
Environment Protection and Biodiversity Conservation Act 1999	Referral EPBC 2016/7848	Referral for construction works on the renovated seawall and pit water, determined to be 'Not Controlled' in February 2017.
EP Act	MS 715, change to proposal approved under section 45C of the EP Act.	Increase in the volume of water released to the sea from Main Pit dewatering, associated with reconstruction of the seawall, approved 13 April 2018.
EP Act	MS 715, revised Marine Management Plan (version 20).	Approved by EPA in 2018 for management of potential direct and indirect effects of the proposal for partial reconstruction of the seawall and capital dewatering.
Mining Act 1978	N/A	No additional Mining Proposal is required under the Mining Act 1978. Past Mining Proposals approved by the Department of Mines, Industry Regulation and Safety will apply during the redevelopment activity and the initial phase of

		mining.

Amendment history

Table 4 provides the amendment history for L8148/2006/4

Table 4: Licence amendments

Instrument	Issued	Amendment
L8148/2006/4	12/06/2014	New Licence and conversion to new format.
L8148/2006/4	18/06/2015	Licence amendment following Minister's appeal determination number 123 of 2014.
L8148/2006/4	31/03/2016	Licence amendment to include Category 12 to allow for the crushing and screening of quartzite to produce aggregate for construction purposes, increase the Category 73 design capacity and make changes to the groundwater monitoring requirements. The Licence was also updated in accordance with the licence template and relevant guidance statements.
L8148/2006/4	29/04/2016	Amendment of Licence expiry date.
L8148/2006/4	19/05/2016	Licence amendment to change the approved production limits for each Licence category to the minimum threshold amount (site in care and maintenance).
L8148/2006/4	17/02/2017	Amendment Notice 1 LIcence amendment to increase the throughput for Category 12.
L8148/2006/4	18/10/2017	Amendment Notice 2 Licence amendment to increase the design capacity of Category 6 and 64
L8148/2006/4	12/09/2018	Amendment Notice 3 Licence amendment to increase the design capacity for Category 5, 58 and 73. Site coming out of care and maintenance, operations to resume.

Location and receptors

Koolan Island is located one kilometre from the mainland and 130 km north of Derby, within Yampi Sound in the Buccaneer Archipelago in the Kimberley region of Western Australia. Koolan Island has an area of 2,580 hectares and is approximately 13 km long and up to 4 km wide. Koolan Island has been included in the heritage listing of the area to be considered in accordance with the EPBC Act, due to its location in the West Kimberley.

Table 5 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Cockatoo Island	9.5 km to North West.

Table 6 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 6: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Marine environment, specifically identified benthic habitats including reef flat, coral slope, lower slope, channel floor and coral pool.	Adjacent to mining, ship loading and fuel storage activities.
Coral Pool at the mouth of Mangrove Inlet has been identified as being of conservation significance, as corals are highly diverse and in good condition, and the feature is the only example of such habitat near Koolan Island (EPA, 2015).	Mangrove Inlet, directly west of the shiploading conveyor.

Risk assessment

Table 7 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 7: Risk assessment for proposed amendments during operation

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**				
Category 5 - Processing or beneficiation of metallic or non-metallic ore	Increased Operation of crushing and screening infrastructure and movement of ore product via conveyor Movement of front end loaders to convey ore	Dust associated with ore handling and vehicle movements	Cockatoo Island (9.5km to North West)	Air	Health and amenity impacts	Slight	Rare	Low	Ore at Koolan Island contains high levels of moisture due to the ore body being below the water table. In addition, water sprays, belt scrapers and washers are used along the ore handling route and at transfer points. Sprinklers are used at the ROM pad and hoppers to prevent excess dust emissions. The majority of chutes and transfer points have hatched doors such as leather or rubber flaps. Water carts are used to apply water on haul roads. These measures are considered adequate to control dust emissions from the premises. In addition, the nearest sensitive receptor is far enough away (9.5 km) that impacts from dust are unlikely to occur. No further assessment or regulatory control is required.
		Noise associated with operation of processing equipment and vehicles	Cockatoo Island (9.5km to North West)	Air	Health and amenity impacts	Slight	Rare	Low	There is at least a 9.5 km buffer between the nearest sensitive receptor and the prescribed premises. This is considered sufficient to prevent noise impacts from occurring. No further assessment or regulatory control is required.
		Stormwater from processing areas with elevated levels of Total Suspended	Marine environment	Overland flow discharging to marine environment	Increased turbidity impacting benthic habitat	N/A	N/A	N/A	The marine ecosystem was identified by the EPA as a relevant environmental factor during their assessment of the Koolan Island mine under Part IV of the EP Act. Condition 7 of MS 715 requires the implementation of a Marine Management Plan to confirm the extent

		Solids							of the direct and indirect impacts of the proposal on water and sediment quality, and health of the benthic habitats. The plan incorporates a sediment and water quality and benthic habitat monitoring programme, including defined management triggers and management options that will be implemented in the event that trigger levels for any particular indicator are exceeded (EPA, 2015). The risk associated with stormwater runoff to the marine environment will not be regulated under Part V of the EP Act. Stormwater discharge is sufficiently regulated under Part IV of the EP Act via MS 715 and the required Marine Management Plan. This is consistent with DWER Guidance Statement, Setting Conditons (DWER, October 2015) which specifies that conditions will not unnecessarily duplicate requirements imposed on licence holders directly by the EP Act or another written law. No further regulatory control is required under Part V of the EP Act.
Category 58 - Bulk loading or unloading	Conveyance of ore onto vessels	Dust associated with ore handling	Cockatoo Island (9.5km to North West)	Air	Amenity impacts	Slight	Rare	Low	Ore at Koolan Island contains high levels of moisture due to the ore body being below the water table. The ship loader is fitted with a feed chute that will sit inside the ship's hull for the majority of time while loading is occurring, further minimizing dust emissions. There is at least a 9.5 km buffer between the nearest sensitive receptor and the prescribed premises. This is considered sufficient to prevent dust impacts from occurring.

									No further assessment or regulatory control is required.
		Spillages of ore from conveyance and loading infrastructure	Marine environment	Direct discharge	Increased turbidity impacting benthic habitat	Minor	Rare	Low	The use of the feed chute which sits inside the ship's hull lowers the risk of ore spillages to the marine environment, and subsequent impacts to marine communities. While up to 75,000 tonnes of ore per day can be loaded, the Delegated Officer notes that generally only one to two ships are loaded per week. At this scale, the Delegated Officer considers it rare that a spillage of ore to the marine environment would impact on benthic habitat. It is also noted that the tidal range experienced at Koolan Island is significant, with water levels rising and falling up to 11 metres. This tidal range contributes to naturally elevated turbidity levels and very fast water movement (EPA, 2015). The Delegated Officer considers the above controls adequate to manage the risk of ore spillage into the marine environment. The risk of dust impacts occurring is low; no further assessment or regulatory control is required.
Category 73 – Bulk storage of chemicals, etc.	Bulk storage of hydrocarbons	Spills and breach of containment infrastructure causing hydrocarbons discharge to land	Soil and vegetation	Direct discharges to land, potential overland flow to marine environment	Soil contamination inhibiting vegetation growth and survival, impacts to marine water quality and	Moderate	Unlikely	Medium	Fuel storage at the BHSF consists of double skinned, self bunded tanks within a concrete floor and bund. The concrete bunded area incorporates a concrete headwall for spill containment, and has a containment capacity volume of 110% of the largest tank. The bunded area slopes for stormwater collection, which is directed to two 9kL

		Stormwater contaminated with hydrocarbons	Soil, vegetation and marine environment	Overland flow discharging to marine environment	disruption to marine ecology				stormwater collection tanks. Potentially contaminated stormwater is treated through an oily water separator unit. Treated water is then directed to two bulk storage tanks, and subsequently reused onsite. Fuel storage tanks are fitted with over-fill protection and mechanical shut off and an audible/visible alarm, and have been constructed in accordance with Australian Standards AS1940-2004: Storage and handling of flammable and combustible liquids and AS1692-2006: Steel tanks for flammable and combustible liquids. Condition 1.2.1 of Licence L8148/2006/4 requires secondary containment infrastructure, including but not limited to bunding and hard stand areas to be maintained in good working order, in accordance with a documented maintenance plan or program. Condition 1.2.2 requires the immediate recovery of spills of environmentally hazardous materials outside an engineered containment system. The above controls are considered adequate to manage the risk associated with hydrocarbons spills and contaminated stormwater runoff. The general provisions of the EP Act with respect to causing pollution and environmental harm apply, as do the requirements of the *Environment Protection (Unauthorised Discharges) Regulations 2004.* <u>Consequence:</u> Low level offsite impacts could occur as a result of a hydrocarbon spill. The consequence has been determined as moderate.

									<u>Likelihood:</u> Given the controls in place, the likelihood of a spill occurring which causes an environmental impact will probably not occur in most circumstances. The likelihood of the consequence occurring has been determined as **unlikely**. <u>Overall Risk Rating:</u> Comparison of the consequence and likelihood ratings described above with the Risk Rating Matrix (Guidance Statement, Risk Assessments) 2017 determines the overall rating of risk impacts to be **medium**.

Decision

The Delegated Officer considers that increasing the design capacity of Category 5, 58 and 73 will not result in emissions which are unacceptable to public health or the environment. The main emissions of concern relating to the proposal to recommence mining are dust, noise, sediment and/or hydrocarbon contaminated stormwater discharging to the marine environment and spills of hydrocarbons outside of containment structures.

The Delegated Officer considers that the nearest sensitive receptor, Cockatoo Island (9.5 km away), is far enough away that dust and noise emissions are unlikely to impact on the amenity of this receptor. The Delegated Officer also considers that appropriate regulatory control for potential impacts to the marine environment from sediment laden and/or hydrocarbon contaminated stormwater is provided by the Marine Management Plan, implemented under MS 715 pursuant to Part IV of the EP Act. Existing conditions in Licence L8148/2016/4 require hydrocarbon storage areas to be adequately maintained, and the requirements for spills of hazardous materials outside of containment compounds to be attended to immediately. DWER conducted an inspection of the premises on 4 April 2017. At the time of inspection the fuel storage area appeared to be fit for purpose and appropriately maintained.

Existing Licence condition 1.3.5 has been updated to increase the design capacity of Category 5, 58 and 73, as requested by the Licence Holder. No further changes, or additional regulatory controls are required under Part IV of the EP Act with respect to the increase in design capacity of Category 5, 58 and 73.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 27 August 2018. On 6 September 2018 the Licence Holder advised in writing via email that they had no comments, and requested that the remainder of the 21 day consultation period be waived.

Amendment

1. Pages 1 and 2 of the Licence are amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
5	Processing or beneficiation of metallic or non-metallic ore: premises on which (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam	50,000 tonnes or more per year	~~50,000~~ **4,000,000** tonnes per Annual Period
6	Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	50,000 tonnes or more per year	5,000,000 tonnes per Annual Period
12	Screening, etc. of material	50,000 tonnes or more per year	2,000,000 tonnes per Annual Period
54	Sewage facility: premises – (a) on which sewage is treated (excluding septic tanks); or	100 cubic metres or more per day	100 cubic metres per day

	(b) from which treated sewage is discharged onto land or into waters.		
58	Bulk material loading or unloading: premises on which clinker, coal, ore, ore concentrate or any other bulk granular material (other than salt) is loaded onto or unloaded from vessels by an open materials loading system.	100 tonnes or more per day	~~100~~ **75,000** tonnes per day
64	Class II or III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial.	20 tonnes or more per year	4,500 tonnes per Annual Period
73	Bulk storage of chemicals, etc.: premises on which acids, alkalis or chemicals that – (a) contain at least one carbon to carbon bond; and (b) are liquid at STP (standard temperature and pressure), are stored.	1,000 cubic metres in aggregate	~~1,000~~ **1,200** cubic metres in aggregate

2. Condition 1.3.5 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

The licensee shall ensure the limits specified in Table 1.3.4 are not exceeded.

Table 1.3.4 Production or design capacity limits

Category[1]	**Category description**[1]	**Premises production or design capacity limit**
5	Processing or beneficiation of metallic or non-metallic ore	~~50,000~~ **4,000,000** tonnes of ore per Annual Period
6	Mine dewatering	5,000,000 tonnes per Annual Period
12	Screening, etc. of material	2,000,000 tonnes per Annual Period
54	Sewage facility	100 cubic metres per day
58	Bulk material loading or unloading	~~100~~ **75,000** tonnes per day
73	Bulk storage of chemicals	~~1,000~~ **1,200** cubic metres in aggregate

Note 1: *Environmental Protection Regulations 1987*, Schedule 1.

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L8148/2006/4	L8148/2006/4	accessed at www.dwer.wa.gov.au
2	Ministerial Statement 715	MS 715	accessed at www.epa.wa.gov.au/
3	EPA, November 2015. *Koolan Island Iron Ore Mine and Port Facility, Aztec Resources Limited, Report and Recommendations of the Environmental Protection Authority*, Perth	EPA 2015	accessed www.epa.wa.gov.au
4	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
5	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DER 2015b	
6	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
7	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.	DER 2016c	