

Amendment Notice 1

Licensee	IB Operations Pty Ltd
ACN	165 513 557
Licence Number	L8845/2014/1
File Number:	DER2014/002065
Premises	North Star Project Mining Tenements M45/1226, L45/293, L45/294, L45/359, L45/360, L45/361, L45/364, and L45/367 MARBLE BAR WA 6760

24 May 2017

Amendment

Date of amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* 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 and follows.

Date signed: 23 May 2017

Alana Kidd

Manager Licensing (Resource Industries)

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

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 54 activities during care and maintenance, general stormwater management and administrative changes. No changes to the aspects of the original licence relating to Category 5 or 54 have been requested by the Licensee.

The following DER 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)
- Guidance Statement: Environmental Siting (November 2016)

Amendment Description

On 10 March 2017 IB Operations (Licensee) submitted an application to DER for an amendment to the North Star licence.

This Notice is a result of the Licensee applying for an amendment under section 59B of the EP Act. The Licensee has applied to make the following changes:

- 1. Suspend the Wastewater Treatment Plant (WWTP) monitoring while the project is in care and maintenance;
- 2. Change the use of the Tailing Storage facility (TSF) supernatant water while the project is in care and maintenance; and
- 3. Amend an error in the reference height of air emission points.

1. Suspension of WWTP monitoring

The WWTP at the Premises is designed to treat 160 cubic metres (m³) of waste per day to cater for 440 rooms at the Premises. The Licensee has advised that during the current care and maintenance period approximately 20 people per day use the facilities at the Premises, and the WWTP is therefore inefficient and ineffective in treating this significantly reduced volume of waste. The Licensee intends to cease use of the existing WWTP and associated irrigation of treated wastewater, and install a septic tank for the treatment of sewage at the Premises.

Septic tanks are specifically excluded from Category 54 of the EP Regulations, the description of the category including '*premises on which sewage is treated (excluding septic tanks)*'. Therefore the construction and operation of the septic tank is not assessed or regulated by DER. The Delegated Officer notes that the Licensee has received approval from the Department of Health (DoH) to construct the septic tank.

The licence currently requires monthly monitoring of the quality of water from the WWTP which is irrigated to land. This condition was placed on the licence on 2 June 2016 as a regulatory control following a risk assessment of emissions to land from the Premises.

The Licensee has requested that the condition specifying this monitoring is only required when the WWTP is in operation, as currently monitoring is required continuously, monthly and

annually for a number of parameters. This wording poses a potential non-compliance issue as the monitoring cannot be undertaken while the WWTP is not in operation.

Decision

The Delegated Officer has determined that while the WWTP is not in use and no irrigation of treated wastewater is occurring at the Premises there are no sources of emissions from this plant. The regulatory control of effluent monitoring is therefore only required when irrigation is occurring and there is a source for the emission.

The Delegated Officer considers that amending Condition 3.2.1 to specify monitoring is to occur when irrigation occurs presents no risk to human health or the environment, and ensures the condition is risk-based and enforceable as per DER *Guidance Statement: Setting Conditions*.

Condition 1.3.2 will be amended to refer to sewage (excluding septage) for clarity in the licence.

2. Change the use of the Tailing Storage facility (TSF) supernatant water

The Licensee has advised that while under care and maintenance there is no demand for water recovered from the TSF to be used within the Premises for dust suppression.

The TSF has sufficient capacity to capture stormwater run-off at the Premises in a 1 in 1,000 year 72 hours storm event without overtopping. There is a risk that in the event of a large storm event there will be a significant volume of stormwater retained within the TSF.

To minimise any geotechnical risk to the TSF, water should not pool against the embankment wall for a period of greater than two weeks. As water is not being reused from the TSF during care and maintenance there is the potential that stormwater will accumulate for longer than two weeks.

The Licensee is proposing to discharge any accumulated stormwater pooling against the TSF embankment wall into Chinnamon creek (ephemeral) immediately north of the TSF. This creek system ultimately discharges into the Turner River approximately 40 km downstream. From this point the Turner River flows approximately 75 km north and discharges into the Indian Ocean to the west of Port Hedland via a large estuarine area. This river system is likely to provide a water source to fauna in the region.

Characteristics of emission

As the premises is currently in care and maintenance no tailings are being deposited into the TSF. Therefore any water accumulated in the TSF will comprise of stormwater with potentially small traces of dilute residual tailings.

Testing undertaken at the Premises indicated that the tailings are:

- Likely to have extremely low concentrations of respirable crystalline silica and are not considered hazardous substances (0.58% of tailings are respirable, of which 0.001% are crystalline silica);
- Likely to have low concentration of metals relative to DER's Ecological Investigation Levels, with a decrease in leaching rate over time;
- Unlikely to be Acid Forming (91.6% of samples had a net acid producing potential of <0 kg H₂SO₄/t); and
- Unlikely to produce acidic discharge when brought into contact with fresh water (12 month testing indicated 3 mg/L sulfate in the final leach even upon complete depletion of neutralisation potential).

Based on the testing results any residual dilute tailings in the stormwater discharge are not considered likely to pose an environmental or public health risk. The stormwater may potentially contain sediments or contaminants after coming into contact with infrastructure at the Premises.

Licensee controls

The Licensee implements the *North Star Surface Water Management Plan (June 2016)* throughout the Premises which aims to prevent impacts to water quality across the Premises. Actions taken to minimise impact to water quality include:

- Surface water is diverted around waste landforms and hardstand areas;
- Sediment traps installed downstream of waste landforms;
- Following significant rainfall events, pits will be managed as sedimentation structures and water will be pumped from the top of the standing water level for emergency discharge;
- Stormwater generated on a hardstand area will be diverted to a sediment trap prior to release; and
- Fuel storage, refueling areas and workshops will be bunded.

Under the management plan the Licensee also commits to undertaking surface water monitoring at three locations and in the event that water quality exceedances or erosion occurs adaptive management measures will be undertaken. These measures include additional sediment control, remedial actions to drainage infrastructure and increasing monitoring until parameters fall below trigger values. The requirement to monitor surface water on a monthly basis (when flowing) and report this data annually is a condition of the current licence.

The Licensee has further specified in their application that in the event that supernatant water needs to be discharged from the TSF this will be recovered by a mobile pump connected to a floating suction line to minimise sediment load in the water discharged to the creek.

Location, environmental siting and potential receptors

Table 1 below lists the relevant environmental receptors in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment. There are no residential receptors within a 30km radius of the Premises.

Table 1: Environmental recept	ptors and distance fr	om prescribed premises
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Environmental receptors	Distance from Prescribed Premises		
Chinnamon Creek	Immediately north of the Premises		
Turner River	10km west of the Premises (40km downstream)		

Part IV

The Premises was assessed by the EPA under Part IV of the EP Act. Ministerial Statement (MS) 993 for the Premises was issued 5 January 2015. Conditions on the MS predominately relate to surveys and management plans to protect priority fauna within the Mine Development Envelope.

The Delegated Officer notes that there are no conditions applied to MS993 which relate to the TSF or stormwater emissions.

Risk assessment

Table 2 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 human health or the environment, requiring regulatory controls.

Risk Event			Concernence	Likolihood	kelikeed				
Source/	Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts	rating	rating	Risk	Reasoning
Cat 5 Processing or beneficiation of metallic or non- metallic ore	Discharge of supernatant water from TSF to environment.	Stormwater with high sediment loads and potential contaminants	Chinnamon Creek which flows into the Turner River	Direct emission	Degradation of surface water quality Scouring of river bed	Slight	Unlikely	Low	Stormwater will only be discharged after significant rainfall events, using a floating pump to minimise sediment load.

Table 2: Risk assessment for proposed amendments during operation

Decision

Based on the supernatant water comprising predominately of stormwater and the likely characteristics of any potential residual tailings, emissions to surface water may cause minimal off-site impacts. The consequence of the emission is therefore considered to be minor.

Given the discharge will only occur following heavy rainfall events, and the Licensee's controls the likelihood of minor impacts occurring will probably not occur in most circumstances. Therefore the likelihood is considered to be unlikely.

The Delegated Officer has determined that the overall risk from emissions to surface water is Low, and will not be subject to controls. The Delegated Officer notes that the licence currently contains conditions in relation to the monitoring and reporting of surface water at the Premises.

The licence will be amended to include the emergency stormwater discharge point as an emission point.

3. Reference height of air emission points

The Licensee has advised that condition 2.1.1 of the current licence specifies emission point heights of 5 metres, however this is incorrect. The diesel generators are located within sea containers with an external height of 2.9 metres. Images of the generators and sea containers demonstrating this were provided as part of the compliance documentation for works approval W5623/2014/1.

Decision

The Delegated Officer has determined that the stack height of 5 metres is a typographic error. The Licence will be amended to refer to the correct emission height of 2.9 metres. This amendment does not alter the emissions or impact risk from the Premises.

Amendment History

Table 3 provides the amendment history for L8845/2014/1.

Table 3: Licence amendments

Instrument	Issued	Amendment
L8845/2014/1	08/06/2015	New Licence
L8845/2014/1	07/01/2016	Amendment to add category 5
L8845/2014/1	02/06/2016	Amendment to increase category 5, add category 54 and decrease category 5 throughput.
L8845/2014/1	24/05/2017	Amendment Notice for Category 54 activities during care and maintenance, general stormwater management and administrative changes.

Licensee's Comments

The Licensee was provided with the draft Amendment Notice on 12 May 2017. The applicant submitted a 21 day comment period waiver form on the 15 May 2017 with no additional comments on the draft.

Amendment

1. Condition 1.1.2 of the licence is amended by the insertion of the text shown below:

'Annual Period' means a 12 month period commencing from 1 January until 31 December in the same year.

- 2. Condition 1.3.3 of the licence is amended by the insertion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:
- 1.3.3 The Licensee shall ensure that the wastes accepted onto the Premises are only subjected to the processes set out in Table 1.3.2 and in accordance with any process requirements described in that table.

Table 1.3.2: Waste processing					
Waste type	Process	Process requirements			
Sewage <u>(excluding</u>	Physical, biological and	Treatment of sewage waste			
<u>septage)</u>	chemical treatment	shall be at or below the			
		treatment capacity of			
		160m ³ /day			

- **3.** Condition 2.1.1 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:
- 2.1.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.1.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.1.1: Emission points to air						
Emission point reference and location on Map of emission points	Emission Point	Emission point height (m)	Source, including any abatement			
A1	Diesel Generator 1	5m 2.9m	1.6MW diesel generator			
A2	Diesel Generator 2	5m 2.9m	1.6MW diesel generator			
A3	Diesel Generator 3	5m 2.9m	1.6MW diesel generator			
A4	Diesel Generator 4	5m <u>2.9m</u>	1.6MW diesel generator			
A5	Diesel Generator 5	5m <u>2.9m</u>	1.6MW diesel generator			
A6	Diesel Generator 6	5m <u>2.9m</u>	1MW diesel generator			
A7	Diesel Generator 7	5m <u>2.9m</u>	1MW diesel generator			
A8	Diesel Generator 8	5m <u>2.9m</u>	1MW diesel generator			
A9	Diesel Generator 9	5m 2.9m	1MW diesel generator			
A10	Diesel Generator 10	5m <u>2.9m</u>	1MW diesel generator			
A11	Diesel Generator 11	5m <u>2.9m</u>	1MW diesel generator			

4. The licence is amended by the insertion of the text shown below following condition 2.2.1

Emissions to surface water

2.2.2 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.2.2 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.2: Emissions to surface water					
Emission point reference	Emission point reference on Map of emission points	Description	Source including abatement		
S1	Emergency Stormwater Discharge Location	Emergency stormwater discharge from TSF	Supernatant stormwater from TSF using a floating pump		

- 5. Condition 3.2.1 of the licence is amended by the insertion of the bold text in underline shown below.
- 3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1	: Monitoring of	emissions to land			
Emission point reference	Monitoring point reference	Parameter	Units	Averaging Period	Frequency
	Flow meter to irrigation area	Volumetric flow rate (cumulative)	m³/day	Monthly	Continuous <u>when</u> <u>irrigating</u>
		pH ¹	pH units		
L1	Outfall pipe to irrigation area	Biochemical Oxygen Demand Total Suspended Solids Total Dissolved Solids Total Nitrogen Total Phosphorus	· mg/L	Spot Sample	Monthly <u>when</u> <u>irrigating</u>
		E.coli	cfu/100 mL		
		Load of Total Nitrogen	kg/ha/day	Annually	Annually <u>when</u> irrigating
		Load of Total Phosphorus	kg/ha/day	Annually	Annually <u>when</u> irrigating

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

6. The licence is amended by the insertion of the text and map shown below in Schedule 1: Map of emission points:



The locations of the emission points defined in Table 2.2.3 is shown in the map below:

Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Appendix 3_GHD 2014 Kinetic Leach Test Report, May 2014	N/A	DER Records [A1416104]
2	DER, July 2015. <i>Guidance Statement:</i> <i>Regulatory principles.</i> Department of Environment Regulation, Perth.	N/A	
3	DER, October 2015. <i>Guidance</i> <i>Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	N/A	accessed at
4	DER, November 2016. <i>Guidance</i> <i>Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	N/A	http://www.der.wa.gov.au
5	DER, November 2016. <i>Guidance</i> <i>Statement: Decision Making.</i> Department of Environment Regulation, Perth.	N/A	
6	FMG, Partial Compliance Document No.1 for W5623, 2 October 2014	N/A	DER Records [A845798]
7	Iron Bridge, Application to Amend Industry Licence L8845/2014/1	N/A	DER Records [A1391876]
8	Licence L8845/2014/1 – North Star Project	L8845/2014/1	accessed at http://www.der.wa.gov.au
9	Ministerial Statement 993	MS993	accessed at http://www.epa.wa.gov.au/
10	Works Approval W5623/2014/1	W5623/2014/1	accessed at http://www.der.wa.gov.au