



Licence Number	L8308/2008/2
Licence Holder	CITIC Pacific Mining Management Pty Ltd
ACN	119 578 371
File Number:	DER2014/000430-2
Premises	Sino Iron Project Mine Site Mining Tenements M08/123, M08/124, M08/125, M08/264, M08/265, M08/266, G08/54 and L08/126 MARDIE WA 6714
Date of Amendment	15/11/2019

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

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
AHD	Australian Height Datum
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DMIRS	Department of Mines, Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>

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 Review
Licence Holder	CITIC Pacific Mining Management Pty Ltd
Licensee	CITIC Pacific Mining Management Pty Ltd
m ³	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
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.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

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 modifications for Categories 5, 57 and 64. The modifications result in amendments to the authorised Category 64 throughput and locations of the Landfill and Category 57 Used Tyre Storage Facility at the Premises and a trial for the Category 5 Mill Line 6 magnetic separation elutriation columns.

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 (June 2019);*
- *Guidance Statement: Risk Assessment (February 2017);* and
- *Guidance Statement: Environmental Siting (November 2016).*

Amendment description

The Licence Holder has submitted an application to amend licence L8308/2008/2 on 17 May 2019 for the following:

Category 5 Magnetic Separation Elutriation Columns

The Licence Holder is proposing to replace the third stage magnetic separator drums on Mill Line 6 with magnetic separation elutriation columns as a trial.

The reason behind this is that, as the mine pit expands the magnetite grain size becomes finer and the grind size, therefore, needs to be finer to meet the target concentrate grade of 65%. This means that the mill speed needs to be lowered with increased power consumption and operating costs.

“During elutriation, particles are subjected to an upward flowing current of process water and magnetic force. In doing so, differences in particle specific gravity and magnetism are exploited, leading to separation into magnetite concentrate underflow and tailings overflow streams. The downward movement of the magnetite concentrate is assisted by electromagnets that agitate and hold the strongly magnetic ore preventing it from being flushed out of the system. The magnetic separation elutriation columns will allow the process to accommodate greater variability in ore properties and coarser grind size thus retaining about 10% higher AG mill feed rate while using approximately 10% less energy” (CITIC, May 2019).

Table 2 shows a comparison of current and proposed processing operations.

Table 2: Comparison between current and proposed processing operations

Parameter	Current Operations (Third Stage Magnetic Separator)	Proposed Operations (Magnetic Elutriation Columns)
AG Feed Rate	1,200 t/hr	1,300 – 1,350 t/hr
Concentrate Grade	65%	65.00 – 65.50%
Water Consumption per Line	9,600 m ³ /hr	10,200 m ³ /hr

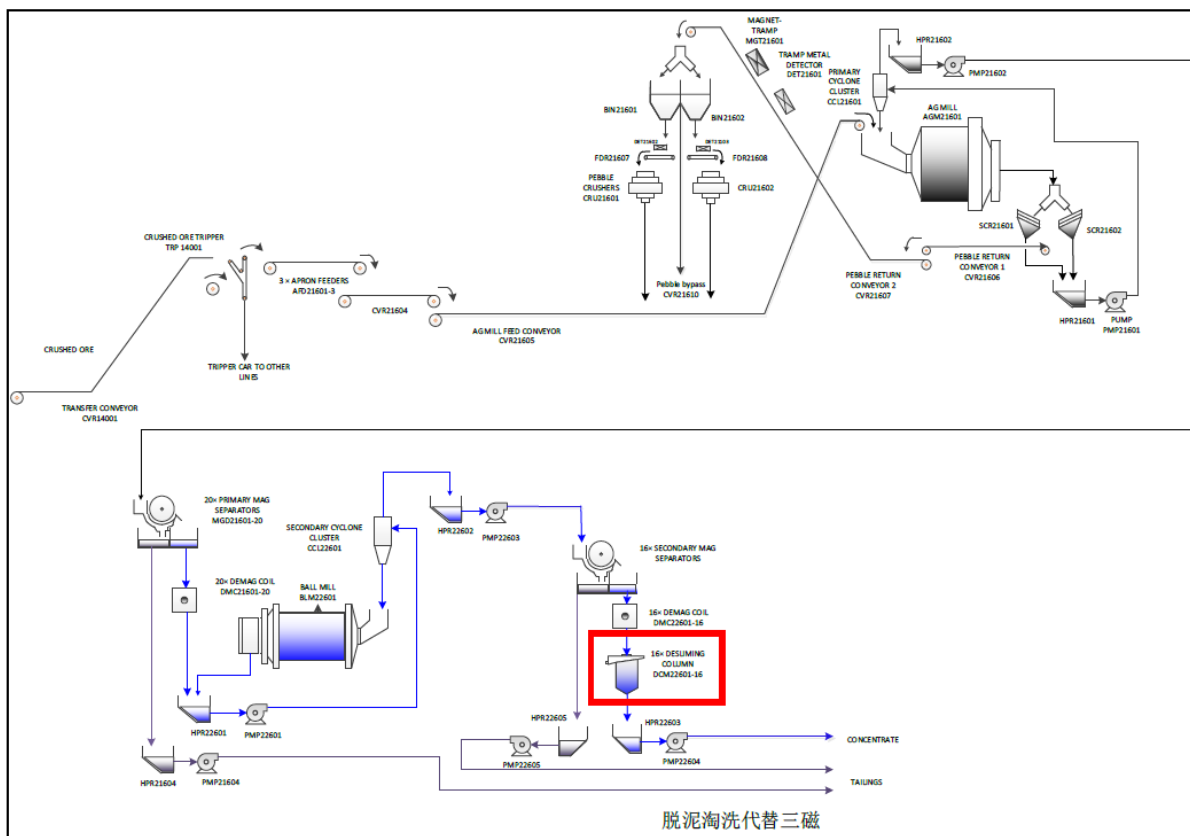


Figure 1: Concentrator Process Flow Diagram

The magnetic separation elutriation columns will be located within the existing hardstand, with no discernible variation to the composition of tailings (only slightly coarser).

Category 57 Used Tyre Storage Facility Relocation

As the existing used tyre storage facility is located within the bounds of the future mine pit, it is proposed to relocate the laydown facility to the eastern side of the mine pit adjacent to the new mining operations / administration hub. This is outside of the future mine pit footprint.

Category 64 Landfill within South East Waste Rock Landform

The current landfill has been operational since September 2009 and it is estimated it will be exhausted by Quarter 4 2020. The Licence Holder is in the process of designing a new landfill that can be used for the life of the project and when this process is complete a Works Approval application will be submitted for this facility. As it is unlikely that the new landfill will be ready prior to the exhaustion of the existing facility, an interim landfill is required, which is proposed in the South East Waste Rock Landform.

Table 3 below outlines the proposed changes to the Licence.

Table 3: Proposed design or throughput capacity changes

Category	Current design throughput capacity	Proposed design throughput capacity	Description of proposed amendment
64	15,000 tpa	25,000 tpa	Forecast deposition rates result in an increase in throughput

Other approvals

The Licence Holder holds a licence to extract water for the purpose of mine dewatering and

other mining related operations under section 5C of the *Rights in Water and Irrigation Act 1914* (GWL167151(6)).

The Sino Iron Project Mine Site is also subject to three Ministerial Statements, MS 635, MS 822 and MS 1066 under Part IV of the *Environmental Protection Act 1986*.

This is a major project with State Agreement Act *Iron Ore Processing (Mineralogy Pty Ltd) Agreement Act 2002*. The State Agreement Act covers the mining and concentration of iron ore, processing, transport, port facilities and shipping.

During the assessment DWER sought confirmation from DMIRS if the landfill proposed within the South East Waste Rock Landform is authorised under the *Mining Act 1978*. The Sino Iron Project mining areas, including the SE Waste Rock Dump, is managed under the *Iron Ore Processing (Mineralogy Pty Ltd) Agreement Act 2002* administered by the Department of Jobs Tourism Science and Innovation (DJTSI). The landfill has therefore not been approved under the *Mining Act 1978*.

DMIRS also recommended that DWER seek further clarification on potential TSF seepage from the coarser tailings grain size as a result of installing the Mill Line 6 magnetic separation elutriation columns. DWER had already sought additional information from the Applicant and the Applicant has stated that *no change to the management strategy of the TSF is expected. Any change to the tailings size distribution is expected to result in quicker settling in the tailings dam and slightly steeper beach angles; all of which will assist in making operation of the dam easier* (CITIC, July 2019). DWER has implemented a summary be provided as part of the AER of any variation to TSF seepage as a result of the installation of the new equipment.

Amendment history

Table 4 provides the amendment history for L8308/2008/2.

Table 4: Licence amendments

Instrument	Issued	Amendment
L8308/2008/1	23/01/2014	Licence amendment to include the operation of PC1 and PC2 (W5005/2011/1), ML1 (W4447/2008/1) and the Biomax WWTP (W5273/2012/1)
L8308/2008/2	24/03/2016	Licence amended to increase the design capacity of category 5 (inclusion of PC3, PC4, ML2 to ML4 and TSF Stage 1) and category 64, inclusion of categories 12 and 57 and expansion of the premises boundary
L8308/2008/2	28/07/2016	Licence amended to increase the capacity of category 5 (inclusion of ML5 and 6)
L8308/2008/2	24/11/2016	Licence amended to include category 6 mine dewatering discharge for 2 GL discharge
L8308/2008/2	16/12/2016	Amendment Notice 1 Licence amendment to change the date of completion for Improvement program IR1 from 31 December 2016 to 30 June 2018
L8308/2008/2	9/06/2017	Amendment Notice 2 Licence amendment to include controlled surface water discharge points, TSF1B lift and modifications to groundwater monitoring bores BH08-08 and BH08-16
L8308/2008/2	11/08/2017	Amendment Notice 3 Licence amendment to include the MBBR WWTP and transfer TSF Stage 2 construction conditions across from W4447/2008/1 onto the licence.
L8308/2008/2	12/01/2018	Amendment Notice 4 Licence amendment to increase the category 6 design capacity from 2 GL/a to 8 GL/a.

L8308/2008/2	19/06/2018	<p>Amendment Notice 5</p> <p>Licence amendment to change the date of completion for Improvement program IR1 from 30 June 2018 to 31 December 2018 and to allow for the disposal of other Inert Waste Type 2 (besides tyres) to be disposed of within sites landfill facility and waste rock landforms.</p>
L8308/2008/2	6/11/2018	<p>Amendment Notice 6</p> <p>Licence amendment to include a secondary emission point (AP1), to the current FR2 discharge point to the Fortescue River, on the existing dewatering pipelines to enable diversion of up to 6 GL/annum of excess mine dewatering water to Pastoral Management Pty Ltd's algae ponds trial.</p> <p>Relocation of current discharge location approximately 600 m upstream within the same remnant tributary of Edwards Creek, as the current discharge location is within the footprint for future TSF development.</p> <p>Removal of Improvement program IR1 from the Licence as point source air emissions have been confirmed.</p> <p>Removal of Improvement program IR2 from the Licence as replacement bore TSF_017 (17NC764) has been installed to replace BH08-16.</p>
L8308/2008/2	18/04/2019	<p>Amendment Notice 7</p> <p>Licence amendment to include TSF Stage 2, Raise 3 up to 61 mRL.</p> <p>Replacement of the pit dewatering staging ponds by constructing a HDPE lined dewatering staging facility to accommodate increased dewatering rates of up to 12GL/annum permitted via MS1066. A request to provide completion reports, for mine dewatering water discharges to the Fortescue River, in the AER is also included.</p>
L8308/2008/2	15/11/2019	<p>Amendment Notice 8</p> <p>Licence amendment to include:</p> <ul style="list-style-type: none"> replacing the third stage magnetic separator drums on Mill Line 6 with magnetic separation elutriation columns as a trial; relocating the laydown facility to the eastern side of the mine pit adjacent to the new mining operations/administration hub. This is outside of the future mine pit footprint; and an interim landfill is required, which is proposed in the South East Waste Rock Landform.

Location and receptors

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
Fortescue River Mouth recreational area (informal campsite not managed by the City of Karratha).	Fortescue River Mouth recreational area (informal campsite not managed by the City of Karratha).
More than 5 km to the north-west.	More than 5 km to the north-west.
Mardie Station Pastoral Lease	Mardie Station Pastoral Lease

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
Fortescue River	Fortescue River
More than 5 km to the north-west.	More than 5 km to the north-west.
De Boulay Creek	De Boulay Creek
More than 2.5 km to the north	More than 2.5 km to the north

Risk assessment

Table 7 and Table 8 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 7: Risk assessment for proposed amendments during construction

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	Vehicle movements on unsealed access roads and movement of vehicles in the vicinity of the Magnetic Separation Elutriation Columns	Dust: associated with vehicles and equipment	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only). The works are a change out of equipment to be conducted within an active processing area where dust controls are already in place.
		Noise: associated with vehicles and equipment							The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only).
Category 57 Used tyre storage (general)	Vehicle movements on unsealed access roads and construction of the tyres pit	Dust: associated with vehicles and equipment	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only). The area of exposed surfaces to be kept to the minimum required for construction activities.
		Noise: associated with vehicles and equipment							The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only).
Category 64 Class II or III putrescible landfill site	Vehicle movements on unsealed access roads and construction	Dust: associated with vehicles and equipment	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only).

	of landfill trenches	Noise: associated with vehicles and equipment	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	The Delegated Officer considers the distance to the receptor to be too great for impacts to occur; given this is over 5km away and not a registered camp area (seasonal only).
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Table 8: 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					
Cat 5 Processing or beneficiation of metallic or non-metallic ore	Operations of ore beneficiation processing	Additional Dust: associated with more lighter ore captured with the addition of the Magnetic Separation Elutriation Columns (this ore will now go on to product phase and not be disposed of in tailings streams)	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Rare	Low	There will be no changes to dust emissions as this part of the processing is a wet process. "No change is proposed to the established L8758 and L8659 Category 58 product handling dust controls. The primary control remains maintaining a product moisture content of ~6-9% and this is aided by secondary controls such as stockpile sprinklers, conveyor covers and enclosed product transfer points. Unlike traditional magnetic separators using magnetic force only, an elutriation column applies a combination of magnetic and buoyancy forces (upward water flow), allowing the removal of coarse magnetite interlocked particles (lighter). Thus, the use of elutriation columns will allow a coarser final grind size to maximise the system throughput at a similar concentrate grade of 65%Fe. In general, the concentrate P80 size for the current flowsheet will be around 30-38um, depending on the ore feed property. In comparison, the concentrate P80 size will become coarser, around 35-45um after the replacement of tertiary magnetic drums with elutriation columns."

									(CITIC, July 2019).
		Additional Noise: associated with addition of Magnetic Separation Elutriation Columns to the process	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Rare	Low	There will be no changes to noise emissions from the change out of the equipment.
		Process solution: leaks/spills of magnetite concentrate	Vegetation and fauna	Direct discharge	Inundation / smothering of vegetation and fauna habitat	Slight	Rare	Low	Leaks/spills would be due to a malfunction and would fall within the processing area, which is clear of vegetation and fauna habitat. Bunding is also present within the processing areas. The Delegated Officer considers that impacts from discharged process solution would be slight due to it falling within a hardstand bunded area and the likelihood is expected to be rare due to it resulting from a malfunction. The risk rating for process solution discharge is, therefore, low .
	TSF	Dust: associated with change to tailings	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Slight	Rare	Low	There will be no changes to dust emissions and the established ambient dust monitoring programme will continue. It should be noted that there will be no discernible variation to the composition of the tailings (only slightly coarser).
		Waste: due to modification to the tailings size distribution from the Magnetic Separation Elutriation Columns	Groundwater with beneficial use (Groundwater Dependent Ecosystem)	Seepage of leachate	Adverse impacts to the health and survival of vegetation dependent upon groundwater	Minor	Likely	Medium	The tailings characterisation will not modify as a result of the change out of equipment and tailings may only be slightly coarser. Required finger drains, seepage trenches and pumps and groundwater monitoring bores are already in place. "No change to the management strategy of the TSF is expected. Any change to the tailings size distribution is expected to result in quicker settling in the tailings dam and slightly steeper beach angles; all of which

								<p><i>will assist in making operation of the dam easier. The current disposition tailings deposition methodology as detailed below has sufficient flexibility to cater for any variation in tailings properties:</i></p> <ul style="list-style-type: none"> • <i>Deposition is sub-aerial to facilitate drying and consolidation, which has a positive impact on the dry density of the tailings;</i> • <i>Tailings deposited in thin discrete layers (~200-300mm max) to facilitate consolidation, optimise the storage capacity of the dam and keep the beach wetted to prevent fugitive dust generation;</i> • <i>Deposition divided via two delivery lines (located on southern and eastern embankments). Discharge via three spigots per delivery line will result in a low discharge velocity, allowing the deposited tailings to segregate with coarse tailings settling out closer to the discharge point and finer tailings particles to flow further down the beach towards the centre of the facility; and</i> • <i>Spigots are opened sequentially and progressively around the facility so that an even beach develops and the decant pond is maintained at a central location around the decant tower.” (CITIC, July 2019).</i> <p><i>The Delegated Officer considers that impacts from seepage from the TSF would be minor due to the benign tailings quality. Potential groundwater contamination and the likelihood is expected to be likely due to the depth to groundwater <10 mbgl. The risk rating for TSF seepage is, therefore, medium.</i></p>
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Category 57 Used tyre storage (general)	Tyre Storage	Fire: air emissions generated in the event of a fire	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west Vegetation and fauna	Air / wind dispersion	Health and amenity impacts	Minor	Rare	Low	The new used tyre storage location is within an already cleared area, not containing vegetation. The Delegated Officer considers that impacts from air emissions from fire would be minor due to the site emergency response teams and water carts based at adjacent mining operating hub equipped with fire truck and suppressants and the likelihood is expected to be rare due to it resulting from a non-standard event. The risk rating for fire air emissions is, therefore, low .
		Fire: wastewater from extinguishing potential fire	Vegetation and fauna	Direct Discharge	Contamination to flora / fauna / soil	Minor	Rare	Low	The new used tyre storage facility area is to be located within a previously disturbed area located wholly outside of the 1:100 ARI flood levels. Surface water flows within the used tyre storage facility (and adjacent mine operations/administration hub) will be directed via two interceptions basins prior to discharge into the upper environment dam. The Delegated Officer considers that impacts from fire suppression wastewater would be minor due to the area being previously disturbed and the likelihood is expected to be rare due to it resulting from a non-standard event and the bunding in place to capture the wastewater. The risk rating for fire wastewater is, therefore, low .
Category 64 Class II or III putrescible landfill site	Disposal of inert and putrescible wastes	Dust: from the movement of vehicles / equipment implementing new trenches in the WRD	Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west	Air / wind dispersion	Health and amenity impacts	Minor	Unlikely	Medium	The Delegated Officer considers that impacts from dust would be minor as it would mainly be localised onsite. The likelihood is unlikely due to the distance to the nearest offsite receptors at the Fortescue River Mouth recreational area and controls the Licence Holder has in place, such as minimizing exposed areas, minimizing tipping distance, dust suppression and covering the active trenches. The risk rating for landfill dust is, therefore, medium .

		<p>Asbestos: from the movement of vehicles / equipment and implementing new trenches</p>	<p>Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west</p>	<p>Air / wind dispersion</p>	<p>Health and amenity impacts</p>	<p>Moderate</p>	<p>Unlikely</p>	<p>Medium</p>	<p>The project area has encountered asbestos and has the potential to become airborne through these activities.</p> <p>Onsite activities affecting mining employees at the Sino Iron Project is currently regulated by DMIRS from a Mines Safety and Inspection Regulations 1995 perspective due to asbestiform material onsite. This is primarily a workplace health issue and is not regulated by DWER.</p> <p>The Licence Holder has the following controls in place:</p> <ul style="list-style-type: none"> • Fibrous Minerals Management Plan; • All material deposited to the South East Waste Rock Landform Landfill will be handled as if it has the potential to contain fibrous materials; • Apply sufficient water to dry dust prone areas; and • Regular covering of the active trenches. <p>The Delegated Officer considers that impacts from asbestos would be moderate as there would be minimal offsite impacts and the likelihood is expected to be unlikely due to the distance to the nearest offsite receptors at the Fortescue River Mouth recreational area and controls the Licence Holder has in place. The risk rating for asbestos is, therefore, medium.</p>
		<p>Odour: from exposed putrescible wastes</p>	<p>Fortescue River Mouth recreational area is the nearest receptor located more than 5 km to the north-west</p>	<p>Air / wind dispersion</p>	<p>Health and amenity impacts</p>	<p>Slight</p>	<p>Rare</p>	<p>Low</p>	<p>The Delegated Officer considers the distance to the receptor to be too great for impacts to occur so would be slight; given this is over 5km away and not a registered camp area (seasonal only), and the likelihood would be rare due to the regular covering of the landfill trenches. The risk rating for landfill odour is, therefore, low.</p>
		<p>Waste: Leachate contaminants in</p>	<p>Groundwater with beneficial use (Groundwater</p>	<p>Seepage of leachate</p>	<p>Adverse impacts to the health and</p>	<p>Slight</p>	<p>Unlikely</p>	<p>Low</p>	<p>The groundwater level beneath the South East Waste Rock Dump Landform is currently at approximately 12mAHD. The</p>

		seepage following rainfall events	Dependent Ecosystem)		survival of vegetation dependent upon groundwater				<p>groundwater flow direction is affected by the mine pit and pit dewatering operations, and is directed towards the pit as the water level at the pit is significantly lower at approximately -120mAHD.</p> <p>Predictive groundwater modelling has been completed as part of the respective Part IV of the EP Act submissions, and shows that with mining continuing to an ultimate depth of approximately 400m, the groundwater will continue to flow towards the pit as the pit deepens, and the groundwater level beneath the SE WRD will continue to deepen to a depth of approximately -50m to -100mAHD by the end of mining (CITIC, June 2019).</p> <p>The Delegated officer considers that impacts from landfill leachate would be slight due to the volume and types of putrescible wastes to be disposed of and that any contaminated groundwater would be recaptured by dewatering activities, and the likelihood would be unlikely due to the groundwater modelling outcomes and high evaporation rates. The risk rating for landfill leachate is, therefore, low.</p>
		Waste: Windblown waste from wind causing wastes to blow from trenches	Fauna ingesting waste	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	<p>The Delegated Officer considers that impacts from windblown waste would be slight as it would be localised onsite and the likelihood is expected to be unlikely due to regular covering of the active landfill trenches and earthen windrows around the tipping area to contain the waste. The risk rating for windblown waste is, therefore, low.</p>

Decision

Category 5 Magnetic Separation Elutriation Columns

The Delegated Officer has determined that it is acceptable to replace the third stage magnetic separator drums on Mill Line 6 with magnetic separation elutriation columns as a trial.

The Notification section of the Licence, condition 4.3.1, Table 4.3.1 has been updated to include a summary of the Mill Line 6 Magnetic Separation Elutriation Columns and associated seepage as part of the AER. This ensures that any variation in TSF seepage is noted prior to any further installation of Magnetic Separation Elutriation Columns to the other Mill Lines. Infrastructure that has been installed has also been removed.

Category 57 Used Tyre Storage Facility Relocation

The Delegated Officer has determined that it is acceptable to relocate the Used Tyre Storage Facility to the eastern side of the mine pit adjacent to the new mining operations / administration hub. This is outside of the future mine pit footprint.

The maps in Schedule 1 have been updated to include the new Used Tyre Storage Facility location.

Category 64 Landfills and Waste Rock Landforms

The Delegated Officer has determined that it is acceptable to implement a new Landfill within the South East Waste Rock Landform and all current Licence L8308/2008/2 conditions can be complied with.

The Prescribed premises category table on the first page of the Licence is updated to the higher throughput of 25,000 tonnes per annum to the Landfill Facilities and Waste Rock Landforms.

Condition 1.2.2, Table 1.2.1 is updated to state landfill facilities (as opposed to facility) as the current Landfill will operate until the new South East Waste Rock Dump Landform Landfill is implemented, and also to include the higher throughput of 25,000 tonnes per annum.

The maps in Schedule 1 have been updated to include the new Landfill within the South East Waste Rock Landform location.

The Reporting section of the Licence, condition 5.2.1, Table 5.2.1 has been updated to include Discussion of options for stabilising and/or reducing the amount of waste to landfills.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 01 November 2019. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. The Prescribed premises category table on the first page 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:

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	50,000 tonnes or more per year	Primary Crushers (1, 2, 3 and 4) 85,400,000 tonnes per Annual Period Concentrators (Mill Lines 1, 2, 3, 4, 5 and 6) 85,400,000 tonnes per Annual Period

			(producing 27,600,000 tonnes per Annual Period) Tailings Storage Facility (Stage 2) 67,400,000 tonnes per Annual Period
6	Mine dewatering discharge	50,000 tonnes or more per year	8,000,000 tonnes per Annual Period (8 ggalitres per Annual Period)
12	Screening, etc. of material	50,000 tonnes or more per year	2,700,000 tonnes per Annual Period
52	Electric power generation	20 megawatts or more in aggregate (using natural gas)	480 megawatts
54	Sewage facility	100 cubic metres or more per day	1,160 cubic metres per day
57	Used tyre storage (general)	100 tyres or more	No more than 500 tyres
64	Class II putrescible landfill site	20 tonnes or more per year	<u>Landfill Facilities and Waste Rock Landforms - 15,000 25,000 tonnes per annual period (excluding Clean Fill used for cover material)</u> Waste Rock Landforms - 3,000 tonnes of tyres
73	Bulk storage of chemicals, etc	1,000 cubic metres in aggregate	4,800 cubic metres in aggregate

2. Condition 1.2.2, Table 1.2.1 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:

1.2.2 The Licensee shall ensure that where waste produced on the Premises are not taken off-site for lawful use or disposal, they are managed according to the requirements in Table 1.2.1.

Table 1.2.1 Management of waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements^{1,2}
Camp 123 WWTP, Biomax WWTP and MBBR WWTP	Sewage	Biological, physical and chemical treatment	Camp 123 WWTP - 1,000 m ³ /day Biomax WWTP – 60 m ³ /day MBBR WWTP – 100 m ³ /day
<u>Landfill Facilities and Waste Rock Landforms</u>	Inert Waste Type 1	Receipt, handling and disposal of waste by landfilling	<u>All waste types</u> No more than 15,000 25,000 tonnes per annual period of all waste types (excluding clean fill used for cover material) cumulatively shall be disposed of by landfilling.
	Inert Waste Type 2 (plastic only)		

Table 1.2.1 Management of waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements^{1,2}
	Special Waste Type 1 (cement bonded asbestos. No fibrous asbestos shall be accepted)		Disposal of waste by landfilling shall only take place within the Landfill Facility <u>ies</u> shown on the Premises Map in Schedule 1. Waste shall be placed in a defined trench or within an area enclosed by earthen windrows.
	Special Waste Type 2 (waste consisting of certain types of biomedical waste which are regarded as hazardous but which, with the use of specific management techniques may be disposed of safely)		The active landfill area is managed such that at no time does landfilling result in an exposed face exceeding 2 m in vertical height. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m.
	Clean Fill		Maintain a minimum distance of at least 100 m between the previously filled areas of the landfill and the active tipping area and any surface water body. A fence or other physical barrier shall be maintained around the active landfill area which is an effective barrier to cattle, horses and stock.
	Contaminated Solid Waste (must meet the acceptance criteria for Class II landfills)		Undertake fortnightly inspections of the landfill fence or other physical barrier and ensure any damage to the fence is repaired within one working day of its discovery.
	Putrescible Waste		Ensure that wind-blown waste is contained within the boundary of the landfill and that wind-blown waste is returned to the tipping area on at least a monthly basis. Ensure that no waste is burnt on the Premises.
	Other wastes (must comply with Class II criteria in the Landfill Definitions)		Ensure that any unauthorised fire at the Landfill Facility <u>ies</u> is promptly extinguished. <u>Non-greenwaste</u> Tipping area is restricted to a maximum linear length of 30 m. <u>Special Waste Type 1</u> Only to be disposed of into a designated asbestos disposal area within the landfill. Not to be deposited within 2 m of the final tipping surface of the landfill. No works shall be carried out on the landfill that could lead to a release of asbestos fibres.

Table 1.2.1 Management of waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements^{1,2}
			<u>Special Waste Type 1 and Special Waste Type 2</u> Material containing asbestos or clinical waste is disposed of at the Landfill Facility <u>ies</u> under the personal supervision of the Licensee or the personal supervision of a person nominated by the Licensee.
Landfill Facility <u>ies</u> and Waste Rock Landforms	Inert Waste Type 2 (tyres only)	Receipt, handling and disposal of waste by landfilling	No more than 3,000 tonnes per annual period of Inert Waste Type 2 shall be disposed of by landfilling. The location of where Inert Waste Type 2 (including tyres) are buried will be surveyed and the latitude and longitude recorded. Tyres (Inert Waste Type 2) ¹ Tyres shall only be landfilled within the Landfill Facility <u>ies</u> and Waste Rock Landforms shown on the Premises map in Schedule 1. Tyres shall consist of batches of less than 100 whole tyres. Batches must be separated from each other by at least 100 mm of soil.
Used Tyre Laydown Area	Inert Waste Type 2 (Used tyres)	Storage	Tyres shall only be stored within the Used Tyre Laydown Area shown on the Premises map in Schedule 1. Shall only store a maximum of 500 tyres at any time.

3. Condition 4.3.1, Table 4.3.1 of the Licence is amended by the insertion of the bold text shown in underline below:

Table 4.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
-	Unauthorised fire at the Landfill Facility	Within 14 days of unauthorised fire	ET1
1.2.1 1.2.13 2.2.2	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
1.2.14	The Licensee shall submit a compliance document to the CEO, following construction of the controlled surface	Within 7 days of the completion of construction	None specified

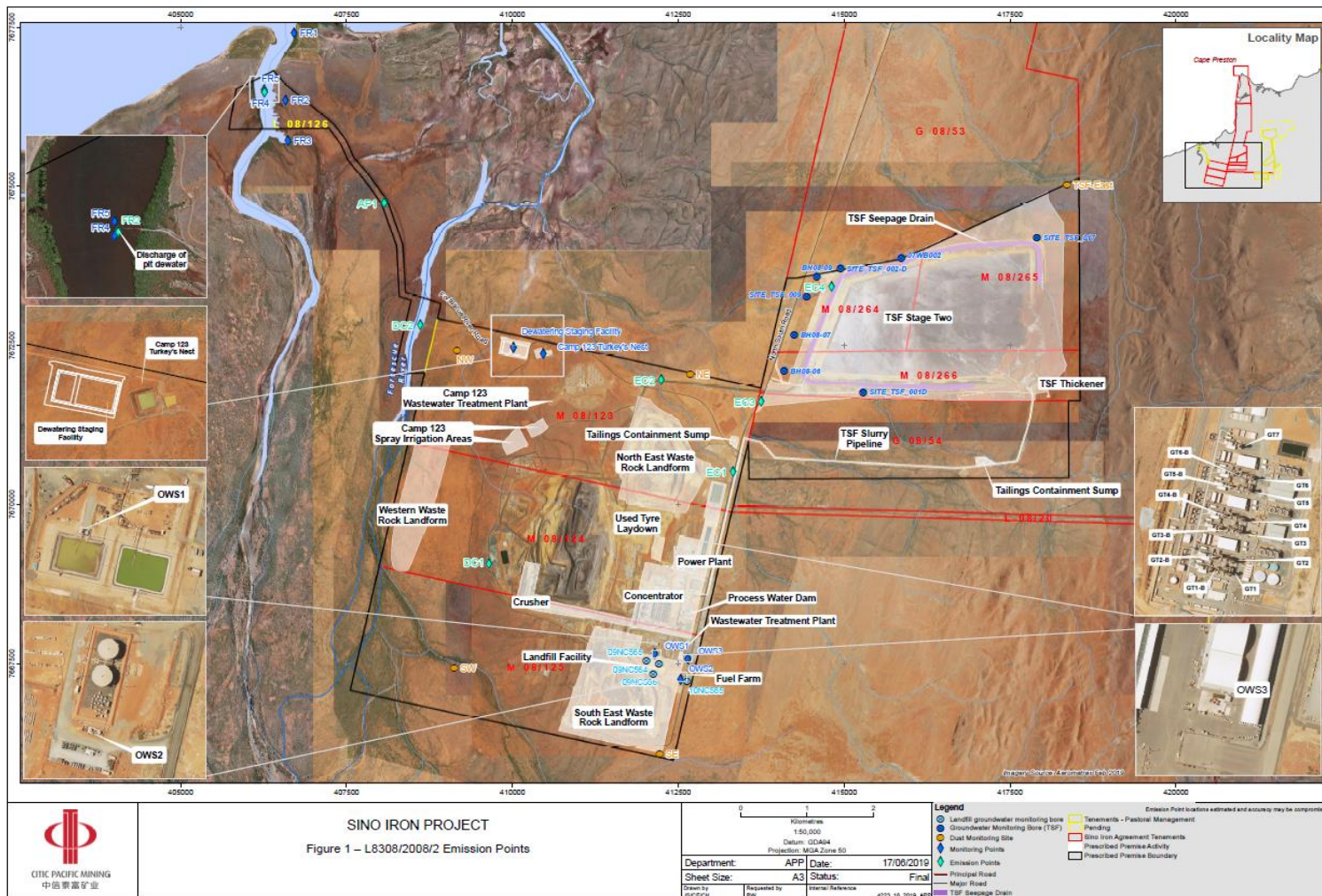
	<p>water discharge points, the MBBR-WWTP and TSF Stage 2 (following the installation of the liner system, low permeability zones and all other seepage controls). The compliance document shall:</p> <ul style="list-style-type: none"> a) be certified by a suitably qualified engineer and certify that the works were constructed in accordance with the construction requirements specified in Table 1.2.6 ; b) note the TSF Stage 2 embankment height at the time of submission; c) provide a list of departures from the specified works certified by a suitably qualified engineer; and d) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company. 		
1.2.14	<p>The Licensee shall submit a compliance document to the CEO, following construction of the TSF2 Raise 3 lift to 61mRL. The compliance document shall:</p> <ul style="list-style-type: none"> a) be certified by a suitably qualified engineer and certify that the works were constructed in accordance with the construction requirements specified in Table 1.2.6; b) provide a list of departures from the specified works certified by a suitably qualified engineer; and c) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company 	Within 7 days of the completion of construction	None specified
3.1.4	Calibration report	As soon as practicable	None specified
<u>N/A</u>	<u>Provide a summary of the Magnetic Separation Elutriation Columns trial to Mill Line 6 including any variation in TSF seepage as a result of the installation of this equipment.</u>	<u>None specified</u>	<u>N/A</u>

4. Condition 5.2.1, Table 5.2.1 of the Licence is amended by the insertion of the bold text shown in underline below:

Table 5.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 3.3.1	Volumetric flow rate, pH, Temperature, Dissolved Oxygen, Electrical Conductivity, Total Dissolved Solids, Total Suspended Solids, Total Nitrogen, Bioavailable Nitrogen, Nitrate, Ammonia, Total Phosphorus, Bioavailable Phosphorus, Bioavailable Organic Carbon, Chlorophyll a, Aluminium, Arsenic, Boron, Cadmium, Chromium (III), Chromium (VI), Cobalt, Copper, Iron, Lead, Mercury, Manganese, Nickel, Selenium, Silver, Strontium, Vanadium, Zinc, Total Recoverable Hydrocarbons	WR1
Table 3.4.1	pH, Biochemical Oxygen Demand, Total Suspended Solids, <i>E.coli</i> , Total Nitrogen and Total Phosphorus	LR1
Table 3.5.1	Inert Waste Type 1, Inert Waste Type 2, Special Waste Type 1, Special Waste Type 2, Clean Fill, Putrescible Waste, Contaminated Solid Waste and Other wastes <u>Discussion of options for stabilising and/or reducing the amount of waste to landfills</u>	None specified
Table 3.6.1	pH, Biochemical Oxygen Demand, Total Suspended Solids, <i>E.coli</i> , Total Nitrogen, Total Phosphorus, Total Recoverable Hydrocarbons, Combined decant water and seepage water recovery volumes and volume of tailings deposited Volume of TSF decant water and seepage water disposed of to DC2 and/or AP1	None specified
Table 3.7.1	pH, Total Nitrogen, Total Phosphorus, Total Dissolved Solids, Lead, Mercury, Copper, Chromium (hexavalent), Arsenic, Nickel, Zinc, Cadmium, Total Recoverable Hydrocarbons, Standing Water Level, Oxidation Reduction Potential, Dissolved Oxygen, Temperature, Electrical Conductivity, Total Sulfur, Calcium, Sodium, Total Alkalinity, Chloride, Magnesium, Potassium, Sulfate (SO ₄ ²⁻), Bicarbonate (HCO ₃ ⁻), Carbonate (CO ₃ ²⁻), Aluminium, Cobalt, Iron and Manganese	None specified
Table 3.7.2	pH, Temperature, Dissolved Oxygen, Electrical Conductivity, Total Dissolved Solids, Total Suspended Solids, Total Nitrogen, Bioavailable Nitrogen, Nitrate, Ammonia, Total Phosphorus, Bioavailable Phosphorus, Bioavailable Organic Carbon, Chlorophyll a, Aluminium, Arsenic, Boron, Cadmium, Chromium (III), Chromium (VI), Cobalt, Copper, Iron, Mercury, Lead, Manganese, Nickel, Selenium, Silver, Strontium, Vanadium, Zinc, Total Recoverable Hydrocarbons A comparison of the data obtained against baseline results shall be provided. The data obtained for the increase in mine dewatering discharge up to 8GL/annum – monitoring of ambient surface water quality during discharge to obtain dilution data and to verify dilution modelling, including a comparison against the initial modelling.	None specified
Table 3.7.3	Visually estimate the average foliage cover	None specified

Table 5.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form¹
	Score the health condition General environmental description of the site and record any changes since previous monitoring Take replicate photographs of foliage density and shadow areas beneath trees. Signs of stress on native flora and fauna at areas of stream discharge: EC1, EC2, EC3, EC4 DC1, DC2	
1.2.12	Annual water balance for the TSF	None specified
3.3.1	Discharge commencement and cessation date and times recorded, along with tidal data from measurement locations.	None specified
5.1.2	Compliance	Annual Audit Compliance Report
5.1.3	Complaints summary	None specified

5. The maps in Schedule 1 are replaced with the following combined map:



6. The tables in Schedule 2 have been updated to include all the monitoring locations and parameters.

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L8308/2008/2 – Sino Iron Project	L8308/2008/2	accessed at www.dwer.wa.gov.au
2	Ministerial Statement 1066	MS1066	accessed at www.epa.wa.gov.au/
3	Ministerial Statement 822	MS822	accessed at www.epa.wa.gov.au/
4	Ministerial Statement 635	MS635	accessed at www.epa.wa.gov.au/
5	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	N/A	accessed at www.dwer.wa.gov.au
6	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	N/A	
7	DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	N/A	
8	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	N/A	
9	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	N/A	
10	Email titled “DR047231 LTR 2019.05.15 CPM to DWER L8308 Alteration to Operations (Categories 5, 57 and 64)” dated 17/05/2019 2:15pm and authored by CITIC Pacific Mining Management Pty Ltd	CITIC, May 2019	
11	Email titled “RE: L8308 Amendment Notice 8” dated 14/06/2019 2:08pm and authored by CITIC Pacific Mining Management Pty Ltd	CITIC, June 2019	DWER records (A1797150)
12	Email titled “RE: L8308 Amendment Notice 8” dated 17 June 2019 1:49pm and authored by CITIC Pacific Mining Management Pty Ltd	N/A	DWER records (A1797628)
13	Email titled “RE: L8308 Sino Iron Categories 5, 57 and 64 Amendment” dated 30/07/2019 2:31pm and authored by CITIC Pacific Mining Management Pty Ltd	CITIC, July 2019	DWER records (A1810451)

14	Email titled "RE: STAKEHOLDER NOTIFICATION - L8308/2008/2 – REFERRAL OF A LICENCE AMENDMENT – REQUEST FOR ADVICE/COMMENT" dated 9/09/2019 4:41pm and authored by DMIRS	N/A	DWER records (A1822356)
15	Email titled "RE: Landfill Deposition Rates" dated 20/09/2019 9:25am and authored by CITIC Pacific Mining Management Pty Ltd	N/A	DWER records (A1825103)
16	Email titled "DER2014/000430-2 DMIRS advice re Sino Iron License amendment" dated 2/08/2019 10:02am and authored by DMIRS	N/A	DWER records (A1811306)
17	Email titled "DR048043 LTR 2019.11.13 CPM to DWER Response to L8308 Amendment Notice 8" dated 13/11/2019 11:12am and authored by CITIC Pacific Mining Management Pty Ltd	N/A	DWER records (A1841047)

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 01 November 2019 for review and comment. The Licence Holder responded on 13 November 2019 and the following comments were received on the draft Amendment Notice.

Section	Summary of Licence Holder comment	DWER response
Table 8, Row 8, Page 13	Change Consequence Rating to Slight and Risk to Low.	Consequence Rating left at Minor and Risk Rating at Medium. Reasoning Section updated to reflect this
Prescribed Premises Category, Page 17	Include Waste Rock Landforms and remove 3,000 tonnes of tyres	Updated as requested
Condition 1.2.2, Table 1.2.1, Page 17 and 19	Removes the list of Waste Types	Waste types not removed
Condition 5.2.1, Table 5.2.1, Page 20	Requests Magnetic Separation Elutriation Columns summary report be placed in the Notification Section	Updated as requested and Notification Section also updated to remove infrastructure that has been installed
Condition 5.2.1, Table 5.2.1, Page 20 and 21	Requests that a discussion of options for stabilising and/or reducing the amount of waste to landfills be placed in the Table 3.5.1 section	Updated as requested