Amendment Report

Application for Licence Amendment

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

Licence Number	L6453/1990/12
Licence Holder	BHP Billiton Nickel West Pty Ltd
ACN	004 184 598
File Number	2011/009443-1
Premises	Mt. Keith Operations WILUNA WA 6646 Legal description – Mining tenements M36/294, M36/467, M36/658, M36/677, M53/56-57, 165-167, 208, 215-217, M53/218, 327-328, M53/489, General purpose lease G53/11-14 and Miscellaneous licence L36/206
Date of Report	4 June 2022
Decision	Revised licence granted

Alana Kidd

Digitally signed by Alana Kidd
Date: 2022.06.03 14:04:56 +08'00'

Alana Kidd
Manager, Resource Industries

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

Table of Contents

1. Decision summary

Licence L6453/1990/12 is held by BHP Billiton Nickel West Pty Ltd (Licence Holder) for the Mt. Keith Operations (the Premises) mine site located in Wiluna WA 6646.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L6453/1990/12 has been granted.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Application summary

On 24 September 2021, the Licence Holder submitted an application to the Department of Water and Environmental Regulation (the department) to amend Licence L6453/1990/12 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The application was for an increase in disposal of waste to two existing on-site landfill areas, being the Western Rock Landform (WRL) landfill area and the TSF 1 landfill area. The Licence Holder proposes to increase the quantity of Class II putrescible waste disposed to these landfill areas by 1,000 tonnes per year from 2,200 to 3,200 tonnes per year. The Licence Holder provided further information stating that the WRL landfill area would remain as the primary putrescible waste disposal location and estimated that about 74% or 740 tonnes of the additional waste would be sent to the WRL landfill area, and the remaining 26% would be sent to the TSF 1 landfill area. This proposed increase was applied for to meet current and future operational demand. The increased future operational demand is associated with the Mt Keith Debottlenecking Project which includes the installation of an additional semi-autogenous grinding (SAG) mill circuit and the installation of a mobile crushing and screening plant at the Premises. This project is currently under assessment via a mining proposal application by the Department of Mines Industry Regulation and Safety (DMIRS) and the associated works approval W6597/2021/1 was issued by the department on 17 May 2022.

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

Table 1: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
64	2 200 tonnes per year	3 200 tonnes per year	Increase of throughput capacity for Category 64: Class II putrescible landfill by 1,000 tonnes per year, from 2,200 tonnes per year to 3,200 tonnes per year.

2.3 Part IV of the EP Act

The Mt Keith Central Discharge Tailings Storage Facility (also known as CDTSF or TSF 2) is managed in accordance with Ministerial Statement 415 titled 'Mt Keith Nickel Project: Tailings Storage Upgrade 400km North of Kalgoorlie' which was approved on 08 May 1996 (EPA report

812). The statement sets out the Licence Holder's environmental commitments to the ongoing protection of groundwater resources, surface drainage, soil structure, vegetation, fauna and nearby Wanjarri Nature Reserve in relation to the risks that the CDTSF poses. The statement requires the Licence Holder to complete compliance reporting every five years so the department can assess compliance with ministerial conditions under Part IV of the EP Act. A five yearly ministerial compliance report was submitted to DWER on 01 April 2022 which noted a significant decrease in vegetation condition fringing the TSF between 2018 and 2021. The compliance report noted that the Licence Holder intends on developing an action plan which will consider both short-term and long-term objectives and provide them with a better understanding of artesian, sub-artesian and sub-surface conditions around the TSF.

A review of recent Annual Environmental Reports submitted by the Licence Holder as required under Part V of the EP Act also indicates that hypersaline TSF seepage has led to groundwater mounding on-site, resulting in impacts to groundwater quality, soil structure (dryland salinisation) and native vegetation impacts.

Given these adverse environmental impacts, the Part IV compliance and enforcement division of the department sent a follow up letter to the Licence Holder dated 04 April 2022, requiring the Licence Holder to submit documentation by 30 June 2022 which summarises the cause of the decline in vegetation condition fringing the TSF; and if determined to be the result of implementing the proposal, the requirement to implement a remediation programme to restore vegetation health.

As these seepage and vegetation issues are being managed by Part IV compliance, these issues have not been addressed within this amendment application, to avoid duplication of regulation and compliance actions. However, the Licence Holder has made changes to the waste to be disposed to the TSF 1 landfill area, to prevent seepage from waste deposited, given the mounding.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 2 below.

Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary. Although noise and dust emissions will be generated from the Premises during operation, there are no sensitive receptors nearby and therefore there will be no risk event associated with these emissions. These emissions have consequently been excluded from Table 2.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Contaminated stormwater	Spills outside the approved landfill areas under L6453/1990/12	Impacts to soil, groundwater and native vegetative via surface water runoff and infiltration	**Existing licence controls** The approved WRL landfill area and TSF 1 landfill area will continue to operate in accordance with L6453/1990/12, including conditions 7 (Table 2: Management of Waste) which includes the requirement for waste to be placed in a defined trench or within an area enclosed by earthen bunds. As per Condition 5(a) and (b) of the licence, a seepage collection and recovery system is in operation at TSF 1 which collects and recovers any potentially contaminated stormwater that falls within TSF 1. Further information provided by the Licence Holder specifies that surface water from the waste rock landforms and the WRL landfill area is controlled by local containment bunds which surround the waste rock landforms and landfill area, retaining any potentially contaminated stormwater from discharging to the environment or mixing with 'uncontaminated' surface water from non-operational areas. Existing diversion drains (northern and southern drainage lines) divert 'uncontaminated' surface water flows from surrounding natural catchments (northern and southern catchments) around the mine's operational footprint, minimising the potential for flood impacts on mine infrastructure and diverting surface flows downstream. These diversion structures were designed to convey a 1:100 ARI critical duration rainfall event. The South Dam Storage Pond collects a proportion of the surface water moving down the outer drain during flow events; although surface water flows would bypass and overtop this dam in large flow events. Water collected in this dam is then used for dust suppression in mining activities. **Additional Licence Holder proposed controls** The application document states spills of waste outside trenches or the approved landfill areas approved under L6453/1990/12 will continue to be managed in accordance with existing NMK site procedures and NiW-HSEC-PLN-001BHP NiW Environmental Management Plan. Spill kits are in place around site. Any spills of contaminated water or hydrocarbons will be promptly stopped, cleaned up and any contaminated soil removed for remediation at the site facility or taken offsite to an appropriately licensed facility for disposal.
Windblown waste	Class II putrescible waste (landfill)	Impact on Wanjarri campsite via windblown pathway	**Existing licence controls** The approved WRL landfill area and TSF 1 landfill area will continue to operate in accordance with L6453/1990/12 conditions 7 (Table 2: Management of Waste) and 8 (Table 3: Cover Requirements), which states:

Emission	Sources	Potential pathways	Proposed controls
			putrescible wastes to be covered fortnightly with sufficient quantities of Type 1 inert waste, clean fill or other appropriate cover material; ensure no wind-blown waste escapes from the Premises and that wind-blown waste is collected on at least a fortnightly basis and returned to the tipping area; the Licence Holder shall ensure that the tipping area is less than 30 metres in length. **Additional Licence Holder proposed controls** No additional controls proposed.
Leachate	Class II Putrescible waste (landfill)	Impacts to soil, groundwater and native vegetative via surface water runoff and infiltration	**Existing infrastructure and licence controls** Putrescible waste at both landfill areas is to be disposed of to landfill in accordance with L6453/1990/12 condition 7 (Table 2: Management of Waste. Condition 18 of the Licence requires the Licence Holder to conduct an annual assessment of the risk associated with the seepages from the tailings storage facilities and if necessary, install and operate additional seepage recovery measures to ensure vegetation impact is minimized during operation and after closure. Condition 11 of the licence also requires corrective action to be taken by the Licence Holder if inspections identify any adverse environmental consequences. Key physical leachate controls at the WRL landfill area (the proposed primary putrescible waste disposal location) include; • Two metre thick oxide overburden material (low permeability) underlying the WRL landfill facility inhibiting the flow of leachate from the landfill cell. • The landfill sits on a thick clayey layer of saprolite (weathered greenstone) with a groundwater level of about 15 m bgl. The saprolite clay overlying the greenstone lithologies suggests that the landfill poses a low risk to groundwater resources as infiltration will be negligible. • Located within the southern portion of the Western Waste Rock Landform. Bunds constructed around the WRL landfill area contain any potentially contaminated surface water run-off. Key leachate operational controls at the WRL landfill area, include: • Waste is placed in a defined trench or within an area or enclosed by earthen bunds • When waste material is covered with sufficient quantities of Type 1 inert waste, clean fill or other appropriate cover material, the area is traversed by vehicles and compacted, reducing the stormwater infiltration risk at the facility and subsequent

Emission	Sources	Potential pathways	Proposed controls
			potential leachate seepage to groundwater. Key physical leachate controls at the TSF 1 landfill area include; • TSF 1 was originally constructed with a low permeability liner, consisting of a 300mm compacted layer over the entire floor of the tailings storage area. This was intended to limit infiltration of seepage water through the floor of the storage area. • TSF 1 was originally constructed with toe drains along the west (partial length), south and eastern embankments, with seepage flows routed to the return water pond for reuse in the processing plant. This was intended to collect seepage water and limit flow outside the TSF. • TSF 1 perimeter embankments were constructed with a key trench excavated down to caprock. This was intended to limit the lateral flow of seepage water from the TSF. Key leachate operational controls at TSF 1 landfill area include: • The TSF 1 landfill cells are bunded to prevent the ingress of water from other parts of the tailings deposition surface. Only rainfall falling directly on the landfill cells is captured. • The TSF 1 central decant system is still operational, with all incidental rainfall collecting at the decant and being discharged to the return water pond for reuse in the processing plant. • Ongoing management of landfill waste; monitoring of ambient groundwater quality and standing water levels for monitoring bores located in the vicinity of the landfill area at TSF1; reporting, including an annual TSF seepage risk assessment and if necessary additional seepage recovery measures in accordance with licence L6453/1990/12 conditions to minimise potential leachate risks to groundwater. **Additional Licence Holder proposed controls** No additional controls proposed.
Odour	Class II putrescible waste (landfill)	Impact on Wanjarri campsite via airborne pathway	**Existing licence controls** The approved WRL landfill area and TSF 1 landfill area will continue to operate in accordance with L6453/1990/12, including conditions 7 (Table 2: Management of Waste) and 8 (Table 3: Cover Requirements). **Additional Licence Holder proposed controls** No additional Licence Holder controls were outlined in the submission.

3.1.2 Receptors

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

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

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

Human receptors	**Distance from prescribed activity**
Aboriginal and other heritage sites - A number of registered and lodged sites are located partially or wholly within the L6453/1990/12 prescribed premises	Registered heritage sites have been identified in the vicinity of and within the Premises. The Licence Holder has in place with the Tjiwarl people an agreed Cultural Heritage Management Plan. The results of all heritage surveys and location of Aboriginal heritage sites are recorded in the Licence Holder's database, which is used in the internal Environmental and Heritage Impact Assessment process, prior to land disturbance to ensure heritage sites are not accidentally impacted. (Managed under MS 415)
Closest residential receptor is a low visitation campsite area at an old shearing shed within the Wanjarri Nature Reserve.	About 5km south of TSF 1 and WRL landfill areas. (managed under MS 415)
Environmental receptors	**Distance from prescribed activity**
Environmentally Sensitive Areas - Wanjarri Nature Reserve (DBCA Legislated Tenure) (Reserve No A30897)	Adjacent to the Premises' eastern boundary and within 100m at closest location. The Reserve is about 5km south of TSF 1 and WRL landfill areas. (managed under MS 415)
Surface water: ephemeral minor surface drainage lines	Multiple ephemeral minor surface drainage lines are located within the Premises. The application supporting documentation states that drainage from the area's natural catchments drains to the east into the Lake Maitland catchment. Apart from a limited period after significant storm events, the majority of surface water runoff from the Premises is unlikely to reach Lake Maitland (50km east). The catchment drains to the north of the Wanjarri Nature Reserve and does not enter the reserve. (managed under MS 415)
Groundwater	Key hydrogeological units at the Premises include shallow surficial deposits (HU1), a paleochannel sand aquifer (HU2) and saprock and fractured basement (HU3). According to the Premises 2020/2021 Annual Groundwater Monitoring Summary (DWERDT499804) the natural groundwater table is about 20 m deep at the mine. Water quality is highly variable depending mainly on depth and Reduced Level (RL) of the aquifer. In up-lying areas, such as at the mine site, shallow groundwater (<100 m depth below surface) is generally brackish and salinity gradually increases with depth. In low lying alluvial aquifers the low salinity layer may be thin or absent and most groundwater is saline-

	hypersaline. Most groundwater in the region is brackish or saline, with potable groundwater occurring in small, elevated areas where recharge conditions are favourable. Monitoring bore standing water level readings reported in the Premises' 2021 Annual Environmental Report (DWERDT585897) indicate that groundwater surrounding TSF 1 ranges in depth between 0m bgl to 9.9m bgl. Total Dissolved Solids (TDS) results from these monitoring bores range from 1630 mg/L to 19,700 mg/L, which demonstrates that hypersaline TSF seepage is impacting upon the naturally brackish groundwater in the area. Trace constituents (copper, nickel and zinc) are generally present at very low or undetectable levels in the groundwater. pH is within the licence limit of 6-9 and ranged between 6.55 to 8.2 The Licence Holder provided RFI information (A2084483) stating two monitoring bores were installed in 2009 immediately west (50 m) of the current WRL landfill but are no longer operational and have since been decommissioned. Historical data collected from these bores between 2014 and 2017 indicate a groundwater level of about 15 m below ground level (bgl) and groundwater salinity and pH ranged from between 240 - 300 mg/L and 7 - 7.5, respectively. (managed under MS 415)
Threatened Ecological Communities - Violet Range (Perseverance Greenstone) BIF Priority Ecological Community (PEC).	The southernmost extent of the licence boundary intersects the PEC (about 10 km south of TSF 1 and WRL landfill areas).
Threatened and/or priority flora - *Hibbertia* sp. Sherwood Breakaways (R.J. Cranfield 6771) (P2); *Verticordia jamiesoni*i (P3) and *Grevillea inconspicua* (P4).	Adjacent (within 100m) to boundary (these species located between 5 to 10 km south of TSF 1 and WRL landfill areas).

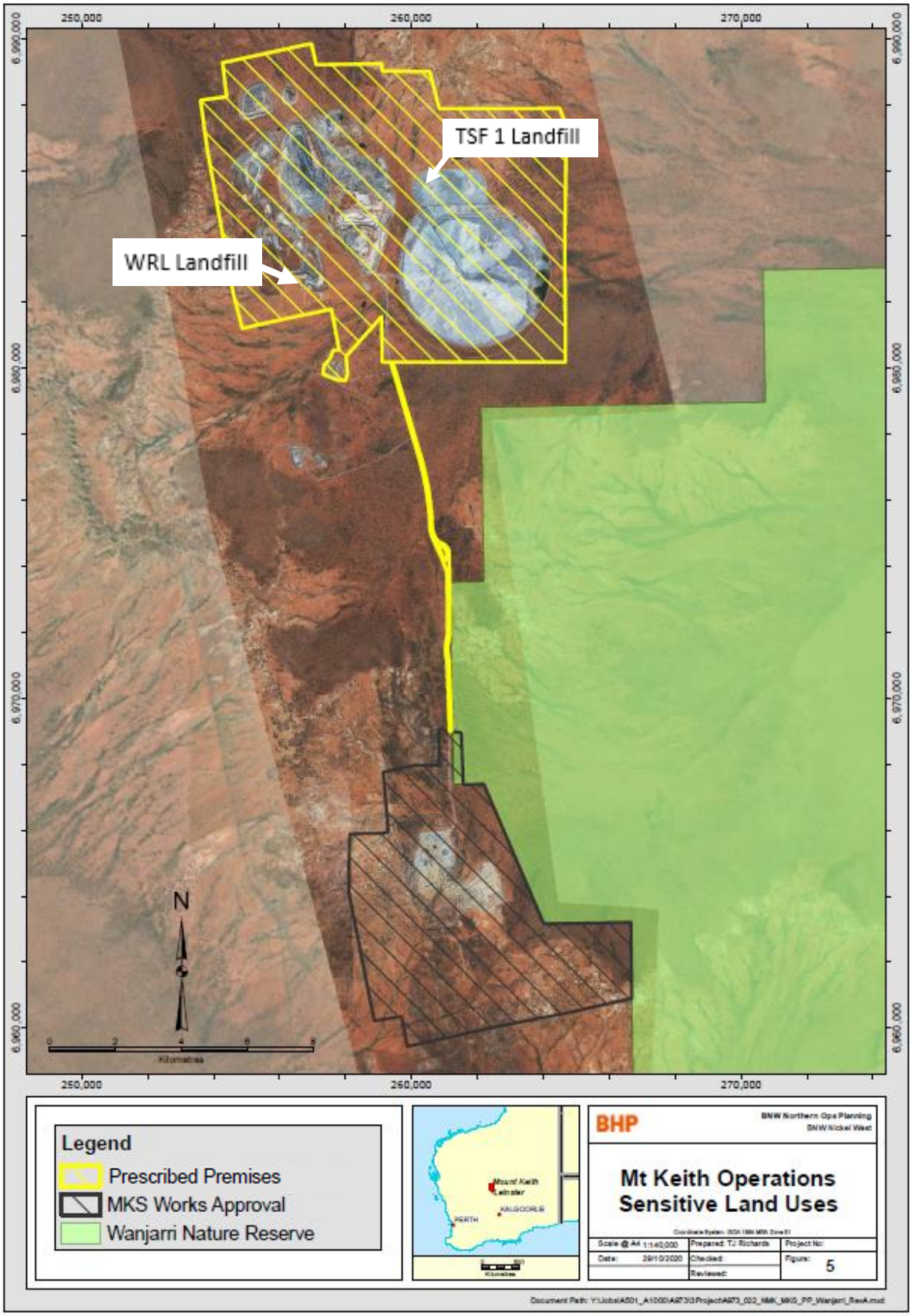

Figure 1: Distance to Wanjarri Nature Reserve

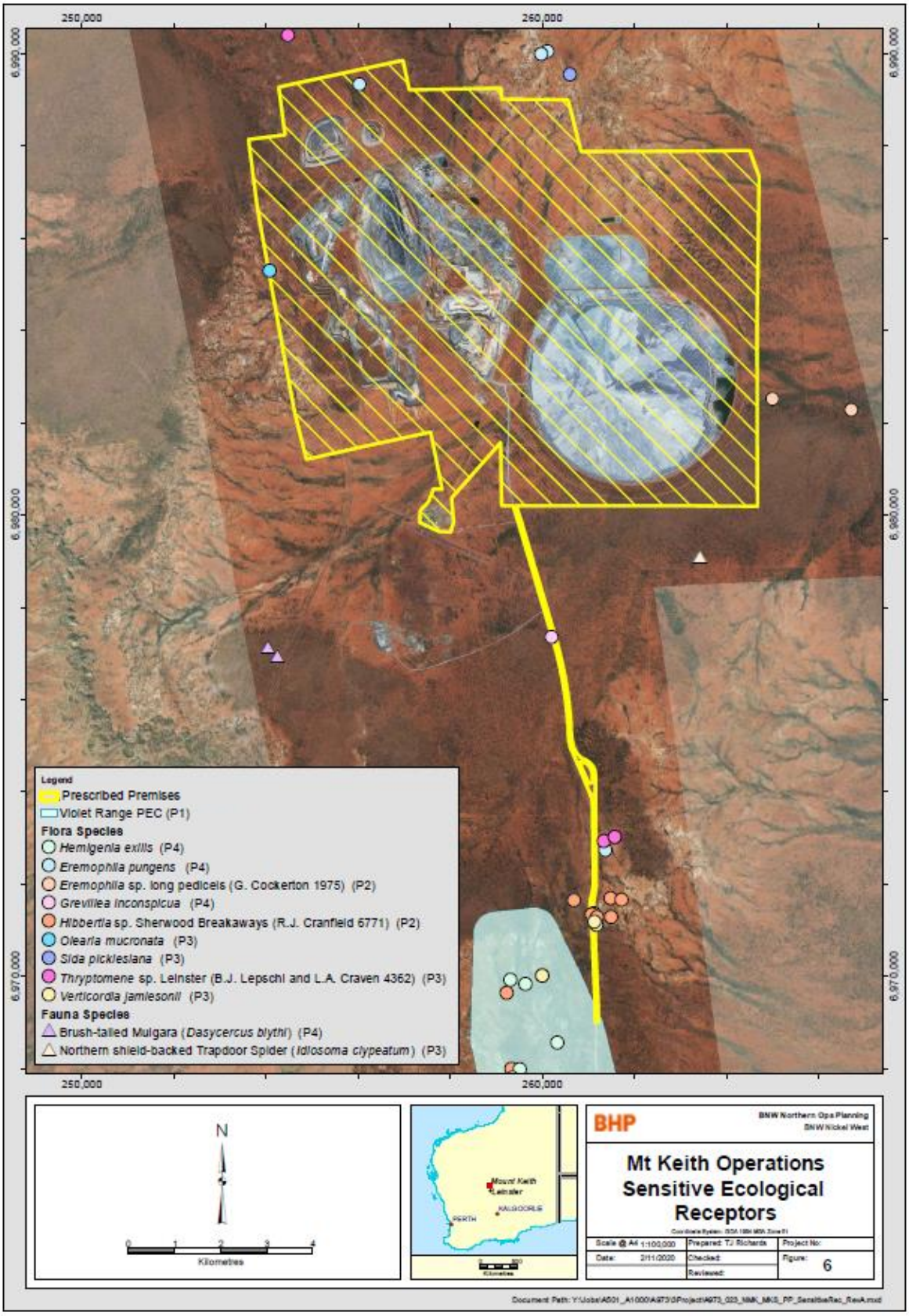

Figure 2: Distance to sensitive ecological receptors

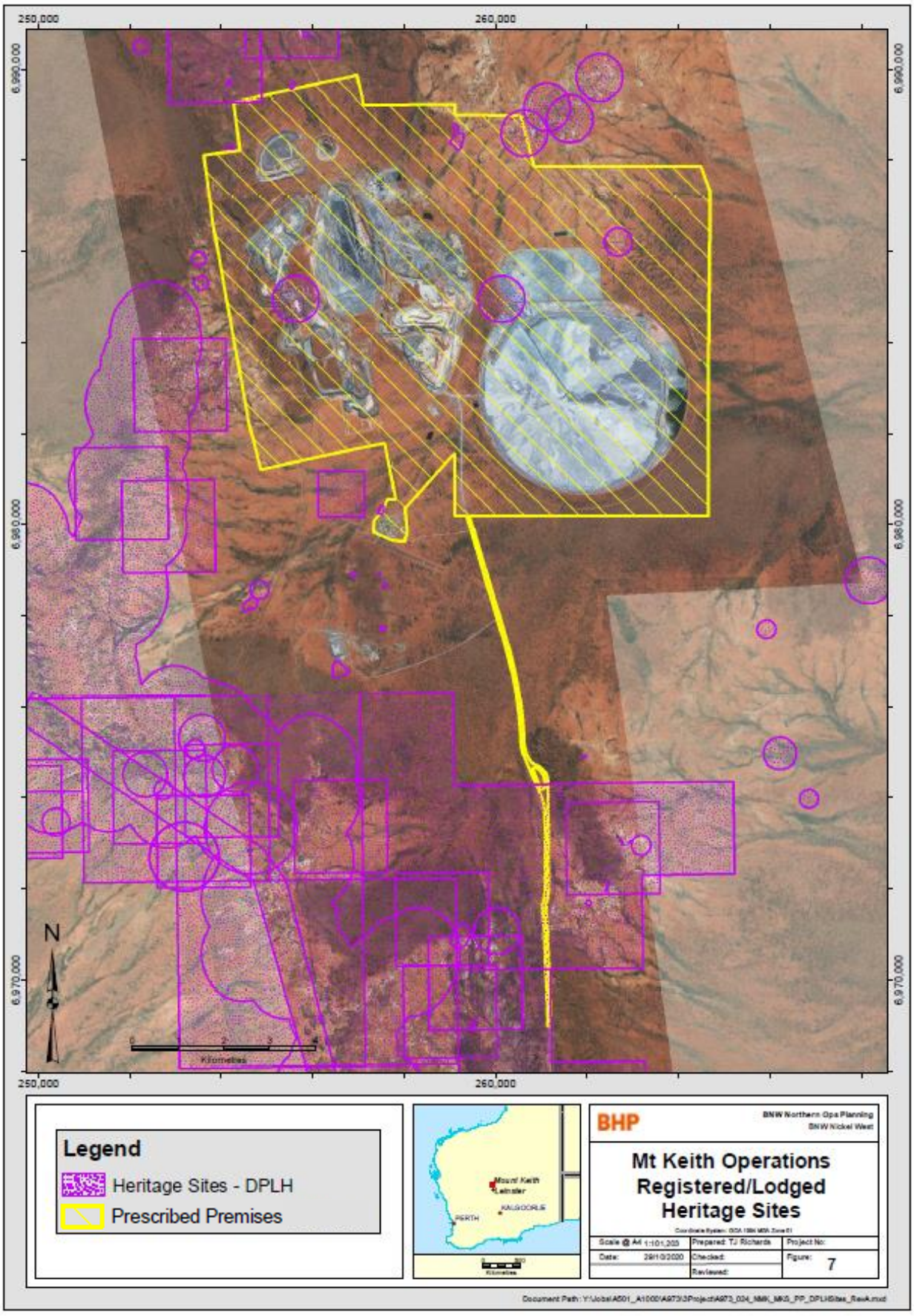

Figure 3: Distance to Registered/Lodged Heritage Sites

3.2 Risk ratings

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

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

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

The Revised Licence L6453/1990/12 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 64 activities.

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

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

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
1000 tonne increase in disposal of Class II Putrescible waste to the WRL Landfill area (approximately 74% to the WRL landfill area and remaining 26% to the TSF 1 landfill area).	Leachate (generated from disposal of putrescible waste or potentially contaminated stormwater – generated from rainfall over landfill area)	Discharge to land – seepage/spillage of leachate into soil / groundwater causing groundwater contamination and poor soil and vegetation health	Groundwater Soil Native vegetation	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	N	<u>Existing licence conditions</u> Condition 7 Condition 18 **<u>New licence conditions</u>** Table 1 amended (Condition 1) Table 2 amended (Condition 7) Table 3 amended (Condition 8) Table 7 amended (condition 23)	DWER notes that the proposed increase in disposal of class II putrescible waste is relatively small and unlikely to change the risk profile of the Premises, however, given the current environmental issues being experienced on-site in regards to groundwater mounding surrounding TSF 1 and TSF 2, additional regulatory controls are required to mitigate further adverse environmental impacts occurring resulting from seepage from the landfill. DWER has conditioned that all putrescible waste that has the potential to leach to groundwater and exacerbate the groundwater issues currently being experienced at TSF 1 and TSF 2, is to be disposed of at the WRL landfill area, away from the seeping TSF 2 which is currently being addressed by Part IV compliance. The licence has also been updated to clarify the specific types of wastes allowed at each landfill site e.g., Special Waste Type 1, as defined in the Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website). Annual reporting requirements have been amended to require the licence holder to report the quantity and types of waste disposed of to each separate landfill site. This will enable DWER to keep track of the location and volumes of potential leachate sources at the Premises. DWER reminds the Licence Holder that in future, the department should be notified as

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
								soon as practicable of any non-compliances of licence limits, such as if monitoring bore water levels surrounding the landfill areas exceed the 2m separation distance requirement between the base of the TSF 1 landfill area and the highest groundwater level. This is to ensure compliance with licence condition 25 relating to notification requirements.
	Contaminated soil or stormwater	Spills outside the approved landfill areas under L6453/1990/12 resulting in seepage of leachate into soil / groundwater causing groundwater contamination and poor vegetation health	Soil and native vegetation Groundwater via infiltration Surface water (run off)	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Existing licence conditions Condition 3, 7	The Licence Holder has proposed no new controls outside of existing licence controls. No additional regulatory controls are required as the provisions of the *Environmental Protection (Unauthorised Discharges) Regulations 2004* still apply.
	Odour	Air/windborne pathway causing impacts to health and amenity Air/windborne pathway attracting fauna to scavenge waste potentially causing poor fauna health	Fauna	Refer to Section 3.1	C = Slight L = Almost certain **Medium Risk**	Y	Existing licence conditions Condition 7, 8	The Licence Holder has proposed no new controls outside of existing licence controls, however given the sufficient separation distance from human receptors, no additional regulatory controls are required to mitigate odour risk. Existing licence conditions (Table 3: Cover Requirements and Table 2: Management of Waste) deemed sufficient to reduce the risk of odour attracting fauna to the site.
	Windblown waste	Air/windborne pathway causing impact on amenity and health and increased potential to attract disease	Fauna	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	N	Existing licence conditions Condition 7, 8 **New licence**	The licence has been updated to clarify the specific types of hazardous wastes allowed at each landfill site (as defined in the Landfill Waste Classification and Waste Definitions 1996 - as amended from time to time and published on the department's

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
		vectors					**<u>conditions</u>** Table 2 amended (Condition 7**)** Table 3 amended (Condition 8)	website) and specify the waste management and cover requirements. This will reduce frequency and risks associated with windblown wastes. DWER notes that this licence amendment has only assessed a throughput increase of class II putrescible waste at the Premises. A throughput increase for landfill material containing hazardous material such as asbestos, which would likely increase the risk profile of the premises, has not been proposed within this licence amendment. Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in *the Environmental Protection (Controlled Waste) Regulations 2004* and still apply.
	Dust (unloading and storage of landfill material waste covering activities and vehicle movements)	Air/windborne pathway causing impacts to health and amenity	No human receptors in close proximity. Low visitation campsite area within the Wanjarri Nature Reserve is about 5km away from landfill areas.	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	<u>Existing licence conditions</u> Condition 2,6, 8, 16	The Licence Holder has proposed no new controls outside of existing licence controls, however as there is sufficient separation distance from human receptors, the risk of dust impacting receptors have been determined to be low. Additional regulatory controls are not required to mitigate risk.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
	Noise (waste disposal, covering activities and vehicle movements)	Air/windborne pathway causing impacts to health and amenity	No human receptors in close proximity. Low visitation campsite area within the Wanjarri Nature Reserve is about 5km away from landfill areas.	Refer to Section 3.1.	C = Slight L = Unlikely **Low Risk**	Y	N/A	The Licence Holder has proposed no new controls, however as minimal noise emissions are expected from the proposed activity and there is sufficient separation from human receptors, the risk of noise impacting receptors has been determined to be low. Additional regulatory controls are not required to mitigate risk. The provisions of the *Environmental Protection (Noise) Regulations 1997* still apply.

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

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

4. Consultation

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

Table 5: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 14 April 2022.	Comments received via email on 14 April 2022 and 02 May 2022. Refer to Appendix 1 for summary of comments received.	Refer to Appendix 1 for the Departments response to comments received.
Application was referred to the Department of Mines, Industry Regulation and Safety (DMIRS) on 06 December 2021.	DMIRS provided comment on 17 December 2021 stating the following: 'The Department of Mines, Industry Regulation and Safety (DMIRS) does not have a direct interest or concern with the volume of waste being deposited within the landfill per year, unless the footprint of the landfill was to increase beyond current extents approved under the Mining Act. This does not appear to be the case based on the supporting information, which suggests that there is no clearing required. It is noted that the need to increase the approved annual capacity at the landfill is related to the Mt Keith Debottlenecking Project (MKDP), the Works Approval for which is under assessment by your Department. For your information, DMIRS has not yet received a Mining Proposal submission relating to the MKDP; however based on a meeting with BHP Nickel West in October 2021, the submission was expected in Q4 2021.'	Acknowledged.

5. Conclusion

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

5.1 Summary of amendments

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

Table 6: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	DWER file number reference corrected.
	Mining tenement M53/187 removed from the premises details legal description.
	Category 64 throughput capacity amended to increase throughput from 2,200 tonnes per year to 3,200 tonnes per year.
Licence history table	Licence history table updated to include this amendment.
Condition 1 Table 1: Infrastructure and equipment requirements	Table 1 updated to include throughputs for each prescribed premises category and associated site infrastructure requirements and locations. This strengthens the licences legal enforceability as these throughputs and operational requirements are now conditioned.
	TSF 2 reference amended for clarity (TSF 2 is also known as CDTSF)
	TSF 1 landfill area added to Table 1 along with the requirement for the landfill area to be located within TSF 1 cell 1 and the throughput limit of no more than 3200 tonnes of waste to be disposed of to either the TSF1 landfill area or the WRl landfill area. No putrescible waste is to be disposed of at the TSF 1 landfill area. Designated asbestos (Special Waste Type 1) disposal area located within TSF 1 landfill area.
	WRL landfill area added to Table 1 along with the requirement for the landfill area to be located within the southern portion of the Western Waste Rock Landform and the throughput limit of no more than 3200 tonnes of waste to be disposed of to either the TSF1 landfill area or the WRl landfill area. All putrescible waste is to be disposed at the WRL landfill area.
	Tyre disposal cell and the Eastern Waste Rock Landform added to Table 1 along with the requirement for used tyre storage to be limited to no more than 120 tyres at any one time. Tyres are to be temporarily stored at the maintenance and contractor workshop laydown area prior to being disposed to the tyre disposal cell located within the Eastern Waste Rock Landform.
	Throughput of no more than 13 500 000 tonnes per year for processing or beneficiation of metallic or non metallic ore added to Table 1 in relation to the Nickel concentrate blending and storage area.
	Table 1 amended to include a throughput limit of no more than 510m^3 per day for wastewater treatment ponds 1 and 2.
	Infrastructure location column amended to include Figures 1 and 2
Condition 7 Table 2: Management of Waste	Table updated to reflect increase in Category 64 throughput from 2,200 tonnes per year to 3,200 tonnes per year.
	Table updated for clarity to identify the two separate approved landfill areas on-site, being the WRL landfill area and the TSF 1 landfill area.
	Special Waste Type 1 and associated management requirements added to the table. Special Waste Type 1 only to be disposed of into a designated asbestos disposal area within TSF 1 landfill area and not to be deposited within 2 meters of the final tipping surface of the landfill. No works should be carried out on the landfill that could lead to the release of asbestos fibres.

	Administrative change for clarity to update the management strategy for sewage from physical biological and chemical to physical and biochemical treatment.
	Administrative change for clarity to add in the word biosolids instead of sewage sludge to better align the table with the definitions in the Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website).
	New note added to the table to clarify that types of waste in the table are defined as per the Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website).
Condition 8 Table 3: Cover Requirements	Special Waste Type 1 and cover requirements added to the table requiring a minimum of 300mm of inert waste type 1 or clean fill cover as soon as practicable after deposit and prior to compaction and by no later than the end of the working day.
	New note added to the table requiring asbestos waste to be disposed of as per the requirements of the Environmental Protection (Controlled Waste) regulations 2004.
Condition 23 Table 7: Annual Environmental Report	Table updated to include requirement for total throughput for category 64 to be reported in graph format separated into waste types (as defined in the Landfill Waste Classification and Waste Definitions 1996 - as amended from time to time and published on the department's website) disposed to both the WRL landfill area and the TSF 1 landfill area in tonnes per year.
Table 10: Definitions	Asbestos fibres definition added to the table to have the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009)
	Biosolids definition added to table as defined in the Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website) Definitions.
	Clean fill definition updated to have the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website) Definitions
	Inert Waste Type 1 definition updated to have the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website) Definitions.
	Inert Waste Type 2 definition updated to have the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the department's website) Definitions.
	Putrescible Waste definition updated to have the meaning defined in Landfill Waste Classification and Waste Definitions (as amended from time to time and published on the department's website) Definitions.
	Special Waste Type 1 added to the table as defined in the Landfill Waste Classification and Waste Definitions 1996 (as amended from time to time and published on the Department's website) Definitions.
Schedule 1: Maps	'Figure 1: Map of the boundary of the prescribed premises' updated to clearly display premises boundary, affected tenements and other bhp tenements. The three waste rock landforms also added to the map, being the Western Waste Rock Landform, the Eastern Waste Rock Landform and the Stage J Waste Rock Landform.
	'Figure 2: Map of ambient monitoring locations' updated to clearly display monitoring bore names and locations, BHP tenements and the prescribed premises boundary.

	‘Figure 3: Infrastructure and emissions locations’ map updated to include the boundary of TSF 1 landfill area and WRL landfill area, the Tyre disposal cell, the Northern and Southern drainage lines and the South Dam Storage Pond.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
5. Department of Water 2009. *Water Quality Protection Note 111 : Landfills for disposal of putrescible materials*, Perth, Western Australia.
6. DWER 2018. *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019*), Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Condition 7 Table 2: Management of Waste – Special waste type 2	Licence Holders requests that the department clarify what kinds of biomedical waste can be disposed of to TSF 1 landfill area which don't require incineration.	Schedule 1 of the *Environmental Protection (Controlled Waste) Regulations 2004* lists some kinds of clinical waste, such as waste from the production or preparation of pharmaceutical products and waste pharmaceuticals, drugs or medicines as controlled waste. Due to the high risk of these waste types, disposal must be via high temperature incineration at an authorised controlled waste facility legally able to accept the waste type. On 20 May 2022 the applicant informed the department via email that the only biomedical waste that they intend to dispose to on-site landfill is gloves, gowns, masks, bandages and plastic RAT covid wrapped cartridges. The department note that these types of waste do not classify as Special Waste Type 2 and instead may be disposed of as putrescible waste to the WRL Landfill area if encapsulated appropriately. The Licence Holder is to refer to the Departments regulatory position statements on DWER regulation during the COVID-19 pandemic for more information on encapsulation requirements: DWER_Regulation_during_the_COVID-19_pandemic_guidance_for_industry_and_community.pdf (www.wa.gov.au) DWER_Regulation_during_the_COVID-19_pandemic_supplementary_waste_information.pdf (www.wa.gov.au) Consequently the department has decided to remove the Special Waste Type 2 section from the licence as the waste type will not be generated at the premises and the category is therefore not required.
Condition 1 Table 1: infrastructure and equipment requirements – Western Rock Landform	The Licence Holder requests to amend the condition to have bunds constructed around the waste rocks dumps and the WRL landfill areas to contain all potentially contaminated surface water run-off. The Licence Holder requests that the condition be amended to only include	Suggestion accepted and licence updated.

Condition	Summary of Licence Holder's comment	Department's response
(WRL) landfill area	bunds around the WRL landfill area and not the waste rock dumps for the following reasons: • Run off from the waste dumps is typically very small owing to the blocky nature of stored material. Most rainfall that falls on waste dumps tends to infiltrate and be taken up the waste rock mass rather than running off. • The geochemical nature of the waste dumps is largely inert and the risk of any containment is extremely low. • There are no nearby environmental receptors that could be impacted by the waste dump.	

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Works approval	☐				
Licence	☐	Relevant works approval number:		None	☐
		Has the works approval been complied with?		Yes ☐ No ☐	
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes ☐ No ☐ N/A ☐	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes ☐ No ☐	
		Date Report received:			
Renewal	☐	Current licence number:			
Amendment to works approval	☐	Current works approval number:			
Amendment to licence	☒	Current licence number:	L6453/1990/12		
		Relevant works approval number:		N/A	☒
Registration	☐	Current works approval number:		None	☐
Date application received		24 September 2021			
Applicant and Premises details					
Applicant name/s (full legal name/s)		BHP Billiton Nickel West Pty Ltd (76 004 184 598)			
Premises name		Mt. Keith Operations			
Premises location		WILUNA WA 6646 Mining tenements M36/294, M36/467, M36/658, M36/677, M53/56, M53/57, M53/165, M53/166, M53/167, M53/187, M53/208, M53/215, M53/216, M53/217, M53/218, M53/327, M53/328 and M53/489 General purpose leases G53/11, G53/12, G53/13 and G53/14. Miscellaneous licence L36/206			
Local Government Authority		Application states Shire of Lenora as LGA but Geocortex shows the northern part of the Premises is within the Shire of Wiluna and the southern section is within the Shire of Lenora.			

Application documents	
HPCM file reference number:	DER2017/000557-1
Key application documents (additional to application form):	Relevant application form attachments appended to the application form.
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	L6453/1990/12 currently allows for the disposal of 2,200 tonnes of Class II putrescible waste per year to landfill. This licence amendment seeks to increase the Class II putrescible waste disposal to on-site landfill by 1,000 tonnes per annum (tpa) to 3,200 tpa. This proposed increase is required to meet current and future demand (projects and operations). At present, on-site landfill disposal is currently exceeding licence limits. The 2020 AER and AACR recorded a non-compliance in relation to exceeding throughput for category 64 by 58 tonnes. This proposed increase in landfill disposal will cover this exceedance as well as cover the increase in waste during the construction phase of the SAG mill (Mt Keith Debottlenecking project works approval which is currently being assessed by DWER). No change to existing Licence L6453/1990/12 prescribed premises is required for this proposed licence amendment. There is no additional equipment or infrastructure required for an increase in Class II Putrescible waste disposal to on-site landfill. No changes are required to the landfill locations or Class II putrescible landfill waste types currently approved under L6453/1990/12 or to increase the total on-site landfill capacity.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	**Proposed design capacity**	**Proposed changes to the design capacity (amendments only)**
Category 64: Class II putrescible landfill	3,200 tonnes per annum (tpa)	*Increase of 1,000 tpa (from 2,200 tpa)*

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐

Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☒ No ☐	Ministerial statement No: MS 1087 and 415 EPA Report No: 1625 and bulletin 812
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Certificate of title ☐ General lease ☐ Expiry: Mining lease / tenement ☒ Expiry: Multiple Mining Tenements make up the prescribed premises and range in their expiry dates from 09/06/2025 (M53/489) to 5/08/2041 (M36/467) (refer Attachment 1A – Proof of Occupier Status). Leases have all been checked and are active on MINEDEX. Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	Approval: Expiry date: If N/A explain why? There is an existing ministerial statement which supersedes local planning approvals.
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☒ No ☐	CPS No: 8871/1 (existing clearing permit)
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: Licence/permit No: GWL 69507 (Albion Downs Borefield)

Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☐ Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☒
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☒ No ☐	• Mining Act 1978 • Ministerial Statements 1087 and 415 • EP Act 1986 and associated regulations • Rights in Water and Irrigation Act 1914 • Aboriginal Heritage Act 1972.
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☒ No ☐	Classification: Multiple areas within the premises boundary are identified as 'possibly contaminated – investigation required'. Date of classification: Apr 11, 2011 (Trim ID 2011/1631) May 20, 2011 (Trim ID DEC5625) Nov 26, 2012 (Trim ID DEC5625)