Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: BHP Billiton Nickel West Pty Ltd

Licence: L4612/1989/11

Registered office: 125 St Georges Terrace
PERTH WA 6000

ACN: 004 184 598

Premises address: BHP Billiton Nickel West Leinster Nickel Operation
ML255SA, M36/230, L36/93, M36/4, and M36/389
Mine Access Rd
LEINSTER WA 6437.

Issue date: Thursday, 17 October 2013

Commencement date: Saturday, 19 October 2013

Expiry date: Thursday, 18 October 2018

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Louise Lavery
Licensing Officer

Decision Document authorised by: Tim Gentle
Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	5	3,600,000 tonnes per year
	6	2,000,000 tonnes per year
	57	500 tyres or less
	64	20 tonnes or more per year
	85	44m^3 per day
Application verified Application fee paid	Date: N/A Date:N/A	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome		

Is the proposal a Major Resource Project?	Yes☒ No☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☐	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

BHP Billiton Nickel West Leinster (NLN) currently processes nickel sulfide ore from the Cliffs Underground Nickel Mine to produce nickel concentrate at 3.6 million tonnes per annum (Mtpa) of ore to produce approximately 2.8 Mtpa of tailings. Tailings resulting from the nickel concentrator process are discharged (in slurry form) to an above-ground paddock style Tailings Storage Facility (TSF) compound, located approximately 2.5 km north of the Concentrator Plant. Tailings are deposited in thin layers to form a “beach” adjacent to the perimeter embankment, with liquor released from the settling tailings collected in a pool around a central decant tower.

May 2015 Amendment

NLN proposed to discharge water from the NLN TSF to the nearby (closed) Harmony Open Pit. Water would be collected from the TSF via the current decant system and discharged to the nearby pit for final storage and evaporation.

Water has been accumulating on the NLN TSF since the suspension of mining from the Perseverance Underground mine in 2013, when the reduction in onsite ore availability resulted in a transition towards campaign processing operations. The change to non-continuous processing has resulted in an overall reduction in the quantity of circuit water consumed in the NLN Concentrator Facility and subsequently reduced the amount of water reclaimed to the Concentrator from the TSF. NLN is licensed to discharge groundwater from the Rocky’s Reward open cut mining operation to the Harmony Open Pit, in accordance with L4612/1989/11. Approximately 12,000 kL of water from the TSF would be discharged over an in initial period of 1 month, followed by intermittent discharge throughout the year, as needed to maintain the Processing Facility water balance. Limiting the storage of excess water on the NLN TSF is necessary to maintain the operation of the TSF within design operating parameters.

The pipeline to discharge the TSF decant water to the Harmony Pit is largely already in place and hence no additional clearing is required. The May 2015 partial decision document related to the assessment of the discharge of TSF return water to Harmony Open Pit only and authorises the operation of a pipeline assessed through Works Approval W5817/2015/1. DER did not reassess the acceptability or impacts of other emissions and discharges from the Premises or re-visited any existing emission control levels. No changes to the conditions on the previous licence have been made with the exception of conditions as highlighted on the amended licence. New conditions W1(b), W23 and W24 were added to the Licence and W6(a) and W16(a) amended. The Licence was not converted to the new template format.

December 2015 Amendment

This partial decision document is for an amendment to authorise operation of a new dewatering bore (RRDB02; as shown on Attachment 8 of the Licence), pump at the Rockys Reward Open Pit, and a new pipeline from RRDB02 to Harmony Open Pit, in order to increase dewatering such that underground mining at Leinster 1A can commence.

The pipeline will be located in an existing bunded pipetrace to contain spills.

Additionally an increase to the category 6 dewatering capacity to 2,000,000 tonnes per year has been authorised consistent with the Premises' Licence to Take Water GWL66248(5) from the Department of Water.

A third amendment to the frequency and parameters for monitoring of water quality from the dewatering bore RRDB03 has been made for to account that the equipment to measure electrical conductivity profile is unable to be installed on the bore and hence electrical conductivity will be sampled as per the process in place for DoW reporting. The frequency has been altered from quarterly to annually consistent with DoW reporting. RRDB02 will also adopt the monitoring regime as for RRDB03. The Licensee should note that RRDB03 is sampled as a proxy for decant water quality being discharged to the Harmony Open Pit from the NLN TSF. Conditions W6(a) and Attachment 8 have been amended on the Licence as a result.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Premises operation	Category 6	The capacity under category 6 has been doubled to 2,000,000 tpa. This is consistent with the Licensee's Licence to Take Water GWL 66248(5) issued under section 5C of the *Rights in Water and Irrigation Act 1914* by the Department of Water. Total estimated dewatering using both RRDB03 and RRDB02 is estimated to increase to 1,692,000 kL, above the previous threshold of 1,000,000 tpa.	Applicant supporting documentation General provisions of the *Environmental Protection Act 1986*. *Rights in Water and Irrigation Act 1914*
	Condition W13 Condition W16(a) Condition W16(b) Condition W17(a) Condition W17(b)	**Abnormal Operation** <u>Emission Description</u> *Emission:* Saline water with dissolved metals (mine dewater from Rockys Reward abstracted by RRDB02 and RRDB03 is transported in an above ground HDPE pipeline through a disturbed area to be discharged in the Harmony Open Pit (refer Figure 1). A pipeline rupture or leak may result in a discharge of mine dewater to land. *Impact:* The decant pipeline traverses through a disturbed area with no native vegetation. *Controls:* The decant pipeline is located within an earthen bund, however the capacity	

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		of the bund is not specified. The pipeline will be inspected 6 hourly when in operation. NLN has an existing spill reporting procedure in place such that personnel are instructed to report leaks and or damage to the pipeline. Any pipe failure or rupture will be detected through the 12 hourly inspections and the manual valves activated to shut off flow. Risk Assessment *Consequence:* Insignificant *Likelihood*: Possible *Risk Rating:* Low Regulatory Controls As the existing risk is low no regulatory controls are necessary, however existing conditions in relation to pipelines carrying saline water on the Licence will ensure a level of control. Condition W16(a) on the existing Licence L4612/1989/11 requires return water lines to be inspected every 12 hours.. Condition W17(a) requires all pipelines containing saline or alkaline constituents to either be buried or sited within appropriately bunded facilities. Condition W17(b) further states that above ground pipelines with saline or alkaline constituents should also have catch pits located at appropriate low points along the pipeline route to enable containment of spills. Condition W13 states that dewater from Rocky's Reward Open Pit is only to be discharged to Harmony Open Pit via the Harmony Open Pit discharge point or to the Turkey's Nest depicted in Attachment 8. Residual Risk *Consequence:* Insignificant *Likelihood*: Possible *Risk Rating:* Low	

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Point source emissions to groundwater including monitoring	Condition W6(a)	Table 4 has been amended to reduce the frequency of water quality monitoring for RRDB03 from quarterly to annually, consistent with the terms of the Licence's monitoring required by their Licence to Take Water. RRDB02 has also been added to the list of parameters to be sampled. The requirement for monitoring electrical conductivity has also been modified, consistent with the Licensee's application that states the that equipment to monitor an electrical conductivity profile on the recovery bores is unable to be installed.	Applicant supporting documentation General provisions of the *Environmental Protection Act 1986*.
Licence Duration	N/A	No changes to Licence duration are proposed as a result of the Amendment.	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
04/12/15	Proponent sent a copy of draft instrument	No comments made.	N/A
15/12/15	DER review of final instrument	Administrative error identified by DER in relation to the CEO's contact details	Edit made to CEO's contact details.

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High