



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Poseidon Nickel Limited

Works Approval: W5180/2012/1

Registered office: 8 Churchill Court
331-335 Hay St
SUBIACO WA 6008

ACN: 060 525 206

Premises address: Windarra Nickel Project
ML261SA, M38/1244 and M38/1245
LAVERTON WA 6440
as depicted in Schedule 1.

Issue date: Friday, 29 June 2012

Commencement date: Monday, 2 July 2012

Expiry date: Wednesday, 1 July 2020

Decision

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

Decision Document prepared by:

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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.

Works approval and licence conditions

DER has three types of conditions that may be imposed on works approvals and licences. They are as follows;

Standard conditions (SC)

DER has standard conditions that are imposed on all works approvals and licences regardless of the activities undertaken on the Premises and the information provided in the application. These are included as the following conditions on works approvals and licences:

Works approval conditions: 1.1.1-1.1.4, 1.2.1, 1.2.2, 5.1.1 and 5.1.2.

Licence conditions: 1.1.1-1.1.4, 1.2.1-1.2.4, 5.1.1-5.1.4 and 5.2.1.

For such conditions, justification within the Decision Document is not provided.

Optional standard conditions (OSC)

In the interests of regulatory consistency DER has a set of optional standard conditions that can be imposed on works approvals and licences. DER will include optional standard conditions as necessary, and are likely to constitute the majority of conditions in any licence. The inclusion of any optional standard conditions is justified in Section 4 of this document.

Non standard conditions (NSC)

Where the proposed activities require conditions outside the standard conditions suite DER will impose one or more non-standard conditions. These include both premises and sector specific conditions, and are likely to occur within few licences. Where used, justification for the application of these conditions will be included in Section 4.



2 Administrative summary

Administrative details									
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input checked="" type="checkbox"/>								
Activities that cause the premises to become prescribed premises	<table border="1"> <thead> <tr> <th>Category number(s)</th> <th>Assessed design capacity</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>1 500 000 tonnes per year</td> </tr> <tr> <td>6</td> <td>400 000 tonnes per year</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Category number(s)	Assessed design capacity	5	1 500 000 tonnes per year	6	400 000 tonnes per year		
	Category number(s)	Assessed design capacity							
	5	1 500 000 tonnes per year							
	6	400 000 tonnes per year							
Application verified	Date: N/A								
Application fee paid	Date: N/A								
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>								
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>								
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>								
Commercial-in-confidence claim outcome									
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Referral decision No: Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input type="checkbox"/>								
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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 <i>Environmental Protection Act 1986</i>)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								
Is the Premises within an Environmental Protection Policy (EPP) Area	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.								
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.								



3 Executive summary of proposal and assessment

Historically, WMC Resources Limited (WMC) conducted mining operations at Mount Windarra (known as the Windarra Nickel Project) from 1972 up until 1993. Between 1994 and 2003, rehabilitation works were conducted at the site. Poseidon intends to recommence mining and processing operations at Mount Windarra mine on the site of the old WMC operations.

Poseidon is a mineral exploration company listed on the Australian Stock Exchange holding exploration interest in gold and nickel. Poseidon's head office is in Perth Western Australia.

Poseidon plan to build a Carbon in Leach (CIL) gold processing plant to retreat tailings from the historic Northern Gold and Southern Gold TSF's. Tailings will be hydraulically mined using high pressure monitors, and resultant slurry pumped approximately 1km to the CIL plant. The new CIL plant will be built adjacent to the nickel processing facility.

The solids content of the reclaimed tails will be increased to 45% by a feed thickener prior to the addition of lime (pH modifier), and sodium cyanide (leachant) in the CIL tanks. The extracted water from the thickener will return to the hydraulic mining operation for reuse, with supplementary feed from the process water pond.

Activated carbon in the CIL tanks will adsorb the gold in solution, and once removed from the process, the carbon will be transported off site in 500kg Bulka bags to be stripped.

The waste slurry from the CIL process will be combined with tails from the nickel processing plant and piped 14km south to the SWP in-pit TSF.

A new underground nickel deposit will be exploited at the Cerberus mine site. Coarse ore (<600mm) will be stockpiled on a ROM pad adjacent to the Cerberus mine boxcut prior to road transport to the Mount Windarra mine ROM pad 14km north of Cerberus. Ore from Cerberus will be processed together with ore from the Mount Windarra deposit to an 8-12% concentrate for export. The plant will process a combined nickel ore volume of 700 000 tonnes per annum from the two sites. The nickel processing plant was assessed in March 2012 (W5118/2012/1).

Poseidon has calculated a dewatering figure of 400 000 kL from Cerberus in the first year of operation, with models showing a gradual decrease in ground water inflow to 30% of initial volumes by year 11 of operation. A dewatering settlement pond is to be constructed at the Cerberus site to precipitate suspended material prior to pumping to the process water pond at the Mount Windarra process site. The Cerberus settling pond will have a geomembrane liner and emergency spillway to an additional water management pond. Poseidon have acknowledged that volumes of mine dewater in excess of operational requirements will be discharged into the Lake Irwin salina via an existing discharge point.

Currently, Poseidon's *Environmental Protection Act 1986* operating licence (L8173/2007/1) allows for an annual dewatering discharge volume of 1.3GL from the Mount Windarra mine into the Lake Irwin salina. This licence will be amended to include dewatering volumes from Cerberus.

The historic SWP has been nominated as the new TSF to accept nickel and gold process tails from the Mount Windarra processing site.

Mining ceased at SWP in 1994, with the pit cut 120 m deep and having a surface area at the pit rim of 27 hectares (ha). Since the cessation of mining, ground water inflows have flooded SWP, with the current water surface between 12 – 15 m below the pit rim.



Poseidon plan to sub-aerially deposit the combined gold/nickel slurry into the flooded SWP, where it will settle beneath approximately 100m of water cover, minimising oxidisation potential. Given the existing water content of the pit, a 100% water recovery target is achievable and necessary to minimise surface water rise.

An existing network of eight monitoring bores surrounding the SWP in-pit TSF will measure ground water parameters

Poseidon will install the following ancillary infrastructure at SWP in-pit TSF:

- A new 400mm HDPE tailings delivery pipeline that will lay adjacent to the return waterline in the Mount Windarra to South Windarra pipeline corridor;
- Both pipes will lay within a V-drain, complemented by sumps, isolation valves, flow sensors, and be double skinned at drainage crossings;
- A tails distribution pipeline around the pit rim. Plans are to operate only one discharge point (dropper) at any time, however the system will be designed to allow for the discharge point to be moved as required; and,

Installation of a power reticulation system (Genset) and associated recovery pump.

This Works Approval was issued in July 2012 for a duration of three years, hence was due to expire in July 2015. An amendment has been granted to extend the expiry date for a total of five years from 1 July 2015 to 1 July 2020.

DER has not re-assessed the acceptability or impacts of emissions and discharges from the Premises or re-visited any existing emission control levels. No changes to the conditions of the Works Approval have been made other than ensuring the most up-to-date template has been used.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, DEC's Policy Statement - Limits and targets for prescribed premises (2006), 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	OSC or NSC	Justification (including risk description & decision methodology where relevant)	Reference documents
Licence Duration	N/A	N/A	The duration of the Works Approval has been extended for an additional five years. The expiry date is now 1 July 2020.	Applicant supporting document and p4 application.



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
22/06/2015	Proponent sent a copy of draft instrument	No comments received	N/A



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