



Licence

Environmental Protection Act 1986, Part V

Licensee: **Polaris Metals Pty Ltd**

Licence: **L8837/2014/1**

Registered office: 1 Sleaf Road
APPLECROSS WA 6153

ACN: 085 223 570

Premises address: Carina Iron Ore Project – Northern Operations
KOOLYANOBING
Shire of Yilgarn
On Mining Lease M77/1244 as depicted in Schedule 1.

Issue date: Thursday, 23 October 2014

Commencement date: Friday, 24 October 2014

Expiry date: Wednesday, 23 October 2019

Prescribed premises category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
06	Mine dewatering	50 000 tonnes or more per year	450 000 tonnes per annual period
89	Putrescible landfill site	More than 20 but less than 5 000 tonnes per year	518 tonnes per annual period

Conditions

This Licence is subject to the conditions set out in the attached pages.

Date signed: 10 March 2016

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Danielle Eyre
Senior Manager – Industry Regulation (Resource Industries)
Officer delegated under section 20
of the *Environmental Protection Act 1986*



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Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.



Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

Polaris Metals Pty Ltd (Polaris), previously an ASX listed iron ore explorer, was acquired by Mineral Resources Limited (MRL) in January 2010. It is now a wholly owned subsidiary of MRL.

The Carina Iron Ore Project (Carina) is located approximately 60 kilometres (km) northeast of Koolyanobbing and 100 km northeast of Southern Cross. The mine, waste rock landform (Northern Operations) and northern half of the haul road are located in the Shire of Yilgarn. The southern half of the haul road, accommodation village and ore processing and rail area (Southern Operations) is in the Shire of Coolgardie. The project also lies partially within the former Jaurdi pastoral station, now managed by the Department of Parks and Wildlife (DPaW).

The mine produces approximately 5 million tonnes per annum (mtpa) of iron ore, which is trucked 50 km from the mine at the Northern Operations to Polaris' processing plant at the Southern Operations which operates under licence L8596/2012/1. The ore is then railed to the Port of Kwinana and exported.

The main mining operations to date have included drilling, blasting and excavation of ore from a single open pit in the Northern Operations along with development of a waste rock landform approximately 200 metres (m) to the west of the pit. Since the commencement of mining, groundwater has been extracted from two alternating bores within the pit at an average of approximately 2,254 kilolitres per day (kL/day) in the 2015 reporting period. Of this volume only 195,962 kL was discharged to the evaporation dams (approximately 537 kL/day). Polaris has constructed four evaporation basins under W4962/2011/1 to receive this water. However, following the completion of mining at Carina Pit expected to be complete in late March 2016, there are no future groundwater discharges to evaporation cells anticipated.

This licence amendment is to authorise the discharge of dewater from J4 Iron Ore Project (J4 Project), licenced under L8945/2016/1 and located approximately 40 km north west on Mining Lease M77/1270-I, to the Carina Pit. For the purposes of this Licence, the end point of the dewatering pipeline located within the L8945/2016/1 premises will be at the boundary of this Licence L8837/2014/1. Dewatering infrastructure has been constructed without a works approval as it was originally only intended for abstracted water to be used for operational requirements such as dust suppression and to supply potable water to the mine. Dewatering of the J4 Pit (L8945/2016/1) to the Carina Pit may occur in exceptional circumstances where surplus water can't be used for operational purposes such as during the wetter winter months.

Polaris has constructed a Category 89 landfill on the Waste Rock Dump (WRD) for the disposal of general domestic and putrescible waste, office waste including cardboard and shredded paper, inert building material, clean fill, glass, aluminium, plastic and timber. Polaris estimates that the maximum design capacity of the landfill is 518 tonnes per year, which also includes the disposal of tyres. Polaris estimates that it disposes of 1,000 road train tyres per year (27" rim diameter) and 100 4WD tyres per year (15-17" rim diameter). Mine equipment tyres are also used on site for delineation of site roads, removed from site by the tyre changing contractor or disposed to the landfill when required.



The preparation of blast stemming material (extracted from the Carina pit) no longer occurs at the premises with the crushing plant being relocated to J4 Mine. The licences, works approvals and registrations issued for the Premises since 25/08/2011 are:

Instrument log		
Instrument	Issued	Description
W4962/2011/1	25/08/2011	Works Approval: Category 6 – Mine dewatering and Category 89 – Putrescible landfill site.
R2307/2012/1	16/02/2012	Registration for Category 89 – Putrescible landfill site.
L8837/2014/1	23/10/2012	New Licence: Category 6 – Mine dewatering and Category 89 – Putrescible landfill site.
L8837/2014/1	19/03/2015	Amended Licence to include Category 12 for the crushing and screening of waste rock material.
L8837/2014/1	10/03/2016	Amended Licence to authorise the discharge of dewater from J4 Mine to Carina Pit.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Acceptance Criteria' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the CEO and as amended from time to time;

'Act' means the *Environmental Protection Act 1986*;

'AHD' means the Australian height datum;

'annual period' means the inclusive period from 1 January until 31 December in the same year;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;



'**CEO**' means Chief Executive Officer of the Department of Environment Regulation;

'**CEO**' for the purpose of correspondence means:

Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: info@der.wa.gov.au

'**Clean Fill**' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the CEO and as amended from time to time;

'**freeboard**' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'**Green Waste**' means waste that originates from flora;

'**hardstanding**' means a surface with a permeability of 10^{-9} metres/second or less;

'**Inert Waste Type 1**' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the CEO and as amended from time to time;

'**Inert Waste Type 2**' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the CEO and as amended from time to time;

'**Licence**' means this Licence numbered L8837/2014/1 and issued under the Act;

'**Licensee**' means the person or organisation named as Licensee on page 1 of the Licence;

'**Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009)**' means the document entitled "Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the Chief Executive Officer and as amended from time to time;

'**NATA**' means the National Association of Testing Authorities, Australia;

'**NATA accredited**' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'**Premises**' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'**Putrescible**' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009), published by the CEO and as amended from time to time;

'**quarantined storage area or container**' means a hardstand storage area or sealed-bottom container that is separate and isolated from authorised waste disposal areas and is capable of containing all non-conforming waste and its constituents, these areas must be clearly marked and their access restricted to authorised personnel;

'**quarterly**' means the four inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December;

'**Schedule 1**' means Schedule 1 of this Licence unless otherwise stated;



'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'six monthly' means the two inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'tipping area' means the area of the landfill in which waste other than cover material is being deposited;

'µS/cm' means microsiemens per centimetre.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 Premises operation

1.2.1 The Licensee shall ensure that all pipelines containing saline water are either:
 (a) equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;
 (b) equipped with automatic cut-outs in the event of a pipe failure; or
 (c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

1.2.2 The Licensee shall ensure that any saline dewatering effluent shall only be managed in the following manner:
 (a) used for dust suppression in a manner that minimises damage to surrounding vegetation;
 (b) discharged to containment infrastructure detailed in Table 1.2.1 and identified in Schedule 1; or
 (c) discharged in accordance with Condition 2.2.1.

Table 1.2.1: Containment infrastructure			
Containment point reference	Containment cell or dam number(s)	Material	Infrastructure requirements
Cell 1	Evaporation basin 1	Dewatering effluent	Built to achieve a permeability of at least 10^{-8} m/s or equivalent. Discharge point equipped with energy dissipation device to minimise scouring.
Cell 2	Evaporation basin 2		
Cell 3	Evaporation basin 3		
Cell 4	Evaporation basin 4		

1.2.3 The Licensee shall manage the evaporation basins in Table 1.2.1 such that:
 (a) a minimum top of embankment freeboard of 500mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained; and,
 (b) methods of operation minimise the likelihood of erosion of the embankments by wave action.

1.2.4 The Licensee shall:
 (a) undertake inspections as detailed in Table 1.2.2;
 (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
 (c) maintain a record of all inspections undertaken.



Table 1.2.2: Inspection of infrastructure		
Scope of inspection	Type of inspection	Frequency of inspection
Dewatering effluent pipelines	Visual integrity	Daily
Evaporation basin embankment freeboard	Visual inspection to confirm required freeboard capacity is available	Daily
Evaporation basin sedimentation levels	Monitoring of sedimentation levels in evaporation basins	Six-monthly

- 1.2.5 The Licensee shall only accept waste on to the landfill if:
- it is of a type listed in Table 1.2.3;
 - the quantity accepted is below any quantity limit listed in Table 1.2.3; and
 - it meets any specification listed in Table 1.2.3.

Table 1.2.3: Waste acceptance		
Waste	Quantity Limit	Specification ¹
Clean fill	518 tonnes per annual period	None specified
Inert Waste Type 1		
Putrescible waste		
Inert Waste Type 2		Tyres and plastic only

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

- 1.2.6 The Licensee shall ensure that where waste does not meet the waste acceptance criteria set out in condition 1.2.6 it is stored in a quarantined storage area or container and removed from the Premises to an appropriately authorised facility as soon as practicable.

- 1.2.7 The Licensee shall ensure that wastes accepted onto the landfill are only subjected to the process(es) set out in Table 1.2.4 and in accordance with any process limits described in that table.

Table 1.2.4: Waste processing		
Waste type(s)	Process	Process limits ^{1,2}
All	Disposal of waste by landfilling	Shall only take place within the landfill area shown on the Map in Schedule 1. No waste shall be temporarily stored or landfilled within 35 metres from the boundary of the Premises. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2m.
Inert Waste Type 2 - Tyres	Receipt, handling, storage prior to re-use or disposal by landfilling	To be stored in piles of up to 100 units with a 6m separation distance between piles. Tyres shall only be landfilled: (a) in batches separated from each other by at least 100mm of soil and each consisting of not more than 40 cubic metres of tyres reduced to pieces; or (b) in batches separated from each other by at least 100mm of soil and each consisting of not more than 1,000 whole tyres.
Putrescible Waste	Receipt, handling and disposal by landfilling	None specified
Clean Fill		
Inert Waste Type 1		

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

Note 2: 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*.



- 1.2.8 The Licensee shall manage the landfilling activities to ensure:
- (a) the size of the tipping face is kept to a minimum and not larger than 30 m in length and 2 m above ground level in height;
 - (b) waste is placed and compacted to ensure all faces are stable and capable of retaining cover material.
- 1.2.9 The Licensee shall ensure that cover is applied to waste in accordance with Table 1.2.5 and that sufficient stockpiles of cover are maintained on site at all times.

Waste Type	Material	Depth	Timescales
Putrescible Wastes	Inert and incombustible material	Sufficient to ensure the waste is completely covered and that no waste is exposed	Weekly or as soon as practicable after deposit and prior to compaction
Inert Waste Type 1			
Inert Waste Type 2	Inert waste type 1 or soil	500 mm	As soon as practicable after deposit

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

- 1.2.10 The Licensee shall ensure that no waste is burnt on the premises.
- 1.2.11 The Licensee shall 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.
- 1.2.12 The Licensee shall complete construction of the crushing and screening plant in accordance with the documentation listed in Table 1.2.6 and in the layout as depicted in Schedule 1:

Document	Parts	Date of Document
Carina Iron Ore Project – Licence Amendment Supporting Documentation, Polaris Metals Pty Ltd.	All	1 November 2014

Note 1: Where the details and commitments of the documents listed in condition 1.3.12 are inconsistent with any other condition of this licence, the conditions of this licence shall prevail.

2 Emissions

2.1 General

- 2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to groundwater

- 2.2.1 The Licensee is permitted, subject to conditions in the Licence, to emit waste to groundwater through the emissions points listed in Table 2.2.1 identified in the Premises Map in Schedule 1.

Emission point reference and location on Premises Map	Description	Limit	Source including abatement
Carina Pit	Saline dewater	450 000 tonnes per annual period	J4 Mine located on mining tenement M77/1270-I and licensed for dewatering under DER Licence L8945/2016/1



3 Monitoring

3.1 General monitoring

- 3.1.1 The licensee shall ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
 - (c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

- 3.1.2 The Licensee shall ensure that :
- (a) monthly monitoring is undertaken at least 15 days apart;
 - (b) quarterly monitoring is undertaken at least 45 days apart;

3.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

3.2 Monitoring of inputs and outputs

3.2.1 The Licensee shall undertake the monitoring in Table 3.6.1 according to the specifications in that table.

Table 3.6.1: Monitoring of inputs and outputs				
Input/Output	Parameter	Units	Averaging period	Frequency
Dewatering effluent	Volumetric flow rate (abstraction from mine pit)	m ³ /s	N/A	Monthly
	Cumulative volume of water dewatered from pit	kL	Month	Monthly
	Cumulative volume of water discharged to evaporation basins	kL	Month	Monthly
Waste Inputs	Inert Waste Type 1, Inert Waste Type 2, Putrescible Waste and Clean Fill	Tonnes or (where no weighbridge is present) m ³	N/A	Each load arriving at the landfill

3.3 Ambient environmental quality monitoring

3.3.1 The Licensee shall undertake the monitoring in Table 3.8.1 according to the specifications in that table.

Table 3.8.1: Monitoring of ambient groundwater quality				
Monitoring point reference (location shown Schedule 1)	Parameter	Units	Averaging period	Frequency
WRD1	Standing water level	m(AHD)	Spot sample	Monthly
WRD2 WRD3	Aluminium (Al), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), zinc (Zn), sodium (Na), potassium (K), chloride (Cl), carbonate (CO ₃), bicarbonate (HCO ₃), nitrate (NO ₃), sulphate (SO ₃).	mg/L	Spot sample	Quarterly
	pH	-		
	Electrical conductivity	µS/cm		



4 Information

4.1 Records

- 4.1.1 All information and records required by the Licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters.
- 4.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
 - (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.
- 4.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 4.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting

- 4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 28 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: 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 2.2.1	Dewatering throughputs	None specified
Table 3.6.1	Monitoring of volumetric flow rate (abstraction from mine pit), cumulative volume of water dewatered from pit, cumulative volume of water discharged to evaporation basins Waste inputs to landfill: Inert Waste Type 1, Inert Waste Type 2, Putrescible Waste and Clean Fill	None specified
Table 3.8.1	Standing water level, pH, electrical conductivity Aluminium (Al), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), zinc (Zn), sodium (Na), potassium (K), chloride (Cl), carbonate (CO ₃), bicarbonate (HCO ₃), nitrate (NO ₃), sulphate (SO ₃)	None specified



5.1.3	Compliance	Annual Audit Compliance Report (AACR)
5.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

- 4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results, Licence limits or other appropriate measures (e.g. standards or guidelines).
- 4.2.3 The Licensee shall submit a compliance document to the CEO, following the completion of the works under condition 1.3.13 and prior to commissioning of the same.
- 4.2.4 The compliance document shall:
- (a) certify that the works were constructed in accordance with the conditions of the Licence;
 - (b) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

4.3 Notification

- 4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
2.1.1	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
-	Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution		
-	Production ceasing for an unspecified period of time	As soon as practicable after the decision has been made	None Specified
-	Production recommencing	At least 28 days prior to production recommencing	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2



Schedule 1: Maps

Premises map

The Premises is shown in the map below. The pink line depicts the Premises boundary. The evaporation basins are depicted in blue. The landfill area is outlined in red. The Potentially Acid Forming (PAF) material encapsulation cell is outlined in green.





Map of storage and monitoring locations

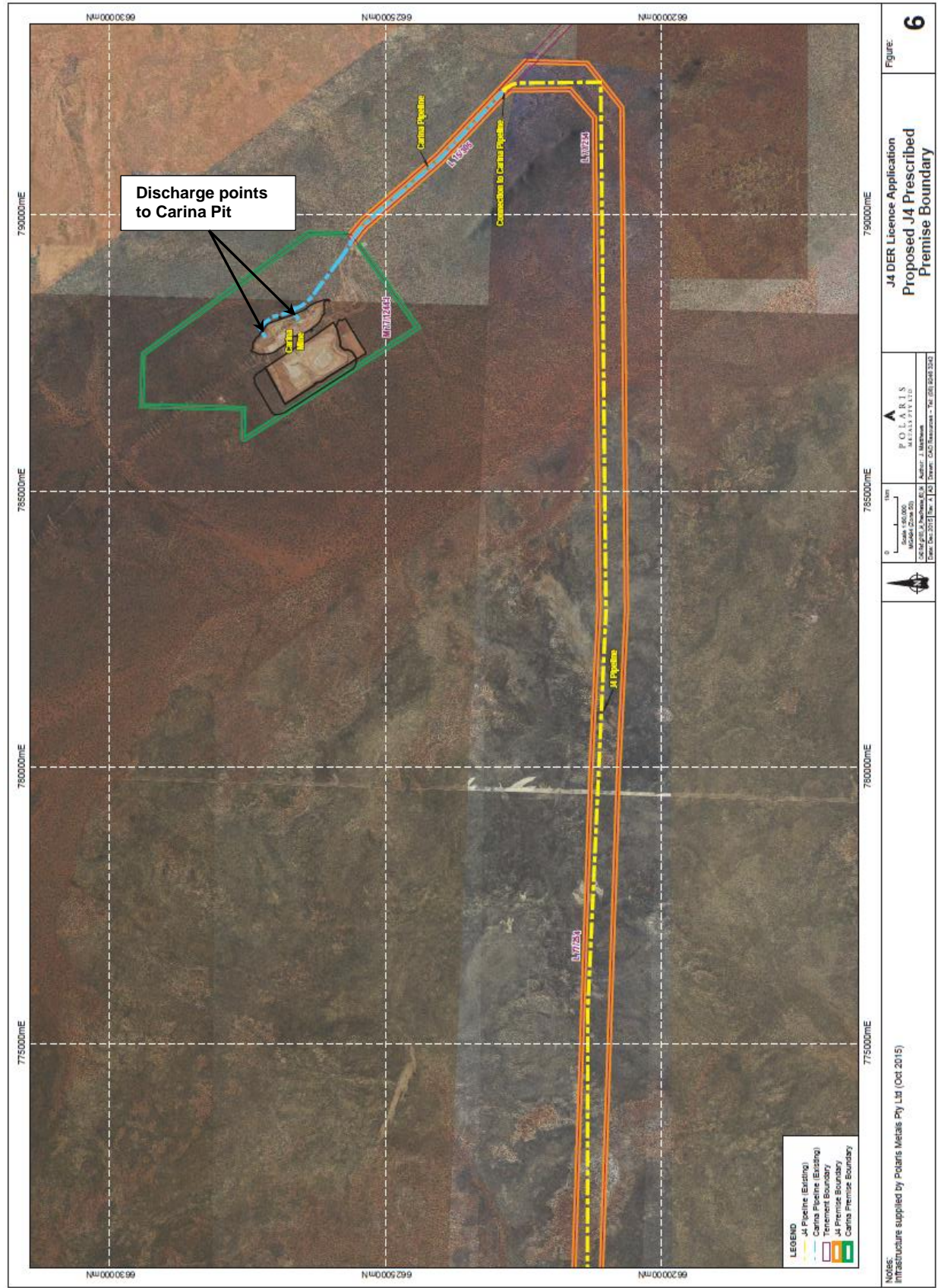
The location of the storage areas defined in Table 1.3.1 are shown below. The locations of the monitoring points defined in Table 3.8.1 are shown below.





Map of point source emissions to groundwater

The locations of dewatering discharge defined in Table 2.2.1 are shown below.





Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name:	ABN:
Trading as:	
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes Please proceed to Section C

No Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:



SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
<input type="checkbox"/> Yes	<input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____
<input type="checkbox"/> No	
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

SIGNATURE: _____

NAME:
(printed) _____

NAME:
(printed) _____

POSITION: _____

POSITION: _____

DATE: ____/____/____

DATE: ____/____/____

SEAL (if signing under seal)



Licence: L8837/2014/1
Form: N1

Licensee: Polaris Metals Pty Ltd
Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	L8837/2014/1
Name of operator	Polaris Metals Pty Ltd
Location of Premises	Carina Iron Ore Project
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Polaris Metals Pty Ltd	
Date	



Decision Document

Environmental Protection Act 1986, Part V

Proponent: **Polaris Metals Pty Ltd**

Licence: **L8837/2014/1**

Registered office: 1 Sleat Road
APPLECROSS WA 6153

ACN: 085 223 570

Premises address: Carina Iron Ore Project – Northern Operations
KOOLYANOBING
Shire of Yilgarn
On Mining Lease M77/1244-I as depicted in Schedule 1.

Issue date: Thursday, 23 October 2014

Commencement date: Friday, 24 October 2014

Expiry date: Wednesday, 23 October 2019

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a 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: **Clarrie Green**
Licensing Officer

Decision Document authorised by: **Danielle Eyre**
Senior Manager – Industry Regulation



Contents

1	Purpose of this document	2
2	Administrative summary	2
3	Executive summary of proposal and assessment	3
4	Decision table	4
5	Advertisement and consultation table	7
6	Risk Assessment	8

1 Purpose of this document

This decision document explains how DER has assessed and determined the application for a works approval or licence, 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 <input type="checkbox"/>	
	New Licence <input type="checkbox"/>	
	Licence amendment <input checked="" type="checkbox"/>	
	Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	6	450,000 tonnes per annual period
	89	518 tonnes per annual period
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	N/A	
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"/>
Is the proposal subject to Ministerial Conditions?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Does the proposal involve a discharge of waste	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>



into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Department of Water consulted Yes <input type="checkbox"/> No <input checked="" 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

The Carina Iron Ore Project (Carina) is located approximately 60 kilometres (km) northeast of Koolyanobbing and 100 km northeast of Southern Cross. The mine and northern half of the haul road are located in the Shire of Yilgarn. The southern half of the haul road, accommodation village and ore processing and rail area is in the Shire of Coolgardie. The project also lies partially within the former Jaurdi pastoral station, now managed by the Department of Parks and Wildlife (DPaW).

This licence amendment is to authorise the discharge of dewater from J4 Iron Ore Project (J4 Project), licenced under L8945/2016/1 and located approximately 40 km north west on Mining Lease M77/1270-I, to the Carina Pit. For the purposes of this Licence, the end point of the dewatering pipeline located within the L8945/2016/1 premises will be at the boundary of this Licence L8837/2014/1. Dewatering infrastructure has been constructed without a works approval as it was originally only intended for abstracted water to be used for operational requirements such as dust suppression and to supply potable water to the mine. Dewatering of the J4 Pit (L8945/2016/1) to the Carina Pit may occur in exceptional circumstances where surplus water can't be used for operational purposes such as during the wetter winter months.

The preparation of blast stemming material (extracted from the Carina pit) no longer occurs at the premises with the crushing plant being relocated to J4 Mine. DER has considered whether the risk profile of emissions and discharges from the premises has significantly changed since the previous licence was granted. No significant changes have occurred and therefore DER has not amended conditions relating to emissions and discharges



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 L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Prescribed categories	N/A	<p>Category 12: Screening etc. of material The preparation of stemming material (extracted from the Carina pit) no longer occurs at the premises with the crushing plant being relocated to J4 Mine. Therefore category 12 has been removed from the Licence.</p> <p>Category 6: Mine dewatering Approximately 2,254 kilolitres per day (kL/day) was dewatered from the Carina Pit to the four evaporation ponds in the 2015 reporting period. Of this volume only 195,962 kL was discharged to the evaporation dams (approximately 537 kL/day). Mining at Carina Pit is expected to cease around late March 2016 at which point dewatering to the evaporation ponds will cease. However, dewatering discharges to Carina Pit may occur in the event that all abstracted water from J4 Mine cannot be used for dust suppression. At a maximum this volume will not exceed 450,000 kL per annual period and therefore nominated dewatering throughputs on this Licence have been reduced.</p>	<i>Environmental Protection Regulations 1987</i>
General conditions	N/A	<p>Former conditions L1.2.1 – 1.2.5 have been removed from the Licence as they are neither clear nor enforceable. The potential discharge of hazardous materials, unreasonable emissions and discharge of waste from this operation would be captured by the <i>Environmental Protection Act 1986</i> and associated Regulations and is not required to be included in this licence.</p> <p>Stormwater management <u>Emission Description</u> <i>Emission:</i> Stormwater contaminated with hydrocarbons from workshops, refuelling bays and storage areas; and waste, nutrients and heavy metals from landfilling operations.</p>	<p>Application supporting documentation</p> <p><i>Environmental Protection (Unauthorised Discharges Regulations), 2004.</i></p> <p>General Provisions of the <i>Environmental Protection Act 1986</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>Impact:</i> Potential contamination of surrounding soils and damage to vegetation.</p> <p><i>Controls:</i> The natural topography indicates the dominant flow directions are away from the waste landform with a limited contributing area of flow onto the site coming from the area of the south-eastern side of the Carina Pit located directly upslope of the waste landform.</p> <p>The main areas of hydrocarbon storage are within the flood bund constructed around the mine workshops and fuel storage. No discharge of materials (including stormwater) occurs from the area contained within the flood bund. Hydrocarbons are stored on self bunded containers at strategic locations on the tenement to avoid unintended discharges to the environment. These bunds are utilised to hold 110% of the capacity of the stored hydrocarbons and are inspected regularly to ensure bunds are kept below minimum freeboard requirements.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Rare <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> Management measures implemented by Polaris adequately reduce the risk of contaminated stormwater entering the environment to low. Therefore no replacement condition to the former L1.2.5 is required.</p>	
Premises operation	L1.2.1	The phrase 'environmentally hazardous materials' within condition L1.2.1 was more accurately defined as saline water, referring to the transport of dewatering effluent.	<i>Environmental Protection (Unauthorised Discharges Regulations), 2004.</i>
Point source emissions to groundwater including monitoring	L2.2.1	DER's assessment and decision making is provided in Appendix A.	Application supporting documentation General Provisions of the <i>Environmental Protection Act 1986</i>



DECISION TABLE			
Works Approval / Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Fugitive emissions	N/A	<p>Normal operation</p> <p><u>Emission Description</u> <i>Emission:</i> Dust emissions may be generated at the Premises from materials handling, movement of vehicles and open areas. <i>Impact:</i> Dust emissions can be harmful to human health and can smother vegetation. <i>Controls:</i> The proponent undertakes dust suppression using water carts in all areas of potential dust emissions and as a result, has very little dust on site. Mining activities that are likely to be the most significant dust source at the premises are expected to cease in late March 2016. In addition, screening equipment used for stemming processing has been relocated to the J4 Mine.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Rare <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u> Generic dust conditions L2.6.1 and 2.6.2 have been removed from the licence as they are no longer considered enforceable. There is also a lowered risk of dust emissions and therefore these conditions have not been replaced.</p>	
Improvements	N/A	Improvement condition IR1 has been removed from the Licence as Polaris no longer requires Carina Pit to be dewatered. Evaporation cells constructed in response to water disposal issues at the site have adequately managed surplus water. Carina Pit will now receive dewatering effluent from J4 Mine.	Application supporting documentation
Information	L4.2.1	Volumes of dewatering discharges to Carina Pit will need to be provided as part of annual reporting. In addition, reporting requirements that duplicate Office of Environmental Protection Authority requirements under Ministerial Statement 852 have been removed.	N/A
Licence Duration	N/A	The licence expiry has not been amended as part of this amendment.	N/A



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
03/03/2016	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



Appendix A

Groundwater mounding

Emission Description

Emission: Saline dewatering effluent discharged from J4 Pit to Carina Pit resulting in groundwater contamination and/or mounding.

Impact: Mine dewater is expected to raise the standing water level which may reach the root zone of the surrounding undisturbed Priority Ecological Community resulting in reduced plant growth or death. Groundwater beneath J4 Pit is saline with a TDS of approximately 25,000 mg/L compared to approximately 49,000 mg/L at Carina Pit. The two pits share similar metal/metalloid characteristics meaning the likelihood of significant contamination is low. The cumulative volume of the Carina Pit is 9,935,925 m³ suggesting that the rate of discharge will not result in mounding of groundwater to within the root zone of native vegetation. The maximum estimated root depth is 20 metres below ground level (mbgl) although groundwater levels are likely to subside at distance from the crest of the Carina Pit where trees are located.

Other than Polaris who utilise groundwater for dust suppression and potable water at the camp, there are no users of the groundwater at Carina Pit, which is sited within a proposed mining and conservation area.

Controls: Polaris propose to cease dewatering at the end of the J4 Project life of mine, which is mid to late 2017. This is before groundwater within the Carina Pit is expected to recover to natural levels post dewatering. Natural groundwater levels within Carina Pit are approximately 80 mbgl providing adequate protection to nearby natural vegetation meaning that the root zone of vegetation is unlikely to be intercepted given the volume of dewater discharge proposed.

Risk Assessment

Consequence: Major

Likelihood: Rare

Risk Rating: Moderate

Regulatory Controls

As the likelihood of groundwater mounding into the root zone of Priority Ecological Communities is rare, freeboard limits have not been set in the Licence. However, decreased throughput limits will serve to protect native vegetation from rising groundwater. The residual risk remains unchanged.