



Decision Document

Environmental Protection Act 1986, Part V

Proponent: Mincor Operations Pty Ltd

Licence: L8577/2011/2

Registered office: 56 Ord Street
WEST PERTH WA 6005

ACN: 094 977 321

Premises address: Mittel & Mariners Mines
Mining Tenements M15/83, M15/85, M15/91, M15/92, M15/93, M15/543,
M15/667, M15/668 and L15/243, Norseman-Coolgardie Highway
WIDGIEMOOLTHA WA 6443
As depicted in Schedule 1.

Issue Date: Friday 15 July 2011

Commencement Date: Friday 15 July 2011

Expiry Date: Sunday, 14 July 2024

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: Clarrie Green
Licensing Officer

Decision Document authorised by: Tim Gentle
Delegated Officer



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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.

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
	85	Sewage facility
	89	Putrescible landfill site
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 type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input 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 type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input 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

Mincor Resources NL (Mincor) is owner of the Miitel and Mariners mines located in the Coolgardie Mineral Field. Miitel and Mariner Mine sites are located within the Shire of Coolgardie approximately 12 km south-east of the Widgiemooltha town site and 65 km south of Kambalda. The primary ore mined from Miitel and Mariners mines is nickel bearing ore which is transported to BHP Billiton’s Kambalda Nickel Concentrator for processing.

Miitel and Mariner Mine sites have entered a period of care and maintenance and in February 2016, ceased dewatering. This licence amendment removes category 6 to reflect the status of dewatering although some conditions relating to dewatering and dewatering impact monitoring have been retained. Justification is provided in the decision table below.

Landfill and wastewater treatment activities will remain active at the mine sites although at a reduced capacity with Mincor opting to retain categories 85 (wastewater treatment) and 89 (landfill) on the Licence. Conditions relating to the environmental management of the landfill will continue to align with the *Environmental Protection (Rural Landfill) Regulations 2002*. Wastewater volumes may not be sufficient to require discharge during care and maintenance although should the workforce increase, treated effluent is still authorised to be discharged via irrigation to a 2.0 ha fenced area.



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			
Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	Former conditions 1.2.1 to 1.2.5	Generic conditions L1.2.1 to 1.2.5 have been removed from the Licence as they are unclear in their intent and are therefore unenforceable. General provisions of the <i>Environmental Protection Act 1986</i> adequately regulate the release of environmentally hazardous materials to the environment.	General provisions of the <i>Environmental Protection Act 1986</i> .
Premises operation	L1.2.1	The transport of hydrocarbons is regulated by the Department of Mines and Petroleum (DMP) and is not intended for inclusion in any reference to “environmentally hazardous materials” at DMP-regulated mine sites. Therefore condition L1.2.1 has been amended to specify the limitations of environmental protection requirements to saline dewater effluent only. In amending the condition, an option to implement telemetry systems over bunding or automatic cut-outs has also been included to L1.2.1.	N/A
	L1.2.2 – 1.2.3	Operation – care and maintenance Although dewatering for the purposes of extracting mineral ore has ceased while the site is in care and maintenance there may remain a need for groundwater abstraction for the purposes of dust suppression. Condition 1.2.2 has been amended to restrict the discharge of abstracted groundwater to being for dust suppression purposes only. As pipelines may still be utilised during care and maintenance on an as needed basis, inspection requirements have reduced to daily when dewatering infrastructure is in use.	
	L1.2.4	Condition L1.2.4 has been applied to the Licence to ensure the continuation of shoreline vegetation monitoring. Already a requirement of annual reporting, shoreline vegetation monitoring during care and maintenance will assist in measuring the real impacts of dewatering from the Miitel and Mariners Mines. Further assessment and decision making is detailed in Appendix A.	



DECISION TABLE			
Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Point source emissions to surface water including monitoring	L3.2.1 L1.2.4	DER's assessment and decision making are detailed in Appendix A.	N/A
Emissions to land including monitoring		DER's assessment and decision making are detailed in Appendix B.	Australian Standard AS/NZS 5667.1 – Water Quality – Sampling – Guidance on the Design of sampling programs, sampling techniques and the preservation and handling of samples
Fugitive emissions	Former condition L2.6.1	<p><u>Emission Description</u> Emission: The risk of dust emissions remains from vehicle movements and unsealed cleared areas. Impact: Miitel and Mariners Mines are located approximately 17km south of Widgiemooltha and dust is extremely unlikely to impact amenity to the nearest residential receptor. Controls: Fugitive dust emissions are likely to reduce with decreased vehicle movements during care and maintenance.</p> <p><u>Risk Assessment</u> Consequence: Insignificant Likelihood: Unlikely Risk Rating: Low</p> <p><u>Regulatory Controls</u> The former generic fugitive condition has been removed from the Licence as it is no</p>	N/A



DECISION TABLE			
Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		longer considered enforceable or clear in its intent. As there is an already low environmental and human health risk from dust emissions at Miitel and Mariners Mines, this condition has not been replaced.	
Odour	Former condition L2.7.1	Former condition 2.7.1 has been removed as it is no longer considered enforceable. No replacement condition has been added to the Licence as odours from mining activities at Miitel and Mariners Mines are not anticipated to impact the nearest human receptors at Widgiemooltha approximately 17 km to the north.	N/A
Information	4.2.2	Following a review of an Annual Environmental Report, DER's Compliance and Enforcement Branch referred an amendment to Licence L8577/2011/1 to remove condition 5.2.2(a) as this condition refers to 3.1.3, which no longer exists. Reference to condition 3.1.3 has been removed although Mincor will still be required to provide throughput information on each prescribed activity in annual reports.	N/A
Licence Duration	N/A	The Licence has been extended until 14 July 2024 to more closely align with Mincor's mining lease M15/243, which is the tenement within the premises boundary that is soonest to expire.	DER Guidance Statement: Licence Duration, May 2015



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
22/04/2016	Proponent sent a copy of draft instrument	<ol style="list-style-type: none">1) Update on vegetation monitoring locations.2) Request not to require botanist to conduct vegetation monitoring.3) Remove the requirement to conduct spot sampling at the WWTP where there is no discharge.	<ol style="list-style-type: none">1) Maps added to Licence to indicate vegetation monitoring locations.2) Accepted due to low risk and no declared rare flora or threatened ecological communities in potential impact area.3) Note added to only require annual sampling where a discharge greater than 20 m³ per day occurs.



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

Point source emissions to surface water including monitoring – care and maintenance

Emission Description

Emission: Discharge of hypersaline mine dewater to Lake Fore and Lake Lefroy.

Impact: Discharging mine dewater to Lake Fore and Lake Lefroy increases the risk of hypersaline water coming into contact with shoreline vegetation. A review of the 2014/15 Annual Environmental Report identified that water levels at Lake Fore were close to shoreline vegetation, which may cause stress or even death if contact were to be made. Hypersaline dewater discharges can also increase the salt crust thickness on the lake surface. Increasing the thickness of the salt crust can limit the ability of aquatic invertebrates to become active, reducing the opportunity for adults to replace eggs that are also in resting stages where surface salt content is high.

Controls: No further mine dewater discharges to surface water will occur while the site is in care and maintenance, reducing the likelihood to rare.

Risk Assessment

Consequence: Minor

Likelihood: Rare

Risk Rating: Low

Regulatory Controls

Surface water on both lakes is dependent on a number of factors including wind, rainfall and mine dewater discharges. Mincor's real impacts on the salt crust thickness and proximity of water to vegetation are unknown as other mine sites also discharge dewater to the lakes. Given that dewatering is likely to be required when the Miitel and Mariners Mines are taken out of care and maintenance, continuation of salt crust thickness monitoring and water levels will assist DER in better understanding the risk of discharging mine dewater from Miitel and Mariners Mine to the two salt lakes.

Therefore existing surface water monitoring conditions shall remain on the licence. The addition of vegetation health monitoring condition L1.2.4 does not increase the level of monitoring as this is already conducted in accordance with previous and current licence reporting conditions.



Appendix B

Emissions to land including monitoring – dewatering discharges to Dordie Pit

Emission Description

Emission: Abstracted groundwater from the Miitel Dam discharged to Dordie Pit seeping through to groundwater.

Impact: Discharges to Dordie Pit may raise surrounding groundwater levels to within the root zone of native vegetation, which has the potential to cause vegetation stress or even death. Table 2 shows the groundwater chemistry of both Miitel dam and Dordie Pit. Due to the similarities, mine dewater is expected to form the same aquifer as Dordie Pit.

Table 2. Groundwater chemistry of Miitel Dam and Dordie Pit

Parameter	Unit	Miitel Dam	Dordie Pit
TDS	mg/L	210,000	209,000
pH	ph units	7.2	7.4
CO ₃	mg/L	<1.0	<1.0
Cl	mg/L	130,000	110,000
SO ₄	mg/L	9,300	10,000
Na	mg/L	61,000	57,000
K	mg/L	1,000	940
Ca	mg/L	890	790
Mg	mg/L	6,700	8,000
NO ₃	mg/L	11	14
Co	mg/L	<1.0	<0.26
Cu	mg/L	<0.5	0.15
Pb	mg/L	<0.5	<0.4
Ni	mg/L	1.4	11
Se	mg/L	<2.0	<1.0
As	mg/L	<2.0	0.40

As the mine moves into care and maintenance the requirement to dewater is removed and with it, the likelihood of rising standing water levels. Although the risk of groundwater contamination is also expected to decline as dewatering discharges cease, there may be a small increase in the salinity of water within the Dordie Pit due to evaporation. There are no known incidence of stygofauna in groundwater within the vicinity of Dordie Pit.

Controls: No controls are proposed other than to cease dewatering during care and maintenance.

Risk Assessment

Consequence: Minor

Likelihood: Rare

Risk Rating: Low

Regulatory Controls

As the risk of groundwater contamination is low, monitoring associated with the discharge of dewatering effluent to the Dordie Pit is not required. The removal of monitoring conditions does not change the risk of environmental impact.



Emissions to land including monitoring – treated wastewater irrigation

Emission Description

Emission: Treated effluent from the wastewater treatment plant (WWTP) irrigated to land increasing the nutrient content of soil and potentially nearby watercourses such as Lake Zot.

Impact: High concentrations of nutrients within soils may result in the promotion of weed growth over less competitive native species. Eutrophication of localised areas of Lake Zot may also occur near to the irrigation area in the event of highly elevated nutrients within discharges although this is very unlikely. Although nutrient loading rates have not consistently achieved compliance with targets on the previous Licence, total throughput at the WWTP in the 2014/15 reporting period averaged 0.28 m³/day. This volume is not expected to increase during care and maintenance as the number of workers present on site is significantly reduced. Therefore it is highly unlikely that nutrient loading will exceed existing limits on the Licence meaning that the risk of weed growth and water/soil contamination is low.

Controls: With a declining workforce throughputs will also be reduced.

Risk Assessment

Consequence: Insignificant

Likelihood: Unlikely

Risk Rating: Low

Regulatory Controls

As the risk of eutrophication and significant weed growth is low no targets or limits are considered necessary. There remains a risk that once the workforce increases, treatment of effluent may be poor until suitable levels of bacteria are developed in the system. Therefore existing conditions that require monitoring of discharge quality and volume will provide confidence that discharges to land from the WWTP are not resulting in unacceptable levels of nutrient loading. However, should discharges be insignificant (less than 20 m³/day on every day throughout the annual period) then no monitoring will be required as it would be highly unlikely that eutrophication of Lake Zot would occur.