



**Licence Number** L6420/1988/14

**Licence Holder** Kalgoorlie Consolidated Gold Mines

**ACN** 009 377 619

**File Number:** DER2015/002506

**Premises** Fimiston Plant and Tailings Storage Facilities  
Mining Tenements G26/15, G26/44-68, G26/70-71,  
G26/73-78, G26/82-86, G26/99-107, G26/138-145,  
G26/149, G26/159, G26/160, G26/165, G26/166,  
L26/267, M26/46, M26/78, M26/86, M26/95, M26/267-  
268, M26/294, M26/308, M26/326, M26/359, M26/377,  
M26/383, M26/405, M26/448, M26/451 and M26/715  
KALGOORLIE WA 6430

**Date of Amendment** 6 July 2018

## Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 6 July 2018

**Tim Gentle**

**Manager Licensing (Resource Industries)**

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

# Definitions and interpretation

## Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
KCGM	Kalgoorlie Consolidated Gold Mines Pty Ltd
Licence Holder	Kalgoorlie Consolidated Gold Mines Pty Ltd

Licensee	has the same meaning as Licence Holder
m <sup>3</sup>	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
mtpa	million tonnes per annum
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

## Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 5.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*

## Amendment description

On 16 March 2018, KCGM (the Licence Holder) submitted an application to increase the permitted operational height of the Fimiston II TSF, following completion of the TSF embankment construction works for cells AB, C and D to stage 1 heights, as permitted by the existing Licence L6420/1988/14, under condition 1.3.7. It is noted that a full assessment of all embankment raises to a height of 60m has previously been assessed and approved via the licence amendment dated 5 April 2016 (Ramboll Environ 2015; L6420/1988/14). At that time provision was made to allow for incremental submission of construction compliance documents for each stage of the embankment raises, at which time pending construction compliance and successful operation of the facility with regard to management of seepage, progressive height increases would be approved.

Consequently, compliance construction documents for the stage 1 embankment raise have been submitted along with the licence amendment application (Golder 2018). Together with the quarterly groundwater monitoring reports, both compliance and monitoring documents form the basis for the assessment for the increase in operational height for Fimiston II TSF.

## Amendment history

Table 2 provides the amendment history for L6420/1988/14.

**Table 2:** Licence amendments

Instrument	Issued	Amendment
L6420/1988/14	17/09/2015	Licence amendment to include category 54.
L6420/1988/14	05/04/2016	Licence amendment to authorise progressive embankment raises to Fimiston II TSF and addition of category 63 to construct and operate a Class 1 inert landfill within the Fimiston Waste Rock Dump.
L6420/1988/14	25/11/2016	Licence amendment to remove vegetation monitoring requirements following Licensee submission. Authorisation to dispose of hydrocarbon contaminated waste to Paringa TSF. Administrative changes requested by the Licensee and additional administrative changes made by DER.
L6420/1988/14	15/12/2017	Licence amendment to authorise progressive embankment raises to Fimiston I TSF to a final height of 60m.

L6420/1988/14	06/07/2018	Licence amendment to authorise increase operational height of Fimiston II TSF to Stage 3 heights.
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## Location and receptors

Table 3 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 3: Receptors and distance from activity boundary**

Residential and sensitive premises	Distance from Prescribed Premises
City of Kalgoorlie- Boulder	Located at western edge of Fimiston open pit; approximately 3km west from the Fimiston II TSF

## Risk assessment

Table 6 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

The risk rating for these risk events has been determined in accordance with the risk rating matrix set out in Table 4 below.

**Table 4: Risk rating matrix**

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

The assessment of the consequence and likelihood of the Risk Event was made in accordance with the criteria in Table 7 below.

**Table 5: Risk criteria table**

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
		Environment	Public health* and amenity (such as air and water quality, noise, and odour)	
Almost Certain	The risk event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> <li>onsite impacts: catastrophic</li> <li>offsite impacts local scale: high level or above</li> <li>offsite impacts wider scale: mid-level or above</li> <li>Mid to long-term or permanent impact to an area of high conservation value or special significance^</li> <li>Specific Consequence Criteria (for environment) are significantly exceeded</li> </ul>	<ul style="list-style-type: none"> <li>Loss of life</li> <li>Adverse health effects: high level or ongoing medical treatment</li> <li>Specific Consequence Criteria (for public health) are significantly exceeded</li> <li>Local scale impacts: permanent loss of amenity</li> </ul>
Likely	The risk event will probably occur in most circumstances	Major	<ul style="list-style-type: none"> <li>onsite impacts: high level</li> </ul>	<ul style="list-style-type: none"> <li>Adverse health effects: mid-level or frequent medical treatment</li> </ul>

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
		Environment	Public health* and amenity (such as air and water quality, noise, and odour)	
Almost Certain	The risk event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> <li>onsite impacts: catastrophic</li> <li>offsite impacts local scale: high level or above</li> <li>offsite impacts wider scale: mid-level or above</li> <li>Mid to long-term or permanent impact to an area of high conservation value or special significance<sup>^</sup></li> <li>Specific Consequence Criteria (for environment) are significantly exceeded</li> </ul>	<ul style="list-style-type: none"> <li>Loss of life</li> <li>Adverse health effects: high level or ongoing medical treatment</li> <li>Specific Consequence Criteria (for public health) are significantly exceeded</li> <li>Local scale impacts: permanent loss of amenity</li> </ul>
			<ul style="list-style-type: none"> <li>offsite impacts local scale: mid-level</li> <li>offsite impacts wider scale: low level</li> <li>Short-term impact to an area of high conservation value or special significance<sup>^</sup></li> <li>Specific Consequence Criteria (for environment) are exceeded</li> </ul>	<ul style="list-style-type: none"> <li>Specific Consequence Criteria (for public health) are exceeded</li> <li>Local scale impacts: high level impact to amenity</li> </ul>
Possible	The risk event could occur at some time	Moderate	<ul style="list-style-type: none"> <li>(i) onsite impacts: mid-level</li> <li>(ii) offsite impacts local scale: low level</li> <li>(iii) offsite impacts wider scale: minimal</li> <li>(iv) Specific Consequence Criteria (for environment) are at risk of not being met</li> </ul>	<ul style="list-style-type: none"> <li>(v) Adverse health effects: low level or occasional medical treatment</li> <li>(vi) Specific Consequence Criteria (for public health) are at risk of not being met</li> <li>(vii) Local scale impacts: mid-level impact to amenity</li> </ul>
Unlikely	The risk event will probably not occur in most circumstances	Minor	<ul style="list-style-type: none"> <li>(viii) onsite impacts: low level</li> <li>(ix) offsite impacts local scale: minimal</li> <li>(x) offsite impacts wider scale: not detectable</li> <li>(xi) Specific Consequence Criteria (for environment) likely to be met</li> </ul>	<ul style="list-style-type: none"> <li>(xii) Specific Consequence Criteria (for public health) are likely to be met</li> <li>(xiii) Local scale impacts: low level impact to amenity</li> </ul>
Rare	The risk event may only occur in exceptional circumstances	Slight	<ul style="list-style-type: none"> <li>onsite impact: minimal</li> <li>Specific Consequence Criteria (for environment) met</li> </ul>	<ul style="list-style-type: none"> <li>Local scale: minimal to amenity</li> <li>(xiv) Specific Consequence Criteria (for public health) met</li> </ul>

<sup>^</sup> Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting*.

\* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines*.

**Table 6: Risk assessment for proposed amendments during operation**

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts					
<p><b>Cat 5</b> Processing or beneficiation of metallic or non-metallic ore</p>	<p>Increasing the operational height of Fimiston II TSF to stage 3 heights</p>	<p><b>Waste:</b> Tailings disposal</p>	<p>Adjacent native vegetation</p>	<p>Acidic and hypersaline groundwater mounding in vicinity of the TSF inundating rootzones of vegetation surrounding the TSF</p>	<p>Adverse impacts to the health and survival of adjacent native vegetation</p>	<p>Moderate (no conservation significant vegetation species); potentially affected vegetation communities widespread regionally)</p>	<p>Rare</p>	<p>Medium</p>	<p>Management of seepage impacts and seepage recovery in the eastern borefield (area subject to impacts from seepage from Fimiston II) is adequately managed via the Fimiston Seepage Groundwater Management Plan (FSGMP) which is conditioned in the Licence via condition 1.3.5. Annual audits of the plan are required by condition 1.3.6. A series of groundwater recovery bores are installed in the Eastern Borefield to manage groundwater levels to below the 4 mbgl limit for compliance bores. This limit is conditioned via Licence condition 3.3.1. Quarterly and annual monitoring of groundwater levels and quality is required by condition 3.3.1. This data must be reported on a quarterly basis to DWER via condition 4.2.2. Further the area of the supernatant ponds on each cell of Fimiston II</p>

									TSF is targeted to remain below 15%, in order to reduce the seepage. The sizing of each pond is reported on to DWER via the quarterly groundwater monitoring reports.
	Tailings release	Native vegetation Soils	Overtopping of supernatant pond or tailings release during extreme rainfall event	Tailings inundation of adjacent vegetation and soil contamination <sup>1</sup>	Major	Rare	Medium	Previously assessed via Licence amendment dated 5 April 2016 – no change to controls required.	



## Decision

Licence Holder controls for the operation of Fimiston II TSF are conditioned on the Licence to ensure that freeboards are sufficient to capture extreme rainfall events and that seepage from the increasing height of the facility is adequately managed. Both risks have previously been assessed via the licence amendment dated 5 April 2016. Quarterly groundwater monitoring reports submitted in accord with condition 4.2.2 have consistently demonstrated that the seepage impact is managed adequately via the Fimiston Seepage and Groundwater Management Plan. A groundwater level limit is imposed on the Licence via condition 3.3.1 and no breaches of this limit have been recorded

Conditions currently on the Licence capture operational emissions relating to management of freeboard (condition 1.3.4) and seepage (conditions 1.3.5, 1.3.6, 3.3.1 and 4.2.2). Condition 1.3.7 has been updated in this amendment to permit the increase in operating height to stage 3, following the submission of the compliance completion documents for stage 1 (Golder 2018). These documents have demonstrated compliance with conditions 1.3.8, 4.2.3 and 4.2.4. Consequently the increase in operational height is approved.

## Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 29 June 2018. No comments were received from the Licence Holder and a waiver requested on 3 July 2018 for the remaining consultation period.

## Amendment

- Condition 1.3.7 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

- 1.3.7 The Licensee is authorised to construct embankment raises and operate the Fimiston II TSF until the end of Stage ~~2~~ 3 to the heights as listed in Table 1.3.3 below:

<b>Table 1.3.3: Fimiston II TSF Construction &amp; Operating Heights</b>			
<b>Stages</b>	<b>TSF Cell</b>	<b>Construction Height (m)</b>	<b>Operating Height (m)</b>
Stage 1	AB	45	45
	C	47	47
	D	45	45
Stage 2	AB	48	48
	C	50	50
	D	48	48
Stage 3	AB	51	<del>51</del> Not permitted at this time.
	C	53	<u>53</u>
	D	51	<u>51</u>
Stage 4	AB	54	<del>Not permitted at this time</del>
	C	56	
	D	54	
Stage 5	AB	57	<del>Not permitted at this time</del>
	C	59	
	D	57	
Stage 6	AB	60	<del>Not permitted at this time</del>
	C	60	
	D	60	

## Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L6420/1988/14 – KCGM Fimiston Plant	L6420/1988/14	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
2	Ramboll Environ (2015) Fimiston II Tailings Storage Facility Height Increase – Mining Proposal, September 2015	Ramboll Environ 2015	DWER records (zA86359)
3	Licence Amendment Application submitted 16 March 2018	Application	DWER record (A1636208)
4	Golder (2018) Fimiston II Tailings Storage Facility Stage 1 TSF Construction Under Prescribed Premises Licence L6420/1988/14, dated 7 February 2018	Golder 2018	Appendix B to DWER record (A1636208)
5	KCGM (2018a) Fimiston Tailings Storage Facilities Quarterly Groundwater Monitoring Report Quarter 4 2017	KCGM 2018a	DWER record (A1618974)
6	KCGM (2018b) Fimiston Tailings Storage Facilities Quarterly Groundwater Monitoring Report Quarter 1 2018	KCGM 2018b	DWER record (A1699760)
5	DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	DER 2015a	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
6	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
7	DER, August 2016. <i>Guidance Statement: Licence duration.</i> Department of Environment Regulation, Perth.	DER 2016a	
8	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
9	DER, November 2016. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2016c	