



<b>Licence Number</b>	L5946/1988/13
<b>Licence Holder</b>	Kalgoorlie Consolidated Gold Mines Pty Ltd
<b>ACN</b>	009 377 619
<b>Registered business address</b>	Black Street KALGOORLIE WA 6430
<b>Date of amendment</b>	5 October 2016
<b>Prescribed Premises</b>	Category 5: Processing or beneficiation of metallic or non-metallic ore
<b>Premises</b>	Gidji Processing Plant Tenements G24/24-33 KALGOORLIE WA 6430

## **Amendment**

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* as set out in this Amendment Notice.

Date signed: 5 October 2016

**Jonathan Bailes**

**Manager Licensing (Process Industries)**

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

## Amendment Notice

This notice is issued under 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.

## Amendment Description

Licence L5946/1988/13 was granted by DER on 26 September 2015. The licence was last amended on 21 April 2016 to remove metal smelting activities (ore roasting) which are no longer carried out. Ore roasting has been replaced by the use of Ultra-Fine Grinding (UFG) Mills commissioned in 2001 (10tph mill) and 2015 (30tph mill).

The Licence Holder has submitted an application to amend the licence in accordance with Ministerial Statement No. 1032 (MS1032) issued by the Environmental Protection Authority (EPA) on 30 June 2016. The Ministerial Statement approves an increase in production throughput from 351,000tpa to 438,000tpa.

The use of the UFG Mills has resulted in efficiency gains which enable the premises to process approximately 25% more ore using the existing infrastructure.

The amendment application also included a request to remove vegetation monitoring requirements near the premises Tailings Storage Facility as specified in condition 2.2.1. Other minor administrative amendments have also been made.

## Decision

### Increase in throughput capacity

The increased throughput authorised by MS1032 will result in an increased rate of discharge of tailings to the Gidji II Tailings Storage Facility (TSF). The main environmental risks associated with an increased discharge of tailings to the Gidji II TSF relate to potential increased seepage from the base and walls of the TSF and overtopping of the TSF.

These risks are mitigated by the design of the TSF which is regulated by the Department of Mines and Petroleum, and who also require an annual audit and assessment of the structural stability of the TSF. The TSF is designed using the downstream method of construction meaning that there is no requirement to allow the tailings to dry and consolidate prior to raise construction.

The Gidji II TSF has a containment capacity of 2.2Mt at a dry density of 1.6t/m<sup>3</sup> (Golder Associates, August 2015). A revised water balance for the increase production shows that there will be an increase in supernatant return that will require treatment in the cyanide destruction plant.

The TSF will be managed according to the *Kalgoorlie Consolidated Gold Mines Gidji Tailings Storage Facilities Operating manual- October 2015 Update* (Golder Associates, November 2015).

Condition 1.2.2 of the licence requires the Licence Holder to maintain an operating freeboard of 300mm in the TSF cells and the supernatant return water dam. Condition 1.2.3 requires six-hourly visual inspections of the tailings and supernatant return water lines, ponding on the surface of the TSF, maintenance of the freeboard, and integrity of the external walls of the TSF. Where an issue is identified, corrective action is

required to be undertaken to mitigate environmental impacts.

The Gidji II TSF was constructed with a composite clay and HDPE liner with a permeability of less than  $1 \times 10^{-9}$  m/s. The TSF also has an over-liner drainage system to maximise the recovery of seepage within the TSF. Seepage from the TSF is also managed by the use of groundwater production bores and compliance monitoring bores that limit the extent to which ambient groundwater levels rise within the vicinity of the TSF in accordance with licence condition 1.2.4.

The Delegated Officer considers these control measures to be adequate to manage the risks associated with an increase in tailings generated as a consequence of the increased production throughput capacity.

### Vegetation Monitoring

Vegetation monitoring has been conducted at the site since 1999 to determine if groundwater mounding resulting from seepage from the Gidji I TSF is causing impacts on vegetation growth. The Gidji I TSF was lined with a clay base, and a series of groundwater production bores and seepage trenches were used to manage and recover seepage from this TSF. A series of targets and limits for water quality and standing water levels were incorporated into the licence requiring management action to prevent ambient groundwater levels from reaching the root zone of vegetation. The Licence Holder has requested that vegetation monitoring is removed from the licence as current groundwater abstraction and monitoring controls have demonstrated that the impact to vegetation from seepage can be adequately managed by controlling the groundwater levels in the vicinity of the Gidji I TSF.

The Delegated Officer accepts that the use of groundwater production bores and seepage trenches has been an effective measure in mitigating environmental impacts and that the continuation of vegetation monitoring is no longer required. Furthermore, tailings deposition is no longer occurring in the Gidji I TSF, and the newly commissioned Gidji II TSF is appropriately lined and contains an over drainage layer which will significantly reduce groundwater mounding beneath the TSFs. Quarterly groundwater monitoring results since the closure of the Gidji I TSF indicate a decrease in groundwater mounding beneath the TSFs which is expected to decrease further over time.

The Delegated Officer has removed the vegetation monitoring requirements on the basis of the above and that the vegetation monitoring carried out to date has not demonstrated any impacts such as declining vegetation health over the groundwater mounding risk areas.

### Administrative Amendments

The Delegated Officer has made minor administrative amendments to correct typographical errors and remove improvement condition 3.1.1 as the Dust Management Plan was submitted to DER on the 4 July 2016 and assessed as meeting the requirements of the condition.

## Amendment History

Instrument	Issued	Amendment
L5946/1988/13	26/09/2014	Licence re-issue
L5946/1988/13	4/12/ 2014	Licence amendment to increase plant throughput capacity from 225,000 tonnes to 351,000 tonnes per annum and to allow for the use of Gidji I TSF.
L5946/1988/13	21/04/ 2016	Licence amendment to remove metal smelting or refining and the Gidji I TSF for deposition of tailings. The vehicle wash down bay is also removed. The licence has also been amended to extend the duration of the licence in accordance with DER's <i>Guidance Statement on Licence Duration</i> .
L5946/1988/13	5/10/2016	Amendment Notice 1 Amended to increase the approved throughput capacity, and remove the requirements for vegetation monitoring and the improvement condition requiring the submission of a dust management plan.

## Amendment

1. The approved licence production or design capacity is amended from *351,000 tonnes per annual period* to *438,000 tonnes per annual period*.
2. Condition 2.1.2 of the licence is amended by the insertion of the red text shown in underline below:
  - 2.1.2 *The Licensee shall ensure that:*
    - (a) *quarterly monitoring is undertaken at least 45 days apart;*
    - (b) *six monthly monitoring is undertaken at least 5 months apart; and*
    - (c) *annual monitoring is undertaken at least 9 months apart.*
3. Condition 2.2.1 of the licence is amended by the by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:
  - 2.2.1 *The Licensee shall undertake monitoring in ~~Tables 2.2.1 and 2.2.2~~ Table 2.2.2 according to the specifications in ~~those tables~~ that table.*
4. The licence is amended by the deletion of the following Table 2.2.1:

<b>Table 2.2.1: Monitoring of vegetation</b>			
<i>Purpose</i>	<i>Monitoring Reference</i>	<i>Parameter</i>	<i>Frequency</i>
<i>Monitor the vegetation in the vicinity of the Gidji roaster to identify if there is any detrimental impacts on vegetation caused by seepage from the TSFs</i>	<i>1, 2, 6, 7, 8, 9, 12, 13, 14, 15 as shown on the map of TSF photographic monitoring locations in Schedule 1</i>	<i>Photographs of vegetation at monitoring points associated with monitoring bores or identifiable field markers. Photographs are to be taken at a fixed focal length and away from the TSFs to standardise information gained.</i>	<i>Annually (between 1 September and 30 November)</i>

5. The licence is amended by the deletion of the following condition 3.1.1:

*3.1.1 The Licensee shall complete the improvement in Table 3.1.1 by the date of completion in Table 3.1.1.*

<b>Table 3.1.1: Improvement program</b>		
<i>Improvement reference</i>	<i>Improvement</i>	<i>Date of completion</i>
<i>IR1</i>	<p><i>The Licensee shall submit to the CEO a Dust Management Plan (DMP) covering the management of dust onsite that may potentially cause a risk to the environment. As a minimum the DMP shall include:</i></p> <ul style="list-style-type: none"> <li><i>• A review of the adequacy of current dust management practices and provide recommendations for changes to operating procedures or monitoring if required.</i></li> <li><i>• Standard operational procedures (SOPs) for the identification, assessment and management actions for fugitive dust emissions; and</i></li> <li><i>• Identification of roles and responsibilities under the DMP.</i></li> </ul> <p><i>The Licensee shall implement the DMP.</i></p>	<i>31 July 2016</i>

6. Table 4.2.1 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:

<b>Table 4.2.1: Annual Environmental Report</b>		
Condition or table (if relevant)	Parameter	Format or form <sup>1</sup>
-	Summary of any failure or malfunction of any pollution control equipment that has resulted in any reportable environmental incidents that have occurred during the annual period and any action taken	None specified
Table 2.2.4	<del>TSF Photographic Vegetation Monitoring Programme including an assessment of the vegetation by a person with tertiary or post-secondary qualifications in plant ecology, botanical or environmental studies.</del>	
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified
Table 5.2.2 <u>4.2.2</u>	Reference non annual reporting data and provide a summary of the key findings and recommendations	
Table 5.3.1 <u>4.3.1</u>	Summary of any saline, alkaline or cyanide constituent spills greater than 5000L that escaped from pipeline bunding	

Note 1: Forms are in Schedule 2

7. Table 4.2.2 of the licence is amended by the by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

<b>Table 4.2.2: Non-annual reporting requirements</b>				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
2.1.3	Calibration	Available on request	14 calendar days	None specified
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties
Table 2.2.2	Groundwater monitoring including summary of any <u>limit</u> <del>target</del> exceedances	Quarterly	46 calendar days	None specified