



<b>Licence Number</b>	L8485/2010/2
<b>Licence Holder</b>	St Ives Gold Mining Company Pty Limited
<b>Registered business address</b>	Level 5 50 Colin Street WEST PERTH WA 6005
<b>ACN</b>	098 286 273
<b>File Number:</b>	2011/000300
<b>Premises</b>	St Ives Gold Mine (SIGM) KAMBALDA WEST WA 6442  Legal description - Mining tenure (Schedule 1 of the Licence)
<b>Date of Amendment</b>	14 October 2019

# Definitions and interpretation

## Definitions

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

**Table 1: Definitions**

Term	Definition
ACN	Australian Company Number
Amendment Notice	Refers to previous Amendment Reports relating to this licence
Amendment Report	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 of the Department of Department of Water and Environmental Regulation. CEO for the purposes of notification means: Director General Department Administering the Environmental Protection Act 1986 Locked Bag 10 JOONDALUP DC WA 6027 Email: <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a> ;
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>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder	St Ives Gold Mining Pty Ltd
MS	Ministerial Statement
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.

## Amendment Report

This report details and justifies amendments made to licence L8485/2010/2 under section 59 of the *Environmental Protection Act 1986* (EP Act), on the request of the Licence Holder.

Category 57 has been added to the licence, additional maps have been added for additional water and tyre storage locations, and several minor amendments have been made that apply to Categories 5 and 6.

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

- *Guidance Statement: Regulatory Principles* (July 2015)
- *Guidance Statement: Setting Conditions* (October 2015)
- *Guideline: Decision Making* (June 2019)
- *Guidance Statement: Environmental Siting* (November 2016)

### Amendment description

On 26 November 2018 the Licence Holder submitted an application to the Department of Water and Environmental Regulation (DWER) to amend Licence L8485/2010/2. The following changes were requested:

- Change to inspection frequency of dewatering infrastructure, and removal of Bellerophon Pit discharge point (Category 6- Mine Dewatering);
- Administrative changes to infrastructure naming, and addition of existing containment ponds as containment infrastructure listed on the licence;
- Removal of monitoring requirements for TSF4 (Category 5 -Processing or beneficiation of metallic or non-metallic ore); and
- Authorisation to store up to 500 used tyres on site for re-use. DWER propose that this be achieved through addition to the licence of 'Category 57 - Used tyre storage (general): premises (other than premises within Category 56) on which used tyres are stored'

This assessment has resulted in DWER issuing a revised Licence incorporating Amendment Notices #1 and 2 issued in 2017 and 2018 respectively as listed below in Table 2, and also authorising the Category 57 storage of tyres on the premises. During the consolidation of amendment notices, DWER has not reassessed activities and conditions approved under those notices.

**Table 2: Licence Amendment History**

Instrument	Issued	Nature and extent of licence or amendment
L8485/2010/2	13/10/2016	Licence amendment to include the Leviathan in-pit TSF following compliance with works approval W5858/2015/1.
Amendment Notice 1 (To L8485/2010/2)	23/01/2017	Amendment Notice 1 to include five new dewatering discharge locations to Lake Lefroy and relocate two existing discharge points and permit dewatering from Thunderer pit to Lake Lefroy. Also an update to the premises address and boundary.
Amendment Notice 1 (To	19/03/2018	Amendment Notice 2 to authorise recommissioning and use of the Cemetery landfill for asbestos waste, disposal

L8485/2010/2)		of inert and putrescible waste to Leviathan In-pit TSF, and installation and operation of cyanide detoxification unit to treat tailings before discharge.
L8485/2010/2	14 October 2019	Original licence amended to incorporate above mentioned Amendment Notices 1&2, add Category 57 and authorise 'operational adjustments' as outlined in this Amendment Report.

## Background

The St Ives Gold Mine (SIGM) is located approximately 8 km south of Kambalda and operated by St Ives Gold Mining Company Pty Ltd (St Ives). Mining operations on Lake Lefroy are licenced under L8485/2010/2 and approved under Ministerial Statement 879. SIGM ore is currently mined from four underground mines, three open pits and 10 surface stockpiles and processed at the Lefroy Mill.

A summary of the existing Licence Categories for L8485/2010/2 is provided in Table 3.

**Table 3: Prescribed premises Categories granted for L8485/2010/2**

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
05	Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes or more per year	9,000,000 tonnes per annual period
06	Mine dewatering	50,000 tonnes or more per year	30,000,000 tonnes per annual period
07	Vat or in situ leaching of metal	5,000 tonnes or more per year	3,000,000 tonnes per annual period
54	Sewage facility	100 cubic metres or more per day	220 cubic metres per day
64	Class II or II putrescible landfill site	20 tonnes or more per year	7 000 tonnes per annual period

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: Environmental Siting* (November 2016)

## Consideration of Part IV of the EP Act

It is noted that St Ives currently have an expansion proposal under assessment by the Environmental Protection Authority (EPA) under Part IV of the EP Act, titled 'St Ives Gold Mine Beyond 2018' (Assessment No. 2133). The proposal has completed public review, and the EPA Report has been published (EPA Report 1645). It is noted that the new Ministerial Statement will replace Ministerial Statement (MS 879) that currently applies to the site.

Following release of the new Ministerial Statement, Licence L8485/2010/2 will be amended to give effect to the commitments made by St Ives (the proponent) in relation to management and monitoring of dewatering discharges

## Location and receptors

Table 5 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 4: Receptors and distance from activity boundary**

Residential and sensitive premises	Distance nearest proposed storage
Kambalda township	7.6km

Table 6 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 5: Environmental receptors and distance from activity boundary**

Environmental receptors	Distance from Prescribed Premises
Lake Lefroy (Salt Lake)	Within Prescribed Premise

## Decision and description of amendments

St Ives (the Licence Holder) submitted an application on 26 November 2018 to amend their Licence. Each proposed amendment is summarised, assessed and any changes made are described and justified below.

### New Category for tyre storage

St Ives have requested permission to store up to 500 tyres on site. This will assist St Ives with operational processes. The tyres stored are not waste, but are required to be stored for assessment prior to being repaired and then reused.

Currently, tyres stored on site do not exceed 100, so no category or conditions for tyre storage are applicable. DWER propose that additional tyre storage (up to 500 tyres requested) could be authorised through addition of a new Category to the licence as outlined in Table 6.

**Table 6: Proposed new Category**

Category	Category description	Category production or design capacity	Approved premises production or design capacity
57	Used tyre storage (general): premises (other than premises within Category 56) on which used tyres are stored	100 tyres or more	500 Tyres

Tyres stored on the premises for re-use would be predominantly truck (road train) tyres with some light vehicle and incidental heavy vehicle tyres. The proposed storage locations are the Leviathan HV workshop, Leviathan tip head waste management area, MLG workshop, Athena Hamlet workshop, and Invincible Underground workshop. A map showing these locations is added to Schedule 1 of the Licence.

**Table 7** describes the Risk Events associated with tyre storage, consistent with the *Guideline: Risk Assessments* (June 2019). The only significant Risk Event is a tyre fire. This table identifies whether each potential emission presents a material risk to public health or the environment, requiring regulatory controls.

**Table 7: Risk assessment for storage of up to 500 tyres across the Premises for re-use**

Risk Event				Consequence rating	Likelihood rating	Risk	Reasoning
Potential emission	Potential receptors	Potential pathway	Potential adverse impacts				
Smoke from tyre fire	Residents of Kambalda	Direct emission to air	Health impacts	Moderate	Unlikely	Medium	The closest tyre storage is 7.6km from Kambalda.
Discharge of fire water	Surrounding vegetation or salt lake	Direct runoff to land	Contamination of land or groundwater	Moderate	Possible	Medium	Moderate risk of contamination

To control the moderate risks identified above, the following conditions will be added to the licence:

Risk Event	Controls to be conditioned
Smoke from tyre fire (by minimizing potential size of fire)	<ul style="list-style-type: none"> <li>Total tyres stored on the Premises shall not exceed 500</li> <li>Used tyre stacks shall not exceed 100 m<sup>2</sup> in area and 3 metres in height</li> <li>Used tyres must be stacked on their side walls or if stored on their treads, area baled with a securing device made from a non-combustible material</li> <li>The License Holder shall ensure that firefighting equipment stored onsite is capable of controlling and extinguishing a tyre fire</li> </ul>
Discharge of fire water	<ul style="list-style-type: none"> <li>The storage area must be hardstand and bunded to prevent runoff of fire water to surrounding land.</li> <li>The License Holder shall without any undue delay following the extinguishing of a fire, ensure that fire water is removed from the Premises by a carrier licensed under the <i>Environmental Protection (Controlled Waste) Regulations 2004</i>.</li> </ul>

### Reduction in inspection frequency

St Ives has recently modified its operational roster from 8-hourly shifts to 12-hourly shifts. Previously an inspection was undertaken of infrastructure listed in **Table 1.2.2** of the licence during each shift (three times daily). With shifts changing to two daily, St Ives have requested that the frequency of inspections reflects the new roster with two inspections undertaken daily.

It is noted that condition 1.2.5 already requires all pipelines to be

- equipped with telemetry systems to allow for the detection of leaks and failures or
- equipped with automatic cut-outs in the event of a pipe failure or
- provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

It is noted that St Ives will therefore need to review their current secondary containment to ensure that with a move to 12 hourly inspections, the containment exceeds that of a potential 12 hour spill where leak detection telemetry or automatic cut-offs are not installed. However from a regulatory point of view, it is considered however that compliance with this existing condition adequately means that the risk of containment overflow is not significantly increased by less frequent inspections.

Table 1.2.2, Condition 1.2.6 has been updated from 8 to 12 hourly, as requested.

### TSF4 annual vegetation assessment and TSF4 annual water balance monitoring

Tailings have been deposited into the Leviathan In-pit TSF in preference to TSF4 since 2016. No discernible deterioration in the presence or quality of vegetation has been evident across the study period, particularly in the 12 months December 2017 to December 2018 (Talis 2019).

St Ives have requested removal of **Condition 1.2.7** of the Licence, which requires the Licensee to undertake an annual assessment of vegetation within the zone of influence of TSF4.

St Ives have also requested removal of **Condition 1.2.8** of the Licence, which requires the Licensee to undertake an annual water balance for TSF4.

Since TSF4 has not been decommissioned, and deposition of tailings may be reinstated in the future, DWER does not consider it appropriate to completely remove these conditions. Instead, the conditions are changed so that monitoring is only required for any annual period in which tailings have been deposited into TSF4. **Table 4.2.1: Annual Environmental Report** has also been updated to reflect this change.

### Removal of Bellerophon Pit discharge point

Bellerophon Pit is no longer dewatered to Lake Lefroy, and it is no longer receiving dewater from Thunderer Pit. Therefore Bellerophon Pit has been removed as a discharge point and source of dewater in **Table 2.4.1**, as shown below.

Table 2.4.1: Point source emissions to groundwater		
Emission point reference and location	Description	Source including abatement
Africa Pit and mine voids located within Lake Lefroy <sup>1</sup> .  Includes discharges to nearby transfer dams associated with each pit.	Dewater from active mining voids to disused mining voids	Mine voids located within the Lake Lefroy <sup>1,2</sup>
<del>Bellerophon Pit</del>	Decant water	<del>Thunderer Pit</del>
Africa Pit		<del>Bellerophon Pit</del> , Leviathan Pit, Leviathan underground, Britannia Pit, Britannia underground, Sirius Pit and Sirius underground
Argo Pit		Apollo Pit, Diana Pit and Athena Boxcut
Apollo Pit		Argo Pit

Previous **Condition 2.3.2** regarding Bellerophon Pit dewatering is therefore no longer relevant, and St Ives have requested this condition be removed from the Licence. No risk assessment is necessary for this administrative change. This condition has been removed as requested, and previous **Condition 2.3.3** has therefore been renumbered as **Condition 2.3.2**.

### Prescribed Premise boundary – heap leach ponds addition

Previous site inspections have identified two HDPE (high-density polyethylene) lined heap leach ponds that are not identified as infrastructure containment features on the Licence.

While heap leaching is no longer occurring on site, DWER has previously suggested to St Ives that these two ponds be included within the Prescribed Premises boundary for use as containment infrastructure as operational needs change, or in the event of emergency containment requirements. These two ponds (C15 Heap Leach Pond east, and C16 Heap Leach Pond west) have been added **Table 1.2.1: Containment infrastructure**. A map showing their locations have also been added to **Schedule 1** of the Licence.



## Administrative changes

Modifications to the infrastructure names in **Table 1.2.1** of the Licence are requested. The renaming of some containment infrastructure will ensure consistency with the naming given on-site and reported on from St Ives GIS database.

No risk assessment is necessary for this administrative change, so requested changes have been made.

Other minor administrative changes have also been made including migration into the current licence template, updates to the licence history summary (in introduction), correction of units in Table 3.5.1 and correction of form WR1 to reflect units and averaging periods specified in Table 3.2.

## Licence Holder's comments

The Licence Holder was provided with the draft amended licence and amendment report on 16 August 2019. The Licence Holder responded on 10 September, with further clarification provided on 11 September 2019. Comments received from the Licence Holder as follows:

Condition	Summary of Licence Holder comment	DWER response
4.3.2 and 4.3.3	Requested removal of conditions, as <ul style="list-style-type: none"><li>• Stages 1, 2 and 4 were never constructed;</li><li>• Stage 3 - compliance document submitted</li></ul>	Conditions removed from licence as they are satisfied as follows: <ul style="list-style-type: none"><li>• stage 3 - compliance document received 6 November 2015 (A10084495); accepted 27 November 2015 (A1014447)</li><li>• stage 1, 2 and 4 - approval longer required</li></ul>
Schedule 1	New maps provided – DWER document A1822060	Replaced outdated maps in amended L8485.
Amendment Report, and premises description in L8485	Distances provided from residences to premises boundary and nearest tyre storage, as requested.	Information inserted. Does not change the assessment as approximate distances were used, not significantly different to actual.

## Conclusion

The amendments requested by the Licence Holder to the current licence have been considered in this report. Where they do not increase in the risks of emissions or discharges, these amendments have been approved. Where they may increase the risk of emissions or discharges, the risks have been assessed and appropriate regulatory controls added to the licence.

Based on this assessment, the amendments have been granted and added to the licence.

**Tim Gentle**

**Manager – Resource Industries**

Delegated Officer

under section 20 of the *Environmental Protection Act 1986*

## Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L8485/2010/2 – St Ives Gold Mine	L8485/2010/2	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
2	Talis Consultants (2018) St Ives Gold Mining Company Licence Amendment Application – Operational Adjustments, dated 26 November 2018	Talis 2018	DWER records (A1742952)
3	Email from Alex Langley, SIGM (2019). RE: St Ives licence amendment - tyre storage.	SIGM 2019	DWER records (A1811050)
4	Talis Consultants (2019) Vegetation Impact Assessment Update Tailings Storage Facility 4, dated March 2019	Talis 2019	DWER records (A1782041)
5	Ministerial Statement 879, Gold Mine Developments on Lake Lefroy	MS 879	accessed at <a href="http://www.epa.wa.gov.au/">www.epa.wa.gov.au/</a>
6	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>
7	DER, October 2015. <i>Guidance Statement: Setting Conditions</i> . Department of Environment Regulation, Perth.	DER 2015b	
8	DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Environment Regulation, Perth.	DWER 2019	

## Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft of this Amendment Report and the draft consolidated licence on 16 August 2019 for review and comment. The Licence Holder responded on 10 September. The following comments were received on the draft Licence and Amendment Report.

Condition	Summary of Licence Holder comment	DWER response
4.3.2 and 4.3.3	Requested removal of conditions, as <ul style="list-style-type: none"> <li>• Stages 1, 2 and 4 were never constructed;</li> <li>• Stage 3 - compliance document submitted</li> </ul>	Conditions removed from licence as they are satisfied as follows: <ul style="list-style-type: none"> <li>• stage 3 - compliance document received 6 November 2015 (A10084495); accepted 27 November 2015 (A1014447)</li> <li>• stage 1, 2 and 4 - approval longer required</li> </ul>
Schedule 1	New maps provided – DWER document A1822060	Replaced outdated maps in amended L8485.
Amendment Report	Distances provided from Residences to premises boundary and nearest tyre storage, as requested.	Information inserted. Does not change the assessment as approximate distances were used, not significantly different to actual.