

Amendment Report

Application for Licence Amendment

Part V Division 3 of the Environmental Protection Act 1986

Licence Number	L8485/2010/2
Licence Holder	St Ives Gold Mining Company Pty Limited
ACN	098 386 273
File Number	DER2018/000300~1
Premises	St Ives Gold Mine KAMBALDA WEST WA 6442
	Legal description – Mining Tenements described in Schedule 2 of the Revised Licence L885/2010/2 KAMBALDA WEST WA 6442 As defined by the Premises maps attached to the Revised licence
Date of Report	12/09/2023
Decision	Revised licence granted

A/MANAGER, RESOURCE INDUSTRIES REGULATORY SERVICES

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

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1. Decision summary

Licence L8485/2010/2 is held by St Ives Gold Mining Company Pty Limited (Licence Holder) for the St Ives Gold Mine (the Premises), located in Kambalda West. This amendment report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operations of the premises. As a result of this assessment, revised licence L8485/2010/2 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

St Ives Gold Mining Company Pty Ltd (SIGMC), a subsidiary of Gold Fields Australia (GFA); part of the global Gold Fields Limited group (GFL), currently owns and operates the St Ives Gold Mine (SIGM). The township of Kambalda East is located approximately 20kms to the north-west of operational mining areas.

On 30 March 2023, the Licence Holder submitted an application to the department to amend Licence L8485/2010/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Inclusion of three existing paste plants located within the premises boundary (see Figure 1) – Fenton Paste Plant, Invincible South Paste Plant and Hamlet Paste Plant (Category 5 infrastructure);
- Several minor administrative amendments; and
- Additional amendments deemed to be out of scope (see section 2.2.3)

2.2.1 Category 5 – Paste Plants

Three currently operational paste fill plants (Fenton Paste Plant, Invincible South Paste Plant and Hamlet Paste Plant) are sought to be included within the SIGMC Prescribed Premise Licence.

Previously, paste plants were not considered to be subject to regulation under Part V of the Environmental Protection Act 1986 (EP Act). Paste fill plants have more recently been recognised as a Prescribed Activity, and as such, SIGMC are proposing to include the above three paste plants within Licence L8485/2010/2.

Together the paste plants currently process up to 800,000 tonnes of tailings per year, which are included within the current Category 5 Prescribed Activity limit of 9,000,000 tonnes per annual period.

Tailings is currently sourced from the decommissioned TSF1 to create paste for use within the mining operations. TSF3 and TSF4 may also be used to provide a tailings source in the future for these three paste plants.

Tailings are excavated and loaded onto haul trucks to be transported to the paste plants where tailings is mixed with water and cement to form a paste. The paste material is then pumped underground via boreholes directed to underground receival areas.

Saline water obtained via mine dewatering is used to supply the paste plants which is delivered via existing pipelines.

2.2.2 Administrative amendments

As part of this Licence Amendment several administrative changes are being requested. These include:

- changes to the maps in Schedule 1 to show the North Orchin/Heap Leach monitoring bores and the Leviathan monitoring bores;
- An updated location of the W08 dewatering point on the premises maps in Schedule 1;
- Changes to the format of Table 16 to allow consolidation of items for ease of use; and
- Removal of constructed infrastructure from Table 6.

No changes to the aspects of the existing Licence relating to Category 52 and 73 have been requested by the Licence Holder.

The proposed removal of constructed infrastructure from Table 6 (Condition 23) includes the Argo Turkey's nest, as well as the Dewatering discharge point W8 and associated pipeline. A review of construction reports related to this infrastructure was undertaken by DWER on 31 March 2023 and confirmed that compliance with construction conditions was met.

2.2.3 Out of scope amendments

The licence application received by the department on 30 March 2023 also included a request for approval for construction and operation of new infrastructure including a proposed thermal power station and associated fuel storage facility (category 52 and 73).

In accordance with department's Guide to Licensing, it was determined that a licence amendment application was not suitable for assessment of the construction of this infrastructure and have therefore been excluded from the scope of this assessment. On 4 April 2023, the licence holder was advised by the department that assessment of category 52 and 73 activities had been removed from the scope of this licence amendment, with recommendation that a works approval application be submitted for the new power station and associated fuel storage facility.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk* assessments (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 1 below.

Licence: L8485/2010/2

Table 1 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Emission	Sources	Potential pathways	Proposed controls
Dust from tailings storage, handling and excavation from TSF1	Excavation of dry tailings from TSF1 / other TSFs Handling and transport (loading/ unloading) of dry tailings. Tailing stockpile lift off.	Air/wind dispersion	 No controls proposed. Existing condition 32 requires licence holder to manage fugitive emissions as per Dust Management Plan.
Potentially contaminated surface water within paste plant operating area	Tailings stockpile runoff Tailings / paste spills	Overland runoff	 Surface drainage from within the paste plant operating area is directed either to an open pit mine or to a sump at the main processing plant. Surface water runoff is directed away from the paste plant areas via v-drains.
Hydrocarbons spills from paste plant	Operation of paste plant – spills/ leaks	Direct discharge to land	 Paste Plants are located on constructed ROM areas, reducing the chance of environmental impact.
Tailings dust from transport of dry tailings	Haul truck transport of tailings	Air/windborne dispersion	No controls proposed
Spills and leaks of tailings / paste fill from operation of paste plant	Spills from unloading of tailings. Tank overflows	Direct discharge to land	 Paste Plants are located on constructed ROM areas, reducing the chance of environmental impact. Tailings spills outside of the paste plant footprint to be cleaned up immediately. Tank overflow directed into mine pits or plant sumps
Spills/leaks of saline water used in paste plants	Spills and Leaks from pipelines supplying water to paste plants	Direct discharge to land	 Telemetry and leak detection on pipes supplying saline water to the Paste Plants. Paste Plants are located on constructed ROM areas, reducing the chance of environmental impact. Water storage tanks to be regularly maintained.

 Table 1: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
			 Tank overflow directed into mine pits or plant sumps
Noise	Noise from operation of paste plant	Air/windborne dispersion	 Paste Plants are only operational on day shift unless business needs require night shift operation. The closest noise sensitive receptor is 26km northwest

Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
No human receptors identified.	N/A
Environmental receptors	Distance from prescribed activity
Environmentally Sensitive Areas	No Environmentally Sensitive Area (ESA) recorded in the project area.
Threatened Ecological Communities	No TECs have been recorded in the project area.
Conservation Significant Fauna	 Fourteen conservation significant fauna species (two mammals and 12 birds) were recorded or expected to occur within the project area: Chuditch, Western Quoll (Dasyurus geoffroii) – Low Red-tailed Phascogale (Phascogale calura) – Low Curlew Sandpiper (Calidris ferruginea) – Low Night Parrot (Pezoporus occidentalis) – Low Carnaby's Cockatoo (Calyptorhynchus latirostris) – Medium Malleefowl (Leipoa ocellata) - High/Recorded Grey Falcon (Falco hypoleucos) - Very Low Fork-tailed Swift (Apus pacificus) - High/Recorded

	 Common Sandpiper (Actitis hypoleucos) – Low Sharp-tailed Sandpiper (Calidris acuminata) – Medium Pectoral Sandpiper (Calidris melanotos) – Medium Grey Wagtail (Motacilla cinerea) – Low Peregrine Falcon (Falco peregrinus) – Medium Western Rosella (inland) (Playcercus icterotis xanthogenys) Western Rosella (inland) (Platycercus icterotis xanthogenys) Medium Malleefowl (Leipoa ocellata) (known to occur within prescribed premises boundary, but approximately 5km from paste plant Two species are expected to have a 'High' likelihood of occurrence within the Study Area due to recent recordings; this includes Malleefowl (Leipoa ocellata, EPBC & BC Act Vulnerable) and Forktailed Swift (Apus
Threatened and/or priority flora / native vegetation	pacificus, EPBC & BC Act Migratory). No threatened flora has been identified within close proximity of the paste plant areas No Threatened, Priority or other
	significant flora taxa have been recorded within the Project footprint.
	The distance to nearest native vegetation for each paste plant is as follows:
	 Fenton Paste Plant – 800 meters west
	 Invincible South Paste Plant – 1.5 km north west
	 Hamlet Pate Plant – approximately 70 m (all directions)
Aboriginal and other heritage sites	No registered heritage sites have been recorded within close proximity of the paste plant infrastructure.
	Kambalada (site id 13907 and 19180) is a recognised heritage places within prescribed premises boundary but several kms from location of paste plants.
Surface water	Lake Lefroy is the major surface water body within the project boundary. Mining occurs within Lake Lefroy, with Fenton Paste Plant and Invincible South Paste Plant located within the lake boundaries. Hamlet Paste Plant is located approximately 4 km east of the lake boundary.



Figure 1: Paste Plant Locations

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table3.

The Revised Licence L8485/2010/2 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. category 5, 6, 7, 54, 57 and 64. The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Risk Event	Risk Event					Applicant			
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls	
Operation	peration								
Operation of paste plant including transport and storage of dried tailings to form paste	Dust from tailings storage, handling excavation from TSF1 and transport via haul trucks	Air/windborne pathway causing impacts to environmental receptors	Lake Lefroy, Native vegetation	Refer to section 3.1	C= Minor L= Possible = Medium	No	<u>Condition 1 –</u> <u>tailings to be</u> <u>wetted down,</u> <u>covered of of</u> <u>sufficient</u> <u>moisture content</u> <u>during transport</u> Existing condition 32	No controls were proposed to mange dust emissions from this activity. Dust generated from tailings may impact the health of lake Lefroy and native vegetation. Due to the close proximity of these receptors to the paste plants it has been deemed necessary to ensure dust emissions are minimised during handling and transport of the tailings by requiring the licence holder to wet down, cover or ensure tailings are of sufficient moisture content during handling and prior to transporting via haul trucks.	
	Potentially contaminated surface water within paste plant operating area	Surface water runoff	Lake Lefroy, Native vegetation	Refer to section 3.1	C= Minor L= Unlikely = Medium	Yes	Condition 1	N/A	

Table 3. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event	Risk Event					Applicant		
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
	Hydrocarbons spills from paste plant	Operation of paste plant – spills/ leaks	Lake Lefroy, native vegetation	Refer to section 3.1	C=Minor L= Unlikely = Medium	Yes	Condition 1	N/A
	Spills and leaks of tailings / paste fill from operation of paste plant	Direct discharge to land resulting in contamination of soil / surface water	Lake Lefroy, native vegetation	Refer to section 3.1	C = Minor L = Unlikely = Medium	Yes	Condition 1	N/A

Risk Event	lisk Event					Annligent		
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
	Spills/leaks of saline water used in paste plants	Direct discharge to land as a result of pipeline leaks or overtopping/leak s of water tanks	Lake Lefroy, native vegetation	Refer to section 3.1	C = Minor L = Unlikely = Medium	Yes	Existing condition 2 (pipelines containing saline water to have secondary containment or telemetry/cut outs. Condition 1	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk assessments (DWER 2020).

Note 2: Proposed Works Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 4 August 2023	Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 5 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Condition no.	Proposed amendments
1	Inclusion of new condition and table to provide operational controls for paste plants.
Condition numbering	Condition numbers and table numbers updated throughout document due to inclusion of new condition 1.
23	Deleted rows relating to construction of W8 discharge point/pipeline and Argo Turkey's nest as this work has been completed.
39	Consolidation of table 17 (formerly table 16) to improve readability of existing groundwater monitoring conditions. Monitoring requirements/limits have not changed.
Schedule 1: Maps	Inclusion of new premise maps (2 of 3, and 3 of 3) to provide updated location of W08 and North Orchin/Heap Leach monitoring bores. Inclusion of Figure 17 showing location of paste plants.

Table 5: Summary of Licence amendments

References

- 1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
- 2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
- 3. DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Condition 1	Proposed change of wording to provide flexibility in controls in managing dust generation during handling and transport. Proposed wording as per below:	The Department has granted this request and modified wording in both licence and decision document to incorporate this change.
	Tailings material shall be: - wetted down; or - covered; or - of sufficient moisture content; during handling and transport to minimise dust generation.	
Schedule 1 Maps	The supplied North Orchin/Heap Leach and Leviathan monitoring bores haven't been added to the draft Licence.	Schedule 1 maps updated with Figure 11 (North Orchin/Heap Leach) and 12 (Leviathan In-Pit TSF).

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY						
Application type						
Amendment to licence	\boxtimes	Current licence number:	9	L8485/2010/2		
		Relevant works approval number:	S		N/A	
Date application received		30/3/2023				
Applicant and Premises details	5					
Applicant name/s (full legal name/s)		St Ives Gold Mining Company Pty Limited				
Premises name		SIGM Operations				
Premises location		Fenton Paste Plant (M15/1690) Invincible South Paste Plan (M15/1687) Hamlet Paste Plant (M15/1596)				
		Located approximately 20km south east of Kambalda. Additional tenements form the wider prescribed premises (refer licence L8445/2010/2), Schedule 1 Maps 1-3).				
		Prescribed premises boundary described as:				
		KAMBALDA WEST WA 6442 Mining tenements as described in schedule 2 of L8485/2010/2				
Local Government Authority		Shire of Coolgardie				
Application documents						
HPCM file reference number: DER2018/000300-1~2						
		Attachment 8:	Sup	porting information:		
		APPENDIX G Flora & Fauna Assessment				
		APPENDIX H Hydrology Impact assessment				
		APPENDIX I Hydrogeology impact Assessment				
Key application documents (additiona to application form):	tional	APPENDIX J Noise Impact Assessment				
		APPENDIX K Greenhouse Gas Emissions Impact Assessment				
		APPENDIX L Cor	nstru	iction Environmental N	/Janagen	nent Plan
		Note that these are provided as part of a wider application. None of these additional documents specifically reference the operation of paste plants.				
Scope of application/assessment						

The proposed amendments are:		
 Category 5 – construction of Paste Plants 		
Three currently operational paste fill plants are sought to be included within the SIGMC Prescribed Premise Licence.		
Previously, paste plants were not considered to be subject to regulation under Part V of the Environmental Protection Act 1986 (EP Act). Paste fill plants have more recently been recognised as a		
Prescribed Activity, and as such, SIGMC are proposing to include the above three paste plants within Licence L8485/2010/2.		
Together the paste plants currently process up to 800,000 tonnes per year, which are included within the current Category 5 Prescribed Activity limit of 9,000,000 tonnes per annual period.		
Administrative Amendments		
As part of this Licence Amendment several administrative changes are being requested. These include:		
 changes to the maps in Schedule 1 to show the North Orchin/Heap Leach monitoring bores and the Leviathan monitoring bores; 		
 An updated location of the W08 dewatering point on the premiers many in Schedule 1; 		
the premises maps in Schedule 1;Changes to the format of Table 16 to allow		
consolidation of items for ease of use; and		
 Removal of constructed infrastructure from Table 6. 		

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5 – Processing or beneficiation of metallic or non-metallic ore	Assessed – use for existing premises where amendments are being sought.	Addition of 3 paste plants.
Category 52	Removed from application – ref	er email A2168570
Category 73 Removed from application – refer email A2168		er email A2168570

Legislative context and other approva	ls	
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes 🗆 No 🛛	Referral decision No: Managed under Part V ⊠ Assessed under Part IV □
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes 🛛 No 🗆	Ministerial statement No: MS 879 EPA Report No: 1411
Has the proposal been referred and/or assessed under the EPBC Act?	Yes 🗆 No 🖂	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes □ No ⊠	Certificate of title General lease Mining lease / tenement Expiry: Other evidence Expiry:
Has the applicant obtained all relevant planning approvals?	Yes □ No □ N/A ⊠	Approval: Expiry date: If N/A explain why? Mining tenement
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes 🗆 No 🖂	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes 🗆 No 🛛	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes 🗆 No 🛛	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes □ No ⊠	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes No N/A Regional office: Swan Avon / Mid-West Gascoyne / Kwinana Peel / North West / South West /

		Goldfields / South Coast
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes □ No ⊠	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <u>WQPN 25</u>)? Yes INO N/A I
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes ⊠ No □	 Environmental Protection (Controlled Waste) Regulations 2004 Mining Act 1978
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No ⊠	N/A
Is the Premises subject to any EPP requirements?	Yes □ No ⊠	N/A
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes ⊠ No □	Classification: Possibly contaminated – investigation required. Date of classification: 27/02/2020