Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Licence Number	L4597/1988/14
Licence Holder	Tianye SXO Gold Mining Pty Ltd
ACN	161 566 490
File Number:	DER2014/000887-1
Premises	Marvel Loch Mine Mining tenements M77/7, M77/8, M77/10, M77/26, M77/31, M77/86, M77/112, M77/113,M77/114, M77/137, M77/138, M77/175, M77/193, M77/239, M77/251, M77/347, M77/352, M77/380, M77/424, M77/431, 77/525, M77/554, M77/555, M77/593, M77/631, M77/638, M77/640, M77/660, M77/668, M77/702, M77/745, M77/721, M77/746, M77/747, M77/790, M77/811, M77/969, M77/977, and M77/1036, Miscellaneous Licences: L77/87, L77/91, L77/112, L77/113, L77/114, L77/126, L77/128, L77/145, L77/162, L77/167, L77/173, L77/281, P77/3792, P77/3793 and General Purpose Lease G77/1-3X. MARVEL LOCH, WA 6426
Date of Report	21/11/2019
Decision	Amend Licence

1. Definitions and interpretation

Definitions

In this Amendment Report, 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 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. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6027 Email: info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
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	Tianye SXO Gold Mining Pty Ltd
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)

Term	Definition
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 Amendment Report applies, as specified at the front of this Amendment Report.
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
Risk Event	as described in *Guidance Statement: Risk Assessment*
RiWI Act	*Rights in Water and Irrigation Act 1914*

2. Amendment Description

The following guidance statements have informed the assessment and decision outlined in this Amendment Report:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

2.1. Purpose and scope of assessment

On 16 September 2019, Tianye SXO Gold Mining Pty Ltd (Licence Holder) submitted an application to amend the Marvel Loch Mine Licence L4597/1988/14. The Licence Holder has applied for the approval to transfer dewatering effluent from the Jaccoletti pit to Marvel Loch pit. Initially approximately 480,000kL of water will need to be removed from Jaccoletti pit and transferred to Marvel Loch pit. Ongoing approximately 1,100,000 kL per annum of dewatering effluent will need to be transferred from Jaccoletti pit to Marvel Loch pit over the Life of Mine (10 years).

Table 2 below outlines the proposed changes to the Licence.

Table 2: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
05	2 600 000 tonnes per annual period	No change proposed	Not applicable
06	6 000 000 tonnes per annual period	No change proposed	To allow for the disposal of dewatering effluent from Jaccoletti pit to Marvel Loch pit. No change to the current Category 6 throughput required.
57	200 Tyres	No change proposed	Not applicable
64	2 000 tonnes per annual period	No change proposed	Not applicable

The Jaccoletti Underground Project, which is located approximately 500m west of the town of Marvel Loch on mining tenement M77/112, is currently being developed. The Jaccoletti pit is currently filled to approximately 50m depth (403mRL) with groundwater (approximately 400,00kL, measured on 20 August 2019), due to its role as storage for dewatering effluent from the Nevoria underground mine, approximately 12km to the south.

Water is currently sent from Nevoria underground mine to the Marvel Loch processing plant, with surplus water being diverted to the Jaccoletti pit. Approximately 80,000 kL (10L/second(s)) of surplus water from Nevoria will have been sent to Jaccoletti pit by the end of December 2019 (400,000 kL already in the pit, plus this 80,000kL = total of 480 000 kL of water needing to be removed initially). In the short-term, this water will need to be removed to allow access to the base of the pit for completion of geotechnical studies. Longer term, the Jaccoletti underground mine will require dewatering over the next 10 years.

A hydrogeological study for Jaccoletti underground mine is currently being undertaken by the

Licence Holder to determine dewatering rates etc. Jaccoletti underground has an initial two-year life, with extensions likely as drilling progresses further with mining. The long-term dewatering rate is unknown at this stage. It is projected to be similar to the current Marvel Loch underground rate of 15L/s, however there is potential for higher rates if large, water-bearing fissures are intersected during mining.

The Licence Holder has stated within their application that a detailed water balance will be developed as a component of the hydrogeological study, incorporating mill supply requirements, current and projected Nevoria dewatering rates and proposed Jaccoletti dewatering rates. A basic balance however, requires ~ 70L/s supply to the mill. In winter ~ ~30L/s of water used can be recovered from the Tailings Storage Facility (TSF). External supply of ~40L/s is required, currently provided by Nevoria (45L/s) and Marvel Loch Underground (15L/s). The supply surplus of ~ 20L/s is sent to Jaccoletti pit.

The Licence Holder is expecting the projected discharge to Marvel Loch pit to reduce in early 2020 and potentially reverse in the short term as mill demand may outstrip supply. Based on an estimated long term dewatering rate for Jaccoletti of 15L/s, plus approximately 20L/s of Nevoria dewater (not used by the mill), approximately 35L/s or 1,100,000kL per annum will be discharged into Marvel Loch Pit. A total of apprimately 11,480,000 kL over the life of the mine (10 years) is expected to be discharged into the Marvel Loch Pit.

The Licence Holder has estimated that the capacity of the Marvel Loch pit is approximately 49,000,000kL, allowing for a 10 meter (m) freeboard. Marvel Loch pit has no pit lake and is approximately 275m deep (mbgl). Groundwater levels within the Marvel Loch workings at the end of August 2019 have been approximately 295 meters below ground level (mbgl) (Application, 2019). Groundwater level is approximately 20m below the Marvel Loch pit floor.

An existing pipeline occurs between Jaccoletti pit and Marvel Loch pit. Figure 1 below outlines the pipeline route and location of the two pits. This pipeline is understood to have an original design specification of 80L/s. Existing bunding and spill containment sumps exist along the current pipeline route. This pipeline will be refurbished as part of this amendment. The existing pipeline is being inspected and pumping equipment being designed to match its maximum safe capacity. A pump shut-off communications system will be installed on the system, similar to the system currently in operation at the Aquarius Project. This will ensure that pumps are shut down quickly in the event of a leak being detected. Spill containment sumps will be inspected and refurbished if required, to ensure they are sized to contain the maximum potential volume generated within the system’s shut-off time-period.

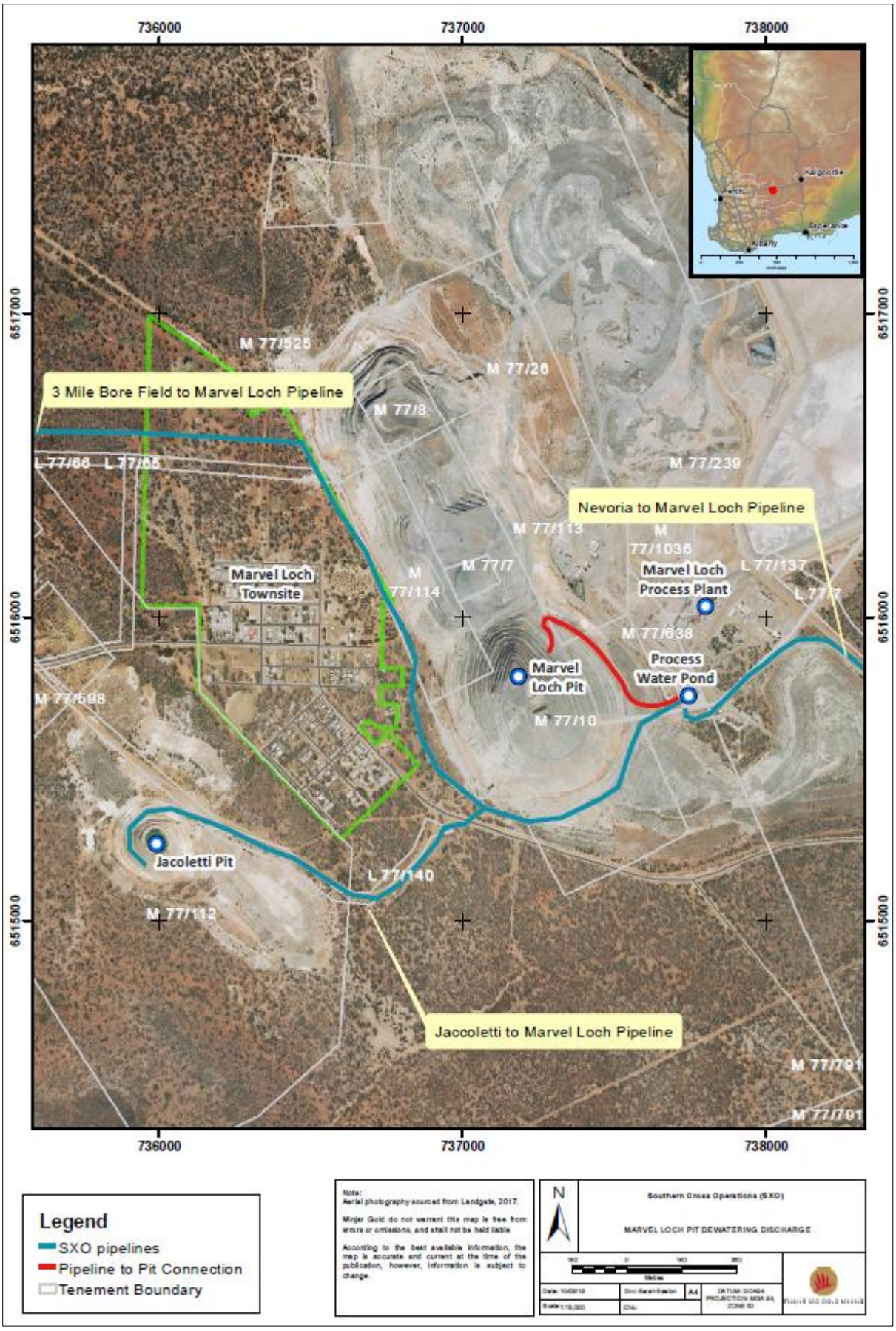

Figure 1: Location of dewatering pipeline between Jacoletti Pit and Marvel Loch Pit.

2.2 Consolidation of Licence

As part of this amendment package DWER has consolidated the licence by incorporating changes made under the following Amendment Notices:

- Amendment Notice 1, granted 8 February 2017 – amendment to include Axehandle Pit as a landfill location;
- Amendment Notice 2, granted 8 December 2017 – amendment to increase the amount of mine dewater discharged into the environment, add category 57: used tyre storage to the licence, add the Transvaal pit as an approved site to operate a class II landfill and construct the TSF3 facility; and
- Amendment Notice 3, granted 18 April 2018 – amendment to relocate the Aquarius dewatering pipeline route.

The obligations of the Licence Holder have not changed in consolidating the licence. DWER has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the Licensee to obtain the form from the Department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

Previously issued Amendment Notices will remain on the DWER website for future reference and will act a record of DWER's decision making

3. Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 3.

Table 3: Relevant approvals

Legislation	Number	Approval
Rights in Water and Irrigation Act 1914	GWL 59227	Rights to abstract water for mining purposes.

4. Amendment history

Table 4 provides the amendment history for L4597/1988/14.

Table 4: Licence amendments

Instrument	Issued	Amendment
L4597/1988/14	26/3/2015	Change to licence conditions and to construct a new landfill.
L4597/1988/14	7/1/2016	Amendment to incorporate the works undertaken in W5818/2015/1 to dewater the Axehandle Pit.
L4597/1988/14	28/4/2016	Amendment to install a new water pipeline from Glendower to Triad

		Pit.
L4597/1988/14	8/2/2017	Amendment notice 1 – amendment to allow landfill activity at the Axehandle Pit.
L4597/1988/14	8/12/2017	Amendment Notice 2 – amendment to allow the establishment of the Aquarius operations, dewatering pipeline, waste facility, construction of TSF3, increase in dewater design capacity and to update the Licensee name to reflect the new owner.
L4597/1988/14	15/3/2018	Amendment notice 3 - amendment to relocate the Aquarius dewatering pipeline route.
L4597/1988/14	11/2019	Amendment to allow the transfer of dewatering effluent to Marvel Loch pit. Amalgamation of this amendment and of amendment notices 1 – 3 into one licence document.

5. 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 5: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Residential premises – Marvel Loch Town site	Approximately 400m east of Jaccoletti pit. Approximately 300 m west of Marvel Lock pit. Approximately 200 m from dewatering pipeline.
Residential premises – Southern Cross Town site	30km north-west from Marvel Loch pit.

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 6: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Threatened ecological community buffer – Parker Range Vegetation complexes.	Buffer overlaps part of the Marvel Loch operations.
Threatened and Priority Flora	Approximately 800m east of Marvel Loch pit
Surface water	No major surface water features within 2km of proposed pipeline.
Groundwater	Groundwater is hypersaline. Depth to groundwater in the Marvel Loch pit area is approximately 295 meters below ground level (mbgl) due to long-term dewatering (Application, 2019).

6. Risk assessment

Tables 7 and 8 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.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

Table 7: Risk assessment for proposed amendments during construction

Risk Event				Consequence rating	Likelihood rating	Risk	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Category 6 - Refurbishment of existing dewatering pipeline from Jaccoletti pit to Marvel Loch pit	Dust	Air/windborne pathway causing impacts to health and amenity of closest human receptors (town of Marvel Loch residential premises)	Water carts will be used as required to suppress dust emissions.	Slight	Unlikely	Low	The minor construction works (equipment installation) are not expected to generate significant dust emissions. The proposed controls are expected to be sufficient at mitigating dust emissions. The Delegated Officer considers that the provisions of section 49 of the EP Act are sufficient to regulate dust emissions during construction.	N/A
	Noise		None proposed				Although the closest human receptors are within 500m of the works, the proposed minor works/placement of equipment will occur within an active mine site. It is expected that receptors will not be significantly impacted by noise emissions. The Delegated Officer considers that the provisions of the *Environmental Protection (Noise) Regulations 1997* are sufficient to regulate noise emissions during construction.	

Table 8: Risk assessment for proposed amendments during operation

Risk Event				Consequence rating	Likelihood rating	Risk	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Category 6 – Operation of dewatering pipeline from Jaccoletti pit to Marvel Loch pit.	Abstraction resulting in drawdown of groundwater levels	Impact to groundwater dependent ecosystems through the abstraction of groundwater, resulting in reduction in groundwater availability for dependent vegetation.	None	N/A	N/A	N/A	Not within scope of Part V of the EP Act. Regulated under the RiWI Act and Part IV of the EP Act.	N/A
	Discharge of dewatering effluent from Jaccoletti pit to Marvel Loch pit.	Hypersaline mine dewater impacting native vegetation as a result of mounding of groundwater table due to seepage from base of pit.	10 meter freeboard will be maintained on Marvel Loch pit. Daily inspection of freeboard. Marvel Loch pit has a large storage capacity	Moderate	Unlikely	Medium	The dewatering effluent from the Jaccoletti pit is hypersaline with a TDS of approximately 190,000mg/L and pH of 6.8 (Application, 2019). A flora and vegetation survey was carried out in a nearby area neighboring the Marvel Loch pit in 2017 (Eco Logical Australia, 2017). This survey described the vegetation as open *Eucalyptus* spp. Woodland and *Acacia* and *Allocasuarina* shrub land. Eucalyptus species are generally shallow rooted. The Priority Ecological Community (PEC) 'Parker Range vegetation complexes' (P3) is mapped as overlapping the Marvel Loch pit area. The outer edge of the PEC's distribution occurs over the Marvel Loch operations. The Licence Holder's application states that Marvel Loch pit has a total capacity of ~49,000,000kL and that a 10 meter	Condition 1.2.2 (Table 1.2.1 - Containment infrastructure) has been updated to include Marvel Loch pit. Condition 1.2.3 (Table 1.2.2 – Inspection of infrastructure) has been updated to include Marvel Loch pit.

							freeboard will be maintained at all times. No detailed water balance (incorporating mill supply requirements, current and projected Nevoria dewatering rates and proposed Jaccoletti dewatering rates (based on geotechnical information)) was submitted as part of this application and therefore it is difficult to determine the long-term suitability of the Marvel Loch pit for storage of dewater from Jaccoletti pit. The Licence Holder has provided a basic balance as follows; based on an estimated long term dewatering rate for Jaccoletti of 15L/s, plus approximately 20L/s of Nevoria dewater (not used by the mill), approximately 35L/s or 1,100,000kL per annum will report to Marvel Loch Pit. Over 10 years the total is estimated to be approximately 11,480,000 kL (23% of the capacity of Marvel Loch pit). This equates to depth of approximately 95mbgl to the pit lake. As the estimated volume of water to be transferred to Marvel Loch pit is not based on site specific geotechnical data the estimated volume may be inaccurate. To increase confidence the Licence Holder has estimated the expected inflow of water with a 50% inaccuracy to the inflow estimate. The upper boundary within this level of accuracy is approximately 1,640,000 kL per annum. With these pumping rates it is estimated that the water level within the pit would be approximately 75mbgl (without considering evaporation or infiltration to bedrock). Marvel Loch pit is approximately 275 m deep from crest level. It is currently dry with no pit lake. Depth to groundwater as of August 2019 is approximately 20m below the pit floor (295 mbgl). Due to the large storage volume of Marvel	

							Loch pit and the estimated volume of water to be deposited into the pit (23% of the pit volume) it is unlikely that this discharge will result in mounding of the water table enough to impact vegetation. The Volume of water being discharged into the pit will be monitored continuously and freeboard will be inspected daily. If groundwater mounding occurs, then the Delegated Officer has determined that the impact of inundating root zones will have a mid-level on site impact. Therefore, the Delegated Officer considers the consequence of groundwater mounding to be moderate. The final risk rating is therefore **Medium.** Due to the lack of information provided regarding the long term dewatering rate from Jaccoletti pit it has been determined that a condition will be added to the licence for the Licence Holder to submit a detailed water balance for the Marvel Loch pit within 3 months of the amendment issue date.	
		Overtopping of Marvel Loch Pit of hypersaline water resulting in impact to adjacent native vegetation.	10 meter freeboard will be maintained on Marvel Loch pit. Daily inspections of the pit freeboard will occur.	Moderate	Unlikely	Medium	An initial 480,000 kL of water from Jaccoletti pit will need to be removed and discharged to Marvel Loch pit to allow access to the base of the pit for geotechnical studies. The Marvel Loch pit currently has a total capacity of ~49,000,000kL not including a 10m freeboard. The disposal of this initial volume should not cause overtopping of the Marvel Loch pit. However, no detailed water balance (incorporating mill supply requirements, current and projected Nevoria dewatering rates and proposed Jaccoletti dewatering rates (based on geotechnical information)) was submitted as part of this application and therefore it is difficult to determine the long-	Condition 2.2.1 (Table 2.2.1 – monitoring of dewatering effluent quality and flow rate) has been updated to include Marvel Loch pit. Condition 2.3.1 (Table 2.3.1 – monitoring of cumulative volume into each pit including Marvel

							term suitability of the Marvel Loch pit for storage of dewater from Jaccoletti pit. The Licence Holder has provided a basic balance as follows; based on an estimated long term dewatering rate for Jaccoletti of 15L/s, plus approximately 20L/s of Nevoria dewater (not used by the mill), approximately 35L/s or 1,100,000kL per annum will report to Marvel Loch Pit. Over 10 years the total is estimated to be approximately 11,480,000 kL (23% of the capacity of Marvel Loch pit). Marvel Loch pit is approximately 275 m deep from crest level. It is currently dry with no pit lake. Depth to groundwater as of August 2019 is approximately 20m below the pit floor (295 mbgl). As the estimated volume of water to be transferred to Marvel Loch pit is not based on site specific geotechnical data the estimated volume may be inaccurate. To increase confidence the Licence Holder has estimated the expected inflow of water with a 50% inaccuracy to the inflow estimate. The upper boundary within this level of accuracy is approximately 1,640,000 kL per annum. With these pumping rates it is estimated that the water level within the pit would be approximately 75mbgl (without considering evaporation or infiltration to bedrock). Due to the large storage capacity of the Marvel Loch pit the likelihood of overtopping occurring has been determined to be 'unlikely'. If overtopping was to occur then mid-level onsite impacts could occur therefore the consequence of this event has been determined to be 'Moderate'. The final risk rating is therefore set as '**Medium**'. Due to the lack of information provided regarding the long term dewatering rate from	Loch pit) has been updated to include Marvel Loch pit. New condition 1.2.24 – requiring a water balance for Marvel Loch pit to be submitted within 3 months of amendment issue date.

							Jaccoletti pit it has been determined that a condition will be added to the licence for the Licence Holder to submit a detailed water balance for the Marvel Loch pit within 3 months of the amendment issue date.	
		Rupture of pipeline causing hypersaline water to discharge to land potentially impacting native vegetation adjacent to the dewatering pipeline.	Pipelines will be equipped with a pump shut-off communications system to ensure pumps are shut down in the event of a leak being detected. Spill containment sumps exist along the pipeline and will be refurbished to ensure they are sized to contain the maximum potential volume generated within the system's shut-off period. Pipelines will be inspected on a daily basis.	Moderate	unlikely	**Medium**	The dewatering effluent from the Jaccoletti pit is hypersaline with a TDS of approximately 190,000mg/L and pH of 6.8. Hypersaline water can contaminate surrounding soils with dissolved solids (salts) and can cause vegetation stress or death. Pipelines will be equipped with a pump shut-off communications system to ensure pumps are shut down in the event of a leak being detected. Spill containment sumps exist along the pipeline and will be refurbished to ensure they are sized to contain the maximum potential volume generated within the system's shut-off period. Pipelines will be inspected on a daily basis. The Likelihood of pipeline rupture impacting native vegetation is considered to be unlikely due to the Licence Holder's proposed controls. If a pipeline rupture were to occur then mid-level on-site impacts could occur due to the hypersaline nature of the water. Therefore consequence rating is Moderate. The final risk rating has been determined to be '**Medium**'. The Delegated Officer has determined that existing conditions 1.2.1 and 1.2.3 adequately manage this risk event and no additional pipeline conditions are required.	Existing condition 1.2.1 (unchanged) – pipelines to be equipped with telemetry or automatic cut outs or within secondary containment. Existing condition 1.2.3 (unchanged) – daily inspection of mine de-water pipelines New conditions 1.2.24-1.2.26 have been added to the licence to require the Licence Holder to refurbish the existing pipeline and dewatering infrastructure between the two pits in accordance with certain requirements as specified in the application.

7. Consultation

Table 9: Summary of consultation

Method	Comments received	DWER response
Local Government Authority advised of proposal on 11/10/2019. Further information sent to Shire for comment on 22/10/2019 and given 21 days to comment. No additional comments was provided at this time.	Comments received on 18/10/2019 A number of issues were raised in respect the Licence Amendment which are listed below: • A hydrogeological report appears not yet to be available, so it is unlikely that the applicant has properly considered the implications of allowing water levels in the Marvel Loch pits to rise to levels significantly higher than natural water table levels in the area. • To allow an increase in water levels to as high as 10m below 'surface' will potentially affect vegetation downslope, cause rising damp in the Marvel Loch townsite, and damage valuable agricultural land downslope. • The Marvel Loch Pit walls are unstable.....they have suffered numerous failures in the past, and an increase in water levels will increase the likelihood that further large failures will occur, potentially causing overtopping, which could have catastrophic consequences including endangering the public. • The proposal does not describe the water balance adequately, omitting critical details. The volumes are quite large, and the water balance needs a very careful assessment, and include all sources. • There are viable alternatives which appear not to have been considered. Alternatives would eliminate the hazards and risks described above. • The information provided by DWER is insufficient to allow the most basic evaluation of the merit of the proposal. • This proposal application is almost certainly being driven by time constraints the application indicates a need to commence pumping by 30 Sept 2019?	DWER believes that the concerns raised by the Shire have been adequately addressed within the Amendment Report. Correspondence has been provided to the Shire from the Licence Holder (with their permission) responding to each of the Shire's concerns. Phone call between Tim Gentle (Delegated Officer) and Peter Clarke (CEO of Shire) occurred on 13/11/2019
Applicant referred draft documents on 18/10/2019	Comments were received on 8/11/2019. Comments were minor in nature and relating to discharge point naming.	Administrative changes were made in accordance with Licence Holder's requests.

8. Conclusion

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

8.1. Summary of amendments

Table 10 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.

Table 10: Licence amendments

Condition No.	Proposed amendments
Definitions	Updated to capture all required terms.
All	All conditions have been updated to remove reference to 'Licencee' and replace with 'Licence Holder' as per new template style guide.
1.2.2	Table 1.2.1 -Containment infrastructure has been updated to include Marvel Loch pit. Wording of type of inspection changed to requiring a visual inspection of freeboard. Term 'discharge facilities' has been removed and replaced with names of receiving pits to make it clear what needs inspecting. Discharge facilities term has been removed from definitions. Dewatering transfer Turkey's Nests exist on-site at Nevoria, Yilgarn Star and Cornishman areas. These turkeys' nests are part of important dewatering infrastructure onsite which was mistakenly left out of Table 1.2.1 as containment infrastructure. These turkey nests have now been added to this condition.
1.2.3	Inspection of infrastructure has been updated to include Marvel Loch pit in Table 1.2.2. Table 1.2.2 has also been updated to include daily inspection of the dewatering transfer turkey's nests at Nevoria, Yilgarn Star and Cornishman areas.
1.2.8	Condition removed as it is unclear as to what 'zone of influence' means and also condition is unenforceable due to monitoring bores not being in place around all containment infrastructure and therefore there is no way to monitor standing water levels and compliance with the 4mbgl limit. Standing water level limits in bores surrounding the sites TSF are outlined in condition 2.4.1 (table 2.4.1).
1.2.9 to 1.2.23	Condition numbers updated due to deletion of condition 1.2.8.
1.2.9	Minor change to condition wording to clarify condition meaning (was condition 1.2.10).
1.2.18	Minor change to condition wording to clarify condition meaning (was condition 1.2.19).
1.2.23	New condition added requiring a water balance for Marvel Loch pit to be submitted within 3 months of amendment issue date
1.2.24 – 1.2.26	New conditions added for the construction / installation works required for the refurbishment of the dewatering infrastructure (pipelines, pumps and bunding/sumps) existing onsite between the two pits. These conditions require the Licence Holder to

	submit a compliance document at the end of construction activities.
2.2	Minor change to Heading 2.2 as discharge of mine dewatering effluent between pits is considered a discharge to land (indirect discharge to groundwater) and not a point source emission to groundwater.
2.2.1	Table 2.2.1 (monitoring of dewatering effluent quality and flow rate) has been updated to include Marvel Loch pit.
2.3.1	Table 2.3.1 has been updated to require the cumulative volumes of mine dewater discharged to each pit to be monitored monthly as opposed to just the Polaris South pit. It's possible this is a historical error which was not updated in past amendment.
3.1.3	Table 3.2.1 has been updated to remove reference to form AR1
3.3.1	Administrative changes – Table 3.3.1 has been updated to remove reference to limit exceedance notification through EL1 form. This is a duplicate requirement to the requirements to notify limit exceedances through the N1 form. – Reference to Groundwater operating strategy has been update to correctly relate to Ground Recovery Plan required by condition 1.2.8. – Conditions referenced in the 'breach of any limit' row of table 3.3.1 has been updated to include all conditions of the licence that include a limit.
Schedule 1: Maps	Emissions map updated to include Marvel Loch pit. Maps of dewatering pipelines have been added too to include map of pipeline from Marvel Loch pit to Jaccoletti pit.
Forms	Forms AR1 and EL1 have been removed from the licence as this is an old format requirement. Specific monitoring data forms are no longer specified in the new template.

As part of this amendment package DWER has consolidated the licence by incorporating changes made under the following Amendment Notices:

- Amendment Notice 1, granted 8 February 2017 – amendment to include Axehandle Pit as a landfill location;
- Amendment Notice 2, granted 8 December 2017 – amendment to increase the amount of mine dewater discharged into the environment, add category 57: used tyre storage to the licence, add the Transvaal pit as an approved site to operate a class II landfill and construct the TSF3 facility; and
- Amendment Notice 3, granted 18 April 2018 – amendment to relocate the Aquarius dewatering pipeline route.

The obligations of the Licence Holder have not changed in consolidating the licence. DWER has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

Tim Gentle

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Tim Gentle
Manager – Resource Industries
INDUSTRY REGULATION

An officer delegated by the CEO under section 20 of the EP Act

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence amendment application - Tianye SXO Gold Mining Pty Ltd, submitted on 16 September 2019	Application, 2019	DWER records (A1823338)
2	L4597/1988/14 Amendment, additional information requested. Email correspondence 11/10/2019 5:01PM from Luke Sibon, Minjar Gold Pty Ltd.	Application, 2019	DWER records (DWERDT211382)
3	Eco Logical Australia (2017) Marvel Loch Targeted Flora, Vegetation and Fauna Survey. Report prepared for Minjar Gold Pty Ltd by Eco Logical Australia, June 2017	Eco Logical Australia, 2017	
4	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	N/A	accessed at www.dwer.wa.gov.au
5	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.		
6	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.		
7	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.		