



<b>Licence Number</b>	L8569/2011/2
<b>Licence Holder</b>	Saracen Gold Mine Pty Ltd
<b>ACN</b>	116 649 122
<b>File Number:</b>	2011/005435-1
<b>Premises</b>	Porphyry Gold Mine Mining tenements M31/3, M31/4, M31/5, M31/6, M31/30, M31/76, M31/380, M31/381, L31/44, L31/62 and L31/63
<b>Date of Report</b>	16 March 2020

# 1. 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 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 <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6027 <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
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (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	Shire of Coolgardie
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 <i>Guidance Statement: Risk Assessment</i>

## 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: Land Use Planning (February 2017)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

Additional documents used to inform the decision are listed in Appendix 1.

### 2.1. Purpose and scope of assessment

Saracen Gold Mines Pty Ltd (Licence Holder) submitted an application to amend Licence L8569/2011/2 on 21 December 2019. The Licence Holder is seeking approval to operate a landfill (category 64), store fuel onsite to fuel earth moving equipment (category 73), as well as construct and operate three new mine dewatering dams (containment infrastructure) at the Porphyry Gold Mine (the Premises). The Premises is located approximately 150 km north east of Kalgoorlie-Boulder on the Edjudina pastoral lease.

The application details that the landfill trench will be located within the footprint of the waste rock dump. The new landfill will only receive inert waste type 1, inert waste type 2 and putrescible waste from the mine. The proposed trench will be approximately 50m long, 5m wide and 6m deep.

The Licence holder intends to fuel earthmoving equipment via 2 x 110kl self-bunded wrap tanks which will be located within the Project area. All refuelling will be conducted on impermeable surfaces (4m x 4m).

Table 2 lists the documents and information provided with the amendment application and submitted as part of the assessment process.

**Table 2: Licence amendments**

Document/information description	Date received
Amendment application form signed by general manager of operations (Porphyry Gold Mine) and attached supporting documentation.	21 December 2019

The following amendments to the licence have therefore been made:

- incorporated the 2019 amendment request to add category 64 and category 73 to the licence;
- added licence conditions relating to the management of the proposed activities, relating to the construction works and submission of a compliance document.

## 2.2. CEO Initiated amendment

In applying the above requested amendment, the CEO has also:

- updated the expiry date to align with the 2016 amended expiry date;
- updated the definitions in the Licence;
- updated the style and appearance of the Licence;
- updated the Licence conditions to reflect wording in current licence template. The word “Licensee” was removed from the licence and the word “Licence Holder” was added to the licence instead;
- deleted the redundant licence conditions and AACR form set out in attachment 2 of the previous Licence and advise the Licence Holder to obtain the form from the Department’s website;
- amended premises category definition table to prescribe category 64 and category 73 activities;
- added licence conditions 1.3.6 – 1.3.13 relating to the management of the proposed activities and licence conditions 1.3.14 – 1.3.17 relating to the construction works and submission of a compliance document; and
- map showing locations of the proposed landfill and saline water storage dams added to the licence.

## 3. Amendment history

Table 3 provides the amendment history for L8569/2003/7.

**Table 3: Licence amendments**

Instrument	Issued	Amendment
W4536/2009/1	12/06/2009	Works Approval for the infrastructure and assessment of dewatering Porphyry Pit to Lake Rebecca.
W4614/2009/1	12/06/2009	Works Approval to allow construction of pipeline to Million Dollar Pit and onto Lake Rebecca.
W4649/2010/1	06/05/2010	Works approval for Wallbrook dewatering project. Amended in May 2013 to extend the expiry date until May 2016.
W4909/2011/1	27/05/2011	Works Approval for the Million Dollar project. Amended in April 2014 to extend the expiry until May 2018.
L8569/2011/1	07/07/2011	New Licence
L8569/2011/2	18/06/2015	Licence re-issue and amendment to REFIRE format
L8569/2011/2	29/04/2016	Notice of Amendment: to extend the expiry date of the Licence
L8569/2011/2	16/03/2020	Licence amended to add Category 64 and Category 73 to the Licence. Approval to construct and operate three new dewatering storage dams.

## 4. Location and receptors

Table 4 below lists the relevant sensitive land uses currently in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

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

<b>Residential and sensitive premises</b>	<b>Distance from Prescribed Premises</b>
Nearest residential premises	Edjudina homestead is located approximately 7 km to east-south east
Historic Yarri town site	Approximately 7.5 km to the east-northeast and is currently unoccupied

Table 5 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**

<b>Environmental receptors</b>	<b>Distance from Prescribed Premises</b>
Groundwater (majority of groundwater in the area is hypersaline)	Depth to groundwater in the area is approximately 30 -32 meters below ground level (mbgl)
Lake Rebecca	Approximately 7 km southwest

## 5. Risk assessment

Tables 6 and 7 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. These tables identify those emissions that present a material risk to public health or the environment and outlines relevant regulatory controls.

**Table 5: Risk assessment for proposed amendment during construction**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<p><b>Category 6</b> – Construction of three mine dewater storage dams (Turkeys nest dam 1, 2 &amp; 3), vehicle movements</p> <p><b>Category 64</b> - construction of class II putrescible landfill trench, vehicle movements</p>	Dust	Air/windborne pathway causing impacts to health and amenity of closes human receptors	Water carts to be used if required to manage dust emissions	Slight	Unlikely	Low	Minimal dust emissions are expected to be generated during construction activities.	The general provisions of the <i>Environmental Protection Act 1986</i> are applicable
<p><b>Category 73</b> – construction of storage tank footings, bunds, placement of storage tanks and vehicle movements</p>	Noise	No residential receptors in the near vicinity.	None				Based on the distance to relevant residential receptors, the Delegated Officer does not consider impacts from noise emissions during the construction works to be significant.	

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 operation**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<b>Category 6</b> - Operation of dewatering water storage dams (Turkeys nest dam 1, 2 & 3).	Seepage of dewatering water (hypersaline water)	Potential for hypersaline water to infiltrate soil and groundwater causing mounding.	The Turkey's Nest mine dewatering dams will be lined with a 1.0 mm HDPE liner.	Slight	Unlikely	Low	<p>Depth to groundwater in the area is approximately 30 -32 mbgl.</p> <p>There is no pathway between the emission (seepage) and the receptor (soil and groundwater) due to the presence of an impermeable liner. Seepage is not considered to be likely.</p> <p>The general provisions of the <i>Environmental Protection Act 1986</i> are also applicable.</p>	<p>Existing Licence condition 1.2.1 does not allow any emission that is not mentioned in the Licence.</p> <p>Existing Licence conditions 2.3.1 and 2.4.1 only allows discharge to Lake Rebecca point and Porphyry pit.</p> <p>Conditions 1.3.13 to 1.3.17 which relates to the infrastructure controls for turkeys nest have been added to the licence.</p>
	Emission to land of dewatering water – overtopping of dams	Overtopping of dams leading to impacts to surrounding vegetation and soil.	The licence holder advises adherence to the licence condition which requires maintaining a freeboard level.	Slight	Unlikely	Low	<p>Dams are located within cleared mining areas so impacts to vegetation will be minimal.</p> <p>It is unlikely that this risk event will occur due to the Licence Holder's controls.</p> <p>The risk rating for this event is therefore determined to be low.</p>	<p>Existing Licence condition 2.5 does not allow any emission to land.</p> <p>Conditions 1.3.14 which relates to ensuring that the dewatering dams will be designed to provide a freeboard of 300mm has been added to the licence.</p>
	Emission to land – rupture or leak of pipeline from the pit to the dewatering dams.	Rupture or leak of pipelines resulting in impacts (i.e. smothering) to vegetation with hypersaline water	<p>The water pipeline system will be connected through telemetry system, controlled, with automatic shut offs that will be engaged should significant variation in flow be detected.</p> <p>All pipelines will be banded in 'v' drains.</p>	Slight	Unlikely	Low	<p>Pipelines are located within a cleared mining area so impacts to vegetation will be minimal.</p> <p>It is unlikely that this risk event will occur due to the Licence Holder's controls.</p> <p>The risk rating for this event is therefore determined to be low.</p>	<p>Licence condition 1.3.13 has been added to the licence to include all three turkeys nest dams as containment infrastructure.</p> <p>Existing Licence condition 1.3.3 requires regular inspection of the pipelines.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<b>Cat 64: Landfilling operations</b>  Vehicle movements on unsealed access roads, movement of waste materials during landfilling operations and leachate generation	Noise		Vehicles will comply with designated speed limits	Slight	Unlikely	Low	With no sensitive receptors in the near vicinity, the Delegated Officer considers that if any noise impacts arise, management under the <i>Environmental Protection (Noise) Regulations 1997</i> will be adequate. No further risk assessment is required.	The provisions of the Environmental Protection (Noise) Regulations 1997 are applicable.
	Dust	Air / wind dispersion No residential premises in close proximity.	Cover will be applied in accordance with the proposed license condition  Only one active tipping face will be exposed during operations.  Water carts for dust suppression	Slight	Unlikely	Low	The Delegated Officer considers the minor amount of dust potentially generated will not cause significant vegetation impacts. There are also no Declared Rare Flora, Threatened Ecological Communities or Priority Ecological Communities in close proximity to the proposed landfill location.	Existing Licence condition 1.3.2 allows for the mine dewater to be used for dust suppression.
	Leachate	Seepage through soil and transport through ground-water. Low impact. Ground water 30-32 mbgl.	The landfill to be located within the Waste Rock Dump (WRD).  Limited leachate generation\  Groundwater is hypersaline.	Slight	Unlikely	Low	The Delegated Officer does not consider that a direct pathway exists given the landfill is situated within the WRD and the depth to groundwater is over 30 m.	Licence condition 1.3.6 has been added to the licence which requires a separation distance of at least 2 m between the base of the landfill and the highest groundwater level; and the disposal of waste will be within the WRD.



Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<b>Category 73: Bulk storage of chemicals, etc.</b>	Breach of containment causing hydrocarbon / chemical discharge to land and soil	Soil and vegetation. Direct discharge to land and infiltration to soil causing Soil contamination inhibiting vegetation growth and survival, and health impacts to fauna	2 x 100kl self bunded wrap tanks will be located on concrete/compacted clay or high density polyethylene lined area.  Spill kits will be available throughout and the employees trained in their use.	Slight	Unlikely	Low	Based on the distance to relevant receptors and the low volume of fuel and chemicals stored onsite, the Delegated Officer considers that the applicant controls are acceptable for mitigating potential hydrocarbon or chemical discharges. The Delegated Officer also notes that storage of dangerous goods is subject to the approval of the Department of Mines, Industry Regulation and Safety.	Existing Licence condition 1.2.2 requires the licence holder to operate and maintain all pollution control equipment to the manufacturer's specification.  Existing Licence condition 1.3.1 ensures that all pipelines containing environmentally hazardous substances be provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

## 6. 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.

### 6.1. Summary of amendments

Table 7 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 6 Licence amendments**

Condition No.	Proposed amendments
NA	Updated the format and appearance of the Licence.
Front page	Updated the expiry date to align with the 2016 amended expiry date and proposed new category 64 and 73 added to the licence.
Definitions	Definitions updated to reflect department name changes and add some new definitions.
1.2.2 – 1.3.5, 2.1.1, 2.3.1– 3.4.1, 3.8.1– 3.3.1	Licence conditions updated to reflect wording in current licence template. The word “Licensee” has been removed and the word “licence holder” was added instead to the licence.
1.3.6 – 1.3.13	Licence conditions relating to the management of the proposed activities added to the licence.
1.3.14 – 1.3.17	Relates to the design and construction specifications for approved works.
Schedule 1	Map showing locations of the proposed landfill and saline water storage dams added to the licence.
Schedule 2	Deleted the redundant AACR form.

### 6.2. Licence Holder comments

The Licence Holder was provided with the draft Amendment Report on 10 March 2020 for review and comment. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

## **A/MANAGER WASTE INDUSTRIES REGULATORY SERVICES**

*An officer delegated under section 20 of the Environmental Protection Act 1986*

## Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Licence L8569/2011/2	L8569/2011/2	Accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
2.	Licence amendment application form signed by general manager of operations (Porphyry Gold Mine) and attached supporting documentation.	Licence amendment application	DWER record (DWERDT238527)
3.	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>
4.	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
5.	DER, May 2016. <i>Guidance Statement: Publication of Annual Audit Compliance Reports.</i> Department of Environment Regulation, Perth.	DER 2016a	
6.	DER, August 2016. <i>Guidance Statement: Licence duration.</i> Department of Environment Regulation, Perth.	DER 2016b	
7.	DER, September 2016. <i>Guidance Statement: Environmental Standards.</i> Department of Environment Regulation, Perth.	DER 2016c	
8.	DER, November 2016. <i>Guidance Statement: Environmental Siting.</i> Department of Environment Regulation, Perth.	DER 2016d	
9.	DER, February 2017. <i>Guidance Statement: Land Use Planning.</i> Department of Environment Regulation, Perth.	DER 2017a	
10.	DER, February 2017. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2017b	
11.	DWER, June 2019. <i>Guideline: Decision Making.</i> Department of Water and Environmental Regulation, Perth.	DWER 2019a	
12.	DWER, June 2019. <i>Guideline: Industry Regulation Guide to Licensing.</i> Department of Water and Environmental Regulation, Perth.	DWER 2019b	
13.	DWER, June 2019. <i>Guideline: Odour emissions.</i> Department of Water and Environmental Regulation, Perth.	DWER 2019c	

## Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Front cover- Design capacity table	Minor typographical changes. Design capacity for Category 73 should be 220m <sup>3</sup> .	Typographical changes adopted. Design capacity changed to 220m <sup>3</sup> .
Condition 1.3.8	The waste trenches are designed to store large quantities of waste down deep in the ground to prevent wind interaction. There is no need to cover waste daily as nothing will leave the trench, the same as all other landfill trenches at Saracen. If the condition must remain, please change the frequency to fortnightly.	The Delegated Officer acknowledges the location of the proposed landfill trenches within the waste rock dump and accepts the proposal for fortnightly cover. Condition modified accordingly.
Table 1.3.3	Typographical changes requested. Cover requirements – change frequency to fortnightly.	Request adopted.
Table 1.3.4	Typographical changes requested. Bulk fuel yard infrastructure requirement.	Request adopted. The bulk fuel yard will be fitted with a high level mechanical float switch.
Table 3.3.1	Typographical changes requested. Freeboard monitoring.	The Delegated Officer acknowledges the information regarding existing capacity within the Porphyry pit (current capacity of over 4.8GL) and the dewatering requirement from the Million Dollar pit (9,000KI of stored water to be dewatered). As a result the request to alter the freeboard monitoring frequency to six monthly is considered acceptable.
Table 3.4.1	Typographical and operational changes requested. The Licence holder advised that due to site conditions, it will not be possible to monitor each load arriving at the landfill, and rather, waste inputs are calculated via an assessment of trench dimensions and waste type density. As a result a change was requested to alter the monitoring frequency of wastes to landfill from each load arriving at the landfill to “after each landfill trench is filled”.	The Delegated Officer acknowledges the request and considers the outcome (monitoring of wastes disposed to landfill) can be achieved by a calculation of trench capacity and therefore considers the request reasonable. The Delegated Officer has however included landfill trench dimensions within table 1.3.5 to standardise the trenches and allow for accurate monitoring of disposed wastes.

