Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: Salt Lake Mining Pty Ltd

Licence: L8893/2015/1

Registered office: Level 2, 14 Ventnor Avenue
WEST PERTH
WA 6005

ACN: 162 824 473

Premises address: Beta Hunt Mine
St Ives Road, Kambalda
WA 6442
Being Mining Tenements M15/1512, M15/1513, M15/1516, M15/1517, M15/1518, M15/1526, M15/1527, M15/1529, M15/1531, M15/1628, M15/1629, M15/1691, M15/1694, M15/1698, M15/1699, M15/1702 and M15/1705 as depicted in Schedule 1.

Issue date: Thursday, 9 July 2015

Commencement date: Thursday, 9 July 2015

Expiry date: Wednesday, 8 July 2020

Prescribed premises category
Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
06	Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	50 000 tonnes or more per year	480 000 tonnes per year

Conditions
This Licence is subject to the conditions set out in the attached pages.

.....
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Contents

Introduction

This introduction is not part of the Licence conditions.

DER's industry licensing role
The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements
This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:
http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees
If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions
If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary
The Beta Hunt Mine is an underground nickel sulfide project located near Lake Lefroy in Kambalda. The mining tenements on which Beta Hunt Mine is located are held by St Ives Gold Mining Company Pty Ltd (SIGM). This amendment includes a change of owner and proponent of the Beta Hunt Mine to Salt Lake Mining Pty Ltd (Salt Lake Mining) from Consolidated Nickel Kambalda Operations Pty Ltd (CNKO). Salt Lake Mining acquired the Beta Hunt Mine from CNKO in December 2013. Salt Lake Mining operates the Beta Hunt Mine by virtue of a sub-lease agreement with SIGM.

A licence was issued for the Beta Hunt Mine in April 2012 for categories 6 and 77, under Schedule 1 of the *Environmental Protection Regulations 1987* for the dewatering of the Beta Hunt underground mine and the operation of a concrete batching plant. The Licence was subsequently amended on 11 April 2013 to remove category 77 as the batching plant no longer existed on the site.

Beta Hunt Mine was in care and maintenance for 5 years and returned to operations on 24 April 2014. During that time, dewatering activities have still been occurring, discharging water to the surface of Lake Lefroy. The same dewatering rate occurs during care and maintenance and during operations.

The Beta Hunt Mine was previously licenced under L8626/2012/1. This licence is the result of a late annual fee payment that resulted in L8626/2012/1 ceasing to have effect. The licences and works approvals issued for the Premises since 12/04/2012 are:

Instrument log		
Instrument	**Issued**	**Description**
L8626/2012/1	12 April 2012	New application
L8626/2012/1	11 April 2013	Proponent amendment to remove category 77
L8626/2012/1	03 July 2014	Proponent amendment to increase dewatering limit. Amendment includes transfer of occupier name.
L8893/2015/1	9 July 2015	New licence after L8626/2012/1 ceased to have effect

Severance
It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'annual period' means the inclusive period from 1 November until 31 October in the following year;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

'AS/NZS 5667.4' means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made;*

'AS/NZS 5667.6' means the Australian Standard AS/NZS 5667.6 *Water Quality – Sampling – Guidance on sampling of rivers and streams;*

'AS/NZS 5667.9' means the Australian Standard AS/NZS 5667.9 *Water Quality – Sampling – Guidance on sampling from marine waters;*

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'CEO' means CEO of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means:
Manager Licensing (Resources)
Department of Environment Regulation
Locked Bag 33
CLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: industry.regulation@der.wa.gov.au;

'code of practice for the storage and handling of dangerous goods' means the document titled "Storage and handling of dangerous goods: Code of Practice" published by the Department of Mines and Petroleum, as amended from time to time;

'controlled waste' has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*;

'dangerous goods' has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

'environmentally hazardous material' means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

'fugitive emissions' means all emissions not arising from point sources identified in sections 2.2, 2.3, 2.4 and 2.5;

'Licence' means this Licence numbered L8893/2015/1 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'quarterly' means the 4 inclusive periods from 1 April to 30 June, 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 General conditions

1.2.1 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
(a) pollution;
(b) unreasonable emission;
(c) discharge of waste in circumstances likely to cause pollution; or
(d) being contrary to any written law.

1.2.2 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.3 The Licensee, except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous materials are stored in accordance with the code of practice for the storage and handling of dangerous goods.

1.2.4 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.

1.2.5 The Licensee shall ensure that uncontaminated stormwater is kept separate from contaminated or potentially contaminated stormwater. Where stormwater has come into contact with a possible source of contamination, it should be treated as contaminated.

1.3 Premises operation

1.3.1 The Licensee shall ensure that all pipelines containing environmentally hazardous substances are either:
(a) equipped with automatic cut-outs in the event of a pipe failure; or
(b) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

1.3.2 The Licensee shall ensure that any saline dewatering effluent shall only be disposed of in the following manner:
(a) used for dust suppression in a manner that minimises damage to surrounding vegetation; and
(b) discharged to the approved discharge point at Lake Lefroy in accordance with conditions 2.3.1 and 2.3.2.

1.3.3 The Licensee shall undertake an annual assessment of vegetation within the zone of influence of any dewatering discharge lakes and areas where saline water is used for dust suppression or potential dust emissions from the activities. The assessment shall:
(a) photograph and record the presence and condition of key vegetation features within the zone of influence;
(b) compare the results of the assessment against previous years assessments and identify whether any deterioration in the presence and/or quality of vegetation has taken place; and
(c) be undertaken by a person suitably qualified in vegetation identification and sampling.

1.3.4 The Licensee shall undertake inspections as detailed in Table 1.3.4:

Table 1.3.4: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Dewatering pipelines	Visual integrity	Daily

1.3.5 The Licensee shall where any inspection undertaken as a result of condition 1.3.4 identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable.

1.3.6 The Licensee shall maintain a record of all inspections undertaken and any corrective action associated with the inspection required by conditions 1.3.4 and 1.3.5.

2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

There are no specified conditions relating to point source emissions to air in this section.

2.3 Point source emissions to surface water

2.3.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.3.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emission points to surface waters

Emission point reference	Emission point reference on Map of emission points	Description	Source including abatement
Discharge point at Lake Lefroy	E1	Discharge to Lake Lefroy	Water from dewatering of the Beta Hunt underground mine: • With a facility to allow adequate settling time to minimise suspended solids in the discharge stream; and • Via a suitable energy dissipation device to ensure minimal erosion and scouring impacts and reduce the likelihood of ponding in Lake Lefroy and minimise damage to fringing vegetation.

2.3.2 The Licensee shall not cause or allow point source emissions to surface water greater than the limits listed in Table 2.3.2.

Table 2.3.2: Point source emission limits to surface waters

Emission point reference	Parameter	Limit (including units)	Averaging Period
E1	Volume	480 000 kL	Annually

2.4 Point source emissions to groundwater

There are no specified conditions relating to point source emissions to groundwater in this section.

2.5 Emissions to land

There are no specified conditions relating to emissions to land in this section.

2.6 Fugitive emissions

2.6.1 The Licensee shall use all reasonable and practical measures to prevent or where that is not practicable, to minimise dust emissions from the Premises.

2.6.2 The Licensee shall ensure that no visible dust generated by the activities on the Premises crosses the boundary of the Premises.

2.7 Odour

There are no specified conditions relating to odour in this section.

2.8 Noise

There are no specified conditions relating to noise in this section.

3 Monitoring

3.1 General monitoring

3.1.1 The licensee shall ensure that:
(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9 as relevant; and
(c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

3.1.2 The Licensee shall ensure that:
(a) monthly monitoring is undertaken at least 15 days apart;
(b) quarterly monitoring is undertaken at least 45 days apart; and
(c) annual monitoring is undertaken at least 9 months apart.

3.2 Monitoring of point source emissions to air

There are no specified conditions relating to monitoring of point source emissions to air in this section.

3.3 Monitoring of point source emissions to surface water

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of point source emissions to surface water

Emission point reference	Parameter	Units	Frequency
E1	Volumetric flow rate	m^3/s	Monthly
E1	Cumulative volume of water from dewatering	kL	Monthly
E1	pH	-	Quarterly
E1	Metals: cadmium, selenium, iron, cobalt, lead, copper, nickel, zinc, arsenic and chromium	mg/L g/day	Quarterly
E1	Major anions and cations: sodium, potassium, calcium, magnesium, chlorine,bicarbonate and sulfate	mg/L g/day	Quarterly
E1	TSS, TDS and TRH	mg/L	Quarterly

3.4 Monitoring of point source emissions to groundwater

There are no specified conditions relating to monitoring of point source emissions to groundwater in this section.

3.5 Monitoring of emissions to land

There are no specified conditions relating to monitoring of emissions to land in this section.

3.6 Monitoring of inputs and outputs

There are no specified conditions relating to monitoring of inputs and outputs in this section.

3.7 Process Monitoring of inputs and outputs

There are no specified conditions relating to process monitoring in this section.

3.8 Ambient environmental quality monitoring

There are no specified conditions relating to ambient environmental quality monitoring in this section.

3.9 Meteorological monitoring

There are no specified conditions relating to meteorological monitoring in this section.

4 Improvements

There are no specified improvement conditions in this section.

5 Information

5.1 Records

5.1.1 All information and records required by the Licence shall:
- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 5.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

5.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
- (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

5.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

5.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

5.2 Reporting

5.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 92 calendar days after the end of the annual period. The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

Table 5.2.1: Annual environmental report

Condition or table (if relevant)	Parameter	Format or form[1]
-	Summary of any failure or malfunction of any pollution control equipment or any incidents that have occurred during the year and any action taken	None specified
5.1.3	Compliance	AACR
5.1.4	Complaints summary	None specified
Table 1.3.4	Assessment of vegetation	None specified
Table 3.3.1	Volumetric flow rate, volume of water from dewatering, pH, Metals: cadmium, selenium, iron, cobalt, lead, copper, nickel, zinc, arsenic and chromium Major anions and cations: sodium, potassium, calcium, magnesium, chlorine, bicarbonate and sulfate, TSS, TDS and TRH	WR1

Note 1: Forms are in Schedule 2

5.3 Notification

5.3.1 The Licensee shall ensure that the parameters listed in Table 5.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 5.3.1: Notification requirements

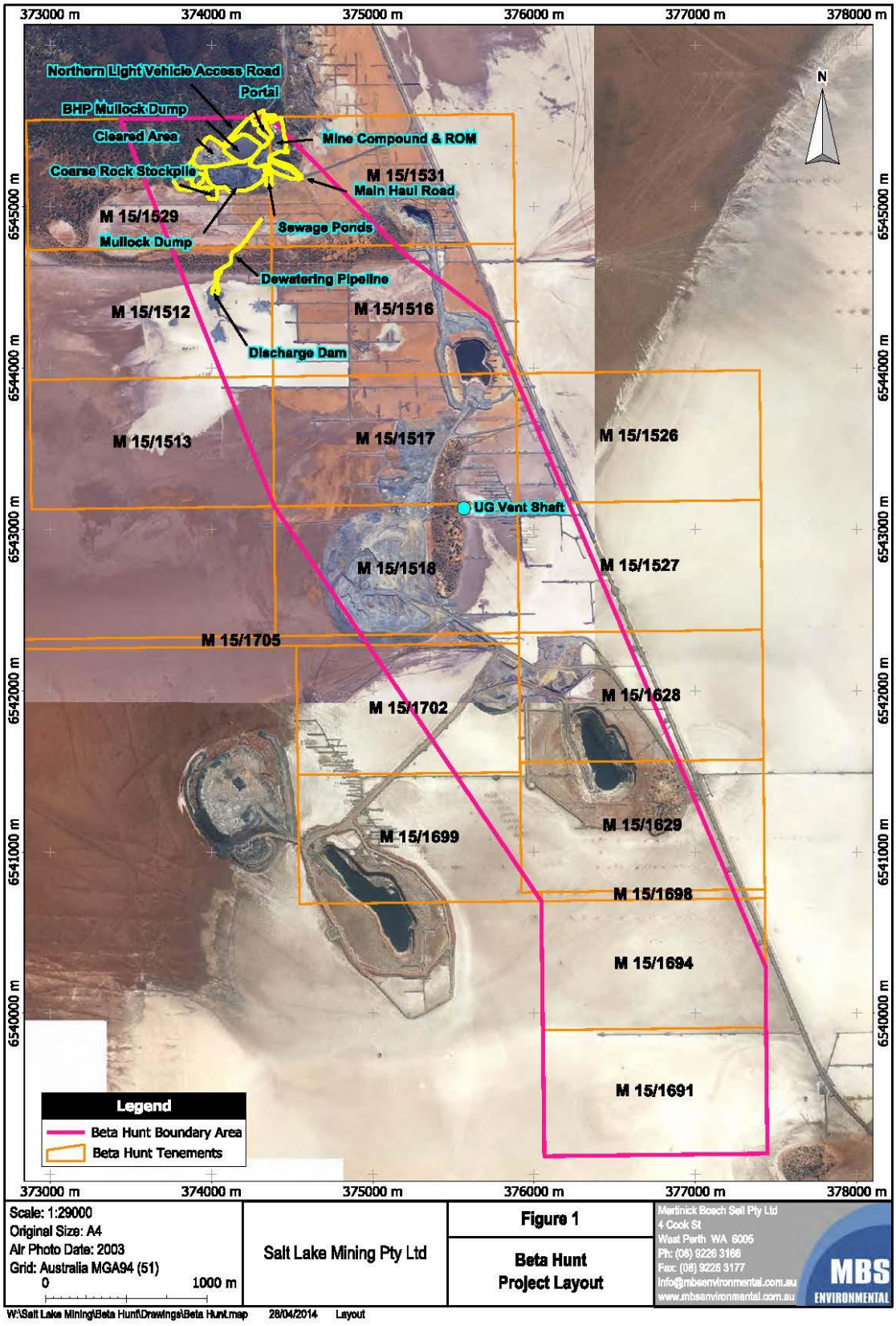
Condition or table	Parameter	Notification requirement[1]	Format or form[2]
	Notification of suspension of operations (care and maintenance) or intention to come out of care and maintenance.	As soon as practicable	None Specified
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5PM of the next usual working day. Part B: As soon as practicable	N1
	Any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution		

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act
Note 2: Forms are in Schedule 2

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The pink line depicts the Premises boundary.



Map of emission points

The locations of the emission point defined in Table 2.3.1 is shown below.

Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A

LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:

SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
☐ Yes ☐ Reported to DER verbally Date _____ ☐ Reported to DER in writing Date _____	☐ No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:

SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	□	by the individual licence holder, or
	□	by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	□	by affixing the common seal of the licensee in accordance with the *Corporations Act 2001*; or
	□	by two directors of the licensee; or
	□	by a director and a company secretary of the licensee, or
	□	if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	□	by the chief executive officer of the licensee; or
	□	by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

Licence: L8893/2015/1 Licensee: Salt Lake Mining Pty Ltd
Form: WR1 Period :
Name: Monitoring of point source emissions to surface water

Form WR1: Monitoring of point source emissions to surface water							
Emission point	**Parameter**	**Limit**	**Result[1] (mg/m^3)**	**Result[1] (g/s)**	**Averaging period**	**Method**	**Sample date & times**
E1	Volumetric flow rate		m^3/s				
E1	pH						
E1	Iron		mg/L				
E1	Cadmium		mg/L				
E1	Selenium		mg/L				
E1	Cobalt		mg/L				
E1	Lead		mg/L				
E1	Copper		mg/L				
E1	Nickel		mg/L				
E1	Zinc		mg/L				
E1	Arsenic		mg/L				
E1	Chromium		mg/L				
E1	Sodium		mg/L				
E1	Potassium		mg/L				
E1	Calcium		mg/L				
E1	Magnesium		mg/L				
E1	Chlorine		mg/L				
E1	Bicarbonate		mg/L				
E1	Sulfate		mg/L				
E1	TSS		mg/L				

E1	TDS		mg/L				
E1	TRH		ug/L				

Note 1: All units are referenced to STP dry

Signed on behalf of Salt Lake Mining Pty Ltd: …….. Date: …….

Licence: L8893/2015/1 Licensee: Salt Lake Mining Pty Ltd
Form: N1 Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution	
Date and time of event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken , or intended to be taken, to stop any emission	
Description of the failure or accident	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Salt Lake Mining Pty Ltd	
Date	

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Salt Lake Mining Pty Ltd

Licence: L8893/2015/1

Registered office:	Level 2, 14 Ventnor Avenue WEST PERTH WA 6005
ACN:	162 824 473
Premises address:	Beta Hunt Mine Kambalda WA 6442 Being Mining Tenements M15/1512, M15/1513, M15/1516, M15/1517, M15/1518, M15/1526, M15/1527, M15/1529, M15/1531, M15/1628, M15/1629, M15/1691, M15/1694, M15/1698, M15/1699, M15/1702 and M15/1705.
Issue date:	Thursday, 9July 2015
Commencement date:	Thursday, 9 July 2015
Expiry date:	Wednesday, 8 July 2020

Decision

Based on the assessment detailed in this document, the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided

Decision Document prepared by:	Clarrie Green Licensing Officer
Decision Document authorised by:	Danielle Eyre Senior Manager, Resource Industries

Contents

1 Purpose of this document

This Decision Document explains how DER has assessed and determined the application for a works approval or licence, and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure its has all relevant approvals for its Premises.

Works approval and licence conditions
DER has three types of conditions that may be imposed on works approvals and licences. They are as follows:

Standard conditions (SC)

DER has standard conditions that are imposed on all works approvals and licences regardless of the activities undertaken on the Premises and the information provided in the application. These are included as the following conditions on works approvals and licences:

Works approval conditions: 1.1.1-1.1.4, 1.2.1, 1.2.2, 5.1.1 and 5.1.2.

Licence conditions: 1.1.1-1.1.4, 1.2.1-1.2.4, 5.1.1-5.1.4 and 5.2.1.

For such conditions, justification within the Decision Document is not provided.

Optional standard conditions (OSC)

In the interests of regulatory consistency DER has a set of optional standard conditions that can be imposed on works approvals and licences. DER will include optional standard conditions as necessary, and are likely to constitute the majority of conditions in any licence. The inclusion of any optional standard conditions is justified in section 4 of this document.

Non standard conditions (NSC)

Where the proposed activities require conditions outside the standard conditions suite DER will impose one or more non-standard conditions. These include both premises and sector specific conditions, and are likely to occur within few licences. Where used, justification for the application of these conditions will be included in section 4.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☒ Licence amendment ☐ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	06	480 000 tonnes per year
Application verified Application fee paid	Date: 25/5/2015 Date: 8/6/2015	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes☒ No☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☐	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

The Beta Hunt Mine is an underground nickel sulfide project located near Lake Lefroy in Kambalda.
The main emission regulated under this Licence is dewatering effluent from the underground mine; which is discharged to Lake Lefroy.

The mining tenements on which Beta Hunt Mine is located are held by St Ives Gold Mining Company Pty Ltd (SIGM). The owner and proponent of the Beta Hunt Mine is Salt Lake Mining Pty Ltd (Salt Lake Mining). Salt Lake Mining acquired the mine in December 2013 from Consolidated Nickel Kambalda Operations Pty Ltd (CNKO). Salt Lake Mining operates the Beta Hunt Mine under a sub-lease agreement with SIGM.

A licence was issued for the Beta Hunt Mine in April 2012 for categories 6 and 77, under Schedule 1 of the *Environmental Protection Regulations 1987* (L8626/2012/1). The licence was subsequently amended on 11 April 2013 to remove category 77 as the batching plant no longer existed on site. The nominated throughput for dewatering was then increased from 250,000 tonnes per annum (tpa) to 380,000 tpa and later to 480,000 tpa to dewater an old section of mine to allow proposed mining of this area. Water quality from the old section of mine was considered to be similar to the existing discharge and therefore unlikely to cause additional or different environmental impact, given the management measures and licence conditions currently in place. Appendix A outlines more information regarding the effects of discharging the (extracted) groundwater into the natural salt lake, Lake Lefroy.

Beta Hunt Mine was in care and maintenance for 5 years and returned to operations on 24 April 2014. During that time, dewatering activities had still been occurring, discharging water to the surface of Lake Lefroy. The same dewatering rate occurs during care and maintenance as during normal mining operations.

Groundwater quality at the site is characterised as hypersaline, neutral pH with a dominant sodium chloride signature. Groundwater salinity in the region is generally in the range of 50,000 to greater than 300,000 mg/L of Total Dissolved Solids (TDS). TDS levels at the mine range from 281,000mg/L to 310,000mg/L TDS for mine water discharge at Beta Hunt.

Given the long history of mining in the area, saline groundwater has been discharged to Lake Lefroy since 1965. St Ives also uses the Beta Hunt discharge point for its Pistol Club expansion and possibly for its Temeraire Cut Back. In addition to the Beta Hunt discharge point, there are seven active dewatering points at St Ives which discharge water to the surface of Lake Lefroy. There are also several historical dewatering points that no longer discharge water to the lake.

Controls implemented by Salt Lake Mining include underground settlement dams, discharge into the lined (rock and geofabric material) turkey's nest and the dewatering pipe discharges onto a steel bollard with a concrete base, that dissipates the outgoing water. No other treatment of the dewatering effluent occurs as it is considered broadly equivalent to the natural environment. Regulatory controls including a limit on the discharge and monitoring of key parameters are implemented to manage this activity. Section 4 and Appendix A below outline how this risk rating was derived.

The Beta Hunt Mine was previously licenced under L8626/2012/1. This licence is the result of a late annual fee payment that resulted in L8626/2012/1 ceasing to have effect. No reassessment of emissions and discharges has taken place for this new licence. The risk assessment of the previous Licence was conducted in July 2014 and has been transferred to this decision document.

4 Decision table

All applications are assessed under the *Environmental Protection Act 1986*, the Environmental Protection Regulations 1987, DER's Corporate Policy Statement No.7 – Operational Risk Management, and the risk matrix attached to this Decision Document in Section 6. Where other references have been used in making the decision they are detailed in the decision table.

OSC = optional standard condition
NSC = non-standard condition

DECISION TABLE				
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**OSC or NSC**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
General conditions	L1.2.5 L1.3.1 – 1.3.6	OSC NSC	DER's assessment and decision making are detailed in Appendix A.	Application supporting documentation General Provisions of the *Environmental Protection Act 1986*.
Emissions general	L2.1.1	OSC	Descriptive limits will be set through condition 2.3.2 of the licence and therefore OSC 2.1.1 regarding recording and investigation of exceedances of limits or targets has been included.	N/A
Point source emissions to air including monitoring	L2.2	N/A	**Normal Operation** No significant point source air emissions are expected from the Premises. No conditions are required.	*Environmental Protection (Unauthorised Discharges) Regulations, 2004*.
Point source emissions to surface water including monitoring	L2.3.1, L2.3.2 and L3.3.1	OSC	**Normal Operation** DER's assessment and decision making are detailed in Appendix B.	Application supporting documentation General Provisions of the *Environmental Protection Act 1986*.

DECISION TABLE				
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**OSC or NSC**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Point source emissions to groundwater including monitoring	L2.4	OSC	**Normal Operation** No point source emissions to groundwater are expected at the Premises. No conditions are required.	Application supporting documentation
Emissions to land including monitoring	L2.5	OSC	**Normal Operation** No significant emissions to land are expected at the Premises. No specific conditions relating to emissions to land are required to be added to the licence.	Application supporting documentation
Fugitive emissions	L2.6.1 L2.6.2	OSC	**Normal Operation** <u>Emission Description</u> *Emission:* Dust is generated from movement of vehicles, materials handling and open areas. *Impact:* Dust emissions can be harmful to human health and the environment. Elevated total suspended particulates (TSP) can impact ambient environmental quality resulting in amenity impacts and can smother vegetation. Particulate matter that are less than 10 (PM_{10}) or 2.5 ($PM_{2.5}$) micrometres in diameter can be drawn deep into the lungs causing human health impacts. The chemical and physical properties of the particles, the size of the particles and the duration of exposure are all factors which may affect human health. Dust may contain elevated nickel content. Human health effects of nickel include dermatitis and respiratory problems. Localised nickel contamination of soil may result from fugitive dust emissions. *Controls:* During operations a water cart is used to minimise dust impacts. <u>Risk Assessment</u> *Consequence: Moderate* *Likelihood: Possible* *Risk Rating: Moderate*	General Provisions of the *Environmental Protection Act 1986*.

DECISION TABLE				
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**OSC or NSC**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
			Regulatory Controls OSCs 2.6.1 and 2.6.2 are included in the licence to ensure adequate management of fugitive dust emissions on site. Residual Risk *Consequence: Moderate* *Likelihood: Unlikely* *Risk Rating: Moderate*	
Odour	L2.7	N/A	**Normal Operation** No significant odour emissions are expected at the Premises. No specific conditions relating to odour are required to be added to the licence.	General Provisions of the *Environmental Protection Act 1986*.
Noise	L2.8	N/A	**Normal Operation** No significant noise emissions are expected at the Premises. No conditions relating to noise are required to be added to the licence.	General Provisions of the *Environmental Protection Act 1986*.
Monitoring general	L3.1.1 and L3.1.2	OSC	General monitoring conditions have been included on the licence to support the monitoring relating to surface water emissions. OSCs L3.1.1 and L3.1.2 have been selected to ensure water monitoring is carried out in accordance with appropriate standards.	Australian Standard AS/NZS 5667.1 – Water Quality – Sampling – Guidance on the Design of sampling programs, sampling techniques and the preservation and handling of samples
Monitoring of inputs and outputs	L3.6	N/A	No specific monitoring of inputs and outputs is required.	
Process monitoring	L3.7	N/A	No specific process monitoring is required.	
Ambient quality monitoring	L3.8	N/A	No specific ambient environmental quality monitoring is required.	

DECISION TABLE				
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**OSC or NSC**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Meteorological monitoring	L3.9	N/A	No specific meteorological monitoring is required.	
Improvements	L4	N/A	No specific improvements are required by DER for the operation at the Beta Hunt Mine.	
Information	L5.3.1	OSC NSC	Standard conditions relating to the management of records and complaints, notification requirements and the submission of an annual audit compliance report and annual environmental report are included in the licence. A NSC has been added to Table 5.3.1 relating to notification of suspension of operations (care and maintenance) or intention to come out of care and maintenance to ensure that DER is kept informed regarding the status of the mine.	General Provisions of the *Environmental Protection Act 1986*.
Licence duration	N/A	N/A	The Licence duration has been set at the standard 5 years.	

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
19/06/2015	Proponent sent a copy of draft instrument	None received	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

General conditions

Emission Risk Assessment

Normal Operation
Emission Description
Emission: Stormwater contaminated with environmentally hazardous materials.
Impact: Potential contamination of surrounding land and surface water drainage systems. Potential impacts on water quality and ecology of Lake Lefroy.
Controls: The proponent uses diversion drains and other forms of surface water management to divert rainwater around sumps and infrastructure. Hydrocarbons and chemicals are stored in bunded areas. Spillage from within the bunded areas is directed to an oil-water separator (UltraSpin). Hydrocarbon wastes are stored in skips on site (on a solid concrete pad) and are transported off site to be disposed of or recycled by a licenced controlled waste company.

Risk Assessment
Consequence: Minor
Likelihood: Unlikely
Risk Rating: Moderate

Regulatory Controls
The OSC L1.2.5 ensures that uncontaminated stormwater is kept separate from contaminated or potentially contaminated stormwater and that if stormwater has come into contact with a possible source of contamination, it is then treated as contaminated.

Residual Risk
Consequence: Minor
Likelihood: Rare
Risk Rating: Low

Normal Operation
Emission Description
Emission: Hypersaline water is used for dust suppression.
Impact: Potential contamination of surrounding soils and vegetation death.
Controls: Operational procedures to direct dust suppression spray away from native vegetation.

Risk Assessment
Consequence: Minor
Likelihood: Possible
Risk Rating: Moderate

Regulatory Controls
The OSC L1.3.2 ensures that saline dewatering effluent is only discharged at the approved point or used for dust suppression, and also that dust suppression is conducted in a manner that minimises damage to surrounding vegetation. L1.3.3 has also been included to assess impact of the dewatering effluent on vegetation.

Residual Risk
Consequence: Insignificant
Likelihood: Unlikely
Risk Rating: Low

Emergency Operation
Emission Description
Emission: Hypersaline water is transported in pipelines through areas of native vegetation. Emission would occur if pipelines rupture and/or leak.
Impact: Potential contamination of surrounding soils and vegetation death.

Controls: Adequate siting, design, construction and maintenance of pipelines. Regular inspections of pipeline integrity.

Risk Assessment
Consequence: Moderate
Likelihood: Possible
Risk Rating: Moderate

Regulatory Controls
The OSCs L1.3.1 and L1.3.4-L1.3.6 have been added to the licence to ensure saline effluent is adequately contained and managed, and that corrective action is taken in the event that pipelines leak or rupture.

Residual Risk
Consequence: Insignificant
Likelihood: Possible
Risk Rating: Low

Appendix B

Point source emissions to surface water including monitoring

The dewatering pipeline conveys water from the underground operations to the surface through a single rising main. From there it is pumped via a 788m pipeline into a geotextile lined turkey's nest dam from where it is discharged into Lake Lefroy. The discharge of mine water may potentially cause localised changes to quality and quantity of water at the Beta Hunt discharge site.

The extent of the change depends on the amount of water being discharged and the differences between the quality of the lake's surface water and that of the mine water. The concentration of heavy metals was noted to vary across the SIGM project area[1], leading to a predicted variation in heavy metals in water at different discharge sites. In addition, the potential was identified for dewatering discharge water to cause the precipitation of low-solubility compounds such as iron silicates, leading to a localised hardening and discolouration of the salt crust. It was also noted that the stained areas are mantled by precipitated salt when the halite crust re-establishes following flood conditions and as a result the staining of the salt crust was not considered to be a significant factor for consideration.

Discharge of hypersaline mine water will not have a significant impact on the total salt balance of the Lake Lefroy system. Surface water and shallow groundwater systems are in dynamic equilibrium. It is anticipated that although there may be a short term build-up of salt on the surface at the discharge point, this would likely be redistributed within the lake system when the surface salt layers dissolve during flood conditions after major storm events.

Adjacent to the Beta Hunt discharge point, *Nitella* species oospores and a Protozoa cyst have been identified. Studies conducted by SIGM[1] indicate that there are localised effects on algal populations at discharge points, with no effects of dewatering discharge noted for other aquatic microflora. It is possible that these localised effects are due to the increase in salt loading at the discharge point, which occurs on a localised scale. Overall the aquatic flora of Lake Lefroy is low compared to regional salt lakes such as Lake Cowan.

At the Beta Hunt dewatering discharge point, resting stages of aquatic macroinvertebrates including copepod and ostracod cysts were identified in sediment. *Ceratopogonidae* sp. 003 (a biting midge) was also identified in the water column at the Beta Hunt discharge point. SIGM[1] observed no impacts of dewatering on aquatic macroinvertebrate abundance or diversity by comparing dewatering discharge points and control sites.

A review of water quality results of the dewatering discharge including from the old section of mine (A-Zone) showed that:

- Major cations/ anions, total dissolved solids (TDS) and pH do not vary significantly and do not show any significant signs of sulfidic oxidation to form acid mine drainage;
- Hydrocarbons (now expressed as Total Recoverable Hydrocarbons or TRH, vice the previous terminology TPH) were not detected in the samples analysed;
- Total suspended solids (TSS) were higher in the March 2014 sampling round than in previous months, particularly from the A-Zone (520mg/L). This may indicate increasing fines in the dewatering water and/or insufficient settling time in the turkey's nest dam prior to discharge, possibly exacerbated by to the larger volumes of water now being pumped. Therefore Salt Lake Mining should ensure sufficient residence time in the turkey's nest dam to achieve the necessary settling prior to discharge to Lake Lefroy;
- Nickel is variable in concentration (range: 0.9-2.3mg/L) and higher than would normally be found in most paleochannel/fractured bedrock aquifers. However nickel in the A-Zone sample is well within the range recorded in the usual dewatering. The higher concentrations of nickel in Beta Hunt dewatering water are very likely the result of interaction with the nickel mineralisation in the area. Nickel and manganese are known to be elevated in the sediment in the vicinity of the historical discharge from the Beta Hunt mine, but are not expected to be significantly mobile. Dewatering from the A-Zone is therefore not likely to cause any significant new impact to Lake Lefroy due to nickel;

- Zinc concentrations have increased gradually over time, possibly due to increasing depth of dewatering.

Environmental impact assessment studies conducted for nearby proposals have concluded that the environmental risk of metal accumulation as result of discharging dewatering effluent into the lake is manageable and confined to areas around the discharge points since the metals are absorbed and immobilised in the sediment[2].

The following table outlines the groundwater quality.

Analyte	LOR*	Routine Dewatering					A-Zone
		October 2011	March 2013	June 2013	Sept. 2013	March 2014	March 2014
pH (pH units)	0.1	7.0	6.7	7.0	7.0	7.0	6.9
TDS	5	281000	290000	2600000	300000	300000	310000
TSS	5	N/A	45	27	59	280	520
Total TPH/TRH	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium	0.5	84500	80000	92000	84000	76000	77000
Potassium	0.5	1410	1600	2200	1600	1700	1700
Calcium	0.5	387	390	550	490	450	400
Magnesium	0.5	15800	15000	17000	15000	15000	16000
Bicarbonate	5	65	100	76	130	99	110
Chloride	1	176000	160000	130000	150000	150000	160000
Sulfate	1	21600	24000	21000	24000	25000	28000
Arsenic	0.05	<0.01	<0.25	<0.2	0.005	0.01	0.01
Cadmium	0.01	0.005	<0.05	<0.2	0.02	0.015	0.01
Chromium	0.01	<0.01	<0.05	<0.2	0.01	0.01	0.01
Cobalt	0.001	N/A	N/A	N/A	0.025	0.035	0.015
Copper	0.01	0.30	<0.05	<0.2	0.045	0.045	0.04
Iron	0.01	<0.5	<0.1	<0.4	<0.05	0.39	0.19
Nickel	0.02	0.90	1.2	1.7	1.5	2.3	1.3
Lead	0.03	0.30	<0.15	<0.6	0.12	0.07	0.035
Selenium	0.1	<0.1	<0.6	<2.4	0.005	0.005	0.005
Zinc	0.02	0.30	0.40	0.58	0.56	0.71	0.77

*Limit of reporting (LOR) for chemical parameters—the minimum concentration of a substance in a sample that can be reliably detected by a laboratory.

Emission Risk Assessment – Operations

Emission Description
Emission: Dewatering effluent from underground mining operations is discharged into Lake Lefroy. The discharge is hypersaline, contains suspended solids and elevated nickel.
Impact: Potential impacts may occur to fringing vegetation as a result of the salinity of the effluent. Discharge may result in a localised sediment/ salinity plume with potential for the accumulation of nickel.
Controls: The proponent ensures that water collected underground passes through settlement dams underground prior to being pumped to the surface which will reduce the TSS. Discharge via the lined turkeys nest reduces potential for erosion and scouring and affords further opportunity for settling of suspended solids.

Risk Assessment:
Likelihood: Likely
Consequence: Moderate
Risk Rating: High

Regulatory controls

- OSC 1.3.2 has been included in the licence which allows discharge from the Beta Hunt Mine through an approved discharge point.
- OSC 2.3.1 stipulates the approved discharge point and abatement which include measures to reduce sediment loading in the effluent, ensure erosion and scouring impacts are minimised, and to ensure the likelihood of damage to fringing vegetation is minimised. Salt Lake Mining should ensure that sufficient settling is achieved in the turkeys nest dam prior to discharge to Lake Lefroy.
- OSC 2.3.2 ensures that point source emissions to surface water are limited to 480,000kL per annual period.
- Monitoring OSC 3.3.1 has been included which requires both monthly and quarterly monitoring of the dewatering discharge. Although no limits on pH, metals, major anion and cations, TSS, TDS and TRH have been applied in the licence, monitoring of these key water quality parameters is required to ensure any impacts to Lake Lefroy can be assessed.

Residual Risk:
Likelihood: Possible
Consequence: Minor
Risk Rating: Moderate

Reference:

1. *St Ives Gold Mining Company (SIGM), Gold Mining Developments on Lake Lefroy – Beyond 2010. 20 December 2010.*
2. *Report and recommendations of the Environmental Protection Authority (2011). Gold Mining Developments on Lake Lefroy – Beyond 2010. Report 1411, August 2011.*