



ROSSLYN • HILL  
MINING



**Rosslyn Hill Mining Pty Ltd**  
**Compliance Assessment Report 2012**  
**Paroo Station Mine**

March 2013



# CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	Background	1
1.2	Objective	1
1.3	Report Structure	3
<b>2</b>	<b>ANNUAL COMPLIANCE</b>	<b>4</b>
2.1	Overview	4
2.1.1	Proposal implementation status	4
2.2	Compliance Statement	4
2.3	Potential Non-compliances and Corrective Actions	5
2.3.1	Potential Non-compliances	5
2.3.2	Corrective and Preventative Actions	5
<b>3</b>	<b>RESULTS OF THE SUBTERRANEAN FAUNA (STYGOFAUNA) SAMPLING PLAN</b>	<b>6</b>
<b>4</b>	<b>CAP PROPOSED CHANGES FOR WHICH CEO APPROVAL IS SOUGHT</b>	<b>7</b>
<b>5</b>	<b>COMPANY ENDORSEMENT</b>	<b>8</b>
<b>6</b>	<b>REFERENCES</b>	<b>9</b>

## Appendices

- Appendix 1: PIMB's 2012 Audit Table - Interim Conditions, Ministerial Statement 783
- Appendix 2: PIMB's 2012 Audit Table - Ministerial Statement 905
- Appendix 3: Subterranean Fauna (Stygofauna) Sampling Plan Report



## Rosslyn Hill Mining Pty Ltd

Suite 1D, 21 Teddington Road, Burswood, WA, 6100, Tel: (08) 9267-7000, Fax: (08) 9267-7070

## Paroo Station Mine Lead Project

35 km west of Wiluna, Wiluna, WA, 6646, Tel: (08) 9981-2144, Fax: (08) 9981-2164

# Rosslyn Hill Mining - Compliance Assessment Report

### Document Control:

	Name	Date	Position
Originator	Ben Cross	11/02/2013	Environmental Superintendent
Review	Mark Forster	22/03/2013	OHSE Manager
Review	Chad Bishop	25/03/2013	GM Risk and Compliance
Approved	Todd Vain	26/03/2013	Managing Director

### Distribution:

Company	Copies	Contact
Paroo Station Mine Site	1	OHS&E Department
Rosslyn Hill Mining Burswood Office	1	Document Library
Enirgi Metal Group - Melbourne	1	Legal Council
Ivernia Inc	1	Vice-President, Legal & General
Rosslyn Hill Mining 2012 Annual Environmental Report External Recipients	5	DEC, OEPA-PIMB, DoH, DoW and DMP

### Disclaimer

All material contained in this Report is subject to copyright. This material may be reproduced for purposes permitted by the Copyright Act 1968 (Cth), provided any reproduction is unaltered, shows the date of first publication and an attribution of source is included. However, no material may be reproduced in any material form or communicated by any means without the prior written permission of the copyright owner (Rosslyn Hill Mining Pty Ltd).

This document is intended to be used only for the purpose for which it was prepared. Subject to any rights that cannot be excluded by law, Rosslyn Hill Mining disclaims all liability for any loss or damage suffered by any third party with respect to the use of and reliance upon this document by that party for a purpose other than the purpose for which it was prepared.



# 1 INTRODUCTION

## 1.1 Background

Rosslyn Hill Mining Pty Ltd (Rosslyn Hill Mining) operates the Paroo Station Mine Site Project (the Project) located approximately 35 km west of Wiluna in the northern Goldfields of Western Australia. The Project was approved on 28 November 2000 by way of Ministerial Statement 559 and operations commenced in February 2005 with mining and processing of lead carbonate concentrate for overseas export through the Port of Esperance. On 2 February 2009, Rosslyn Hill Mining received Ministerial Statement 783 (which amended Ministerial Statement 559) to handle and transport lead carbonate concentrate in sealed bulk bags within locked shipping containers through the Port of Fremantle. On 23 February 2011 Rosslyn Hill Mining received notice of Interim Implementation Conditions (Interim Conditions) from the Minister for Environment pursuant to section 46A of the Environmental Protection Act 1986 (the Act). From 23 February 2011 to July 26 2012, the Interim Conditions have had effect and supersede the implementation conditions set out in Ministerial Statements 559 and 783.

Rosslyn Hill Mining voluntarily placed the Project into care and maintenance during April 2011 to conduct an ‘end to end’ review of operational activities. In parallel with ‘end to end’ review, a Section 46 inquiry was undertaken by the Environmental Protection Authority (EPA) and the EPA’s Report was published 3 October 2011. The EPA’s Section 46 Report provided the EPA’s recommendations to the Minister for Environment as to whether or not the Interim Conditions applicable to Rosslyn Hill Mining should be changed. The Interim Conditions were effective until 26 July 2012, when the Minister for Environment made a decision as to what conditions and procedures the implementation of the Project should be subjected.

On the 27 July 2012, Rosslyn Hill Mining received Ministerial Statement 905, which replaces and supersedes all previous conditions and procedures of Statement 559, Statement 783, and the Interim Implementation Conditions (Published on 23 February 2011).

From 1 January to 31 December 2012 (the “reporting period”), the Project remained on voluntarily care and maintenance. No mining, processing or transportation of lead concentrate carbonate was undertaken during the reporting period.

## 1.2 Objective

The objective of this Compliance Assessment Report (CAR) is to report Rosslyn Hill Mining’s compliance with the conditions applicable to the Project for the period 1 January 2012 to 31 December 2012 (reporting period), in accordance with section 2 of the Rosslyn Hill Mining’s Compliance Assessment Plan (CAP) which applied during the reporting period (being the CAP approved by the CEO of the OEPA on 20 January 2012 (2012 CAP)).

CAPS are required to be maintained to the satisfaction of the CEO under Interim Implementation Condition 4.1 and Ministerial Statement 905 Condition 3.1. Subsequent to the 2012 reporting report, RHM submitted a new CAP under Condition 3.1 of Ministerial Statement 905. This CAP was received

from the CEO of the OEPA on 12 March 2013 (2013 CAP). Subsequent CARs will therefore be prepared in accordance with the 2013 CAP.

Compliance during the reporting period has been assessed against:

- a) Interim Implementation Conditions from 1 January to 26 July 2012; and
- b) Ministerial Statement 905 from 27 July to 31 December 2012.

This CAR is submitted to comply with Interim Implementation Conditions, Condition 4-5 and Ministerial Statement 905, Condition 3-5, both of which require this CAR to be submitted by 31 March 2013 for the period 1 January 2012 to 31 December 2012.

Interim Implementation Condition 4-5 provides that:

*The proponent shall submit a compliance assessment report annually from 31 March 2011 addressing the previous twelve month period or other period as agreed by the CEO. The compliance assessment report shall:*

- 1 *be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the Managing Director's behalf;*
- 2 *include a statement as to whether the proponent has complied with the conditions;*
- 3 *identify all potential non-compliances and describe corrective and preventative actions undertaken;*
- 4 *be made publicly available in accordance with the approved compliance assessment plan; and*
- 5 *indicate any proposed changes to the compliance assessment plan required by Condition 4-1."*

Ministerial Statement 905, Condition 3-5 provides that:

*The proponent shall submit to the CEO a compliance assessment report no later than 31 March annually addressing the previous twelve month period from 1 January to 31 December inclusive or other period as agreed by the CEO. The compliance assessment report shall:*

- 1 *be endorsed by the proponent's Managing Director or in his absence the company secretary, or other person approved by the CEO;*
- 2 *include a statement as to whether the proponent has complied with the conditions;*
- 3 *identify all potential non-compliances and describe corrective and preventative actions taken;*
- 4 *be made publicly available in accordance with the approved compliance assessment plan; and*
- 5 *indicate any proposed changes to the compliance assessment plan required by condition 3-1.*



## 1.3 Report Structure

This CAR has been structured utilising the following heading and sub-headings to convey all relevant information in accordance with Rosslyn Hill Mining's 2012 CAP:

- Cover Page
- Distribution table
- Table of Contents
  - 1.0 Introduction
    - Background
    - Objective
    - Report Structure
  - 2.0 Annual Compliance
    - Overview
    - Compliance Statement
    - Potential Non-compliances and Corrective Actions
      - Potential Non-compliances
      - Corrective and Preventative Actions
  - 3.0 Results of the Subterranean Fauna (Stygofauna) Sampling Program
  - 4.0 CAP Proposed Changes for which CEO Approval is Sought
  - Additional information (eg to record the DMTRS037 results)
  - 5.0 Company Endorsement
  - 6.0 References
  - 7.0 Appendix
    - Appendix 1: Interim Implementation Conditions PIMBS Audit Table effective 1 January to 26 July 2012
    - Appendix 2: Ministerial Statement 905 PIMBS Audit Table effective 27 July to 31 December 2012
    - Appendix 3: Subterranean Fauna (Stygofauna) Sampling Plan Report

As the Interim Implementation Conditions are effective for the period 1 January to 26 July 2012 and Ministerial Statement 905 is effective for 27 July to 31 December 2012 and there are differences between them, two PIMB's audit tables are appended to this report.

## 2 ANNUAL COMPLIANCE

### 2.1 Overview

This CAR represents the fourth annual compliance submission to the Office of the Environmental Protection Authority since the Project's CAP was first approved in July 2009. This CAR details Rosslyn Hill Mining's compliance during the reporting period against the Interim Implementation Conditions received on 23 February 2011 and the implementation conditions set out in Ministerial Statement 905. This CAR has been prepared in accordance with the 2012 CAP.

#### 2.1.1 Proposal implementation status

From 1 January to 31 December 2012 (the "reporting period"), the Project remained on voluntarily care and maintenance. No mining, processing or transportation of lead concentrate carbonate was undertaken during the reporting period.

Activities which did occur during the reporting period however include:

- Conducted an assessment of downstream processing of lead carbonate concentrate options and reported the findings of this assessment to the CEO of OPEA,
- Conducted an environmental risk assessment of key Project aspects regarding potential pathways for lead carbonate contamination including;
  - Mining and processing,
  - Storage,
  - Bagging and loading,
  - Transport, and
  - Port operations,
- Ongoing monitoring of mine site environmental commitments and conditions required by mining tenements and the prescribed premises licence,
- Development and submission of the Project's mine decommissioning and closure plan in accordance with the DMP guideline for mine closure,
- Groundwater aquifer monitoring and compilation of the Annual Groundwater Summary report,
- Conducting a level 2 flora and vegetation assessment covering an extensive area of proposed future mining areas,
- Inspection of on-site stored lead carbonate concentrate to maintain storage integrity,
- Maintained and expanded Project stakeholder engagement activities, and
- Maintained processing plant mechanical and electrical integrity to enable prompt restart of the Project.

### 2.2 Compliance Statement

Rosslyn Hill Mining's compliance with the Interim Implementation Conditions and Ministerial Statement 905 Conditions as they applied during the reporting period has been assessed and the findings are presented in the audit tables provided in **Appendix 1 and 2** (in the format required by the Office of the Environmental Protection Authority). A copy of the Project's Company Endorsement signed by Mr Todd Vains (Managing Director) is provided in **Section 5**.

## **2.3 Potential Non-compliances and Corrective Actions**

This section details any potential non-compliances that occurred during the reporting period and the corrective actions undertaken. Section 2.3.1 sets out a description and cause of any incidents involved in any potential non-compliances. Section 2.3.2 sets out the corrective and preventative actions undertaken by Rosslyn Hill in response to any potential non-compliances.

### **2.3.1 Potential Non-compliances**

Nil potential non-compliance were identified for the 2012 reporting period.

### **2.3.2 Corrective and Preventative Actions**

Nil corrective and preventative actions are carried forward from the Company's 2011 CAR which were required to be addressed within the 2012 reporting period.

Nil corrective and preventative actions are required as a result of nil potential non-compliances being reported for the 2012 reporting period.

### **3 RESULTS OF THE SUBTERRANEAN FAUNA (STYGOFAUNA) SAMPLING PLAN**

Condition 7-3 of the Interim Implementation Conditions requires that:

*The results from the Subterranean Fauna (Stygofauna) Sampling Plan required by Condition 7-1 shall be submitted to the Office of the Environmental Protection Authority in the compliance assessment reports required pursuant to Condition 4-5.*

Rosslyn Hill Mining's Subterranean Fauna (Stygofauna) Sampling Plan was approved by the OEPA on 18 July 2005 and amended on 25 May 2009. Monitoring is carried out biennially. Sampling was last undertaken in 2010.

For 2012 monitoring and reporting commitments, Bennelongia Environmental Consultants (BEC) was commissioned to undertake the fieldwork and stygofauna identification. The 2012 stygofauna sampling consisted of sampling bores previously classified as either impacted (hypothetically) or control depending on their location to the Project and associated infrastructure. A comparison between the stygofauna communities within the respective bore classifications was then undertaken. The stygofauna study undertaken by BEC (2012) concluded that:

*Stygofauna samples collected from impact areas during successive monitoring events provided no evidence of significant change or deterioration in the assemblage in impact areas. The proportions of species recorded from impact and reference areas have remained similar since monitoring began (albeit with some stochastic variation). Stygofauna community structure in impact areas has also changed little and shown no trend of change.*

*Results of monitoring in 2012 confirmed the conclusions from earlier monitoring events that the stygofauna community in impact areas remains stable with no evident decline.*

The results do not indicate any material or significant harm to public health or the environment as a result of activities at the Project.

A copy of the results of the 2012 stygofauna report is attached as Appendix 3 to this CAR.

## **4 CAP PROPOSED CHANGES FOR WHICH CEO APPROVAL IS SOUGHT**

There are currently no proposed changes to the CAP for which CEO approval is sought. Subsequent CARs will follow the CAP received from the CEO of the OEPA on 12 March 2013.



## 5 COMPANY ENDORSEMENT

### SIGNATURE AND CERTIFICATION

Rosslyn Hill Mining has substantially complied with the Interim Implementation Conditions under section 46A of the Act received on 23 February 2011 for the period 1 January 2012 to 26 July 2012, and the implementation conditions set out in Ministerial Statement 905 for the period 27 July 2012 to 31 December 2012.

I declare that the information presented in this CAR is correct and not false or misleading.

SIGNATURE: \_\_\_\_\_

NAME: Mr Todd Vains

POSITION: Managing Director

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_\_

## 6 REFERENCES

Magellan Metals (2012). Approved *Compliance Assessment Plan*, (CAP) approved by the CEO of the OEPA 20 January 2012 (2012 CAP).

Rosslyn Hill Mining (2013). Approved *Compliance Assessment Plan*, (CAP) received from the CEO of the OEPA 12 March 2013.



## APPENDIX 1

Interim Implementation Conditions PIMBS Audit Table effective 1 January to 26 July 2012



# AUDIT TABLE

## Statement Compliance Section

### PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

**Note:**

- Phases that apply in this table = Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases).
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Any elements with status = "Audited by proponent only" are legally binding but are not required to be addressed specifically in compliance reports, if complied with.
- Code prefixes: M = Minister's condition, P = Proponent's commitment, A = Audit specification; N = Procedure.
- Compliance Status: C = Compliant, CLD = Completed, NC = Non – compliant, NR = Not Required at this stage, PNC = Potentially Non-Compliant, IP = In Process. Please note the terms NA = Not Audited and VR = Verification Required are only for OEPA use. The term IP = In Process can be used only for management or monitoring plans awaiting approval of the OEPA or another government agency, and cannot be used for ongoing obligations.
- Acronyms list: BFB = Bush Fires Board (now Fire and Emergency Services Authority of Western Australia), CALM = Department of Conservation and Land Management (now DEC), CEO = Chief Executive Officer; DEC = Department of Environment and Conservation; DIA = Department of Indigenous Affairs; DME = Department of Minerals and Energy (now DMP), DMP = Department of Mining and Petroleum; DoE = Department of Environment (now DEC), DoH = Department of Health; DoW = Department of Water, EPA = Environmental Protection Authority; Part IV = Evaluation Division (now Assessment and Compliance Division, OEPA), HDWA = Health Department of WA (now DoH), Minister for Env = Minister for the Environment; OEPA = Office of the Environmental Protection Authority, Part V = Pollution Prevention Division (now Environmental Regulation Division, DEC), WMD = Waste Management Division (now Waste Management Branch, DEC), WRC = Water and Rivers Commission (now DoW).

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M1.1	Implementation	Subject to these Interim Implementation Conditions, the proponent shall implement the proposal as documented in Attachment 1 of these Interim Implementation Conditions.	The manner of detailed implementation of the proposal shall conform in substance with that set out in any designs specifications, plans or other technical material submitted and as summarised in Attachment 1 of these Interim Implementation Conditions.	Annual Compliance Assessment Reports (ACAR).	Overall		Refer to each specific condition below	
IIC:M2.1	Proponent Commitments	The proponent shall implement the consolidated environmental management commitments documented in Attachment 2 of these Interim Implementation Conditions.	The manner of detailed implementation of the environmental management commitments shall conform in substance with that set out in any designs specifications, plans or other technical material submitted and as summarised in Attachment 2 of these Interim Implementation Conditions.	ACAR.	Overall		Refer to each specific commitment below	
IIC:M3.1	Proponent	The proponent for the time being nominated by the Minister for Environment under section 38(b) or (7) of the <i>Environmental Protection Act 1986</i> is responsible for the implementation of the proposal until such time as the Minister for Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.	Magellan continues to be the nominated proponent.	ACAR	Overall		<b>C</b>	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M3.2	Proponent	Any request for the exercise of that power of the Minister referred to in Condition 3-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.	Magellan continues to be the nominated proponent.	No replacement proponent was sought during the 2012 reporting period. Magellan continues to be the nominated proponent.	Overall		NR	
IIC:M3.3	Proponent	The proponent shall notify the Office of the Environmental Protection Authority of any change of proponent contact name and address within 30 days of such change.	Advise the CEO of the OEPA of any change of proponent contact details in a written letter on proponent letterhead.	The Proponent's address has not changed during the reporting period.	Overall	Within 30 days of such change.	NR	
IIC:M4.1	Compliance Reporting	The proponent shall maintain to the satisfaction of the Chief Executive Officer of the Office of the Environmental Protection Authority (CEO) the Compliance Assessment Plan (CAP) (Ivernia Magellan Metals Pty Ltd, July 2009) approved by the Chief Executive Officer of the Department of Environment and Conservation on 31 July 2009.	Prepare a Compliance Assessment Plan (CAP) and submit to the CEO of the OEPA.		Overall	Updated version to be submitted to OEPA by 25 March 2011.	C	The CAP was modified as required by the Interim Implementation conditions and submitted to the OEPA on 25 March 2011. The modified CAP was approved on 20 January 2012. Following release of OEPA Post Assessment Guideline for Preparing an Audit Table February 2012 clarification was received from OEPA to amend the headings of the approved PIMBS table to those set out within the guideline
IIC:M4.2	Compliance Reporting	The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by Condition 4-1.	An annual compliance assessment report will be developed by the proponent in accordance with the compliance assessment plan.		Overall	31 March each year.	C	CAR submitted on 28 March 2013
IIC:M4.3	Compliance Reporting	The proponent shall retain reports of all compliance assessments described in the compliance assessment plan required by Condition 4-1 and shall make	The annual compliance report will be appended to the Project's AER. The AER will be available on the proponent's website.		Overall		C	The Project's 2012 CAR is maintained on the company database and will be made publicly available to comply with

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		those reports available when requested by the CEO.						the Project's CAP commitments. The 2011 CAR is available on the proponent's website.
IIC:M4.4	Compliance Reporting	The proponent shall advise the CEO of any potential non-compliance as soon as practicable.	The annual compliance report will document any non-compliance. In the event of a potential non-compliance, the proponent will advise in writing the CEO as soon as practicable after being made aware of the non-compliance.	Details of reporting potential non-compliances during the reporting period are set out in Sections 2.3.1 of the CAR.	Overall	As soon as practicable (refer to definition of practicable in EP Act 1986).	C	
IIC:M4.5	Compliance Reporting	The proponent shall submit a compliance assessment report annually from 31 March 2011 addressing the previous twelve month period or other period as agreed by the CEO.	The compliance assessment report will: 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the Managing Director's behalf; 2. include a statement as to whether the proponent has complied with the conditions; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; and 5. indicate any proposed changes to the compliance assessment plan required by Condition 4-1.	ACAR.	Overall	Annually from 31 March 2011.	C	
IIC:M5.1	Dust control - Health, Hygiene and Environmental Management Program	Subject to Condition 5-2, the proponent shall implement the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or revisions approved by the Minister for Environment.	Provide the resources to implement the Health, Hygiene and Environmental Management Program.	Quarterly Audit reports required by M17-2 will be submitted to the CEO and made available on Magellan's website.	Overall		C	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M5.2	Dust control - Health, Hygiene and Environmental Management Program	If there is an inconsistency or difference between the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 and these Interim Implementation Conditions, these Interim Implementation Conditions shall prevail and are to be complied with to the extent of any inconsistency or difference.	In the event of an inconsistency or difference between the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 and the Interim Implementation Conditions Magellan will comply with the Interim Implementation Conditions to the extent of any inconsistency or difference.	ACAR.	Overall		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period so no relevant inconsistency in the operation of the documents arose.
IIC:M5.3	Dust control - Health, Hygiene and Environmental Management Program	The proponent shall ensure that lead carbonate concentrate (other than minor quantities removed for product testing purposes) which is to be removed from the mine-site is dealt with only in accordance with the following procedures: 1. Prior to being removed from the mine-site, lead carbonate concentrate shall be: a. placed into double laminated water-proof and sieve proof bags which are sealed so as to prevent the release of lead carbonate concentrate from the bag; b. all visible dust shall be removed from the exterior of the bags before they are placed in a clean shipping container which when loaded is locked, so that the only material containing lead carbonate is in sealed bags within the container when the container leaves the mine-site. 2. The locked shipping containers shall be transported by road to a	Any lead carbonate concentrate (other than minor quantities removed for product testing purposes) which is to be removed from the mine-site will be dealt with only in accordance with the following procedures: 1. Prior to being removed from the mine-site, lead carbonate concentrate shall be: a. placed into double laminated water-proof and sieve proof bags which are sealed so as to prevent the release of lead carbonate concentrate from the bag; b. all visible dust shall be removed from the exterior of the bags before they are placed in a clean shipping container which when loaded is locked, so that the only material containing lead carbonate is in sealed bags within the container when the container leaves the mine-site. 2. The locked shipping containers shall be transported by road to a designated secured storage	ACAR  Independent accredited auditor monthly reports required by M10-1.  Independent third party Quarterly Audit reports required by M17-2, will be submitted to the CEO, and made available on Magellan's website.	Overall		C	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		<p>designated secured storage area in Leonora and then by rail from Leonora to Fremantle Port where they will be stored prior to being loaded onto vessels for export.</p> <p>3. Unless required by a public official or public authority acting with lawful authority or an auditor engaged under condition 10-1(3), the shipping containers shall be kept locked and the seals on the bags shall not be broken between the time when the shipping container leaves the mine-site and the time it is removed from the State.</p> <p>4. The moisture content of the lead carbonate concentrate in the sealed bags shall be at least 7.5% at all times between the time when the shipping container leaves the mine-site and the time it is removed from the State.</p> <p>5. At all times after they are loaded with sealed bags of lead carbonate concentrate, the shipping containers shall only be lifted by top-lifting machines.</p> <p>6. All bags shall be inspected by an auditor engaged under condition 10 after they are sealed and before they are loaded into a shipping container, and all shipping containers shall be inspected by an auditor engaged under condition 10</p>	<p>area in Leonora and then by rail from Leonora to Fremantle Port where they will be stored prior to being loaded onto vessels for export.</p> <p>3. Unless required by a public official or public authority acting with lawful authority or an auditor engaged under condition 10-1(3), the shipping containers shall be kept locked and the seals on the bags shall not be broken between the time when the shipping container leaves the mine-site and the time it is removed from the State.</p> <p>4. The moisture content of the lead carbonate concentrate in the sealed bags shall be at least 7.5% at all times between the time when the shipping container leaves the mine-site and the time it is removed from the State.</p> <p>5. At all times after they are loaded with sealed bags of lead carbonate concentrate, the shipping containers shall only be lifted by top-lifting machines.</p> <p>6. All bags shall be inspected by an auditor engaged under condition 10 after they are sealed and before they are loaded into a shipping container, and all shipping containers shall be inspected by an auditor engaged under condition 10 before being removed from the mine-site.</p>					

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		before being removed from the mine-site.						
IIC:M6.1	Decommissioning and Rehabilitation Plan	<p>Within twelve months of the date of issue of this Notice of Interim Implementation Conditions, the proponent shall prepare a Decommissioning and Rehabilitation Plan to the requirements of the Office of the Environmental Protection Authority on advice of the Department of Mines and Petroleum.</p> <p>The objectives of this plan are: to render the mine-site areas safe and stable; and to encourage the re-establishment of self-sustaining ecosystems.</p>	A Decommissioning and Rehabilitation Plan will be prepared and lodged with the OEPA no later than 22 February 2012.		Operation	Required to be submitted prior to 23 February 2012.	C	Submitted to the CEO of the OEPA on 22 February 2012
IIC:M6.2	Decommissioning and Rehabilitation Plan	The proponent shall implement the Decommissioning and Rehabilitation Plan required by Condition 6-1 until such time as the Minister for the Environment, on advice of the CEO and the Department of Mines and Petroleum, determines that decommissioning and rehabilitation are complete.	The decommissioning and rehabilitation plan shall be implemented as required following receipt of CEO approval.		Overall		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. The Decommissioning and Rehabilitation Plan was not approved before the publication of Ministerial Statement 905 superseding this condition,



# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								so there was no requirement for the Plan to be implemented.
IIC:M6.3	Decommissioning and Rehabilitation Plan	At least two years prior to the completion of mining, the proponent shall conduct a comprehensive review of the matters referred to in clauses 1-10 of Condition 6-1, to determine if any additional planning, management measures or monitoring are required and to determine if the objectives of the approved plan have been met.	Conduct a comprehensive review of the matters referred to in clauses 1-10 of Condition 6-1, to determine if any additional planning, management measures or monitoring are required and to determine if the objectives of the approved plan have been met.		Operation	2 years prior to completion of mining.	NR	
IIC:M6.4	Decommissioning and Rehabilitation Plan	The proponent shall make the Decommissioning and Rehabilitation Plan required by Condition 6-1 publicly available on the proponent's website within three business days of approval.	The Decommissioning and Rehabilitation Plan required by Condition 6-1 publicly available on the proponent's website within three business days of approval.		Overall	Within three business days of approval.	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. The Decommissioning and Rehabilitation Plan was not approved before the publication of Ministerial Statement 905 superseding this condition, and so there was no requirement for this Plan to be publicly available.
IIC:M7.1	Subterranean Fauna (Stygofauna) Sampling Plan	The proponent shall implement the Subterranean Fauna (Stygofauna) Sampling Plan (Biota, January 2005) approved on 18 July 2005, as amended by letter (Ivernia Magellan Metals Pty Ltd, 4 April 2009) approved on 25 May 2009."	Provide the resources to implement the Subterranean Fauna (Stygofauna) Sampling Plan (Biota, January 2005) approved on 18 July 2005, as amended by letter (Ivernia Magellan Metals Pty Ltd, 4 April 2009) approved on 25 May 2009."	ACAR and Magellan's website.	Overall		C	Stygofauna assessments at the Project have been undertaken by specialised consultants between 2004-06, 2008, 2010 and 2012.
IIC:M7.2	Subterranean Fauna (Stygofauna) Sampling Plan	The proponent shall make the Subterranean Fauna (Stygofauna) Sampling Plan required by condition 7-1 publicly available on the proponent's website by 1 March 2011.	Make the Subterranean Fauna (Stygofauna) Sampling Plan required by condition 7-1 publicly available on the proponent's website	ACAR & Magellan's website.	Overall	By 1 March 2011.	C	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M7.3	Subterranean Fauna (Stygofauna) Sampling Plan	The results from the Subterranean Fauna (Stygofauna) Sampling Plan required by Condition 7-1 shall be submitted to the Office of the Environmental Protection Authority in the compliance assessment reports required pursuant to Condition 4-5.	Submit the results from the Subterranean Fauna (Stygofauna) Sampling Plan required by Condition 7-1 to the Office of the Environmental Protection Authority in the compliance assessment reports required pursuant to Condition 4-5.	ACAR.	Overall	31 March Annually	C	ACAR (inclusive of the results of the Subterranean Fauna Sampling Plan) will be submitted to OEPA during March 2013.
IIC:M8.1	Health, Hygiene and Environmental Monitoring Program	Subject to Condition 8-2, the proponent shall implement the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or revisions approved by the Minister for Environment.	Provide the resources to implement the Health, Hygiene and Environmental Monitoring Program.	Quarterly OEPA reports required by M 18-1 and M 18-2	Operation	The first audit required pursuant to M 18-1 is completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	C	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.
IIC:M8.2	Health, Hygiene and Environmental Monitoring Program	If there is an inconsistency or difference between the Health, Hygiene and Environmental Monitoring program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 and these Interim Implementation Conditions, these Interim Implementation Conditions shall prevail and are to be complied with to the extent of any inconsistency or difference.	In the event of an inconsistency or difference between the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 and the Interim Implementation Conditions the Proponent shall comply with the Interim Implementation Conditions to the extent of any inconsistency or difference.		Operation		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.  Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period so no relevant inconsistency in the operation of the documents arose.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M9.1	Accredited auditor	<p>The Independent Accredited Auditor engaged by the proponent and approved by the Minister for Environment on 13 August 2009, or such other Independent Accredited Auditor as approved by the Minister for Environment, must continue to be engaged and funded by the proponent to undertake the following tasks in an independent manner at all times when shipping containers of lead carbonate is removed from the mine-site:</p> <ol style="list-style-type: none"> <li>1. Auditing the processes for the packaging and transport of the lead carbonate concentrate from the mine-site through to export from the Port of Fremantle, including the use of top-loading machines for the transport of the shipping containers;</li> <li>2. Inspecting all bags of lead carbonate concentrate after they are sealed, prior to and after they are loaded into shipping containers, and inspecting all shipping containers after they are loaded and locked and prior to their removal from the mine-site for the presence of material containing lead carbonate outside the sealed bags;</li> <li>3. Carry out random dust monitoring inside shipping containers, by randomly selecting at least 1% of containers averaged over a</li> </ol>	<p>Engage and fund the services of an independent accredited auditor approved by the Minister.</p> <p>The independent accredited auditor will undertake the following tasks at all times:</p> <ol style="list-style-type: none"> <li>1. Auditing the processes for the packaging and transport of the lead carbonate concentrate from the mine-site through to export from the Port of Fremantle, including the use of top-loading machines for the transport of the shipping containers;</li> <li>2. Inspecting all bags of lead carbonate concentrate after they are sealed, prior to and after they are loaded into shipping containers, and inspecting all shipping containers after they are loaded and locked and prior to their removal from the mine-site for the presence of material containing lead carbonate outside the sealed bags;</li> <li>3. Carry out random dust monitoring inside shipping containers, by randomly selecting at least 1% of containers averaged over a quarter of a calendar year, without the knowledge of the proponent, and place dust monitors inside those containers prior to their removal from the mine-site, removing the monitors at the Port of Fremantle to test for</li> </ol>	<p>The independent accredited auditor was approved by the Minister for environment on the 13<sup>th</sup> August 2009. Monthly independent auditor reports and 6 monthly Inspection reports are posted on the Magellan website.</p>	Operation		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		<p>quarter of a calendar year, without the knowledge of the proponent, and place dust monitors inside those containers prior to their removal from the mine-site, removing the monitors at the Port of Fremantle to test for the presence of lead carbonate dust;</p> <p>4. Carry out quality assurance procedures relevant to the random dust monitoring inside the shipping containers to the satisfaction of the CEO; and</p> <p>5. Recording observations of any visible dust inside those containers opened at the Port of Fremantle pursuant to Condition 9-1(3).</p>	<p>the presence of lead carbonate dust;</p> <p>4. Carry out quality assurance procedures relevant to the random dust monitoring inside the shipping containers to the satisfaction of the CEO; and</p> <p>5. Recording observations of any visible dust inside those containers opened at the Port of Fremantle pursuant to Condition 9-1(3).</p>					
IIC:M10.1	Reporting of outcomes of auditing and monitoring	The proponent shall ensure that all reports received from the Independent Accredited Auditor engaged under Condition 9-1 are provided no later than the next business day to the CEO and to an appropriate reference group with relevant community representation, as determined by the Minister for Environment, and made publicly available on the proponent's website within three business days. Until otherwise determined by the Minister, the reference group shall be the Fremantle Ports Inner Harbour Community Liaison Group established by the Fremantle Port Authority.	Independent accredited auditor reports are made publically available on the Magellan website.	Transport route monitoring results and independent accredited auditor monthly reports have been regularly posted on the Magellan website.	Overall	No later than the next business day Monthly – Monthly Reports.	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M10.2	Reporting of outcomes of auditing and monitoring	The proponent shall report all findings of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, to the reference group referred to in Condition 10-1 at least once every calendar year.	Provide the Community Reference Group with the findings of the health, Hygiene and Environmental Monitoring Program at least once every year.	The proponent will maintain copies of the reports / correspondence provided to the Community Reference Group, including any powerpoint presentations to the Group. The transport route health, hygiene and environmental monitoring program results are posted on the Magellan website.	Overall	At least once every calendar year.	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.
IIC:M10.3	Reporting of outcomes of auditing and monitoring	All obligations of the Independent Accredited Auditor to report to the CEO, other government agencies, reference groups or the public required by or referred to in any plans, programs or other documents which the proponent is required to implement, shall, by virtue of this condition, be the proponent's responsibility	Independent accredited auditor reports are made publically available on the Magellan website.	Magellan website.	Overall		NR	
IIC:M11.1	Emergency Response Plan	In the event that material containing lead carbonate is released from a shipping container into the environment at any point between the time the shipping container leaves the mine-site and the time it is removed from the State, the proponent shall ensure that all lead carbonate is removed from the affected environment.	Post clean-up sampling will be undertaken at any area affected by lead carbonate contamination. Post clean-up sampling is documented in the ERP.	There has been no evidence that lead carbonate concentrate has been released from a shipping container into the environment at any point between the time the shipping container leaves the mine-site and the time it is removed from the State during the 2012 reporting period.	Operation	In the event that material containing lead carbonate is released from a shipping container into the environment.	NR	
IIC:M11.2	Emergency Response Plan	The proponent shall implement the Emergency Response Plan (Strategen, June 2009) approved	Implement the Emergency Response Plan (Strategen, June 2009) approved by the Minister	ACAR. The roles and responsibilities for all parties along the	Operation		C	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		by the Minister for Environment on 13 August 2009.	for Environment on 13 August 2009.  Both desktop and simulated emergency response activities will be undertaken in accordance with the Emergency Response Plan.	transport route have been documented within the ERP. The ERP was not activated during the 2012 reporting period.				
IIC:M11.3	Emergency Response Plan	Revisions to the Emergency Response Plan may be approved by the Minister for Environment on advice of the CEO, Fire and Emergency Service Authority, the Port Authority and relevant Local Governments.	Make revisions to the ERP and seek approval for those revisions from the Minister for Environment on advice of the CEO, FESA, the Port Authority and relevant Local Governments.	No modification of the ERP was required following the issue of Interim Implementation conditions dated 23 February 2011	Operation		NR	
IIC:M11.4	Emergency Response Plan	The proponent shall implement revisions of the Emergency Response Plan approved pursuant to Condition 11-3.	Following approval for any revision, update the ERP and implement in accordance with the revisions.	No modification of the ERP was required following the issue of Interim Implementation conditions dated 23 February 2011	Operation		NR	
IIC:M12.1	Performance review	The proponent shall report by 19 June 2011 to the Minister for Environment and the reference group referred to in Condition 10 on the following matters as they relate to the period commencing from first removal of shipping containers from the mine-site in 2009 and ending on 19 March 2011: 1. Report any non-compliance with conditions 5, 8, 9 and 11; 2. Describe the causes of any non-compliance with those conditions; 3. Describe the additional measures that have been put in place to ensure compliance; 4. Report the number of incidents of the presence of dust containing lead carbonate and those that can be attributed to the	Report the following: 1. Report any non-compliance with conditions 5, 8, 9 and 11; 2. Describe the causes of any non-compliance with those conditions; 3. Describe the additional measures that have been put in place to ensure compliance; 4. Report the number of incidents of the presence of dust containing lead carbonate and those that can be attributed to the proponent's activities; and 5. Review the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) or any revisions approved by the Minister for Environment and make suggestions for changes.	ACAR	Operation	By 19 <sup>th</sup> June 2011.	CLD	Performance Review submitted to the CEO of the OEPA on 19 June 2011 in compliance with condition 12 of the Interim Implementation conditions issued 23 February 2011

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		proponent's activities; and 5. Review the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) or any revisions approved by the Minister for Environment and make suggestions for changes.						
IIC:M13.1	Financial assurance	The unconditional and irrevocable bank guarantee from Australia and New Zealand Banking Group Limited dated 9 September 2009, in the amount of AU\$5 million provided to the Chief Executive Officer of the Department of Environment and Conservation on 10 September 2009 as security for the due and punctual observance and performance by the proponent of the requirements of Conditions 5-3 and 11-1, or such other security on the same terms as may be approved by the CEO, shall be maintained by the proponent and is to be replaced every five years in accordance with Condition 13-2.	Provide to the CEO a financial assurance, in the form of a unconditional and irrevocable bank guarantee.	.	Overall	9 September 2009. Replaced every five years.	C	Lodgment of the required bond has been completed
IIC:M13.2	Financial assurance	The financial assurance shall be for an initial amount of AU\$5 million and shall be substituted every five years after the provision of the first guarantee with the fixed initial amount of each successive guarantee being indexed to inflation (being the Consumer Price Index, Perth).	Provide financial assurance of AU\$5 million indexed to inflation every 5 years.		Overall	9 September 2014	NR	
IIC:M13.3	Financial assurance	In the event that the guarantor referred to in condition 14-1 terminates its liability under the bank guarantee by paying to the Minister or the CEO the balance of			Overall	In the event that the guarantor referred to in condition 14-1 terminates its liability under the bank guarantee by paying to the	NR	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		the financial assurance remaining unpaid, the CEO will hold the financial assurance (being the amount paid by the guarantor upon termination), as security for the due and punctual observance and performance by the proponent of the requirements of conditions 5-3 and 11-1, in an interest bearing account nominated by the CEO, with the interest accruing for the benefit of the Minister or the CEO.				Minister or the CEO the balance of the financial assurance remaining unpaid.		
IIC:M13.4	Financial assurance	The financial assurance may be called on or used in accordance with section 86E of the Environmental Protection Act 1986 if the proponent fails to implement the proposal in accordance with conditions 5-3 or 11-1.	The Minister or CEO to recover the reasonable costs of taking action in accordance with this condition, or the costs reimbursed, by making a claim on or realising the financial assurance part of it.	ACAR. Not required at this stage as the bond has not been called upon.	Overall		NR	
IIC:M13.5	Financial assurance	The financial assurance shall be discharged by the CEO and the Minister when the CEO has given the proponent written notice pursuant to section 86F(1) of the Environmental Protection Act 1986.	CEO to discharge financial assurance.		Decommissioning		NR	
IIC:M14.1	Sampling Programs	The proponent shall conduct the sampling programs required pursuant to sections 4.3.2 (“Transport route monitoring program”) and 5.3.2 (“Monitoring program within Fremantle Ports”) of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, in accordance with the table listed in the Notice of Interim Implementation Conditions under	Undertake the following sampling program: Water sampling in Rainwater tank, WATTRS01 to WATTRS19, Six-monthly, during January/February and July/August, Recorded in mg/L Dust deposition sampling, SDMTRS01 to SDMTRS07, SDMTRS20 and SDMTRS21, Monthly Recorded in mg/m <sup>2</sup> /month Dust deposition sampling, SDMTRS08 to SDMTRS19, Six-monthly, during March/April and September/October, Recorded in mg/m <sup>2</sup> /month High volume air	ACAR. Monthly Monitoring reports required by M 15-5, Notification required by M15-3 and M15-4 and Reports required by M17-2 and M18-2 Independent Auditor approved by the CEO of the OEPA quarterly audits of HHEMPs and quarterly reports on audit findings submitted to the CEO of the OEPA by the 30 <sup>th</sup> day of the month following the	Overall	Water sampling - Six-monthly, during January/February and July/August Dust deposition sampling (SDMTRS01 to SDMTRS07, SDMTRS20 and SDMTRS21) – Monthly Dust deposition sampling (SDMTRS08 to SDMTRS19) - Six-monthly, during March/April and September/October High volume air - One continuous 24 hour period every six days, plus one extra continuous 24 hours period within the six days during unloading or	NR	Project placed on ‘care and maintenance’ April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.



# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		M14-1.	sampling Passenger Terminal and Berth 12, One continuous 24 hour period every six days, plus one extra continuous 24 hours period within the six days during unloading or loading of Magellan shipping containers, Recorded in g/m <sup>3</sup> Soil sampling DMTRS01 to DMTRS251 Annually, during July/August, Recorded in mg/kg Sediment sampling within drainage sumps SUMPTRS01, SUMPTRS02, SUMPTRS03(A), SUMPTRS03(B), SUMPTRS04(A), SUMPTRS04(B), SUMPTRS05 to SUMPTRS13, Six-monthly, during March/April and September/October, mg/kg. Marine sediment sampling P1 to P12, DP1 to DP7 and CO2, Six-monthly, during January/February and July/August , Recorded in mg/kg	end of the audit period.		loading of Magellan shipping containers. Soil sampling - Annually, during July/August. Sediment sampling within drainage sumps - Six-monthly, during March/April and September/October. Marine sediment sampling - January/February and July/August.		
IIC:M15.1	Sampling analysis and reporting timing obligations	The proponent shall ensure that all monitoring samples which are required to be collected pursuant to sections 4.3.2 (“Transport route monitoring program”) and 5.3.2 (“Monitoring program within Fremantle Ports”) of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, are dispatched for laboratory analysis: 1. no later than the next business day following collection for samples collected within the Perth Metropolitan Region; 2. no later than five business	Ensure samples are dispatched: 1. no later than the next business day following collection for samples collected within the Perth Metropolitan Region; and 2. no later than five business days of being collected for samples collected outside of the Perth Metropolitan Region.	Monthly OEPA Monitoring reports required by M15-5 Quarterly audit reports required by M18-2	Overall	No later than the next business day following collection for samples collected within the Perth Metropolitan Region and no later than five business days of being collected for samples collected outside of the Perth Metropolitan Region.	<b>NR</b>	Project placed on ‘care and maintenance’ April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		days of being collected for samples collected outside of the Perth Metropolitan Region.						
IIC:M15.2	Sampling analysis and reporting timing obligations	The proponent shall ensure that each monitoring sample which is required to be isotopically tested pursuant to sections 4.4 (“Performance of controls and contingencies”) and 5.4 (“Performance of controls and contingencies”) of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, is dispatched for laboratory analysis no later than the next business day after the proponent receives the certificate of analysis confirming a monitoring result exceeds the baseline trigger level for a sample site.	Ensure that each monitoring sample, which is required to be isotopically tested, is dispatched for laboratory analysis no later than the next business day after the proponent receives the certificate of analysis confirming a monitoring result exceeds the baseline trigger level for a sample site.	Monthly OEPA Monitoring reports required by M15-5 Quarterly audit reports required by M18-2	Overall	No later than the next business day after the proponent receives the certificate of analysis confirming a monitoring result exceeds the baseline trigger level for a sample site.	<b>NR</b>	Project placed on ‘care and maintenance’ April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.
IIC:M15.3	Sampling analysis and reporting timing obligations	The Managing Director of the proponent, or his delegate approved by the CEO, shall ensure that a copy of the certificates of analysis of all monitoring results above the baseline trigger level for a site monitored pursuant to sections 4.3.2 (“Transport route monitoring program) and 5.3.2 (“Monitoring program within Fremantle Ports) of the Health, Hygiene and Environmental	The Managing Director, or his delegate approved by the CEO, shall ensure that a copy of the certificates of analysis of all monitoring results above the baseline trigger level for a monitoring site are reported to the OEPA, DEC, DoH, DMP, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day	Magellan Managing Director written confirmation of isotopic analysis results provided as required by M 4-3.2 and 5-3.2.	Overall	No later than the next business day following receipt of analysis indicating exceedance of baseline by the proponent.	<b>NR</b>	Project placed on ‘care and maintenance’ April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		Monitoring Program (Strategen, June 2009), are reported to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt by the proponent.	following receipt by the proponent.					
IIC:M15.4	Sampling analysis and reporting timing obligations	The Managing Director of the proponent, or his delegate approved by the CEO, shall ensure that a copy of the certificates of analysis for isotopic testing pursuant to sections 4.4 (“Performance of controls and contingencies”) and 5.4 (“Performance of controls and contingencies”) of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment is provided to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt by the proponent.	The Managing Director, or his delegate approved by the CEO, shall ensure that a copy of the certificates of analysis for isotopic testing is provided to the OEPA, DEC, DoH, DMP, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt by the proponent.	Magellan Managing Director written confirmation of isotopic analysis results provided as required by M15-4.	Overall	No later than the next business day following receipt of analysis indicating exceedance of baseline by the proponent.	<b>NR</b>	Project placed on ‘care and maintenance’ April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M15.5	Sampling analysis and reporting timing obligations	The proponent shall provide the Office of the Environmental Protection Authority with a report, in a format approved by the CEO, on the first business day of every month, with the first report to be submitted 1 March 2011, which includes: <ol style="list-style-type: none"> <li>details of all monitoring samples collected in the preceding month;</li> <li>copies of certificates of analysis and chains of custody for all monitoring results received in the preceding month; and</li> <li>a comparison of all results received in the preceding month to baseline trigger levels.</li> </ol>	Provide a report to the OEPA. The report is to include: <ol style="list-style-type: none"> <li>details of all monitoring samples collected in the preceding month;</li> <li>copies of certificates of analysis and chains of custody for all monitoring results received in the preceding month; and</li> <li>a comparison of all results received in the preceding month to baseline trigger levels.</li> </ol>	Monthly Monitoring reports provided from 1 March 2011 to the OEPA.	Overall	On the first business day of every month, with the first report to be submitted 1 March 2011.	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.
IIC:M16.1	Monitoring triggers, contingency measures and ceasing transport	The proponent shall ensure that it complies with the monitoring triggers and contingency measures outlined in sections 4.4 ("Performance of controls and contingencies") and 5.4 ("Performance of controls and contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment.	Comply with the monitoring triggers and contingency measures outlined in the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment.	Monthly Monitoring reports required by M 15-5. Notification required by M15-3 and M15-4. Quarterly auditor reports required by M 18-2	Overall		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.  CEO of OEPA letter 25 January 2012 confirmed monitoring not required until recommencement of operations.
IIC:M16.2	Monitoring triggers, contingency measures and ceasing transport	The proponent shall immediately cease transport of any further lead carbonate from the mine-site if the results of the isotopic testing undertaken in accordance with the contingency measures outlined in sections 4.4 ("Performance of controls and contingencies") and 5.4	Immediately cease transport of any further lead carbonate from the mine-site if the results of the isotopic testing undertaken in accordance with the contingency measures outlined in sections 4.4 ("Performance of controls and contingencies") and 5.4	Written confirmation to CEO of the OEPA. ACAR. Monthly Monitoring reports required by M 15-5, Notification required by M15-3 and M15-4 and Reports required by M18-2.	Overall	If the results of the isotopic testing undertaken in accordance with the contingency measures outlined in sections 4.4 ("Performance of controls and contingencies") and 5.4 ("Performance of controls and contingencies") of the Health,	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		("Performance of controls and contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, demonstrate exceedance of the baseline trigger level at a sample site.	contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, demonstrate an exceedance of the baseline trigger level at a sample site.			Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, demonstrate exceedance of the baseline trigger level at a sample site.		
IIC:M16.3	Monitoring triggers, contingency measures and ceasing transport	If after the date of issue of these Interim Implementation Conditions the proponent ceases transport of lead carbonate as a result of complying with any contingency measure outlined in sections 4.4 ("Performance of controls and contingencies") or 5.4 ("Performance of controls and contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, it may only recommence transport in accordance with a Re-commencement Plan approved by the CEO which: <ol style="list-style-type: none"> <li>1. Outlines the reasons for the ceasing of transport;</li> <li>2. Provides the results of the investigation designed in accordance with section 4.4 ("Performance of controls and contingencies") or section 5.4 ("Performance of controls and contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment, into the source and extent of the lead;</li> <li>3. Provides the results of a review of packaging and transport procedures;</li> <li>4. Provides the plans of any clean-up required pursuant to Condition 11-1 or results thereof if completed; and</li> <li>5. Proposes management</li> </ol>	Prior to recommencing transport develop a Re-commencement Plan approved by the CEO which: <ol style="list-style-type: none"> <li>1. Outlines the reasons for the ceasing of transport;</li> <li>2. Provides the results of the investigation designed in accordance with section 4.4 ("Performance of controls and contingencies") or section 5.4 ("Performance of controls and contingencies") of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, into the source and extent of the lead;</li> <li>3. Provides the results of a review of packaging and transport procedures;</li> <li>4. Provides the plans of any clean-up required pursuant to Condition 11-1 or results thereof if completed; and</li> <li>5. Proposes management</li> </ol>	Re-commencement Plan approved by the CEO.	Overall	Prior to recommencing transport.	<b>NR</b>	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		<p>Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, into the source and extent of the lead;</p> <p>3. Provides the results of a review of packaging and transport procedures;</p> <p>4. Provides the plans of any clean-up required pursuant to Condition 11-1 or results thereof if completed; and</p> <p>5. Proposes management and monitoring measures for the re-commencement of transport.</p>	<p>and monitoring measures for the re-commencement of transport.</p>					
IIC:M17.1	Ongoing audits of Health, Hygiene and Environmental Management Program	<p>The proponent shall appoint an independent third party approved by the CEO to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of, or parts thereof, the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, regardless of the responsible parties described in the Health, Hygiene and Environmental Management Program.</p>	<p>Appoint an independent third party, approved by the CEO, to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of, or parts thereof, the Health, Hygiene and Environmental Management Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment, regardless of the responsible parties described in the Health, Hygiene and Environmental Management Program.</p>	<p>Independent third party and Scope of works approved by CEO of the OEPA. ACAR.</p>	Operation	Prior to 31 March 2011.	<b>CLD</b>	<p>Independent third party and scope of works was approved by CEO [insert date].</p>

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M17.2	Ongoing audits of Health, Hygiene and Environmental Management Program	The proponent shall ensure that the first audit required pursuant to Condition 17-1 is completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	Ensure the audit is undertaken for the period 1 January 2011 to 31 March 2011 and provide the report by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	Quarterly Audit reports required by M 17-2.	Overall	Completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	C	
IIC:M18.1	Ongoing audits of Health, Hygiene and Environmental Monitoring Program	The proponent shall appoint an independent third party approved by the CEO to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment.	Appoint an independent third party approved by the CEO to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009, or any revisions approved by the Minister for Environment.	Independent third party and Scope of works approved by CEO of the OEPA.	Overall	Prior to 31 March 2011.	CLD	Independent third party and scope of works was approved by CEO 8 April 2011.
IIC:M18.2	Ongoing audits of Health, Hygiene and Environmental Monitoring Program	The proponent shall ensure that the first audit required pursuant to Condition 18-1 is completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	Ensure that the first audit required pursuant to Condition 18-1 is completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	Quarterly Audit reports required by M 18-2.	Overall	Completed for the period 1 January 2011 to 31 March 2011 and the report provided by 30 April 2011. Subsequent audits will be undertaken at three monthly intervals beginning from 1 April 2011 and the reports provided within 30 days of the end of the three monthly period.	C	

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M19.1	Audit reports to be made publicly available	The proponent shall ensure that all reports received from the independent third parties engaged under Conditions 17 and 18 are provided no later than the next business day to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority, relevant local government authority and Fremantle Ports Inner Harbour Community Liaison Group, and made publicly available on the proponent's website within 3 business days.	Ensure that all reports received from the independent third parties engaged under Conditions 17 and 18 are provided no later than the next business day to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority, relevant local government authority and Fremantle Ports Inner Harbour Community Liaison Group, and made publicly available on the proponent's website within 3 business days.	Written confirmation of receipt of reports by the CEO of the OEPA. Quarterly audit reports are posted on the Magellan Website.	Overall	Reports received no later than the next business day and made publicly available on the proponent's website within 3 business days.	C	
IIC:M20.1	Interpretation	If there is an inconsistency or difference between any plans, programs or documents which the proponent is required to implement and these Interim Implementation Conditions, these Interim Implementation Conditions shall prevail and are to be complied with to the extent of any inconsistency or difference.	If there is an inconsistency or difference between any plans, programs or documents which the proponent is required to implement and these Interim Implementation Conditions, these Interim Implementation Conditions shall prevail and will be complied with to the extent of any inconsistency or difference.		Overall		NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period, so no relevant inconsistency in the operation of the documents arose.
IIC:M20.2	Interpretation	References to "auditor engaged under condition 10" in any plans, programs or documents which the proponent is required to implement, is to be read as a reference to the Independent Accredited Auditor required to be engaged by the proponent in accordance with Condition 9-1 of these Interim Implementation Conditions.		Interpretation applied.	Overall		C	



# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M21.1	Definitions - Benthic Sediment Sampling	As described in Benthic Sediment Sampling – Lead Baseline Trigger Levels' (Ivernia Magellan Metals, 17 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment; or b. 50 mg/kg (dry weight), whichever is lower."	Apply definition and unit of measure.	Benthic sediment monitoring results posted on the Magellan website.	Overall		NR	
IIC:M21.2	Definitions - Drainage Sump Sampling	As described in the document 'Drainage Sump Sampling – Lead Baseline Trigger Levels' (Ivernia Magellan Metals, 17 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment; or b. 1500 mg/kg (dry weight), whichever is lower"	Apply definition and unit of measure.	Drainage sump monitoring results posted on the Magellan website.	Overall		NR	
IIC:M21.3	Definitions - Soil Sampling	As described in the document Soil Sampling – Lead Baseline Trigger Levels (Ivernia Magellan Metals, 17 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment; or b. 1500 mg/kg (dry weight), whichever is lower."	Apply definition and unit of measure.	Soil sampling monitoring results posted on the Magellan website.	Overall		NR	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:M21.4	Definitions - Rainwater Tank Sampling	As described in the document Rainwater Tank Sampling Lead Baseline Trigger Levels' (Ivernia Magellan Metals, 17 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment; or b. 0.01 mg/L, whichever is lower."	Apply definition and unit of measure.	Rainwater tank monitoring results posted on the Magellan website.	Overall		NR	
IIC:M21.5	Definitions - Ambient High Volume Sampling	As described in the document High Volume Air Sampling (Ivernia Magellan Metals, 17 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment; or b. 0.5 ug/m3, whichever is lower."	Apply definition and unit of measure.	High volume air monitoring results posted on the Magellan website.	Overall		NR	
IIC:M21.6	Definitions - Static Dust Sampling	As described in Static Dust Sampling Lead Baseline Trigger Levels (Ivernia Magellan Metals, 18 February 2011) or as updated in accordance with Appendix 1 of the Health, Hygiene and Environmental Monitoring Program (Strategen, June 2009) approved by the Minister for Environment on 13 August 2009 or any revisions approved by the Minister for Environment.	Apply definition and unit of measure.	Static dust deposition monitoring results posted on the Magellan website.	Overall		NR	
IIC:M21.7	Definitions - Shipping Container air sampling	20 ug/m3	Apply definition and unit of measure.	Shipping container air quality monitoring results posted on the Magellan website.	Overall		NR	

# AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:P1	Environmental Management System	Prepare an Environmental Management System that includes the following elements: 1. An environmental policy and corporate commitment to it; 2. Mechanisms and processes to ensure; [1] planning to meet environmental requirements [2] implementation and operation of action to meet environmental requirements [3] measurement and evaluation of environmental performance; and 3. Review and improvement of environmental outcomes	Prepare an Environmental Management System that includes the following elements: 1. An environmental policy and corporate commitment to it; 2. Mechanisms and processes to ensure; [1] planning to meet environmental requirements [2] implementation and operation of action to meet environmental requirements [3] measurement and evaluation of environmental performance; and 3. Review and improvement of environmental outcomes	EMS.	Pre-construction	Prior to the commencement of construction activities.	CLD	
IIC:P2	Environmental Management System	Implement the Environmental Management System described in 1 above.	Implement the Magellan environmental policy.	Magellan Policy document.	Overall	Ongoing through the life of the operations until the site is deemed rehabilitated	C	
IIC:P3	Surface water drainage	Prepare a surface water and drainage management plan for the minesite that: 1. Identifies surface contours and drainage; 2. Identifies diversion drains and sumps to contain runoff and divert drainage into the pit; and 3. Describes measures to monitor the effectiveness of the plan and take corrective action if required.	Prepare a surface water and drainage management plan for the minesite that: 1. Identifies surface contours and drainage; 2. Identifies diversion drains and sumps to contain runoff and divert drainage into the pit; and 3. Describes measures to monitor the effectiveness of the plan and take corrective action if required.	Surface Water and Drainage Management Plan approved for use November 2004.	Pre-construction	Before the commencement of ground disturbing activities.	CLD	
IIC:P4	Surface water drainage	Implement the surface water and drainage management plan described in 3 Above.	Implement the surface water and drainage management plan described in 3 Above.	Surface Water and Drainage Management Plan approved for use November 2004.	Overall	Ongoing throughout the life of the mining operations.	C	

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
IIC:P5	The waste rock dump and tailings storage facility will be reshaped to enable rehabilitation	Prepare a contour plan consistent with the guidelines issued by the Department of Mines and Petroleum.	Prepare a contour plan consistent with the guidelines issued by the Department of Mines and Petroleum.	Contour Plan approved for use November 2004.	Pre-construction	Before the commencement of construction of the waste rock dump and tailings storage facility.	CLD	
IIC:P6	Revegetation trials on the waste rock dump and tailings storage facility	Prepare a scope of works for revegetation trials that: 1. Describe the objectives of the proposed trial; 2. Outline monitoring; 3. Outline the timeframe for reporting of results; and 4. Identify mechanisms to consider and implement the recommendations at the conclusion of the trials.	Prepare a scope of works for revegetation trials that: 1. Describe the objectives of the proposed trial; 2. Outline monitoring; 3. Outline the timeframe for reporting of results; and 4. Identify mechanisms to consider and implement the recommendations at the conclusion of the trials.	Scope of works for Revegetation Trials. ACAR.	Operation	Within two years of commencement of mining operations.	CLD	
IIC:P7	Revegetation trials on the waste rock dump and tailing storage facility.	Implement revegetation trials described in 6 above.	Implement revegetation trials described in 6 above.	ACAR.	Overall	Ongoing until the trials are concluded and the recommendations implemented.	C	
IIC:P8	Waste and recycling program	Prepare a waste and recycling program that: 1. Includes a procedure for identifying wastes that are suitable for recycling or reuse. 2. Identifies designated areas for the storage of recyclables. 3. designates materials that should be disposed to landfill. 4. Includes the proponent's commitment to participate in the "Ruggies" recycling programme if accepted by the programme or an alternative program.	Prepare a waste and recycling program that: 1. Includes a procedure for identifying wastes that are suitable for recycling or reuse. 2. Identifies designated areas for the storage of recyclables. 3. designates materials that should be disposed to landfill. 4. Includes the proponent's commitment to participate in the "Ruggies" recycling programme if accepted by the programme or an alternative program.		Pre-construction	Before commencement of construction.	CLD	
IIC:P9	Waste and recycling program	Implement the waste and recycling program described in 8 above	Implement the waste and recycling program described in 8 above	DEC compliance site inspection.	Overall	Throughout the life of the mining operations until it is deemed rehabilitated.	C	
IIC:P10	Control of access	The active operations area will be fenced including a firebreak. It will be constructed around the minesite, plant, waste rock dump and Tailings storage facility	Construct a fence around the active operations including a firebreak. The fence will be constructed around the minesite, plant, Waste Rock Dump and	DEC compliance site inspection.	Overall	Prior to commencement of operations.	CLD	

## AUDIT TABLE

Statement Compliance Section

PROJECT: Magellan Lead Carbonate Project, Wiluna

1 January 2012 – 26 July 2012

Audit Code (IIC – Interim Implementation Conditions)	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
			Tailings Storage Facility.					
IIC:P11	Vegetation monitoring for lead uptake	Prepare a scope of works for the sampling program that describes; <ol style="list-style-type: none"> <li>1. Vegetation sampling and analysis</li> <li>2. Timing of sampling program; and</li> <li>3. Reporting and assessment of results.</li> </ol>	Prepare a scope of works for the sampling program that describes; <ol style="list-style-type: none"> <li>1. Vegetation sampling and analysis</li> <li>2. Timing of sampling program; and</li> <li>3. Reporting and assessment of results.</li> </ol>	Lead uptake in vegetation program and reports.	Operation	After commencement of operations.	<b>CLD</b>	
IIC:P12	Vegetation monitoring for lead uptake	Implement the sampling program described in 11 above.	Implement the sampling program described in 11 above.	Lead uptake in vegetation program and reports.	Overall	Ongoing until the minesite is deemed satisfactorily rehabilitated.	<b>C</b>	
IIC:P15	Tailings storage facility	Prepare a tailings storage facility operating manual. The manual shall detail operating procedures, emergency response plans and monitoring.	Prepare a tailings storage facility operating manual. The manual will detail operating procedures, emergency response plans and monitoring.	Tailings Storage Facility Operating Manual approved for use October 2004.	Pre-construction	Prior to the commencement of tailings disposal to the facility.	<b>CLD</b>	
IIC:P16	Tailings storage facility	Implement the tailings storage facility operating manual described in 15 above.	Implement the tailings storage facility operating manual described in 15 above.	Tailings Storage Facility Operating Manual. ACAR.	Overall	Over the life of the tailings facility.	<b>C</b>	



## APPENDIX 2

Ministerial Statement 905 PIMBS Audit Table effective 27 July to 31 December 2012





# AUDIT TABLE

## Statement Compliance Section

### PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

**Note:**

- Phases that apply in this table = Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases). Note that because Ministerial Statement 905 relates to an existing constructed proposal, the phase 'Construction' has been used in the table to indicate requirements which must be completed before recommencement.
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition, P = Proponent's commitment.
- Acronyms list: CEO = Chief Executive Officer of OEPA; DEC = Department of Environment and Conservation; DIA = Department of Indigenous Affairs; DMP = Department of Mining and Petroleum; EPA = Environmental Protection Authority; DoH = Department of Health; DoW = Department of Water, Minister for Env = Minister for the Environment; OEPA = Office of the Environmental Protection Authority.
- Compliance Status: C = Compliant, CLD = Completed, NC = Non – compliant, NR = Not Required at this stage, PNC = Potentially Non-compliant, IP = In process. Please note the terms NA = Not Audited and VR = Verification Required are only for OEPA use. The term IP = In Process can be used only for management or monitoring plans awaiting approval of the OEPA or another government agency, and cannot be used for ongoing obligations.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M1.1	Proposal Implementation	The proponent shall implement the proposal as documented and described in Schedule 1 of this statement subject to the conditions and procedures of this statement	Implement proposal and the conditions and procedures of Statement 905	Annual Compliance Assessment Report (CAR).	Overall	Duration of project	Refer to each specific condition below	
905:M2.1	Proponent Nomination and Contact Details	The proponent for the time being nominated by the Minister for Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal.	Proponent to implement the proposal	CAR, letter from Minister nominating proponent	Overall	Duration of project	C	
905:M2.2	Proponent Nomination and Contact Details	The proponent shall notify the Chief Executive Officer of the Office of the Environmental Protection Authority (CEO) of any change of the name and address of the proponent for the serving of notices or other correspondence within 20 business days of such change.	Notify OEPA of any change of the proponent's name and address.	Copy of correspondence notifying the CEO of OEPA of any change of the name and address of the proponent.	Overall	Within 20 business days of change of proponent's name or address	C	CEO was advised of change of Company ownership arrangements 11 October 2012, and business address 19 October 2012.
905:M3A-1	Time limit on Shipments through Fremantle Port	The proponent shall not ship lead carbonate through Fremantle Port beyond five years from the date of publication of this statement.	Cease shipping lead carbonate concentrate through Fremantle Port by 26 July 2017 unless modified through Section 46 of the EP Act prior to this date	CAR	Overall	Five years from the date of this Statement (26 July 2017).	NR	
905:M3.1	Compliance Reporting	The proponent shall prepare and maintain a Compliance Assessment Plan to the satisfaction of the CEO.	Develop a Compliance Assessment Plan and submit to CEO for approval  Keep CAP up to date with amendments to Project, MS 905 and any documents required under MS 905  Submit any other amendments to CAP to CEO for approval	Compliance Assessment Plan (CAP), updated CAP, copy of correspondence showing CEO approval of CAP and any amendments	Overall	Duration of project	C	
905:M3.2	Compliance Reporting	The proponent shall assess compliance with conditions contained in this Statement in accordance with the Compliance Assessment Plan referred to in condition 3-1.	Assess compliance with conditions in accordance with Compliance Assessment Plan	CAP, CAR	Overall	As required by CAP for duration of project	C	

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M3.3	Compliance Reporting	The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 3-1 and shall make those reports available when requested by the CEO.	Retain copies of all Compliance Assessment Reports and provide to CEO when requested in writing	CAR, CAP, written requests from CEO, letter providing CAR in response to CEO request	Overall	Duration of project	C	RHM will retain a copy of this CAR in accordance with the CAP requirements
905:M3.4	Compliance Reporting	The proponent shall advise the CEO of any potential non-compliance within five business days of that potential non-compliance being known to the Proponent.	Report any potential non-compliances to CEO within 5 days of being known to the proponent	CAR, written correspondence reporting potential non-compliances to CEO	Overall	Within 5 business days of a potential non-compliance being known to the proponent	C	
905:M3.5	Compliance Reporting	The proponent shall submit to the CEO a compliance assessment report no later than 31 March annually addressing the previous twelve month period from 1 January to 31 December inclusive or other period as agreed by the CEO. The compliance assessment report shall: 1. be endorsed by the proponent's Managing Director or in his absence the company secretary, or other person approved by the CEO; 2. include a statement as to whether the proponent has complied with the conditions; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; and 5. indicate any proposed changes to the compliance assessment plan required by condition 3-1.	Submit CAR annually by 31 March	CAR, written correspondence showing submission of annual CAR to CEO, correspondence from OEPA acknowledging receipt of CAR, any correspondence from CEO agreeing reporting period	Overall	By 31 March annually, addressing the previous twelve month period from 1 January to 31 December or as agreed by CEO, for duration of project	C	
905:M3.6	Compliance Reporting	The proponent shall ensure that the Minister for Environment and the reference group referred to in condition 17-1 is notified that the compliance assessment report required by condition 3-5 is available.	Notify Minister for Environment and reference group of availability of annual CAR	CAR, written correspondence notifying Minister and reference group of availability of CAR	Overall	Annually, for duration of project	C	
905:M4.1.1	Bagging and Shipping Container Management	The proponent shall ensure that lead carbonate concentrate (other than quantities of less than 30 kilograms removed for product testing purposes) which is to be removed from the mine-site is dealt with only in accordance with the following procedures: 1. Prior to being removed from the mine-site, lead carbonate concentrate shall be: a. Placed into double laminated water-proof and sieve proof bags which are sealed so as to prevent the release of lead carbonate concentrate from the bag; and b. All visible dust shall be removed from the exterior of the bags immediately before they are placed in a clean shipping container which when loaded is locked, so that the only material containing lead carbonate concentrate is in sealed bags within the container when the container leaves the mine-site.	Undertake movement of lead carbonate concentrate as required by 905:M4.1.1	CAR, independent third party audit reports	Operation	Prior to removing lead carbonate concentrate from mine site, for duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M4.1.2	Bagging and Shipping Container Management	The locked shipping containers shall be transported by road to a designated area in Leonora and then by rail from Leonora to Fremantle Port on the road/rail transport route identified generally in Figures 1 to 16, unless a change in route is approved by the CEO on advice of the Department of Transport and Department of Health. The locked shipping containers shall be stored in a secure manner at Leonora and at Fremantle Port prior to being loaded onto vessels for export;	Ensure locked shipping containers are transported and stored as required by 905:M4.1.2	CAR, approval of CEO for change in route, independent third party audit reports	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.3	Bagging and Shipping Container Management	Unless required by a public official or public authority acting with lawful authority or the Independent Inspector pursuant to condition 16-1 (3), the shipping containers shall be kept locked and the seals on the bags shall not be broken between the time when the shipping container leaves the mine-site and the time it is removed from the State	Ensure that shipping containers are locked and bags sealed as required by 905:M4.1.3	CAR, independent third party audit reports	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.4	Bagging and Shipping Container Management	The moisture content of the lead carbonate concentrate in the sealed bags shall be at least 7.5% at the time the shipping container leaves the mine-site;	Sealed bags to have at least 7.5% moisture content when leaving the mine-site	CAR, independent third party audit reports	Operation	At the time shipping containers leave the mine site, for duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.5	Bagging and Shipping Container Management	The shipping containers shall only be lifted by top-lifting equipment at all times after being loaded with sealed bags of lead carbonate concentrate and locked	Shipping containers loaded with sealed bags of lead carbonate concentrate to be lifted only by top-lifting equipment	CAR, independent third party audit reports	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.6	Bagging and Shipping Container Management	All bags shall be inspected by the Independent Inspector engaged under condition 16 after they are sealed and immediately before they are loaded into a shipping container and all containers shall be inspected by the Independent Inspector engaged under condition 16 before being removed from the mine site	Independent inspector to inspect all bags and containers as required by 905:M4.1.6	CAR, independent third party audit reports	Operation	Before loading bags into containers, and before containers removed from mine site, for duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.7	Bagging and Shipping Container Management	No damaged double laminated water-proof and sieve proof bags which could compromise the containment of lead carbonate concentrate, shall be used for bagging lead carbonate concentrate;	Ensure lead carbonate concentrate bags are not damaged	CAR, independent third party audit reports	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.1.8	Bagging and Shipping Container Management	The weight of the sealed double laminated water-proof and sieve proof bags loaded with lead carbonate concentrate shall not be above 2,000 kilograms prior to loading into shipping container	Weigh sealed bags before loading in to shipping container	CAR, independent third party audit reports	Operation	Before loading bags into shipping containers, for duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M4.1.9	Bagging and Shipping Container Management	No damaged shipping containers, which could compromise the containment of lead carbonate, shall be used to transport sealed double laminated water-proof and sieve proof bags containing lead carbonate concentrate from the mine-site.	Ensure shipping containers are not damaged	CAR, independent third party audit reports	Operation	For duration of project	NR	reporting period. Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M4.2	Bagging and Shipping Container Management	Prior to removing shipping containers containing lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, the proponent shall prepare and submit to the CEO, for approval and on the advice of the Department of Mines and Petroleum, an Environmental Management Program which makes provision for the following matters in a manner which is consistent with the requirements of condition 4-1 and condition 5: 1. document standards, guidelines and codes of practice relating to the management of lead carbonate concentrate; 2. detail procedures to be applied in the mining, processing and storage areas at the mine-site to minimise disturbance of lead carbonate concentrate and to ensure that the release to the environment is minimised; 3. detail procedures to be applied for the packaging and transport of the lead carbonate concentrate from the mine-site through to export from Fremantle Port, including the use of top-lifting equipment for the lifting of the shipping containers; 4. detail the process which will be applied to ensure ongoing assessment of the risk of lead carbonate contamination, including environmental biological monitoring to evaluate the environmental risks and determine appropriate control measures; and 5. detail the existing storage and ship loading facilities at Fremantle Port which are being used for lead carbonate concentrate, including: a. equipment to be used; b. procedures and monitoring programs in place to identify potential pathways for lead carbonate concentrate to enter the environment; and c. where equipment, management or revised procedures are found to pose a risk to the safe storage and ship loading of the lead carbonate concentrate, additional equipment, management or revised procedures are to be identified and acquired or implemented.	Prepare Environmental Management Program (EMP) as required by 905:M4:2 and submit to CEO of OEPA for approval	CAR, Rosslyn Hill Mining Environmental Management Program (EMP), approval of CEO	Operation	Before removing shipping containers containing lead carbonate concentrate from the mine-site at any time after 26 July 2012	C	The Project EMP was submitted to CEO 26 Nov 2012. The CEO approved the EMP 25 March 2013.
905:M4.3	Bagging and Shipping Container Management	The proponent shall implement the Environmental Management Program required by condition 4-2	Implement the approved EMP	CAR, independent third party audit reports	Operation	Duration of project	NR	
905:M4.4	Bagging and Shipping Container Management	Revisions to the Environmental Management Program may be approved by the CEO on the advice of the Department of Mines and Petroleum.	Submit any revisions of the EMP to CEO of OEPA for approval	CAR, Revised EMP, CEO approval of revised EMP	Operation	Duration of project	NR	

# AUDIT TABLE

## Statement Compliance Section

### PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M4.5	Bagging and Shipping Container Management	The proponent shall implement revisions of the Environmental Management Program approved under condition 4-4.	Implement approved revisions to EMP	CAR, independent third party audit reports	Operation	Duration of project	NR	
905:M5.1	Prevention of Discharge of Lead Carbonate	The proponent shall ensure that no lead carbonate which is transported from the mine-site to Fremantle port is discharged from within the shipping containers and causes environmental harm as identified at monitoring sites detailed in Schedule 2	Ensure no lead carbonate concentrate is discharged from shipping containers and causes environmental harm at the monitoring sites required by 905:M5.1	CAR, independent third party audit reports, independent inspector reports	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M6.1	Downstream Processing Report	The proponent shall provide by 31 January 2013 to the CEO a report detailing options for downstream processing of lead carbonate concentrate. The report shall: 1. detail and benchmark the available options against best environmental practice; 2. detail all point and fugitive emission sources from a selected technology; 3. identify applicable emission limits for point and fugitive emissions sources identified in condition 6-1(2); and 4. Provide potential locations for the downstream processing plant.	Provide Downstream Processing Report to CEO by 31 January 2013	CAR, written correspondence showing Downstream Processing Report provided to CEO by 31 January 2013, Downstream Processing Report	Pre Construction	31 January 2013	NR	Note that the Downstream Processing Report was provided to the CEO on 31 Jan 2013.
905:M6.2	Downstream Processing Report	The proponent shall ensure that the report required by condition 6-1 is peer reviewed by an independent expert acceptable to the CEO prior to it being provided to the CEO	Obtain CEO of OEPA approval for an independent expert to peer review the Downstream Processing Report, and ensure Downstream Processing peer reviewed before provided to CEO	Written correspondence showing CEO approval of independent expert, report of independent expert	Pre Construction	Before submission of Downstream Processing Report (31 January 2013)	NR	Note that CEO approval of the independent expert was obtained 23 Jan 2013 and the report was peer reviewed by this expert before the Report was provided to the CEO on 31 Jan 2013.
905:M7.1	Shipping Container Cleanliness	Shipping containers shall be free of all visible mud containing lead carbonate prior to being removed from the mine-site and prior to being loaded onto the train at Leonora	Ensure shipping containers free of all visible mud before removal from mine-site and before loading onto train at Leonora	CAR, independent inspector reports	Operation	Before removing shipping containers from mine-site, and before loading shipping containers onto train at Leonora, for duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M8.1	Sampling Program	The proponent shall conduct a Sampling Program to	Conduct Sampling Program	CAR, Quarterly Monitoring	Operation	As required by	NR	Project placed on

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		determine total lead in air, dust, soil and sediment. The description of the sampling, the location and frequency of sampling, the sampling method and reporting units are to be done in accordance with the table (see Statement).	as required by 905:M8.1	Report, independent third party audit reports		905:M8.1		'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 23 August 2012 confirmed monitoring not required until recommencement of operations.
905:M8.2	Sampling Program	The proponent shall ensure that samples taken in accordance with condition 8-1 are analysed by a NATA accredited analytical laboratory for each specific analyte	Ensure samples analysed utilising a laboratory accredited by NATA for the analyte being analysed	CAR, documents showing accreditation of laboratory	Operation	Duration of project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 23 August 2012 confirmed monitoring not required until recommencement of operations.
905:M8.3	Sampling Program	The CEO may approve the ceasing of the Sampling Program, or parts thereof, referred to in condition 8-1 in the event that the transportation of lead carbonate concentrate ceases.	Request cessation of Sampling program from CEO of OEPA in the event that transport of lead carbonate concentrate ceases	CAR, written correspondence showing CEO of OEPA approving of cessation of sampling	Operation	If the transportation of lead carbonate concentrate ceases during the project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 23 August 2012 confirmed monitoring not required until recommencement of operations.
905:M8.4	Sampling Program	The CEO may approve changes to the Sampling Program, or parts thereof, referred to in condition 8-1 in response to the results of monitoring over a given time period, as approved by the CEO.	Request CEO approval for change to Sampling Program where relevant	CAR, written correspondence showing CEO approval to change the Sampling Program	Operation	In response to the results of monitoring over a given time period approved by the CEO	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M9.1	Sampling Analysis and Reporting Timing Obligations	The proponent shall ensure that all monitoring samples collected pursuant to condition 8 are dispatched to a NATA accredited analytical laboratory in accordance with condition 8-2 within the timeframe specified below: 1. no later than the next business day following collection for samples collected within the Perth Metropolitan Region; and 2. no later than five business days of being collected for samples collected outside of the Perth Metropolitan Region.	Dispatch monitoring samples to NATA accredited analytical laboratory within timeframes required by 905:M9.1	CAR, independent third party audit reports, chain of custody forms, Quarterly Monitoring Report.	Operation	No later than the next business day following collection for samples collected within the Perth Metropolitan Region; and no later than five business days of being collected for samples collected outside of the Perth Metropolitan Region	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 23 August 2012 confirmed monitoring not required until recommencement of operations.
905:M9.2	Sampling Analysis and Reporting Timing Obligations	Where analysis of a sample undertaken in accordance with condition 8 indicates a result above the lead baseline trigger level for the relevant site (as detailed in Schedule 2), the proponent shall ensure the relevant sample is dispatched to a NATA accredited laboratory to be isotopically tested no later than the next business day after the proponent receives the certificate of analysis confirming that the relevant sample result is above the lead baseline trigger level for the sample site, detailed in Schedule 2.	Dispatch samples above lead baseline trigger level to NATA accredited laboratory for isotopic testing no later than one day after receiving certificate of analysis confirming sample result	CAR, independent third party audit reports, chain of custody forms, Quarterly Monitoring Report,	Operation	No later than the next business day after the proponent receives the certificate of analysis confirming that the relevant sample result is above the lead baseline trigger level for the sample site, detailed in Schedule 2	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M9.3	Sampling Analysis and Reporting Timing Obligations	The Managing Director of the proponent, or in his absence the company secretary, or other person approved by the CEO, shall ensure that a copy of the certificates of analysis of all monitoring results which are above the lead baseline trigger level for a site are reported to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt of the results by the proponent.	Managing Director, company secretary or other approved person to provide a copy of certificates of analysis of all monitoring results which are above the lead baseline trigger level for a site to the OEPA, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority	CAR, copies of certificates of analysis, written correspondence from Managing Director, company secretary or approved person, approval from CEO for person to submit copies, independent third party audit reports Quarterly Monitoring Report.	Operation	No later than the next business day following receipt of the results by the proponent	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M9.4	Sampling Analysis and Reporting Timing Obligations	The Managing Director of the proponent, or in his absence the company secretary, or other person approved by the CEO, shall ensure that a copy of the certificates of analysis for isotopic testing showing that the lead is not Paroo Station Mine lead is provided to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt by the	Managing Director, company secretary, or approved person to provide a copy of certificates of analysis for isotopic testing showing that the lead is not Paroo Station Mine lead to the OEPA, Department of Environment and Conservation, Department of Health, Department of Mines and	CAR, copies of certificates of analysis, written correspondence from Managing Director, company secretary or approved person, approval from CEO for person to submit copies, independent third party audit reports Quarterly Monitoring Report.	Operation	No later than the next business day following receipt of the results by the proponent	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.

# AUDIT TABLE

## Statement Compliance Section

### PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		proponent.	Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority					
905:M9.5	Sampling Analysis and Reporting Timing Obligations	Where isotopic testing confirms that monitoring results for a site are above the lead baseline trigger levels and show the presence of Paroo Station Mine lead the Managing Director of the proponent, or a member of the board authorised by the board to do so, shall ensure that a copy of the certificates of analysis for isotopic testing is provided to the Office of the Environmental Protection Authority, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority, no later than the next business day following receipt by the proponent.	Managing Director or member of the board to provide a copy of certificates of analysis for isotopic testing showing the presence of Paroo Station Mine lead above lead baseline trigger levels to the OEPA, Department of Environment and Conservation, Department of Health, Department of Mines and Petroleum, Department of Transport, Fremantle Port Authority and the relevant local authority	CAR, copies of certificates of analysis, written correspondence from Managing Director or board member, authorisation of board, independent third party audit Quarterly Monitoring Report.	Operation	No later than the next business day following receipt of the results by the proponent	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M9.6	Sampling Analysis and Reporting Timing Obligations	The proponent shall provide the Office of the Environmental Protection Authority with a report, in a format approved by the CEO, within the first five business days following the end of every quarter from recommencement of operations, which includes: 1. details of all monitoring samples collected in the preceding three months; 2. a record of dates when ship loading of Paroo Station Mine lead has occurred and the number of containers loaded; 3. copies of certificates of analysis and chains of custody for all monitoring results received in the preceding three months; and 4. a comparison of all results against the lead baseline trigger levels detailed in Schedule 2 for the preceding three months.	Seek OEPA approval of report format and provide Quarterly Monitoring Report to OEPA in approved format	CAR, written correspondence from CEO approving format of Quarterly Monitoring Report, Quarterly Monitoring Report,.	Operation	Within the first five business days following the end of every quarter from recommencement of operations	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 7 November 2012 confirmed monitoring not required until recommencement of operations.
905:M9.7	Sampling Analysis and Reporting Timing Obligations	The proponent shall ensure that a summary of the results obtained from the sampling program detailed in condition 8-1 and isotopic testing detailed in condition 9-2 are made publicly available within five business days of receipt of the results or as required by the CEO.	Ensure sampling results and isotopic testing results are made publicly available	CAR, Rosslyn Hill Mining website, , approval of CEO for any time extension	Operation	Within five business days of receipt of the results or as required by the CEO	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 7 November 2012 confirmed monitoring not required under recommencement of operations.
905:M9.8	Sampling Analysis and Reporting Timing Obligations	The proponent shall report all results of the Sampling Program as required by condition 8-1 to the reference group referred to in condition 17-1 at least once every calendar year	Report results of Sampling Program to Fremantle Ports Inner Harbour Community Liaison Group (FPIHCLG) (or such group otherwise determined by the Minister)	CAR, Written correspondence confirming a monitoring report was submitted to the reference group,	Operation	At least once every calendar year	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.



# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								CEO of OEPA letter 7 November 2012 confirmed monitoring not required under recommencement of operations.
905:M9.9	Sampling Analysis and Reporting Timing Obligations	The proponent shall revise the lead baseline trigger levels at any of the sites, outlined in Schedule 2, on the advice of the CEO where monitoring results show that the lead baseline trigger level has been exceeded and isotopic testing of the site samples demonstrate that Paroo Station Mine lead is not present at the sample site. The latest monitoring result may become the new lead baseline trigger level for these sites providing that the new lead baseline trigger level does not exceed the lead baseline trigger level defined in point b in condition 20 for the particular sampling type (that is, benthic sediment sampling, soil sampling etc).	Revise lead baseline trigger levels on advice of CEO of OEPA	CAR, monitoring results, correspondence from the CEO of OEPA advising on revision of lead baseline trigger levels	Operation	After receipt of isotope test results indicating lead is not from Paroo Station Mine sources - following advice from the CEO of the OEPA to revise baseline trigger levels	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M9.10	Sampling Analysis and Reporting Timing Obligations	The CEO may approve changes to the sampling analysis and reporting timelines, referred to in condition 9 in response to the results of monitoring over a given time period, as approved by the CEO.	Request CEO of OEPA approve changes to sampling analysis and reporting timelines where relevant	CAR, written correspondence from the CEO of OEPA approving changes to sampling analysis and reporting timeframes	Operation	In response to the results of monitoring over a given time period, as approved by the CEO	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. CEO of OEPA letter 23 August 2012 confirmed monitoring not required until recommencement of operations.
905:M10.1	Monitoring Triggers, Contingency Measures and Ceasing Transport	The proponent shall report against the lead baseline trigger levels outlined in Schedule 2 (or any revised lead baseline trigger level approved in accordance with condition 9-9) and where monitoring shows that the results are above the lead baseline trigger level the proponent shall carry out isotopic testing required by condition 9-2.	Report against lead baseline trigger levels in Schedule 2 (or as updated) and carry out isotopic testing where relevant	CAR, Quarterly Monitoring Report, independent third party audit reports, exceedence notifications to OEPA as required by 905:M9.3, 905:M9.4, 905:M9.5,	Operation	For duration of project, and where monitoring shows that the results are above the lead baseline trigger level	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M10.2	Monitoring Triggers, Contingency Measures and Ceasing Transport	The proponent shall immediately cease transport of any further lead carbonate concentrate if the results of the isotopic testing undertaken in accordance with condition 9-2 show the presence of Paroo Station Mine lead at a sample site.	Cease transport of lead carbonate concentrate if isotopic testing shows the presence of Paroo Station Mine lead	CAR, independent third party audit reports	Operation	Immediately upon receipt of relevant isotopic testing results that show the presence of Paroo Station Mine lead at the sample site	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M10.3	Monitoring Triggers, Contingency Measures and Ceasing Transport	Where isotopic testing shows that the result of monitoring samples above the lead baseline trigger level for a sample show the presence of Paroo Station Mine lead, the proponent shall design an investigation in consultation with the Department of Mines and Petroleum and the Department of Environment and	Design an investigation in consultation with the Department of Mines and Petroleum and the Department of Environment and Conservation, on the	CAR, Investigation design and consultation correspondence and documents,	Operation	Where isotopic testing shows that the result of monitoring samples above the lead baseline trigger level for a sample show the	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of

# AUDIT TABLE

## Statement Compliance Section

### PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		Conservation, on the advice of the Department of Health to determine the source and extent of the lead and initiate a review of the packing and transport procedures.	advice of the Department of Health to determine the source and extent of the lead and initiate a review of the packing and transport procedures.			presence of Paroo Station Mine lead		reporting period.
905:M10.4	Monitoring Triggers, Contingency Measures and Ceasing Transport	If the proponent ceases transport of lead carbonate concentrate in accordance with condition 10-2, it may only recommence transport in accordance with a Re-commencement Plan approved by the CEO.	Recommence transport of lead carbonate concentrate in accordance with Re-commencement Plan approved by CEO	CAR, Re-commencement Plan, written correspondence from CEO approving Re-commencement Plan	Operation	If the proponent ceases transport of lead carbonate concentrate during the project in accordance with condition 10.2	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M10.5	Monitoring Triggers, Contingency Measures and Ceasing Transport	The Re-commencement Plan, to be prepared by the proponent, must include the following: 1. the reasons for the ceasing of transport; 2. the source of, and the extent of, the Paroo Station Mine lead detected; 3. the results of a review of packaging and transport procedures; 4. the plans of any clean-up required pursuant to condition 11-1 or results thereof if completed; and 5. management and monitoring measures for the re-commencement of transport.	Prepare the Re-commencement Plan as required by 905:M10.5	CAR, Re-commencement Plan	Operation	If the proponent ceases transport of lead carbonate concentrate during the project in accordance with condition 10.2	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M11.1	Emergency Response Plan	In the event that lead carbonate concentrate is discharged into the environment at any point between the mine-site and the shipping containers being removed from the State, the proponent shall implement the Emergency Response Plan (Strategen, June 2009) approved on 13 August 2009 or revision approved by the CEO on advice of the Fire and Services Authority, Fremantle Port Authority and relevant local governments.	Implement Emergency Response Plan (ERP) where relevant	CAR, ERP	Operation	If lead carbonate concentrate is discharged into the environment at any point between the mine-site and the shipping containers being removed from the State during the project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M11.2	Emergency Response Plan	Revisions to the Emergency Response Plan may be approved by the CEO, on advice of the Fire and Emergency Service Authority, the Port Authority and relevant Local Governments.	Submit revised ERP to the OEPA for approval	CAR, Revised ERP, CEO approval of Revised ERP	Operation	As required during the project	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M11.3	Emergency Response Plan	The proponent shall implement revisions of the Emergency Response Plan approved pursuant to condition 11-1	Implement Revised ERP as required	CAR, Revised ERP	Operation	Following approval of revisions of the Emergency Response Plan	NR	Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.
905:M12.1	Quality Control for Sampling and Analysis	Prior to removing shipping containers containing lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, the proponent shall engage a third party expert approved by the CEO to carry out an evaluation of the sampling methodology and analysis methodology for all sample types required by condition 8.	Seek OEPA approval of third party expert  Third party expert to evaluate sampling and analysis methodologies	CAR, OEPA approval of third party expert, Quality Control and Sampling and Analysis evaluation report	Construction	Before removing shipping containers containing lead carbonate concentrate from the mine-site at any time after 26 July 2012	C	OEPA approval of expert received 7 <sup>th</sup> Nov 2012.  Note that the approved independent expert has completed the

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								evaluation and is preparing the report findings
905:M12.2	Quality Control for Sampling and Analysis	The proponent shall demonstrate that the recommendations listed in the sampling and analysis evaluation required by condition 12-1 have been implemented or reasons provided why the recommendations cannot be implemented to the CEO prior to removing shipping containers containing lead carbonate concentrate from the mine-site at any time from the date of publication.	Correspond with CEO to demonstrate that recommendations in Quality Control and Sampling and Analysis evaluation report have been implemented or provide reasons why recommendations cannot be implemented	CAR, written correspondence to CEO demonstrating that recommendations are being implemented or reasons why they cannot be implemented	Construction	Before removing shipping containers containing lead carbonate concentrate from the mine-site at any time after 26 July 2012	NR	OEPA approval of expert received 7 <sup>th</sup> Nov 2012.  Note that the approved independent expert has completed the evaluation and is preparing the findings.
905:M13.1	Ongoing Audits of the Environmental Management Program	The proponent shall appoint an independent third party approved by the CEO to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of, or parts thereof, the Environmental Management Program as required by condition 4-2 and recommend changes to practices, processes and infrastructure	Seek OEPA approval of independent third party and audit scope  Independent third party to provide audit reports on the implementation of the EMP	CAR, CEO approval of independent third party and audit scope,	Operation	Duration of project	C	Note that CEO approval of independent third party received 1 <sup>st</sup> March 2013.  Auditing and reporting was not required during the reporting period as the EMP was not approved in the reporting period and project remained on 'care and maintenance' during reporting period.
905:M13.2	Ongoing Audits of the Environmental Management Program	The proponent shall demonstrate that the recommendations listed in the compliance/assurance audit required by condition 13-1 have been implemented or reasons provided why the recommendations cannot be implemented to the CEO within six months of the date of the compliance/assurance audit	Correspond with CEO of OEPA to demonstrate that recommendations in the independent third party report have been implemented or provide reasons why the recommendations cannot be implemented	CAR, Written correspondence with CEO demonstrating that recommendations are being implemented or reasons why they cannot be implemented	Operation	Within six months of the date of the compliance/assurance audit, for duration of project	NR	
905:M13.3	Ongoing Audits of the Environmental Management Program	The proponent shall ensure that the audits will be undertaken at three monthly intervals and the reports provided to the CEO within 20 business days of the end of the three monthly periods, with the first report to be submitted within four months from the commencement of operations, unless otherwise approved by the CEO.	Quarterly audits to be undertaken and audit reports provided to CEO as required	CAR, independent third party audit reports, written correspondence providing audit reports to CEO	Operation	For duration of project at quarterly intervals  Reports provided to the CEO within 20 business days of the end of the three monthly periods, with the first report to be submitted within four months from the commencement of operations, unless	NR	

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
						otherwise approved by the CEO		
905:M14.1	Ongoing Audits of the Sampling Program	The proponent shall appoint an independent third party approved by the CEO to undertake a compliance/assurance audit in accordance with an audit scope approved by the CEO, and provide a report on, the implementation of the Sampling Program as required by condition 8, the sampling analysis and reporting timing obligations as required by condition 9 and the monitoring triggers, contingency measures and the ceasing of transport required by condition 10 and recommend any changes.	Seek OEPA approval of independent third party and audit scope  Independent third party to provide audit reports on the implementation of the Sampling Program and the monitoring triggers, contingency measures and ceasing of transport required by Condition 10	CAR, CEO approval of independent third party and audit scope,	Operation	Duration of project	IP	Note the CEO approved the independent third party on the 1 <sup>st</sup> March 13. The proponent has requested approval of the audit scope 14 March 2013.
905:M14.2	Ongoing Audits of the Sampling Program	The proponent shall demonstrate that the recommendations listed in the compliance/assurance audit required by condition 14-1 have been implemented or reasons provided why the recommendations cannot be implemented to the CEO within six months of the date of the compliance/assurance audit.	Correspond with the CEO of OEPA to demonstrate that recommendations in the independent third party report have been implemented or provide reasons why the recommendations cannot be implemented	CAR, written correspondence with CEO demonstrating that recommendations are being implemented or reasons why they cannot be implemented	Operation	Within six months of the date of the compliance/assurance audit, for duration of project	NR	.
905:M14.3	Ongoing Audits of the Sampling Program	The proponent shall ensure that the audits will be undertaken at three monthly intervals and the reports provided to the CEO within 20 business days of the end of the three monthly periods, with the first report to be submitted within four months from the recommencement of removing shipping containers containing lead carbonate concentrate from the mine-site, unless otherwise approved by the CEO.	Quarterly audits to be undertaken and audit reports provided to CEO as required	CAR, independent third party audit reports, written correspondence providing audit reports to CEO	Operation	For duration of project at quarterly intervals  Reports provided to the CEO within 20 business days of the end of the three monthly periods, with the first report to be submitted within four months from the recommencement of operations, unless otherwise approved by the CEO	NR	.
905:M15.1	Audit Reports to be Made Publicly Available	The proponent shall ensure that all reports received from the independent third parties engaged under conditions 13 and 14 are made publicly available on the proponent's website within 30 business days of the end of the three monthly period.	Independent third party reports to be placed on Rossllyn Hill Mining's website	CAR, Rossllyn Hill Mining website, independent third party audit reports.	Operation	Within 30 business days of the end of the quarterly audit periods. for duration of project	NR	
905:M16.1	Independent Inspector	Prior to removing shipping containers containing lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, the proponent is to engage the services of, and provide necessary funding for, an independent inspector, to be approved by the CEO. The inspector is to be engaged and funded to undertake the following in an independent manner: 1. Visually inspect all bags of lead carbonate concentrate, after they are sealed, immediately prior to loading into shipping containers, for the presence of material containing lead carbonate outside the sealed bags. Where material containing lead carbonate is visible on the bag, it shall be	Seek CEO approval of independent inspector  Independent inspector to be engaged and funded to inspect and report as required	CAR, CEO of OEPA approval of independent inspector, independent inspector reports	Construction	Before removing shipping containers containing lead carbonate concentrate from the mine-site at any time after 26 July 2012	NR	Inspections and reports not required as project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period. Note The CEO approved the independent

# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		<p>revacuumed and rechecked prior to being loaded into the shipping container; 2. Visually inspect all shipping containers, after they are loaded and locked and immediately prior to their removal from the mine-site, for material containing lead carbonate on the outside of the shipping containers; 3. Carry out random dust monitoring inside shipping containers, by: 1. randomly selecting at least 1% of containers averaged over a quarter of a calendar year, without the knowledge of the proponent; 2. placing dust monitors inside the selected containers prior to their removal from the mine-site; and 3. removing the dust monitors at the Port of Fremantle, and making available the samples obtained for analysis to test for the presence of lead carbonate dust. 4. Carry out quality assurance procedures as per the recommendations in the 'Review of Analytical Procedures Used and Data Produced by SGS Australia Pty Ltd for the Magellan Metals Pty Ltd 'Lead in Shipping Container Monitoring' (Laboratory Quality Management Services, 2011) for all random dust monitoring inside shipping containers; and 5. Recording observations of: 1. any visible lead carbonate mud on the outside of containers pursuant to condition 16-1(2); and 2. any visible lead carbonate concentrate inside the shipping container and outside of the bags in those containers opened at Fremantle ports pursuant to condition 16-1(3); and report immediately to the proponent.</p>						inspector letter 1 March 2013
905:M16.2	Independent Inspector	<p>Prior to removing shipping containers of lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, the proponent shall establish and document the detailed roles and responsibilities of the inspector engaged under condition 16, to the satisfaction of the CEO, in consultation with the Department of Environment and Conservation and the Department of Mines and Petroleum.</p>	<p>Consult with DEC and DMP to develop a document that includes the roles and responsibilities of the Independent Inspector and provide document to CEO for approval</p>	<p>CAR, CEO of OEPA approval of roles and responsibilities of inspector. Correspondence of consultation with DEC and DMP</p>	Construction	<p>Before removing shipping containers of lead carbonate concentrate from the mine-site at any time after 26 July 2012</p>	NR	<p>Note Consultation with the DEC and DMP and the – Proponent requested approval of the detailed roles and responsibilities 13 March 2013</p>
905:M17.1	Reporting of Inspections and Monitoring	<p>The proponent shall ensure that all reports received from the Independent Inspector engaged under condition 16-1 are provided no later than the next business day to the CEO and to an appropriate reference group with relevant community representation, as determined by the Minister for Environment, and made publicly available on the proponent's website within five business days. Until otherwise determined by the Minister, the reference group shall be the Fremantle Ports Inner Harbour Community Liaison Group, established by the Fremantle Port Authority.</p>	<p>Provide all independent inspector reports to CEO and reference group and place reports on Rosslyn Hill Mining website</p>	<p>CAR, Written correspondence to CEO and reference group providing Independent Inspector reports, Rosslyn Hill Mining website</p>	Operation	<p>Submission of reports to CEO and reference group no later than the next business day following receipt of the report</p> <p>Reports available on website within five business days of receipt</p>	NR	<p>Project placed on 'care and maintenance' April 2011 and remained so for duration of reporting period.</p>

# AUDIT TABLE

## Statement Compliance Section

### PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
905:M18.1	Financial Assurance	As security for the due and punctual observance and performance by the proponent of the requirements of condition 11-1, the proponent shall, prior to removing shipping containers of lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, provide to the CEO, to be replaced every five years in accordance with condition 18-2, a financial assurance for the benefit of both the Minister and the CEO and which is in the form of an unconditional and irrevocable bank guarantee, from a guarantor acceptable to the CEO and in a form acceptable to the CEO, in the amount specified in condition 18-2.	Seek CEO approval of guarantor and form of guarantee  Provide unconditional and irrevocable bank guarantee to CEO for the amount specified in 905:M18.2 for the benefit of both the Minister and the CEO	CAR, CEO approval of guarantor and form of guarantee, written correspondence to CEO providing Approved Bank Guarantee	Overall	Before removing shipping containers of lead carbonate concentrate from the mine-site at any time after 26 July 2012	NR	Note CEO approved released of proponent responsibility to hold an unconditional bank guarantee 12 November 2012.
905:M18.2	Financial Assurance	The financial assurance shall be for an initial amount of AU\$5 million and shall be substituted every five years after the provision of the first guarantee with the fixed initial amount of each successive guarantee being indexed to inflation (being the Consumer Price Index, Perth).	Bank guarantee as required by 905:M18.1 to be for AU\$5 million initially and indexed every five years	CAR, Approved Bank Guarantee	Overall	Duration of project	NR	
905:M18.3	Financial Assurance	In the event that the guarantor referred to in condition 18-1 terminates its liability under the bank guarantee by paying to the Minister or the CEO the balance of the financial assurance remaining unpaid, the CEO will hold the financial assurance (being the amount paid by the guarantor upon termination), as security for the due and punctual observance and performance by the proponent of the requirements of condition 11-1, in an interest bearing account nominated by the CEO, with the interest accruing for the benefit of the Minister or the CEO.	Approved Bank Guarantee to address termination of liability as required by 905:M18.3	CAR, Approved Bank Guarantee	Overall	If the guarantor referred to in 905:M18.1 terminates its liability under the bank guarantee by paying the balance to the Minister or the CEO	NR	
905:M18.4	Financial Assurance	The financial assurance may be called on or used in accordance with section 86E of the <i>Environmental Protection Act 1986</i> if the proponent fails to implement the proposal in accordance with condition 11-1.	Proponent acknowledges Approved Bank Guarantee may be called on or used if proponent fails to implement proposal in accordance with 905:M11.1	CAR, Letter from the CEO providing written notice.	Overall	If the proponent fails to implement the proposal in accordance with 905:M11.1	NR	
905:M18.5	Financial Assurance	The financial assurance shall be discharged by the CEO and the Minister when the CEO has given the proponent written notice pursuant to section 86F(1) of the <i>Environmental Protection Act 1986</i> .	Approved Bank Guarantee to be discharged by CEO and Minister when CEO gives written notice under s 86F(1) EP Act	CAR, written notice from CEO pursuant to section 86F(1) of the <i>Environmental Protection Act 1986</i>	Overall	As required	NR	
905:M19.1	Environmental Risk Assessment	Prior to removing shipping containers containing lead carbonate concentrate from the mine-site at any time from the date of publication of this Statement, and then annually thereafter, the proponent shall carry out a risk assessment following methodology detailed in AS/NZS 4360:2004, of all key aspects of the project regarding the potential pathways for lead carbonate contamination including: 1. mining and processing; 2. storage; 3. bagging and loading; 4. transport; and 5. port operations, and report on the findings to the CEO.	Conduct Risk Assessments following methodology in AS/NZS 4360:2004 for potential pathways of lead carbonate contamination for mining and processing, storage, bagging and loading, transport and port operations, and provide report to the CEO of OEPA.	CAR, Risk Assessment reports, written correspondence submitting Risk Assessment reports to CEO	Construction	Before removing shipping containers containing lead carbonate concentrate from the mine-site at any time after 26 July 2012 and then annually for the duration of the project	C	Note Risk assessment provided to CEO 26 November 2012.



# AUDIT TABLE

Statement Compliance Section

PROJECT: ROSSLYN HILL MINING PTY LTD - LEAD CARBONATE PROJECT, WILUNA

27 July 2012 – 31 December 2012





## APPENDIX 3

Subterranean Fauna (Stygofauna) Sampling Plan Report



# Stygofauna Monitoring: Magellan Lead Carbonate Project, March 2012

## Final Report

Prepared for  
Magellan Metals Pty Ltd  
by Bennelongia Pty Ltd

March 2013  
Report 2013/I62





# **Stygofauna Monitoring: Magellan Lead Carbonate Project, March 2012**

Bennelongia Pty Ltd  
5 Bishop Street  
Jolimont WA 6913  
[www.bennelongia.com.au](http://www.bennelongia.com.au)  
ACN 124 110 167

March 2013

Report 2013/162



**Front Cover photo:** Willie Well sample site

**LIMITATION:** This report has been prepared for use by the Client and its agents. Bennelongia accepts no liability or responsibility in respect of any use or reliance on the report by any third party. Bennelongia has not attempted to verify the accuracy and completeness of all information supplied by the Client.

**COPYRIGHT:** The document has been prepared to the requirements of the Client. Copyright and any other Intellectual Property associated with the document belong to Bennelongia and may not be reproduced without written permission of the Client or Bennelongia.

**Client – Magellan Metals Pty Ltd**

Report	Version	Prepared by	Checked by	Submitted to Client Method	Date
Draft report	Vers. 1	Sue Osborne	Stuart Halse	email	6.vi.12
Final report		Mike Scanlon	Mike Scanlon	email	13.iii.13

*K:\Projects\B\_MagM\_01\BEC\_Magellan Stygofauna Monitoring\_final13iii2013*





## EXECUTIVE SUMMARY

This report fulfils the requirements of Condition 7 in Schedule A of the Notice of Interim Implementation Conditions. Specifically, it presents the results of stygofauna monitoring required in accordance with the Stygofauna Sampling Plan approved in May 2009, and a summary of groundwater monitoring presented in more detail in separate groundwater monitoring reports.

The total volume of groundwater abstracted during the 23 month period from April 2010 to February 2012 was 1,286,448 kL, which is well below the maximum annual volume permitted of 2.5 million kL.

The average groundwater levels measured across the four reference bores AQMO001 – 004 remained at least 0.8 m above the trigger level of 508.12 m AHD between April 2010 and December 2011 with no expectation that groundwater levels would have fallen significantly between January 2012 and the end of the monitoring period in March 2012.

Groundwater quality at the mine site and borefield provided no evidence of significant changes to pH, or increases in either salinity, or turbidity. However, the persistently low pH at bore GWO07 negates its effective use as a reference site for stygofauna monitoring and may need investigation. Laboratory analyses showed that with the exception of TDS at abstraction bore PB04 in May 2010 and November 2011, nitrate at abstraction bore PB01 in May 2010, and ongoing elevated lead levels at bore TDMB015 (investigated in 2007 to the satisfaction of the Department of Environment and Conservation), the major ion, nutrient and metal concentrations remained below the ANZECC & ARM CANZ (2000) livestock drinking water guidelines at monitored bores and generally within the tolerance range of stygofauna.

Three of the 22 species collected during the 2012 stygofauna survey had not been collected during previous monitoring surveys, bringing the amalgamated list of species within the species rich community in the Magellan survey area to approximately 40 species belonging to nine major taxonomic groups: a rotifer, an aphanoneuran, six species of tubificid oligochaetes, eight ostracods, 13 copepods, six syncarids, two amphipods, a single isopod and two dytiscid coleopterans. The two apparently new species collected in 2012 were the ostracod *Cyprinotus* sp., the copepod *Haifameira* sp. B1 and the amphipod *Yilgarniella* sp. B1.

Thirteen stygofauna species (two ostracods, two copepods, five syncarids, two amphipods, two beetles) are known only from the Magellan lead carbonate project and its immediate surrounds. These 13 apparently restricted species appear to be the most vulnerable members of the stygofauna community to adverse impacts from mining at Magellan. However, all but four species have been recorded from outside the mine impact areas. It is considered likely that the four species known only from impact areas actually have wider ranges.

Stygofauna samples collected from impact areas during successive monitoring events provided no evidence of significant change or deterioration in the assemblage in impact areas. The proportions of species recorded from impact and reference areas has remained similar since monitoring began (albeit with some stochastic variation). Stygofauna community structure in impact areas has also changed little and shown no trend of change.

Results of monitoring in 2012 confirmed the conclusions from earlier monitoring events that the stygofauna community in impact areas remains stable with no evident decline.



## CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>III</b>
<b>1. INTRODUCTION</b> .....	<b>3</b>
1.1. STATUTORY FRAMEWORK .....	3
1.2. MONITORING PRIOR TO APRIL 2010 .....	5
1.3. OBJECTIVES OF 2012 SAMPLING .....	6
<b>2. METHODS</b> .....	<b>6</b>
2.1. GROUNDWATER SAMPLING .....	6
2.2. STYGOFAUNA SAMPLING .....	7
2.3. SPECIMEN SORTING AND IDENTIFICATION .....	7
2.4. COMPILING SPECIES LISTS .....	7
2.5. TREATMENT OF STYGOFAUNA MONITORING RECORDS .....	8
2.6. PERSONNEL .....	8
<b>3. RESULTS AND DISCUSSION</b> .....	<b>8</b>
3.1. GROUND WATER .....	8
3.1.1. <i>Laboratory and monthly field monitoring</i> .....	8
3.1.2. <i>Field measurements during the 2012 stygofauna survey</i> .....	10
3.2. STYGOFAUNA .....	10
<b>4. SUMMARY AND CONCLUSIONS</b> .....	<b>14</b>
<b>5. REFERENCES</b> .....	<b>16</b>
<b>APPENDICES</b> .....	<b>19</b>
APPENDIX A AMALGAMATED SPECIES LIST FROM ALL MONITORING SURVEYS .....	19
APPENDIX B HIGHER ORDER IDENTIFICATIONS REMOVED FROM AMALGAMATED SPECIES LIST .....	22
APPENDIX C BORES SAMPLED FOR STYGOFAUNA IN 2012 .....	23

## LIST OF FIGURES

FIGURE 1-1. REGIONAL MAP SHOWING LOCATION OF THE MAGELLAN LEAD PROJECT. ....	4
FIGURE 2-1. DISTRIBUTION OF BORES SAMPLED DURING THE 2012 MONITORING SURVEY .....	7
FIGURE 3-1. GROUNDWATER ABSTRACTION AND DEPTH MEASUREMENTS IN RELATION TO STATUTORY TRIGGER LEVELS AND RAINFALL .....	9
FIGURE 3-2. RATIOS ACROSS YEARS OF SPECIES AND SAMPLES FROM REFERENCE AND IMPACT AREAS .....	14
FIGURE 3-3. STYGOFAUNA COMMUNITY STRUCTURE IN IMPACT AREAS SINCE COMMENCEMENT OF MONITORING .....	15

## LIST OF TABLES

TABLE 3-1. FIELD MEASUREMENTS OF GROUNDWATER PH, CONDUCTIVITY AND TEMPERATURE IN 2012. ....	11
TABLE 3-2. THE IDENTIFICATION AND DISTRIBUTION OF SPECIMENS COLLECTED DURING THE 2012 MONITORING SURVEY .....	11
TABLE 3-3. SPECIES COLLECTED ONLY FROM BORES IN IMPACT AREAS SINCE COMMENCEMENT OF MONITORING AND KNOWN ONLY FROM THE MAGELLAN LEAD CARBONATE PROJECT. ....	14



## 1. INTRODUCTION

Magellan Metals Pty Ltd operates the Magellan lead carbonate mine which is located 30 km west of the town of Wiluna in the northern Goldfields Region of Western Australia (Figure 1.1). Mining infrastructure includes ore processing facilities at the mine site and a borefield located 4 km to the south-east.

Stygofauna is the term applied to animals (mainly crustaceans) that live underground in caves, fissures, vugs and other spaces that are saturated by groundwater. Calcrete deposits that have formed along ancient channels in the Goldfields Region of Western Australia support some of the richest stygofauna communities in Australia (Humphreys 2001).

As a consequence of living underground, subterranean species often have limited dispersal capacity. Many species of Goldfields stygofauna have highly restricted distributions around single calcrete deposits (Humphreys 2001; Cooper *et al.* 2002, 2007, 2008). Their very limited ranges make them vulnerable to extinction as a result of anthropogenic activities (Fontaine *et al.* 2007). In recognition of this vulnerability, threat to subterranean fauna is one of the issues the Environmental Protection Authority addresses during environmental impact assessments (EPS 2003; 2007).

The mine pit at the Magellan lead carbonate mine does not extend below the water table, but water is pumped from the nearby borefield for ore processing, road maintenance, dust suppression, and for treatment to provide potable water. Three of the four production bores target a shallow calcrete aquifer, while the fourth bore accesses a deeper chert aquifer. The aquifers are unconfined with the potential to replenish following major rain events. However, pumping groundwater from the borefield is expected to lower the water table in the calcrete and therefore reduce the volume of saturated vuggy substrate that provides habitat for stygofauna.

### 1.1. Statutory framework

The Magellan Lead Carbonate Project was formally assessed by the Environmental Protection Authority under Part IV of the *Environmental Protection Act 1986*. Conditional approval for the Magellan Lead Carbonate Project was granted in November 2000 with the release of Ministerial Statement 559. Condition 8 of Ministerial Statement 559 required the preparation, approval, publication and implementation of a Subterranean Fauna Sampling Plan.

Under condition 8-1 the proponent was to prepare a Subterranean Fauna Sampling Plan that addressed:

1. Subterranean fauna surveys of the areas to be affected by dewatering operations and adjacent areas to assist in establishing the conservation significance of any species within these areas;
2. An appropriate groundwater monitoring program to ensure that groundwater drawdown is monitored and related to rainfall and climatic data so as to determine if groundwater drawdown is being managed within the expected seasonal fluctuations of the aquifer;
3. Repeat subterranean fauna sampling of the aquifer to monitor the effects of groundwater abstraction; and
4. Specific measures to record and preserve biological information on any species collected in the project area.

Under Condition 8-2 the proponent was to implement the Subterranean Fauna Sampling Plan required by Condition 8-1.

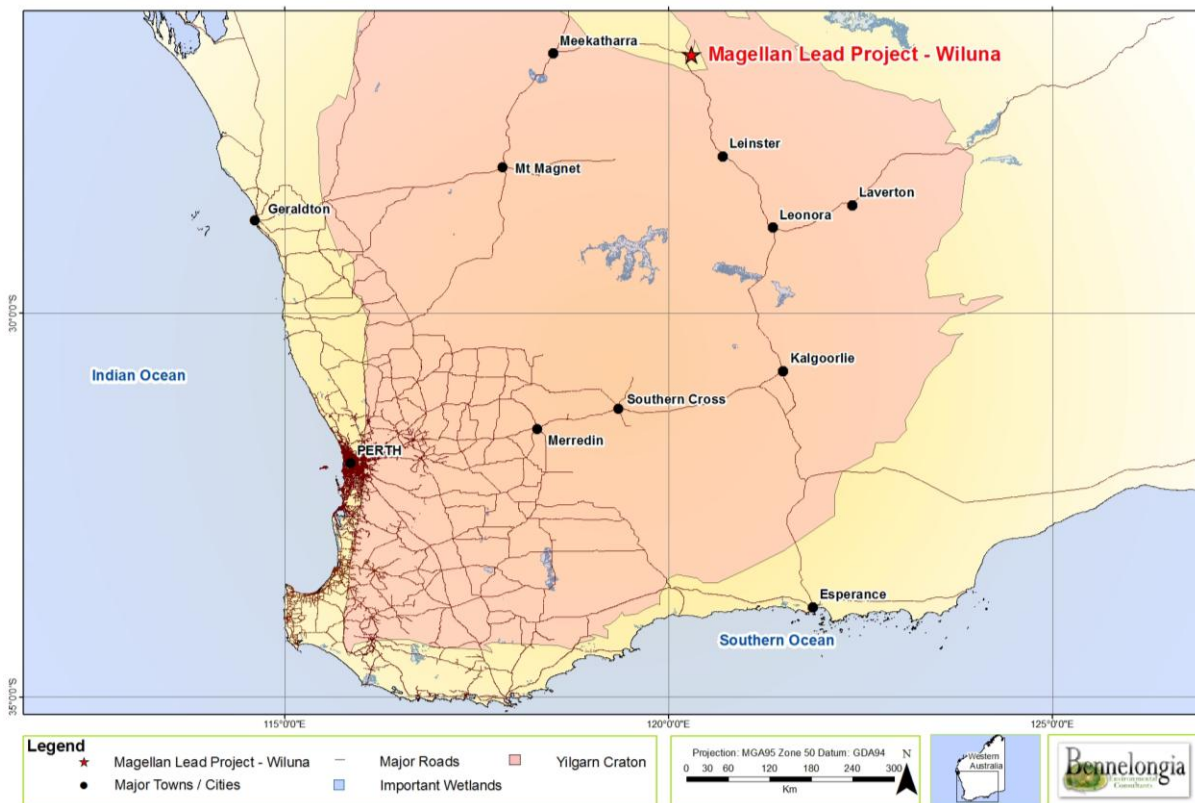
Under Condition 8-3 the proponent was to make the Subterranean Fauna Sampling Plan publically available.

Under Condition 8-4, the results of the Subterranean Fauna Sampling Plan are to be submitted to the EPA, Western Australian Museum and Department of Environment and Conservation.

Under Condition 8-5, should the EPA consider, based on the review of sampling the results that its objective of maintaining the abundance, species diversity and geographical distribution of subterranean fauna is being compromised, then the proponent shall develop an action plan to the requirements and timing of the EPA.

A Subterranean Fauna Sampling Plan (referred to as the *Stygofauna Sampling Plan*) was prepared and approved in 2005 (Biota 2005). The plan outlines requirements for stygofauna sampling at the borefield, adjacent to tailing storage facilities, and at bores in surrounding pastoral country. Within the calcrete, bores within a nominal 500 m buffer around each abstraction bore are considered to be in impact areas.

The Stygofauna Sampling Plan states that groundwater monitoring is to be conducted in accordance with a Groundwater Monitoring Programme prepared, and approved by the Waters and Rivers



**Figure 1-1. Regional map showing location of the Magellan Lead Project.**

Commission in April 2000 and appended to the Groundwater Well Licence issued under the *Rights in Water and Irrigation Act 1914*. Specifically, the Stygofauna Sampling Plan states that:

- Monthly abstraction from each bore is to be recorded with combined annual abstraction not to exceed 2.5 million kilolitres per annum;
- Monthly groundwater levels in monitoring bores are to be measured and the average level across these bores is to be maintained above a trigger level of 508.12 m AHD;
- Monthly measurements of pH and total dissolved solids (TDS) are to be measured in all production bores, and common ions are to be measured every six months; and
- Groundwater monitoring data are to be reported in conjunction with the findings of stygofauna monitoring to assess the impact of groundwater abstraction on the aquifer system and the conservation significance of stygofauna species identified.

The four monitoring bores specified in the Stygofauna Sampling Plan as those to be used for groundwater depth monitoring in the borefield calcrete are located more than 500 m from abstraction bores and are, therefore, treated as reference sites for the purpose of stygofauna monitoring. The Stygofauna Sampling Plan allows for an average drawdown of approximately 2.5 m across these sites before the trigger level of 508.12 m AHD would be reached.

Since first approval of the Stygofauna Sampling Plan in 2005, operations at the Magellan lead carbonate mine have been reviewed, first with the release of Ministerial Statement 783 in February 2009, and most recently in February 2011, the Minister for Environment; Water, issued a Notice of Interim Implementation Conditions which supersede conditions in both Ministerial Statements 559 and 783. Condition 7 in Schedule A of the Notice of Interim Implementation Conditions relates specifically to stygofauna and includes the following clauses:

- 7-1. The proponent shall implement the Subterranean Fauna (stygofauna) Sampling Plan (Biota, January 2005) approved on 18 July 2005, as amended by letter (Ivornia Magellan Metals Pty Ltd, 4 April 2009) approved on 25 May 2009.
- 7-2. The proponent shall make the Subterranean Fauna (Stygofauna) Sampling Plan required by condition 7-1 publicly available on the proponent's website by 1 March 2011
- 7-3. The results from the subterranean Fauna (stygofauna) Sampling Plan required by Condition 7-1 shall be submitted to the Office of the Environmental Protection Authority in the compliance assessment reports required pursuant to condition 4-5.

The amendment referred to in clause 7-1 approves stygofauna monitoring and reporting at a frequency of every two years.

## **1.2. Monitoring prior to April 2010**

Stygofauna investigations at the Magellan lead mine commenced with a three phase survey to assess the conservation significance of stygofauna species. This work was conducted and the results reported by Biota (2006). As required, monitoring has been conducted every two years (Outback Ecology 2008, 2010).

Stygofauna monitoring up to March 2010 detected no evidence of significant impacts to stygofauna communities at the Magellan mine site or borefield. Although some species had been collected only from assigned impact areas, it was considered that the occurrence of other species both within and beyond impact areas demonstrated habitat connectivity, and the repeated occurrence of many demonstrated their persistence over time (Outback Ecology 2008, 2010).

The combined list of stygofauna species collected up to March 2010 include approximately 38 species representing nine major taxonomic groups: Rotifera; Aphanoneura; Oligochaeta; five orders of

Crustacea (Ostracoda, Copepoda, Syncarida, Amphipoda and Isopoda), and Coleoptera (Appendix A). Some of the species collected during each monitoring survey differed from those collected previously, but the number of new species diminished with each survey (12 new species in 2008 and three new species in 2010).

Groundwater monitoring demonstrated compliance with water depth and quality requirements. There was little evidence of any significant decline in the watertable during the initial monitoring period to March 2006. A gradual lowering of the watertable was recorded during the following monitoring period to March 2008, but levels remained above the trigger level. The Magellan lead mine was in care and maintenance mode between April 2007 and February 2010, just before Outback Ecology conducted the March 2010 round of stygofauna monitoring. Despite significantly lower levels of groundwater abstraction during this period the watertable fell, perhaps in response to lower than average rainfall. However, it remained above the trigger level of 508.12 m AHD.

Groundwater has generally been found to be of suitable quality for stygofauna. However, low pH values of <6 were recorded at two reference bores (GWOB06 and GWOB07) in 2008 and again in 2010 prompting the conclusion that stygofauna distributions may be restricted in deeper rock aquifers.

There are some differences between the bores planned for monitoring in the 2005 Stygofauna Sampling Plan and those actually sampled. Twenty-three of the 39 bores specified in the Stygofauna Sampling Plan could not be accessed during initial surveys, including the four bores specified for monitoring groundwater depth in the borefield. However, the same replacement bores have been used for groundwater depth measurements since monitoring commenced. Subsequent changes to the bores monitored have also been necessary.

### **1.3. Objectives of 2012 sampling**

The overarching objective of this report is to fulfil the requirements of Condition 7 in Schedule A of the Notice of Interim Implementation Conditions. Specifically, this report presents the results of stygofauna monitoring required in accordance with the Stygofauna Sampling Plan approved in May 2009. The stated objectives of this Plan are “to increase scientific knowledge about subterranean fauna to assist in conservation of this element of the environment”. Specifically, this monitoring report:

- Presents and interprets a list of stygofauna species collected during the March 2012 stygofauna monitoring survey;
- Presents and interprets measurements of depth to groundwater in relation to rainfall, and the trigger level of 508.12 m AHD outlined in the approved Stygofauna Sampling Plan; and
- Assesses the potential threat to stygofauna from mining operations at the Magellan lead carbonate mine.

## **2. METHODS**

### **2.1. Groundwater sampling**

Two sources of groundwater monitoring data were used:

- Field measurements of electrical conductivity (EC) (used to infer salinity), pH and temperature were taken at each bore monitored for stygofauna. Measurements were taken at the end of March 2012, concurrently with stygofauna sampling using a WP-81 model TPS water quality analyser that was calibrated daily. Water quality measurements were taken from 1 m below the water surface.



- Monthly measurements of groundwater depth were taken by Magellan personnel at observation bores adjacent to each groundwater abstraction pump (OBS01, OBS02, OBS03 and OBS04) and at all monitoring bores, including those used to gauge compliance with the 508.12 m AHD trigger level (AQMB001, AQMB002, AQMB003, and AQMB004) (Figure 2.1). Monthly measurements of pH, EC and total dissolved solids (TDS), and six monthly water samples for laboratory analysis were taken by Magellan personnel in all production bores. In addition, laboratory analysis was conducted on groundwater samples taken from tailings storage facility monitoring bores on a quarterly basis. Laboratory samples were analysed by the NATA accredited SGS Newburn Environmental. Measured depths to groundwater were compared with rainfall recorded at the nearest Bureau of Meteorology weather station at Wiluna.

## 2.2. Stygofauna sampling

A total of 28 bores were sampled for stygofauna; 22 were in areas potentially impacted by either groundwater drawdown at the production borefield, or seepage from tailings storage facilities; and six were located in reference areas (Figure 2.1). Sampling sites were selected by Magellan and despite some turnover of sample sites since commencement of monitoring; all bores sampled in 2012 had been sampled previously in 2010, with 20 having been sampled since 2008. Bore details are provided in Appendix C.

The drill holes were surveyed between 26 and 29 March 2012. Field sampling followed the methods outlined in the Stygofauna Sampling Plan and recommended by the EPA (2007). At each bore, six net hauls were collected using weighted plankton nets; three hauls with a 50 µm mesh net and three with a 150 µm mesh net. After the net was lowered to the bottom of the bore, it was jerked up and down briefly to agitate benthic stygofauna into the water column prior to slowly retrieving the net. Contents of the net were transferred to a 125 ml polycarbonate vial after each haul and preserved in 100% ethanol. Nets were washed between bores to minimise contamination between sites. Each set of six hauls from a single bore made on the same day were combined as a single sample.

## 2.3. Specimen sorting and identification

Preserved stygofauna samples were elutriated to separate animals from heavier sediment and sieved into size fractions (250, 90 and 53 µm) to remove debris and improve searching efficiency prior to sorting.

All samples were sorted under a dissecting microscope and stygofauna specimens were identified to species or morphospecies level using published and informal keys and reference to voucher collections. Specimens were dissected as necessary and examined under a compound microscope with differential interference contrast lighting.

Representative specimens will be lodged with the Western Australian Museum.

## 2.4. Compiling species lists

Stygofauna specimens that could not be identified to species or morphospecies level were included in estimates of species richness only if they could not belong to species already recorded; e.g., damaged crustacean specimens that could not be identified beyond the higher order level of Amphipod sp. were not counted as an additional taxon because the sample also included other amphipod species. If however, there had been no other amphipod specimens collected, the higher order identification of

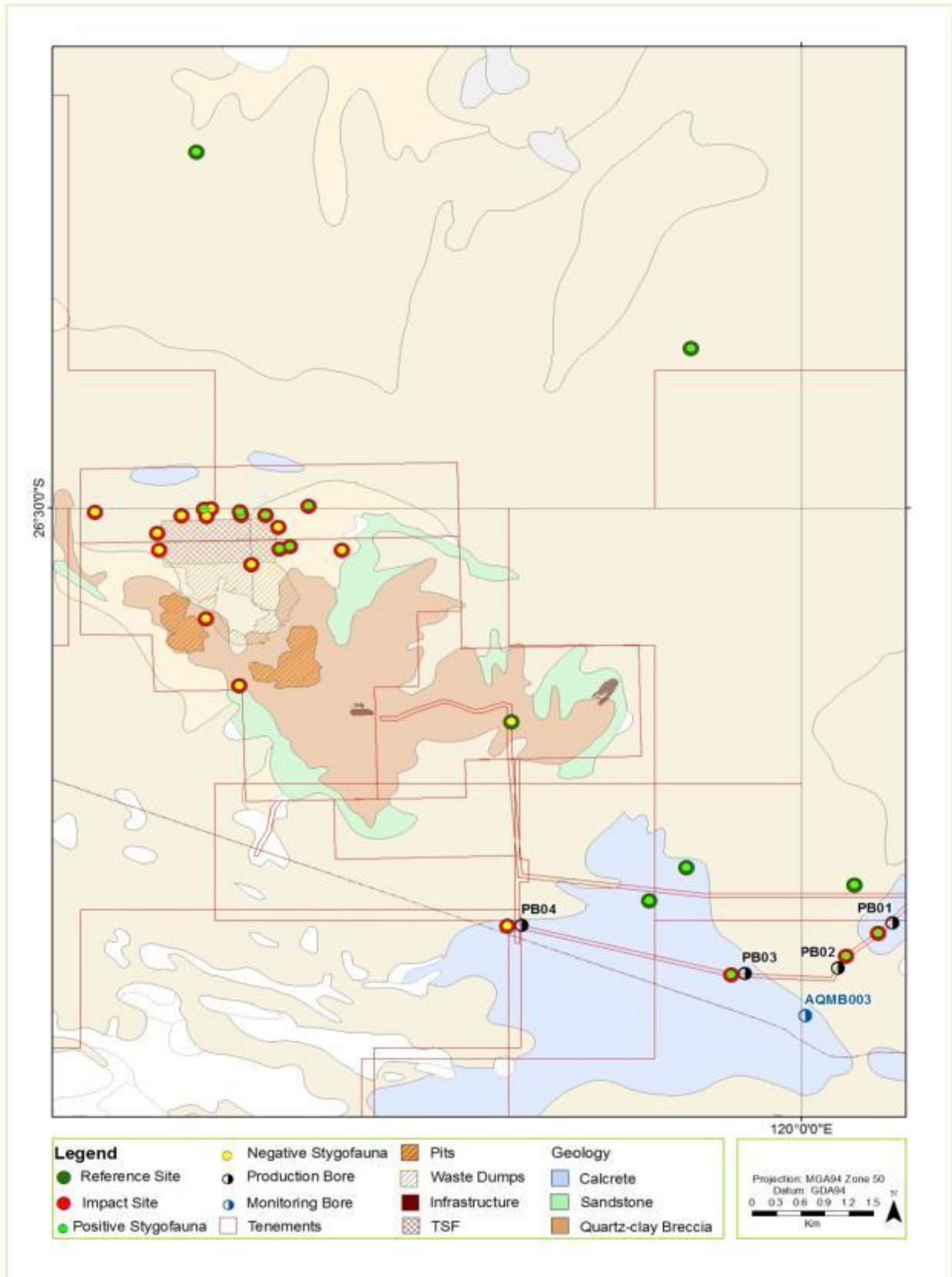


Figure 2-1. Distribution of bores sampled during the 2012 monitoring survey.

Amphipod sp. would have been added to the list of species. The purpose of this criterion was to prevent higher level identifications falsely inflating species richness.

## **2.5. Treatment of stygofauna monitoring records**

The known distributions of species, based both on records from outside the Magellan area, and on their occurrence among impact and reference sites within the Magellan area, were reviewed to determine the vulnerability of species to impacts from mining. Species persistence and community composition since the commencement of monitoring were used to determine whether there was any evidence of significant change, or decline, in stygofauna assemblages in impact areas.

## **2.6. Personnel**

Fieldwork was undertaken by Sean Bennett from Bennelongia with assistance provided by Cassandra Bryan, Environmental Advisor with Magellan Metals. Sample sorting was done by Sean Bennett and Jim Cocking, and specimen identifications were made by Jane McRae, Mike Scanlon and Stuart Halse.

# **3. RESULTS AND DISCUSSION**

## **3.1. Ground water**

### ***3.1.1. Laboratory and monthly field monitoring***

Magellan Metals suspended mining, processing and export of lead carbonate in April 2011. Consequently there has been a significant reduction in groundwater abstraction since that date. The total amount of groundwater abstracted during the 23 month period of April 2010 to February 2012 was 1,286,448 kL (Figure 3.1). The maximum permitted abstraction over a 12 month period is 2.5 million kL.

Groundwater levels adjacent to abstraction pumps generally showed a slow decline during the first half of the monitoring period when the mine was operational but recovered when abstraction rates fell. The recovery was particularly pronounced adjacent to pump 4, where the watertable has risen by nearly nine metres since November 2010. Rapid recovery of groundwater levels is likely to have been influenced by high rainfall in February 2011 (Figure 3.1).

Groundwater depths at monitoring bores used to assess compliance (AQMB001 – 004) showed similar trends, with the level at bore AQMB003 dipping below the trigger level of 508.12 m AHD in January 2011. However, compliance is assessed using the average depth at the four monitoring bores, which remained at least 0.8 m above the trigger level to the end of December 2012 (Figure 3.1). Groundwater depths at monitoring bores were not available for 2012. However, it is very unlikely that the average depth fell significantly below the level recorded in December because abstraction rates have remained low and there is evidence of February 2011 rainfall re-charging the aquifer (Figure 3.1).

Groundwater quality measurements and analyses were available for the period April 2010 to 2011 (Aquaterra 2010, 2011). At the production bores, pH ranged from weakly alkaline to weakly acidic (pH 8.1 to 6.5). TDS and EC levels were lower at PB01 and 02 (<1,400 mg/L TDS and < 2,100 µS/cm EC) than at PB03 and 04, but all measurements remained below a TDS of 5000 mg/L and EC of 7700 µS/cm (Aquaterra 2010, 2011) which is within the tolerance range of stygofauna. Results of laboratory analyses show that with the exception of TDS at PB04 in May 2010 and November 2011, and nitrate at PB01 in May 2010, the major ion and metal concentrations remained below the ANZECC & ARMCANZ (2000) livestock drinking water guidelines for all production bores.

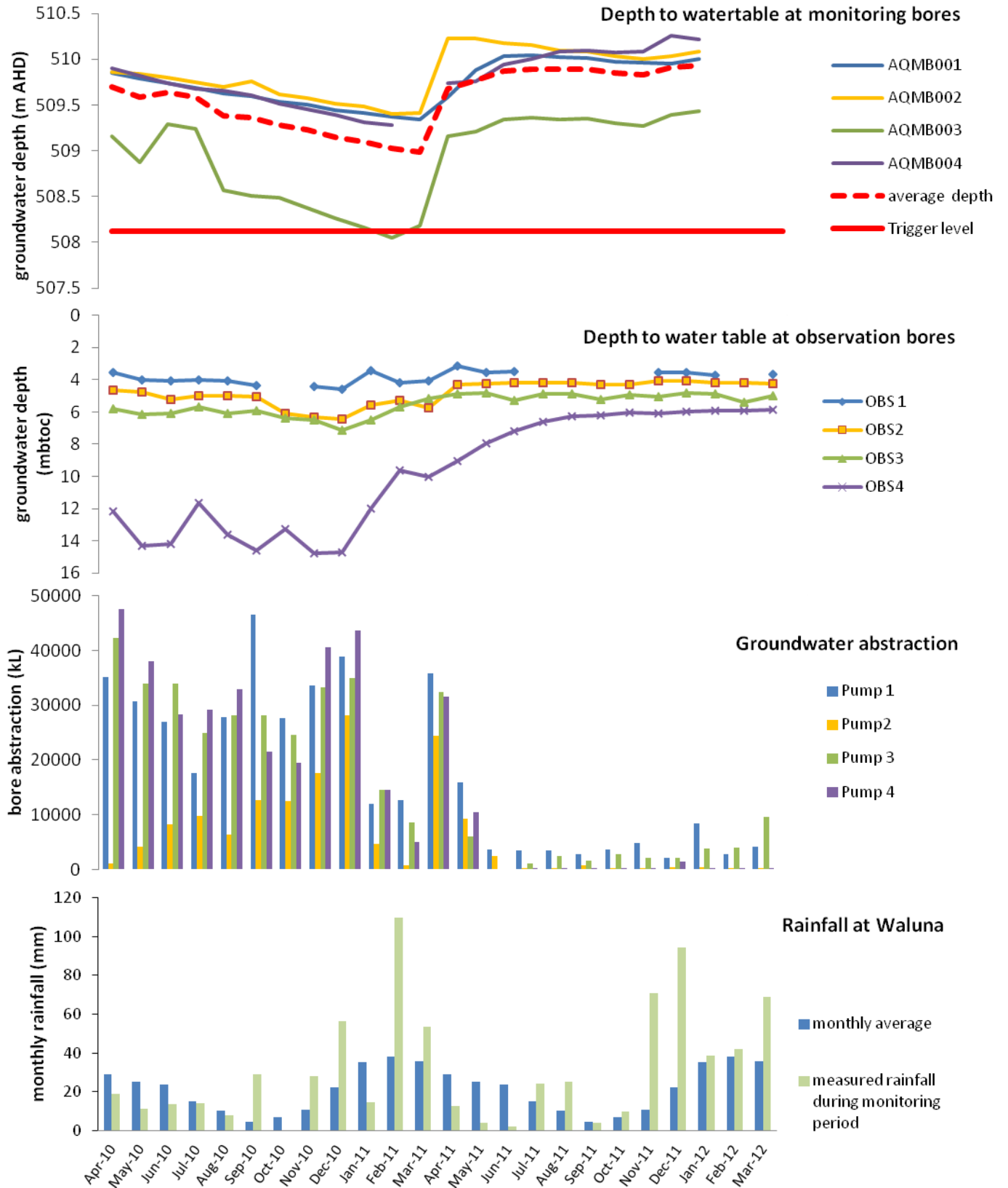


Figure 3-1. Groundwater abstraction and depth measurements in relation to statutory trigger levels and rainfall mAHD – metres above height datum, mbtoc – metres below top of casing (mAHD levels not available for observation bores).

Groundwater at tailings storage facility monitoring bores ranged between weakly acidic and weakly alkaline (pH 5.31 – 8.0). Groundwater in this area is brackish to saline with EC measurements of 2,560 to 20,000 uS/cm recorded between April 2010 and December 2011. TDS ranged from 2,000 to 14,600 mg/L. No significant consistent trends in pH, EC or TDS at individual monitoring bores were noted (Aquaterra 2010, 2011). Other than the level of lead at bore TDMB015 which ranged from 0.17 to 0.43 mg/L, metal concentrations remained below the ANZECC & ARM CANZ (2000) livestock drinking water guidelines. An investigation in 2007 concluded that bore TDMB015 intercepted low grade lead mineralisation and the Department of Environment and Conservation no longer require notification of high lead levels at this bore.

### **3.1.2. Field measurements during the 2012 stygofauna survey**

Bores monitored in the borefield were neutral to weakly alkaline with pH values ranging from 7.07 to 8.42, conductivity ranging from 2,410 to 16,750 uS/cm, and temperatures ranging from 24.3 to 30.1 °C (Table 3.1). These records are slightly more alkaline values recorded at the abstraction bores during the monitoring period to December 2011 (Section 3.1.1), and unlike the measurements of pH and conductivity which were consistently lower at production bores PB01 and PB02, field measurements of pH and conductivity at the associated observation bores of OB01 and OB02 in March 2012, were higher than those at bores OB03, OB04 (Table 3.1). The field measurements indicate that groundwater pH and EC levels in the borefield calcrete at the end of March 2012 provide ideal conditions for stygofauna. Measured groundwater temperatures were also within the tolerance range for stygofauna.

Field measurements of pH at bores associated with tailing storage facilities were most just above neutral to alkaline with a range of pH 7.25 to 8.86. Although pH 8.86 is more alkaline than recorded during the monitoring period to December 2011, it remains within the tolerance range of stygofauna. The exception was bore GWOB07, which was acidic with a pH of 3.43. This bore has been consistently acidic since 2008 (Outback Ecology 2008, 2010) and may require further investigation. Low pH at GWOB07, prevents it being an effective reference site for stygofauna monitoring, particularly as the stygofauna community of greatest interest is associated with the more alkaline conditions associated with calcrete.

The temperature range of 23.7 to 31 recorded at bores outside the borefield is similar to that recorded in the borefield and is within the tolerance range of stygofauna.

## **3.2. Stygofauna**

After adjusting for possible duplication of species (i.e. species sometimes identified only to higher order, see Section 2.4), monitoring in 2012 collected 201 stygofauna specimens representing 22 species from eight major taxonomic groups. They included Aphanoneura (one species), tubificid oligochaetes (four species), the five crustacean groups of ostracods (four species), copepods (six species) syncarids (two species), amphipods (two species) and isopods (one species), and coleopteran insects (three species) (Table 3.2, Appendix B). Specimens were collected from 15 (54%) of the 28 bores sampled; ten in impact areas and five at reference locations.

Of the 22 species collected, eight are formally described (three ostracods and five copepods). The other specimens were assigned morphospecies codes. All of the described species had known ranges that extend beyond the Magellan mine and borefield area. Two of the ostracods (*Cypretta seurati* and *Limocythere stationis*) and two of the copepods (*Mesocyclops brooksi* and *Microcyclops varicans*) are widely distributed with ranges extending beyond the Murchison region (Table 3.2). The remaining

**Table 3-1. Field measurements of groundwater pH, conductivity and temperature in 2012.**

Bore code	Site type	Field pH	Field Conductivity (uS/cm)	Field Temperature (° C)
OB01	Impact	8.01	16750	28.5
OB02	Impact	8.34	11050	30.1
OB03	Impact	7.71	5810	24.3
OB04	Impact	7.07	9080	24.8
AQMB001	Reference	7.86	9430	28.3
AQMB002	Reference	8.42	15600	27.3
AQMB004	Reference	8.13	2410	28.6
MTM002	Impact	8.57	2050	31.0
TDMB001	Impact	7.30	5900	27.9
TDMB002	Impact	7.49	14130	28.1
TDMB003	Impact	7.82	6750	27.3
TDMB004	Impact	8.00	9900	25.8
TDMB005	Impact	7.92	6140	25.1
TDMB006	Impact	7.89	4180	30.3
TDMB007	Impact	8.53	13360	29.0
TDMB008	Impact	8.28	10860	29.0
TDMB009	Impact	8.04	3880	29.1
TDMB011	Impact	7.85	4710	29.6
TDMB012	Impact	7.88	17830	29.0
TDMB013	Impact	7.38	15580	27.9
TDMB014	Impact	7.58	12190	28.4
TOM001	Impact	7.80	6020	29.4
GWOB01	Impact	8.20	4070	30.8
GWOB03	Impact	8.86	8190	28.8
GWOB08	Impact	7.25	22380	27.5
GWOB07	Reference	3.43	15910	23.7
Percey Well	Reference	8.50	9830	23.9
Willie Well	Reference	8.15	10630	25.1

ostracod (*Candonopsis dani*) and two of the copepods (*Halicyclops eberhardi*, *Parapseudoleptomesochra rouchi*) occur elsewhere in the Murchison region, while the copepod (*Haifeira pori*) is known only from the Wiluna area (Karanovic 2004). Many of the morphospecies recorded in 2012 are known to be widely distributed (Table 3.2).

Stygofauna surveys of the Goldfields region have shown that many species belonging to above taxonomic groups are restricted to single calcrete deposits (Humphreys 2001; Cooper *et al.* 2002, 2007, 2008; Guzik *et al.* 2008).

**Table 3-2. The identification and distribution of specimens collected during the 2012 monitoring survey.**

Three higher order identifications (Amphipoda sp.) are presented in a table of higher order identifications in Appendix B).

Higher order taxonomic groups	Lowest level identifications	Impact	Reference	Bores where recorded in 2012 (impact sites in orange)	Previous records at Magellan		Broader distribution
					Impact areas	Reference areas	
<b>Aphanoneura</b>							
	<i>Aeolosoma</i> sp. 1 (PSS)	3	-	OB01	2008 2010	-	Common in Pilbara groundwater <sup>(1)</sup>
<b>Oligochaeta</b>							
Tubificida							
	<i>Enchytraeus</i> Pilbara sp. 1 (PSS)	16	-	TDMB008	-	2006*	Common in Pilbara groundwater <sup>(1)</sup> . Most likely equivalent to Enchytraeidae CALM sp. PST1 recorded previously
	<i>Enchytraeus</i> Pilbara sp. 2 (PSS)	-	1	Willie Well	2006*	-	Common in Pilbara groundwater <sup>(1)</sup> . Most likely equivalent to Enchytraeidae CALM sp. PST2 recorded previously
	Phreodrilid with dissimilar ventral chaetae	9	-	OB02	2008 2010	-	Group of species, common in the Pilbara and Yilgarn regions <sup>(2, 3)</sup>
	<i>Ainudrilus</i> sp. WA25 (PSS)	4	-	TDMB008, TDMB014	2006	-	Also recorded from Fortescue Marsh in the Pilbara Region <sup>(2)</sup>
<b>Crustacea</b>							
Ostracoda							
	<i>Candonopsis dani</i>	-	33	AQMB002, AQMB004	2006 2008 2010	2006 2008 2010	Recorded at Lake Violet and Bubble Well on Millbillillie Station <sup>(3)</sup>
	<i>Cypretta seurati</i>	-	1	Willie Well	-	2006 2008	Widespread species described in Africa <sup>(4)</sup>
	<i>Cyprinotus</i> sp.	1	-	OB01	<b>Not previously recorded at Magellan</b>		Species of this genus often occur in surface water and generally have broad distributions
	<i>Limnocythere stationis</i>	-	20	Percey Well	-	2010	Cosmopolitan species, mainly northern hemisphere <sup>(5)</sup>
Copepoda							
	<i>Haifameira pori</i>	1	2	OB03 AQMB002, AQMB004	2006 2008 2010	2006 2008 2010	Common at several locations close to Wiluna, but not farther afield <sup>(6)</sup>
	<i>Haifameira</i> sp. B1	2	-	TDMB011	<b>Not previously recorded at Magellan</b>		Range is unknown
	<i>Parapseudoleptomesochra rouchi</i>	16	-	TDMB012	2008 2010	2008 2010	Prior to collection at Magellan, known only from Uramurdah Lake in the Murchison <sup>(6)</sup>
	<i>Halicyclops eberhardi</i>	-	1	AQMB001	2008	-	Widespread in the Yilgarn <sup>(6)</sup>

Higher order taxonomic groups	Lowest level identifications	Impact	Reference	Bores where recorded in 2012 (impact sites in orange)	Previous records at Magellan		Broader distribution
					Impact areas	Reference areas	
	<i>Mesocyclops brooksi</i>	-	2	Percey Well	2006 2008	2006 2008	Widespread in the southern Australia and Pilbara <sup>(6)</sup>
	<i>Microcyclops varicans</i>	5	3	OB01 AQMB004, Willie Well	-	2010	Cosmopolitan species also occurs in surface waters <sup>(6)</sup>
Syncarida							
	<i>Brevisomabathynella</i> sp. B1	-	1	AQMB004	2008* 2010*	2008* 2010*	Range is unknown. Most likely equivalent to parabathynellid morphospecies recorded previously
	<i>Notobathynella</i> sp. B5	41	-	TDMB005 TDMB006 TDMB014	2006*	2006*	Range is unknown. Most likely equivalent to notobathynellid morphospecies recorded in 2006
Amphipoda							
	Paramelitidae (nr. Kruptus) sp. B30	1	-	TOM001	2006* 2008* 2010*	2006*	Range is unknown. Equivalent to Paramelitidae sp. OES3 and Neoniphargidae sp. 1 (nr <i>Neocrypta</i> ) recorded previously
	<i>Yilgarniella</i> sp. B1	-	1	AQMBOO1	<b>Not previously recorded at Magellan</b>		Range is unknown
Isopoda							
	<i>Haloniscus</i> sp.	2	6	OB03 AQMB001	2006* 2008*	2006* 2008*	Equivalent to <i>Haloniscus stilfer</i> recorded in 2006 and <i>Haloniscus nr stilfer</i> recorded in 2008. <i>Haloniscus stilfer</i> is known from Lake Way <sup>(7)</sup>
<b>Insecta</b>							
Coleoptera							
	<i>Limbodessus</i> sp. B3	14	7	OB03 AQMB004	-	2006*	Equivalent to the morphospecies <i>Limbodessus</i> sp. nov. recorded in 2006. Range is unknown
	<i>Limbodessus</i> sp. B4 = nr <i>padburyensis</i>	4	-	OB03	2006*	2006*	Equivalent to the morphospecies <i>Limbodessus</i> nr <i>padburyensis</i> . Range is unknown
	Specimen total	120	78				
	Total species	15	12				

\* Denotes previous occurrences of differently named morphospecies that are most likely the same species. (1) DEC unpublished data from the Biodiversity Survey of the Pilbara Region, (2) Pinder 2008; (3) Karanovic and Marmonier 2002; (4) Gauthier (1929); (5) Martens & Sukonthrip (2011); (6) Karanovic 2004; (7) Taiti and Humphreys 2001.



In many cases, the alignment of morphospecies with names used in previous surveys was straightforward but for some taxonomic groups access to previously collected specimens is required before results of the different monitoring events can be aligned. This is particularly true of syncarids. However, after aligning names as best as currently possible, the amalgamated species list from all monitoring surveys contained approximately 41 species (Appendices A and B). The list included a rotifer, an aphanoneuran, six species of tubificid oligochaetes, eight ostracods, 13 copepods, seven syncarids, two amphipods, a single isopod and three dytiscid coleopterans. The 22 species collected in 2012 are equivalent to 56% of the species in the amalgamated list.

All but three of the 22 species collected in 2012 have either been collected in previous monitoring events or were closely aligned to morphospecies recorded previously (and, thus, were likely to have been collected). The three apparently new records were the ostracod *Cyprinotus* sp., the copepod *Haifameira* sp. B1 and the amphipod *Yilgarniella* sp. B1. Thus, 2012 continued the pattern of only low numbers of new species being detected in extra monitoring events. All 15 species were new in 2006 and 60% of the 20 species in 2008 were new, whereas only 14% of the 21 and 22 species in 2010 and 2012, respectively, were new. The numbers of bores sampled were 58 (96 samples) in 2006, 31 in 2008, 29 in 2010 and 28 in 2012. Numbers of species recorded per bore sampled has increased since 2006, probably as a result of better taxonomic knowledge allowing more animals to be identified to species.

Based on current knowledge of species distributions, 13 species are known only from the Magellan lead carbonate project and its immediate surrounds and could be considered as conservation-significant species (Table 3.3). Two of the species collected for the first time in 2012 (*Cyprinotus* sp. and *Haifameira* sp. B1) are known only from the project impact area, although *Cyprinotus* is a genus of surface water ostracods that occur regularly in groundwater; the species would be expected to have a moderately wide range (see Reeves *et al.* 2007).

All but two (*Metacyclops* nr *superincidentis*, Parabathynellidae sp. OES10) of the conservation-significant species collected prior to 2012 have been found in areas where groundwater will not be impacted. The conservation of these eight species and *Yilgarniella* sp. B1 appears assured irrespective of whether their populations decline in impact areas. It is considered that threats to the conservation status of the other four species (*Cyprinotus* sp., *Metacyclops* nr *superincidentis*, *Haifameira* sp. B1, Parabathynellidae sp. OES10) are likely to be minimal on the basis that their current known ranges are likely to be an underestimate of their true ranges, which extend beyond the mine impact areas. In addition, the pattern of collection from impact and reference bores provides no obvious evidence that the ranges of any species is contracting in impact areas (Table 3-3, Appendix A). This suggests that even if species were restricted to the impact areas, their conservation status has not been threatened to date.

The conclusion that species ranges in the impact areas are not contracting is supported by the pattern of overall species occurrence in impact and reference area. The ratio of species in reference areas to those in impact areas has shown little change since 2006, being 0.85 in 2006, 0.81 in 2008, 0.69 in 2010 and 0.86 in 2012. The ratio of reference and impact samples was 1.24 in 2006, 0.5 in 2008, 0.32 in 2010 and 0.27 in 2012. While there appeared to be a loose relationship until 2010 between the proportion of reference samples and the proportion of species collected in reference areas, the relationship was not continued in 2012 when the proportion of species in reference bores returned to the 2006 level. It appears that the variation in species richness between impact and reference areas is mostly a reflection of stochastic variation in results across years (Figure 3-2).

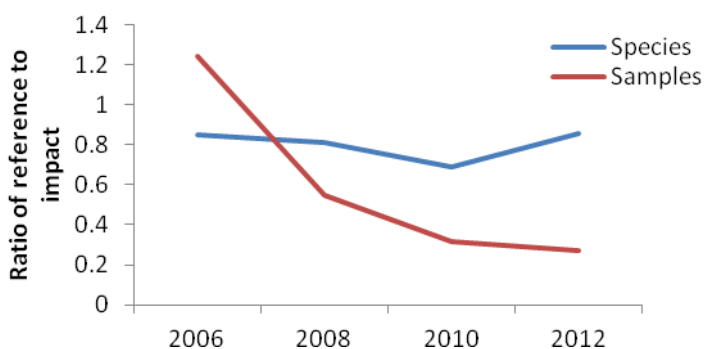


Figure 3-2. Ratios across years of species and samples from reference and impact areas.

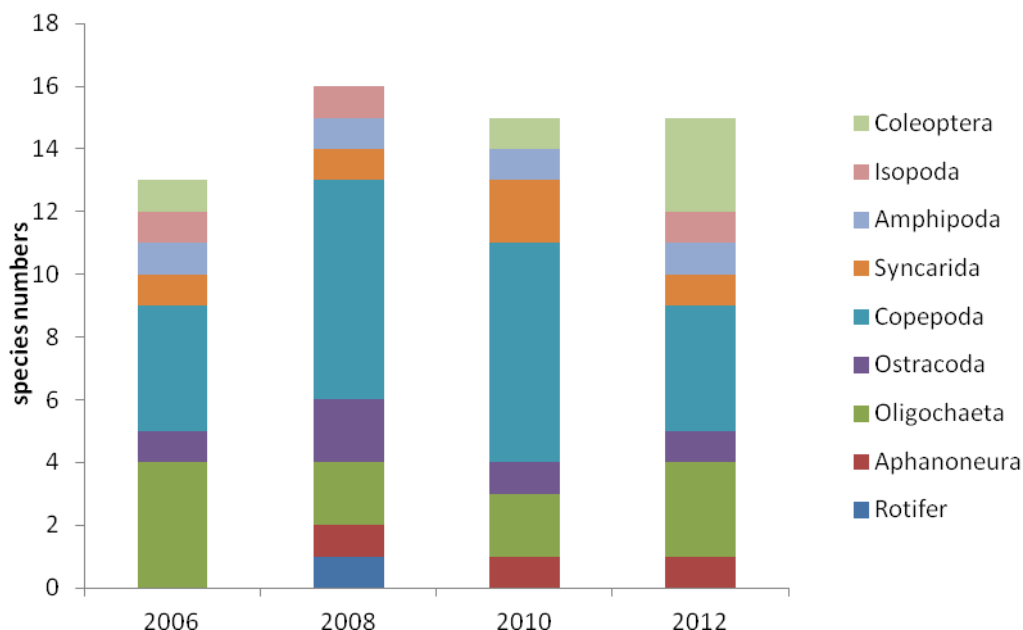
Table 3-3. Species collected only from bores in impact areas since commencement of monitoring and known only from the Magellan lead carbonate project.

Species	2012 distribution	Previous distribution
<i>Cyprinotus</i> sp.	Impact	-
Candonidae sp. 4	-	Reference, 2006
<i>Haifameira</i> sp. B1	Impact	-
<i>Metacyclops</i> nr <i>superincidentis</i>	-	Impact, 2006
<i>Brevisomabathynella</i> sp. B1	Reference	Impact and reference, 2008 and 2010
<i>Notobathynella</i> sp. B5	Impact	Impact and reference, 2006
Parabathynellidae sp. OES10	-	Impact, 2010
Parabathynellidae sp. OES11	-	Reference, 2010
Parabathynellidae sp. OES12	-	Reference, 2010
Paramelitidae (nr. <i>Kruptus</i> ) sp. B30	Reference	Impact and reference, 2006, 2008, 2010
<i>Yilgarniella</i> sp. B1	Reference	-
<i>Limbodessus</i> sp. B3	Impact/reference	Reference, 2006
<i>Limbodessus</i> sp. B4 = nr <i>padburyensis</i>	Impact	Impact and reference, 2006

Composition of the stygofauna community in the monitored bores in impact areas has remained similar since 2006, with copepods being the most abundant element of the fauna (Figure 3-3). Amphipods, syncarids, copepods, ostracods and oligochaetes have been collected each monitoring event, while beetles, isopods, and aphanoneuran worms have been collected in three of the four events.

#### 4. SUMMARY AND CONCLUSIONS

Stygofauna and groundwater monitoring have been conducted in accordance with the approved Stygofauna Sampling Plan required under Condition 7 in Schedule A of the Notice of Interim Implementation Conditions, although for logistical reasons there have been changes over time in the bores sampled. There has also been a reduction in the number of bores sampled.



**Figure 4-1. Stygofauna community structure in impact areas since commencement of monitoring.**

The total volume of groundwater abstracted during the 23 month period from April 2010 to February 2012 was 1,286,448 kL, which is well below the maximum annual volume permitted of 2.5 million kL.

The average groundwater levels measured across the four reference bores AQMO001 – 004 remained at least 0.8 m above the trigger level of 508.12 m AHD between April 2010 and December 2011 with no expectation that groundwater levels would have fallen significantly between January 2012 and the end of the monitoring period in March 2012.

Groundwater quality at the mine site and borefield provided no evidence of significant changes to pH, or increases in either salinity, or turbidity. However, the persistently low pH at bore GWO07 negates its effective use as a reference site for stygofauna monitoring and may need investigation. Laboratory analyses showed that with the exception of TDS at abstraction bore PB04 in May 2010 and November 2011, nitrate at abstraction bore PB01 in May 2010, and ongoing elevated lead levels at bore TDMB015 (investigated in 2007 to the satisfaction of the Department of Environment and Conservation), the major ion, nutrient and metal concentrations remained below the ANZECC & ARMCANZ (2000) livestock drinking water guidelines at monitored bores and generally within the tolerance range of stygofauna.

Three of the 22 species collected during the 2012 stygofauna survey had not been collected during previous monitoring surveys, bringing the amalgamated list of species within the species rich community in the Magellan survey area to approximately 40 species belonging to nine major taxonomic groups: a rotifer, an aphanoneuran, six species of tubificid oligochaetes, eight ostracods, 13 copepods, six syncarids, two amphipods, a single isopod and two dytiscid coleopterans. The two apparently new species collected in 2012 were the ostracod *Cyprinotus* sp., the copepod *Haifameira* sp. B1 and the amphipod *Yilgarniella* sp. B1.

Thirteen stygofauna species (two ostracods, two copepods, five syncarids, two amphipods, and two beetles) are known only from the Magellan lead carbonate project and its immediate surrounds. These

13 apparently restricted species appear to be the most vulnerable members of the stygofauna community to adverse impacts from mining at Magellan. However, all but four species have been recorded from outside the mine impact areas. It is considered likely that the four species known only from impact areas actually have wider ranges.

Stygofauna samples collected from impact areas during successive monitoring events provided no evidence of significant change or deterioration in the assemblage in impact areas. The proportions of species recorded from impact and reference areas has remained similar since monitoring began (albeit with some stochastic variation). Stygofauna community structure in impact areas has also changed little and shown no trend of change.

Results of monitoring in 2012 confirmed the conclusions from earlier monitoring events that the stygofauna community in impact areas remains stable with no evident decline.

## 5. REFERENCES

- ANZECC & ARMCANZ (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand. Artatmon, New south Wales.
- Aquaterra (2010) groundwater Monitoring Summary Magellan Metals 2010 \_ GWL 96342(2). RPS Aquaterra Subiaco, 41pp.
- Aquaterra (2010) groundwater Monitoring Summary Magellan Metals 2011 \_ GWL 96342(2). RPS Aquaterra Subiaco, 40pp.
- Biota (2005) Magellan Metals Pty Ltd – Wiluna Lead Project Stygofauna Sampling Plan. Project number 273. Biota Environmental Sciences, Leederville, 25pp.
- Biota (2006) Magellan Lead Project Stygofauna Assessment. Project number 273. Biota Environmental Sciences, Leederville, 19pp.
- BOM (2012) rainfall data for Wiluna weather station 13012 since 1898. Bureau of Meteorology website [http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p\\_nccObsCode=139&p\\_display\\_type=dateTimeFile&p\\_startYear=&p\\_c=&p\\_stn\\_num=013012](http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=dateTimeFile&p_startYear=&p_c=&p_stn_num=013012).
- Cooper, S.J.B., Hinze, S., Leys, R., Watts, C.H.S. & Humphreys, W.F. (2002) Islands under the desert: molecular systematics and evolutionary origins of stygobitic water beetles (Coleoptera: Dytiscidae) from central Western Australia. *Invertebrate Systematics* 16, 589-598.
- Cooper, S.J.B., Bradbury, J.H., Saint, K.M., Leys, R., Austin, A.D. & Humphreys, W.F. (2007) Subterranean archipelago in the Australian arid zone: mitochondrial DNA phylogeography of amphipods from central Western Australia *Molecular Ecology* 16, 1533-1544.
- Cooper, S.J.B., Saint, K.M., Taiti, S., Austin, A.D. & Humphreys, W.F. (2008) Subterranean archipelago: mitochondrial DNA phylogeography of stygobitic isopods (Oniscidea: Haloniscus) from the Yilgarn region of Western Australia. *Invertebrate Systematics* 22, 195–203.
- Fontaine, B., Gargominy, O. and Neubert, E. (2007) Priority sites for conservation of land snails in Gabon: testing the umbrella species concept, *Diversity and Distributions*, **13**, 725-734.
- EPA (2003) Guidance for the assessment of environmental factors: consideration of subterranean fauna in groundwater and caves during environmental impact assessment in Western Australia. Guidance Statement 54, Environmental Protection Authority, Perth, 12 pp.
- EPA (2007) Sampling methods and survey considerations for subterranean fauna in Western Australia (Technical Appendix to Guidance Statement No. 54). Guidance Statement 54A. Environmental Protection Authority, Perth, 32 pp.

- Gauthier, H. (1929) Cladocères et Ostracodes du Sahara central. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, **20**(7), 143 – 162.
- Gibert, J. and Deharveng, I. (2002) Subterranean Ecosystems: A Truncated Functional Biodiversity. *BioScience* **52**: 473-481.
- Guzik, M.T., Abrams, K.M., Cooper, S.J.B., Humphreys, W.F., Cho, J.-L. & Austin, A.D. (2008) Phylogeography of the ancient Parabathynellidae (Crustacea: Bathynellacea) from the Yilgarn region of Western Australia. *Invertebrate Systematics* **22**, 205–216.
- Humphreys, W.F. (2001) Groundwater calcrete aquifers in the Australian arid zone: the context to an unfolding plethora of stygal biodiversity. *Records of the Western Australian Museum Supplement*, **64**, 63-83.
- Harvey, M. (2002) Short-range endemism among the Australian fauna: some examples from non-marine environments. *Invertebrate Systematics* **16**, 555-570.
- Karanovic, I. and Marmonier, P. (2002) On the genus *Candonopsis* (Crustacean: Ostracoda: Candoninae) in Australia, with a key to the world recent species. *Ann. Limnol.* **38**, 199 – 240.
- Karanovic, T. (2004) Subterranean copepods (Crustacea: Copepoda) from arid Western Australia. *Crustacean Monographs*, **3**, 1-366.
- Martens, K., and Sukonthrip, S. (2011) A subjective checklist of the Recent, free-living, non-marine Ostracoda (Crustacea). *Zootaxa* **2855**, 1-79.
- Outback Ecology (2008) Stygofauna assessment for the Magellan Lead Project – Wiluna 2008 Outback Ecology, Jolimont, 21pp.
- Outback Ecology (2010) Magellan Lead Project, 2010 Stygofauna Compliance Monitoring. Outback Ecology, Jolimont, 34pp.
- Pinder A.M. and Brinkhurst R.O. (1994) the Microdrile Oligochaeta of Australian Inland Waters. Cooperative Research Centre for Freshwater Ecology, Albury, 137pp.
- Pinder, A.M. (2008) Phreodrilidae (Clitellata: Annelida) in north-western Australia with descriptions of two new species. *Records of the Western Australian Museum*, **24**, 459-468.
- Pinder, A.M., Halse, S.A., Shiel, R.J., and McRae, J.M. (2010) An arid zone awash with diversity: patterns in the distribution of aquatic invertebrates in the Pilbara region of Western Australia. *Records of the Western Australia Museum Supplement*, **78**, 205-246.
- Reeves, J.M., De Deckker P. and Halse, S.A. (2007) Groundwater Ostracods from the arid Pilbara region of northwestern Australia: distribution and water chemistry. *Hydrobiologia* **585**, 99-118.
- Taiti S. and Humphreys, W.F. (2001) New aquatic Oniscidae (crustacean: Isopoda) from groundwater calcretes of Western Australia. *Records of the Western Australian Museum* **64**, 133-151.



## APPENDICES

### Appendix A Amalgamated species list from all monitoring surveys

Multiple morphospecies names show the specimen alignments assigned between surveys. The numbers presented represent specimen abundance.

Higher order taxonomic groups	Lowest level identification showing both codes of aligned morphospecies	2006		2008		2010		2012	
		Impact	Ref	Impact	Ref	Impact	Ref.	impact	Ref.
Rotifer									
	Filiniidae	-	-	6	10	-	-	-	-
Aphanoneura									
	Aelosoma sp. 1 (PSS)	-	-	1	-	5	-	3	-
Oligochaeta									
	Tubificida								
	Encytraeidae CALM sp. PST1 / Enchytraeus Pilbara sp. 1 (PSS)	-	1	-	-	-	-	16	-
	Encytraeidae CALM sp. PST2 / Enchytraeus Pilbara sp. 2 (PSS)	8	-	-	-	-	-	-	1
	Encytraeidae ?Pilbara sp. 3	2	-	-	-	-	-	-	-
	Phreodrilidae with dissimilar ventral chaetae	-	-	1	-	1	-	9	-
	Naididae sp.	5	-	8	-	3	-	-	-
	Ainudrilus sp. WA25	1	-	-	-	-	-	4	-
Crustacea									
	Ostracoda								
	Candonidae sp. 3 / Candonopsis dani	76	30	1	7	20	1	-	33
	Candonidae sp. 4	-	5	-	-	-	-	-	-
	Gomphodella glomerosa	-	-	-	2	-	-	-	-
	Limnocythere stationis	-	-	-	-	-	6	-	20
	Sarscypridopsis ochracea	-	-	37	-	-	12	-	-

Higher order taxonomic groups	Lowest level identification showing both codes of aligned morphospecies	2006		2008		2010		2012	
		Impact	Ref	Impact	Ref	Impact	Ref.	impact	Ref.
	Cypridopsis vidua	-	-	-	-	-	1	-	-
	Cypretta sp. A & Cypretta sp. B/ Cypretta seurati	-	3	-	1	-	-	-	1
	Cyprinotus sp.	-	-	-	-	-	-	1	-
Copepoda									
	Dussartcyclops uniarticulatus	-	-	76	3	20	-	-	-
	Halicyclops eberhardi	-	-	1	-	-	-	-	1
	Metacyclops laurentisae	4	-	-	60	1	-	-	-
	Metacyclops nr superincidentis	7	-	-	-	-	-	-	-
	Mesocyclops brooksi	8	7	1	12	-	-	-	2
	Microcyclops varicans	-	-	-	-	-	11	5	3
	Australocamptus hamondi	-	-	1	6	7	2	-	-
	Haifameria pori	3	6	20	48	-	8	1	2
	Haifameira sp. B1	-	-	-	-	-	-	2	-
	Nitokra lacustris pacifica	-	-	1	-	3	-	-	-
	Parapseudoleptomesochra rouchi	-	-	60	2	11	-	16	-
	Megastygonitocrella 'yilgarnensis'	-	-	-	-	1	-	-	-
	Schizopera sp. TK3	-	-	-	-	2	-	-	-
Syncarida									
	Notobathynella sp. 4 / Notobathynella sp. B5	53	5	-	-	-	-	41	-
	Notobathynella sp. / Parabathynellidae sp. OES9	-	-	10	1	16	-	-	-
	Parabathynellidae sp. OES10	-	-	-	-	1	-	-	-
	Parabathynellidae sp. OES11	-	-	-	-	-	1	-	-
	Parabathynellidae sp. OES12	-	-	-	-	-	1	-	-
	Brevisomabathynella sp. B1	-	-	-	-	-	-	-	1



Higher order taxonomic groups	Lowest level identification showing both codes of aligned morphospecies	2006		2008		2010		2012	
		Impact	Ref	Impact	Ref	Impact	Ref.	impact	Ref.
Amphipoda									
	Neoniphargidae sp. 1 (nr <i>Neocrypta</i> ) / Paramelitidae sp. OES3 / Paramelitidae (nr. <i>Kruptus</i> ) sp. B30	30	9	4	-	1	-	1	-
	Yilgarniella sp. B01			-	-	-	-	-	1
Isopoda									
	Haloniscus stilifer / Haloniscus nr stilifer / Haloniscus sp.	2	2	1	14	-	-	2	6
Insecta									
Coleoptera									
	Limbodessus sp. nov. / Limbodessus sp. B03	-	1	-	-	-	-	14	7
	Limbodessus nr padburyensis / Limbodessus sp. B4 = nr padburyensis	2	4	-	-	-	-	4	-
Specimen numbers		201	73	229	167	92	45	119	78
species numbers		13	11	16	13	16	11	14	12

**Appendix B Higher order identifications removed from amalgamated species list.**

	2006		2008		2010		2012	
	Impact	Reference	Impact	Reference	Impact	Reference	Impact	Reference
<b>Oligochaeta</b>								
Tubificida								
Enchytraeidae	-	-	4	1	2	-	-	-
Enchytraeidae sp.	-	5	-	-	-	-	-	-
<b>Crustacea</b>								
Ostracoda								
Ostracoda	-	-	-	1	-	-	-	-
Cyprididae	-	-	-	-	-	8	-	-
Copepoda								
<i>Cyclopoidea</i> sp.	10	-	-	1	-	-	-	-
Metacyclops sp.	8	1	1	3	-	-	-	-
Copepoda nauplii	-	-	50	13	-	-	-	-
Harpacticoida Ident.	-	-	1	-	-	-	-	-
Syncarida								
Bathynellacea				1				
Parabathynellidae	-	-	-	2	1	-	-	-
Amphipoda								
Amphipoda sp.	-	-	-	-	-	-	-	3
<b>Insecta</b>								
Coleoptera								
Bidessini sp.					1		1	
<i>Limbodessus</i> sp.	-	2	-	-	-	-	-	-

**Appendix C Bores sampled for stygofauna in 2012**

Bore code	Site type	Depth to groundwater (m)	Latitude	Longitude
GWOB07	Control	34	-26.52588889	119.9670556
AQMB002	Control	4	-26.54352778	119.9869722
AQMB001	Control	7	-26.54758333	119.9827222
AQMB004	Control	5	-26.54563889	120.0060833
Willie Well	Control	9	-26.48075	119.9874444
Percey Well	Control	6	-26.45694444	119.9312778
GWOB08	Impact	8	-26.50688889	119.9375
TDMB014	Impact	6	-26.50469444	119.9419167
TDMB008	Impact	8	-26.505	119.9407778
TDMB007	Impact	4	-26.50236111	119.9406111
TDMB006	Impact	3	-26.50094444	119.9391111
TDMB005	Impact	5	-26.50094444	119.9363611
TDMB004	Impact	2	-26.50102778	119.9324167
TDMB003	Impact	2	-26.501	119.9295556
TDMB002	Impact	3	-26.50311111	119.9268056
TDMB001	Impact	6	-26.50513889	119.9270556
TDMB013	Impact	15	-26.50513889	119.9478056
TDMB012	Impact	5	-26.49980556	119.9440278
MTM002	Impact	3	-26.50013889	119.9329167
TOM001	Impact	2	-26.50016667	118.9321111
TDMB009	Impact	8	-26.50055556	119.9197222
TDMB011	Impact	3	-26.50047222	119.9361944
GWOB01	Impact	28	-26.52152778	119.9361389
GWOB03	Impact	32	-26.51347222	119.9323333
OB04	Impact	4	-26.55063889	119.9666389
OB03	Impact	6	-26.5565	119.9920833
OB02	Impact	4	-26.55430556	120.0051389
OB01	Impact	4	-26.55147222	120.00875

