

Karara Mining Limited

Annual Compliance Report

Karara Iron Ore Project Environmental Protection and Biodiversity Conservation Act 1999 Approval 2006/3017

1 July 2022 - 30 June 2023

CORP-EN-REP-1182

28 June 2023



Disclaimer

"This document has been prepared by Karara Mining Limited for exclusive use ("the Purpose"). Use of this document other than for the Purpose is not permitted."

CORP-EN-REP-1182 ANNUAL COMPLIANCE REPORT 2022/2023 KIOP EPBC 2006/3017										
REV	REV DESCRIPTION ORIG REVIEW APPROVED DATE									
0	0 Issued for Use Sin Zu									
		O Marino	M Chen	G Trench						



Declaration of accuracy

In making this declaration, I am aware of sections 490 and 491 of the *Environment Protection* and *Biodiversity Conservation Act 1999* (EPBC Act) making it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

Full name (please print) Dr Gaomai Trench

Position (please print) General Manager Health, Safety, Environment and

Communities

Organisation Karara Mining Ltd / 68 070 871 831

Date 28 June 2023



CONTENTS

1	Intr	oduction	3
2	Des	scription of Activities	4
3	Соі	mpliance with Approval Conditions	5
4	Соі	mpliance with Management Plans	11
	4.1	Malleefowl Management and Monitoring	11
	4.2	Western Spiny-tailed Skink Management and Monitoring	14
5	Sta	tus of Research Proposal	20
6	Ne	w Environmental Risks	21
7	Oth	ner Information	22
	7.1	Feral Animal Monitoring	22
8	Соі	nclusion	23
9	Ref	ferences	24
L	IST	OF APPENDICES	
Αį	opend	lix A: Malleefowl Mounds Monitored 2022 Survey	25
Αį	opend	lix B: Malleefowl Sighthings 2022/2023	28
L	IST	OF FIGURES	
Fi	gure	1: Malleefowl Mound Monitoring 2022/2023	12
Fi	gure :	2: WStS Monitoring Locations 2022/2023 – Section 1	15
Fi	gure :	3: WStS Monitoring Locations 2022/2023 – Section 2	16
Fi	gure 4	4: WStS Monitoring Locations 2022/2023 – Section 3	17





1 INTRODUCTION

This Annual Compliance Report 2022 has been prepared by Karara Mining Limited (KML) to demonstrate compliance with the Karara Iron Ore Project (KIOP) conditions of approval under the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) (2006/3017).

A list of the definitions referred to in this report is listed in Table 1.

Table 1: Definitions

Term	Description					
CMSR	Centre for Mine Site Restoration					
DAWE	Department of Agriculture, Water and Environment					
DCCEEW	Department of Climate Change, Energy, the Environment and Water					
DBCA	Department of Biodiversity, Conservation and Attractions (WA)					
DMIRS	Department of Mines, Industry Regulation and Safety (WA)					
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999					
EMS	Environmental Management System					
GIS	Geographical Information System					
KIOP	Karara Iron Ore Project					
KML	Karara Mining Limited					
PER	Public Environmental Review					
SEWPaC	Department of Sustainability, Environment, Water, Populations and Communities					
TSF	Tailings Storage Facility					
WStS	Western Spiny-tailed Skink					



2 DESCRIPTION OF ACTIVITIES

A description of the approved actions and activities undertaken by KML in the reporting period is listed in Table 2.

Table 2: Description of Activities

Approval	Description
EPBC Number	2006/3017
Project Name	Karara Iron Ore Project (KIOP)
ACN	070 871 831
Approved Action	To construct and operate a magnetite iron ore mine, processing plant and associated infrastructure, as described in the Public Environmental Review, dated September 2008
Activities undertaken in the reporting period	Karara Mining Limited continued to maintain KIOP in its operational phase of the project. During the reporting period KML have: • Undertaken magnetite ore mining and processing • Continued operations of project infrastructure (rail, transmission line, water and port).
Location	Mid-West Region of WA approximately 215km south-east of Geraldton and 320km north-northeast of Perth.
Responsibility	Dr Gaomai Trench: General Manager Health, Safety, Environment and Communities
Reporting Period	1 July 2022 to 30 June 2023
Report Date	28 June 2023



3 COMPLIANCE WITH APPROVAL CONDITIONS

KML conducted an audit against all Conditions of Approval (2006/3017) in June 2023. The findings are outlined in Table 3 below.

As also identified in last year's audit, one minor non-compliance was in relation to Condition 3, which requires tenements M59/650, E59/1138, 59/1496-99 and E59/1500 to be relinquished by 31 March 2012 or, if not relinquished, KML was to provide an offset area approved by the Minister.

All tenements have now been relinquished and Condition 3 has been classified as 'Closed'.

KML were compliant with all other Conditions of Approval.



Table 3: Compliance Table

Ref.	Condition	Compliant / Non-Compliant	Finding	Evidence
1.01	In order to minimise the impact on the EPBC listed endangered WStS (<i>Egernia stokesii badia</i>) the person taking the action must implement the Environmental Procedure – WStS Management, Monitoring and Translocation, dated 12 April 2022.	Compliant	The WStS Management, Monitoring and Translocation Procedure CORP-EN-PRO-1024 was implemented in 2010, prior to the commencement of operations in 2013. During the reporting period, WStS monitoring was undertaken in accordance with the latest version (rev 5, dated 12 April 2022) of the WStS Management and Monitoring Procedure CORP-EN-PRO-1024. Results are detailed in Section 4.214 of this report.	 KML Environmental Procedure - WStS Management, Monitoring and Translocation (CORP-EN-PRO-1024_5) dated 12/04/2022. KML WStS Monitoring register and sighting data sheets.
2.01	In order to minimise the impact on the EPBC listed vulnerable Malleefowl (<i>Leipoa ocellata</i>) the person taking the action must implement the Environmental Procedure – Malleefowl Management and Monitoring, dated 12 April 2022.	Compliant	The Malleefowl Management and Monitoring Procedure CORP-EN-PRO-1035 was implemented in 2010, prior to the commencement of operations in 2013. During the reporting period, Malleefowl monitoring was undertaken in accordance with the latest version (rev 5, dated 12 April 2022) of the Malleefowl Management and Monitoring Procedure CORP-EN-PRO-1035. Results are detailed in Section 4.1 of this report.	 KML Environmental Procedure - Malleefowl Management and Monitoring (CORP-EN- PRO-1035) revision 5 dated 12/04/2022. KML Malleefowl register.
3.01	In order to minimise the impact on the EPBC listed endangered WStS (<i>Egernia stokesii badia</i>) and the EPBC listed vulnerable Malleefowl (<i>Leipoa ocellata</i>) from the loss of potential habitat the person taking the action must relinquish tenure over the tenements M59/650, E59/1138, 59/1496-99 and E59/1500 at or before the time the Government of Western Australia gazettes the areas for the purpose of Conservation and/or: a) by 31 March 2012 provide the Department with confirmation that the tenements have been relinquished and secured under a conservation agreement or, if not,	Minor Non- Compliant	All tenements have now been surrendered with M59/650 (the final tenement) being surrendered in June 2021 and registered with DMIRS on 17 August 2021. Whilst the State and Federal Governments are aware of the status of tenement relinquishment, and KML has been actively addressing this requirement for a number of years, failure to relinquish M59/650 within the required timeframe is continuously considered a minor non-compliance. As all required tenements have been relinquished, this condition has been classified as 'Closed'.	 EPBC Referral and Determination for Mungada Ridge Rehabilitation (Mining Lease 59/650) (EPBC 2019/8556) Letters to DMIRS and DBCA outlining status of Mungada Ridge Rehabilitation (dated 21 May 2020) Email to the DAWE outlining surrender of Mining Lease M59/650 Registration of surrender of M59/650 on DMIRS Mineral Titles Online (MTO) on 17 August 2021. Final surrender report for M59/650 was submitted to the DMIRS on 1 December 2021.
3.02	b) Provide an offset area approved by the Minister, of at least equal area to the project's disturbance footprint and with suitable habitat for both WStS and Malleefowl, which can be vested for conservation purposes.	Not Applicable	As all tenements have been surrendered, it can be considered that this alternative is now no longer required. This condition has been classified as 'Closed'	As above

Page 6 CORP-EN-REP- 1182 Rev 0: 28-Jun-23



Ref.	Condition	Compliant / Non-Compliant	Finding	Evidence
4.01	In order to increase knowledge of the EPBC listed endangered WStS (<i>Egernia stokesii badia</i>) and the EPBC listed vulnerable Malleefowl (<i>Leipoa ocellata</i>) the person taking the action must provide for the Minister's approval a Research Plan that includes:	Compliant	DAWE ('now DCCEEW') accepted the KML Research Plan to Support Offset Requirements for the Malleefowl and WStS (CORP-EN-PLN-1039). The Centre for Mine Site Restoration (CMSR) Research Project addresses priority research areas outlined in the KML Research Plan. The status of the CMSR Research Project is detailed in Section 5 of this report.	 Research Plan to Support Offset Requirements for the Malleefowl and WStS (CORP-EN-PLN-1039) dated 11/08/2017 'EPBC Fauna Stress Monitoring (EPBC 2006/3017)' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018
4.02	(a) how the \$400,000 research offset over ten years will be directed to improve knowledge of the WStS and the Malleefowl;	Compliant	The CMSR research project proposal outlines the budget for proposed research. KML cash expenditure totals \$250,000 plus KML cash in-kind of \$200k. KML has paid out the total cash expenditure of \$250k for the CMSR research project including \$100k cash for Project 1 and 2 and \$150k cash for Project 3, which was paid with two instalments in August 2021 and March 2022.	 'EPBC Fauna Stress Monitoring (EPBC 2006/3017)' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018 CMSR Progress Report - March 2020 CMSR Progress Report - March 2021 CMSR Final Report - December 2021
4.03	(b) who will be responsible for the research;	Compliant	The accepted CMSR Research Project Proposal included details of who will be responsible for the research. The Final Research Project Report - December 2021 includes information on who were involved in conducting the research project.	 'EPBC Fauna Stress Monitoring' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018 CMSR Final Report - December 2021
4.04	(c) what the aims of the research will be;	Compliant	The accepted CMSR Research Project Proposal details the aims of the research. The Final Research Project Report – December 2021 reiterates the objectives of the three research projects.	 'EPBC Fauna Stress Monitoring' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018 CMSR Final Report – December 2021
4.05	(d) the commencement date of the research;	Compliant	The research project proposal refers to the project milestones of the research proposal. The commencement date of the research is 8 May 2018, as detailed in the Curtin University Research Services Agreement for EPBC 2006/3017. As outlined in the Final Research Project Report – December 2021, all research projects (Project 1, 2 and 3) have been completed and a final report has been received.	 'EPBC Fauna Stress Monitoring' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018 CMSR Final Report – December 2021
4.06	(e) who will be provided with the research data;	Compliant	As outlined in the Final Research Project Report – December 2021, findings from Project 1 were presented to the WA Malleefowl Recovery Group on 27 August 2019. Project 2 research was presented at the National Malleefowl & WA Threatened Species Forum and Society for Ecological Restoration Australasia (SERA) Conference in Darwin in 2021, the Gunduwa Regional Conservation	CMSR Progress Report - March 2020 includes copies of presentations made to the WA Malleefowl Recovery Group and at the



Ref.	Condition	Compliant / Non-Compliant	Finding	Evidence
			Associate AGM in 2020, the Society for Ecological Restoration: 8 th World Conference on Ecological Restoration in South Africa in 2019 and information regarding this project was also presented at a meeting of the Gunduwa Regional Conservation Association in 2018. Key findings from Project 3 were published on online scientific journal of Restoration Ecology and Global Ecology and Conservation in 2021.	Society for Ecological Restoration 2019 conference CMSR Final Report – December 2021 lists the conference/forum and title of presentation of the research findings from Project 2 and publications of key findings from Project 3
4.07	The Research Plan must be provided within six months of commencement of operations. The approved plan must be implemented.	Compliant	The CMSR Research Project Proposal (accepted by DAWE on 1 March 2018) addresses priority research areas outlined in the KML Research Plan to Support Offset Requirements for the Malleefowl and WStS (CORP-EN-PLN-1039). The Research Proposal has been implemented, and alignment with the research priorities is outlined in Table 4 of the Final Research Project Report – December 2021. All research projects (Project 1, 2 and 3) have been completed.	CMSR Final Report – December 2021
5.01	The person taking the action must submit to the Department a report annually on 1 July each year addressing the compliance with the conditions of approval (or other data as may be agreed by the Minister). This report must be made publicly available on the internet within 30 days of it being provided to the Minister.	Compliant	Annual compliance reports have been submitted yearly since obtaining project approvals. The 2021/2022 EPBC Compliance Report (CORP-EN-REP-1178) was emailed to DAWE (now 'DCCEEW') on 29 June 2022. The 2021/2022 EPBC Compliance Report is available on the KML public website.	 2021/2022 Annual compliance report (CORP-EN-REP-1178) 2021/2022 EPBC Compliance Report at Karara Mining Limited
6.01	The person taking the action must maintain accurate records of all activities associated with or relevant to the above conditions of approval, and make them available on request by the Department. Such documents may be subject to audit by the Department and used to verify compliance with the conditions of approval.	Compliant	KML maintain a document control system with the most current procedures, plans and reports made available to employees. This system captures any changes made to plans and procedures from the last revision. The Malleefowl procedure, WStS procedure and the research plan have all been document controlled. Further to controlled documents, KML maintain a shared drive with filed documents and emails recorded, including monitoring register for Malleefowl and WStS respectively and sightings reports. A comprehensive Geographical Information System (GIS) is also maintained, showing such features as location of habitats and monitoring sites for Malleefowl and WStS.	 KML Environmental Procedure - WStS Management, Monitoring and Translocation (CORP-EN-PRO-1024) KML Environmental Procedure - Malleefowl Management and Monitoring (CORP-EN-PRO-1035). Research Plan to Support Offset Requirements for the Malleefowl and WStS (CORP-EN-PLN-1039). 'EPBC Fauna Stress Monitoring' Research Project Proposal Agreement between Curtin University (CMSR) and KML executed on 8 May 2018 Malleefowl and WStS monitoring registers. GIS database - layers PER - Fauna survey areas, Malleefowl Mounds, Malleefowl and



Ref.	Condition	Compliant / Non-Compliant	Finding	Evidence
				WStS habitats and Monitoring Sites, Rare fauna sightings and feral animal sightings.
7.01	The person taking the action may choose to revise a Plan specified in conditions 1 or 2 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised Plan would not be likely to have a new or increased impact. If the person taking the action makes this choice they must notify the Department in writing that the approved Plan has been revised and provide the Department, at least four weeks before implementing the revised plan, with: a) an electronic copy of the revised Plan; b) an explanation of the differences between the revised Plan and the approved Plan; and c) the reasons the person taking the action considers that taking the action in accordance with the revised Plan would not be likely to have a new or increased impact.	Compliant	The Malleefowl Management and Monitoring Procedure (CORP-EN-PRO-1035) was updated to revision 5 in April 2022 to incorporate a number of minor administrative changes. The Western Spiny Tailed Skink Management, Monitoring and Translocation Procedure (CORP-EN-PRO-1024) was updated to revision 5 in April 2022 to incorporate a number of minor administrative changes. Both documents with table of changes have been submitted to DAWE (now 'DCCEEW') for review and acceptance on 13 April 2022.	 KML Environmental Procedure - Malleefowl Management and Monitoring (CORP-EN-PRO-1035) Revision 5. KML Environmental Procedure - WStS Management, Monitoring and Translocation (CORP-EN-PRO-1024) Revision 5. Emails to DAWE (now 'DCCEEW') on 13/04/2022 re 'Submission of updated Malleefowl Management and Monitoring Procedure and WStS Management, Monitoring and Translocation Procedure' and DAWE's email on 13/04/2022 indicating receipt and assessment of the updated procedures.
7.02	The person taking the action may revoke their choice under condition 7 at any time by notice to the Department. If the person taking the action revokes the choice to implement a revised Plan, without approval under section 143A of the EPBC Act, the Plan approved by the Minister must be implemented.	Not applicable	This scenario has not occurred to date.	
7.03	If the Minister gives a notice to the person taking the action that the Minister is satisfied that the taking of the action in accordance with the revised Plan would be likely to have a new or increased impact, then: a) condition 7 does not apply, or ceases to apply, in relation to the revised Plan; and b) the person taking the action must implement the Plan approved by the Minister.	Not applicable	This scenario has not occurred to date.	



Ref.	Condition	Compliant / Non-Compliant	Finding	Evidence
	To avoid any doubt, this condition does not affect any operation of conditions 7 and 7A in the period before the day the notice is given. At the time of giving the notice the Minister may also notify that, for a specified period of time, condition 7 does not apply for one or more specified Plans required under the approval.			
7.04	Conditions 7, 7A and 7B are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised Plan to the Minister for approval.	Not applicable	This scenario has not occurred to date.	
7.05	If, for the purposes of the Plan approved by the Minister under condition 4, the person taking the action wishes to carry out an activity otherwise than in accordance with the approved Plan, the person taking the action must submit to the Department for the Minister's written approval a revised version of the Plan. The person taking the action must not commence the varied activity until the Minister has approved the varied Plan. If the Minister approves the revised Plan, the Plan must be implemented in place of the Plan originally approved.	Not applicable	This scenario has not occurred to date.	
8.01	If the Minister believes that it is necessary or desirable for the better protection of the listed threatened species to do so, the Minister may request that the person taking the action make specified revisions to any plans approved pursuant to this Annexure. The person taking the action must comply with any such request. The revised plans must be implemented.	Not applicable	This scenario has not occurred to date.	
9.01	If the action has not substantially commenced within 5 years the date this approval the action must not commence without the written agreement of the Minister.	Compliant	KML has implemented the proposal. Official grand opening of KIOP occurred on 9 April 2013.	Australian Securities Exchange (ASX) Announcement: http://www.asx.com.au/asxpdf/20130409/pdf/42f4rsg492wnz8.pdf



4 COMPLIANCE WITH MANAGEMENT PLANS

During the reporting period, KML undertook management and monitoring of the Malleefowl and WStS, in accordance with the environmental procedures:

- CORP-EN-PRO-1035 Malleefowl Management and Monitoring,
- CORP-EN-PRO-1024 WStS Management, Monitoring and Translocation.

4.1 Malleefowl Management and Monitoring

KML have monitored Malleefowl annually since 2008 in accordance with the Environmental Procedure - Malleefowl Monitoring and Management CORP-EN-PRO-1035.

Monitoring is undertaken by the KML Environment team throughout the Malleefowl breeding season, from 1st September until 30th April so that accurate information can be gathered on populations and mound activity. KML uses the National Malleefowl Monitoring Manual (National Malleefowl Recovery Team, 2016) to define and determine which mounds shall be monitored within any given year. Mounds that were active the previous year and those in close proximity to infrastructure are monitored as a priority, followed by mounds with less recent activity. Selections of mounds with an unverified status in close proximity to activity or infrastructure are included in the monitoring schedule.

A total of 71 mounds were surveyed over the reporting period, of which 19 were reported as active (Figure 1). This number of active mounds has increased by approximately 26% compared to last reporting period which have recorded 15 active mounds (Table 4).

There were 18 Malleefowl sightings (25 individuals) during the reporting period. Overall, the location and number of Malleefowl sightings recorded has remained relatively consistent in recent reporting periods.

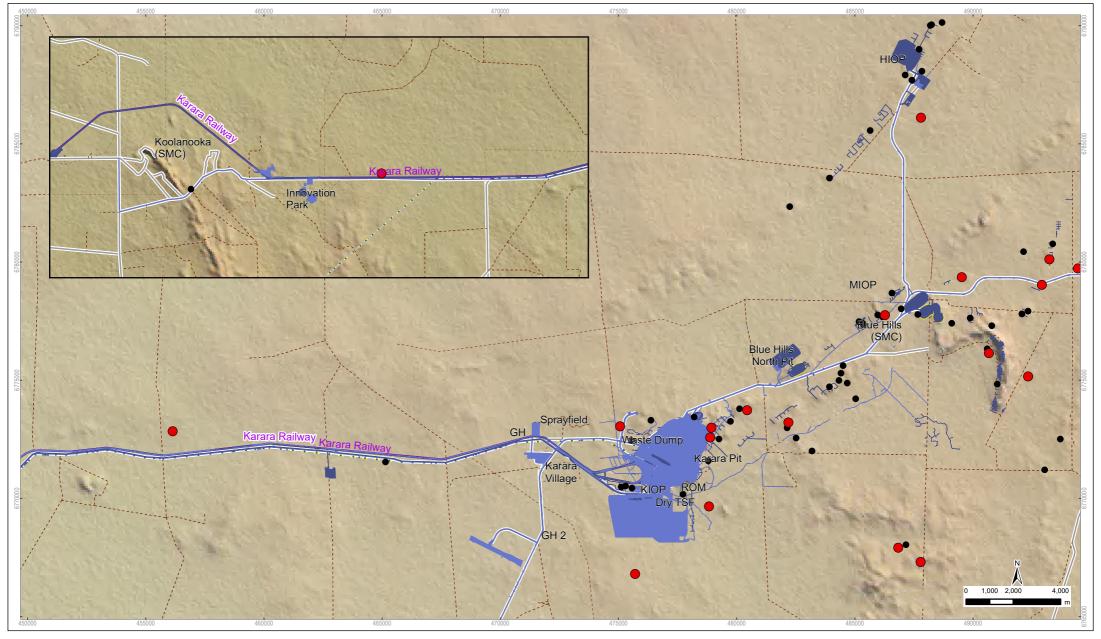
Three new Malleefowl mounds were found during the reporting period (Table 5). One new mound was classified as active.

Details of mounds surveyed and Malleefowl sightings are provided in Appendix A and B respectively.

Two Malleefowl mortalities were recorded during the current reporting period.



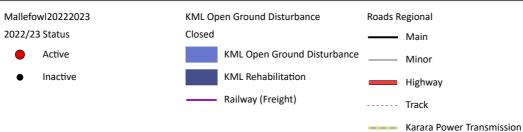
Figure 1: Malleefowl Mound Monitoring 2022/2023



KIOP EPBC 2006/3017

Malleefowl Mound Monitoring 2022/23







Ref: K0138 F1 Version: A 23 May 2023

Proj: GDA94 MGAZ50 Scale: 1:160,000 Size: A4



Table 4: Malleefowl Monitoring Results 2017-2023

Year	Maunda Sumravad	Category		% Active	No Cimbtod
rear	Mounds Surveyed	Active	Inactive	mounds	No. Sighted
2017/2018	116	7	109	6	40
2018/2019	89	10	79	13	21
2019/2020	84	10	74	14	24
2020/2021	157	10	147	6	19
2021/2022	88	15	73	17	6
2022/2023	71	19	52	27	18

Table 5: New Malleefowl Mounds identified during the Reporting Period

Mound ID	Easting	Northing	Profile type	Status	Comments
912	486566	6778687	1	E	Large old, WStS scat and standing hollow log and abundant rabbit's poo.
913	494436	6779728	4	A	Deep diggings around circumference, Malleefowl's feather, several small white fluffy feathers and predator scats.
914	486156	6777687	1	E	Old, very large

A total of 914 mounds of varying status (ancient through to fresh and actively used) have been identified and surveyed since 2008. The percentage of all mounds that are active has ranged from 4% (in 2012 and 2016) to 27% (in 2022) over the past 14 years. The average activity over the 14 years of monitoring is 12.28%. The total number of mounds monitored in any one year has varied since the commencement of monitoring (ranging from 71 to 191), however the total number of active mounds identified each year has remained relatively consistent, ranging from 7 to 19, with a 14-year average of 12 active mounds identified per year.

A spatial analysis of monitoring data shows that Malleefowl have occupied various mounds within operational areas where impacts to Malleefowl activity may be anticipated, with many sites being used for multiple years over the reporting period. This would suggest that Malleefowl are relatively undisturbed by proximity to mining activity. This is supported by findings of other resource companies in the region actively mining and monitoring Malleefowl



activity, for example the nearby Extension Hill Hematite Operation (Mount Gibson Mining Ltd and Extension Hill Pty Ltd 2013).

4.2 Western Spiny-tailed Skink Management and Monitoring

KML mapped prospective WStS habitat in 2008 and has been monitoring since 2011 to determine whether mining is impacting on the local population. To investigate potential impacts of mining, monitoring sites within monitoring areas are divided into two categories:

- Impact Sites: within 500m from mining disturbance
- Control Sites: outside 500m from mining disturbance

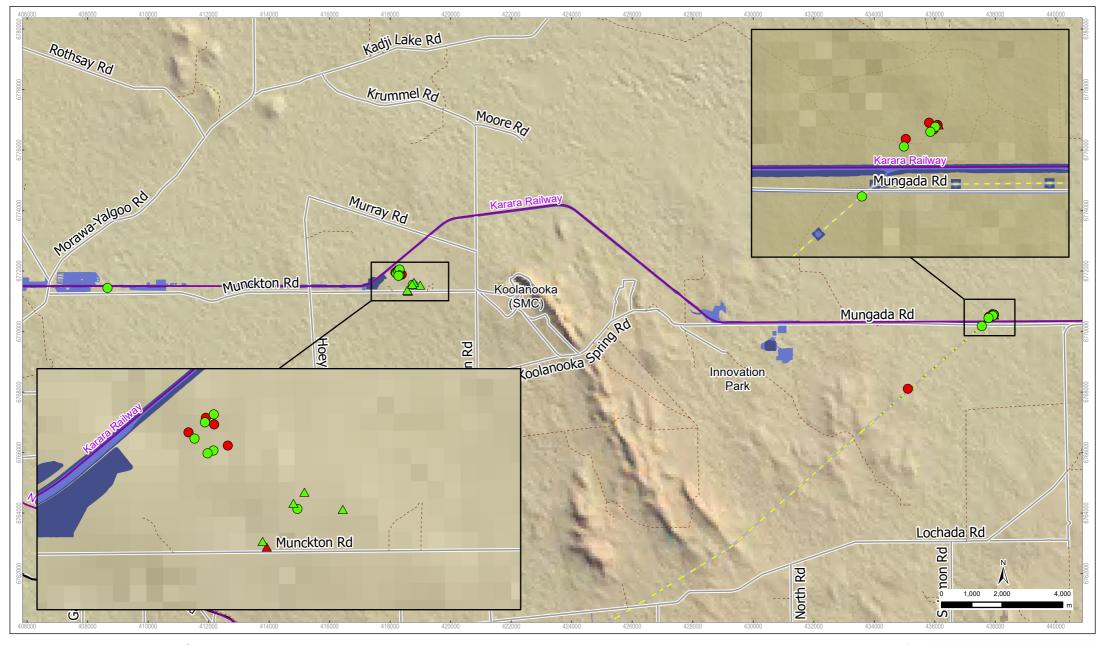
WStS monitoring is undertaken in accordance with the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) survey guidelines for Australia's threatened reptiles (Commonwealth of Australia, 2011). Monitoring is undertaken during breeding season between spring and summer by a fauna specialist or trained personnel from the KML Environmental Department. Monitoring involved thoroughly searching for WStS and/or scats in sheltering sites such as hollow logs/trees and roots, piles of timber and rocky outcrops within prospective skink habitats. Monitoring includes details on evidence of WStS, such as the age, contents and size of scats and latrines and photographs of monitoring sites and scats so as to adequately determine recent activity or presence of WStS. WStS are classified as present using direct observation, camera trap evidence or presence of scat. Scat evidence is further broken down into fresh or old scats, with the presence of fresh scats a better indicator of skink activity.

Annual WStS monitoring in the reporting period was undertaken in September and October 2022. Monitoring of 155 sites was undertaken, including 72 control sites, 72 impact sites, and 11 translocation sites. Monitoring identified that 58 sites were inhabited (32 at control sites, 25 at impact sites and 1 at translocation site) and 97 were uninhabited (40 at control sites, 47 at impact sites and 10 at translocation sites) (refer Figure 2 - Figure 5). These results are comparable to previous years (Figure 6).

A translocation program for WStS colonies within KML disturbance areas has been in place since the commencement of the project in 2010. A total of eleven WStS and 21 potential WStS colonies (habitat log piles) have been translocated since the start of the project. All translocation sites have been monitored on an annual basis, one evidence of WStS (presence of scats) was observed at the translocation site ID WSTS137 in September 2022.



Figure 2: WStS Monitoring Locations 2022/2023 - Section 1



KIOP EPBC 2006/3017

Western Spiny-tailed Skink Monitoring 2022/2023



WSTS Monitoring

Uninhabited,Translocation

Roads Regional

KML Open Ground Disturbance

Main

KML Rehabilitation

Inhabited,Control

Railway (Freight)

Highway

Karara Power Transmission

Uninhabited,Impact

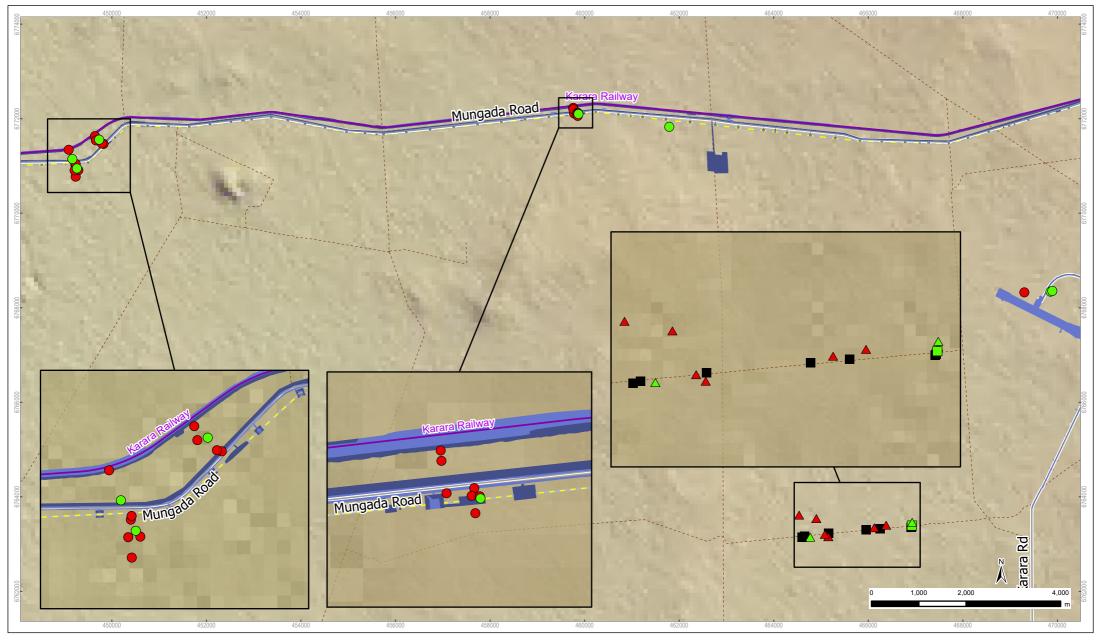


Ref: K0138 F2 Version: A 23 May 2023

Proj: GDA94 MGAZ50 Scale: 1:125,000 Size: A4



Figure 3: WStS Monitoring Locations 2022/2023 – Section 2



KIOP EPBC 2006/3017

Western Spiny-tailed Skink Monitoring 2022/2023



WSTS Monitoring Status,SiteType

- △ Inhabited,Control
- Inhabited,Impact
- ▲ Uninhabited,Control
- Uninhabited,Impact

- Uninhabited, Translocation
- Inhabited, Translocation
- IAM On an One word District on
- KML Open Ground Disturbance
- KML Rehabilitation
- Railway (Freight)Karara Power Transmission

Roads Regional

— Main

--- Minor

......

---- Highway

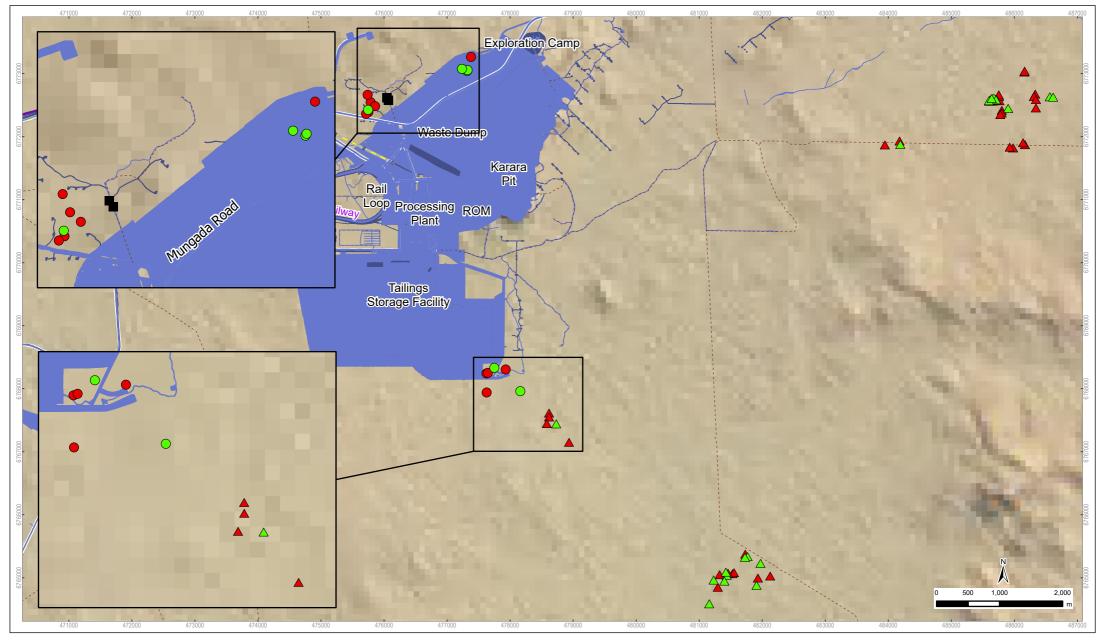
----- Track



Proj: GDA94 MGAZ50 Scale: 1:80,000 Size: A4



Figure 4: WStS Monitoring Locations 2022/2023 - Section 3



KIOP EPBC 2006/3017

Western Spiny-tailed Skink Monitoring 2022/2023



WSTS Monitoring Status,SiteType

△ Inhabited,Control

Inhabited,Impact

▲ Uninhabited,Control

Uninhabited,Impact

Uninhabited, Translocation Roads Regional

KML Open Ground Disturbance Main

KML Open Ground Disturbance Minor

KML Rehabilitation Highway

Railway (Freight) Track

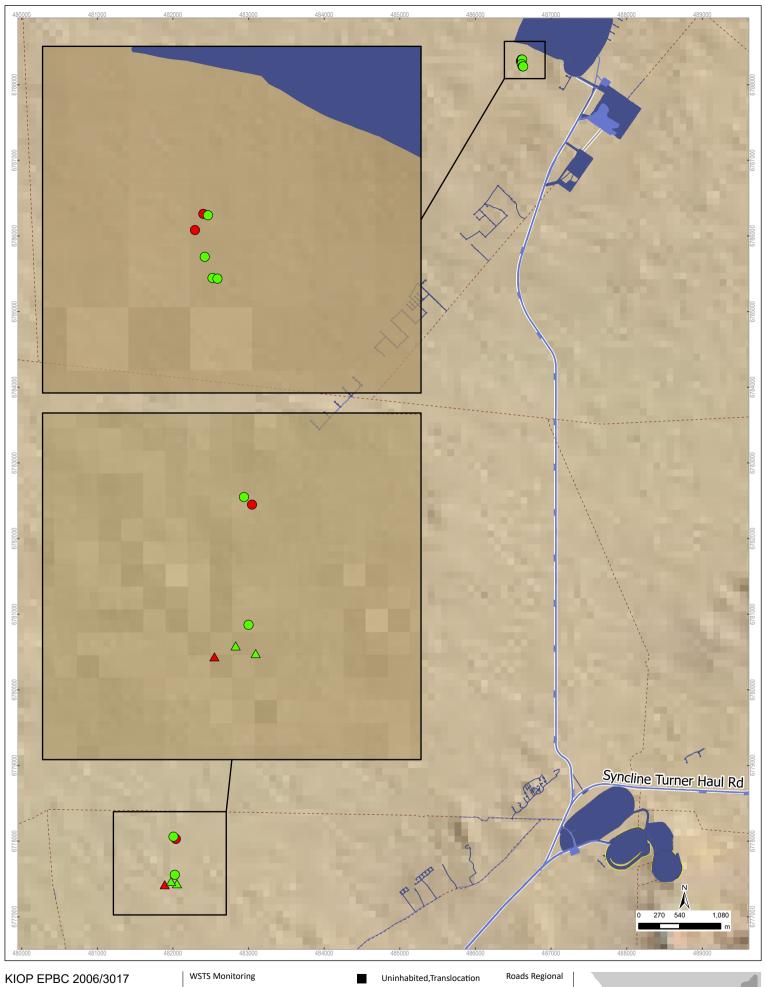
Karara Power Transmission



Ref: K0138 F4 Version: A 23 May 2023 Proj: GDA94 MGAZ50 Scale: 1:60,000 Size: A4



Figure 5: WStS Monitoring Locations 2022/2023 – Section 4



Western Spiny-tailed Skink Monitoring 2022/2023



WSTS Monitoring Uninhabited, Translocation Roads Regional
Status, SiteType KML Open Ground Disturbance — Main

Inhabited, Control KML Open Ground Disturbance — Minor

Inhabited, Impact KML Rehabilitation — Highway

Uninhabited, Control — Railway (Freight) — Track

Uninhabited, Impact Karara Power Transmission



Ref: K0138 F5 Version: A 23 May 2023 Proj: GDA94 MGAZ50 Scale: 1:50,000 Size: A4



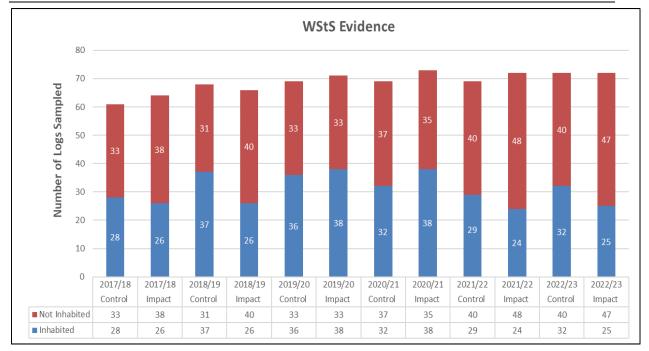


Figure 6: WStS Evidence Recorded at Control and Impact Sites across All KML Tenements

No mortalities of WStS were recorded over the reporting period.

KML's objective of monitoring for the presence or absence of WStS on an annual basis has been achieved in each successive year since the commencement of monitoring in the spring of 2011. Monitoring results to date strongly suggest that mining related activities are not impacting WStS populations. Whilst presence/absence data varies between years, skink activity at impact and control sites are closely aligned, with an average presence of skinks at control sites comparable to at impact sites (both around 50%). Similarly, at sites where skink presence is observed the indicators of recent activity (fresh scats) were also consistent between impact and control sites.



5 STATUS OF RESEARCH PROPOSAL

The CMSR Research Project Proposal addresses priority research areas outlined in the KML Research Plan to Support Offset Requirements for the Malleefowl and WStS (CORP-EN-PLN-1039).

The whole Research Proposal has been completed in December 2021, and the Final Report was provided to KML in February 2022. The key highlights and findings or the research program are summarised below (Gagnon et al, 2021):

- A backward projected species distribution model shows that much of the distribution of the Malleefowl available at the time of European settlement in Australia is now unsuitable for the species, meaning that populations that were once on the fringes, such as those at Karara, are now essential holdouts for the species;
- Based on preliminary analysis of camera trap data, the number and diversity of animals detected does not appear to be impacted by noise levels; and
- No robust patterns of metal, metalloid or trace element contamination in relation to
 proximity of Malleefowl mounds to Karara mine dry tailings was detected. The measured
 Pb concentrations in soil samples from the Malleefowl mounds at Karara mine site are
 significantly lower than the guideline value. Consequently, these levels are not expected
 to cause adverse impacts to biota coming into contact with these sediments.

The findings of the research projects (Project 1, 2 and 3) were published in a range of local, national and international conferences and technical forums and online scientific journals as detailed in findings of Condition 4.06 in Table 3.



6 NEW ENVIRONMENTAL RISKS

No new environmental risks, in relation to management of conservation significant fauna and feral animal management were identified during the reporting period.



7 OTHER INFORMATION

7.1 Feral Animal Monitoring

In accordance with KML Environmental Procedure – Feral Animal Management and Monitoring CORP-EN-PRO-1050, KML monitors feral animal sightings and trapping success to ensure feral animal numbers are not increasing nor having a detrimental impact on conservation significant flora and fauna and other native fauna and flora resident on KML tenements. KML implements an active feral animal control program that includes baiting and trapping.

A summary of the feral animals trapped over the past six years is provided in Table 6. Trappings and sightings of other feral animals has remained relatively consistent over the period.

Table 6: Feral Animals Trapped at KIOP between 2017-2023

Reporting Year	Cats	Foxes	Goats	Other
2017/2018	9	0	3	
2018/2019	11	0	1	
2019/2020	5	0	0	
2020/2021	10	0	1	1
2021/2022	21	0	0	0
2022/2023	9	0	0	0



8 CONCLUSION

As outlined above, operations of KIOP are largely compliant with the requirements of the EPBC approval conditions (EPBC 2006/3017).

Monitoring data for the reporting period, along with data collected over the duration of mining operations, has continued to demonstrate that KML mining activities have not impacted on Malleefowl or WStS populations in the area. An increased active Malleefowl mounds percentage of 27% was recorded over the reporting period compared with 17% recorded in 2021 and average active mounds percentage of 14% recorded since 2017. KML will continue to monitor Malleefowl and WStS activity for the life of the mine in accordance with the approved monitoring procedures. Feral animal populations remain at manageable levels. KML's ongoing extensive environmental management activities, such as feral management and progressive rehabilitation, are to date successful in minimising impacts on Malleefowl and WStS populations in the area, and the wider environment in the vicinity of KIOP operations.



9 REFERENCES

Commonwealth of Australia, 2011. Survey Guidelines for Australia's Threatened Reptiles. Department of Sustainability, Environment, Water, Populations and Communities.

Gagnon et al, 2021. Final Report on EPBC Fauna Stress Monitoring for Karara Mining Limited EPBC 2006/3017. Curtin University. December 2021.

Mount Gibson Mining Ltd and Extension Hill Pty Ltd, 2013. Annual Compliance Report Extension Hill Hematite Haulage Road and Rail Siding. http://www.mtgibsoniron.com.au/wp-content/uploads/17.04.13-Extension-Hill-Annual-Compliance-Report-2012 2013.pdf

National Malleefowl Recovery Team, 2016. National Manual for the Malleefowl Monitoring System: Edition 2016-1.



APPENDIX A: MALLEEFOWL MOUNDS MONITORED 2022 SURVEY

	– 1				
MFM ID	Easting	Northing	Profile Type	Status	
MFM7	479738	6773267	6	Е	
MFM12	476377	6773308	6	Е	
MFM29	483188	6772007	6	Е	
MFM32	475562	6772447	1	Е	
MFM54	424657	6769705	2	D	
MFM60	486836	6767920	4	Α	
MFM62	62 475058 6773042		4	Α	
MFM65	477718	6770174	1	E	
MFM66	434736	6770530	4	Α	
MFM73	489100	6777399	1	Е	
MFM80	490786	6777307	5	Е	
MFM82	484411	6775301	6	Е	
MFM91	493035	6771209	1	С	
MFM97	491687	6798822	1	Е	
MFM104	48868	6790124	1	Е	
MFM106	482516	6772556	1	Е	
MFM110	480438	6773737	4	Α	
MFM128	465145	6771537	1	Е	
MFM134	456146	6772844	4	Α	
MFM147	475295	6770518	6	Е	
MFM175	476525	6770882	1	Е	
MFM183	490669	6776149	4	Α	
MFM199	484495	6775620	3	С	
MFM202	491015	6774836	6	Е	
MFM227	484328	6774992	4	В	
MFM234	478799	6771584	1	Е	
MFM235	478829	6769657	4	Α	
MFM244	486273	6777750	4	Α	
MFM251	492325	6777928	1	D	
MFM272	493232	6780105	2	Α	
MFM273	484681	6774874	1	Е	
MFM284	475570	6770436	6	Е	
MFM307	478206	6773448	1	Е	
MFM314	478930	6772988	4	Α	
MFM374	480102	6773783	1	Е	
MFM478	485960	6777754	1	Е	
MFM479	493367	6780766	1	Е	
MFM518	489874	6777623	3	С	
MFM519	492318	6775159	4	Α	
MFM570	476511	6770883	1	D	
MFM588	487835	6788067	3	С	
MFM595	487132	6787909	1	Е	



MFM ID	Easting	Northing	Profile Type	Status
MFM629	487796	6786108 4		Α
MFM661	493693	6772508	1	Е
MFM667	495334	6775233	1	С
MFM674	482304	6773755	1	Е
MFM694	486958	6778017	1	Е
MFM703	487413	6787696	1	Е
MFM716	485349	6777392	6	Е
MFM717	485371	6777357	6	Е
MFM720	492067	6777807	6	Е
MFM735	489526	6779358	4	Α
MFM745	483927	6774721	6	Е
MFM752	485172	6777464	1	Е
MFM762	479256	6772520	2	D
MFM795	482517	6772554	4	Α
MFM802	492909	6779037	4	Α
MFM811	485034	6774220	6	Е
MFM816	488243	6790039	1	Е
MFM819	476650	6771009	6	Е
MFM821	485647	6785564	1	Е
MFM822	488190	6790007	1	Е
MFM823	487720	6789000	6	Е
MFM826	487663	6777778	1	С
MFM832	478878	6772574	4	Α
MFM905	487167	6768040	1	С
MFM909	475711	6766803	4	Α
MFM910	487780	6767307	4	Α
MFM912	486566	6778687	1	Е
MFM913	494436	6779728	4	Α
MFM914	486156	6777687	1	Е



Mound Status	Status Description		
A	Active (Profile 4): Mound almost certainly contains eggs. Mound is covered over, dome-shaped and surface is freshly disturbed (that day), often with small excavations around the lower perimeter where the male has scratched material onto the centre of the mound. There will be no ant-line tracks and very few tracks of small animals present, as the surface of the mound is being worked constantly.		
В	Inactive (Profile 4): Mound is covered over and dome-shaped, but surface is not disturbed, having assorted animal tracks and ant-lion traps on it. This is a mound that has been fully-prepared for incubation in that year, but has been abandoned. Note that it may also have been prepared in an earlier year but this will have been recorded.		
С	Inactive (Profile 3 or 5): Mound has been excavated and filled with leaf-litter, but has been abandoned.		
D	Inactive (Profile 1 or 2): Mound has been excavated but no further progress has been made.		
Е	Inactive (profile 1 or 6): No recent activity. Profile 1 and 6 grade into each other, but mounds can be roughly aged (i.e. time since last used) by their appearance.		
Unverified	Mound found opportunistically and requires inspection by a trained and competen person to verify status		



APPENDIX B: MALLEEFOWL SIGHTINGS 2022/2023

Date	Easting	Northing	#	Location
6-Aug-2022	481259	6774800	2	100m before Blue Hills north turn off
19-Aug-2022	424707	6769652	2	Between sports shooting complex and Koolanooka Springs campsite on Koolanooka Springs Rd
13-Sep-22	435479	6770266	1	Mungada Rd
15-Sep-22	481394	6774783	2	Mungada Rd near Gardiner track/bore 301
15-Sep-22	470670	6771938	1	Along the fence line between Gate 1 And Gate 2 boundary track
01-Oct-22	485644	6776328	1	Just after the entrance to KMG
05-Oct-22	475639	6773607	1	ANFO Rd west of ANFO yard
08-Nov-22	487689	6788502	1	Bore at Hinge, track south of bore
10-Nov-22	486991	6777827	1	Terapod haul road, just north of fork in road
10-Nov-22	465807	6771567	1	Mungada Rd 5km out from Gate 1
16-Nov-22	483361	6775337	2	Mungada Rd east of Blue Hills north
18-Nov-22	460287	6772365	2	Rail Access Rd 10km west of Gate one
25-Nov-22	494000	6779451	1	Syncline Turner Haul Road, ~200m W of Wendy's Way
26-Nov-22	424992	6769949	1	Koolanooka Spring Rd, ~2.5km W of intersection with Mungada Rd
29-Mar-23	485253	6776040	2	Mungada road south of Terapod haul road
17-Apr-23	472552	6771956	1	Jones Way, between intersection to village and first culvert to East of intersection
19-Apr-23	484380	6775720	2	Mungada Rd, ~1km west of intersection with Terapod Haul Rd
01-May-23	479300	6772066	1	Karara East Rd, ~100 m SE of Dust Bottle 26