

Wotonga Offset Photo Monitoring November 2023

Millennium Mine 'Wotonga Offset Area'

24000604b

08 December 2023



B12, Harbour City Central, Mackay,
QLD 4740
Phone +61 7 4957 5036



Kleinfelder Australia Pty Ltd

ABN: 23 146 082 500

B12, Harbour City Central, Mackay, QLD 4740

Phone +61 7 4957 5036

www.kleinfelder.com.au

08 December 2023

24000604b

Department of Agriculture, Water and the Environment
Environment Assessment Branch
Department of Agriculture, Water and the Environment
Canberra, ACT

Attention: Att. Mr David Calvert: A/g Assistant Secretary

Subject: EPBC 2009/4821 Year 10 Monitoring Report (Dry Season) for Wotonga Offset
Area Management Plan Millennium Mine Expansion Project

Kleinfelder Australia Pty Ltd (Kleinfelder) have been engaged by M Mining Pty Ltd (M Mining) to complete the Year 10 Dry season photo monitoring of their environmental offset area that has been established on the Wotonga Pastoral Holding property, north-east of Moranbah in central Queensland. The offset area was established to comply with conditions of approval under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC 2009/4821) (**Appendix 1**). This letter demonstrates compliance with the monitoring requirements for Year 10 as described in the Wotonga Offset Area Management Plan (WOAMP) (Ecofund 2013). Offset property details are provided in Appendix 2.

The offset area consists of an active management area and a passive management area. The active management area contains the target regional ecosystem 11.9.5 *Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks.

1 METHODOLOGY

Two-ecologist inspected seven permanent monitoring locations. At each photo point a thorough observation of vegetation attributes including but not limited to canopy, shrub and ground cover, floristics, weeds, erosion and regeneration was recorded. Between each permanent monitoring point the ecologists walked parallel to each other at a minimum distance of 20 metres apart observing and recording signs of general degradation, weeds erosion and regeneration. The assessment was conducted at the end of dry season.

2 RESULTS

Field surveys were conducted on the 15 November 2023 by two Kleinfelder ecologists Jason Mark (Senior Ecologist) and Tichafa Mhiti (Ecologist) This section includes the findings from the visual monitoring and any management actions required.

2.1 PERMANENT PHOTO-MONITORING SITES

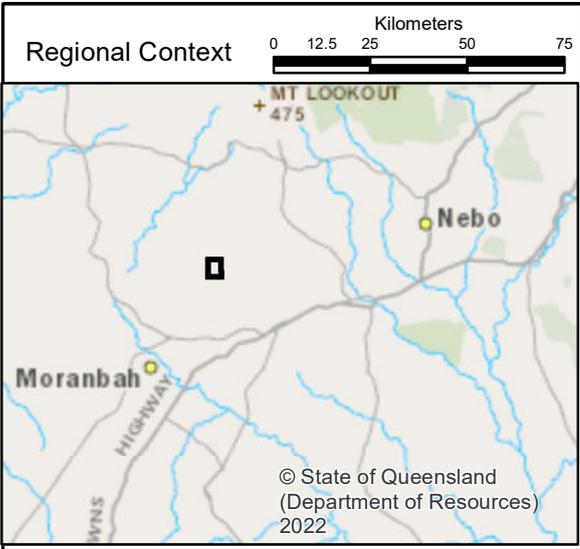
A total of seven Photo-monitoring Points were established within the offset area in August 2015. The locations of the Photo-monitoring Points are shown in **Table 1** and in **Figure 1**. Directional photos for November 2023 in order of north, east, south and west, taken from the photo-monitoring points are shown in **Plate 1** to **Plate 7**. A sample photo from each point in the same direction at each sampling period is shown in **Appendix 3**. Semi-permanent metal star pickets were at each photo monitoring point to ensure replicates are taken from the same locations and observed to be in good order.



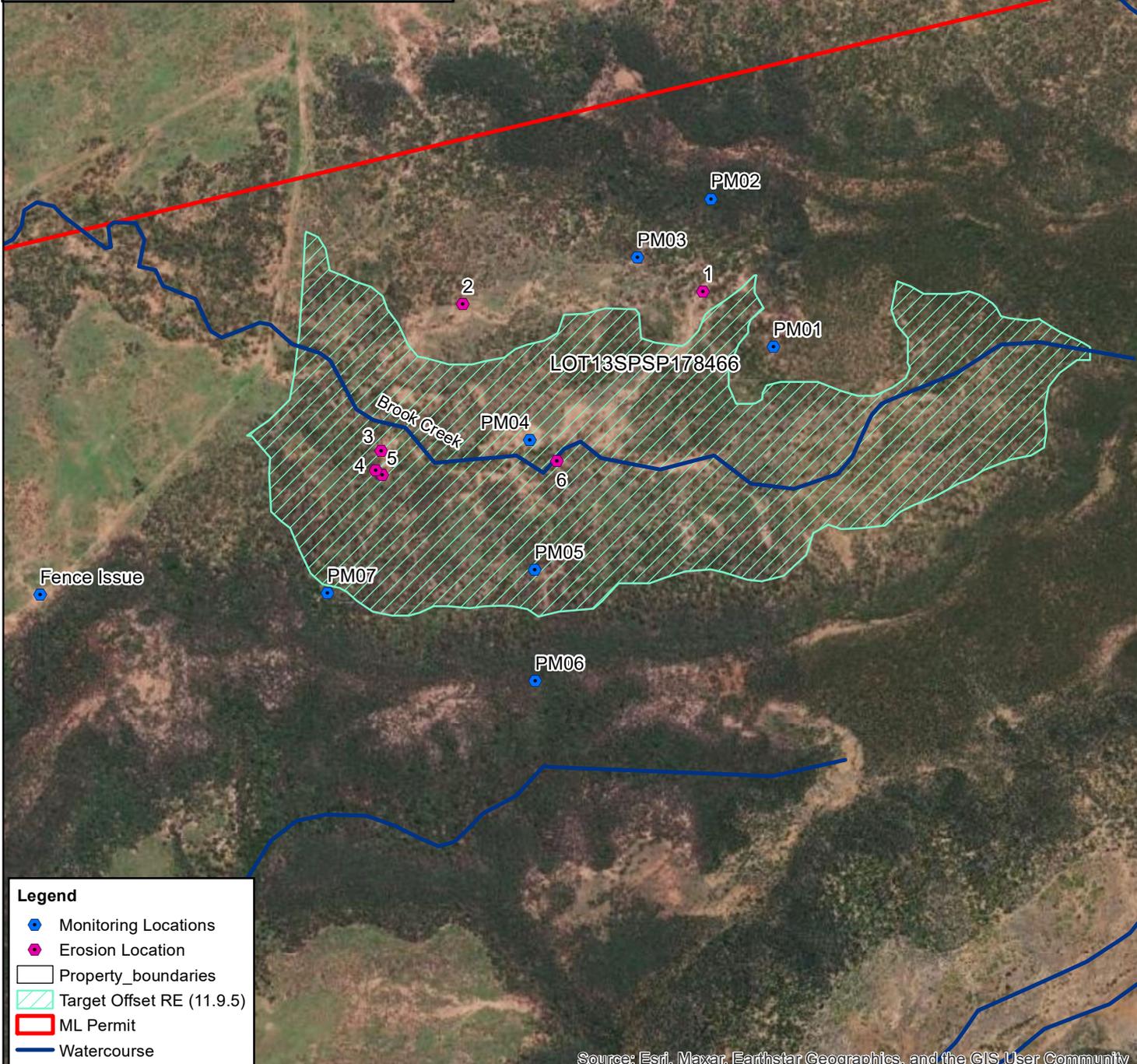
Table 1: Table 2 Coordinates for Photo-monitoring Points.

Photo-monitoring Point	Easting	Northing
PM01	624,951	7,590,122
PM02	624,779	7,590,533
PM03	624,576	7,590,371
PM04	624,278	7,589,864
PM05	624,292	7,589,503
PM06	624,293	7,589,194
PM07	623,720	7,589,438

Coordinates are in datum GDA94, MGA Zone 55 projection



The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



Legend

- Monitoring Locations
- Erosion Location
- ▭ Property boundaries
- ▨ Target Offset RE (11.9.5)
- ▭ ML Permit
- Watercourse

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Metres
0 50 100 200 300 400 500

PROJECT REFERENCE: 24000604

DATE DRAWN: 12/10/2023 Version 1

DRAWN BY: JMark

DATA SOURCE:
QLD - Spatial Catalogue

Site Overview

M Mining
Wotonga Offset Biannual Photo Monitoring
Wotonga Offset

FIGURE:
1



Plate 1: PM01 directional photos November 2023



Plate 2: PM02 directional photos November 2023



Plate 3: PM03 directional photos November 2023



Plate 4: PM04 directional photos November 2023



Plate 5: PM05 directional photos November 2023



Plate 6: PM06 directional photos November 2023



Plate 7: PM07 directional photos November 2023

2.2 PERIMETER FENCING AND GATES

2.2.1 Outcomes

The offset area is to be fully fenced in accordance with the WOAMP and offset agreement. The fences present are a three-strand barb-wire type and are generally in good condition. The ridgeline forming the boundary of the offset to the north, east and west is providing an exclusion structure to cattle ingress.

Several gates are located around the offset perimeter. The two gates located on the western perimeter were inspected and appeared in good working order.

The cattle access point (Easting 623,956, Northing 7,590,823) has been addressed through fencing work further north allowing for cattle to be excluded from within the offset as part of a larger paddock and introduced as required to control fuel load. A section of fencing along the south-western side of the Offset (Easting 622,927, Northing 7,589,439) was observed in poor condition but is still excluding cattle at this stage. The fence should be maintained to prevent cattle movement within the offset (**Figure 1**)

2.2.2 Further Actions

Although the fence is currently excluding cattle it is in disrepair, maintenance is required to ensure compliance into the future and effective management of livestock within the offset.

2.3 NOXIOUS AND ENVIRONMENTAL WEEDS

2.3.1 Outcomes

Cenchrus ciliaris (Buffel Grass) and *Megathyrsus maximus var maximus* (Guinea Grass) were observed in varying densities throughout the offset area with native grass species including *Heteropogon contortus* (Black Spear grass), *Aristida leptopoda* (White Spear grass), *Aristida caput-medusae* (Many-headed Wiregrass), *Themeda triandra* (Kangaroo Grass) and *Chloris divaricate* (Slender Rhodes Grass) also present. Buffel Grass was particularly evident on the flat country within the *Eucalyptus persistens*, *Triodia mitchellii* open woodland on



stripped margins of Cainozoic lateritic duricrust Regional Ecosystem with Guinea Grass observed along the Creek upper banks in the lower reaches. Both species are known to outcompete native grass species and generate above ecosystem natural groundcover biomass levels. Buffel Grass was observed to be moderately grazed which was reducing fuel load and providing weed control through the prevention of seed set (**Plate 9**). Grazing can be an effective control method if used correctly and cattle are removed before overgrazing and degradation occurs or livestock start browsing native species with the more palatable Buffel Grass exhausted.

During this dry season inspection it was observed that the numbers of *Opuntia tomentosa* and *Harrisia martinii* continue to decline in comparison to the previous monitoring. Furthermore, most of the Cactus observed were immature ranging from 20 to 50 cm tall on average. M Mining engaged Kleinfelder’s Bush Regenerators division to complete continued primary control and follow up control of previously treated areas targeting Cacti species in May 2023.

2.3.2 Further actions

Follow up treatment should be undertaken over the next 12 months to target new growth individuals as well as follow-up on the larger individuals that may require retreatment including treatment of any cladodes that have successfully reshot following spraying events. Consultation with the property owner to develop a holistic approach to treating Buffel Grass should be undertaken before on-ground works are completed to ensure the approach is widely adopted and outcomes meet all parties’ needs and resources.



Plate 8: Small Velvety Tree Pear



Plate 9: Grazed Buffel Grass

2.4 EROSION AND AREAS WITH HIGH EROSION POTENTIAL

2.4.1 Outcomes

During the November monitoring it was noted that again, insignificant amounts of erosion had occurred within the offset area.

Due to the length of time elapsed and the relatively small instances of erosion present within the offset it could be assumed that the erosion has begun to stabilise. Monitoring will continue in the coming years to ensure it doesn’t degrade further.

Table 2: Current Erosion Sites

Site	Notes
1	Top of large erosion gully to the north of Brook Creek.
2	Scalded area.
3	Erosion head cut 1 of erosion gully south of Brook Creek.
4	Erosion head cut 2 of erosion gully south of Brook Creek.



Site	Notes
5	Erosion head cut 3 of erosion gully south of Brook Creek.
6	Erosion on outer bank of Brook Creek

2.4.2 Further actions

Erosion control activities have not been undertaken to date and are not currently planned to occur. Removal of livestock will lead to slow improvement of scalded areas as soil profiles develop and organic matter composition increases. Gully erosion may require more intense remediation although the erosion appears to be stabilising in recent monitoring events. If vegetation does not colonise and remediation is required possible activities include gully reshaping, geotextile placement, revegetation, or coir logs/timber check dams. If it is suspected gully erosion is active, it should be monitored to ascertain if the gully is active before any remediation works are considered. This could be completed with high-accuracy GPS data or in field measurements with semi-permanent location marks (for example dumpy survey peg) and measuring tape.



Plate 10: Inactive erosion within the Offset Area

2.5 BUSHFIRE FUEL LOADS

2.5.1 Outcomes

During the preceding dry season, a combined total of 54.6 mm was recorded from 15 May 2023 to 15 November 2023 (Moranbah Airport Bureau of Meteorology). This is significantly lower than last year and fuel load in particular grass cover was low. The bushfire fuel load is currently low on average across the site, although it is expected to increase as biomass from plant growth increases during the wet season (**Plate 1 - Plate 7** and



Appendix 3). The site was assessed for biomass using the Futurebeef photo standards and methodology at each photo monitoring location. Cattle grazing has managed the Buffel Grass to an average height of 15 cm across site.

The site scored low to moderate with an average of 1,220kg/ha of biomass and the lowest observation of 400kg/ha and the highest of 1,650kg/ha. Futurebeef photographic guidelines used for approximating fuel loads across varying vegetation groups for the Wotonga Offset are as followed. Blue Grass & Wire Grass Photo Standards, Lancewood, Bendee, Rosewood & Spotted Gum Photo Standard, Eucalyptus Woodland Photo Standards and Buffel Grass Photo Standards were used as appropriate for each monitoring location.

2.5.2 Further actions

Continue to monitor and take management measures as required including grazing and maintenance of the fire break.

2.6 DAMAGE/DEGRADATION FROM PEST ANIMAL POPULATIONS

2.6.1 Outcomes

Evidence of *Oryctolagus cuniculus* (Rabbit) and *Canis lupus* (Wild Dogs) were observed during this monitoring event and previously within the Offset. *Sus scrofa* (Wild Pigs) have been observed, but no evidence was observed during this monitoring event.

Levels of activity observed were very low and it is likely pest animals are having a negligible if any effect on the health and structure of the offset vegetation and ecosystem. Wild dogs are likely to be using the offset as refuge during the day while feeding in surrounding lands.

Anecdotal evidence suggests pest management has been undertaken by landholders and agistees over many years in the offset and on surrounding lands. Wild Dogs and Feral Pigs have been targeted particularly during calving season.

2.6.2 Further actions

Pest management (shooting) should be undertaken for two consecutive nights or equivalent to ensure populations are managed to acceptable levels. Should populations be observed to be increasing additionally management could be required.

2.7 SUCCESS OF REVEGETATION WORKS

2.7.1 Outcomes

Active revegetation activities have not been undertaken to date and are not currently scheduled to occur. The vegetation is in good health with a number of native species present in each stratum. Further development of the vegetation structure is expected without the need for revegetation.

2.7.2 Further actions

No further action is required at this stage.

2.8 GROUNDCOVER AND SIGNS OF LAND DEGRADATION DURING PULSE GRAZING

2.8.1 Outcomes

Cattle and evidence of cattle were observed within the offset area with higher concentrations along the northern side of Brook Creek where Buffel Grass is more dominant in a more open Box Eucalypt vegetation community preferred by browsing cattle. Cattle have reduced the fuel load and preferentially grazed on the Buffel Grass. Ongoing presence of cattle will likely reduce the biodiversity and recruitment rate of the offset in its current condition and should be excluded until fuel load control is required again.

2.8.2 Further actions

Ensure cattle continue to be excluded throughout spring and summer to allow for native seed set and germination.



3 SUMMARY

An inspection of the offset area was undertaken on 15 November 2023 for the purposes of visual monitoring according to Section 4 of the Wotonga Offset Area Management Plan.

Vegetation appeared in good health with limited impact from pests and cattle incursion. Fencing issues were identified during this monitoring and discussions should be held with the landholder to identify a suitable solution for geography and site conditions. While the fuel load is currently low this is expected to increase as biomass increases in the wet season followed by a large amount of dry material when rainfall decreases as plants respond to reduced rainfall. Weed species were present in scattered to low densities in the active management area and did not appear to be having significant impacts on the ecological values.

Sincerely,

Kleinfelder Australia Pty Ltd

Tichafa Mhiti

Land Management Supervisor - Ecologist
Ecology

tmhiti@kleinfelder.com

Mobile: 0448855219



4 REFERENCES

Kleinfelder 2023. *Wotonga Offset Area Management Plan Millennium Expansion Project*. A report prepared for M Mining (Millennium).

Queensland Herbarium (2021) Regional Ecosystem Description Database (REDD). Version 12.1 (December 2021) (Queensland Department of Environment and Science: Brisbane)

Queensland Department of Agriculture and Fisheries (2017) Futurebeef. <https://futurebeef.com.au/> Accessed 4th January 2022

Kleinfelder (2021) Wotonga Offset Photo Monitoring October 2021 A report prepared for M Mining (Millennium)

Kleinfelder (2022) Wotonga Offset Photo Monitoring April 2022 A report prepared for M Mining (Millennium)



APPENDIX 1: CONDITIONS OF APPROVAL UNDER THE EPBC ACT



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Approval

Millennium Expansion Project - EPBC No 2009/4821

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*

Proposed action

Person to whom the approval is granted: Peabody Energy Australia Pty Ltd

Proponent's ACN(if applicable): 93 096 909 410

Proposed action To extend the current open cut mining operation on the existing ML 70313 and additionally into two adjoining leases Mining Lease Application MLA 70401 "North Poitrel and Mineral Development Licence MDL 136 "Mavis Downs" 22km east of Moranbah and 16km south west of Coppabella in central Queensland as described in the referral received 27 March 2009 and the Millennium Expansion Project Environment Impact Statement dated December 2010 (see EPBC Act Referral 2009/4821)

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 28 October 2031.

Decision-maker

name and position David Calvert
A/g Assistant Secretary
Environment Assessment Branch

date of decision



Conditions attached to the approval

1. To offset the impact to the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community, the person taking the action must register a legally binding conservation mechanism (such as a Nature Refuge Agreement) over a minimum of 112.5 hectares of the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community (the offset area) as identified in the offset management plan referred to in condition 2. The mechanism/s must provide enduring protection for protection for the offset area and be registered within 2 years of the date of this approval.

The conditions of the conservation mechanism must ensure that management actions are undertaken for the protection and enhancement of the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community. The person taking the action must obtain agreement from any third parties responsible for management actions and provide details of the responsible parties, including their position or status as a separate contractor, to the **department**.

2. To offset the impacts to the Brigalow (*Acacia harpophylla* dominant and co-dominant) ecological community, the person taking the action must submit to the **Minister** for approval an Offset Management Plan within 12 months of the date of this approval.

This Offset Management Plan must include, at a minimum, the following information:

- a. the desired outcomes/objectives of implementing the plan;
- b. details of Brigalow (*Acacia harpophylla* dominant and co-dominant) endangered ecological community offset areas, including a textual description and map to clearly define the location and boundaries of the offset area. This must be accompanied with the **offset attributes** and a **shapefile**;
- c. details of management actions to protect and enhance the extent and condition of the threatened species habitat values including rehabilitation, weed control, fire management, erosion and sediment control, management of livestock and restrictions on access, within the offset area;
- d. the timing, responsibilities and performance criteria for such actions;
- e. a monitoring plan including ecological surveys that must be undertaken to assess the success of the management measures against Identified milestones and objectives;
- f. a process to report, to the **department**, the management actions undertaken in the offset areas and the outcome of those actions, including identifying any need for improved management;
- g. a description of the potential risks to successful management and rehabilitation in the offset areas, and a description of the contingency measures that would be implemented to mitigate these risks; and,
- h. details of parties responsible for monitoring, reviewing and implementing the plan.

The Offset Management Plan must be implemented.

3. Before Impacting or removing any EPBC listed ecological community or species, the person taking the action must provide to the **Minister** a Threatened Flora and Fauna Species and Ecological Communities Management Plan. The Plan must contain, but is not limited to, the following:
 - a. Management actions relating to EPBC listed species; and
 - b. Mitigation actions relating to EPBC listed species.

The Threatened Flora and Fauna Species and Ecological Communities Management Plan must be implemented. This plan may be made publicly available on the internet by the **department**.

Note: Condition 8 provides that, if the **Minister** believes that it is necessary or desirable for the better protection of the environment, the **Minister** may require the person taking the action to make, within a period specified by the **Minister**, revisions to a plan required under these conditions.



4. Within 14 days from the **commencement of construction**, the person taking the action must advise the **department** in writing of the actual date of **commencement of construction**.
5. Within three months of every 12 month anniversary of the **commencement of construction**, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **department** at the same time as the compliance report is published.
6. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
7. If the person taking the action wishes to carry out any activity otherwise than in accordance with the Plans referred to in conditions 2 and 3, as specified in the conditions, the person taking the action must submit to the **department** for the **Minister's** written approval a revised version of that plan. The varied activity shall not commence until the **Minister** has approved the revised plan in writing. If the **Minister** approves the revised plan, that plan must be implemented in place of the plan originally approved.
8. If the **Minister** believes that it is necessary or convenient for the better protection of listed threatened species and communities to do so, the **Minister** may request that the person taking the action make specified revisions to plans specified in the conditions and submit the revised plan for the **Minister's** written approval. The person taking the action must comply with any such request. The revised plan must be implemented. Unless the **Minister** has approved the revised plan then the person taking the action must continue to implement the original plan.
9. If, at any time after 5 years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the **Minister**.
10. The person taking the action must maintain accurate records substantiating all activities and outcomes associated with or relevant to the above conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **department**.

Such records may be subject to audit by the **department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **department's** website. The results of audits may also be publicised through the general media.

Note: To avoid doubt, if a condition of a State (OLD) approval held by the proponent requires a plan relating to EPBC-listed species the proponent may simultaneously meet the relevant requirements of these conditions by submitting a single plan.



Definitions

Department - the Australian Government Department responsible for the *Environment Protection and Biodiversity Conservation Act 1999*.

Minister - the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Shapefile - means an ESRI Shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the Offset Area, including the shape, EPBC reference ID number and EPBC protected matters present at the relevant site. Attributes should also be captured in '.xis' format.

Offset attributes - mean an '.xis' file capturing relevant attributes of the Offset Area, including the EPBC reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the EPBC protected matters that the offset compensates for, any additional EPBC protected matters that are benefiting from the offset, and the size of the offset in hectares.

Commencement of construction- means any preparatory works required to be undertaken including clearing vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for mining, buildings or infrastructure.



APPENDIX 2: WOTONGA OFFSET DETAILS

Departmental Reference Details

Reference and Assessment Details	
Queensland Departmental Reference No: MIN10034430	Queensland Offset ID: TBA
Property Address: Wotonga Pastoral Holding, Ellensfield Road, Burton, Queensland	
Real property description: Lot 13 on SP178466	
Tenure: Leasehold	Primary local government area: Isaac Regional Council

Offset Area Details

Landholder Details	
Registered Lot on Plan: Lot 13 on SP178466	
Registered Owner/s on Title: State of Queensland	
Lessee: Malcolm Burston	
Business/Company name (ABN/CAN): ABN: 33 229 398 728	
Phone number: -	Mobile Phone: +61 (4) 407 168 013
Fax number: -	Contact person: Malcom Burston
Email: malburston.pl@bigpond.com	
Postal address: 162 Geebung Station Road, Kuttabul, QLD, 4741	



APPENDIX 3: PHOTO-MONITORING SAMPLE DIRECTION FOR ALL SURVEYS

PM01 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.7.3)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023



PM02 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.7.2)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023



PM03 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.7.3)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023

PM04 sample photos (northerly) for each monitoring event since August 2015 (Erosion)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023



PM05 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.9.5)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023



PM06 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.7.2)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



May 2023

October 2022



November 2023



PM07 sample photos (northerly) for each monitoring event since August 2015 (Regional Ecosystem 11.5.3a)



April 2015



April 2016



August 2016



May 2017



August 2017



June 2018



September 2018



June 2019



June 2020



December 2020



May 2021



October 2021



April 2022



October 2022



May 2023



November 2023