Primary Gold Limited

Mining Management Plan Amendment to the Approved 2016 MMP

AUTHORISATION NUMBER: 0739-01

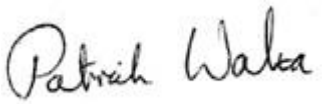
ML29781, ML29782, ML29783, ML29785, ML29786 and EL30824 – Quest 29 Project Area

December 2016

WWW.PRIMARYGOLD.COM.AU

Document Control Record

Prepared by:	Justin Robins
Position:	Manager Approvals and Tenure
Signed:	
Date:	09/12/2016

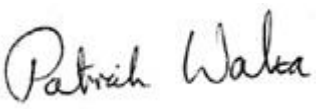
Approved by:	Patrick Walta
Position:	Executive Director
Signed:	
Date:	09/12/2016

Revision Status

Revision No.	Description of Revision	Date	Comment	Approved
0	First Issue	09/12/16		PW

.

I, Patrick Walta, declare that to the best of my knowledge the information contained in this amendment is true and correct and commit to undertake the works detailed in this plan in accordance with all the relevant Local, Northern Territory and Commonwealth Government legislation.

SIGNATURE: 

DATE: 9 December 2016

.

Amendments

Section / Reference	Comments	Primary Interp / Planned Action

Contents

Tables

Figures

1 Introduction

1.1 Operator Details

Primary Gold Limited ("Primary") is a publicly listed company, currently managing granted mineral and exploration tenure purchased from Crocodile Gold in early 2013. Primary's tenement holding covers approximately 2,000 km² in the Arnhem region of the Northern Territory. The landholding contains the Quest 29 project area and also includes Toms Gully Mine and Rustlers Roost project.

The centroid of the Quest 29 project area is located approximately 100km south east of Darwin by road and 20km south of the Arnhem Highway via the existing Toms Gully mine and pastoral roads (Figure 1). The project is located on Old Mount Bundey Station (PPL 1163, NT Portion 4937) and McKinlay River Station (PPL 1184, NT Portion 4938).

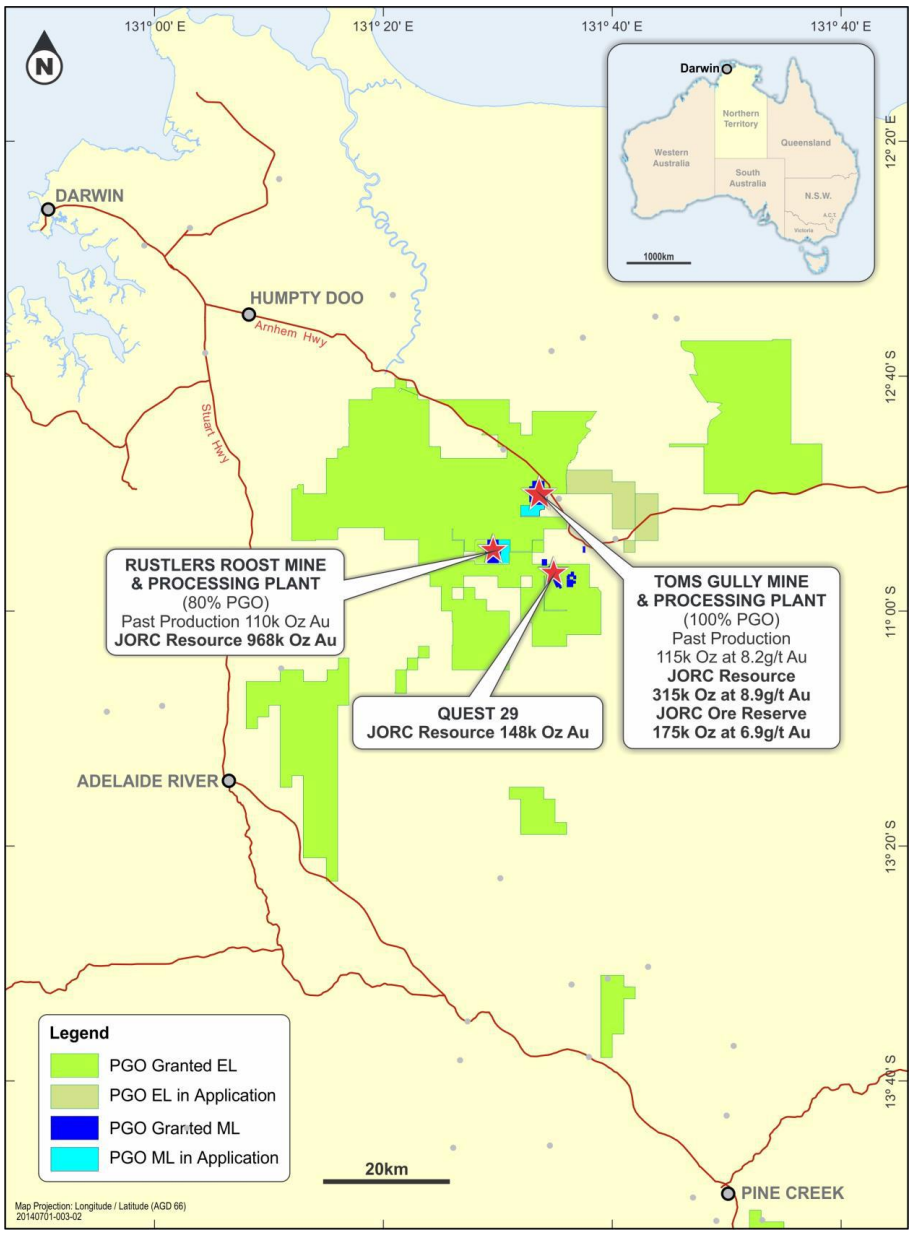


Figure 1. Location of Primary's Projects in the Arnhem Region.

Primary Gold Limited

ABN 42 122 726 283
Postal Address
PO Box 1311
SUBIACO WA 6904

Perth Office

Telephone: 08 6143 6700
Facsimile: 08 9388 8824
Email: info@primarygold.com.au

1.1.1 Key Personnel/Contacts

Mr Patrick Walta Executive Director

pwalta@primarygold.com.au

Mr Justin Robins Manager Approvals and Tenure
jrobins@primarygold.com.au

Mr Marat Abzalov Director – Exploration

marat.z.abzalov@gmail.com

1.2 Organisational Structure and Workforce

The organisational chart for the Quest 29 Project has been presented in the approved 2015-2016 MMP.

Overall responsibility for environmental management and compliance at the Quest 29 Project lies with the Manager Approvals and Tenure. Implementing, resourcing and maintaining environmental management as documented in the approved MMP and this MMP amendment is the responsibility of the Manager Approvals and Tenure and delegated personnel. The Manager Approvals and Tenure and relevant onsite personal are responsible for defining and communicating relevant environmental responsibilities and accountabilities to employees, consultants and contractors within their area of responsibility during the stages of exploration and evaluation.

The exploration team will consist of two or three Primary personnel including an exploration geologist, and two field assistants. Primary will contract a suitable drilling company (preferred contractor is Ausdrill) to undertake the drilling programs on a campaign basis. This company will have approximately one driller and two offsiders onsite at any one time. Field personnel will be accommodated and supported from the Corroboree Park Tavern or similar accommodation within easy commuting distance.

1.3 Tenure Details

This amendment covers work specific to portions of Mineral Lease 29783 and 29786 (see Figure 2). Additionally, an amended authorisation has been lodged to incorporate Exploration Licence 30824 into the Quest 29 Project as drilling is proposed on this tenement as it surrounds ML29783, ML29786 and ML29781 (Figure 2). Tenement ML29783, ML29786 and ML29781 have an expiry date of 2nd May 2023, while EL30824 was granted on the 7th March 2015 with an expiry date of the 7th February 2021. All tenements are held 100% by Primary Minerals NL, a subsidiary of Primary Gold Limited.

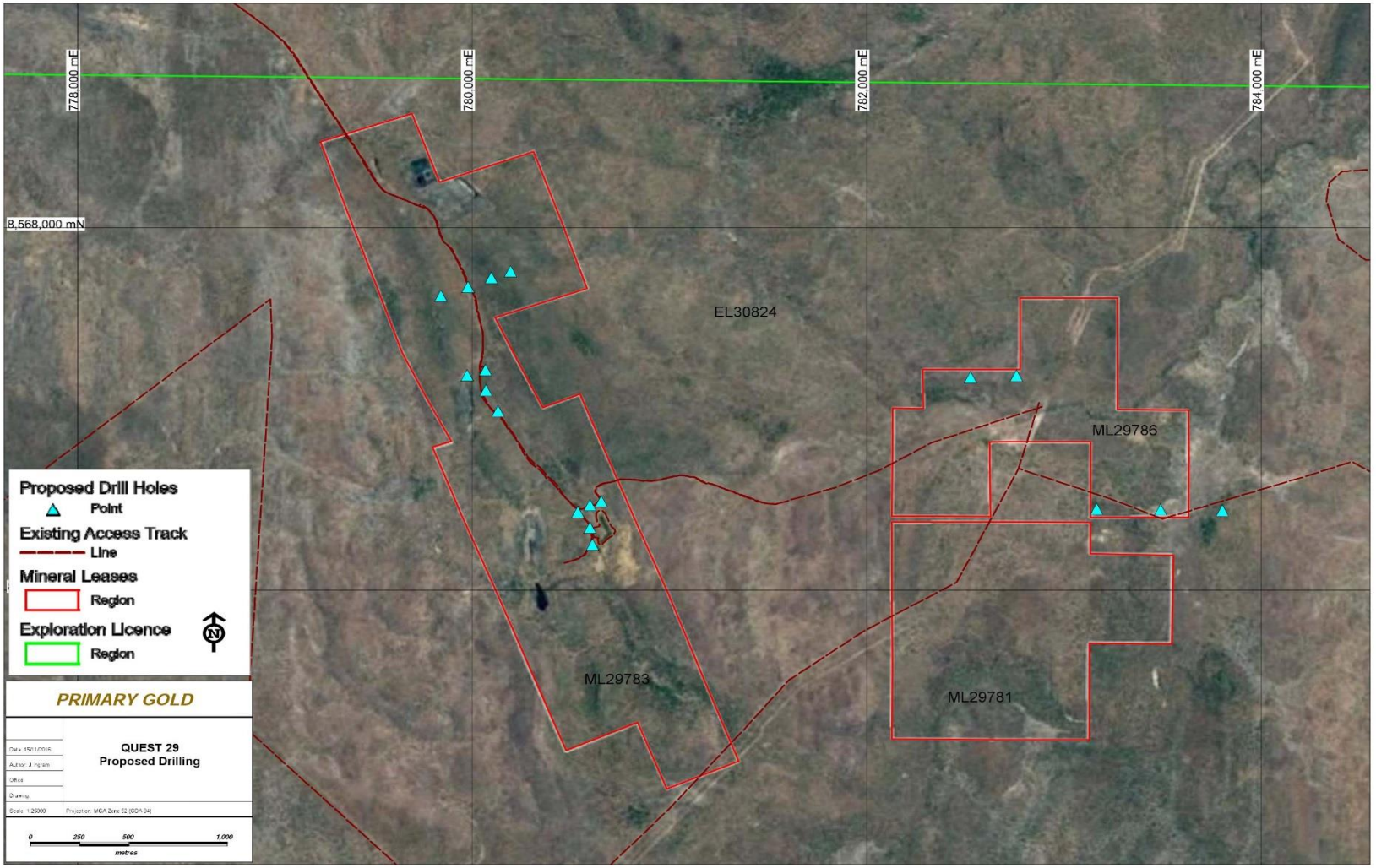


Figure 2. Location of Proposed Drilling Within EL30824, ML29783 and ML29786.

2 Identified Stakeholders and Consultation

Primary has identified the following interested parties and stakeholders;

- Traditional Owners via the Aboriginal Areas Protection Authority;
- Old Mt Bundey Station Pastoralist;
- McKinlay River Station Pastoralist;
- Government Departments – Department of Primary Industry and Resources (DPIR) (formerly Department of Mines and Energy (DME)) Department of Mines and Energy (DME) and Department of Land Resource Management (DLRM);
- Primary Employees;
- Primary Shareholders; and
- Primary Contractors and Suppliers;

Details of relevant stakeholder consultation as part of the proposed exploration activities are provide in Table 1. Ongoing communications will take the form of both of both formal and informal. A record of these communications/correspondence with be maintained for future presentation in MMPs.

Table 1. Stakeholder Consultation for the Proposed Drill Program.

Stakeholder	Contact Person	Issues discussed	Consultation/Action	Ongoing and Evidence of Consultation	Agreements
Traditional Owners via the Aboriginal Areas Protection Authority	Wendy Forscutt (Assistant Register)	Undertaking of Authority Certificate Surveys (Sacred Site) across the proposed drilling sites in a timely fashion.	Sourcing an external consultant to undertake the surveys with the traditional owners.	AAPA certificates issued for future areas of activity.	Issue of the AAPA certificate covering the drill sites. Refer to Appendix A.
Old Mt Bundey Station Pastoralists	Anthony Harrower (Pastoral owner) and Garry Keppel (Pastoral manager)	Location of access tracks to the drill holes and access during the wet season.	Modifying the location of the tracks to avoid pastoral infrastructure and greatly limit access during the wet season.	This will include formal communications (including letters) and informal communications (including emails, telephone and on site conversations). Record kept of engagement.	For the purpose of this program the pastoralist has provided a letter detailing that he has no objection to the proposed drilling. Refer to Appendix B.
McKinlay River Station Pastoralists	Peter Maley and Ross Anictomatis (Pastoral owners)	Location of proposed drill holes and limited access during the wet season. Ensure gates are shut, remove all rubbish, no cutting of fences and no shooting.	The pastoralist raised issues that the low lying area should not be accessed during the wet season. Management measures include requirement for no shooting, no fence cutting, removal of rubbish and leaving gates how found.	This will include formal communications (including letters) and informal communications (including emails, telephone and on site conversations). Record kept of engagement.	For the purpose of this program the pastoralist has provided a letter detailing that he has no objection to the proposed drilling. Refer to Appendix B.
Department of Mines and Energy (DME)	Peter Waggitt (Director Mining Compliance) and Leslee Reif (Mining Officer)	• Requirements for lodgement of an amendment. • The presence of threatened species in the proposed area. • Agreed access with the pastoralist. • The requirement for AAPA certificates.	• Obtain letters from the pastoralists demonstrating no objections to the proposed program. • Likelihood analysis to determine potential for threaten species and consult with the threaten species branch DLRM on mitigation and management measures. Undertake a survey. • Seek AAPA authority certificates.	Consultation will be by informal and formal means. Records will be kept of correspondence.	Approval of MMPs and associated documents.

Stakeholder	Contact Person	Issues discussed	Consultation/Action	Ongoing and Evidence of Consultation	Agreements
Department of Land Resource Management (DLRM)	Simon Ward (Species Conservation Director)	On-ground management and mitigation measures for the potential presence of threaten species.	Adoption of management and mitigation measures during drill activity.	Consultation will be by informal and formal means. Records will be kept of correspondence.	Details of consultation provided in Appendix C.

3 Project Details

Project details have been provided in Primary's 2015-2016 MMP (Authorisation 0739-01) and in section 1 above.

3.1 Previous Activities and Current Status

Since the approval of the MMP on activities have taken place. Prior to this only low impact geological mapping and rock chip sampling has been completed with access via existing roads.

3.2 Proposed Activities

Once approved Primary plans to conduct reverse circulation exploration drilling targeting areas of known gold mineralised and anomalous gold occurrences. A total of 18 drill holes are proposed to be drilled.

Of the proposed exploration drill sites, 11 are located in close proximity to existing tracks. Minimal disturbance will be required to access these sites as the areas have been cleared previous. The remaining 7 drill sites are located away from the road in areas of existing vegetation. Each drill pad will cover an area of approximately 20 by 25 metres with the drill hole centrally located. Dependent on the configuration of the drill rig the drill sump and drill samples will be placed to one side. Drill spoils/samples will not be collected in plastic bags but will be placed on the ground for later rehabilitation. The majority of access will be via existing tracks. Where tracks are required, track width is to be limited to approximately 3 metres across. Where practicable disturbance/vegetation clearing will be minimised by raised blade clearing. Exploration and drilling personnel will be accommodated offsite. Specific details of the drilling are outlined in Table 2 below and Figure 2.

Table 2. Proposed Exploration Activities – Mineral Lease (29783 and 29786) Exploration Licence (EL30824).

Project	Collars	Nominal Depth (m)	Total Metres	Area of disturbance (ha)	Drill Method	Comments
Quest 29 Prospect ML29783						
Drilling Quest 29 Prospect.	13	200	2,600	Clearing to be minimised. Drill pads to be 20 by 25 metres. Drill access/lines 3m wide and being 600m in length. Disturbance area 0.83 ha (i.e.13x20x25 and 3x600)	Reserve Circulation	
Quest 30 Prospect ML29786 and EL30824						
Drilling Quest 30 Prospect.	5	200	800	Drill pads to be 20 by 25 metres. Drill access/lines 3m wide and being 550m in length.	Reserve Circulation	

Project	Collars	Nominal Depth (m)	Total Metres	Area of disturbance (ha)	Drill Method	Comments
				Disturbance area 0.42 ha (i.e.5x20x25 and 3x550)		

The proposed area/drill sites in which the activities are contained have been surveyed for sacred sites via the Aboriginal Areas Protection Authority (AAPA). An Authority Certificate covering the proposed drilling has been issued and is attached as Appendix A. The findings of the survey demonstrated that the proposed drill holes will not intersect any known sacred sites.

In addition, the Public Register of Sacred Sites have been consulted. No sacred sites have been recorded in the area of the proposed drilling.

4 Current Project Site Conditions

4.1 Summary of Previous Activities

Current project conditions have been provided in Primary's 2015-2016 MMP (Authorisation 0739-01).

The proposed drilling does not occur in any defined sites of conservation significance, sites of botanical significance, parks or reserves. The project area is located 2.8km to the west of the Mary River National Park. The Mary River Coastal Floodplain is also defined as a site of conservation significance. Based on literature and database information available from the DLRM, Primary has undertaken a likelihood analysis of the potential for threatened species to be present in the area. The likelihood of a number of known threatened species to occur in the area is presented in Table 3. In summary the following species have the potential to occur in the area:

- Black footed tree-rat (Low to unlikely)
- Bare-rumped shealthtail bat (Low)
- Northern Quoll (Possible)
- Fawn antechinus (Low to unlikely)
- Gouldian Finch (Possible)
- Floodplain Monitor (Low)
- Yellow Snouted Gecko (Low)

Subsequent to the desktop assessment, a flora and fauna survey was undertaken in November by Low Ecological Services across the area, and findings of this survey were used to further refine the likelihood analysis. As the report is currently being drafted, a summary of the survey has been provided in Appendix D. The survey highlighted that no threatened flora and fauna were identified in the area.

In the location of the proposed drilling, livestock grazing and regular fires have resulted in the under and middle storey of vegetation being highly modified in comparison to natural conditions thus reducing food sources, shelter and potential breeding sites for threatened species. Management and mitigation measures designed to address the potential impact in the area are detailed in Section 5.

Table 3. Likelihood Analysis of the Potential Species Located at the Quest 29 Area.

Threatened Species	Habitat Preference	Information source	Comments	Likelihood	Mitigation
Black footed tree-rat	Black footed tree rat has been recorded 5km to the north east of the nearest drill hole in the Mary River National Park. Black footed tree-rat is largely arboreal typically in tall Woollybutt and Stringybark with a moderately dense mid and understorey of shrubs and grass due to low fire frequency. Its diet consists of fruit, seeds, insects, flowers and nectar. Being nocturnal, it shelters in tree hollows or dense foliage (notably Pandanus).	DLRM	The proposed drill sites and access are characterised by an absence of dense mid and under storey vegetation.	Low to unlikely	As detailed in Section 5
Bare-rumped sheathtail bat	Primarily occurs in tropical eucalypt woodlands and Woollybutt forests. Known roosts occur in tree hollows with roosts entrances 6 to	DLRM	The area of the proposed drill holes tends to be on ridges with minimal large trees. Drilling is not	Low	As detailed in Section 5

Threatened Species	Habitat Preference	Information source	Comments	Likelihood	Mitigation
	7 metres above the ground or in caves and mine workings.		intended to intersect mine voids or caves that have surface expressions. The presence of suitable roosts are highly limited as larger trees greater than 10 metres were not observed at the sites.		
Northern quoll	The northern Quoll is nocturnal with dens in tree hollows, termite mounds, goanna burrows, hollow logs and rock crevices. Individuals have been recorded along the Arnhem Highway that occurs 4.5km to the north of the most northern drill hole. Habitat comprises rocky areas and tall open coastal eucalypt forests.	DLRM		Possible	As detailed in Section 5
Fawn antechinus	Terrestrial and partly arboreal insectivore that occurs in open forests of Darwin Woollybutt and/or Darwin Stringybark with relatively dense shrubby understorey. The species prefers areas of cooler and less frequent fires. Individuals shelters in tree hollows and fallen logs.	DLRM	Fires in the area have tended to be frequent over recent times leading to a relatively sparse understorey limiting suitable habitat.	Low to Unlikely	As detailed in Section 5
Pale field - Rat	The pale field rat has been recorded in the Mary River National Park approximately 7.4km to the north of the closest drill site. Individuals are found in dense vegetation along creeks.	DLRM	Proposed drilling is located away from creek lines. Where creek lines are present in the area livestock grazing and fire regimes have greatly reduced vegetation thus providing minimal habit and cover.	Unlikely	
Gouldian Finch	Gouldian Finches have been recorded 5.5km to the north east of the closest drill hole. The granivorous bird feeds exclusive on seeds from a restricted range of grass species including cockatoo, spinifex grasses and golden beard grass. Breeding occurs in hilly terrain adjacent to flatter country with patches of season grass. The bird nests in unburnt tree hollows. Individuals drink water daily so shallow water sources with clear access and some cover from predators are critical for the selection of nesting sites.	DLRM	Livestock and feral grazing, and fires across the area of the proposed drilling has the potential to greatly reduce preferred grass seed species. Hotter fires through the area have limited the number of possible nesting locations. The majority of drill holes are located away from shallow water resources with vegetation cover.	Possible	As detailed in Section 5

Threatened Species	Habitat Preference	Information source	Comments	Likelihood	Mitigation
Partridge pigeon	The partridge pigeon Is known from the Mary River National Park 6.5km from the nearest drill hole. The species is ground dwelling and occurs principally in tall lowland eucalypt open forests and woodlands with grassy understoreys.	DLRM	The proposed drilling is located in open woodlands but vegetation composition and structure is greatly different to the Mary River National Park due to livestock grazing and extensive fire areas/regimes. A grassy understorey is not present across the site. The absence of an understorey would not attract this species to the area.	Unlikely	
Merten's water monitor	The monitor is semi-aquatic and is seldom far from water.	DLRM	Drilling is not located close to any natural water bodies.	Unlikely	
Mitchell's water monitor	The monitor is semi aquatic and arboreal and inhabits the margins of water courses.	DLRM	Drilling is not located close to any natural water bodies.	Unlikely	
Floodplain monitor	The floodplain monitor has been recorded 4km to the east (in the Mary River National Park) of the most easterly drill hole. The monitor is ground dwelling in a range of habitats including coastal beaches, floodplains, grassland and woodlands. Major pressure on the population is the ingesting of cane toads.	DLRM	Drilling is occurring away and upslope from the broad Mary river inland floodplains located to the east of the project.	Low	As detailed in Section 5
Yellow-Snouted Gecko	Endemic to the Northern Territory but only known from Kakadu National Park and Wildman River portion of Mary River National Park. Individuals captured in areas of well-developed leaf litter and grasses in open forests typically on red sandy loam soils.	DLRM	The proposed drilling is located in open woodlands but vegetation composition and leaf litter is greatly different to the Mary River National Park due to livestock grazing and extensive fire areas/regimes. In addition red sandy loams are not present.	Low	As detailed in Section 5
Threatened Flora					
Species					
Helicteres macrothrix	The species is known to occur on the lower slopes and colluvial pediments of the Mt Bundey Granite and Mt Goyder Syenite. Additionally species are known to be associated with the Wildman Sandstone.	DLRM	The proposed drilling is 4.5km to the south and south west of the known occurrences of Helicteres macrothrix. The Mt Bundey Granite, Mt Goyder Syenite and Wildman Sandstone geology units and related geomorphology do not occur in the area of proposed drilling.	Unlikely	

5 Environmental Management

Details of the environmental policy, inductions, aspects, impacts and monitoring are presented in Primary Gold Limited's 2015-2016 MMP (Authorisation Number: 0739-01).

In addition, to management measures outlined in the Flora and Fauna Management Plan and Weed and Pest Management Plan to manage threatened species. The following environmental management and mitigation measures will be implemented:

1. Minimisation of vegetation and habitat clearing by:
    - Use of appropriately sized mobile machinery to reduce drill pad size. (Target: source equipment with blade width appropriate to prevent over clearing)
    - Avoiding riparian vegetation, staying within approved clearing envelopes (Target: Minimal clearing of riparian vegetation)
    - Avoiding larger trees and significant vegetation. Prior to the final positioning of the access tracks and drill holes larger habitat trees, logs, burrows and rock crevices will be identified. The position of access tracks and drill holes will be modified if required to preserve these features to ensure potential roosts, dens and/or nests are not disturbed. (Target: Minimal removal of potential roosts, dens and nest sites)
    - Limit off-track driving. (Target: minimise off road driving)
    - Maximise the use of raised blade method to preserve root stocks and soil profile. (Target: Down blade clearing only used where necessary)
    - Rationalise drill locations to ensure pad sizes are kept to a minimum while ensuring operational safety is not compromised. (Target: remain within clearing envelope)
2. Management of fauna:
    - Drill holes will be immediately capped prior to below ground plugging. (Target: no fauna deaths associated with drill holes)
    - RC holes immediately plugged below ground upon completion of drilling. (Target: no fauna deaths associated with drill holes)
    - Maintain weed quarantine by inspecting for weeds. (Target: do not increase the distribution of weeds across the area)
    - Vehicle speeds will be restricted to 60km/hr on cleared tracks to minimise the potential for fauna collisions and generation of dust. (Target: no fauna deaths associated with driving across project)
    - Prevent the feeding of native and feral fauna. (Target: not to increase the presence feral animals around the drill sites)
    - No fires will be lit drilling the drill program. (Target: no fires caused by drilling and exploration crew activities)
    - Undertake progressive rehabilitation to prevent erosion and disruption to fauna. (Target: full rehabilitation of drill holes within 6 months of program)
    - Sumps are to include an egress ramp to allow fauna to exit. (Target: no fauna deaths associated with sumps)

- Remove all rubbish, food scraps or introduced water sources to avoid attracting cats and other feral animals. (Target: removal of all rubbish and water sources upon drilling completion).
- Educating the workforce on threatened species and the above management measures. (Target: All staff undergo induction and attend toolbox/site meetings when required)

3. Rehabilitation:
    - Plastic sample bags will not be used; drill samples will be laid out on the ground and disposed of either by placing below ground and/or dispersed across the surface if the drill spoils are inert and aesthetically compatible to the surface soils. Rehabilitation will be in accordance to the Department of Mines and Energy advisory notes titled "Construction and Rehabilitation of Exploration Drill Sites" (Target: complete rehabilitation in accordance to guidance notes)

Details of the above management measures were discussed with Dr Ward the Director of the Species Conservation, Flora and Fauna Division, Department of Land Resource Management to ensure the measures are appropriate. The response provided is contained in Appendix C.

6 Exploration Rehabilitation

As detailed in Primary Gold Limited's 2015-16 MMP (Authorisation Number: 0739-01).

Details of the rehabilitation specific to the proposed drilling is detailed in Table 4.

Table 4. Exploration Drilling Rehabilitation Details for EL30824, ML29783 and ML29786.

Disturbance type	Rehabilitation method	Scheduling	Closure Objective/Targets	Monitoring and Remediation
Drill holes	Cutting collars with cone plug placed 40cm below ground backfilled and mounded. Drill cuttings if non hostile and not of substantial colour difference raked over, with samples not meeting those criteria placed below ground. All rubbish removed.	Temporary capping once holes drilled with below ground plugging completed within 6 months of drilling.	All holes capped before end of program and plugged below ground within 6 months.	Before and after photographs taken with a cross section of holes visited post following wet season.
Drill pads	Compacted areas ripped across contour to encourage natural vegetation regrowth.	Rehabilitated within six months of program once drill assays received.	Drill pads ripped and made stable within six months.	Before and after photographs taken with a cross section of pads visited post next wet season.
Sumps	Sumps backfilled with overburden and covered with topsoil and ripped to encourage natural vegetation regrowth.	Rehabilitated within six months of program once drill assays received.	All sumps backfilled within six months of drilling.	Before and after photographs taken with a cross section of pads visited post next wet season.
Access tracks and drill lines	Windrows and vegetation if present to be pulled back over the road. Compacted areas cross scarified. Creek crossings removed and drainage lines re-established.	Access tracks no longer required rehabilitated within six months of program once drill assays received.	Tracks and drill lines make safe and stable.	Drill tracks inspected after next wet season to assess erosion and stability.

6.1 Exploration Register

Once completed details of the drilling status and rehabilitation will be included in a rehabilitation register that will be reported in subsequent MMPs. Details will include before and after photographs of the drill sites.

6.2 Closure Costing

A summary of the closure costing is available in the spreadsheet, which is provided to DME in Appendix E.

Acronyms

AAPA	Aboriginal Areas Protection Authority
DLRM	Department of Land Resource Management
DPIR	Department Primary Industry and Resources
EL	Exploration Licence
ha	hectare
k	kilometre
m	metre
ML	Mineral Lease
MMP	Mining Management Plan

APPENDIX A: AAPA AUTHORITY CERTIFICATE

APPENDIX B: LETTERS FROM MCKINLAY RIVER AND OLD MOUNT BUNDEY PASTORAL STATIONS

Please place mailing address or letter head here or somewhere else on the letter

A.N. HARROWER
P.O. Box 1144.
KATHERINE NT
0851.

23 August 2016

Mr Peter Waggitt
Director Compliance
Department of Mines and Petroleum
GPO Box 4550
DARWIN NT 0801

Dear Mr Waggitt

On the 18th August 2016 I spent the day with representatives from Primary Gold Limited (Primary). During this meeting we inspected the proposed 2016 exploration drill sites that are located on Old Mount Bundey Station. From discussions, it is anticipated that the drilling will commence prior to the wet season and be completed when access is restored during the early part of 2017. Based on the details and maps provided I have no objections to Primary having access to undertake the drilling. In the longer term an access arrangement between the two parties will be formalised.

Yours Sincerely

J Harrower

Anthony Harrower
Pastoral Owner – Old Mount Bundey Station

30 November 2016

Mr Peter Waggitt
Director Mining Compliance
Department of Primary Industry and Resources
GPO Box 4550
DARWIN NT 0801

Dear Mr Waggitt

Primary Gold Limited (Primary) has approached the owners of McKinlay River Station seeking permission to undertake drilling on Exploration Licence 30824, Mineral Lease 29783 and Mineral Lease 29786 located on McKinlay River Station. The drilling will occur in close proximity to the Quest 29 project area. Based on the details and maps provided we have no objections to Primary having access to undertake the drilling provided that gates and fences are left how they are found, rubbish is removed from site and no shooting occurs. In the longer term an access arrangement between the parties will be formalised.

Yours Sincerely

Ross Anictomatis
Pastoral Owners – McKinlay River Station

Peter Maley

Ostojic Nominees

APPENDIX C: DEPARTMENT OF LAND RESOURCE MANAGEMENT EMAIL

Justin Robins

From: Simon Ward <Simon.Ward@nt.gov.au>
Sent: Monday, 29 August 2016 2:33 PM
To: Justin Robins
Subject: RE: Advice on Threatened Species Management

Hi Justin,
From the brief details you have provided, the proposed environmental management you outline is on the right track. There is also the need for appropriate weed quarantine and avoidance of rainforest/vine thicket patches and associated buffers.
You haven't defined the specific areas that might be impacted, but if you are working in floodplain areas, yellow chats may occur there, and if you are in woodland, yellow-snouted geckos, black-footed tree-rats are possibilities.
Yours
Simon

Dr Simon Ward
Director, Species Conservation
Flora and Fauna Division, Department of Land Resource Management
Northern Territory Government

Tom Hare Building, Arid Zone Research Institute, Stuart Hwy-South
PO Box 1120, Alice Springs, NT 0871
P: 08 8951 8249
E: simon.ward@nt.gov.au
W: www.lrm.nt.gov.au

From: Justin Robins [mailto:jrobins@kcgroup.net.au]
Sent: Monday, 29 August 2016 1:15 PM
To: Simon Ward
Subject: Advice on Threatened Species Management

Hi Simon

Thank you for your time today. As discussed we are looking to undertake broad spaced exploration drilling on Old Mt Bundey and McKinlay River Stations that are to the east of the Mary River National Park. We have undertaken a likelihood analysis and consider that the following threatened species have some potential to occur in the area.

- Northern Quoll
- Gouldian Finch
- Bare-rumped sheathtail bat
- Fawn antechinus

The pastoral stations have very limited under storey due to regular fires and grazing activity. As part of our proposed environmental management around the drilling we intend to do the following:

1. Where practicable avoid large habitat trees, stumps, logs, rock crevases to preserve these features as they may be potential roosts, dens or nests.
2. Minimised vegetation disturbance by avoiding riparian vegetation, staying within approved clearing envelopes and where practicable using raised blade clearing.
3. Limit off-track driving
4. Restrict vehicle speeds on cleared tracks to 60km/hr
5. Prevent feeding of native and feral fauna.
6. Remove all rubbish, food straps or introduced water sources to avoid attracting cats and other feral animals
7. Educating the workforce on threatened species and the above management measures.

Any advice relating to the proposed management measures above or any other potential management measures would be greatly appreciated.

Kind Regards

Justin Robins
Manager Approvals and Tenure

PRIMARY GOLD

Ph: +61 8 6143 6700
Email: jrobind@kcgroup.net.au
PO Box 1311, Subiaco WA 6904

APPENDIX D: LOW ECOLOGICAL SERVICES SURVEY SUMMARY

Low Ecological Services P/L

Grouped with WA Low Ecological Services
ABN 55 064 311 502
PO Box 3130, Alice Springs, NT 0871, Australia
Phone: (08) 89 555 222 Fax: (08) 89 555 722
Email: lowecol@lowecol.com.au Web: www.lowecol.com.au
Phone: (08) 89 555 222 Fax: (08) 89 555 722

Primary Gold Ltd
Suite 23
513 Hay Street
Subiaco WA 6008

Memorandum

Att: Justin Robins

Re: Quest 29 ML Flora and Fauna Survey, Summary Report, November 2016

Quest 29 ML is located approximately 95 km south-east of Darwin, Northern Territory (NT) within McKinlay River Station and Old Mount Bundey Station, which are both operational pastoral leases. Quest 29 is a non-operational, existing mine. Primary Gold Ltd (Primary Gold) acquired the site in 2013 and is proposing to drill 18 exploration holes within the Quest 29 area. In October 2016, Primary Gold commissioned Low Ecological Services (LES) to undertake a flora and fauna survey at Quest 29 to identify:

- The potential for and identification of any State or Commonwealth listed threatened species;
- Feral animals and weed species at the site;
- Flora and fauna native to the area; and
- Flora and fauna of cultural significance.

An interrogation of the *Environment Protection and Biodiversity Conservation Act 1999* Protected Matters Search Tool (PMST), the NT Flora Atlas and NT Fauna Atlas identified four threatened flora species and 27 threatened fauna species as potentially occurring within the Quest 29 mineral lease area. Twelve additional threatened fauna species were identified by the PMST as potentially occurring within the area, but were excluded due to their association with marine habitats (e.g. *Megaptera novaeangliae* and *Chelonia mydas*), or habitats associated with perennial water availability (e.g. *Glyphis garricki* and *Pristis clavata*). The threatened flora species *Helicteres macrothrix* potentially occurs within the Quest 29 area. Threatened fauna species potentially occurring within the Quest 29 area include *Dasyurus hallucatus, Saccolaimus saccolaimus nudicluniatus, Mesembriomys gouldii, Antechinus bellus, Rattus tunneyi, Erythrura gouldiae, Geophaps smithii smithii, Lucasium occultum, Varanus mitchelli, Varanus mertensi* and *Varanus panoptes.*

LES undertook a flora and fauna survey of the Quest 29 area between the 1st and 7th November 2016. Survey methodology followed the *Guidelines for Assessment of Impacts on Terrestrial Biodiversity* (Northern Territory Environment Protection Authority, 2013) and there was a focus on habitats which were identified as potentially suitable for the identified threatened species. Fauna surveys included 3 nights live-trapping (25 Elliott, 4 cage, 4 pit (where possible) and 10 funnel traps per site per night), camera-trapping, spotlighting, bird quadrat surveys, active searches for animals or sign of species, incidental recording and sound recording for bats. Vegetation and landform surveys involved recording all flora species found in 8 100 x 100 m quadrats, assessment of landform, soil type,

disturbance type and level, ground cover types, and vegetation community structure and composition as well as incidental targeted surveys in habitat appropriate to threatened species. Within the Quest 29 area, four live-trapping sites and four separate camera-trapping sites were established. Vegetation, bird, and bat surveys, and active searches were also undertaken at each of these eight sites. Additional bird surveys were undertaken at a dam in the north-east of the Quest 29 area, which was identified as potential habitat for Gouldian finches, and at a dam in the east of the Quest 29 area, which was identified as good general bird habitat. Spotlighting was undertaken at two sites where deep leaf litter was observed, as this was identified as being potential habitat for *Lucasium occultum.* Call playback surveys for *Tyto novaehollandiae kimberli* were also undertaken after spotlighting surveys.

Table-1. Location of survey sites in the Quest 29 area and survey types undertaken at each location

Site	Easting	Northing	Survey type
CamQ01	781882	8565489	Camera, vegetation, bird, active search
CamQ02	780428	8566668	Camera, vegetation, bird, active search
CamQ03	779361	8568363	Camera, vegetation, bird, active search
CamQ04	779272	8568534	Camera, vegetation, bird, active search
SQ01	782816	8566409	Trapping, vegetation, bird, active search, bat
SQ02	781055	8566601	Trapping, vegetation, bird, active search, bat
SQ03	779968	8567715	Trapping, vegetation, bird, active search, bat
SQ04	778491	8569480	Trapping, vegetation, bird, active search, bat
Dam	778601	8569335	Bird
SPQ1	778571	8569444	Spotlight
SPQ2	780209	8566893	Spotlight

The Quest 29 area consists predominantly of rugged terrain with very shallow stony lithosols (rudosols) (Foster & Fogarty, 1975). In the west of the Quest 29 area there are low erosional rises with gravelly yellow brown and yellow lithosols and drainage lines with yellow earths (Foster & Fogarty, 1975). In the south-east of the Quest 29 area, there are drainage line and creek landforms with deeper yellow earths (Foster & Fogarty, 1975). Adjacent to these drainage lines are alluvial plains, low hills and strike ridges, and erosional slopes with grassy woodland vegetation (Foster & Fogarty, 1975). Sites assessed during the on-ground survey within the Quest 29 area consisted of gently to steeply sloping low rocky hills, creek lines adjacent to rocky hills, and gently sloping plains. Vegetation community structure varied, being open-woodland, woodland and open forest with an understorey of grasses and forbs.

Flora specimens taken for further identification at the Darwin Herbarium are currently being processed. Therefore, a complete flora species list is not available at this time. However, no threatened flora species or those listed as data deficient or near threatened, were identified during the survey. The most common flora species recorded across the Quest 29 area were *Erythrophleum chlorostachys, Buchanania obovata, Cocholospermum fraseri, Corymbia bleeseri, Eucalyptus miniata* and *Planchonia careya.* Four introduced flora species, *Hyptis suaveolens, Cynodon dactylon, Andropogon gayanus* and *Cenchrus polystachios* were recorded in the Quest 29 area during the on-ground survey. Although Gamba grass is prominent at Toms Gully, it was more restricted at Quest 29. *Hyptis suaveolens* is a class B and class C weed in the NT. *Andropogon gayanus* is a class A and class C weed in the NT, except in the declared management zone, which encompasses an area from Katherine

to Darwin, where it is a class B and class C weed. *Andropogon gayanus* is also a Weed of National Significance (WoNS). *Cenchrus polystachios* is declared a class B and class C weed in the NT. On-site identification of plant species showed several species which were of cultural economic (bush tucker) value, eg *Buchanania obovata*, however, these were widespread.

Fifty-nine fauna species were recorded in the Quest 29 area during the on-ground survey. There were three amphibian, 51 bird, four mammals and one reptile species. There were no threatened fauna species recorded during the on-ground survey. One data deficient species, the blue-winged kookaburra (*Dacelo leachii*) was recorded in the Quest 29 area during the on-ground survey. Four introduced fauna species, the cane toad (*Rhinella marina*), cattle (*Bos Taurus*), pig (*Sus scrofa*) and feral cat (*Felis cattus*) were recorded within the Quest 29 area during the on-ground survey. These species were widespread across the site. Bat calls have not as yet been assessed.

Habitats within Quest 29 consisted predominantly of rocky hills and upland plains surrounded by lower lying plains. The major vegetation community was *Corymbia* spp. and *Eucalyptus* spp. woodland with grassy understorey. No threatened species were identified during the on-ground surveys, despite identification of potentially suitable habitat from the desktop assessment and targeted on-ground survey effort. Weed species identified in the Quest 29 area included *Hyptis suaveolens, Cynadon dactylon, Andropogon gayanus* and *Cenchrus polystachios.* Introduced fauna species included the cane toad (*Rhinella marina*), cattle (*Bos Taurus*) and many pigs (*Sus scrofa*) and feral cat (*Felis cattus*).

The Quest 29 area has undergone prior disturbance from mining, including an open-cut pit and several waste water dams, and from pastoral activities. Therefore much of the potentially suitable threatened species habitat to be impacted by the proposed drilling activities has been disturbed by prior operations. Feral cats and cane toads are currently regionally implicated in decline of many fauna species (Gillespie et al., 2015), perhaps explaining the relatively low numbers of small to mid-size native fauna observed during the survey.

Lauren Young, Bill Low,

27/11/16

APPENDIX E: SECURITY CALCULATION