



Preston
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PRIMARY GOLD LIMITED

TOMS GULLY UNDERGROUND PROJECT

ENVIRONMENTAL MANAGEMENT PLAN

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CONTENTS

LIST OF FIGURES.....	VI
LIST OF TABLES	VI
LIST OF APPENDICES	VII
1 INTRODUCTION.....	1
1.1 Background.....	1
1.2 Purpose.....	4
2 EXISTING ENVIRONMENT	6
2.1 Land Tenure and Ownership.....	6
2.2 Topography and Land Use.....	6
2.3 Geology.....	6
2.4 Surface Water.....	8
2.5 Groundwater.....	9
2.6 Biodiversity.....	11
2.6.1 Flora.....	11
2.6.2 Vegetation.....	11
2.6.3 Terrestrial Fauna.....	11
2.6.4 Aquatic Ecosystem.....	14
2.7 Indigenous and Cultural Heritage.....	14
3 ENVIRONMENTAL MANAGEMENT SYSTEM.....	15
3.1 Environmental Policy.....	16
3.2 Legal and Other Requirements.....	16
3.3 Risk Assessment and Management.....	18
3.4 Training and Awareness.....	18
3.5 Management Structure.....	19
3.6 Roles and Responsibilities.....	19
3.7 Incident Management.....	21
3.8 Audits and Inspections	23
3.9 Communication and Reporting.....	23
3.10 Emergency Response.....	29
4 ENVIRONMENTAL PROCEDURES	30
4.1 Ground Disturbance	31
4.1.1 Objective.....	31
4.1.2 Strategy.....	31
4.1.3 Targets.....	31



4.1.4	Potential Impacts and Mitigation Measures.....	31
4.1.5	Monitoring	32
4.1.6	Contingency Actions.....	32
4.1.7	Reporting.....	33
4.2	Borrow Pits.....	34
4.2.1	Objective.....	34
4.2.2	Strategy.....	34
4.2.3	Targets.....	34
4.2.4	Potential Impacts and Mitigation Measures.....	34
4.2.5	Monitoring	36
4.2.6	Contingency.....	36
4.2.7	Reporting.....	36
4.3	Fire.....	37
4.3.1	Objective.....	37
4.3.2	Strategy.....	37
4.3.3	Targets.....	37
4.3.4	Potential Impacts and Mitigation Measures.....	37
4.3.5	Monitoring	39
4.3.6	Contingency Actions.....	39
4.3.7	Reporting.....	39
4.4	Noise and Vibration.....	40
4.4.1	Objective.....	40
4.4.2	Strategy.....	40
4.4.3	Targets.....	40
4.4.4	Potential Impacts and Mitigation Measures.....	40
4.4.5	Monitoring	41
4.4.6	Contingency Actions.....	42
4.4.7	Reporting.....	42
4.5	Waste.....	43
4.5.1	Objective.....	43
4.5.2	Strategy.....	43
4.5.3	Targets.....	43
4.5.4	Potential Impacts and Mitigation Measures.....	43
4.5.5	Monitoring	44
4.5.6	Contingency actions.....	44
4.5.7	Reporting.....	45



4.6	<i>Air Emissions</i>	45
4.6.1	<i>Objective</i>	45
4.6.2	<i>Strategy</i>	45
4.6.3	<i>Targets</i>	46
4.6.4	<i>Potential Impacts and Mitigation Measures</i>	46
4.6.5	<i>Monitoring</i>	47
4.6.6	<i>Contingency Actions</i>	47
4.6.7	<i>Reporting</i>	47
4.7	<i>Erosion and Sediment Control</i>	48
4.7.1	<i>Objective</i>	48
4.7.2	<i>Strategy</i>	48
4.7.3	<i>Targets</i>	48
4.7.4	<i>Potential Impacts and Mitigation Measures</i>	48
4.7.5	<i>Monitoring</i>	49
4.7.6	<i>Contingency Actions</i>	50
4.7.7	<i>Reporting</i>	50
4.8	<i>Biting Insects</i>	51
4.8.1	<i>Objective</i>	51
4.8.2	<i>Strategy</i>	51
4.8.3	<i>Targets</i>	51
4.8.4	<i>Potential Impacts and Mitigation Measures</i>	51
4.8.5	<i>Monitoring</i>	52
4.8.6	<i>Contingency Actions</i>	53
4.8.7	<i>Reporting</i>	53
4.9	<i>Culture and Aboriginal Heritage</i>	54
4.9.1	<i>Objective</i>	54
4.9.2	<i>Strategy</i>	54
4.9.3	<i>Targets</i>	54
4.9.4	<i>Potential Impacts and Mitigation Measures</i>	54
4.9.5	<i>Monitoring</i>	55
4.9.6	<i>Contingency Actions</i>	56
4.9.7	<i>Reporting</i>	56
4.10	<i>Social and Community</i>	57
4.10.1	<i>Objective</i>	57
4.10.2	<i>Strategy</i>	57
4.10.3	<i>Targets</i>	57



	4.10.4 Potential Impacts and Mitigation Measures.....	57
	4.10.5 Monitoring	58
	4.10.6 Contingency Actions.....	58
	4.10.7 Reporting.....	58
5	REFERENCES.....	60
6	GLOSSARY	61

LIST OF FIGURES

Figure 1:	Location Plan.....	2
Figure 2:	TGU Project Infrastructure Layout.....	3
Figure 3:	Geology	7
Figure 4:	Vegetation Mapping.....	13
Figure 5:	TGU Project EMS	15
Figure 6:	EMS Documentation Structure	16
Figure 7:	Primary Gold Management Structure	19
Figure 8:	Incident Reporting Process	22

LIST OF TABLES

Table 1:	Terms of Reference EMP Requirements.....	4
Table 2:	Register of Ownership for Mining Interests.....	6
Table 3:	SWTG2 Surface Water Quality Data – July 2002 to February 2015 (GHD, 2015a)	8
Table 4:	Summary of Major Ion data (AGE, 2015)	10
Table 5:	Trace Metals in Groundwater (AGE, 2015)	10
Table 6:	Legal and Other Requirements	17
Table 7:	Preliminary Communications Schedule.....	25
Table 8:	Potential impacts and mitigation measures for ground disturbance.....	31
Table 9:	Ground disturbance monitoring requirements	32
Table 10:	Ground disturbance contingency actions	33
Table 11:	Summary of ground disturbance reporting.....	33
Table 12:	Potential impacts and mitigation measures for borrow pits.....	35
Table 13:	Borrow pit monitoring requirements	36
Table 14:	Borrow pit contingency actions.....	36
Table 15:	Borrow pit reporting requirements.....	37
Table 16:	Potential impacts and mitigation measures for fire.....	38
Table 17:	Fire monitoring requirements	39
Table 18:	Fire contingency actions.....	39
Table 19:	Fire reporting requirements.....	39
Table 20:	Potential impacts and mitigation measures for noise and vibration	41
Table 21:	Noise and vibration monitoring requirements	42
Table 22:	Noise and vibration contingency actions.....	42
Table 23:	Noise and vibration reporting requirements.....	42



Table 24: Potential impacts and mitigation measures for waste.....	43
Table 25: Waste monitoring requirements.....	44
Table 26: Waste contingency actions	44
Table 27: Reporting requirements for waste.....	45
Table 28: Potential impacts and mitigation measures for air emissions.....	46
Table 29: Air emissions monitoring requirements.....	47
Table 30: Contingency actions for air emissions	47
Table 31: Reporting requirements for waste.....	47
Table 32: Potential impacts and mitigation measures for erosion and sediment control	49
Table 33: Erosion and sediment control monitoring requirements.....	50
Table 34: Erosion and sediment control contingency actions	50
Table 35: Erosion and sediment control reporting requirements	50
Table 36: Potential impacts and mitigation measures for biting insects.....	51
Table 37: Biting insect monitoring requirements.....	53
Table 38: Biting insect contingency actions.....	53
Table 39: Biting insect reporting requirements.....	53
Table 40: Potential impacts and mitigation measures for Aboriginal heritage	54
Table 41: Aboriginal heritage monitoring requirements.....	55
Table 42: Cultural and Aboriginal heritage contingency actions.....	56
Table 43: Cultural and Aboriginal heritage reporting requirements.....	56
Table 44: Potential impacts and mitigation measures for social and community	57
Table 45: Social and community monitoring requirements	58
Table 46: Social and community contingency actions.....	58
Table 47: Social and community reporting requirements.....	58

LIST OF APPENDICES

Appendix A: Environmental Impact Statement Commitments

Appendix B: Environmental Policy



1 INTRODUCTION

1.1 BACKGROUND

Toms Gully is an existing, non-operating mine, located within the Old Mount Bunday Station, approximately 90 km south-east of Darwin (Figure 1). The mine was operational for periods from 1988 and has been in care and maintenance since February 2011. Existing mine infrastructure comprises of an open pit and underground mine, access roads, 22 kv power reticulation, processing facility, two waste rock dumps (WRD's), two tails storage facilities (TSF's), two evaporation dams, drains and sumps, maintenance shed and lay-down yard, stores shed and yards and administration offices.

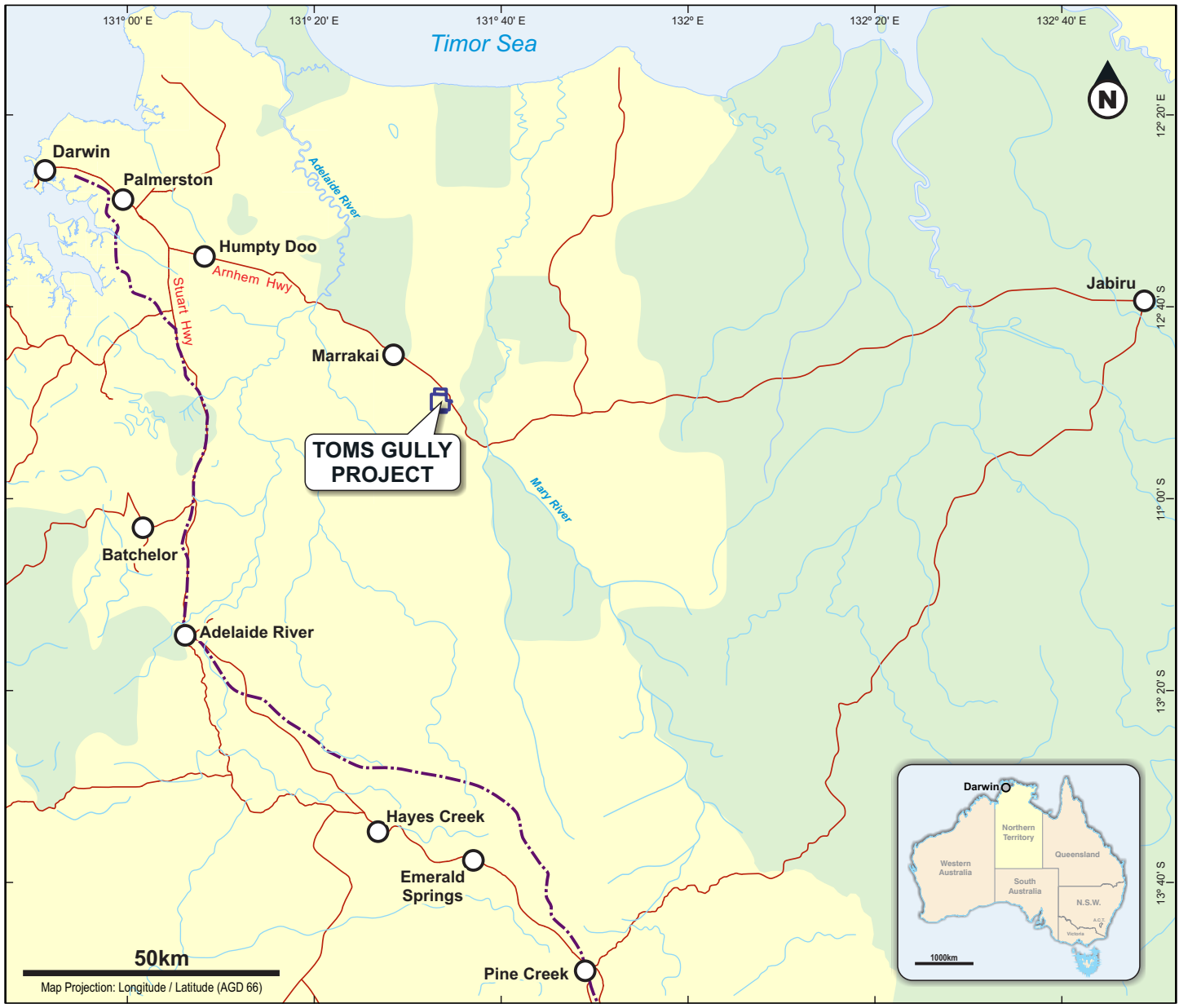
Primary Gold Ltd (Primary Gold) acquired the existing mine site in 2013 and is proposing to develop a new underground mining phase at Toms Gully. The proposed Toms Gully Underground Project (TGU Project) comprises of the following works as illustrated in Figure 2:

- Mining underground to the south of the existing underground workings;
- Extraction of up to 350,000 tonnes per annum (tpa) of ore over four years;
- Removal of approximately 720,000 tpa of waste rock, replaced underground or in the base of the existing pit (no external storage of waste rock);
- Conventional Carbon in Leach gold processing plant and ancillaries renovated and re-used;
- Storage of approximately 830,000 t of tailings in a raised TSF or in the base of the existing pit at cessation of mining;
- New 2.1 GL water supply dam (WSD);
- Treatment of pit water, then storage in the WSD to facilitate mine dewatering; and
- Clearing of approximately 93 ha of native vegetation for the construction of the WSD.

Existing infrastructure not proposed to be used as part of the TGU Project include the WRDs and TSF 1.

The TGU Project is expected to have an operational life of up to four years, produce approximately 144,000 ounces of gold dore, provide 104 jobs and allow for improvements to be made to the existing Toms Gully site.

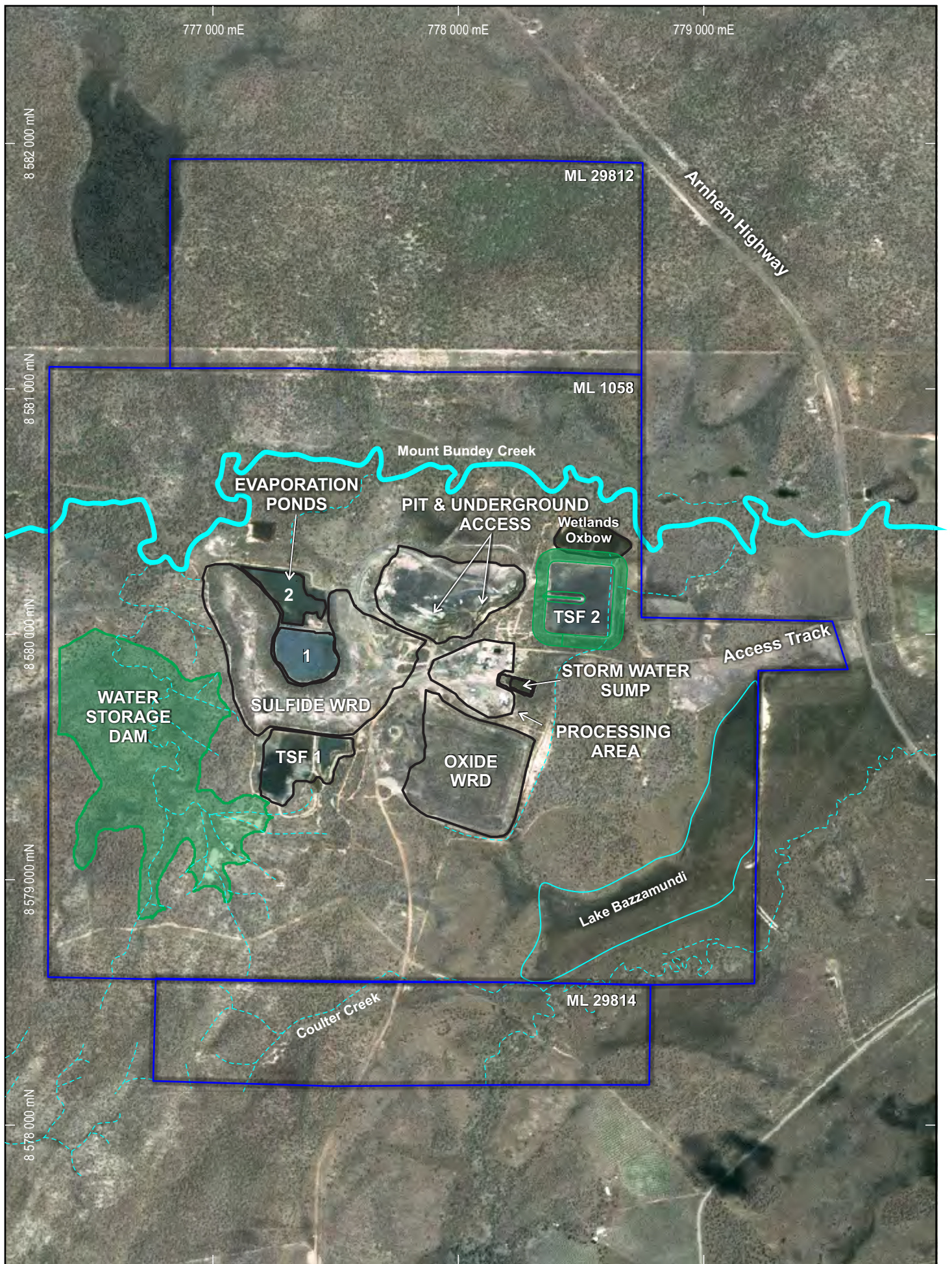




- Legend**
- National Parks
 - Rail
 - Road
 - Drainage

Figure 1: Location Plan





- Legend**
- Proposed Infrastructure
 - Minor Watercourse
 - Major Watercourse



1km

Figure 2: TGU Project Infrastructure Layout

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1.2 PURPOSE

The 2013/2014 Mining Management Plan (MMP) was submitted to the Department of Mines and Energy (DME), who referred it to the Northern Territory Environmental Protection Authority (EPA) for consideration under the *Environmental Assessment Act 1982 (NT)* (as amended). In April 2014 the EPA determined that the TGU Project would require assessment at the level of Environmental Impact Statement (EIS).

The EPA’s decision was based on an assessment of potential risks. The EPA released the *Terms of Reference for the Preparation of an EIS* for the TGU Project in November 2014. The Terms of Reference (ToR) was developed to assist Primary Gold in preparing an EIS for the TGU Project.

The ToR recommends that the EIS should contain an Environmental Management Plan (EMP) that describes a framework for continuing management, mitigation and monitoring programs for the relevant impacts of the TGU Project. A list of the EMP requirements as set out in the ToR is provided in Table 1 below. The sections of the EMP where the ToR EMP requirements have been addressed have also been provided. Note that specific EMPs have been prepared for water management, acid mine drainage management, traffic management, hazardous materials management, mine closure management, emergency management and biodiversity management consistent with the ToR.

Table 1: Terms of Reference EMP Requirements

Terms of Reference EMP Requirement	Section in EMP
Proposed management structure of the TGU Project and its relationship to the environmental management of the site, including personnel responsible for maintaining and approving the EMP	Section 3.5 and 3.6
Description of the main elements of the environmental management system and reference to related documents determined by the Proponent to be necessary to ensure the effective planning, operation and control processes that relate to the environmental management system	Section 3
A register of ownership for the mining interests associated with the TGU Project, including the title numbers, title holders and status	Section 2.1
Proposed reporting procedures consistent with Territory and Australian Government legislative requirements	Section 3.2 and 3.9
A summary table listing the commitments made in the EIS, including clear timelines for key commitments and performance indicators, with cross-references to the text of the EIS	Appendix A
Management targets and objectives for relevant environmental impacts and/or factors	Section 4
Performance indicators by which all anticipated and potential impacts can be measured	Section 4
Proposed monitoring programs to allow early detection of adverse impacts	Section 4
Sampling procedures and frequency	Refer to Water Management Plan
Contingencies for emergency events, such as hydrocarbon and other hazardous chemical spills or natural disasters	Section 3.10 and 4
Procedures for dealing with failure to meet performance criteria and targets, non-compliance with environmental management controls, environmental incidents and emergencies	Section 4
Contingency and reactive management for when interpretation of the monitoring data or other observations detect potential for impact or actual adverse trends in performance. Detail should be provided of when remedial/corrective strategies and actions will be implemented. Include	Section 4



Terms of Reference EMP Requirement	Section in EMP
scopes of work where appropriate together with a commitment to an implementation timetable and any modifications to the monitoring program required in order to assess the performance of the actions	
Overview of the environmental awareness training and education process regarding responsibilities, including: <ul style="list-style-type: none"> • The induction program (e.g. general, site, department) • Communication of the requirements of the EMP to all employees and contractors • Environmental emergency response training • Particular training requirements for targeted personnel • Any other environmental training or education requirements 	Section 3.3
Provision for the periodic review of the EMP	Section 1.2
Provision for independent environmental auditing of the TGU Project	Section 3.8

This EMP has been developed to address the ToR. It will be reviewed when environmental risks or incidents require its review and amendment. Upon review, the EMP will be revised where appropriate and the revision status updated.



2 EXISTING ENVIRONMENT

2.1 LAND TENURE AND OWNERSHIP

The TGU Project site is located entirely within Mineral Lease MLN 1058, which lies within Old Mount Bunday Station (Perpetual Pastoral Lease 1163, NT Portion 4937). MLN 1058 covers an area of 681 ha and is solely owned by Primary Minerals NL. Primary Minerals N.L is a wholly-owned subsidiary of ASX-listed company Primary Gold. A number of additional tenements owned by Primary Minerals NL are located to the North and South of MLN 1058. A list of the mining interests associated with the TGU Project is provided in Table 2 and illustrated in Figure 2.

Table 2: Register of Ownership for Mining Interests

Title No.	Holder	Status	Area	Comment
MLN1058	Primary Minerals NL	Granted	681 ha	TGU Project located entirely within this lease
ML29812	Primary Minerals NL	Granted	158 ha	Directly North of TGU Project
ML29814	Primary Minerals NL	Granted	84 ha	Directly South of TGU Project

2.2 TOPOGRAPHY AND LAND USE

The land surface at the TGU Project site comprises of a series of small ridges and dissected hills drained by small stream channels which flow north into Mount Bunday Creek located approximately 300 m north of the existing open pit. The surface elevation of the TGU Project site reaches 51 m Australian Height Datum (AHD) in the southwest corner of MLN 1058 and falls to 16 m AHD in the low-lying areas.

Land use of the wider region is dominated by pastoralism and conservation. Other land uses include defence training, mining, tourism and recreation, wildlife harvesting, commercial fishing and horticulture.

2.3 GEOLOGY

Wildman Siltstone forms the basement rock at the TGU Project site and consists of predominantly banded, dark grey siltstone, and black, silty shale, with beds of quartz sandstone. The geological units outcropping at the surface in and surrounding the mine site are illustrated in Figure 3.

Gold mineralisation at Toms Gully is hosted by a quartz vein that has in-filled an unnamed thrust fault within the Wildman Siltstone. The quartz vein consists of quartz, laminated with black shale and sulphides, and is quite variable in nature.



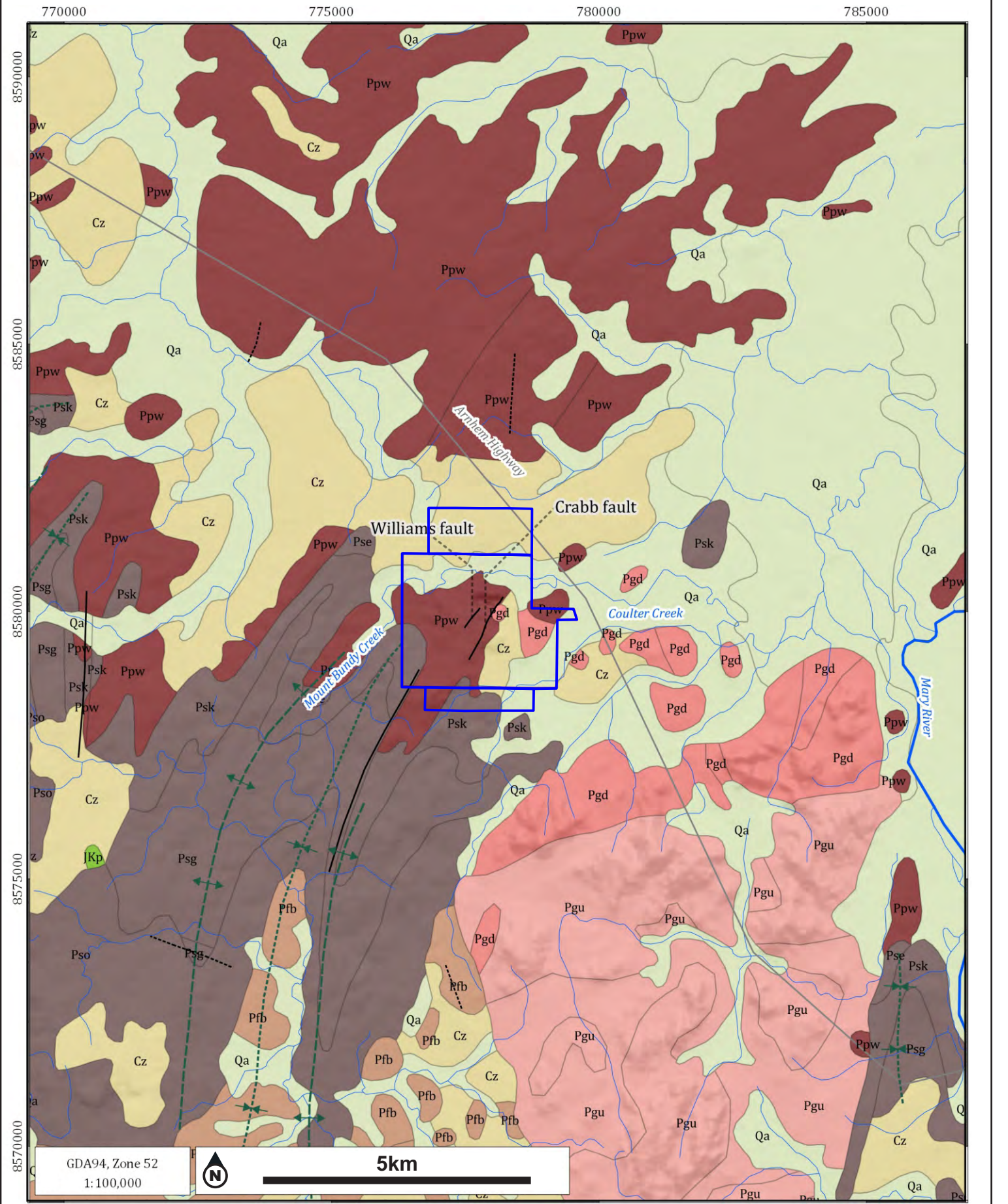


Figure 3: Geology

2.4 SURFACE WATER

The TGU Project is located within the Mount Bunday Creek catchment. The total catchment area upstream from the mine is approximately 117 km². Mount Bunday Creek flows west to east along the northern section of the TGU Project area.

Coulter Creek is a tributary of Mount Bunday Creek and flows southwest to east (to the south of the TGU Project area). Coulter Creek flows into Mount Bunday Creek downstream of the TGU Project area.

Mount Bunday Creek is approximately 30 km long with 13 km upstream of the mine site. The creek has several tributaries upstream of the TGU Project area. Downstream from the mine site it drains into Hardies Creek, and then the Mary River.

Historical water quality data for compliance monitoring site SWTG2 is presented in Table 3 and has been compared to Site Specific Trigger Values developed by GHD (GHD, 2015a). Site SWTG2 is located at the Arnhem Highway crossing of Mount Bunday Creek; approx. 800 m downstream of the TGU Project site. This data indicates that receiving waters are often subject to elevated turbidity levels and elevated dissolved concentrations of metals such as cobalt, copper and zinc. Electrical Conductivity (EC) levels have also been found to be occasionally high.

Table 3: SWTG2 Surface Water Quality Data – July 2002 to February 2015 (GHD, 2015a)

Analyte	Units	N	Min	Median	Max	SSTV
Physiochemical Characteristics						
pH	pH	212	3.38	6.25	7.94	5.8-8.0
Electrical Conductivity	µS/cm	213	12	97	1,351	20-250
Turbidity	NTU	2	35	59.5	84	15
Total Suspended Solids	mg/L	87	<5	12	140	32
Temperature	°C	72	19.8	28	37.1	-
Environmental Indicators						
Hardness (CaCO ₃)	mg/L	79	<3	16	160	-
Carbonate (CO ₃)	mg/L	85	0	2.5	<5	-
Bicarbonate (HCO ₃)	mg/L	118	<1	17.5	134.1	-
Alkalinity (CaCO ₃)	mg/L	86	<1	17	44	-
Calcium	mg/L	113	<0.1	3.4	121	-
Magnesium	mg/L	80	<0.5	1.8	120	-
Potassium	mg/L	79	0.7	1.2	3.2	-
Sodium	mg/L	111	<0.1	3.7	52.1	-
Chloride	mg/L	79	<1	2	9	-
Cyanide	mg/L	6	<0.004	0.005	0.02	0.018



Analyte	Units	N	Min	Median	Max	SSTV
Sulfate	mg/L	133	<1	18	1,640	129
Ammonia	mg/L	2	0.165	0.5875	1.01	2.3
Metals/Metalloids (Filtered)						
Aluminium	µg/L	145	0.4	110	14,000	260
Arsenic (total)	µg/L	163	0.6	0.95	5	140
Cadmium	µg/L	163	0.04	0.68	28	0.8
Chromium	µg/L	82	0.4	0.5	2	40
Cobalt	µg/L	163	0.15	4	227	1.4
Copper	µg/L	163	0.96	3	223	2.5
Iron	µg/L	162	<20	290	1,800	430
Lead	µg/L	122	<0.01	0.5	3.77	9.4
Manganese	µg/L	166	<5	185	12,500	3,600
Molybdenum	µg/L	45	<0.05	0.25	207	34
Nickel	µg/L	142	<1	6.95	355	17
Uranium	µg/L	55	0.051	0.20	5.5	0.5
Zinc	µg/L	165	2	42	1,430	31

**Bold red figures indicate an exceedance of the SSTVs when compared with the median (as recommended by ANZECC 2000, Section 7.4.4) of the test data.*

Water management for the TGU Project will be implemented according to the Water Management Plan (GHD, 2015).

2.5 GROUNDWATER

Three aquifer systems exist within the TGU Project site:

- Upper weathered profile within the Wildman Siltstone;
- Fractured Wildman Siltstone; and
- Orebody and the Crabb Fault zone.

Previous reports indicate that the pre-mining groundwater flow direction was from the south to the north with a hydraulic gradient of 0.005. Groundwater contours across the site are generally south west to north east, with the resultant general flow direction of north east (AGEC 2015).

A recent survey of the site showed water levels in the open pit to be approximately 1004 mRL (mine datum). Groundwater levels in bores G9 and WB3 located to the north of the pit were recorded to be 1014 mRL and 1012 mRL respectively. Bores to the south of the pit also recorded groundwater levels above the level in the pit. This indicates that the pit is currently a groundwater sink where groundwater flows toward this local low point (AGEC 2015).



Groundwater quality data has also been recorded from bores located within and around the TGU Project site. A summary of major ion concentrations from historical groundwater quality data is presented in Table 4. EC data shows that groundwater at the TGU Project site is fresh. Values for pH range from 3.3 to 8.6, indicating strongly acidic to slightly alkaline conditions are present in the TGU Project area, however the median value of 6.9 indicates neutral conditions dominate.

Table 4: Summary of Major Ion data (AGE, 2015)

Analyte	EC	pH	Cl	SO ₄	HCO ₃	Na	K	Ca	Mg	SiO ₂	F
No. of samples	138	139	123	128	122	132	132	132	131	26	72
Min.	34.3	3.3	1	<1	<0.1	<1	0.4	<1	<1	0.1	<1
Max.	4,755	8.6	47	3,500	630	100	459	569	570	2.8	430
Geomean	494.3	6.5	7.5	46.4	127	10.4	4.1	40.2	23.7	0.5	101.2
Median.	405	6.9	8	38.5	170	12	4.15	52	18	0.45	130

*Note: Units for EC are $\mu\text{S}/\text{cm}$
 Major ions are in mg/L*

Groundwater on site is relatively young and represents recent recharge. Samples which show elevated SO₄ are affected by sulphide oxidation. These elevated levels may be due to acid leachate contamination (low pH water) from the existing sulphide and oxide waste dumps.

A summary of trace metal concentrations from groundwater samples collected between 2010 and 2014 is presented in Table 5. The groundwater samples show a large range of dissolved metal concentrations due to the presence of fresh natural groundwater (low in dissolved constituents) and samples which are affected by acid mine drainage from the existing facilities.

Table 5: Trace Metals in Groundwater (AGE, 2015)

Analyte*	Al	As	Cd	Co	Cr	Cu	Fe	Pb	Mn	Ni	Zn
No. of samples	61	61	61	61	61	61	84	61	65	61	61
Min	0.5	0.5	0.05	0.5	0.5	0.5	0.3	0.5	0.05	0.5	0.5
Max	13,000	280	90	1,200	1	1,700	85,000	140	31,000	1,900	6,400
Geomean	19.8	2.6	0.4	6.2	0.5	2.8	79.3	1.1	410	11.1	36.8
Median	18	2	0.2	4	0.5	0.5	64	0.5	340	6	25

** All units are in mg/L*

Groundwater management for the TGU Project will be implemented according to the Water Management Plan (WMP) (GHD, 2015b).



2.6 BIODIVERSITY

This section briefly describes the existing biodiversity status of the TGU Project site. Further information regarding the biodiversity status of the TGU Project is provided in the Biodiversity Management Plan (Preston Consulting, 2015).

2.6.1 FLORA

A search of the Department of the Environment's Protected Matters Search Tool (PMST) was used to identify Listed Threatened Flora species potentially occurring in the TGU Project area. The PMST identified that three threatened flora species had the potential to occur within the TGU Project area. A further assessment by GHD (2015c) determined that none of the three threatened flora species would possibly occur in the TGU Project site.

2.6.2 VEGETATION

The following four vegetation types based on the National Vegetation Information System were identified at the TGU Project site and are illustrated in Figure 4:

- Darwin Stringybark (*Eucalyptus tetradonta*), Darwin Woollybutt (*Eucalyptus miniata*) and Ironwood (*Erythrophleum chlorostachys*) open woodland to open forest;
- Paperbark (*Melaleuca* spp.) woodland to open forest;
- Riparian forest corridor; and
- Cleared areas.

2.6.3 TERRESTRIAL FAUNA

A search of the PMST and NT Department of Land Resource Management (DLRM) database results identified 28 threatened fauna species predicted or known to occur within a 10 km buffer of the TGU Project site. This includes eight mammals, 15 birds, four reptiles and one fish. The results also included for eleven migratory species predicted or known to occur in the study area (under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)) (GHD, 2015c).

The likelihood of occurrence of these threatened and migratory species occurring within the 10 km buffer was further assessed. Spatial data including vegetation, soils and landform data, and aerial imagery, sourced from the DLRM was interrogated to determine the likely presence or absence of threatened or Migratory species' habitat within or adjacent to the TGU Project mine site. This information was cross referenced against literature relating to the habitat requirements of the species, and DLRM fauna species records from the study area, to determine whether the species' habitat is present or likely to be present. The findings of this are summarised below:

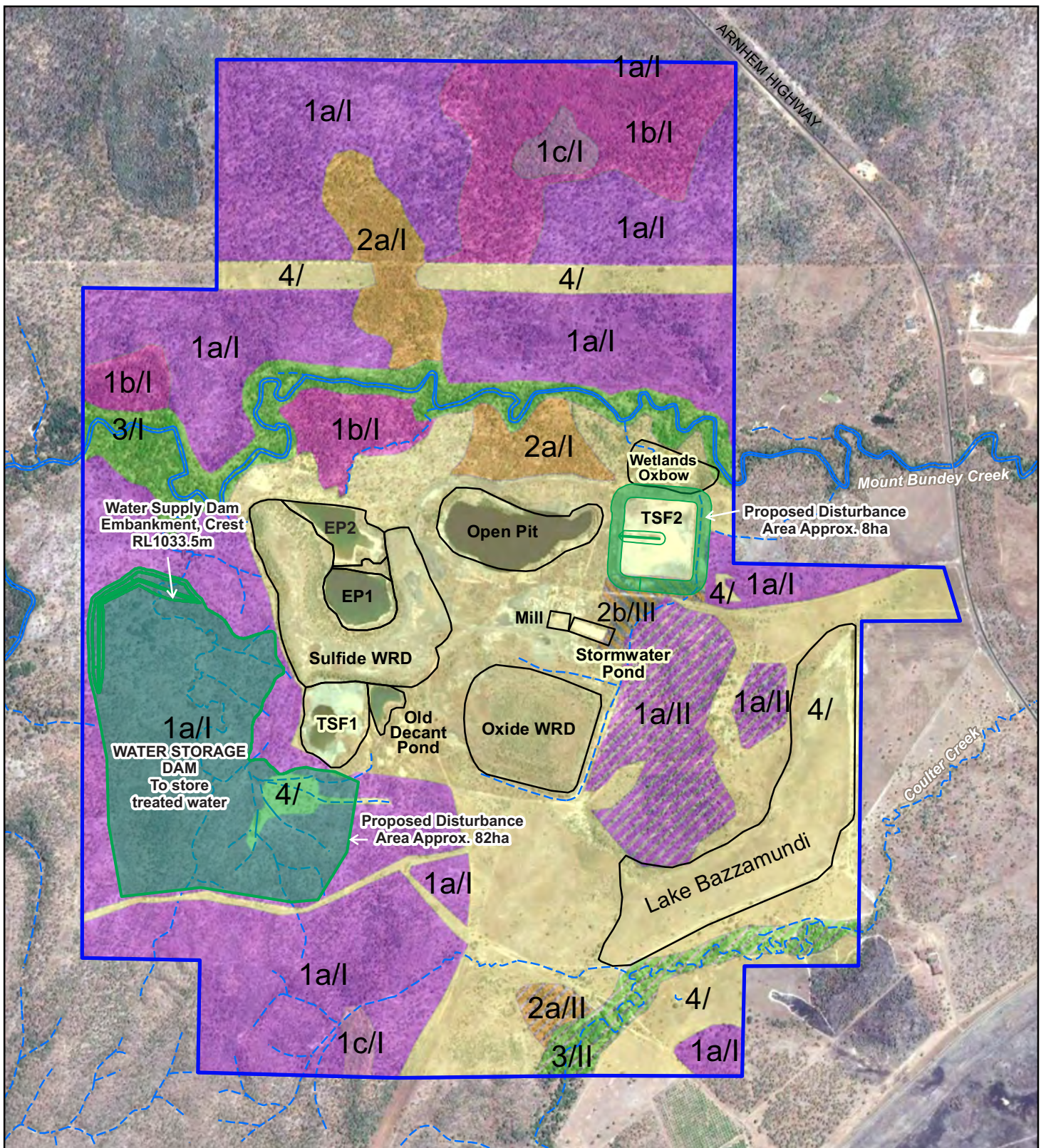
- Of the 3 threatened flora species, none are expected to occur at the TGU Project mine site.
- Of the four threatened mammals determined as possibly occurring on or within the 10 km buffer of the TGU Project mine site, only the Northern Quoll, Black-footed Tree Rat



and Pale Field Rat have been sighted or recorded in recent times (i.e. within the last 25 years).

- Of the 6 listed threatened bird species, 2 have been determined as possibly occurring within the TGU Project mine site, and both of these, the Gouldian Finch and the partridge pigeon, are listed as Vulnerable under the EPBC Act and *Territory Parks and Wildlife Conservation Act 2006 (NT)* (as amended) (TPWC).
- Of the 11 Migratory bird species that were predicted to occur, 2 are listed as threatened and 1 has been determined as possibly occurring within the mine site. Both Migratory species have a preference for wetland habitats but are likely to use multiple habitat areas.
- Three reptile species, two of them listed as Vulnerable under EPBC, and one as Migratory, have been determined as possibly occurring within the mine site.





Mine Site Layout
 Disturbance Areas
 Site Boundary

Figure 4: Vegetation Mapping

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VEGETATION TYPE	
1a I	1b I
1a II	1c I
2a I	3 I
2a II	3 II
2b III	4

VEGETATION TYPE
 1a Darwin Stringybark (*Eucalyptus tetradonta*), Darwin Woollybutt (*E. miniata*) and Ironwood (*Erythrophleum chlorostachys*) open woodland
 1b Darwin Stringybark (*Eucalyptus tetradonta*), Darwin Woollybutt (*E. miniata*) and Ironwood (*Erythrophleum chlorostachys*) woodland
 1c Ironwood (*Erythrophleum chlorostachys*) open forest
 2a Paperbark (*Melaleuca spp.*) woodland
 2b Paperbark (*Melaleuca spp.*) open forest
 3 Riparian Forest Corridor
 4 Cleared Areas

VEGETATION CONDITION
 I Largely undisturbed native Eucalypt woodlands
 II Modified - native Eucalypt and Paperbark woodlands impacted by grazing
 III Transformed - Grazed grassland with isolated trees or native woody regrowth



GDA 1994 MGA Zone 52

2.6.4 AQUATIC ECOSYSTEM

An aquatic ecology survey of the TGU Project area was undertaken by GHD in April 2015 (GHD, 2015d). The survey was undertaken at 13 sites and focussed on macroinvertebrate community sampling, fish community sampling and aquatic habitat assessment. The following was determined from the survey:

- 13 of 37 freshwater fish species known to the broader study region were recorded;
- 47 macroinvertebrate taxa were recorded from the study area from 11 sites. This comprised of seven Plecoptera, Ephemeroptera and Trichoptera (PET) taxa, two of which are pollution-sensitive. The majority of taxa however are high to moderately pollution-tolerant taxa;
- Some sites featured low pH;
- Widespread instances of low dissolved oxygen content; and
- Turbidity levels were low and generally within or only slightly exceeding the SSTV for turbidity (GHD, 2015d).

2.7 INDIGENOUS AND CULTURAL HERITAGE

A search of the NT Heritage Register was undertaken and identified that there are no nominated, provisional or declared heritage places located within the area of NT Portion 4937 (Old Mount Bunday Station) that incorporates the TGU Project site.

A search was also undertaken of the NT Archaeological Sites Database and this showed that there are no previously recorded Aboriginal archaeological sites located within the existing Toms Gully Mine footprint.

As much of the area has already been subject to previous land and vegetation clearing, it is very unlikely that there would be any Aboriginal archaeological sites located within the former footprint (DLPE letter, March 2015).

The Aboriginal Areas Protection Authority (AAPA) provided an Authority Certificate dated 30 July 2015 for the proposed mining activities.



3 ENVIRONMENTAL MANAGEMENT SYSTEM

Primary Gold has a strong commitment to responsible environmental management. Primary Gold will continue to develop its Environmental Management System (EMS) to enable systematic assessment and review of environmental impacts and obligations to be fulfilled (Figure 5). Details of the following components of the EMS are described throughout the remainder of this Section:

- Environmental Policy;
- Legal and Other Requirements;
- Incident Reporting and Management;
- Training and Awareness;
- Management Structure;
- Roles and Responsibilities;
- Reporting; and
- Review and Auditing; and Emergency Response.

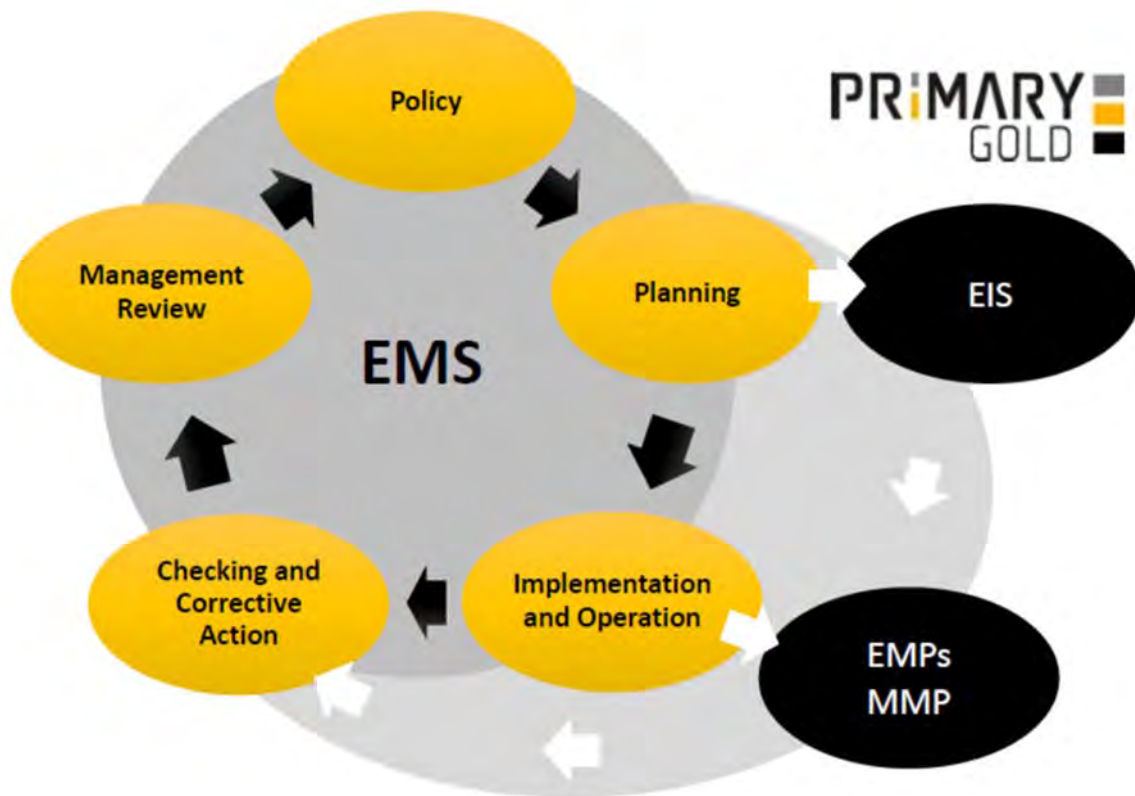


Figure 5: TGU Project EMS

An outline of the proposed EMS documentation structure is provided in Figure 6 below. The Primary Gold Environmental Policy is the overarching environmental document for the TGU Project. Beneath the Policy lie the EIS commitments and the TGU Project Risk Register. The Risk Register has been developed with input from subject matter experts and forms the basis for identifying environmental risks and appropriate controls to ensure they are managed to acceptable levels. A TGU Project EMP and various Topic EMP's (Acid Mine Drainage, Water, Biodiversity, Hazardous Materials, Emergency Response, Traffic, Mine Closure and Health and



Safety) have been developed to manage the impacts associated with the risks identified in the Risk Register.

The Risk Register is to be reviewed and updated on an annual basis, with changes to other system elements made accordingly. The annual review provides a cornerstone for continual improvement of environmental performance.

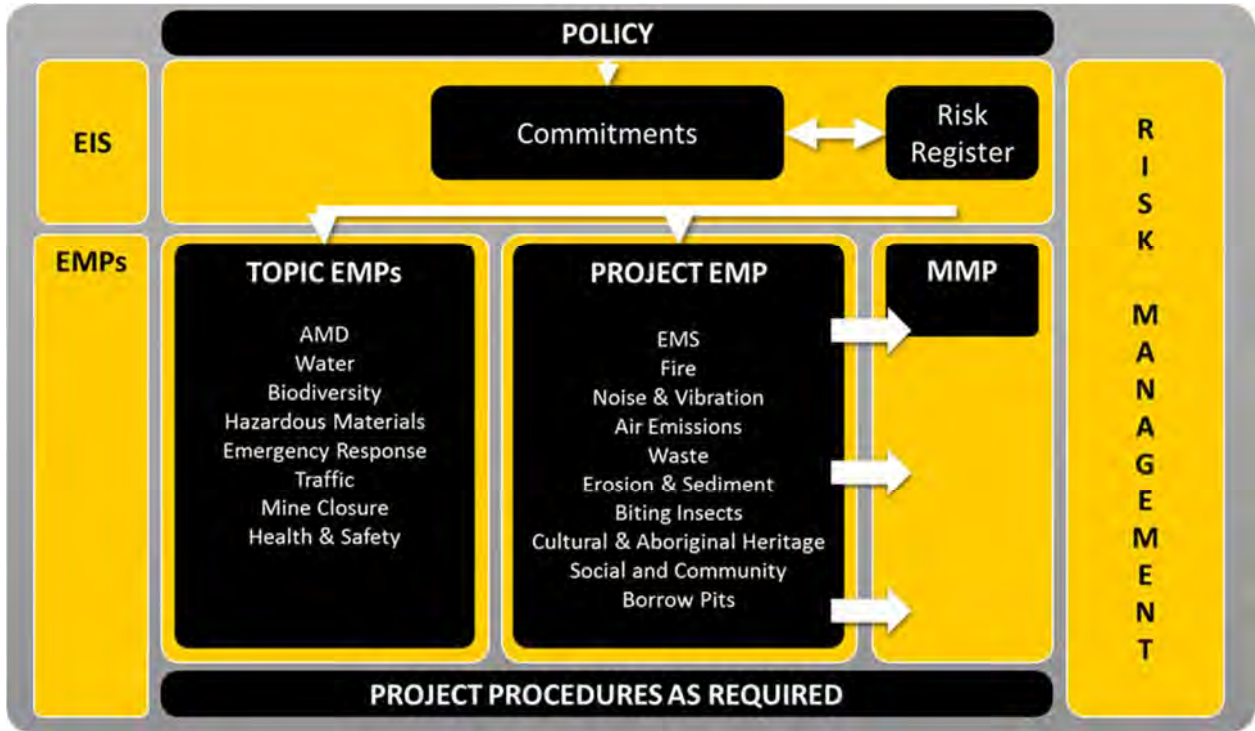


Figure 6: EMS Documentation Structure

3.1 ENVIRONMENTAL POLICY

The Primary Gold Environmental Policy (Environmental Policy) outlines Primary Gold’s commitment to promote sound environmental and community engagement practices, and to undertake all works in accordance with the relevant environmental regulatory requirements. The policy shall be reviewed and updated if required on an annual basis. Copies of the Environmental Policy shall be displayed in prominent locations throughout the TGU Project site. A copy of the Environmental Policy is also included in Appendix B.

3.2 LEGAL AND OTHER REQUIREMENTS

A register shall be developed for the TGU Project that outlines the legal and other requirements applicable to the TGU Project. This register shall be maintained and updated throughout the life of the TGU Project. A summary of key environmental legal and other requirements that may be applicable to the TGU Project is provided in Table 6.



Table 6: Legal and Other Requirements

State (Northern Territory)	Commonwealth
<ul style="list-style-type: none"> • <i>Australasia Railway (Special Provisions) Act 1999</i> • <i>Building Act 1993</i> • <i>Bushfires Act 1980</i> • <i>Control of Roads Act 1953</i> • <i>Crown Lands Act 1992</i> • <i>Dangerous Goods Act 1998</i> • <i>Dangerous Goods (Road and Rail Transport) Act 2003</i> • <i>Disasters Act 2008</i> • <i>Electrical Workers and Contractors Act 1978</i> • <i>Energy Pipelines Act 1981</i> • <i>Environmental Assessment Act 1982</i> • <i>Environmental Offences and Penalties Act 1996</i> • <i>Fences Act 1972</i> • <i>Heritage Act 2011</i> • <i>Lands, Planning and Mining Tribunal Act 1998</i> • <i>Litter Act 1972</i> • <i>Minerals Royalty Act 1982</i> • <i>Minerals (Acquisition) Act 1953</i> • <i>Minerals Titles Act 2010</i> • <i>Mining Act 2005</i> • <i>Mining Management Act 2001</i> • <i>Motor Vehicles Act 1979</i> • <i>Northern Territory Aboriginal Sacred Sites Act 1989</i> • <i>Northern Territory Employment and Training Authority Act 1999</i> • <i>Northern Territory Land Corporation Act 1989</i> • <i>Northern Territory Rail Safety Act 2010</i> • <i>Ozone Protection Act 1989</i> • <i>Parks and Wildlife Commission Act 1977</i> • <i>Pastoral Land Act 2011</i> • <i>Plant Health Act 2009</i> • <i>Public Health Act 2010</i> • <i>Soil Conservation and Land Utilisation Act 1980</i> • <i>Territory Parks and Wildlife Conservation Act 2006</i> • <i>Traffic Act 2012</i> • <i>Validation (Mining Tenements) Act 1987</i> • <i>Waste Management and Pollution Control Act 1998</i> • <i>Water Act 2011</i> • <i>Weeds Management Act 2001</i> • <i>Work Health and Safety (National Uniform Legislation) Act 2011</i> 	<ul style="list-style-type: none"> • <i>Aboriginal Land Rights (Northern Territory) Act 1984</i> • <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> • <i>Australian Heritage Council Act 2003</i> • <i>Environment and Heritage Legislation Amendment Act (No 1) 2003</i> • <i>Environment and Heritage Legislation Amendment Act (No 1) 2006</i> • <i>Environment Protection and Biodiversity Conservation Act 1999</i> • <i>Native Title Act 1993</i> • <i>National Environmental Protection Measures (NEPM) 1998</i>



3.3 RISK ASSESSMENT AND MANAGEMENT

This EMP has been prepared to address the environmental risks identified for the TGU Project. The TGU Project's environmental risks were determined following a series of risk assessment workshops undertaken in 2015. A TGU Project Risk Register was subsequently developed that lists all the identified environmental risks.

Environmental procedures and management plans have been developed to minimise the adverse impacts associated with these environmental risks. These procedures and management plans outline the objectives, targets, mitigation, monitoring, contingency and reporting actions to manage the identified risks (controls). Further details on these procedures and management plans are provided in Section 4.

3.4 TRAINING AND AWARENESS

An environmental induction shall be developed specifically for the TGU Project. All employees and contractors shall be required to undertake the induction prior to the commencement of any works. The environmental induction shall include details of:

- TGU Project site;
- EMS;
- Key environmental risks;
- EMP requirements;
- Personnel responsibilities; and
- Incident management and reporting.

All health, safety and environmental policies shall be communicated to employees and contractors. All employees/contractors will be responsible for adherence to corporate and site policies as part of their duty of care and employment contract conditions. Implementation of the policies is to be achieved by:

- Employment strategies;
- Copies of policies and management plans included in tender documents and contracts;
- Induction of employees, contractors, contractor's employees and visitors;
- Displaying of policies in work areas;
- TGU Project management plans, procedures and standards;
- Training programmes; and
- Policies available on the internal server.

Ongoing awareness and communication of environmental issues shall be reinforced through email notification, bulletin boards, daily site meetings, tool box talks, training and awareness programmes. Communication meetings shall be regularly held and environmental issues raised and discussed as needed.

All staff shall be required to follow department guidelines on off-road driving, safety, ground clearing, staged rehabilitation, weed reporting and spread minimisation, and report native and feral animal sightings to the environmental department. Staff are also expected to report any environmental incidents to their supervisor or manager and take appropriate action.



A number of EH&S staff shall be required to undertake targeted environmental training such as fauna handling, hazardous materials spill clean-up and incident management and reporting.

All contractors shall be required to ensure their employees have the required level of competence and training, and provide evidence to Primary Gold.

3.5 MANAGEMENT STRUCTURE

The proposed TGU Project management structure is illustrated in Figure 7 below.

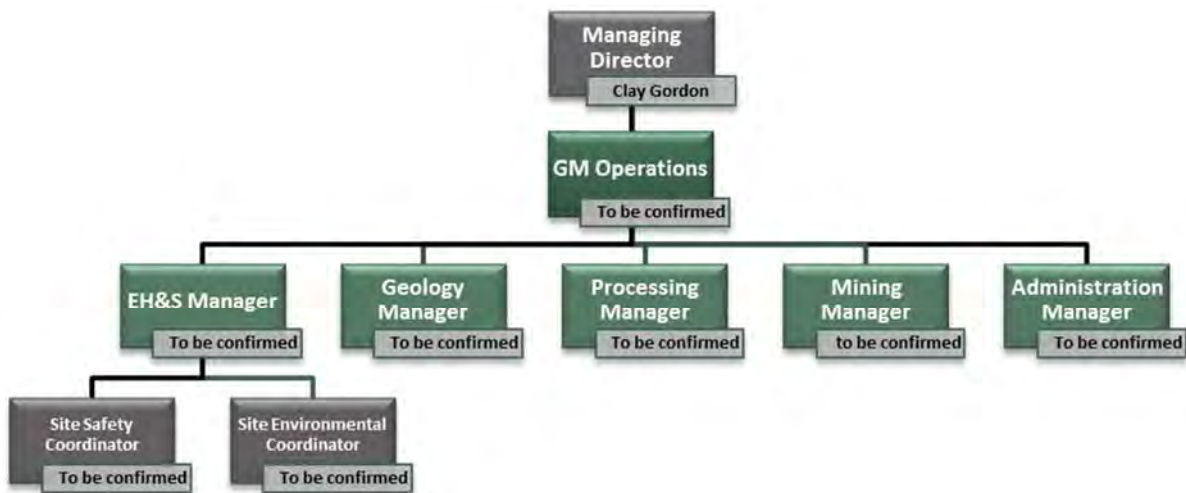


Figure 7: Primary Gold Management Structure

The Managing Director will hold overall responsibility for the TGU Project. A General Manager Operations will be responsible for the day to day running of the TGU Project and will report to the Managing Director. A number of Area Managers (Environment, Health and Safety (EH&S), Administration, Geology, Mining and Processing) will be responsible for the management of personnel and activities associated with their area. All Area Managers will report to the General Manager Operations.

All EH&S personnel will report to the EH&S Area Manager. Details of the roles and responsibilities of the EHG&S Manager, EH&S personnel and all other personnel with environmental responsibilities are provided in Section 3.6.

3.6 ROLES AND RESPONSIBILITIES

Overall responsibility for the TGU Project rests with the General Manager Operations. Environmental responsibility applies to all personnel and contractors, but specific management roles and responsibilities for environmental aspects of the TGU Project rests with the individual, Area Managers and the EH&S Manager. All employees and contractors shall be required to meet the requirements of this EMP and associated procedures. Responsibility for some management actions stated in this EMP may be delegated to specific contractors if appropriate.



Key TGU Project personnel shall ensure that all management actions are implemented to the required standard and that all personnel are aware of their responsibilities.

Dedicated staff shall be responsible for the management of health, safety and environmental obligations of the TGU Project during construction, operation and closure. A general outline of responsibilities in relation to environmental management are provided below. The roles listed below are nominal and some responsibilities may be allocated to other personnel during the TGU Project. Responsibilities for implementation of more detailed mitigation measures are presented in Section 4.

General Manager Operations

- Ensure that TGU Project design will allow compliance with the control measures listed throughout this EMP.

EH&S Manager

- Overall accountability for the auditing and assessment of compliance with this EMP and ensure it is implemented on site;
- Provide support to all TGU Project personnel as required ensuring this EMP is implemented and complied with;
- Provide advice to all key parties to ensure compliance with legal requirements, achievement of environmental objectives and improving environmental performance;
- Obtain relevant approvals, as required;
- Review reports provided by the Site Environmental and Safety Coordinator (SESC);
- Review the effectiveness and implementation of this EMP;
- Review and close out any corrective actions;
- Participate in hazard studies, risk workshops and design reviews to ensure environmental risks and opportunities are identified and managed; and
- Report as required to regulating authorities.

Area Managers

- Overall accountability to ensure this EMP is implemented, reported and maintained on site;
- Ensure all personnel attend inductions and are aware of the requirements of this EMP;
- Review reports provided by the Site Environmental and Safety Coordinator;
- Provide support to contractors and on-site TGU Project Personnel required during the construction / operation phase; and
- Ensure appropriate resources and personnel are made available to meet the requirements of this EMP.

Area Supervisors

- Ensure the requirements of this EMP are implemented within their area of responsibility as delegated by their Area Manager;
- Have a working knowledge of environmental management applicable to their area of responsibility;
- Include environmental issues when applicable in prestart (toolbox) meetings;
- Conduct audits, inspections and raising corrective actions as required; and



- Provide leadership, training and recognition in managing environmental issues within their area of responsibility.

Site Environmental and Safety Coordinators (SESC)

- Provide training and induction on environmental management as outlined in this EMP;
- Liaise with supervisors to identify environmental issues associated with day-to-day construction and pre-commissioning activities and operation activities;
- Undertake inspections in liaison with Site Supervisors;
- Prepare reports on environmental management and identify areas of improvement and corrective action;
- Assist with investigating environmental incidents and co-ordinating corrective actions, if required;
- Provide accurate and timely advice to their Area Manager regarding environmental management and corrective actions in relation to environmental incidents;
- Report any non-compliance in the TGU Projects Incident Reporting and Management System;
- Maintain all documents (hard copy files, electronic files and emails) for inspection during internal and external audits;
- Maintain an Incident Register and provide the register to the EH&S Manager; and
- Maintain the Risk Register that informs this EMP.

Contractors

- Support TGU Project environmental management initiatives and culture;
- Comply with all legal requirements and the requirements specified in this EMP;
- Ensure all personnel are adequately trained in environmental management; and
- Seek advice from Primary Gold when in doubt of their requirements.

All Personnel

- Comply with all legal requirements and the requirements of this EMP;
- Report environmental incidents to their Site Supervisor or SESC;
- Attend environmental inductions or any other training on environmental management; and
- Participate in HSE meetings and suggest improvements to environmental management.

3.7 INCIDENT MANAGEMENT

An Incident Reporting Procedure has been developed for the TGU Project. All events (e.g. near misses, audit non-compliances), incidents and injuries shall be reported, assessed and recorded as per the Incident Reporting process illustrated in Figure 8 and described below:

- All hazards and incidents are reported to the appropriate Supervisor as soon as the hazard or incident is identified;
- All significant safety incidents are recorded and reported to NT WorkSafe under the *Work Health and Safety (National Uniform Legislation) Act 2011* (NT);
- All significant environmental incidents are recorded and reported to DME as required under Section 29 of the *Mining Management Act 2001* (NT);



- Where required, copies of the environmental incident report are submitted to the Department of Lands, Planning and Environment (DLPE) and a copy submitted to the AAPA where the incident involves damage or destruction of Aboriginal heritage sites; and
- All significant incidents are investigated, with follow up actions allocated to improve systems and prevent recurrence.

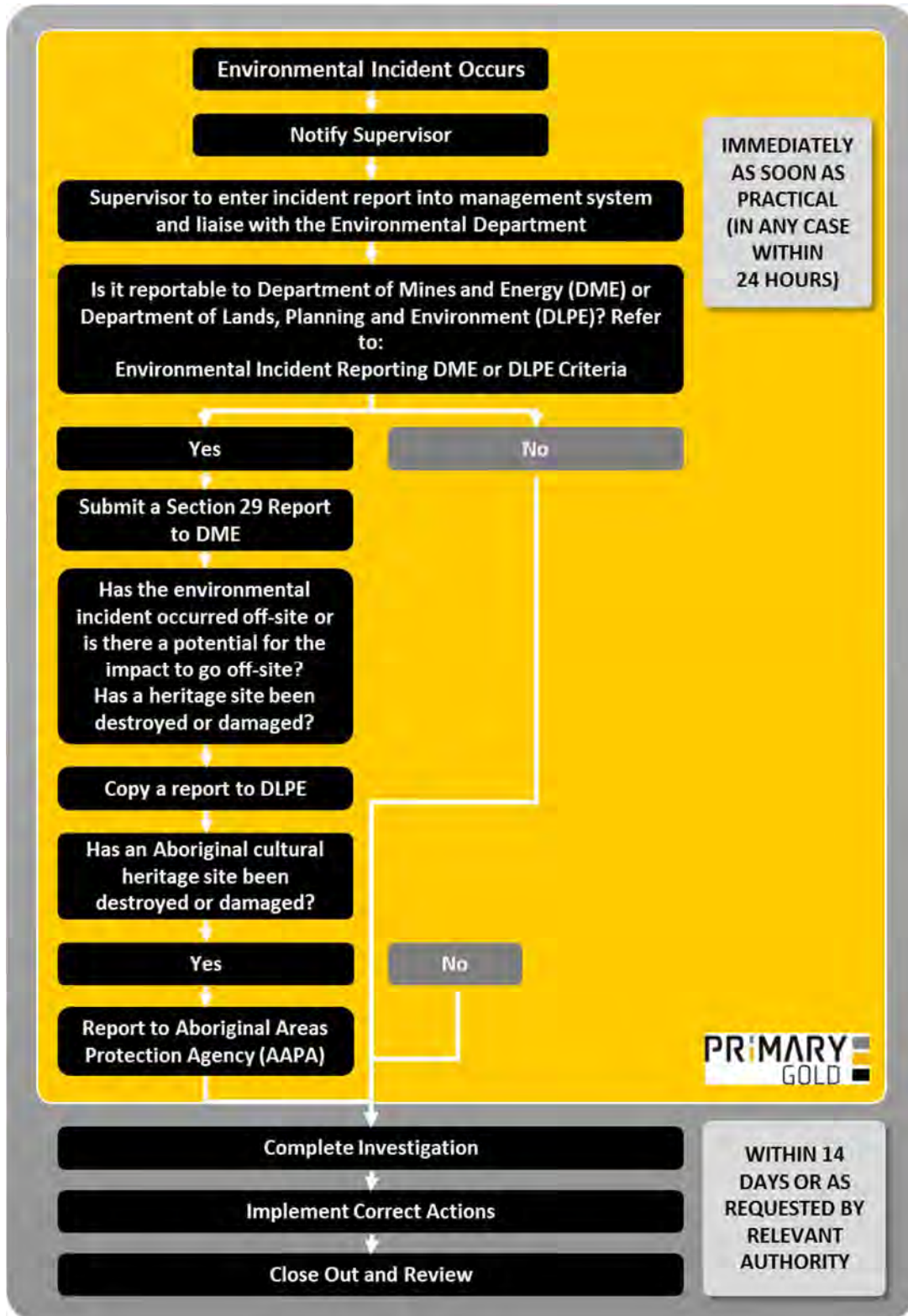


Figure 8: Incident Reporting Process



Reportable incidents may include environmental events (such as spillages, unplanned discharges, non-compliance with approval or licence conditions, overclearing, fauna deaths), minor illnesses, minor injuries, medically treated injuries, or serious and potentially serious injuries.

Involvement by the management team in routine inspections by EH&S personnel will ensure that Corporate level of commitment to the management of EH&S is apparent to all personnel and contractors. Regular and routine site management meetings and communication protocols will ensure prompt reporting of incidents and follow ups.

In the event of a major environmental or safety incident, the matter will be reported to the General Manager Operations and Managing Director who will coordinate any necessary response according to the Emergency and Crisis Management Plan. It is the responsibility of the General Manager Operations to report the occurrence of a serious accident or critical incident to the Chief Executive Officer of the DME in accordance with Section 29 of the Mining Management Act and conduct a full investigation. Investigations will aim to identify system improvements and will allocate actions to appropriate positions in the organisation to provide for continuous improvement.

3.8 AUDITS AND INSPECTIONS

Regular environmental site inspections shall be conducted throughout the TGU Project implementation across the TGU Project site. An internal schedule of inspections and audits will be prepared with participation of site management in selected activities to reinforce Corporate commitment. Generally, these inspections shall be undertaken by the SESC and/or EH&S Manager, utilising an Environmental Inspection Checklist that shall be developed for the TGU Project.

TGU Project performance against Primary Gold and regulatory requirements shall be audited to demonstrate compliance and ensure any non-compliances identified are sufficiently managed. Environmental audits shall be regularly conducted during the construction, operational and closure phases of the TGU Project. Where an audit identifies the need for corrective actions, these shall be allocated to appropriate positions in the organisation to be implemented and this EMP amended accordingly if required.

In addition to internal audits, an independent environmental audit of the TGU Project shall be undertaken by an accredited auditor where there has been a significant number of environmental incidents recorded.

3.9 COMMUNICATION AND REPORTING

Ongoing communication of site activities and opportunities for stakeholders to communicate with Primary Gold will be provided according to a communication schedule. A preliminary communication schedule (Table 7) has been prepared for the start-up and operations phases of the TGU Project and will be revised upon TGU Project Financial Investment Decision (FID).



The TGU Project shall have a number of external and internal reporting requirements throughout the life of the TGU Project including:

- Mine Management Plans (MMP);
- Waste Discharge Licence (WDL) reports;
- National Pollutant Inventory (NPI) reports;
- Internal operational reports;
- Audit and inspection reports; and
- Monitoring reports.

Open communication shall be maintained with DME and DLPE and all other relevant government departments over the life of the TGU Project through formal reports and written communications as well as informal contact as required. Consultation with external stakeholders and in particular landholders, is seen as an important part of all operations from the exploration stage through to mine closure. As such, on-going consultation with landowners, specifically the underlying pastoral lease holder and other community members, shall be maintained throughout the life of the TGU Project.

The TGU Project shall maintain a complaints register. All complaints received shall be documented, retained in a register, investigated and follow up communication made with the complainant. The intent of the follow up with the complainant is to outline actions taken or gain further understanding of the nature of the complaint. A summary of complaints received and how they have been addressed shall be provided in the Annual MMP.

As required by the Mining Management Act and Regulations, Primary Gold shall submit MMPs detailing planned operations and reporting on the work completed in the previous reporting period. Also, as required under the Mining Management Act, Primary Gold shall report all environmental incidents to DME.

Communication with local interest groups shall be conducted using Primary Gold's communication protocols. All consultation and communications conducted in relation to the TGU Project area shall be recorded in a consultation log. This log shall be used to document details of all consultations undertaken for the TGU Project.



Table 7: Preliminary Communications Schedule

Sector	Organisation	Aspect/Group	Topic	Key contact	Year 1	Year 2	Year 3
State Government	DME	MMP Development	MMP Approval	Department heads, Case officers			
			MMP & EIS process & updates	Minister, CEO, Department heads, Case officers			
			Specific site issues	Department heads, Case officers			
	EPA	EIS development	EIS assessment	Managers & Case officers			
			Process & updates	Chairman, Managers & Case officers			
	DLPE	Heritage group	NT Heritage register search	Senior Heritage Officer			
			NT Archaeological sites database search	Senior Heritage Officer			
	PWC	Network Engineering Power Networks	Coordinate site power supply	PWC Manager			
	National Parks and Wildlife Commission NT	Mary River and Djukbinj National Parks regional traditional owners	General Company & TGU Project information	Park Management Committees			



Sector	Organisation	Aspect/Group	Topic	Key contact	Year 1	Year 2	Year 3
	NT Worksafe & Dept. of Business	NT Work Health and Safety (National Uniform Legislation) Act 2011 (WHS Act),	Primary Gold H&S Policy certified March 2015 Primary Gold Risk Management Plan certified March 2015 Primary Gold H&S Management System certified March 2015 Primary Gold Whole of TGU Project Risk Assessment Report certified March 2015	Permissioning and Advisory Services Principal Inspector - Team Leader (Mines)			
	Bushfire NT	Regional/local brigades	TGU Project awareness	Regional Fire Control Officer – Arafura Captain, Point Stuart Volunteer Bushfire Brigade			
	AAPA	Authority Certificate	Section 19 of the Northern Territory Aboriginal Sacred Sites Act 1989	Director of Policy and Governance			



Sector	Organisation	Aspect/Group	Topic	Key contact	Year 1	Year 2	Year 3
Local Government	Local Government Association	Local council requirements	Nil – TGU Project is located in an unincorporated area, i.e. No local council	Case officer/manager			
Private Land Owners	Land Owners	Old Mount Bunday Station, NT Portion 4937	Access agreement, TGU Project consultation	Land owner/manager			
		Marrakai Station, N.T. Portion 01170	TGU Project awareness				
		N.T. Portion 03698	TGU Project awareness				
		N.T. Portion 06047	TGU Project awareness				
		N.T. Portion 06048	TGU Project awareness				
		N.T. Portion 07230	TGU Project awareness				
		N.T. Portion 01832	TGU Project awareness				
Interest Groups	Northern Land Council	Cooperation arrangement	Indigenous Affairs	General Manager			
	Amateur Fishers Association of NT	Response to ToR	EIS process & updates	Executive Officer			



Sector	Organisation	Aspect/Group	Topic	Key contact	Year 1	Year 2	Year 3
	Northern Territory Guided Fishing Industry Association	Response to ToR	EIS process & updates	Executive Officer			
Local Business	Various	Mary River Wilderness Retreat, Bark Hut Inn, Corroboree Park Tavern, Ostoic Quarry, Boral Quarry, Halkitis Quarry	EIS process & updates	Managers			



3.10 EMERGENCY RESPONSE

The aim of the Toms Gully Mine Emergency and Crisis Management Plan (MECMP) (Primary Gold, 2015,) is to provide Mine Management with detailed guidance on how to respond to various emergency situations that could occur during normal operations. That is:

- What type of incident could occur;
- What general type of emergency response is required; and
- Any special response requirements.

The MECMP applies to all Primary Gold employees and contractors, and to all aspects of the TGU Project including exploration, mining, processing and administration.

Emergency incidents covered are classified under four broad groups: natural disasters, off-site incidents, on-site surface incidents and on-site underground incidents. Responses to incidents covered in the MECMP include the following information:

- The main “threats” associated with the incident;
- How the incident may be notified (aside from emergency telephone/ radio call);
- Alarms or methods to alert persons of an emergency;
- The management response required (i.e. who should be notified, what action should be taken);
- Any special instructions; and
- Possible contacts for specialist advice.

In the case of emergency management, regular drills shall be conducted to measure the effectiveness of Primary Gold emergency preparedness and the MECMP. Evacuation drills shall be conducted in each areas on an annual basis. Emergency Management and Recovery drills shall also be conducted on an annual basis and involve all key personnel



4 ENVIRONMENTAL PROCEDURES

This EMP is comprised of individual Environmental Procedures that outline mitigation measures for various environmental parameters. Environmental Procedures have been developed for environmental parameters that do not have a standalone EMP in place. For each Environmental Procedure developed, the following framework has been applied:

- Objectives;
- Targets;
- Potential Impacts and Mitigation Measures;
- Monitoring;
- Contingency; and
- Reporting.

The following Environmental Procedures are provided in Sections 4.1 to 4.10 of this EMP:

- Ground disturbance;
- Borrow;
- Fire;
- Noise and Vibration;
- Waste;
- Air emissions;
- Erosion and sediment control;
- Biting insects;
- Culture and Aboriginal heritage; and
- Social and Community.

The following standalone EMP's have been prepared for the TGU Project and therefore Environmental Procedures have not been developed for these parameters:

- Water Management Plan;
- Acid Mine Drainage Management Plan;
- Biodiversity Management Plan;
- Hazardous Materials Management Plan;
- Traffic Management Plan;
- Emergency and Crisis Management Plan; and
- Mine Closure Plan.

This EMP is to be reviewed if significant additional information comes to hand or environmental risks or incidents require its review and amendment. Upon review, the document will be revised where appropriate and the revision status will be updated in accordance with Fortescue's document control procedures. This EMP and associated Procedures shall be reviewed on an annual basis or where environmental risks or incidents require its review and amendment



4.1 GROUND DISTURBANCE

4.1.1 OBJECTIVE

To minimise overall ground disturbance and prevent over clearing and clearing in unapproved areas.

4.1.2 STRATEGY

The strategy for managing ground disturbance works is:

- Develop a Ground Disturbance Procedure to ensure ground disturbance is undertaken within approved boundaries and limits.

4.1.3 TARGETS

In order to meet the objective, the following targets are set:

- Total ground disturbance does not exceed that which is approved as part of the EIS process; and
- No clearing outside of approved areas.

4.1.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

Up to 93 ha of clearing and ground disturbance is proposed as part of the TGU Project. All ground disturbance works shall be undertaken in accordance with an approved Ground Disturbance Permit (GDP). The GDP process shall ensure that all environmental obligations are checked prior to ground disturbance works commencing. There are no areas of environmental or Aboriginal heritage significance adjacent to areas proposed to be cleared and checks are to focus on adherence to approved areas, minimisation and the application of environmental controls.

Table 8 outlines the mitigation measures to be implemented for ground disturbance works.

Table 8: Potential impacts and mitigation measures for ground disturbance

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Over clearing	Areas required to be cleared shall be restricted to the minimum required.	Life of TGU Project	GDP system Auditing and site inspections
	Heavily vegetated areas and vegetation along water courses should be avoided where practicable.	Life of TGU Project	
	Existing cleared areas and tracks should be used for laydown and temporary construction areas in preference to undertaking new clearing.	Life of TGU Project	



Potential Impact	Mitigation Measure	Timing	Performance Indicators
	Clearing shall be undertaken progressively and as required.	Life of TGU Project	
Clearing in unapproved areas	Ground disturbance shall only be undertaken in areas that have an approved GDP in place	Life of TGU Project	GDP System Auditing and site inspections
	All ground disturbance works shall be undertaken in accordance with the conditions set out in the approved GDP.	Life of TGU Project	
	Prior to ground disturbance commencing, clearing boundaries shall be surveyed, pegged and flagged in accordance with the approved GDP. All ground disturbance works shall be undertaken within the pegged GDP area.	Life of TGU Project	
Insufficient stockpiling of Topsoil and sub soil	Vegetation and Topsoil shall be removed and stockpiled separately.	Life of TGU Project	Auditing and site inspections
	Topsoil shall be stripped to a minimum depth of 100 mm unless otherwise approved.	Life of TGU Project	
	Subsoil shall be recovered to a minimum depth of 200 mm and up to a depth of 1 m where construction / excavation activities allow and where the material is optimal for rehabilitation. Stockpiles shall be to a maximum vertical height of 3m.	Life of TGU Project	

4.1.5 MONITORING

All clearing undertaken as part of the TGU Project will need to be recorded and monitored to ensure compliance with TGU Project clearing requirements. Further details regarding proposed monitoring are provided below in Table 9.

Table 9: Ground disturbance monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Clearing of native vegetation	At the completion of clearing, a post clearing survey shall be undertaken to record all areas cleared. An audit shall then be undertaken to determine if all clearing was undertaken within approved areas.	Life of TGU Project	EH&S Manager
Clearing Incident monitoring	Clearing incidents shall be monitored to identify any potential trends.	Quarterly and as required	EH&S Manager

4.1.6 CONTINGENCY ACTIONS

The contingency actions listed in Table 10 below will be implemented if the TGU Project does not meet the ground disturbance targets set in Section 4.1.2.



Table 10: Ground disturbance contingency actions

Performance indicator	Action	Timing	Responsibility
GDP System	<p>If non-compliance with ground disturbance procedures occurs the following contingency actions will be implemented:</p> <ul style="list-style-type: none"> • Raise as an incident under the TGU Project’s Incident Reporting and Management Procedure • Stop work until clearing area defined • Review GDP process to determine cause of non-compliance • Assess if the incident caused any significant environmental impact • If significant, report to the EPA / DME as soon as practicable and commence rehabilitation • Address cause to ensure likelihood of the incident occurring again is minimised • Report incident to relevant government authorities if required • Rehabilitate cleared area 	Immediately following incident	EH&S Manager

4.1.7 REPORTING

All areas cleared shall be recorded and all clearing incidents shall be reported internally. Clearing incidents that have impacted on areas of environmental or Aboriginal heritage significance shall be reported to the EPA / DME.

Table 11 below outlines the TGU Project’s reporting requirements in relation to ground disturbance.

Table 11: Summary of ground disturbance reporting

Report	Details	Reporting frequency	Responsibility
GDP Report	Internal report that contains details of vegetation clearing and ground disturbance over the previous month, and an update on the total cleared.	Monthly	Prepared by Construction Manager SESCO. Review by EH&S Manager.
Clearing incident report (internal)	Internal report unless significant incident. Report to contain details of clearing incident.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Clearing heritage incident report (external)	External report to regulatory authorities outlining any significant clearing incidents.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of any clearing incidents.	Monthly	Prepared by SESC. Review by EH&S Manager.



Report	Details	Reporting frequency	Responsibility
Annual MMP	Summary of clearing status and any clearing incidents that occurred during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.

4.2 BORROW PITS

4.2.1 OBJECTIVE

To ensure borrow pits are sited, designed, constructed, operated and rehabilitated to minimise environmental impacts.

4.2.2 STRATEGY

The strategy for managing borrow pits is:

- Develop a Borrow Pit Procedure to ensure borrow pits are sited, constructed, operated and rehabilitated as per industry best practice.

4.2.3 TARGETS

In order to meet the objective, the following targets are set:

- No significant ponding of surface water within borrow pits during construction, operation and rehabilitation; and
- No collapse or significant erosion of borrow pit walls during construction, operation and rehabilitation.

4.2.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

Borrow material will be required for the construction of the proposed WSD, future lift of TSF2 and capping of the TSF's. As much material as possible will be sourced from the footprint of the WSD. Where insufficient borrow material is available within the WSD footprint, borrow pits will need to be developed. Borrow pits will result in the direct removal of vegetation and may impact on surface water flows.

Table 12 below lists the mitigation measures proposed to be implemented for borrow pit management.



Table 12: Potential impacts and mitigation measures for borrow pits

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Creation of unnecessary borrow pits	<p>The following hierarchy shall be used for prioritising the selection of borrow pit locations:</p> <ul style="list-style-type: none"> • Use cut material from future infrastructure works • Use nearby suitable material where available • Develop borrow pits from within future waste infrastructure areas (i.e. WSD) • Investigate borrow pits within pre-disturbed areas such as old borrow pits • New borrow pit areas 	Construction	Auditing and site inspections
Surface water ponding and alteration of existing surface water flows	Borrow pits shall be designed to minimise significant surface water ponding (i.e. they should be free draining as much as practicable) and should be designed so as to minimise erosion	Life of TGU Project	Auditing and site inspections
	Drainage management systems shall blend in with the natural landscape and drainage lines		
	Long drains or engineered structures shall be avoided where possible		
	Disturbance to natural drainage lines shall be avoided so as to maintain the flow of natural surface flow through the borrow pit area		
	Borrow pits shall not intercept groundwater		
	If the pit cannot be designed to promote self-draining, engineered channels and trenches may be used as a last resort to drain the pit area. The design must remain sensitive to the surrounding environment		
Insufficient material available to rehabilitate borrow pit	Borrow pit design shall include allowance for the storage of vegetation, topsoil and subsoil removed during pit development.	Life of TGU Project	Auditing and site inspections
	Borrow pit design shall ensure that there is sufficient backfill available at closure to achieve a safe landform that blends in with the surrounding landscape		
	Topsoil and vegetation shall be stripped and pushed to the upslope side of the borrow pit, away from any drainage lines, in preparation for the		



Potential Impact	Mitigation Measure	Timing	Performance Indicators
	borrow pit rehabilitation once extraction is completed.		
Borrow pits not sufficiently rehabilitated	Borrow pit shall be landscaped and battered to blend in with the surrounding landform	Rehabilitation and Closure	Auditing and site inspections
	Borrow pits shall not form permanent water bodies at closure		
	Final borrow pit contours shall be stable, safe and not prone to erosion.		
	Stockpiled topsoil and vegetation shall be distributed evenly across the surface of the pit floor and battered walls		

4.2.5 MONITORING

The following borrow pit monitoring actions shall be implemented for the TGU Project.

Table 13: Borrow pit monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Construction of borrow pits	Following construction, borrow pits shall be inspected to ensure they meet the design requirements outlined in Table 12 above.	Life of TGU Project	EH&S Manager
Rehabilitation of borrow pits	Acceptability of borrow pit rehabilitation works shall be assessed to ensure they meet the requirements of Table 12 above and the TGU Project Mine Closure Plan (MCP).	Quarterly and as required	EH&S Manager

4.2.6 CONTINGENCY

The contingency actions described below shall be implemented if the TGU Project does not meet the borrow pit management targets listed in Section 4.2.4.

Table 14: Borrow pit contingency actions

Performance indicator	Action	Timing	Responsibility
Significant surface water ponding within borrow pits	Review cause and undertake works to reduce extent of ponding	Immediately	EH&S Manager

4.2.7 REPORTING

Reporting requirements related to borrow pits are outlined in Table 15 below.



Table 15: Borrow pit reporting requirements

Report	Details	Reporting frequency	Responsibility
Borrow pit incident report (internal)	Internal report containing details of nature of complaint	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains summary of any borrow pit incidents recorded during reporting period.	Monthly	Prepared by SESC. Review by EH&S Manager.
Annual MMP	Overview of borrow pit incidents recorded during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.

4.3 FIRE

4.3.1 OBJECTIVE

TGU Project activities do not generate fires, and external bushfires do not impact on TGU Project activities.

4.3.2 STRATEGY

The strategy for managing fire is:

- Minimise the potential for generation of uncontrolled fires;
- Install fire breaks to prevent the spread of fire; and
- Ensure sufficient trained resources and equipment are on site to fight fires.

4.3.3 TARGETS

In order to meet the objective, the following targets are set:

- No fires generated as a result of TGU Project activities;
- Sufficient firefighting equipment available and adequately maintained to protect personnel and infrastructure; and
- Sufficient personnel trained in fire response.

4.3.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

The TGU Project has the potential to generate fires that could adversely impact the surrounding environment. Conversely, bushfires have the potential to impact on TGU Project activities, infrastructure and personnel.

Table 16 below lists the mitigation measures proposed to be implemented for fire management.



Table 16: Potential impacts and mitigation measures for fire

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Damage/loss of vegetation, flora, fauna and infrastructure	Prior to hot works commencing on site, surrounding area shall be cleared of all combustible material and a fire extinguisher and some other means of fire suppression shall be provided and available.	Life of TGU Project	Incident reporting system
	Cigarette smoking shall be restricted to approved areas only, with appropriate cigarette butt disposal facilities available.	Life of TGU Project	
	No burning of rubbish or open fires shall be permitted on site.	Life of TGU Project	
	Vehicles shall be restricted to existing roads and tracks where practicable.	Life of TGU Project	
	Vehicle undersides shall be checked and any material stuck around exhaust manifolds shall be removed as part of normal vehicle pre-start check routines.	Life of TGU Project	
Spread of fire outside of TGU Project site	Firebreaks shall be established around key facilities and shall be maintained on a seasonal basis.	Life of TGU Project	Auditing and site inspections
Firefighting equipment not available to manage fires	Firefighting equipment including fire extinguishers or other control equipment shall be made available in all vehicles and at designated work area points.	Life of TGU Project	Auditing and site inspections
	Firefighting equipment shall be maintained to comply with relevant fire safety standards.	Life of TGU Project	Maintenance records
Injury or loss of life	A fire refuge area and escape plans shall be prepared and made available to all personnel and contractors. The fire refuge area shall be safe from uncontrolled fire.	Prior to commencement of TGU Project	Auditing and site inspections
External bush fires cause damage/loss of infrastructure	A fire management works/action programme shall be implemented which will detail spatial and temporal aspects of wildfires and hazard reduction burns, mapping of fire extents and documentation of fire effects and control outcomes.	Annually (by end of April)	Auditing and site inspections
	Fire breaks shall be slashed or graded at the end of the wet season (or when access is permissible).	Annually (by end of July – access permissible)	
	A 5 metre buffer zone shall be installed and maintained either side of the site boundaries and the constructed stock fence.	Annually (by end of July – access permissible)	
	Controlled mosaic burning shall be undertaken within the TGU Project area to reduce fuel loads. Burns shall be coordinated with the assistance of the pastoralist, Bushfires NT or local volunteer brigade.	Annually (by end of July – season and permit approval dependent)	



4.3.5 MONITORING

The following fire monitoring actions will be implemented for the TGU Project.

Table 17: Fire monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Fire incident	A fire incident register shall be developed and maintained that will log uncontrolled fires incidences and controlled burning events including details of location, approximate area burnt and severity.	Life of TGU Project	EH&S Manager
Fire breaks	The condition of firebreaks shall be monitored to ensure they are sufficiently free of vegetation.	Quarterly - immediately after wet season before fire bans in place	EH&S Manager
Fire control	Regular consultation shall be undertaken with NT Bushfires regarding regional fire break scheduling and implementation.	Annually (by June)	EH&S Manager

4.3.6 CONTINGENCY ACTIONS

The contingency actions described below shall be implemented if the TGU Project does not meet the fire management targets listed in Section 4.3.2.

Table 18: Fire contingency actions

Performance indicator	Action	Timing	Responsibility
Fire generated by TGU Project activities	Review of fire causes and preventative actions that may have been appropriate	Following incident report	EH&S Manager
Insufficient equipment or personnel to control fire	Review of availability of equipment on site and trained personnel	Following incident report	EH&S Manager

4.3.7 REPORTING

Reporting requirements related to fire are outlined in Table 19 below.

Table 19: Fire reporting requirements

Report	Details	Reporting frequency	Responsibility
Fire incident report (internal)	Internal report unless significant incident. Report to contain details of any impacts to vegetation, flora, fauna and infrastructure as a result of fire.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Fire incident	Where a fire incident causes or	As required	Prepared by



Report	Details	Reporting frequency	Responsibility
report (external)	threatens to cause pollution resulting in environmental harm, DME will be informed as soon as practicable in accordance with the Mining Management Act.		Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of non-compliances and monitoring and measurement results.	Monthly	Prepared by SESC. Review by EH&S Manager.
Annual Environmental Report	Overview of summary reports listed above and overall compliance with any fire conditions.	Annually	Prepared by SESC. Review by EH&S Manager.

4.4 NOISE AND VIBRATION

4.4.1 OBJECTIVE

Noise and vibration emissions as a result of TGU Project activities are managed to not cause repeated complaints.

4.4.2 STRATEGY

The strategy for managing noise and vibration is:

- Ensure noise and vibration levels being generated meet the required standards; and
- Ensure personnel wear appropriate noise and vibration personal protective equipment (PPE) where required.

4.4.3 TARGETS

In order to meet the objective, the following targets are set:

- No community complaints received related to noise and vibration; and
- No incidents raised by employees concerning excessive noise and vibration levels.

4.4.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

TGU Project activities (in particular blasting, crushing ore and vehicle movements) have the potential to generate noise and vibration levels. Excessive noise levels can impact on local residents and workers. Table 20 below identifies the noise and vibration mitigation measures that will be implemented for the TGU Project.



Table 20: Potential impacts and mitigation measures for noise and vibration

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Community complaints received as a result of excessive noise and vibration levels at nearest receptor	All plant and equipment shall be maintained in good working order and fitted with appropriate noise abatement devices where required.	Life of TGU Project	Complaints register
	During the construction phase, works which have the potential to result in excessive noise or vibration shall be undertaken in accordance with regulatory requirements. Where excessive noise and vibration works are required to be undertaken outside these hours, the pastoralist and station manager shall be notified.	Construction	
	A complaints register shall be maintained to record any community and/or worker complaints received concerning excessive noise and vibration levels.	Life of TGU Project	
	Underground blast times will be notified to potentially impacted residents.	Life of TGU Project	
Employees subject to excessive noise and vibration levels	Workers shall wear hearing protection when undertaking tasks that exceed occupational health and safety limits for noise (above LAeq,8h of 85 dB(A)). Hearing protection shall meet Australia Safety Standards in accordance with AS/NZS 1269.3.	As required	Complaints register
	Areas where people may be exposed to excessive noise levels shall be sign-posted as hearing protection areas.	Life of TGU Project	Auditing and site inspections
Disturbance of fauna populations and local residents as a result of blasting activities	A blast management plan shall be prepared prior to the commencement of blasting. This shall include details of nearest receptors, potential impacts and appropriate mitigation measures.	Prior to blasting	Auditing and site inspections
	All workers and visitors shall be made aware of the blast schedule.	Life of TGU Project	

4.4.5 MONITORING

Due to the remoteness of the TGU Project site and lack of nearby sensitive receptors, noise and vibration monitoring is not proposed. The systems and registers developed to reduce and manage noise and vibration levels will be monitored and these are outlined in Table 21 below.



Table 21: Noise and vibration monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Complaint monitoring	A review of the number, frequency and type of noise and vibration complaints shall be undertaken to identify any potential trends.	Quarterly and as required	EH&S Manager
Noise generation	Plant and equipment shall be regularly inspected to ensure they are adequately maintained, not generating excessive noise levels and fitted with appropriate noise abatement devices where required.	Monthly	EH&S Manager

4.4.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the noise and vibration targets set in Section 4.4.3.

Table 22: Noise and vibration contingency actions

Performance indicator	Action	Timing	Responsibility
Noise Complaint	Investigate additional mitigation measures to manage excessive noise and vibration levels	Following complaint	EH&S Manager

4.4.7 REPORTING

Reporting requirements related to noise and vibration levels are provided in Table 23 below.

Table 23: Noise and vibration reporting requirements

Report	Details	Reporting frequency	Responsibility
Noise/vibration incident report (internal)	Internal report containing details of nature of complaint	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains summary of noise and vibration complaints received during reporting period.	Monthly	Prepared by SESC. Review by EH&S Manager.
Annual MMP	Overview of noise and vibration incidents and summary of compliance with any noise and vibration conditions during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.



4.5 WASTE

4.5.1 OBJECTIVE

To minimise the generation of waste material and ensure all waste is appropriately disposed..

4.5.2 STRATEGY

The strategy for waste management is:

- Ensure volumes of waste being generated are minimised;
- Ensure waste is re-used and recycled where possible; and
- Ensure waste is disposed of at appropriately licensed facilities.

4.5.3 TARGETS

In order to meet the objective, the following targets are set:

- A programme to minimise the generation of wastes is implemented;
- Materials are reused and recycled where practicable; and
- No incidents of incorrect disposal of wastes.

4.5.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

TGU Project activities will generate waste. Proper management of waste material will help minimise potential adverse impacts on the environment. Table 24 below describes the waste mitigation measures to be implemented for the TGU Project.

Table 24: Potential impacts and mitigation measures for waste

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Excessive waste being generated	Purchasing should consider ways to minimise the generation of waste materials by minimising packaging and making arrangements with suppliers to minimise waste.	Life of TGU Project	Purchasing requests include waste minimisation. Auditing and site inspections
	Wastes shall be re-used or recycled where practicable.	Life of TGU Project	
	Sufficient and clearly labelled recycling skips shall be provided to facilitate segregation of waste.	Life of TGU Project	
Littering of TGU Project site	Sufficient bins, skips and waste receptacles shall be provided.	Life of TGU Project	Auditing and site inspections
	Putrescible / crib wastes shall be stored in covered waste receptacles or covered skips at all times.	Life of TGU Project	



Potential Impact	Mitigation Measure	Timing	Performance Indicators
	Waste storage areas shall be kept tidy and adequately maintained.	Life of TGU Project	
Pollution/contamination due to incorrect disposal of waste	All non-hazardous wastes shall be disposed of at the TGU Project site landfill.	Life of TGU Project	Auditing and site inspections
	There shall be no burning of waste material on site.	Life of TGU Project	
	All hazardous waste materials shall be stored separately, taken off site by a licensed carrier and disposed of at an appropriately licensed facility.	Life of TGU Project	

4.5.5 MONITORING

The following waste monitoring actions will be implemented.

Table 25: Waste monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Waste incidents	Maintain an incident register and monitor all waste related incidents.	Life of TGU Project	EH&S Manager
Waste volumes	Monitor volumes of wastes and recycled material being generated and dispose of on site or off site.	Monthly	EH&S Manager
Waste disposal records	Monitor all waste tracking receipts to ensure wastes being taken off site are being disposed of in an appropriately licensed facility.	Monthly	EH&S Manager

4.5.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the waste targets set in Section 4.5.3.

Table 26: Waste contingency actions

Performance indicator	Action	Timing	Responsibility
Excessive generation of waste	Investigate opportunities to reduce waste volumes	Following incident report	SESC
Missed recycling or re-use opportunity	Investigate opportunities to promote re-use and recycling	Following incident report	SESC
Waste disposal incident	Investigate additional mitigation measures to prevent reoccurrence	Following incident report	SESC



4.5.7 REPORTING

Reporting requirements in relation to waste management are provided in Table 27 below.

Table 27: Reporting requirements for waste

Report	Details	Reporting frequency	Responsibility
Waste incident report (internal)	Internal report unless significant incident. Report to contain details of any waste issues.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Waste incident report (external)	Where a waste incident causes or threatens to cause pollution resulting in environmental harm, the DME will be informed as soon as practicable in accordance with the Mining Management Act.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of waste incidents recorded during the reporting period.	Monthly	Prepared by SESC. Review by EH&S Manager.
National Greenhouse and Energy Reporting Act 2007 (NGER)	Waste volumes shall be recorded in accordance with NGER reporting requirements.	Monthly	Prepared by SESC. Review by EH&S Manager.
National Pollutant Inventory (NPI) Guide	Waste volumes shall be recorded in accordance with NPI reporting requirements.	Annually	Prepared by SESC. Review by EH&S Manager.

4.6 AIR EMISSIONS

4.6.1 OBJECTIVE

To avoid, minimise or control dust and air pollutant emissions generated as a result of TGU Project activities.

4.6.2 STRATEGY

The strategy for managing air emissions is:

- Ensure the generation of air emissions is minimised as far as practicable.



4.6.3 TARGETS

In order to meet the objective, the following targets are set:

- No community complaints received related to dust levels;
- No incidents raised by employees concerning excessive dust levels; and
- No significant dust deposition onto adjacent vegetation.

4.6.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

Dust is the primary air emission that will be generated as a result of the TGU Project. Dust generation will be minimised in the mining operations with drilling, blasting and mining activity being completed underground. Exhaust gases will also be emitted from TGU Project plant and equipment.

A series of mitigation measures have been established to address the potential impacts related to air emissions that could arise during construction, operation and closure of the TGU Project. Details of these mitigation measures are provided in Table 28 below.

Table 28: Potential impacts and mitigation measures for air emissions

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Excessive dust being generated	Construction works that have the potential to generate high dust levels shall be restricted during times of high wind in the direction of station dwellings.	Construction	Auditing and site inspections
	Site access and haulage roads shall be regularly sprayed with water to control dust generation.	Life of TGU Project	
	Ore shall be wetted prior to crushing.	Operation	
	Tailings deposition shall be rotated around different spigots to ensure areas of tailings do not dry and emit dust.	Operation	
	Vehicle speed limits shall be set within the TGU Project site.	Life of TGU Project	
	Clearing shall be restricted to the minimum required.	Life of TGU Project	
	Vehicles shall keep to designated tracks as far as practicable.	Life of TGU Project	
Release of pollutants to atmosphere	All plant and equipment shall be regularly inspected and maintained to minimise exhaust emissions.	Life of TGU Project	Auditing and site inspections
	No burning of waste shall be permitted on site.	Life of TGU Project	



4.6.5 MONITORING

Due to the remoteness of the TGU Project site and lack of nearby sensitive receptors, dust monitoring is not proposed. The systems and registers developed to reduce and manage dust and exhaust emissions will be monitored and these are outlined in Table 29 below.

Table 29: Air emissions monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Complaint monitoring	A review of the number, frequency and type of dust complaints shall be undertaken to identify any potential trends.	Quarterly and as required	EH&S Manager
Exhaust emissions	Plant and equipment shall be regularly inspected to ensure they are in good working order and not emitting excessive exhaust emissions.	Monthly	EH&S Manager
Dust deposition	The condition of vegetation adjacent to the TGU Project site shall be visually monitored for excessive dust deposition.	Quarterly	EH&S Manager

4.6.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the air emissions targets set in Section 4.6.3.

Table 30: Contingency actions for air emissions

Performance indicator	Action	Timing	Responsibility
Dust complaint	Investigate complaint	Following complaint	SESC
Dust incident	Investigate incident and investigate additional mitigation measures	Following incident report	SESC
Dust deposition killing vegetation	Investigate causes and identify opportunities to improve	Following incident report	SESC

4.6.7 REPORTING

Reporting requirements in relation to dust and air emissions management are provided in Table 31 below.

Table 31: Reporting requirements for waste

Report	Details	Reporting frequency	Responsibility
Dust incident report (internal)	Internal report unless significant incident. Report to contain details of nature of complaint.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that	Monthly	Prepared by SESC.



Report	Details	Reporting frequency	Responsibility
	contains details of dust complaints received during the reporting period		Review by EH&S Manager.
Annual MMP	Overview of dust incidents recorded and summary of compliance with any dust and air quality conditions during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.

4.7 EROSION AND SEDIMENT CONTROL

4.7.1 OBJECTIVE

To ensure that erosion and sediment generation is minimised on site and there are no off site effects from sediment.

4.7.2 STRATEGY

The strategy for managing erosion and sediment control is:

- Minimise the extent of areas susceptible to erosion; and
- Install sediment control structures to capture loss of sediment off site.

4.7.3 TARGETS

In order to meet the objective, the following targets are set:

- No incidents of excessive erosion from site;
- No incidents of sediment load non-compliance in Mount Bundey Creek caused by site; and
- Site sediment control systems constructed, inspected and kept fit for purpose.

4.7.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Toms Gully site is an established site with cleared areas and existing drains and sumps. Potential sources of erosion are from cleared areas, the new embankments for TSF2 and the WSD, borrow areas, and erosion from new tracks, bores and stockpile areas. The following mitigation measures are proposed to minimise the potential for erosion and sedimentation.



Table 32: Potential impacts and mitigation measures for erosion and sediment control

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Erosion of cleared areas and sedimentation of waterways	Clearing shall be restricted to the minimum required.	Life of TGU Project	Auditing and site inspections
	Vehicles shall keep to designated tracks as far as practicable.	Life of TGU Project	
	Cleared areas shall be progressively rehabilitated when no longer required.	Life of TGU Project	
	Access to areas undergoing rehabilitation shall be restricted and clearly sign posted.	Life of TGU Project	
	Vegetation and soil shall not be stockpiled within the 100 year flood zone.	Life of TGU Project	
	Natural drainage features shall be maintained where practicable.	Life of TGU Project	
	Diversion channels shall be installed where practicable to divert clean surface water runoff away from cleared areas and areas with high erosion potential.	Life of TGU Project	
	In areas of high erosion and sedimentation potential, appropriately sized sediment basins shall be established at strategic locations.	Life of TGU Project	
	Sediment fencing should be established in areas where there is a high potential for sediment to enter natural surface drainage lines.	Life of TGU Project	
	Rip rap shall be installed within constructed drainage channels that are subject to high velocity flows and/or increased erosion.	Life of TGU Project	
Containment bunds shall be established around ore stockpiles and processing areas.	Life of TGU Project		

4.7.5 MONITORING

The following erosion and sediment control monitoring actions shall be implemented for the TGU Project.



Table 33: Erosion and sediment control monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Erosion and sedimentation control	Inspect erosion and sediment control management measures for effectiveness. Ensure sediment traps are maintained as fit for purpose.	Monthly before and during wet season	SESC
Potential erosion and sedimentation	Monitor condition of areas prone to erosion and sedimentation. Implement mitigation measures where excessive erosion and sedimentation is noted.	Monthly	SESC

4.7.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the erosion and sediment control targets set in Section 4.7.3.

Table 34: Erosion and sediment control contingency actions

Performance indicator	Monitoring Action	Timing	Responsibility
Excessive erosion incident	Inspect and investigate additional mitigation measures	Following incident report	SESC
Excessive sediment in Mount Bunday Creek at downstream monitoring site	Investigate potential causes, develop and implement mitigation measures	Following incident report	SESC
Site drainage not fit for purpose	Clean or reconfigure drainage	Following incident report	SESC

4.7.7 REPORTING

Reporting requirements in relation to erosion and sediment control are described in Table 35 below.

Table 35: Erosion and sediment control reporting requirements

Report	Details	Reporting frequency	Responsibility
Erosion incident report (internal)	Internal report unless significant incident. Report to contain details of any erosion and sedimentation issues.	As required	Prepared by SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of any erosion and sedimentation incidents during the reporting period.	Monthly	Prepared by SESC. Review by EH&S Manager.
Annual MMP	Summary of the erosion and sedimentation status of the TGU Project and any incidents raised during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.



4.8 BITING INSECTS

4.8.1 OBJECTIVE

To avoid, minimise or control the occurrence of biting insects breeding sites throughout the life of the TGU Project.

4.8.2 STRATEGY

The strategy for managing biting insects is:

- Minimise the creation of habitats that promote breeding of biting insect populations; and
- Ensure personnel wear appropriate PPE and deterrent.

4.8.3 TARGETS

In order to meet the objective, the following targets are set:

- No mosquito or biting insect breeding sites generated as a result of TGU Project activities; and
- Minimise potential for transmission of diseases associated with biting insects.

4.8.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

A Baseline Biting Impact Assessment was undertaken for the Toms Gully mine in 2001.

Table 36 outlines the mitigation measures proposed to minimise the potential for generation of biting insect breeding sites and spread of diseases transmitted by biting insects as a result of TGU Project activities.

Table 36: Potential impacts and mitigation measures for biting insects

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Creation of mosquito and biting insects breeding sites	Where practical, dam walls should be constructed with steep sides (45 degree slope) to prevent the establishment of semi-aquatic vegetation that will provide suitable breeding habitat.	Construction	Auditing and site inspections
	Surface water drainage shall be designed to minimise potential for ponding.	Construction	
	Areas of frequent surface water ponding shall be filled in or drained where practicable.	Life of TGU Project	
	Stockpiles shall not be placed in areas that may impede drainage and	Construction	



Potential Impact	Mitigation Measure	Timing	Performance Indicators
	shall be contoured to prevent ponding of water.		
	Sedimentation ponds shall be designed to drain and empty following rainfall events.	Construction	
	Unless in use, all rainwater tank access points, (excluding inlet and outlets), shall be kept shut to prevent mosquito access. Inlets and outlets shall be covered with closely fitting removable insect-proof screens.	Life of TGU Project	
	Wastewater treatment and storage systems shall be designed and constructed as per Department of Health and Community Services (DHCS) guidelines,	Life of TGU Project	
	Dead and lodged reeds shall be removed from Bazzamundi lake on an annual basis where practicable.	Life of TGU Project	
	Where TGU Project activities have created active breeding sites, these sites shall be modified where practicable to prevent further breeding.	Life of TGU Project	
	Where active breeding sites are unable to be modified, options for chemical control shall be investigated in consultation with the Medical Entomology Branch of the DHCS.	Life of TGU Project	
Illness as a result of mosquito or biting insects borne diseases	Workers shall wear long sleeved shirts, long trousers and mosquito repellent during times of high mosquito activity.	Life of TGU Project	Auditing and site inspections
	Site offices and cribs shall be screened and air conditioned to discourage the presence of mosquitos.	Life of TGU Project	
	Workers shall be educated in the prevention and early identification of mosquito and biting insect borne diseases.	Life of TGU Project	

4.8.5 MONITORING

The following monitoring works shall be undertaken to minimise the potential for establishment of biting insect breeding grounds and the spread of disease.



Table 37: Biting insect monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Presence of biting insects and larvae	Monitor natural and man-made water storage features within the TGU Project site for the presence of biting insect larvae during the wet season.	Weekly during the wet season	SESC / EH&S Manager
Water ponding	The extent of surface water ponding within the TGU Project site shall be monitored for the potential to act as biting insect breeding sites.	Weekly during the wet season	SESC / EH&S Manager
Condition of biting insect access prevention structures	Monitor the condition of biting insect screens and other access prevention measures.	Monthly	SESC / EH&S Manager

4.8.6 CONTINGENCY ACTIONS

The contingency actions described below shall be implemented if the TGU Project does not meet the biting insect targets set in Section 4.8.3.

Table 38: Biting insect contingency actions

Performance indicator	Action	Timing	Responsibility
Increase in mosquito activity noted	Investigate potential causes, develop and implement mitigation measures	Following incident report	SESC / EH&S Manager

4.8.7 REPORTING

Reporting requirements in relation to the management of biting insects and their breeding grounds are provided in Table 39 below.

Table 39: Biting insect reporting requirements

Report	Details	Reporting frequency	Responsibility
Biting insect infestations report (internal)	All biting infestations shall be reported to the EH&S Manager.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Significant biting insect infestations report (external)	Any significant infestations of biting insects and/or sickness due to biting insects shall be reported to the NT Medical Entomology Branch.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of any biting insect infestations during the reporting	Monthly	Prepared by SESC. Review by EH&S Manager.



Report	Details	Reporting frequency	Responsibility
	period.		
Annual MMP	Overview of any biting insect infestations during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.

4.9 CULTURE AND ABORIGINAL HERITAGE

4.9.1 OBJECTIVE

To avoid unauthorised disturbance to Heritage sites as per the requirements of the *Northern Territory Heritage Act 2015*.

4.9.2 STRATEGY

The strategy for managing impacts to culture and Aboriginal heritage is:

- Ensure no works impact on known Aboriginal heritage sites; and
- Develop a procedure that outlines steps to be taken when an unknown Aboriginal heritage site/artefact is encountered.

4.9.3 TARGETS

In order to meet the objective, the following targets are set:

- No unauthorised impacts or disturbance of known cultural and Aboriginal heritage sites; and
- No impact to newly discovered Aboriginal heritage sites.

4.9.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

A search of the NT Heritage Register has identified that no known cultural or Aboriginal heritage sites exist with the TGU Project site. Table 40 below outlines proposed mitigation measures to minimise impacts on any unknown Aboriginal heritage sites that may exist within the TGU Project site.

Table 40: Potential impacts and mitigation measures for Aboriginal heritage

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Unauthorised disturbance of known Aboriginal heritage	All workers shall undertake an induction that outlines their requirements in relation to Aboriginal heritage management	Life of TGU Project	Auditing and site inspections



Potential Impact	Mitigation Measure	Timing	Performance Indicators
sites	and the AAPA certificate.		
	All clearing shall be undertaken in areas approved to be cleared and in accordance with an approved GDP.	Life of TGU Project	
	No unauthorised disturbance of known Aboriginal heritage sites and where works are proposed within 50 m of a known site, the site shall be flagged.	Life of TGU Project	
	All known Aboriginal heritage sites shall be demarcated on clearing drawings, design drawing and communicated to workers.	Life of TGU Project	
Discovery of new Aboriginal heritage sites/artefacts	All personnel shall be informed of the need to identify and protect Aboriginal heritage sites.	Life of TGU Project	Auditing and site inspections
	In the event of any unexpected discovery of objects suspected to be Aboriginal heritage material, work at that location shall stop immediately until the objects can be assessed and authorisation given to continue activities.	Life of TGU Project	
	Where Aboriginal heritage sites are required to be disturbed, they will be managed in accordance with the Northern Territory <i>Heritage Act</i> 2015, the conditions of the Work Approval and in consultation with Traditional Owners.	Life of TGU Project	

4.9.5 MONITORING

Although there are currently no cultural or Aboriginal heritage sites within the TGU Project site, the following monitoring actions shall be implemented in the case where an Aboriginal heritage site is discovered.

Table 41: Aboriginal heritage monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Clearing	Maintain the GDP system to assess and record proposed clearing to ensure compliance with TGU Project Aboriginal heritage constraints.	Life of TGU Project	EH&S Manager
Heritage site inspections	Aboriginal heritage sites within the TGU Project site shall be inspected for any signs of impact or disturbance.	Weekly during construction and monthly thereafter	EH&S Manager



4.9.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the cultural and Aboriginal heritage targets set in Section 4.9.2.

Table 42: Cultural and Aboriginal heritage contingency actions

Performance indicator	Action	Timing	Responsibility
Bones or other cultural materials noted	All work shall cease immediately. Police shall be notified if bones are discovered. The Heritage Branch and the AAPA shall be notified if cultural materials are discovered.	Within 24 hours	GM Operations

4.9.7 REPORTING

Reporting requirements in relation to the management and protection of Aboriginal heritage sites are described in Table 43 below.

Table 43: Cultural and Aboriginal heritage reporting requirements

Report	Details	Reporting frequency	Responsibility
GIS Database	Records of known and discovered Aboriginal heritage sites will be maintained on a site Geographical Information System (GIS) database and register.	As required	EH&S Manager
Discovery of new sites	Newly discovered Aboriginal heritage sites shall be reported to the Heritage Branch in accordance with the Northern Territory <i>Heritage Act</i> 2015 (Heritage Act).	As required	EH&S Manager
Aboriginal heritage incident report (internal)	Internal report unless significant incident. Report to contain details of any impacts to known / discovered Aboriginal heritage sites.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Aboriginal heritage incident report (external)	Incident report submitted to the DLPE and the AAPA where the incident involves damage or destruction of an Aboriginal heritage site.	As required	Prepared by Construction Manager and SESC. Review by EH&S Manager.
Monthly reports	Internal report that contains details of any Aboriginal heritage incidents during the reporting period.	Monthly	Prepared by SESC. Review by EH&S Manager.
Annual MMP	Summary of any discovered sites and/or Aboriginal heritage incidents recorded during the reporting period.	Annually	Prepared by SESC. Review by EH&S Manager.



4.10 SOCIAL AND COMMUNITY

4.10.1 OBJECTIVE

The TGU Project does not adversely impact on the social environment and community values of the area.

4.10.2 STRATEGY

The strategy for managing social and community impacts is:

- Reduce TGU Project traffic;
- Maximise use of local workforce and services; and
- Develop a complaints register and procedure for monitoring of complaints.

4.10.3 TARGETS

In order to meet the objective, the following target is set:

- No community complaints received related to TGU Project activities.

4.10.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

TGU Project activities have the potential to adversely impact on the social and community status of the area. Excessive traffic levels can impact on local residents and workers, and the inflow of new workers can alter the social values of an area. Table 44 below identifies the social and community mitigation measures that will be implemented for the TGU Project.

Table 44: Potential impacts and mitigation measures for social and community

Potential Impact	Mitigation Measure	Timing	Performance Indicators
Community complaints received as a result of additional traffic	A bus service shall be provided to transport employees to and from to reduce traffic numbers.	Life of TGU Project	Complaints register
	Where practicable, general freight haulage companies with established routes on Arnhem Highway shall be engaged to utilise any excess capacity.		
Negative impact on housing availability and affordability	Recruitment of local personnel shall be maximised where sufficient skills are available.	Life of TGU Project	Complaints register
Negative impact on tourism	Visual impact of the TGU Project from Arnhem Highway shall be minimised through vegetation placement and TGU Project design.	Life of TGU Project	Complaints register Site inspections
Negative impact	Recruitment of local personnel shall be	Life of TGU	Complaints register



Potential Impact	Mitigation Measure	Timing	Performance Indicators
on community cohesion and inclusion	maximised from a demographic where mining is already significant proportion of industry of employment.	Project	
Negative impact on other land users	Operate within existing access agreement.	Life of TGU Project	Complaints register

4.10.5 MONITORING

The following social and community monitoring actions shall be implemented for the TGU Project.

Table 45: Social and community monitoring requirements

Category	Monitoring Action	Timing	Responsibility
Complaint monitoring	A review of the number, frequency and type of social and community complaints shall be undertaken to identify any potential trends.	Quarterly and as required	EH&S Manager

4.10.6 CONTINGENCY ACTIONS

The contingency actions described below will be implemented if the TGU Project does not meet the social and community targets set in Section 4.10.4.

Table 46: Social and community contingency actions

Performance indicator	Action	Timing	Responsibility
Social and Community Complaint	Investigate complaint and investigate additional mitigation measures	Following incident	EH&S Manager

4.10.7 REPORTING

Reporting requirements related to social and community are provided in Table 47 below.

Table 47: Social and community reporting requirements

Report	Details	Reporting frequency	Responsibility
Social and community incident report (internal)	Internal report containing details of nature of complaint.	As required	Prepared by Construction Manager and SEC. Review by EH&S Manager.
Monthly reports	Internal report that contains summary of social and community complaints received during reporting period.	Monthly	Prepared by SEC. Review by EH&S Manager.



Report	Details	Reporting frequency	Responsibility
Annual MMP	Overview of social and community incidents during the reporting period.	Annually	Prepared by SEC. Review by EH&S Manager.



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6 GLOSSARY

Term	Meaning
AAPA	Aboriginal Areas Protection Authority
AHD	Australian Height Datum
ASX	Australian Stock Exchange Limited
CIL	Carbon In Leach
DLPE	Department of Lands Planning and Environment
DLRM	Department of Land Resource Management
DME	Department of Mines and Energy
EC	Electrical Conductivity
EPA	Northern Territory Environmental Protection Authority
EH&S	Environmental Health and Safety
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
Environmental Policy	Document outlined in Section 3.1 and Appendix B
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
FID	Project Financial Investment Decision
GDP	Ground Disturbance Permit
GIS	Geographical Information System
GL	Gigalitre
ha	Hectares
HSE	Health, Safety and Environment
km	Kilometres
kv	Kilovolts
mRL	Metres Reduced Level
M	Million
m	Metres
M ³	Cubic meters – measure of volume
MCP	Mine Closure Plan
MECMP	Toms Gully Mine Emergency and Crisis Management Plan
Migratory	Species currently on the (EPBC Act migratory species list)
Mining Management Act	<i>Mining Management Act 2001 (NT)</i>
ML	Megalitres (millions of litres)
MLN	Mineral Lease (North)
MMP	Mining Management Plan
NGER	<i>National Greenhouse and Energy Reporting Act 2007 (Cth)</i>
NPI	National Pollutant Inventory



Term	Meaning
NT	Northern Territory
Primary Gold	Primary Gold limited
Proponent	Proponent for the TGU Project being Primary Gold
PMST	Protected Matters Search Tool
PPE	Personal Protective Equipment
Q29	Quest 29 deposit
Risk Register	The document used to identify environmental risks and appropriate controls to manage to an acceptable level.
RL	Relative level – surveyed level relative to a known height.
SEC	Site Environmental Coordinator
SESC	Site Environmental and Safety Coordinator
SSTV	Site Specific Trigger Values
SWG2	Existing Surface Water Monitoring Station on Mount Bundey at Arnhem Highway bridge
t	tonnes
TGU Project	Underground mining Project based on the Toms Gully gold orebody to be accessed via a portal from within the existing Toms Gully pit.
Topsoil	Top layers of the soil containing organic matter and seed. Notionally the top 10 cm of the soil profile.
ToR	Terms of Reference
tpa	Tonnes per annum
TPWC	<i>Territory Parks and Wildlife Conservation Act 2006 (NT)</i>
TSF	Tailings Storage Facility
TSF1	Tailing Storage Facility 1 – Old TSF
TSF2	Tailing Storage Facility 2 – New TSF
Vulnerable	Category of threatened fauna and flora listed under Section 178 of the EPBC Act
Weed	Plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity
WMP	Water Management Plan
WRD	Waste Rock Dumps
WRD1	Waste Rock Dump 1 - Also known as the oxide Waste Rock Dump
WRD2	Waste Rock Dump 2 - Also known as the sulphide Waste Rock Dump
WSD	Water Storage Dam
WDL	Waste Discharge Licence



Appendix A

Environmental Impact Statement Commitments



Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Water (engineering)	Designs for TSF2 raise and WSD to be ANCOLD compliant	Pre-mining	Sign-off of design and construction by qualified engineer	6.4.3.1
	Develop manual detailing appropriate tailings and water management		Sign-off of operating manuals by qualified engineer	
	Install instrumentation (i.e. piezometers, movement monitoring) to enable monitoring		Installation report by qualified engineer	
	Undertake regular routine and intermediate surveillance inspections	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
	Establish sufficient freeboard to contain excess water and pump infrastructure to transfer excess water to alternative locations			
Water (general)	Complete water treatment strategy	Pre-mining	Strategy report	6.4.3.2
	Complete discharge management plan		Management report	
	Complete groundwater bore census	LOM	Census report	
	Complete groundwater modelling		Model report	
	Complete contaminant transport modelling		Model report	
	Treat the water from EP1 and EP2 as part of the pit dewatering procedure	Pre-mining	Water analyses	
	Finalise design for the WSD and provide to the Department of Mines and Energy for review and approval prior to construction		MMP	
	Finalise the TSF2 detailed design, provide to the Department of Mines and Energy for review and approval prior to construction		MMP	
	Install flow meters and water storage gauges to validate the water balance model	Pre-mining	Installation report	
	Weekly readings will be collected on all transfers across site and storage levels	LOM	Weekly report	
	Gather sufficient relevant data and complete an annual update of Water Balance Model		Annual water balance model	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Water (general)	Develop manual detailing appropriate tailings and water management	Pre-mining	Sign-off of operating manuals by qualified engineer	6.4.3.2
	Instrumentation (i.e. piezometers, movement monitoring, tailings beach indicators) to enable tailings management monitoring		Installation report by qualified engineer	
	Implementation of AMD Management Plan including ore and waste rock controls and tailings controls	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
	Capture water within the pit/underground and transfer for treatment and on-site storage			
	Investigation to establish required mitigation measures SWRD and OWRD	Closure	Closure report	
Water (contaminant source control)	Manage disposal of wastes in accordance with the <i>Waste Management and Pollution Control Act 2009</i> and the TGU Project EMP	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	6.4.3.3
	Chemical and hydrocarbon storage facilities banded and managed in accordance with the Hazardous Materials Management Plan and the TGU Project EMP	Pre-mining	Construction/installation sign-off by qualified person	
	Waste rock left in or returned to underground or stored within base of pit	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
	All of the Ore unit is considered to be PAF and shall only be stockpiled underground, in the base of the pit or on the ROM pad			
	No waste rock is to be moved beyond the pit base			
	No waste rock is to be used for construction purposes, other than the distal hanging wall unit			
	No waste rock from the existing sulphide or oxide waste rock dumps is to be used for construction purposes			
	The existing SWRD and OWRD are to be maintained to ensure their integrity			
	All metallurgical tailings to be treated as PAF and placed in TSF2			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	The existing TSF1 is to be maintained to ensure its integrity until removal and rehabilitation			
	Maintain a minimum freeboard on TSF2 for water management purposes			
	All tailings decant water is to be treated as contaminated and retained within the process circuit other than in an emergency situation			
Water (surface)	Review existing site drainage, retain and renovate to ensure they are fit for purpose	Pre-mining	Inspection and construction report	6.4.3.3
	Clean sumps and drains at least annually before each wet season	LOM		
	Prepare a water treatment plan including proposed water treatment methodology and target outcomes for review and approval as part of the Waste Discharge Licence and Mining Management Plan	Pre-mining	Treatment plan, WDL, MMP	
	Design and install water retention ponds sized to capture an Average Recurrence Interval (ARI) rainfall event appropriate to their hazard category plus an appropriate freeboard allowance for sedimentation		Construction design and construction/installation report	
	Monitor and manage water levels in the retention ponds to maximise available storage capacity prior to the Wet Season	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
	Establish a Discharge Management Plan and apply for a Waste Discharge Licence to reduce volumes of water stored on-site	Pre-mining	Management plan, Water Discharge Licence application	
	Rock armour protection on northern TSF2 embankment to protect against 1 in 100yr ARI flood level		Construction report by qualified engineer	
	Upgrade of embankment levels on existing infrastructure above 1 in 100 year ARI flood levels			
	Installation of clean water diversion channels			
	Installation of rip-rap protection on earthwork embankments adjacent to drainage channels			
Regular inspections of bunds/embankments by a suitably qualified engineer and maintenance as necessary	LOM	Inspection reports		

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	Undertake regular routine and intermediate surveillance inspections			
	Drainage to be designed to capture runoff from infrastructure and transfer to retention basins	Pre-mining	Design report	
Water (groundwater)	Install and/or rehabilitate groundwater monitoring wells to provide upstream, mid and downstream coverage of infrastructure and underground operation. The installation will include MB1A, MB1B, MB2A, MB2B, MB3A, MB3B, MB4, MB5A, MB5B, MB6A and MB6B;	Pre-mining	Installation and construction reports	6.4.3.5
	Investigate the degree of interconnectivity between Mount Bundey Creek and associated alluvium. The investigation will assess life of mine and closure impacts in relation to the potential for contaminated groundwater migration off lease boundary and potential impacts on GDEs;	LOM	Contaminant report	
	Groundwater bore census to confirm if bores meet minimum construction requirements for water bores in Australia and decommission or rehabilitate in accordance with the guidelines	Pre-mining	Census report	
	Groundwater model and monitoring to establish cone of depression from dewatering and proposed LOM underground shells	LOM	Groundwater model report	
	Undertake investigation to establish quality of sediment and determine management requirements (i.e. removal, on-site landfill, cap)	LOM	Investigation report	
	Implement Groundwater Monitoring Program	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
Acidic and metalliferous drainage (general)	All PAF material will be compacted and encapsulated under water or within NAF material	LOM & Closure	Operations & closure plan implemented to design	7.4
Acidic and metalliferous drainage (ore & waste rock design measures)	All waste rock is to be disposed of underground or in the base of the pit	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	7.4.3.1
	Ore is only to be stored underground, in the pit or on the ROM Pad			
	Effective drainage keeping clean water out of the pit and directing dirty water from ROM Pad to the stormwater sump			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Acidic and metalliferous drainage (ore & waste rock design measures)	Pit is to be flooded for mine closure to minimise oxygen availability to PAF waste rock	Closure	Inspection report	7.4.3.1
	Annual design review accompanying MMP that verifies the AMD standards shall be implemented for the MMP term	LOM	Review report, MMP	
	Material will be placed using boggers in accordance with the mine development schedule under the supervision of the Mine Geologist		Inductions, inspections, daily, weekly, monthly, annual reports	
	Water that has been in contact with the waste rock will be treated as contaminated and managed accordingly			
	Suitable locations for the underground placement of waste rock are to be determined by the Mining Engineer in consultation with the Mine Manager. These would be communicated to the Mine Geologist for implementation			
Acidic and metalliferous drainage (operational measures)	Preparation and implementation of AMD Management Plan and site AMD procedure	LOM	AMD MP, Inductions, inspections, daily, weekly, monthly, annual reports	7.4.3.2
	Preparation and implementation of the TGU Project WMP that includes the AMD water monitoring analytes		WMP, Inductions, inspections, daily, weekly, monthly, annual reports	
Acidic and metalliferous drainage (tailings design measures)	TSF2 embankments will be raised using a downstream lift	Pre-mining	Design, construction report by qualified engineer	7.4.4.1
	TSF2 will have an engineered geomembrane installed over the historic tailings during the first lift to minimise the risk of leakage			
	All tailings from TSF1 and potentially TSF2 to be placed into the pit post closure for AMD management purposes	Closure	Closure report	
	If not placed into the pit, all tailings in TSF2 to be capped in-situ in accordance with an approved closure design			
	The pit is to be flooded for mine closure to minimise oxygen availability to PAF tailings			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Acidic and metalliferous drainage (operational measures)	All metallurgical tailings to be treated as PAF and placed in TSF2	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	7.4.4.2
	Preparation and implementation of AMD Management Plan and AMD site procedure		AMD MP & site procedure, Inductions, inspections, daily, weekly, monthly, annual reports	
	The existing TSF1 is to be maintained to ensure its integrity until removal and rehabilitation		Inductions, inspections, daily, weekly, monthly, annual reports	
	Development of a TSF2 operating manual / procedure	Pre-mining	Operating manual / procedure	
	All tailings decant water is to be treated as contaminated and retained within the process circuit other than in an emergency situation	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
Acidic and metalliferous drainage (construction material)	Underground waste rock from the TGU Project shall not be used as construction materials	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	7.4.5
Acidic and metalliferous drainage (drainage)	The TSF water circuit is designed to be closed during operations, with decant water being the priority water source for the processing operation	LOM	Design document, Inductions, inspections, daily, weekly, monthly, annual reports	7.5.1
	Drainage from the ROM pad shall be directed to the Stormwater Sump which shall be managed to prevent overflow			
	Water from the Stormwater Sump shall not be released directly to the environment. It shall be utilised in the process as first priority		Inductions, inspections, daily, weekly, monthly, annual reports	
Biodiversity (flora, vegetation and fauna habitat)	<p>A Ground Disturbance Permit System shall be implemented to restrict the number and extent of cleared areas to the minimum needed for safe and efficient implementation of the TGU Project. The system shall include:</p> <ul style="list-style-type: none"> • Checks that clearing requirements are consistent with approvals • Geographical Information System (GIS) information identifying significant flora and fauna features for use when planning Project activities 	Pre-mining	Permit system	8.4.1

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Biodiversity (flora, vegetation and fauna habitat)	<ul style="list-style-type: none"> A communication and approval system that requires Management signoff; and Specifications for clearing 			8.4.1
	Vegetation clearing shall occur within approved boundaries	Pre-mining	EIS, MMP	
	Disturbance of riparian vegetation shall be avoided wherever practicable	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	
	Required clearing shall be minimised, for example: <ul style="list-style-type: none"> Material from excavations will be used for construction where practicable Pre-disturbed areas shall be used wherever possible 		Construction design, Inductions, inspections, daily, weekly, monthly, annual reports	
	Rehabilitate cleared areas in accordance with the MCP		Inductions, inspections, daily, weekly, monthly, annual reports	
	Machinery hygiene procedures shall be implemented to manage the risks of weed introduction and export to and from the site		Procedures, inductions, inspections, daily, weekly, monthly, annual reports	
	Movement of topsoil between sites where weeds could be spread to new locations shall be restricted			
	All ground engaging equipment shall be required to arrive on site clean of plant and soil material from other sites or hygiene work areas			
	Weed surveys shall be conducted as soon as practicable after construction to determine whether construction of the TGU Project has increased the population or distribution of weeds. If determined that the TGU Project has caused an increase in the population or distribution of weeds corrective actions (spraying, removal etc.) shall occur after consultation with relevant government authorities and weed experts as to the preferred course of action			
Fencing shall be installed around the TGU Project site	Pre-mining	Construction report	8.4.2	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Biodiversity (fauna)	Speed limits shall be applied and enforced within the TGU Project site	LOM	Signage, inductions, inspections, daily, weekly, monthly, annual reports	
	Selected personnel shall be trained in wildlife rescue protocols. All other staff shall notify trained staff of any incidences of fauna injury or death. Incidents shall be investigated with follow up measures implemented.		Training, inductions, reports, investigations, follow-up measures	
Biodiversity (fisheries & aquatic ecosystems)	Pit water shall be treated to livestock water quality standards	Pre-mining	Water quality analyses	8.4.3
	Treated water shall be released to Mt Bunday Creek to meet 80% ANZECC & ARMCANZ (2000a) criteria at the downstream compliance point			
	Clean water shall not be mixed with dirty water	LOM	Inspections, water quality analyses, daily, weekly, monthly, annual reports	
	A bio-monitoring programme shall be implemented downstream of the mine site in Mount Bunday Creek; and		Monitoring report	
	Water quality and water release shall be monitored in accordance with the WMP		WMP reporting	
	Stockpiled vegetation and topsoil shall be stored away from water courses to prevent sedimentation		Inspections, daily, weekly monthly, annual reporting	
	Impact on active creek beds shall be minimised through the use of culverts, to help protect riparian vegetation		Monitoring report	
	Monitoring of riparian vegetation health shall be undertaken to ensure that surface hydrology management measures are suitable		Inductions, inspections, daily, weekly, monthly, annual reports	
	All waste rock shall be assumed to be PAF and shall remain underground, or if not practicable, placed in the pit			
	No waste rock from the existing sulphide or oxide waste rock dumps shall be used for construction purposes			
	All metallurgical tailings shall be treated as PAF and placed in TSF2			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	A minimum freeboard shall be maintained on TSF2 for water management purposes			
	All tailings decant water shall be treated as contaminated and retained within the process circuit other than in an emergency situation			
	The mitigation measures as outlined within the TGU Project EMP shall be implemented		EMP reporting	
Biodiversity (introduced or invasive species)	Where feral animal numbers are increasing as a result of Project activities, mitigation measures as outlined in the relevant Threat Abatement Plans shall be implemented where required and practicable	LOM	Inductions, inspections, repairs/construction, daily, weekly, monthly, annual reports	8.4.4
	Existing stock proof fencing shall be upgraded and extended where required to restrict access to the site by stock and larger sized feral animals			
Historic and Cultural Heritage	All personnel shall undertake an induction that outlines their requirements in relation to historic and cultural heritage management	LOM	Inductions	9.4
	All personnel shall be informed of the need to identify and protect historic and cultural heritage sites		Inductions, inspections, daily, weekly, monthly, annual reports	
	All clearing shall be undertaken in areas approved to be cleared in accordance with an approved Ground Disturbance Permit		Stop work, assessment, authorisation	
	In the event of a discovery of objects suspected to have historic and/or cultural heritage significance, work at that location shall stop immediately until the object/s can be assessed and authorisation given to continue activities		Notification	
	Should the objects discovered be human remains, the NT Police will be immediately notified		Demarcation on-ground and mapped	
	If a historical or cultural heritage site is determined, the area shall be flagged on the ground and demarcated on drawings. No works shall be undertaken within this flagged area until approval to disturb is granted		Approval, consultation	
	Where a determined historical or cultural heritage site is required to be disturbed, approval shall be sought for its disturbance. Works shall then be			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Historic and Cultural Heritage	undertaken in accordance with the Heritage Act, the conditions of the Works Approval and in consultation with TOs	LOM		9.6
	Although there are currently no historic or cultural heritage sites within the Project site, any newly discovered sites shall be flagged and the condition of the flagging will be regularly monitored		Demarcation, monitoring	
	The site will be inspected and any impacts or disturbance will be recorded		Inspection, report	
	Sites and flagging shall be inspected weekly during the construction phase of the Project and monthly thereafter		Weekly, monthly inspections	
Infrastructure integrity and suitability (proposed and renovated infrastructure)	Roads and tracks will be renovated to be fit for purpose, with safety bunds, drainage, signage all reviewed and upgraded as required	LOM	Review and construction/renovation report	10.4.1
	On-site road and traffic risks will be managed as a safety issue and have been considered in the risk assessment		Risk assessment	
	Additional controls will include education and training (including records of same), qualifications and competency assessment, vehicle inspections and maintenance, radio and communications requirements and regular reporting		Induction, training, assessments, inspections, reporting	
	Renovations to the processing plant area will be completed to ensure it is fit for purpose with all infrastructure being subject to engineering inspection prior to and post-renovation	Pre-mining	Engineers report pre & post renovation	
	The existing evaporation ponds will continue to be regularly inspected	LOM	Inspection reports	
	The water currently residing within the evaporation ponds will be treated along with the pit water to provide additional water storage in the ponds	Pre-mining	Water quality analyses	
	TSF2 and the new WSD design and construction to be consistent with the: <ul style="list-style-type: none"> Guidelines on Tailings Dams - Planning, Design, Construction, Operation and Closure (ANCOLD 2012); Code of Practice, Tailings Storage Facilities in Western Australia (Department of Mines and Petroleum 2013); and AS 1726-1993 SAA Geotechnical Site Investigations. 		Sign-off of design and construction by qualified engineer	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Infrastructure integrity and suitability (proposed and renovated infrastructure)	<p>Additional mitigation measures will be defined by the detailed design and the accompanying operating manual for TSF2. This will include industry standard measures including:</p> <ul style="list-style-type: none"> • Identification of freeboard requirements to enable retention of a 1:100 year 72 hour rainfall event at all times • Monitoring of pond size • Spill prevention and containment measures including bunding, inspections and reporting • Embankment integrity monitoring including inspections, annual audits • Use of a GCL to limit seepage of tailings slurry water • Additional groundwater monitoring around TSF2 • Continued surface water monitoring around TSF2 • Commitment to a detailed closure plan including cover specifications for TSF2 should sufficient suitable cover materials be identified 		Sign-off of design and operating manual by qualified engineer	10.4.1
Infrastructure integrity and suitability (existing infrastructure)	The proposed raising of the TSF2 embankment will provide additional protection against inundation of the tailings by floodwater. At completion, the embankment height will ensure that a 1:100 year flood event would not inundate the tailings	Pre-mining	Flood model	10.4.2.1
	TGU operations will not result in any changes to the construction, structural integrity or rehabilitation status of WRD1 or WRD2	LOM	Inductions, inspections, daily, weekly, monthly, annual reports	10.4.2.2
	<p>As part of the ongoing investigations to plan for the remediation of both the SWRD and OWRD, the risk of ongoing contamination will be mitigated by:</p> <ul style="list-style-type: none"> • Conduct an investigation into water management for the WRDs that assesses the potential for water to enter the structure, the quality of runoff and seepage water, the locations for seepage exit and options for capture; and • Review the options for long term remediation of the WRDs. 		Investigations undertaken	
Capping or removal of the tails from TSF1 such that they are placed in the bottom of the pit (potentially via re-processing), or capped and	Closure	Closure plan, closure reporting	10.4.2.4	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Infrastructure integrity and suitability (existing infrastructure)	rehabilitated in-situ should sufficient suitable materials be located and a detailed closure plan for TSF1 approved			
	Rehabilitation of the TSF1 footprint with materials suitable to ensure revegetation and the capacity to resume pastoral land use on the site			
	Oxbow Wetland area (used as passive treatment for runoff from WRD1) is seen as an asset and will be retained for ongoing use. The existing monitoring sites for surface water will be retained and continue to be monitored	LOM	Operations and closure reporting	10.4.2.5
	The existing pit will be retained and used as a low oxygen storage location for any TGU generated PAF waste rock unable to be retained underground and potentially for PAF tailings from TSF1	Closure	Closure plan, closure reporting	10.4.2.6
Human Health and Safety (vehicle accidents)	All PG mine employees and contractors are expected to comply with all requirements of the EH&S MS.	LOM	Inductions, reporting	11.3
	Primary Gold proposes to provide a bus service for the transfer of employees to and from work		Bus contract	11.4.1
	PG will ensure that the dedicated bus driver is a competent driver with the necessary driving permits in place		Driving permits	
	PG will ensure that the bus is kept in good condition and serviced on a regular basis		Service reports	
	Management measures to minimise such vehicle accidents include: <ul style="list-style-type: none"> • Drivers shall have the required permits/licences in place; • Drivers shall be aware of and comply with the Project Traffic Management plan; • Speed limits shall be applied and enforced within the Project site; • Pedestrian areas shall be demarcated 		Permits, induction, signage, reporting	
	Road signage shall be installed on the Northern and Southern approaches of Arnhem Highway warning of the mine entrance and the potential for entering and exiting vehicles		Signage in-place	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	This signage shall be in accordance with Austroad requirements and to the satisfaction of the Northern Territory Department of Transport		Inspection, report	
	Signage shall be installed along the site entrance road warning of the upcoming intersection with the Arnhem Highway		Signage in-place	
	A stop sign shall also be installed on the entrance road at the intersection point			
	Vehicle speed limits shall be set and signposted within the Project site			
Human Health and Safety (plant & equipment)	Use of plant and equipment shall require competency based training delivered and assessed by a trained and certified person	LOM	Certified training & assessment	11.4.2
	The induction process shall include specific hazard awareness training regarding plant and equipment both on and off-site		Service reports	
	Plant and equipment shall be maintained through a robust maintenance regime by competent and appropriately experienced personnel		Equipment specification	
	An equipment specification for each type of equipment shall define the risk controls necessary to ensure the safe operation of equipment		Inductions, reporting	
	Personnel shall wear high visibility clothing and maintain direct radio contact when working alongside or within heavy plant			
Human Health and Safety (fire)	All underground mobile mining equipment shall be fitted with fire suppression	LOM	Daily inspection	11.4.3
	An equipment specification for each type of equipment shall define the risk controls necessary to ensure the safe operation of equipment		Equipment specification	
	Equipment shall be maintained through a robust maintenance regime by competent and appropriately experienced personnel		Service reports	
	Fire extinguishers shall be placed on all mobile equipment and at strategic locations in and around all fixed infrastructure		Daily inspection	
	Refuge chambers shall be installed underground		Installation report	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	All personnel who are underground shall be trained and use a self-rescuer and they are inducted and trained in its use		Induction, training, usage	
	Equipment fire risk, mitigation, and contingency action shall be included in all operator training		Training records	
Human Health and Safety (mine collapse and flooding)	All designs for underground openings, pit walls, and dam walls shall include geotechnical input and sign off	Pre-mining	Geotechnical assessment report and design sign-off	11.4.5
	When working underground, no person shall be permitted to work under unsupported ground	LOM	Inductions, barricades	
	Slope management plans shall be developed for any active surface mining activity where wall failure is identified as a high or extreme risk		Management plan	
	The ground control management plan shall include the necessary requirements to mitigate ground failure risks		Contingency pumps and power installed pre-wet season	
	Mine pumping capacity shall include contingency volume and also includes backup diesel pumps to mitigate against power loss			
Human Health and Safety (hazardous materials and storage)	H&S and Environmental management will support line management with assistance to identify and evaluate alternate products	LOM	List of alternates	11.4.6.1
	Should a new chemical be required (at Project commencement all hazardous materials will be treated as new products), a request form is to be completed and for approval by the relevant Coordinator		Request form	
	If the product is classified as Hazardous, Dangerous, or is one of its ingredients or is suspected of being carcinogenic, teratogenic / mutagenic (reproductive toxicants), a Hazardous Substance Risk Assessment (see Senior H&S Adviser) must accompany this application.		Risk assessment	
	shall be stored in a secure, limited access area until disposal	LOM	Barricade, demarcation	11.4.6.2
	Hazardous materials storage as per MSDS recommendations		Audit	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Human Health and Safety (hazardous materials and storage)	Hazardous materials storage areas and bunding constructed as per Australian Standard AS1940	LOM	Inspection	11.4.6.2
	Incompatible hazardous materials shall not be stored together		First aid kit installed	
	Appropriate first aid equipment shall be made available		Audit report	
	Hazardous materials storage practices and physical arrangements shall be regularly audited		Inspections, MSDS sheet	
	Transport and use of hazardous materials in accordance with relevant regulations, and directions given on the MSDS for the substance		Installed signage	
	Suitable signage shall be used during transport of hazardous materials		Audit	
	Decanting and labelling carried out in accordance with the National Code of Practice for the Labelling of Workplace Substances NOHSC (1994)		Audit, labels	
	Containers used for decanting hazardous materials shall be as per the MSDS requirements of the substance and all containers labelled appropriately		Inspect packaging, storage & MSDS	
	Hazardous materials that are no longer required on-site shall be stored in the salvage yard until disposal. The substance shall be suitably packaged, include a sealed copy of the MSDS with each container and returned/disposed of at an appropriately licensed facility			
	In the event of a hazardous materials spillage, the MSDS shall be consulted for spill procedures and clean-up in accordance with the HMMP & ECMP		Check against MSDS & HMMP	11.4.6.3
Human Health and Safety (falls from height)	All works to be undertaken at height shall require either a documented work procedure or a Job Hazard Analysis (JHA) prior to commencement. A Take 5 shall also be used immediately prior to the task	LOM	Documented procedure, JHA & Take 5	11.4.7
	Risk assessments shall apply the hierarchy of avoiding working at heights where other safer options can be implemented.		Safer option implemented	
	Fall prevention shall be used to prevent personnel from falling from height if reasonably practicable		Fall prevention used	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS	
	Where fall prevention cannot be used then fall arrest shall be used through PPE		Fall arrest used		
	Any person using fall prevention or fall arrest harness shall be trained in the use of the equipment		Documented training		
Social and Economic Environment (economic risk)	Target Opex costs in lower quartile of Australian production costs combined with a forward gold price hedging strategy	LOM	Monthly & annual management reports	12.4.1	
	Target Opex costs in lower quartile of Australian production costs consider foreign exchange hedge				
	Target Opex costs in lower quartile of Australian production costs consider and review any potential advantages of a diesel fuel price hedging strategy				
	Implement a ground monitoring programme that effectively captures changes in ground conditions and stress		Inspections, regularly reporting		
	Ensure adequate pumping capacity available at all times. Ensure availability of effective drainage which can be used during high rainfall events. Install and maintain effective water drainage control bunds around potential water ingress channels				
	Metallurgical recovery testing of exploration samples on an appropriate density to undertake recovery modelling, monitor in production reconciliation studies				Testwork, modelling, daily, weekly, monthly reporting
	Ensure appropriate warranties in place and maintain appropriate critical mechanical spares inventory				
	Grade control and mapping programmes combined with effective production reconciliation studies both present and historical				Warranties, spares
	Use of Australian Standards for preparation of applicable and appropriate contract conditions. Conduct appropriate legal and commercial due diligence. Use only reputable established contract companies with record of successful completion.				Reconciliations
	Commercial contracts				
Primary Gold will seek to employ locally	LOM	Proportion of local employees	12.5.1		

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Social and Economic Environment (workforce)	Provide bus services to transport employees to and from work.		Bus contract	
Social and Economic Environment (accommodation & housing)	If it is necessary to recruit from outside the area, the individuals concerned will be accommodated at currently operating accommodation service premises in the local area	LOM	Provision of accommodation services	12.5.2
	Occasional overnight visitors to the TGU Project will be accommodated in currently operating accommodation service premises in the local area			
Social and Economic Environment (traffic & transport)	<p>The safety risk associated with the transport of hazardous goods to site (diesel fuel, cyanide, caustic) will be minimised by ensuring transport of such goods is in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (NTC Australia 2014) and the following mitigation measures:</p> <ul style="list-style-type: none"> • Ensure supply of hazardous goods is by recognised and approved suppliers; and • Ensure transport of hazards goods is as per directions of the MSDS. 	LOM	Audit	12.5.3
Social and Economic Environment (summary)	Vegetation placement and good design to minimise visual impacts	LOM	Positive consultation outcomes	12.5.7
	Seek commercial terms from NT based providers		List of providers	
	Where possible, recruit locally		Proportion of local employees	
	Operate within the existing access agreement		Positive consultation outcomes	
Rehabilitation and closure (planning)	Sufficient resources shall be made available to enable detailed closure planning to be completed ensuring mine closure standards are implemented	Planning and Operations	Detailed plans for closure and rehabilitation	13.4

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	Planning shall include consultation with key stakeholders	Closure	Consultation records	13.4
Rehabilitation and closure (post-mining land use)	The mine closure process shall enable the TGU Project to be closed and rehabilitated so that pastoral grazing land use may be fully resumed over the majority of the land	Post-closure	Pastoral grazing resumed over rehabilitated and closed areas	
	The mine pit, WRDs and associated drainage controls shall be retained post closure.	Post-closure	Mine drainage retained during closure	
Rehabilitation and closure (tailings)	All tailings shall be stored in safe, stable long term facilities that may include in-situ encapsulation within, or placement in the base of the pit (or underground workings) prior to flooding the pit	Closure	Approved capping design or in-pit disposal	
	The tailings stored in the TSF1 site shall be either re-processed or placed directly in the pit (including underground workings) or have in-situ encapsulation	Closure	TSF1 tails removed	
Rehabilitation and closure (waste rock)	Existing WRDs are to be retained with management focusing on investigating causes of AMD and potential solutions, maintenance of drainage controls and monitoring	Closure	Investigation and Options report	
Rehabilitation and closure (pit and underground workings)	The pit and underground workings shall be used for long term storage of AMD materials then allowed to flood	Closure	AMD materials records, AMD audit at mine closure	
	The abandonment bund shall be reviewed at closure to prevent inadvertent vehicle access.	Closure	Bund in place	
Rehabilitation and closure (water)	Closure of TGU Project shall be designed and completed to ensure that water quality of Mount Bunday Creek and the post-mining pastoral land use areas is protected.	Closure	Water quality monitoring records	
	Site drainage shall be configured to minimise risks associated with the existing WRDs.	Closure	MMP approved site drainage plan	
Rehabilitation and closure (processing area)	At closure, the processing area shall be cleaned, equipment sold and relocated or removed from the area and disposed of at a suitable location (in-pit or landfill).	Closure	Equipment removed, Disposal records	

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
and ancillary infrastructure)	At closure, surface material from the processing area that is contaminated with ore, waste rock or tailings shall be removed and placed in-pit or TSF. Suitable growth medium shall then be spread over the processing area and it shall be revegetated with native species.	Closure	Post-closure inspection	13.4
Rehabilitation and closure (rehabilitation)	Areas to be cleared of vegetation shall have any useful materials (seed, timber) salvaged, before vegetation is pushed aside, topsoil (notionally 10 cm) and other useful growth media or construction materials are stockpiled for later use	Closure	GDPs for clearing, Audits of GDP conditions	
	Topsoil that is likely to be infested with weed seed shall be stockpiled separately from clean topsoil	Closure	GDP records, GDP audit records	
	Areas designated for rehabilitation (TSF footprints) shall be prepared with topsoil spread to specified thicknesses, ripped and seeded with native species	Closure	Post-closure inspection	
	Weed infested topsoil shall only be used in areas designated as appropriate by the site EHS Manager. A weed control programme shall be used to control weeds if necessary	Closure	GDP records, Weed map	
Rehabilitation and closure (post closure monitoring and reporting)	Rehabilitation monitoring shall be completed in the first wet season and any remedial actions identified and implemented by the next wet season	Closure	Rehabilitation monitoring reports	
	Annual reporting on rehabilitation and closure progress and plans shall be provided to DME for a minimum of five years post-closure	Closure	Rehabilitation monitoring reports	
Rehabilitation and closure (record keeping)	Records of rehabilitation and closure activities shall be retained by Primary Gold and submitted to DME annually	Closure	Rehabilitation monitoring reports	
Other factors (fires and bushfires)	Prior to hot works commencing on-site, the surrounding area shall be cleared of all combustible material and a fire extinguisher and some other means of fire suppression shall be provided and available	LOM	Nil fires on site	14.1.2
	Cigarette smoking shall be restricted to approved areas only, with appropriate cigarette butt disposal facilities available			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Other factors (fires and bushfires)	No burning of rubbish or open fires shall be permitted on-site	LOM	Nil fires on site	14.1.2
	Vehicles shall be restricted to existing roads and tracks where practicable			
	Vehicle undersides shall be checked and any material stuck around exhaust manifolds shall be removed as part of normal vehicle pre-start check routines			
	Firebreaks shall be established around key facilities and shall be maintained on a seasonal basis (as required)			
	All buildings on-site should comply with Australian Standards and Fire Safety regulations			
	Firefighting equipment including fire extinguishers or other control equipment shall be made available in all vehicles and at designated work area points			
	Firefighting equipment shall be maintained to comply with relevant fire safety standards			
	A fire management works/action programme shall be implemented which will detail spatial and temporal aspects of wildfires and hazard reduction burns, mapping of fire extents and documentation of fire effects and control outcomes			
	Fire breaks shall be slashed or graded at the end of the wet season (or when access is permissible)			
	A 5 m buffer zone shall be installed and maintained either side of the site boundaries and the constructed stock fence			
Controlled mosaic burning shall be undertaken within the TGU Project area to reduce fuel loads Burns shall be coordinated with the assistance of the pastoralist, Bushfires NT or local volunteer brigade				
	All plant and equipment shall be maintained in good working order and fitted with appropriate noise abatement devices where required	LOM	Nil incidents, complaints	14.2.2

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Other factors (noise and vibration)	During the construction phase, works which have the potential to result in excessive noise or vibration shall be undertaken as per regulatory requirements. Where excessive noise and vibration works are required to be undertaken outside these hours, the pastoralist and station manager shall be notified	LOM	Nil incidents, complaints	14.2.2
	A complaints register shall be maintained to record any community and/or worker complaints received concerning excessive noise and vibration levels			
	Workers shall wear hearing protection when undertaking tasks that exceed occupational health and safety limits for noise (above LAeq, 8h of 85 dB(A)). Hearing protection shall meet Australia Safety Standards in accordance with AS/NZS 1269.3			
	Areas where people may be exposed to excessive noise levels should be sign-posted as hearing protector areas			
	A blast management plan shall be prepared prior to the commencement of blasting. This shall include details of nearest receptors, potential impacts and appropriate mitigation measures			
	All workers and visitors shall be made aware of the blast schedule			
Other factors (air emissions)	Construction works that have the potential to generate high dust levels shall be restricted during times of high wind in the direction of station dwellings	LOM	Nil incidents, complaints	14.3.2
	Water shall be applied to unsealed tracks and open areas during times of increased dust levels			
	Ore shall be wetted prior to crushing			
	Dust shall be controlled using sprays over the conveyors at crusher and mill feed during processing			
	Vehicle speed limits shall be set within the TGU Project site			
	Clearing shall be restricted to the minimum required			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
	Vehicles shall keep to designated tracks as far as practicable			
	All plant and equipment shall be regularly inspected and maintained to minimise exhaust emissions			
	No burning of waste shall be permitted on-site			
Other factors (visual amenity)	Mining will be restricted to underground and there shall be no surface expansion of the pit	LOM	Positive consultation outcomes	14.4.2
	Waste rock material shall be disposed of underground or in the bottom of the existing pit to avoid the need to create additional WRDs			
	Options to rehabilitate the existing sulphide and oxide WRDs shall be investigated			
	Areas required to be cleared shall be restricted to the minimum required			
	Existing cleared areas and tracks should be used for laydown and temporary construction areas in preference to undertaking new clearing			
	Water shall be applied to unsealed tracks and open areas during times of increased dust levels			
Other factors (mosquito breeding)	Where practical, dam walls should be constructed with steep sides (45 degree slope) to prevent the establishment of semi-aquatic vegetation that will provide suitable breeding habitat	LOM	Nil mosquito reports	14.5.2
	Surface water drainage shall be designed to minimise potential for ponding			
	Areas of frequent surface water ponding shall be filled in or drained where practicable			
	Stockpiles shall not be placed in areas that may impede drainage and shall be contoured to prevent ponding of water			
	Sedimentation ponds shall be designed to drain and empty following rainfall events			

Category	Commitment	Timeline	Performance Indicators	Section from the EIS
Other factors (mosquito breeding)	Unless in use, all rainwater tank access points, (excluding inlet and outlets), shall be kept shut to prevent mosquito access. Inlets and outlets shall be covered with closely fitting removable insect-proof screens			14.5.2
	Wastewater treatment and storage systems shall be designed and constructed as per DoHCS guidelines			
	Dead and lodged reeds shall be removed from Bazzamundi lake on an annual basis where practicable			
	Where Project activities have created active breeding sites, these sites shall be modified where practicable to prevent further breeding	LOM	Nil disease reports	
	Where active breeding sites are unable to be modified, options for chemical control shall be investigated in consultation with the Medical Entomology Branch of the DoHCS			
	Workers shall wear long sleeved shirts, long trousers and mosquito repellent during times of high mosquito activity			
	Site offices and cribs shall be screened and air conditioned to discourage the presence of mosquitos			
	Workers shall be educated in the prevention and early identification of mosquito and biting insect borne diseases			

Appendix B

Environmental Policy



ENVIRONMENTAL POLICY

Primary Gold is committed to promote sound environmental and community engagement practises into all facets of our business.

Primary Gold acknowledges and believes that effective environmental management is paramount to a successful future.

To promote our commitment to Environmental Management, Primary Gold commits to:

- ❖ **Comply** with all corporate requirements, environmental legislation, licenses and regulations;
- ❖ **Develop** and maintain a comprehensive and effective Environmental Management System;
- ❖ **Foster** mutually beneficial environmental partnerships in all phases of our operations;
- ❖ **Conduct** business in a manner that minimises any potential environmental impacts;
- ❖ **Instil** behaviour of primary environmental performance in all persons involved in our operations;
- ❖ **Foster** mutually beneficial environmental partnerships with host communities;
- ❖ **Implement** and maintain a culture where appropriate environmental, social, cultural and economic considerations are effectively integrated into all planning and decision making processes;
- ❖ **Seek** continuous improvement in the management and use of resources in environmentally responsible exploration, mining, processing, waste management and rehabilitation;
- ❖ **Understand**, encourage and promote eco-cultural and cross cultural awareness, and identify and protect sites of environmental or cultural significant;
- ❖ **Maintain** appropriate and effective communication with all stakeholders, who may be directly affected by our operations;
- ❖ **Provide** for the reclamation and rehabilitation of areas affected by our operations, considering future end land use.

To fulfil our commitment to the environment we will aim to continually improve our environmental performance by regularly;

- ❖ Reviewing objectives and targets;
- ❖ Monitoring performance against objectives and targets;
- ❖ Evaluating our environmental risks and striving to implement appropriate controls.



Clay Gordon
Managing Director
13/08/2015



PRIMARY
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