

PRiMARY
GOLD



Toms Gully Underground Project EIS Supplement

Appendix M – NT EPA Correspondence on Primary Gold's Draft EIS



Northern Territory
Environment Protection Authority

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Our ref: EN2014/0040-006

Mr Clay Gordon
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Dear Mr Gordon,

**RE: PRIMARY GOLD LIMITED - TOMS GULLY UNDERGROUND PROJECT –
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

The Northern Territory Environment Protection Authority (NT EPA) examined the draft Environmental Impact Statement (EIS) for the Toms Gully Underground Project, which was exhibited publicly between Saturday 26 September and Friday 6 November 2015. Comments from the NT EPA are attached.

Written submissions on the draft EIS were received from ten NT Government advisory bodies, two non-government organisations and a member of the public. The submissions are attached.

Pursuant to clause 12 of the Environmental Assessment Administrative Procedures (EAAP), I now direct Primary Gold Limited to provide the NT EPA with a Supplement to the draft EIS for the Toms Gully Underground Project (the Supplement).

I am required to consult with you with respect to the period to lodge the Supplement with the NT EPA in accordance with clause 12(3)(a) of the EAAP, which I propose to be within two years from the date of this letter. I consider this period appropriate to enable Primary Gold Limited to address the written comments received on the draft EIS and to produce the Supplement. I would appreciate your written response with respect to the period to lodge the Supplement.

Once completed, the Supplement and draft EIS it supplements are collectively referred to as the Environmental Impact Statement (EIS). The EIS should contain a summary of written comments received on the draft EIS and how those comments have been addressed; and contain sufficient information to avoid the need to search out previous or additional, unattached reports. Many of the submitters identified that the studies used to develop the risk assessment and environmental management sections of the draft EIS were not complete or were preliminary in nature. It is likely that further data collection and studies will need to be repeated/augmented or commenced to provide sufficient information for baseline data and risk assessment for inclusion in the Supplement.

The NT EPA will consult with NT Government advisory bodies, suitably qualified persons or organisations and commenters on the draft EIS when examining the EIS in accordance with clause 14 of the EAAP. The NT EPA may request further information from Primary Gold Limited to facilitate the examination of the EIS if the information provided in the EIS is considered deficient.

I understand that the Toms Gully Underground Project was not referred to the Australian Government for consideration under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to the action occurring within an existing brownfield footprint. The draft EIS included new project components in areas of undisturbed land, including the construction of a 54 ha water supply dam. I encourage you to contact the Australian Government to determine whether a referral is required under the EPBC Act.

Any queries in relation to this letter should be directed to Michael Browne, NT EPA on (08) 8924 4149 or by email at eia.ntepa@nt.gov.au.

Yours sincerely



DR BILL FREELAND
Chair

18 November 2015

Attached: - *Table of NTEPA comments*
 - *Table of All Agency Comments*

NT EPA COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

PRIMARY GOLD LIMITED - TOMS GULLY UNDERGROUND PROJECT

Topic	Terms of Reference item / Draft Environmental Impact Statement section	Comment
Risk assessment	Section 6.1 of the Terms of Reference (ToR) required the Environmental Impact Statement (EIS) to be undertaken in a risk assessment framework, with specific emphasis on the identification, analysis and mitigation of risks through a whole-of-project risk assessment.	<p>The objective of project specific risk assessment is to ensure that significant risks are identified and evaluated such that appropriate risk treatment can be implemented to mitigate risks. Risk assessment provides a mechanism to demonstrate to stakeholders that the project's environment risks are recognised, and that treatment measures are developed to adequately reduce risks to acceptable levels during the execution of a proposed action.</p> <p>The Northern Territory Environment Protection Authority (NT EPA) requires an EIS to be undertaken in a risk assessment framework. The framework as defined by the International Organisation for Standardisation ISO 3100:2009 Risk Management – Principles and Guidelines, is as follows:</p> <ol style="list-style-type: none"> 1. Establishment of context 2. Risk identification 3. Risk analysis 4. Risk evaluation 5. Risk treatment 6. Monitoring and review 7. Communication and consultation. <p>The draft EIS noted the use of ISO 3100:2009, HB 203:2012 and HB 158:2010. However, the credibility of the output of these processes is contingent on the procedures being used correctly and thoroughly. This involves clearly defined steps from ISO 3100:2009, which start with a statement of the objective/s of a particular</p>

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		<p>analysis, the context of the analysis, definition of the risk criteria to be used, and in semi-quantitative/quantitative analyses, use of likelihood and consequence to provide ratings of the risk to attainment of the particular objective/s. All steps must be included to provide a rigorous outcome.</p> <p>The NT EPA identified that the risk assessment for the Toms Gully Underground Project applied poorly defined risk criteria and there was an absence of appropriate justification for the levels of likelihood and consequence chosen. Some of the levels of likelihood and consequence chosen were unsupported by a balanced discussion and were more optimistic than realistic. For example, the likelihood levels of acid mine drainage (AMD) seepage from mine components was listed as B, meaning less than once per month, but more than once per year. Seepage is associated with mounding of groundwater and is likely to occur over most of the year, meaning the likelihood of seepage should be graded as an A (almost certain). Certainty and credibility require that justifications be provided.</p> <p>Of equal concern is the absence of an attempt to relate findings of particular risk assessments to the overall risk of failure to achieve an environmental objective. For example, surface and groundwater quality is determined to be potentially subject to impacts from a large number of risk elements (hazards). Considering only the 21 first listed risk elements, eight are rated as posing a high risk to achieving the water quality objective following mitigation, nine with a post mitigation risk rating of moderate and only three as being of low risk following mitigation. Even if the likelihoods and consequences of these risks are accepted, conventional risk assessment suggests that the risk from all 21 collectively are most conservatively treated as being additive. It seems that the only conclusion is that the water quality objective will not be achieved (i.e. the risk is extreme), and additional consideration and mitigation would be essential.</p> <p>The consideration of water quality objectives was not an isolated example of inadequate risk assessment leading to failure to recognise extreme risk. There were five risk assessments for mine rehabilitation and closure; the estimated residual risks were three moderate and two high. The only reasonable conclusion is that the risk of failing to meet rehabilitation and closure objectives would be extreme, for which additional</p>

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		<p>consideration and mitigation would be necessary, based on existing knowledge of the Toms Gully Mine. It is also inappropriate to assume that the Department of Mines and Energy (DME) legacy mine levee fund would be used to meet the costs of mine rehabilitation.</p> <p>Other areas of concern included the absence of formal risk assessment for impacts on terrestrial biodiversity in the draft EIS or the Biodiversity Appendix. A cursory biodiversity risk assessment was included in the Risk Register. However, there was limited supporting information on how it was conducted. This was compounded by the use of more than one risk element in some analyses, which were provided without explanation. For example, three impacts on threatened species are listed as having one high and two low risks to achieve the objective. These analyses were undertaken without knowing what species are on the site (see following comment on flora and fauna surveys), or recognition of the potential impact from use of hazardous chemicals, such as cyanide.</p> <p>Public confidence in the outcomes of the risk assessment is critical. It is recommended that the EIS be revised in its entirety to ensure that the risk assessment framework is clearly defined, executed and presented. The assessment needs to identify the nature of the risks and potential impacts; assess the effectiveness of the proposed mitigation and management measures; and provide sufficient information to allow the decision-makers to understand whether or not the Project will have unacceptable impacts on the environment. It will likely require additional data gathering and review of mitigation methods, including consideration of additional mine components and/or infrastructure. Genuine recognition, assessment and reduction of risk are in the company's interest; failure to do so could jeopardise the future of the project.</p>
Water - Existing environment and risk	Sections 5.2 and 6.4 of the ToR required the EIS to provide information on the existing environment and risks to water resources.	The draft EIS was deficient in the information necessary to understand the existing environment and the risks to water resources (surface and groundwater systems - hydrology, quality and quantity). In particular, the draft EIS did not satisfy the requirements of the ToR and lacked the necessary baseline information to characterise

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assessment		<p>water resources. Consequently, the risks to water resources have not been adequately represented in the risk assessment (see above comment). It is difficult to assess whether the risks to water resources have been recognised and that risk treatment measures are appropriate to reduce risks to acceptable levels. The following sections highlight the deficiencies and concerns identified by the NT EPA that should be considered and addressed in the Supplement to the draft EIS (the Supplement).</p> <p><u>Hydrogeological model</u></p> <p>The draft EIS included a 2-D hydrogeological model, which was based on historic groundwater monitoring data, data from previous mine de-watering, and modelling of anticipated pumping rates. There were serious inadequacies in the model, particularly in relation to the hydrogeological characteristics of the ore body and the two known faults. The ore body and one of the faults (and possibly the second fault) have a much higher hydraulic conductivity than the surrounding rock and are variable in structure. These characteristics are likely to have an influence on local groundwater levels and the direction and speed of groundwater flows. Data from previous pit dewatering support this assumption, which identified reduced lowering of groundwater levels east of one fault and west of the other; and reductions in groundwater levels to the south-west of the pit. The variations in groundwater from geological structures requires further consideration and incorporation into a detailed hydrogeological model for the Toms Gully Mine Project</p> <p>With respect to groundwater flows, the model considered the pit to be a groundwater sink without consideration of existing or predicted groundwater mounding under mine components, such as the Waste Rock Dumps (WRDs) and Tailing Storage Facilities (TSFs). This has implications for seepage pathways and flows of contaminants, which also requires further consideration in the hydrogeological model and conceptual site model (see below).</p> <p>Monitoring of groundwater down gradient from the Toms Gully Mine has been poor. The draft EIS acknowledges that the “existing monitoring bore data is insufficient and cannot be utilized for a 3D groundwater flow and contaminant transport modelling. In view</p>

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		<p><i>of this, it is proposed to drill 6 additional monitoring bores (4 at the north and 2 at the south) to provide adequate spatial coverage of the site. Groundwater levels and quality will be monitored in all the bores (proposed and existing ones) during initial dewatering and operations. The data obtained will be used for the contaminant transport modelling, which would predict the behaviour, migration and potential contamination plume(s) that would occur over time from the project. The model output would enable effective groundwater management at the site during the life of mine.”</i></p> <p>It is recommended that additional monitoring bores be installed and data obtained to inform the hydrogeological model. The outcomes of the additional data gathering and the revised model(s) should be presented in the Supplement. At a minimum, the groundwater modelling should provide an overview of progressive groundwater drawdown over and beyond the life-of-mine, which is supported by valid and appropriate data.</p> <p>The inadequacies of the hydrogeological model are linked to overall uncertainties in relation the potential pathways of contaminants/excess water and consequently the conceptual site model. The conceptual site model should utilise the findings of hydrogeological model and be of sufficient detail for the general reader to understand the sources of potential contaminants, mechanisms of their release, pathways for transport, and potential for human and ecological exposure to these potential contaminants. Seepage dynamics around the WRDs and TSFs and the degree of interconnectivity via alluvium between TSFs, WRDs, Run of Mine, evaporation ponds, stormwater sump, the Oxbow Wetland, Lake Bazzamundi and the proposed dam need to be quantified and considered further. The potential connectivity and interactions of these mine components with Mount Bundey Creek and Coulter Creek also need to be defined and quantified in respect of potential impacts on the environment.</p> <p><u>Contaminant sources and water quality</u></p> <p>Toms Gully Mine is a brownfield site, with known occurrences of poor quality seepage (e.g. AMD) from existing mine components, including the sulphide and oxide WRDs, TSF 1 and 2 and evaporation ponds 1 and 2. The historic mining infrastructure is also a</p>

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		<p>source of ongoing acid leachate within the mining lease. It was estimated in the draft EIS that approximately 2.6 GL of low pH, metal-laden water is currently located in the pit; the extent and volume of contaminated groundwater on and around the Toms Gully Mine is unknown. The draft EIS stated that water from the pit would need to be treated and discharged to gain access to the underground portal.</p> <p>The NT EPA is concerned that characterisation of materials to inform the potential impacts of existing and new AMD, neutral mine drainage or saline drainage (NMD/SD), on water quality was not conducted because it was claimed that the nature of potential mineral contaminants are known. This is despite expressions of poor quality seepage from the oxide WRD and the proposed use of rock from the Distal Hanging Wall (>100m from the ore body) (DHW) for construction purposes. Core samples from the DHW identified the presence of arsenic and lead, which could mobilise easily into water. Adequate sampling and testworks of materials is able to indicate which rocks and/or mine components are likely to produce AMD/NMD/SD, as well as identify the potential contaminants of concern.</p> <p>It is recommended that sampling and testwork to characterise the risk of AMD/NMD/SD from existing mine components and new operations/infrastructure/components be undertaken. The results should be presented in the Supplement, including relevant environmental management plans, where revisions are required.</p> <p>More broadly, a clear understanding of the potential for downstream transport of AMD products and/or for their accumulation / bio-accumulation in water, sediments, food-chains, and depositional environments has not been provided, nor analysed with respect to tolerances of sensitive receptors in the environment. Sediment sampling should be undertaken and analysis included in the Supplement to determine historic accumulation of AMD products, and to predict the extent this is likely to occur with proposed Project discharges.</p> <p><u>Tailings storage</u></p> <p>Statements about the management of the existing TSF2 in the draft EIS were confusing and generate uncertainty. For example, Appendix 11 referred to the use of the TSF2 for</p>

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		<p>the placement of new tailings generated from the Toms Gully Underground Project. A CCL (liner) would be placed over the existing tailings to limit water penetrating the existing tailings and causing AMD. The liner would be placed at the time of raising the TSF2 embankment, which was stated as occurring after three to four years of operation (potentially at the end of the proposed operational life of the mine), i.e. new mine tailings would be placed in the TSF without any modification or mitigation. This differs to the information in Appendix A, which stated that the raising of the embankment and placement of the CCL would occur after 10 months of mining and placement of additional tailings. The timing of both options appears unappealing because a period would exist where additional tailings would be placed in the TSF without the CCL. This could result in the increased interaction of existing and new tailings and contribute to additional generation of AMD.</p> <p>Statements concerning TSF1 were equally confusing and likely to generate uncertainty. The only proposed undertaking in draft EIS related to the proposed management of TSF1 during operations is to collect and manage seepage flows to the evaporation ponds and to control erosion on the surface of the TSF.</p> <p>Further details are required with respect to the existing condition of TSFs and how they would be used for the Toms Gully Mine Project. At a minimum, the details should include informing pertaining to:</p> <ul style="list-style-type: none"> • the existing TSF construction design, estimated rate and quality of seepage, risks and controls measures for short, medium and long term • appropriate assessment of the tailings AMD characteristics • methods for tailings deposition, dewatering and consolidation • methods for managing tailings during lifts to the TSF • the design and design life of the proposed liners and geosynthetic layers, including contingencies if design permeability and/or life of the liners and/or layers do not perform as predicted

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		<ul style="list-style-type: none"> closure of the TSF, including cover designs, seepage containment and capture, and demonstrated availability of sufficient quantities of clay to contain of PAF tailings and exclude of oxygen and water for the very long term. <p><u>Water quality monitoring</u></p> <p>The existing water quality monitoring program is primarily focused on Mount Bunday and Coulter Creeks. Different levels of management are proposed for waters entering these systems, which ultimately join north of the Arnhem Highway. Coulter Creek is proposed to receive discharges from Lake Bazzamundi, which will receive water from the dewatering bores. The quality of the water is largely unknown and it was assumed in the draft EIS that it would be of appropriate quality to release to the environment. This requires further quantification and explanation in the Supplement.</p> <p>The draft EIS also included reference to utilising Lake Bazzamundi as an irrigation field for pit dewatering bores. No details were provided on the proposed irrigation applications, including staging and the influence of seasonality to justify the use of irrigation. In addition, monitoring of groundwater to determine the influence of irrigation on groundwater quality or quantity was not provided.</p> <p>Discharges to Mount Bunday Creek are equally uncertain. The studies provided to define existing water quality, estimated discharges and the water balance were preliminary. The water balance model omitted to include significant water volumes and contaminant loads. Mount Bunday Creek will receive water, of unknown volume, and assumed quality from the water storage dam, which is included in the water balance model. Uncontrolled surface runoff and groundwater seepage from the WRDs, Oxbow wetlands, stormwater sump, TSFs, TSF decant ponds and spillway discharges from the evaporation ponds are not included. The latter receives discharges from the sulphide WRD and TSF1. Collection of discharges from TSF1 in the evaporation ponds seems to be the case based on a statement that this occurred during previous mining and it would occur in the future. No reference to this was made in the water management plan. The absence of estimates of the flows, and their quality, derives from there being limited understanding of the structure or dynamics of the infrastructure involved in</p>

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		<p>determining the flow characteristics, and no effort expended to determine the basic characteristics of the flows.</p> <p>The absence of this understanding prevents implementation of a sound and robust water-monitoring program. The program is based on a trigger level legitimately assessed from records of water quality at a monitoring site upstream of the mine. Calculations are then to be made that enable controlled discharges of known contamination from the water storage dam; such that the desired low level of contamination at the downstream end of a mixing zone is achieved. This is likely to be impossible as there are unaccounted discharges of contaminated water between the control monitoring point and the monitoring point at the end of the mixing zone.</p> <p>There were no estimates of total discharges to Mount Bundey Creek or Coulter Creek, or even consideration of the influence that year round discharges of water in unknown quantities or quality may have on Coulter Creek. There was no assessment of contaminated groundwater migration off the mineral lease boundary and/or potentially impacting groundwater.</p> <p>The use of very preliminary studies to predict the proposed outcomes raises a significant level of uncertainty. There is no proposed surface water quality monitoring point upstream of Lake Bazzamundi, one at the discharge point and one near the Arnhem Highway, and no control over flows to Coulter Creek. There is no assessment of potential impacts of unknown quantities of discharge on the ephemeral creek, nor any sound basis for prediction of discharge water quality or capacity to monitor or control potential impacts.</p> <p>The implementation of a valid monitoring program is further inhibited by the as yet unknown characteristics of the stream at the end of the mixing zone, and inadequate data on the likely stream flow rates. Available flow rates are based on two year's data; these being the highest and third highest rainfall years recorded at the mine. These issues raise additional concern as to the adequacy of the assessment of risk.</p> <p>There are inadequacies in the understanding of the existing water systems and the likely treatment/management required to ensure the downstream water systems,</p>

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		<p>including sensitive receptors, are protected. It is recommended that the water balance, the water monitoring program and water management plan be revised. The outcomes of the revisions should be presented in the Supplement.</p> <p><u>Sensitive receptors</u></p> <p>The draft EIS did not identify downstream sensitive receptors in respect of active or passive discharges of water from the Toms Gully Mine Project. This includes the identification and mapping of potable water users and sensitive receptors, such as habitats and ecosystems in Mount Bunday Creek, Coulter Creek and Mary River National Park. The nature of respective sensitivities should be characterised, as well as potential impacts from the Toms Gully Underground Project on those receptors.</p> <p><u>Beneficial uses</u></p> <p>Beneficial uses have been declared for the Mary River surface and groundwater area. The declared beneficial uses are for protection of environment, riparian vegetation and agriculture. The beneficial use area comprises the Mary River catchment and includes all the named and unnamed waterways within the Mary River catchment, and the Project Area.</p> <p>Setting of target water-quality compliance levels and Site Specific Trigger Values (SSTVs) should include detail and comparative analysis of expected environmental impacts from the full range of alternative water quality compliance thresholds above the proposed 80% ecosystem protection level, to provide justification for the adoption of an 80% default level. In addition, it would be appropriate for contingency management options to be presented in the Supplement, in the event that the proposed (e.g. 80%) ecosystem protection level is found to be unachievable with the currently proposed Project configuration.</p> <p><u>Mixing zone</u></p> <p>Further justification regarding the proposed mixing zone and dilution rates should be provided in the Supplement. Approximately 7 km of creek would be used as a 'mixing zone' before the location of the first water quality compliance point. Proposed dilution of</p>

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

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		<p>discharge water in a mixing zone to achieve target water quality compliance levels needs to consider environmental risks of potential ecosystem accumulation / bioaccumulation of AMD products in aquatic sediments, food chains, biota or depositional areas, within and downstream of the mixing zone. Potential for future or downstream mobilisation, such as with changes in river pH, should also be considered.</p>
<p>Water Supply Dam</p>	<p>DEIS App.4, Fig.7.1, p.20 / pdf.p.120</p>	<p>The proposed Water Supply Dam (WSD) footprint drains into Mount Bunday Creek. Unless groundwater modelling can prove otherwise, the WSD should be considered to have direct connectivity via seepage to Mount Bunday Creek. A detailed description is required of the geotechnical condition/porosity of strata underlying the WSD footprint, including identification of faults, strata, clays, aquifers and groundwater recharge zones. The outcomes of the geotechnical surveys should be presented in the Supplement and incorporated into the conceptual site model.</p>
<p>Pit dewatering and water treatment</p>	<p>DEIS, Section 6.3.2.5 <i>Dewatering and Operations</i>, p.125 / pdf.p.162</p>	<p>The draft EIS placed a high level of reliance on the effectiveness of the pit water-treatment system, which was primarily based on a literature review of water treatment techniques applied at other mine sites (e.g. Mount Todd). Uncertainty exists regarding how effective the proposed in-pit dosing and treatment would be for the purposes of treating water at the Toms Gully Mine Project. In addition, estimated costings for the reagents are presented in the draft EIS, without any discussion as to whether limes or other reagents are available and whether it is feasible for these reagents to be sourced locally or more broadly.</p> <p>There was limited discussion in the draft EIS regarding how the treatment would operate and its degree of efficiency, including how sludges would be managed and disposed. Water treatment options should be finalised and described in the Supplement. The description should include a demonstration that outputs will meet necessary water-quality thresholds and the anticipated volumes of water that will require treatment during dewatering, operations and emergencies.</p>

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Pit / underground mine, storage of PAF material	DEIS App.11 Acid and Metalliferous Drainage Management Plan	<p>The underground mine is proposed as a potential repository for potentially acid forming (PAF) material. However, there is a paucity of information with respect to the proposed mine schedule and the treatment/storage of PAF for long-term management and storage. The following information should be detailed in the Supplement:</p> <ul style="list-style-type: none"> • Outline design details, staging and depths of the underground mine. • What is the storage capacity of the pit below portal level? • What designs / methods / procedures will be applied to the storage of waste rock/tailings in the underground mine or pit? • How is lag time of PAF materials incorporated into management of these materials? • How is PAF material in pit and decline walls, and runoff / groundwater seepage through this material to be characterised / managed?
Biodiversity – Aquatic	Section 5.3 of the ToR required the EIS to describe fauna, flora, vegetation communities and aquatic ecosystems of the Project area and impact footprint. Description of aquatic fauna should, as a minimum include fish, frog and macro-invertebrate communities.	<p>The NT EPA considers that the sampling program to inform the assessment of aquatic biodiversity is unlikely to have characterised the presence and abundance of existing species. This is because the program was restricted to a single round of sampling and the quality control and quality assurance measures were poorly documented (e.g. lack of replication of samples at each sample site). It is recommended that the sampling program to characterise the aquatic biodiversity be revised. The fish study and future monitoring should also be revised to ensure that the level, number and types of samples taken are appropriate to inform the assessment. The NT EPA reiterates that sampling effort must conform to requirements of the NT EPA, the Department of Land Resource Management, and DME as at other mine sites and the importance of appropriate survey/program timing, locations and methodology.</p> <p>It was concerning that the sample site SWTG02, downstream of the proposed mixing zone, was not sampled. The proposed replacement is not considered an appropriate alternative because it is a small ephemeral stream with differing water chemistry,</p>

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		<p>hydrology, etc. The location of an appropriate sample site downstream of the proposed mixing zone is critical to understanding the existing environment and informing the proposed water quality monitoring program. The Supplement should include consideration of an appropriate sample site located downstream of the proposed mixing zone. Suitable discussion is required to justify the sample location, sampling methods, and additional sampling required to be undertaken if difficulties are encountered. For example, the use of automated samplers should be considered where there are hazards, such as crocodiles, that could restrict sampling efforts.</p>
<p>Biodiversity – Terrestrial</p>	<p>Section 5.3 of the ToR required the EIS to describe fauna, flora, vegetation communities and aquatic ecosystems of the Project area and impact footprint.</p>	<p>The draft EIS did not include the results of flora or fauna surveys for the Toms Gully Underground Project, despite a number of threatened species identified as possibly occurring on the site. Species include:</p> <ul style="list-style-type: none"> • black-footed tree-rat • bare-rumped sheath-tail bat • northern quoll • fawn antechinus • pale field-rat • Gouldian finch • partridge pigeon • floodplain monitor • Mertens' water monitor • Mitchell's water monitor <p>The NT EPA recommends that flora and fauna surveys be undertaken and reported in the Supplement. Particular focus is needed on areas proposed to be disturbed by the Project and of areas potentially impacted by the Project. Where potential threatened</p>

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		<p>species habitat is present, appropriately designed targeted surveys should be undertaken to determine actual presence or absence of the species.</p> <p>Background material provided in the Carpentaria Gold Public Environmental Report (1988) reports the presence of the northern quoll (<i>Dasyurus hallucatus</i>) and the partridge pigeon (eastern) (<i>Geophaps smithii smithii</i>) on the Toms Gully Underground Project. This is not acknowledged in the draft EIS, nor has there been an assessment of the potential presence of the species on site.</p> <p>In addition, the draft EIS listed the bare-rumped sheathtail bat (<i>Saccolaimus saccolaimus</i>) as only occurring in Kakadu. It is found in a wide variety of places other than Kakadu and should be considered as part of the assessment of the Toms Gully Underground Project.</p>
Wastes and hazardous materials	Section 4.2 of the ToR required the EIS to provide relevant information with respect to other waste management, including but not limited to: information on potentially hazardous materials to be used or produced and methods for storage, transport, handling, containment, disposal and emergency management of these materials, including fuel.	The use and handling of cyanide has not been included in the draft EIS. Cyanide storage, handling, use, recycling, disposal and/or measures to protect the bird community from cyanide after disposal should be addressed in the Supplement to the draft EIS (the Supplement). The risk assessment for the Toms Gully Underground Project and the Hazardous Materials Management Plan should also be revised accordingly with respect to cyanide, the risks to the environments (including human health) from its use and the proposed mitigation measures.
Indigenous and cultural heritage	Section 5.4 of the ToR required the EIS to include a description of Indigenous and non-Indigenous sites, places or objects of historic or cultural heritage significance, and surveys used to identify sites or objects of historic or cultural heritage significance, with outline of	<p>Surveys to identify sites or objects of historic or cultural heritage significance were not included in the draft EIS. The NT EPA expects that appropriate surveys, including details of the survey locations and efforts, will be undertaken by a qualified professional and the results presented in the Supplement.</p> <p>The proponent has acquired a clearance certificate although a copy was not provided with the draft EIS. It seems to be from some time ago and may require updating to</p>

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	survey location and effort.	avoid risk to the proponent.
Cumulative impacts		<p>The table cross-referencing the requirements of the ToR and the text of the draft EIS identified that cumulative impacts were addressed in Chapter 18. However, most of Chapter 18 repeated material from various parts of the draft EIS without drawing attention to or assessing cumulative impacts. In some cases, potential external impacts were noted but were not considered further (e.g. mine sites Quest 29 & Rustlers Roost, livestock and pastoral activities on Mount Bunday Station, etc.).</p> <p>Cumulative impacts can be from different actions within a project affecting a particular receptor, or the actions of more than one project (past, current or future) impact on a receptor. The former types of cumulative impact were not assessed, other than for some receptors e.g. threatened species, where the multiple hazards were lumped and assessed as a single hazard, without explanation. Cumulative impact assessment of the second type was not undertaken. It is recommended that the cumulative impact assessment of the draft EIS be revised in respect of this comment and provided in the Supplement.</p>
Commitments	The ToR required the EIS to include a table listing commitments made by the Proponent, which are linked to the EMP in order in order to assess the performance of the actions.	<p>Many of the commitments provided in the draft EIS are not measurable nor do they have timeframes. When providing a commitment it should follow the Specific, Measureable, Attainable, Realistic and Timely (SMART) principle, where possible.</p> <p>For example, a commitment relevant to section 14.1.2 of the draft EIS reads: <i>“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.”</i> When will this programme be developed and implemented? How will its efficiency be determined to allow for continual improvement of the programme?</p> <p>The Supplement should include a complete table listing commitments made by the Proponent.</p>

Topic	Terms of Reference item / Draft Environmental Impact Statement section	Comment
Quality assurance and quality control	Section 8.3 of the ToR requires the EIS to include the results of quality assurance / quality control (QA/QC) testing are to be provided where data are used to support statements or findings in the EIS. Sufficient discussion should accompany the data to demonstrate that the QA/QC and data are suitable and fit for purpose.	The draft EIS does not include information pertaining to the reliability and accuracy of the data used to satisfy the requirements of the ToR. It is recommended that the relevant sections of the draft EIS and appendices (e.g. water quality monitoring, sediment/soil sampling, etc.) be revised accordingly and the results and discussion regarding QAQC be provided in the Supplement.
Rehabilitation and closure		<p>The draft EIS noted that the WSD would be retained following closure for pastoral purposes. With specific reference to the long-term use of this feature, further information is required to provide certainty that the WSD will be stable, non-polluting, free-of weeds and fit for purpose. The Supplement should include methods for revegetation and measures to reduce risks for the short, medium and long-term. Invariably, this will be linked to considerations of weed management, site / WSD water balance and management of topsoil / soil profiles.</p> <p>More broadly, the operational period of the mine is short and rehabilitation and closure would commence thereafter. Well-developed details of rehabilitation and closure are critical during the early stages of mine planning and should be provided in the Supplement. This should include finalisation of rehabilitation and closure objectives for key Project components and infrastructure, such as tailings disposal/consolidation, water dams and planned works (if any) on the WRDs.</p>

SUMMARY OF COMMENTS RECEIVED ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
PRIMARY GOLD LIMITED - TOMS GULLY UNDERGROUND PROJECT

Comments from	Comment
Department of Business 6/11/2015	<p>The Department of Business (DOB) does not have any major issues in relation to the Draft EIS.</p> <p>DOB notes that this project would provide socio-economic benefits to the region as well as the broader Territory economy. The estimated contribution of the project to the Australian GDP and the NT GSP are however, overestimated.</p>
Department of Health 5/11/2015	<p>Environmental Health Branch / Department of Health</p> <p>The Environmental Health Branch of the Department of Health has reviewed the Toms Gully Draft Environmental Impact Statement (EIS) and has the following comments:</p> <p><i>Section 2.4.14 Public and Environmental Health Act and Regulations</i> should include reference to the Wastewater management legislative requirements detailed in the Public and Environmental Health Regulations which will be relevant when reinstating office blocks, workshops etc. and any associated ablution facilities. Fact sheet 700¹ provides further advice on wastewater management requirements.</p> <p>The <i>Terms of Reference (Section 5.7.2 Assessment of Risks to Human Health and Safety)</i> included the requirement to consider aspects to human health and safety from project impacts on downstream ecosystems including fish for human consumption. The draft EIS has not satisfactorily covered this issue of fish for human consumption.</p>
28/10/2015	<p>Medical Entomology / Department of Health</p> <p>There are no Medical Entomology comments on the above EIS. The mosquito section provided in the draft EIS is satisfactory.</p>

¹ Department of Health, date unknown. *Environmental Health Fact Sheet 700 – Requirements for mining and construction projects*. Available at: http://www.health.nt.gov.au/library/scripts/objectifyMedia.aspx?file=pdf/16/49.pdf&siteID=1&str_title=Requirements%20for%20Mining

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

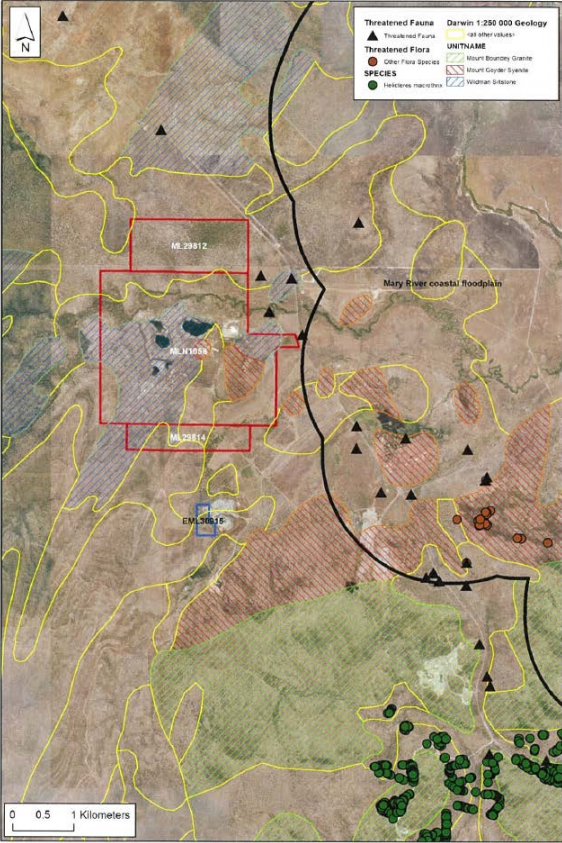
Comments from	Comment
<p>Department of Infrastructure 6/11/2015</p>	<p>The Department of Infrastructure (DoI), Engineering and Environment Services on behalf of the Department have reviewed the draft Environmental Impact Statement for comment and have no comment on the proposed mine at this time. It is the view of DoI that works are expected to have a low impact on existing infrastructure managed by the Department. Any issues associated with roads are expected to be addressed by the Department of Transport.</p>
<p>Department of Land Resource Management 13/11/2015</p>	<p>The Department of Land Resource Management has assessed the information contained in the above EIS and provides the following comments:</p> <ul style="list-style-type: none"> • No systematic survey of biodiversity values has been undertaken across the tenement as part of the EIS, and threatened species assessments are restricted to desktop analyses of existing distributional information. The Department's database records and vegetation/ habitat mapping of the area provide an indication of the potentially significant biodiversity values likely to be present on the tenements although they do not allow a complete assessment of risks associated with the proposal. <p>Vegetation mapping undertaken by the proponent as part of the EIS has identified the presence of sensitive/significant riparian and wetland vegetation within the project area, the majority of which is in an intact ('residual') or slightly modified condition. The mitigation measures outlined in Section 8.4.1 of the EIS to minimise disturbance associated with the operations are supported.</p> <p>Table 4 of Appendix 6 recommends the adoption of buffer zones between sensitive/significant vegetation communities and ground disturbance associated with construction activities on-site in accordance with the NT Land Clearing Guidelines. This approach is supported, particularly in relation to minimising impacts on downstream wetland and aquatic ecosystems.</p> <p>A number of threatened fauna species have been assessed by the Department as possibly occurring within the project area:</p> <ul style="list-style-type: none"> • Northern Quall <i>Dasyurus hallucatus</i> (Endangered, <i>Environment Protection and Biodiversity Conservation Act</i> (EPBC Act); Critically Endangered, <i>Territory Parks and Wildlife Conservation Act</i> (TPWC Act)) • Bare-rumped Sheathtail Bat <i>Saccolaimus saccolaimus nudicluniatatus</i> (Critically Endangered, EPBC Act)

Comments from	Comment
	<ul style="list-style-type: none"> • Black-footed Tree-rat <i>Mesembriomys gouldii</i> (Endangered EPBC Act; Vulnerable TPWC Act) • Fawn Antechinus <i>Antechinus bellus</i> (Endangered TPWC Act) • Pale Field-rat <i>Rattus tunneyi</i> (Vulnerable TPWC Act) • Gouldian Finch <i>Erythrura gouldiae</i> (Vulnerable, EPBC Act) • Partridge Pigeon <i>Geophaps smithii smithii</i> (Vulnerable, EPBC Act) • Mitchell's Water Monitor <i>Varanus mitchelli</i> (Vulnerable, TPWC Act) • Merten's Water Monitor <i>Varanus mertensi</i> (Vulnerable TPWC Act) • Floodplain Monitor <i>Varanus panoptes</i> (Vulnerable TPWC Act). <p>No targeted survey of fauna has been undertaken over the tenement. However, as the additional above-ground disturbance on the tenement is limited to the construction of the water storage dam, risks to local populations of these species is likely to be low.</p> <p>No threatened plant species have been recorded from within the tenements. The EIS identified three threatened plant species as having some potential to occur within the project area and assessed the likelihood of these species being present on site as either 'unlikely' or 'highly unlikely'.</p> <p>The Department's Flora and Fauna Division assessment supports the EIS findings for <i>Goodenia quadrifida</i> (Vulnerable EPBC Act and) <i>Schoutenia ovata</i> (Endangered, TPWC Act) that there is a low likelihood that suitable habitat for these species is present within the areas proposed to be disturbed as part of mining operations.</p> <p>The EIS documentation does not adequately support the proponent's conclusion that the threatened shrub <i>Helicteres macrothrix</i> (Endangered, EPBC Act) should be considered 'highly unlikely' to occur within the project area. <i>Helicteres macrothrix</i> is known from the Mt Bunday area on the lower slopes and colluvial pediments of the Mt Bunday Granite and Mt Goyder Syenite, with other sub-populations of <i>H. macrothrix</i> being recorded on the Wildman Siltstone in the Lake Bennet area. Both of the Wildman Siltstone and the</p>

Comments from	Comment
	<p>Mount Goyder Syenite are present within the project area, with the proposed water storage dam lying wholly within a mapped area of Wildman Siltstone (see Figure 1 below).</p> <p>Although there are no records of the species within the tenements, no targeted survey has been undertaken in potentially suitable habitat present within the project area.</p> <p>If <i>H. macrothrix</i> is present within the tenement, the construction of above-ground infrastructure has the potential to represent a risk to the local population as a result of reduction in area of occupancy, fragmentation and impacts upon habitat quality. The proponent should determine the presence or absence of the species on the tenement by targeted survey. If present, assessment of the potential risks to this species associated with all aspects of the proposal (including direct, off-site and indirect impacts) should be undertaken. Appropriate risk minimisation / mitigation measures should be described.</p> <p>Comprehensive details have been provided outlining site rehabilitation and closure associated with the Tom's Gully Mine operations. Although these cover a range of possible closure scenarios, it is anticipated that the measures outlined in the EIS should allow effective revegetation of the mine site if implemented in accordance with best practice industry standards.</p> <p>In addition, it is recommended that revegetation goals aim to re-establish vegetation communities characteristic of the pre-clearing vegetation mosaic of the local area. This would increase the likelihood of successful revegetation outcomes and integration of the disturbed areas into the surrounding landscape.</p> <ul style="list-style-type: none"> • The draft EIS references the Erosion and Sediment Control guidelines (NRETAS, 2006) in Section 2.6.3 and makes reference to developing an Erosion and Sediment Control Plan (ESCP). However, the EIS does not describe what erosion and sediment control (ESC) strategies will be undertaken during the life of the mine. <p>To service environmental management objectives associated with the use and land disturbing activities, the Department recommends that an ESCP be developed, and be cross-referenced with the Mine Closure Plan. The ESCP will support environmental management of land disturbing activities by facilitating preparation of work costs and schedules, provide direction for site management and personnel responsible for implementing ESC and rehabilitation measures, and assist monitoring activity.</p>

Comments from	Comment
	<p>The ESCP should include details of permanent and temporary erosion and sediment control methods and treatments to be implemented during both the construction (development) and operational phases (including post-extraction) of the project. The ESCP should address management of vegetation clearance; management of road formation and drainage, including stabilised crossings and discharge points; and ESC measures for mine pits (e.g. surface water diversion, stockpile stabilisation and sediment control) where applicable. The Mine Closure Plan should address final landform and drainage and related stabilisation measures, soil management and establishment of vegetation cover, including ground cover standards/targets, monitoring and contingency.</p> <p>The ESCP can be based on site plan maps and should include notes on timing of works, flagging of No-Go areas, types of ESC structures to be installed, and reference to the Rehabilitation Plan. Map symbols should be used to indicate locations of works, and be referenced in the legend. Standard drawings or other information sheets, giving detail of ESC structures or methodologies, should be included as attachments.</p> <p>It is recommended that ESCP preparation is undertaken by a suitably qualified and experienced professional in ESC planning, and be approved by, and implemented to the satisfaction of the Department of Mines and Energy, to ensure the applicant takes sufficient measures to avoid or minimise sediment runoff during both the construction and operational phases, to prevent environmental harm or nuisance.</p> <p>The IECA Best Practice Erosion and Sediment Control Guidelines 2008 may be referenced as a guide to the type of information that should be included in an ESCP.</p> <p>Additionally the Soils and Construction Volume 2E Mines and Quarries document also has useful information that will assist in the development of E&SC and ESCP's. Information regarding erosion and sediment control and ESCP content, including standard drawings, is available at:</p> <p>http://www.austieca.com.au/, http://irm.nt.gov.au/soil/management, and http://www.environment.nsw.gov.au/resources/stormwater/08208soilsconststorm2e.pdf</p> <ul style="list-style-type: none"> • The Draft EIS addresses the concerns of the Department's Weed Management Branch regarding weed spread both within the property and to clean areas outside. The proponent recognises the densely infested

Comments from	Comment
	<p>areas of NT Portion 4937, particularly those infested with gamba grass, and will take measures to reduce the impact of these weeds. These measures will involve seasonal control, vehicle hygiene protocols, monitoring for incursions, and, if needed, liaison with appropriate government agencies to ensure conformity with the <i>Weeds Management Act</i>. The draft EIS and supporting documentation identifies that these measures will apply during the construction, operational, closure and post closure rehabilitation phases of the project.</p> <p>The Weed Management Branch may conduct random inspections of NT Portion 4937 to ensure weeds have not been spread within or introduced to the site.</p> <ul style="list-style-type: none"> • The draft EIS only includes a brief description of the water monitoring program in Section 6.6.1 (Water Monitoring). This description does not include detail of the distribution of monitoring sites or the design to detect mining impact. • Appendix 12 (Biodiversity management Plan) includes some information regarding previous work in relation to aquatic ecosystems; however this does not include any additional detail on design. The macroinvertebrate survey identified taxa to family level only. Though common practice, this constrains any effort to describe patterns of aquatic biodiversity. The comment that potential impacts may be confounded by habitat differences highlights the need for explicit description of the design to detect mining impacts. <p>The measures described in the EIS should be adequate to address the previously identified risks that relate to groundwater.</p> <p>Flood modelling was carried out by the proponent using XPRAFTs and HECRAS modelling to determine peak flood levels and food extent for a 1% AEP, 72 hour flood event. Based on the flood modelling, embankment protection at the Tailings Storage Facility and an increase in the embankment level has been proposed. However, it has been recommended that the results of the flood modelling study are not used for detailed design due to the limitations of the topographic survey, and that a more detailed survey is carried out for the design stage.</p> <p>The proposed water management strategy and mitigation measures for the project has been designed by water balance simulation modelling for the mine system (Figure 4.2 in EIS), to assess expected performance against performance indicators: water supply reliability, excess water production and spillway frequency and site water inventory, including reviews of mine expansion designs, expected future stored water inventory in Water Supply Dam and modelling under a 1 in 100 year 72 hour rainfall event. Historic climate data was</p>

Comments from	Comment
	<p>used to run the model.</p> <p>It is understood that the new dam height would be 12 to 14m, which may require a permit under the <i>Water Act</i>.</p>  <p>Figure 1: Biodiversity values in the vicinity of Tom's Gully Mine, MLN 1058, ML 29812 and ML29814 on Old Mount Bunday Station (NT Portion 4937). Background imagery from Google Earth.</p>

<p>Department of Mines and Energy 10/11/2015</p>	<p>Toms Gully Draft EIS Part A</p> <p><u>Project Description</u></p> <p>"Mining underground to the south of the existing underground workings" (p. vi)</p> <ul style="list-style-type: none"> • Has a geotechnical assessment been undertaken for the underground workings? Operations ceased in part due to difficult ground conditions. <p>" Approximately 0.9 Mt of tailings to be stored in raised Tailings Storage Facility 2 (TSF2)" (p.vi)</p> <p>" Removal or capping in-situ of tailings in TSF1 and TSF2" (p.vi)</p> <ul style="list-style-type: none"> • Trees growing on the TSF walls may be creating seepage pathways which could lead to piping. The trees need to be removed. <p>' A WSD is proposed to be constructed with designed usable capacity of 2.1 Gigalitres (GL)' (p. vii)</p> <ul style="list-style-type: none"> • Are there any exploration drill holes through the proposed WSD area that may potentially impact on the WSD and the underground operations (i.e. create a water flow path)? <p>There are references to 85-93 ha of clearing throughout the document, for example:</p> <p>" Clearing of 93 ha of generally disturbed vegetation for the WSD and borrow material. " (p. vi)</p> <p>" Clearing of approximately 93 ha of native vegetation (54 ha being for WSD, the remainder for borrow materials, new access and drainage) " (p. ix).</p> <p>However 'Section 3.1 Proposed Project Key Characteristics' states "Clearing of 85 ha of native vegetation for the WSD and borrow material." (p.22).</p> <ul style="list-style-type: none"> • Primary Gold Limited is required to clarify the exact amount of clearing proposed in the EIS. <p><u>Existing Environment</u></p> <p>" Groundwater at Toms Gully exhibits variability in salinity (S04) and pH range conditions are present indicative of localised AMD contamination of groundwater. A number of bores access groundwater in the surrounding areas." (p.xi)</p>
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- Have baseline surveys been completed? Provide data and summarise the results.
- If baseline surveys have not been undertaken, Primary Gold Limited is required to provide evidence to support this statement.

A list of threatened and vulnerable flora and fauna species has not been included in this section of the EIS.

- Provide a list of which species have potential to be impacted by activities associated with the project

"The likelihood of occurrence of threatened and migratory species within 10 km of the TGU Project site was assessed based on desktop searches and literature review." (p. xii)

- When was this assessment completed?
- Note that the *Environmental Protection and Biodiversity Conservation Act* Threatened Species list has been updated as of 8 July 2015.

These changes may be relevant to the project and can be found at:

<https://www.environment.gov.au/news/2015/07/14/six-species-listed-under-epbc-act>.

Please ensure that you are aware of these changes.

" One of these, the Gouldian Finch, is listed a vulnerable under the EPBC Act..." (p. xii)

- The Gouldian Finch is listed as Endangered under the EPBC Act and Vulnerable under the TPWC Act.

Impact Summary

" Given the small proportion of catchment and flow contribution made by Mount Bunday Creek, any impacts on Mount Bunday Creek are not expected to impact upon the wetlands of the Mary River system." (p. xvi)

- Discharging treated water (typically high in EC) will have an effect and the ratios are not yet determined. Further investigation is required into the anticipated quality and quantity of flow and impact on the Mary River system.

" Further support for this disconnect is that the previous dewatering operations at the mine did not result in any significant changes in vegetation in Mount Bunday Creek". (p.xvi)

- Primary Gold Limited is required to provide evidence to support this statement.

Outcomes

" *Placing all tails in-pit unless sufficient cover materials can be located and a suitable long-term cover design approved*" (p.xvii)

- The investigations undertaken by Primary Gold Limited should be adequate to determine the availability of sufficient cover material. A commitment should be made to one of the options.

" *The TGU Project will not use any waste rock, or bring any to the surface, but will complete more detailed investigations to enable a regional 3D groundwater model to consider long-term contaminant transport so that options for the WROs can be identified and assessed.*" (p.xvii)

- In Section 6.3.5.1 Groundwater Modelling (p.138) there is a commitment to "a 3D impact assessment flow model" to be implemented in the pre-mining phase. The outcomes of this modelling will provide clarity for water and tailings storage and WRD options.
- Primary Gold Limited need to provide a commitment to the 3D Groundwater modelling (and costs) prior to approval.

ES Table 3: Assessment Summary of Key Environmental Factors

Acid and Metalliferous Drainage

" *Dewatering and treating the pit water minimises the risk of AMD leachates in water being discharged to the environment.*" (p.xix)

" *The TGU Project has the potential to virtually eliminate the long-term risk and liability associated with acid producing tailings and the subsequent risk of leachate migrating into the groundwater and off-site, runoff and downstream contamination and embankment failure.*"

- A key concern would be the potential for pit leaching AMD contaminated water into surrounding groundwater systems, and furthermore, surface water catchments.
- Geotechnical and groundwater studies should be undertaken during the feasibility stage to ensure adequate baseline data is collected and available for comparison during Life of Mine (LOM).
- Further information regarding waste rock characterisation is necessary to completely understand the

potential impacts associated with this project over time. An initial waste rock characterisation assessment should be undertaken during feasibility, and supported by regular interval (quarterly or bi-annual) reporting to ensure that any changes within waste rock chemistry and composition are identified promptly and managed appropriately.

Infrastructure Integrity and Suitability

"A review of the WRDs will be completed during the operation of TGU and be used to determine the feasibility of improvement options for these features." (p.xxi)

- This review should be undertaken during the feasibility stage of the project.

Rehabilitation and Closure

"Ensuring waste rock generated by the TGU Project does not leave the pit (it is either stored underground or placed at the base of the pit to be inundated with water post closure." (p.xxiii)

- At what rate will inundation occur? Slowly refilling the pit with water will increase the risk of the pit being full of very poor quality water. This would not be an acceptable long-term closure strategy if the resulting water quality is poor.
- Primary Gold Limited must provide information regarding all options for AMD management.
- A Mine Closure Plan should be developed within the early stages of mining, if not before, to ensure that progressive rehabilitation will be undertaken, and, that appropriate management strategies are in place should premature closure of the mine occur.

3.8.1 Existing Infrastructure

- DME require tailings and dams to be constructed in accordance with the *Guidelines on Planning, Design, Construction, Operation and Closure of Tailings Dams* (ANCOLD Guidelines 2012).
- Primary Gold Limited must assess if the original TSF has been built to ANCOLD 2012 before creating a lift.
- TSF2 and the Water Supply Dam (WSD) must be developed in accordance with ANCOLD 2012.
- TSF2 is close to Mount Bunday Creek and could cause ongoing issues if there is further loading of tailings. Removal to the pit may be the only closure option and security would have to reflect this.

3.8 Tailings Management and

3.8.2 Method and Management

"TSF2 has approximately 125,000t of remaining capacity; sufficient for the first six months of production before additional capacity is required." (p.39)

"In the past, excess water from the TSFs has been directed by pipe to the pit, however with the resumption of mining, this system will be re-configured to direct overflow to the evaporation ponds. The additional freeboard provided by the TSF raise, and the administrative controls to keep 1 m of freeboard, makes this scenario unlikely." (p.40)

- TSF 2 is already overflowing in one section. It is difficult to see how this facility has capacity for 6 months before a lift is attempted.
- DME may not approve use of this facility in its current state.

"The walls of TSF2 will be raised by 7.8 m to create sufficient capacity and a Geosynthetic Clay Liner (GCL) will be installed over the existing tailings to reduce the risk of seepage to groundwater. The walls will be constructed of material won from construction of the new WSD and adjacent borrow pits." (p.40)

- To ensure the integrity of the TSF is not compromised, the current TSF must be assessed for compliance with *Guidelines on Planning, Design, Construction, Operation and Closure of Tailings Dams* (ANCOLD Guidelines 2012).
- Any proposed changes to TSF2 should be planned, designed and constructed in accordance with *Guidelines on Planning, Design, Construction, Operation and Closure of Tailings Dams* (ANCOLD Guidelines 2012).
- What is the final footprint of TSF2? Please provide details.

3.9.1 Pit Dewatering

"Pit dewatering is required to enable access to the underground workings. The pit water quality does not meet the quality requirements to enable it to be released. The pit has been used as a storage area for poor quality runoff water and the exposed walls of the pit are expected in places to have exposed PAF materials." (p.42)

- What measures will be implemented to treat/prevent impact from exposed PAF materials during dewatering?

4.3.3.1 Surface Water Quality Sampling

"In-situ physical and chemical water quality sampling was undertaken as part of the Aquatic Ecology Study (GHD 2015a). Water quality was measured at 13 sites between 17 and 21 April using a YS/ 650 MDS multi-parameter water quality meter."

"It should be noted that conditions on-site were unusually dry for the time of year due to lower rainfall over the 2014/15 wet season." (p.65)

- Has follow up sampling been planned or undertaken?

4.5.3 Fauna

"GHD (2015d) undertook an assessment to identify the potential for listed threatened species within the TGU Project site (Appendix 6)" (p. 90).

- Despite referencing the ToR in "2.6.2 Terrestrial Flora and Fauna Survey Guidelines", Primary Gold Limited has not undertaken any field based threatened species studies in the areas they intend to clear. Primary Gold Limited has undertaken a small desktop search, which has failed to assess the presence or absence of the Yellow Snouted Gecko (*Lucasium occultum*) which occurs to the north east of the mine. As this species is known to occur in open forest dominated by *Eucalyptus tetradonta* and *E.miniata* (DLRM Yellow Snouted Gecko Online Fact Sheet), which is the same vegetation type present in the proposed WSD, Primary Gold Limited needs to discuss the species.
- If Primary Gold Limited chooses to not conduct field-based surveys they should provide evidence in the terms of existing records to justify a desktop assessment.

Toms Gully Draft EIS Part B

6.3.2.2 Water flows

"During the operations phase, dewatering will be largely from bores located to the east of the pit located directly amongst the proposed underground workings. The water from bores will be released directly to Lake Bazzamundi (as has been done previously), adding to the flows in Coulter Creek on a more continuous basis for the life of the underground mining." (p.120)

6.3.6.1 Water Discharge

" The water management system relies on the treatment and release to Coulter Creek of native bore water from around the underground operations ...The steady state release of water to Lake Bazzamundi would therefore be around 300 to 800 ML/yr." (p.155)

"The capacity of Lake Bazzamundi is estimated at 50 ML, allowing for evaporation and seepage losses, it is likely that a significant portion of this water would flow through the Lake and into Coulter Creek." (p.155)

- Water may be flowing off site from Coulter Creek during the dry season and during periods of no/low flow.
- What is the anticipated water quality?
- What is the proposed water quality testing regime?

6.3.2.4 Surface Water Quality and Derivation of Site Specific Trigger Values

" Default trigger values can be selected from the ANZECC & ARMCANZ (2000a) Guidelines, however, site derived trigger values are preferred to regionally derived trigger values (GHD 2015g)." (p.123)

- Have these Site Specific Trigger Values (SSTV) been agreed upon by NTEPA and all other involved stakeholders?

6.3.2.6 Water Discharge

- The discussion on water quality and treatment is very ad hoc. There is no decision or commitment regarding treatment and no commitment to dilution ratios etc.
- EC levels are a major stressor to freshwater aquatic life and would need significant reduction before leaving the site.
Livestock levels of 3000 are not appropriate for the downstream Mary River.
- There is no discussion on installing flowmeters or telemetry to determine required flow for water release.
- It is not possible to assess any environmental impact without further detailed information.

6.3.2.6 Water Discharge

- What method of construction of the base of the WSD will be used (if any) to prevent potential influences to

and from groundwater?

- The local groundwater has been influenced by the Sulphide WRD and is poor quality. Nearby monitoring bore GB pH is 4.7 and EC is 1940.
- The WSD could also further reduce ground water quality (e.g. high EC levels post treatment) if not constructed with an appropriate base.

"An analysis of current pit water quality against the SSTVs shows that cobalt and zinc would only require dilution ratios around 250:1 to meet the SSTVs..." (p.126)

- A dilution ration of 250:1 could be difficult to achieve. Long term water storage and its affects will need to be considered.

6.3.3.4 Seepage from TSFs

6.3.2.4 Surface Water Quality and Derivation of Site Specific Trigger Values

"Whilst the pit water balance modelling indicates there is minor potential for seepage of poorer quality water from the pit during wet seasons, any contamination is highly likely to remain localised as the pit forms a groundwater sink during the dry season." (p.135)

Table 33: Summary of Surface Water Quality On-site (GHD 2015b) states (p.124):

"SWTG Tails 1 exceeded the SSTV with a median value of 0.009mg/L" for Total Cyanide.

"Only SWTG Tails 1 exceeded the SSTV with a median value of 1,200ug/L" for Arsenic.

"The exceptions were EP2 and SWTG Tails 1 with median values of 49 and 55ug/L respectively" for Chromium.

- Water Quality analysis identified that Total Cyanide, Arsenic and Chromium trigger values were exceeded.
- These exceedances further demonstrate that a 3D groundwater model needs to be developed.

6.3.2.7 Mine Closure

"A more rapid filling of the pit could to reduce the potential for AMD products to form, accumulate and concentrate in the pit water." (p.127).

- How would more rapid filling be achieved?

6.3.3.3 Groundwater Dependent Ecosystems

"Further support for this is that the previous dewatering did not result in any significant changes in vegetation (vegetation death) in Mount Bundey Creek - no anecdotal or residual evidence exists for any such event. It is concluded that the TGU Project is very unlikely to result in any impact to GDEs" (p.132)

- Primary Gold Limited is required to provide evidence to support this statement.

6.3.3.3 Groundwater Dependent Ecosystems

"The map indicates that Mount Bundey Creek has potential for groundwater dependency." (p.132)

- Primary Gold Limited is required to provide further information to support this statement, i.e. monitoring etc.

6.3.3.7 Mine closure

"Upon mine closure, the pit will be allowed to fill, and given the reactivity of the AMD materials, the pit water quality is likely to return to these conditions." (p.136)

- It will not be acceptable to allow pit water to go back to previous poor water quality post closure.

6.3.4 Contaminants of Concern

"The catchments of both Mount Bundey Creek and Coulter Creek can be seen to be cleared for agricultural grazing downstream of the Toms Gully site". (p.136)

- This statement confirms that a major risk involved with this project is exposure of livestock to unacceptable water quality in the event of an accidental discharge etc.
- Contaminated areas and potentially contaminated areas must be fenced to exclude stock.

6.3.5.3 Conceptual Contaminant Transport - Dewatering Phase

"It is proposed that the Section of Mount Bundey Creek as it flows through the Mining Lease be used as a mixing zone." (p.140)

- Primary Gold Limited should provide further information to clarify what is being mixed in the creek.
- Mixing in the creek is generally not acceptable as this may lead to erosion of the creek bed. Primary Gold

Limited should consider constructing a rock check riffle area where the water is being pumped to.

6.3.5.3 Conceptual Contaminant Transport - Dewatering Phase

" Potential receptors are identified outside of the operating area as:

- *Livestock in grazing areas;*
- *Fauna living in or accessing Mount Bunday or Coulter Creek water; and*
- *Groundwater." (p. 141)*
- Primary Gold Limited acknowledges the potential receptors but the first two receptors (i.e. livestock and fauna) are not discussed in detail within the document. Further information is required.

6.5 Residual Risks And Contingency

Table 38: Contingency Measures for Water Management:

"Alternative water treatment" has been listed as a contingency measure for "Water treatment does not meet quality requirements to enable discharge to Mount Bunday Creek" (p.164).

- What is the alternative water treatment? Further information is required.

8.3.1.2 Indirect Impacts

"Whilst the vegetation is mapped as GDE, previous operators have not caused vegetation death in the creek, and the short window of operations limits the risk of impact to GDEs." (p.196)

- Primary Gold Limited is required to provide evidence to support this statement.

8.4.2 Terrestrial Fauna

" To minimise the potential for fauna injury or death, the following mitigation measures shall be implemented:

- *Fencing shall be installed around the TGU Project site;*
- *Speed limits shall be applied and enforced within the TGU Project site; and*

- *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".* (pp. 208-209).

- These mitigation measures are acceptable for post clearing; however Primary Gold Limited has not provided mitigation measures for fauna death during clearing. Primary Gold Limited should consider ensuring a suitably qualified fauna handler is on site during the land clearing operations.

8.6 Monitoring and Reporting

Table 45: Biodiversity monitoring actions

Aquatic and riparian ecosystems:

"Implement a bio-monitoring program to include the monitoring of fish species. Results from these future programs shall be compared against the baseline fish survey results recorded by GHD (2015a) to determine if the TGU Project is having any adverse impacts on fish species and downstream fisheries". (p.211)

- Primary Gold Limited has committed to annual monitoring of fish downstream. Monitoring should also include the Merten's Water Monitor (*Varanus mertensi*) and Mitchell's Water Monitor (*Varanus mitchelli*) as these two threatened species may be present downstream and could be affected by changes to vegetation etc. as mentioned in the Table 4 of the Biodiversity Report (Appendix 6).

13.3.1.2 Operations

"If adequate funds are not available during operations, and the mine enters premature closure/care and maintenance, or if inadequate funds are available at the end of mine life, there is potential for rehabilitation to be incomplete or not commenced." (p.250)

- It is strongly advised that progressive rehabilitation is undertaken to reduce the likelihood of insufficient funds at the end of the mine phase.
- Primary Gold Limited has obligations under the Mining Management Act (MMA) to ensure sufficient funds and resources are available to conduct rehabilitation and deposited prior to authorisation and commencement of operations.

" Thus if the TGU Project was to close due to inadequate funding, the treated pit dewatering water is expected to

be suitable for use by livestock and would be safely stored in the WSD." (p.250)

- Primary Gold Limited should also provide contingencies for if the water is not suitable for livestock, i.e. fencing the WSD.
- How will Primary Gold Limited ensure that WSD water is suitable post life of mine?

13.3.4 Long term positive water balance and acid mine drainage issues from waste rock dumps

"WRDs are not part of the TGU Project. At closure, Primary Gold will not have completed any substantial capping or relocation of materials that will prevent or improve their current behaviour as a source of AMD". (p.252)

- As the title holder and Operator of the site, Primary Gold Limited has obligations under the MMA to establish, implement and maintain an appropriate environment protection management system for the site. This includes the AMD management on site.

13.3.5.1 Rehabilitation Materials

"Clearing the WSD will allow the salvage of topsoil. Other potentially valuable rehabilitation materials will be identified and salvaged where possible. Consideration will be given to:

- *Timber salvage;*
- *Retention of cleared bush and scrub material;*
- *Collection of seed; and*
- *Retention of boulders and logs for fauna habitat." (p.253-254).*

- Where will Primary Gold Limited store and manage this material? How will Primary Gold Limited manage the material to prevent it from slowly eroding into the current water system?

13.3.5.1 Rehabilitation Materials

"As the TGU Project is located on the Old Mount Bunday Pastoral Station, the rehabilitation prescription will be developed in consultation with the Pastoralist prior to presentation in the MMP." (p.253).

- Primary Gold Limited must include the rehabilitation plan in the EIS and include specific key performance indicators that should be met.
- Primary Gold Limited must also detail rehabilitation monitoring (including post closure rehabilitation monitoring).

13.3.6 Future Land Use

"The remainder of MLN1058 forms the pastoral grazing precinct which includes the new WSD and existing Lake Bazzamundi and other areas unaffected by mining." (p.254)

- Primary Gold Limited needs to provide a commitment that if the WSD and Lake Bazzamundi are affected by mining they will also form part of the livestock exclusion precinct.

13.3.6 Future Land Use

"The OWRD and SWRD as well as EP1 and EP2 and the pit will not be rehabilitated by Primary Gold in the timeframe of the TGU Project. Those features are expected to require long term exclusion of livestock until safe and sustainable. Primary Gold will complete studies to advance development of a long term closure solution for these legacy features." (p.254)

- Primary Gold Limited must commit to completing these studies and develop an action plan, which includes actions to be completed, timeframes for completion, responsibilities for completion etc.

13.3.7.1 Open Pit and Underground

"Infrastructure not containing contaminating materials and not of any commercial value will be left in-situ;" (p.257)

- How will Primary Gold Limited ensure this infrastructure does not present a health and safety risk or affect the amenity of the rehabilitated site as it slowly deteriorates?

14.3.3 Monitoring

"Due to the remoteness of the TGU Project site and the minor levels of dust and exhaust emissions envisaged to be generated, dust and exhaust emission levels are not proposed to be Monitored"

"The condition of surrounding vegetation shall be visually monitored for evidence of excessive dust deposition"

	<p><i>causing vegetation damage". (p.284)</i></p> <ul style="list-style-type: none"> • Primary Gold Limited should be aware that the site is very close to a major highway. Construction of the WSD will generate extensive dust that could affect driving conditions on the highway. Therefore it is necessary that dust monitoring and mitigation is carried out during these works. • How often will Primary Gold Limited monitor the dust deposition on existing vegetation? Primary Gold Limited should discuss trigger values for the amount of dust etc., prior to vegetation disturbance. <p><u>11 Human Health and Safety</u></p> <ul style="list-style-type: none"> • References should include the Guidance Note on Public Health Risk Management of Asbestiform Minerals Associated with Mining: http://www.public.health.wa.gov.au/cproot/5387/2/Guidance Note on Public Health Risk Management of Asbestos Associated with Mining Activities.pdf
<p>Department of Primary Industry and Fisheries 26/10/2015</p>	<p>The attached draft EIS has been assessed as not falling with DPIF interests.</p>
<p>NT Police, Fire and Emergency Services 6/11/2015</p>	<ul style="list-style-type: none"> • The Northern Territory Police, Fire and Emergency Services (NTPFES) note the proposed project site is approximately 1km from the Arnhem Hwy at Mt Bunday and have considered the traffic impact to the surrounding area with respect to traffic safety. A slow-turning large truck in and out of site onto a highway where the speed limit of 130km/p/hr applies is considered hazardous. Transport infrastructure has been addressed in the 'Draft Environmental Impact Statement' provided under s 3.7.4 stating that road signage will be installed on both northern and southern approaches on the highway warning of the entrance in accordance with AustRoad requirements and to the satisfaction of the Department of Transport NT. Signage is also promised for the turning vehicles exiting the site onto the Arnhem Hwy with a stop sign and vehicle speed limits will be addressed and signposted within the project site. The NTPFES note this site to have potential for an increased need for traffic enforcement activity in the region to ensure the safety of the project staff as well as other road users. The NTPFES request that any significant changes to the proposed transport infrastructure and notice prior to the commencement of the project for the awareness of local police.

	<ul style="list-style-type: none"> • The NTPFES also note that the workforce is set to peak at 104 employees including management (proposed to be sourced mainly locally) and the project proposes to outsource accommodation at nearby accommodation facilities. It is noted that there is no proposal of new accommodation infrastructure. The workforce accommodated at local accommodation facilities will be transported by coach to work each day from the accommodation facilities, minimising disruption to traffic. Again, the NTPFES would like to be informed of any significant increase in workforce as this may impact the requirement of police resourcing in the region. • The project acknowledges application of the Bushfires Act and Regulations with regards to assessing risk and management of fires.
<p>Power and Water Corporation 29/10/2015</p>	<p>No comments from PWC for the project</p>
<p>Tourism NT 27/10/2015</p>	<p><u>Water</u></p> <p>There is a volume of detail surrounding environmental provisions for the project from initial refurbishment and production through to rehabilitation and closure. The mine has existing Acid Metalliferous Drainage (AMD) and water issues from existing mine infrastructure. There appear to be risks with leaving the existing infrastructure in its current state as well as in refurbishing and closing the mine.</p> <p>There are monitoring and management plans to ensure surface and groundwater quality is protected and to prevent, mitigate and manage AMD and sediment seepage and discharge to nearby waterways. Tourism NT notes the importance of the Mary River catchment and wetlands as recreational fishing/ boating and wildlife areas.</p> <p>The area is prone to high rainfall, and a drainage and pumping strategy is in place to reduce risk of mine flooding, however we note this is yet to be fully tested.</p> <p><u>Closure</u></p> <p>The mine has had several operational periods under various ownerships. The ability to extract all remaining ore would advance the project towards final completion, facilitating closure and environmental rehabilitation. The costs associated with closure will be addressed as part of ongoing submission of the Toms Gully Mining</p>

	<p>Management Plan (MMP), we would advise funds be set aside for this purpose.</p> <p><u>Transport</u></p> <p>The Arnhem Highway is heavily utilised by tourists, however incremental traffic from the Primary Gold project is judged to not have a material impact on volumes.</p> <p><u>Visual Amenity</u></p> <p>The mine will have low visibility from the road; the top of the TSF tailings dam wall may be visible from the road.</p> <p>Utilisation of short term accommodation by project workforce</p> <p>The Tom Gully project has a short life span of 40 months. At the peak of operation there will be over 100 people employed. The local area is serviced by two tourist villages and a moderate increase in “corporate” demand will likely result in a positive outcome for these two tourist villages by raising occupancy rates and assist to smooth out the effects of seasonality.</p>
<p>The Parks and Wildlife Commission of the Northern Territory</p> <p>17/11/2015</p>	<p>Thank you for the opportunity to comment on the EIS for the Tom’s Gully Project. The project is located in close proximity to the Mt Bundy and Coulter Creeks which run into the Mary River and enter the Mary River National Park which is approximately 6km downstream. The Mary River National Park is one of the Northern Territory’s most important parks for biodiversity conservation and protects natural values that are nationally and internationally significant.</p> <p>The Mary River NP is a site of national Conservation Significance and is noted as the most significant and reliable breeding habitat for magpie geese in the Northern Territory and is important breeding and feeding grounds for water, shore and sea-birds. The wetlands are also important habitat for many fish species and other aquatic life.</p> <p>Tourism is a major economic driver in the Northern Territory and the Park’s wetlands are important destinations for tourists and recreational Fishers with a number of commercial operators servicing the tourism and recreational fishing sector within and adjacent to the park.</p> <p>We have reviewed the EIS and in relation to the Mary River NP support the comments made by DLRM in relation to the lack of detail in the draft EIS provided on erosion and sediment control strategies and the level of detail provided in relation to the water monitoring program to enable detection of mining impacts.</p>

<p>Amateur Fishermen's Association NT 30/10/2015</p>	<p><u>Introduction</u></p> <p>The Amateur Fishermen's Association of the Northern Territory (AFANT) welcomes the opportunity to provide comment on the Tom's Gully Underground Project Environmental Impact Statement.</p> <p>Recreational fishing is an important social and cultural component of the Northern Territory lifestyle as well as being a major tourism drawcard and a significant contributor to the economy. Recreational fishing surveys and fishing tour operator data indicates that more than 35,000 Territory residents and 54,000 visitors participated in recreational fishing in the Territory in 2010 and recreational fishing was estimated to contribute at least \$100 million directly to the Northern Territory economy during 2014.</p> <p>Recreational fishing provides significant cultural, economic and social contributions to the Northern Territory and unless proper environmental procedures and management practices are put in place for Tom's Gully Underground Project (TGUP) there may be unacceptable negative impacts on this industry.</p> <p><u>Identified Risks</u></p> <p>While there are a number of significant environmental risks to be considered in the assessment of this project proposal, AFANT will confine its comments to those issues with the potential to impact on recreational fishing.</p> <p>These recognised risks include;</p> <ul style="list-style-type: none">• Proposed management of water quality and quantities;• Management of waste rock and other material with potential to produce Acid Mine Drainage (AMD) and/or saline drainage (SD);• Erosion and sedimentation;• Financial risk and the rehabilitation bond <p>AFANT is especially concerned with the health of downstream aquatic ecosystems in Mount Bunday Creek and Mary River National Park as a result of the Tom's Gully Underground Project (TGUP) as these areas include the iconic fishing locations of Hardies Billabong, Corroboree Billabong, Shady Camp and the Mary River system.</p> <p>Our main concerns revolve around the discharge of water into Mount Bunday Creek, separation of clean water and dirty water through the mine site, sedimentation and surface water run-off and the storage of tailings to minimise downstream contamination risks and the potential acidification of groundwater through AMD.</p> <p>AFANT understands that treated water is proposed to be stored in a 2.1 GL capacity WSD on-site and then be discharged to Mount Bundy Creek during subsequent wet seasons when there is sufficient dilution capacity</p>
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available. AFANT is comfortable with the water being treated to meet 80% ANZECC and ARMCANZ (2000a) criteria however we believe that environmental factors need to be considered in regards to planned wet season water releases. This concern relates to a strong El Nino influence resulting in more extreme weather events but reduced overall rainfall in the Mary River Catchment. AFANT would like the proponent to acknowledge that this likely reduction in overall rainfall will have an effect on wet season discharges and could result in TGUP being unable to discharge as frequently as needed to maintain a sufficient dilution capacity.

AFANT also has concerns regarding the storage of tailings in TSF2. This dam is designed to store 350,000 t of tailing solids with an average beaching slope of 1v:120h, at an assumed density of 1.2 t/m³ while maintaining a 0.5 m freeboard, even during an extreme rainfall event (1:100 year, 72 hour duration). While these concerns relate to use of the 1:100 year extreme rainfall event AFANT believes this data should be more precautionary based on the large number of extreme weather events in the past thirty years rather than the lower average rainfall events of the past one hundred years. Rainfall events in the Mary River Catchment have frequently been recorded at higher than the 1:100 levels by NT Parks and AFANT believes there is a serious risk of TSF2 overflowing and contaminating the downstream environment unless a more precautionary slope and greater freeboard is put in place.

AFANT also believes greater measures need to be put in place for the management of stormwater and the potential for on-site erosion and sediment loads during these extreme weather events. These greater control measures also include sediment control and erosion runoff during the clearing of approximately 93 ha of native vegetation at TGUP (54 ha being for WSD, the remainder for borrow materials, new access and drainage) during the construction phase prior to operation.

AFANT would also like more information to be made available by the proponent regarding the groundwater monitoring network of on-site. The EIS identifies that there is potential at TGUP for a water table fluctuation of up to 3.5M between the wet and dry seasons and groundwater seepage has been identified as possible issue from the WRD, Evaporation ponds and TSF's. This raises concerns about possible groundwater flow of AMD and contaminated water from the site into aquatic habitats downstream. AFANT believes a more robust groundwater monitoring system with expanded monitoring sites must be put into place prior to TGUP becoming operational.

A number of potential issues and risks contained in the EIS also need to be considered in relation to the current financial environment and potential environmental impacts if economic factors go against TGUP. While the EIS addresses the best case scenario regarding financial viability it is essential that all alternatives be considered as well as the international financial situation in regards to the gold price and exchange rates plays a big part in ensuring the viability of this project.

History has shown that past Northern Territory governments have been willing to circumvent best practice

	<p>environmental management and bend the regulatory process in order to get mines up and running or keep struggling mines operating. This is a significant risk that needs to be managed for TGUP.</p> <p>The mine management plans and future rehabilitation stages of the TGUP need to be conducted, regulated and enforced by government. In addition there is a potential financial risk to taxpayers if this project fails and government funding is required for the clean-up and rehabilitation. This risk must be factored into the bond prior to the TGUP approval.</p> <p>It is essential that this bond needs to be of sufficient value to address the size and scale of current risks and threats at the site and any newly identified future risks given the size of this facility and the cost of managing the ongoing operational requirements of the site like pumping and water management that will need to be conducted in the event of an emergency shut down or if the mine goes into caretaker mode.</p> <p><u>Conclusion</u></p> <p>AFANT has a strong commitment to ensuring the protection and the quality of recreational fishing in the Northern Territory. Recreational fishing is a major contributor to the economy and lifestyle of the Northern Territory and must be nurtured and enhanced by the Government for current and future generations.</p> <p>We have an extremely strong interest in ensuring that the proposed mining operations and post closure rehabilitation of the site can be conducted in a manner that removes any current and future water and pollution risks at the TGUP site.</p> <p>We would welcome the opportunity for greater engagement and consideration of AFANT's views.</p>
<p>Environmental Defenders Office 6/11/2015</p>	<p>The Environmental Defenders Office of the Northern Territory (EDO NT) welcomes the opportunity to make a submission in relation to the proposed underground gold mine of Primary Gold Ltd (PG) at Tom's Gully.</p> <p>We are pleased that PG has responded to numerous early concerns of the Environmental Protection Authority, specifically that waste rock material will not be used for construction, that a new water supply dam is built, and that waste rock is kept underground. We are pleased that many issues that plague the McArthur River Mine appear to have been considered and addressed in PG's proposal at this early stage.</p> <p>However, after considering PG's draft Environmental Impact Statement (EIS) we still have the following concerns:</p> <ol style="list-style-type: none"> 1. <i>Risk of elevated cyanide levels in Tailings Storage Facility (TSF) Cell 2</i> <p>There are recent documented West Australian cases of gold mine TSF's containing elevated levels of cyanide ¹</p>

	<p>Given the occurrence of the Gouldian Finch, listed as Vulnerable under the Environmental Protection and Biodiversity Conservation Act 1999, within a 10km radius of the mine site and the known possibility of birds drinking TSF water it is troubling that the EIS does not propose a method for appropriately managing this risk.</p> <p><i>2. Closing and rehabilitation</i></p> <p>Further, given the short lifetime of the mine we are concerned about the lack of an appropriate closure or rehabilitation plan at this point in time. The EIS proposes that various options for closure and rehabilitation be investigated but does not provide a timeframe for this process. Given the old mine is already contaminating the environment and that recommencement of mining activities will increase stress on the mine's surroundings, PG should already have a plan in place regarding rehabilitation and closure of the Sulphide Waste Rock Dump, the Oxide Waste Rock Dump and TSF Cell 1.</p> <p>[¹ See for instance: Griffiths, S.R. et al. 'Factors Influencing the risk of wildlife cyanide poisoning on a tailings storage facility in the Eastern Goldfields of Western Australia' (2009) <i>Ecotoxicology and Environmental Safety</i> 72(5), p 1579-1586; Donato, D.B. et al. 'A critical review of the effects of gold cyanide-bearing tailings solutions on wildlife' (2007) <i>Environment International</i> 33(7), p 974-984]</p> <p>At the very least there should be a timeline for the development of rehabilitation or closure plans and a deadline for their submission to the Department of Mines and Energy. In considering this aspect we note that the gold mining industry is currently very volatile and that past closure plans for this mine have not been successful. It would be devastating if this project increased the environmental degradation already occurring.</p>
<p>Public Comment 6/10/2015</p>	<p>I would like to make the following comments about the Toms Gully EIS. These comments are in relation to the biodiversity chapter and report.</p> <p>It is not sufficient that they have not undertaken any fauna surveys for this EIS. I don't agree with the determination of likelihood of threatened species within the site. The report does not refer to any fauna surveys that were conducted previously. Considering no surveys have been undertaken in the area, how can they decide if a species is likely to be present or absent from the site? Just because there are no records on the DLRM database of a species in the mine site, it does not mean they do not occur there. If they were to do surveys, then they could at least have some level of certainty. At the moment it appears to be a guess as to what could be on site.</p> <p>Considering the large area to be cleared for the new raw water dam, I believe that some sort of fauna surveys should be undertaken in that area.</p>

