CABONNE COUNCIL

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Our Ref:
Doc ID: 959731
ABN: 41992 919 200

15 August 2018

Mandana Mazaheri
Senior Environmental Assessment Officer
Resource and Energy Assessments
Planning Services
NSW Planning & Environment

Mandana.Mazaheri@planning.nsw.gov.au

Dear Sir/Madam,

**MCPHILLAMYS GOLD PROJECT (SSD 18_9505)**
**ENVIRONMENTAL ASSESSMENT REQUIREMENTS**

Thank you for your email of 6 August 2018 requesting council's requirements for the EIS for the proposed gold mine. Requirements for the State Significant development for the proposed gold mine are as follows:

1. Need for the project
    - Project objectives and proposed development including employment, hours of operation, proposed processing operations.

2. Natural and Cultural Environment
    - Impact on natural, historical (including archaeology and heritage) and cultural environment with emphasis on land use conflict.
    - Environmental characteristics of the site (land ownership, meteorology, topography, drainage, geology, water resources, ecology, socio-economic profile, visual characteristics and site visibility, existing noise climate, proximity of dwellings to the mine).
    - Environmental impact of the proposed development upon the natural environment, in particular the existing hydrology of the landscape and any impact posed by the development proceeding.

3. Water Management
    - Impact assessment (surface water run-off)
    - Impact assessment (groundwater system)
    - Water demand and supply (existing and proposed)

4. Air Quality Control and Management
    - Dust control

5. Noise Impacts
    - Noise controls proposed
    - Noise assessment

6. Blasting Impacts
    - Blasting control measures and impact assessment

7. Traffic and Transportation issues
    - Access
    - Use of public roads/crown roads
    - Increased truck traffic levels on main roads
    - Truck traffic levels and impact upon local roads

8. Site land Management
    - Site land management strategy
    - Visual screening
    - Rehabilitation strategy
    - Future rehabilitation options for the site

9. Environmental risk assessment and public safety, with particular reference to the impact of ore processing and storage of mine waste materials in tailing dams

10. Environmental monitoring

11. Flora and Fauna Assessment

Thank you for the opportunity to provide comment to your department of Cabonne Council's requirements. Should you have any further enquiries please contact council's Environmental Services Department on 6392 3247 during business hours.

Yours faithfully,

HJ Nicholls
**DIRECTOR ENVIRONMENTAL SERVICES**

Department of Industry

OUT18/12279

Mandana Mazaheri
Senior Environmental Assessment Officer
Resource & Energy Assessments
NSW Department of Planning and Environment

Mandana.Mazaheri@planning.nsw.gov.au

Dear Ms Mazaheri

**Secretary's Environmental Assessment Requirements (SEARs)**
**McPhillamy's Gold Project (SSD 9505)**

I refer to your email of 6 August 2018 to the Department of Industry (DoI) in respect to the above matter. Comment has been sought from relevant branches of Lands & Water and Department of Primary Industries (DPI), and the following requirements for the proposal are provided:

**DoI - Water**

- Annual volumes of surface water and groundwater proposed to be taken by the activity (including through pit inflows and direct capture from storages) from each surface and groundwater source as defined by the relevant water sharing plan (WSP). This is recognised as a key issue for this project as the Department is aware of limitations in available surface water entitlement within the relevant water source.
- The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance and proposed water management infrastructure.
- Assessment of impacts on surface and groundwater sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Assessment of the ecological value of the riparian areas and any groundwater dependent ecosystems to be impacted within the disturbance footprint and potential impact zone of the project.
- Assessment of the hydrological characteristics of the site and downstream, and an impact assessment of the project on downstream water users and the environment. An assessment over wet, dry and average periods will be required. Impacts to water supply from Carcoar Dam and riparian and licensed water users will need to be addressed.
- An assessment of risk and potential impacts to downstream surface and ground water users and the environment due to the proposed location of a Tailings Storage Facility (TSF) on the headwaters of the Belubula River. The ability to effectively monitor and apply mitigation measures to potential impacts is of critical concern due to no buffer between the TSF and the watercourse and the potential for interaction with the fractured groundwater system which increases the uncertainty of flow paths. The risk assessment should clearly identify the users and the water source at risk and consider the ability to rehabilitate if seepage/TSF failure occurs and the associated time period.

- Key policies for the project to be assessed against includes; the NSW Aquifer Interference Policy (2012) using DoI Water's assessment framework, the "Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)" and the Harvestable Right provisions of the *Water Management Act 2000*.
- An assessment against the rules of the groundwater and surface water sharing plans relevant to the site.
- Full technical details and data of all surface and groundwater modelling, and an independent peer review.
- Proposed management and disposal of produced or incidental water.
- Proposed surface and groundwater monitoring activities and methodologies.
- Consideration of relevant policies and guidelines.
- A statement of where each element of the SEARs is addressed in the EIS in the form of a table.

**DPI Fisheries**

The current proposal includes an extensive loss of mapped Key Fish Habitat in the Belubula River as a consequence of this project. The EIS should include an assessment of the impacts on aquatic biodiversity and the requirement for aquatic biodiversity offsets as per the following link;
http://www.environment.nsw.gov.au/resources/biodiversity/14817aqoffs.pdf.

The EIS should address impacts on Key Fish Habitats (Third order streams or larger under the Strahler Stream Order System) such as the Belubula River (Strahler fifth order stream), Tributary F (Strahler fourth order stream), and an unnamed Tributary (Strahler third order stream).

Additionally, the EA should conduct an aquatic ecological assessment and address impacts to key Fisheries-related issues including: Aquatic Biodiversity; Dams, Waterway Crossings & Barriers to Fish Passage; Threatened Species, populations and ecological communities; and Riparian Buffer Zones). Please see **Attachment A** for more details.

**DoI Crown Lands**

The EIS should describe the impacts on Crown land and Crown waterways, namely Dungeon Creek and the Belubula River located within and adjacent to the Project and the mitigation measures to minimise impacts. For further details on directly (and indirectly) impacted Crown lands, see **Attachment A**.

**DPI Agriculture**

The proposal is located on and adjacent to agricultural land, including mapped Biophysical Strategic Agricultural Land (BSAL)and is . The EIS should include preparation of an Agriculture Impact Statement.

Any further referrals to Department of Industry can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

Yours sincerely

Alison Collaros
**A/Manager, Assessment Advice**
24 August 2018

**McPhillamys Gold Project SSD 9505**
**SEARs**

## Fisheries Resources

### AQUATIC ECOLOGICAL ASSESSMENT

The aquatic ecological environmental assessment should include the following information;

- A recent aerial photograph (preferably colour), map or GIS of the locality which maps the key fish habitat of the development site, and the waterway classes as defined in Tables 1 and 2 of the Policy & Guidelines document above.
- Aerial extent of the key fish habitat types to be affected either directly or indirectly by the development or activity should be identified and shown on recent aerial photograph map or GIS.
- Description and quantification of aquatic and riparian vegetation should be presented and mapped. This should include an assessment of the extent and condition of riparian vegetation and the extent and condition of freshwater aquatic vegetation and the presence of significant habitat features (e.g. gravel beds, snags, reed beds, etc)
- Quantification of the extent of aquatic and riparian habitat removal or modification which will result from the proposed development, and impacts on fish passage.
- Determination of aquatic biodiversity offsets required *(see NSW Biodiversity Offsets Policy for Major Projects, Fact Sheet: Aquatic Biodiversity)* at http://www.environment.nsw.gov.au/resources/biodiversity/14817aqoffs.pdf.
- Detailed maps outlining the proposed realignment of new waterways within the project area.
- Detailed maps outlining compensatory habitats and significant habitat features that will be created to offset the loss of aquatic and riparian habitat.
- Detailed maps that outline and assess the geomorphic stability of the proposed realignments of the new waterways including re-creation of the sinuosity/complexity of the new waterways.
- Details of the location of all waterways crossings and construction designs, such as bridges or culverts, mine access tracks, or pipeline waterway crossings.
- Details of the location of all waterway realignments, including a detailed rehabilitation plan for the aquatic environment and the adjacent riparian zone, and a timetable for construction of the proposal with details of various phases of construction.
- Aspects of the management of the proposal, both during construction and after completion, which relate to impact minimisation e.g. Environment Management Plans.

### KEY ISSUES

***NSW Biodiversity Offsets Policy: Aquatic Biodiversity***

The proposal should refer to the *NSW Biodiversity Offsets Policy for Major Projects, Fact Sheet: Aquatic Biodiversity* located on the website http://www.environment.nsw.gov.au/resources/biodiversity/14817aqoffs.pdf .

The proposed area of development such as the Tailings Storage Facility and the Waste Rock Emplacement Boundary contains such *Key Fish Habitats* as the Belubula River (4$^{th}$ and 5$^{th}$ order), Tributary F (4$^{th}$ order), and an unnamed Tributary (Strahler third order stream) connecting to the Belubula River diversion from the eastern side, and will have a direct adverse impact resulting in a loss of *Key Fish Habitat* and connectivity. Chapters 3 and 4 of the DPI Fisheries *Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013)* outline the requirements for environmental compensation to ensure there is a 'no net loss' of key fish habitat. The *NSW Biodiversity Offsets Policy for Major Projects* allows for both site based offsets to compensate for the loss of each aquatic habitat type or the payment of an amount to compensate for the value of the aquatic habitat being lost to be considered. The policy and guidelines require a minimum 2:1 offset for Type 1–3 key fish habitats to help redress both direct and indirect impacts of development.

DPI Fisheries will therefore require the negotiation of a compensatory habitat package through the use of aquatic biodiversity offsets and/or supplementary measures to ensure that such outcomes are achieved.

***Dams, Waterway Crossings & Barriers to Fish Passage***

The Department does not support the construction of in-stream structures such as dams, or weirs within *Key Fish Habitat* in accordance with the Department's *Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013).* "*The Installation and Operation of Instream Structures that alter Natural Flow Regimes of Rivers and Streams*" has been listed as a Key Threatening Process under Schedule 6 of the *Fisheries Management Act* 1994.

Watercourse diversions must emulate a natural meandering watercourse that provides for fish passage within the diversion and also at the confluence to other tributaries that are *Key Fish Habitat* such as Tributary F (Strahler fourth order stream) and an unnamed Tributary (Strahler third order stream) connecting to the Belubula River diversion from the eastern side.

Existing and proposed waterway crossings should comply with DPI *Fisheries* Guideline document: *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings.* In particular, a proposed new realignment of Dungeon Road will likely involve a waterway crossing over the Belubula River, and the Mine access road will involve a waterway crossing over Tributary A. The closure of existing sections of Dungeon Road should enable the removal of waterway crossings that may potentially impede fish passage in *Key Fish Habitats* such as the existing crossing on Tributary A.

The "Pipeline Development" and related waterway crossings should be assessed in the EIS. DPI Fisheries should be consulted with regards to any temporary measures that will result in blocking fish passage. This includes coffer dams, temporary access tracks or redirecting flows whilst the pipeline is constructed.

***Threatened Species, populations and ecological communities– Fisheries Management Act 1994***

The proposal should include a threatened aquatic species assessment (as per part 7A *Fisheries Management Act* 1994) to address whether there are likely to be any significant impacts on listed threatened species, populations or ecological communities listed under the *Fisheries Management Act 1994*.

**Belubula Catchment**- The proposal is located within an area considered habitat of the threatened species, Purple Spotted Gudgeon (*Mogurnda adspersa*). This species is known or expected to occur downstream in the Belubula River area between Blayney and Canowindra, as is the Endangered Murray Darling Population of Eel-Tailed Catfish (*Tandanus tandanus)* which is known or expected to be found within the Belubula River downstream near Canowindra.

**Macquarie Catchment -** There are several species known or expected to occur within the corridor of the pipeline including the endangered Macquarie Perch (*Macquaria australasica*) known or expected to occur within the Macquarie River and Campbells River near Bathurst, and the Purple Spotted Gudgeon (*Mogurnda adspersa*) known or expected to occur in the Macquarie River, and tributaries of the Fish River and Windburndale Rivulet.

Threatened fish species mapping distributions are available at:
https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current/threatened-species-distributions-in-nsw

***Riparian Buffer Zones***

*R*iparian buffer zones should be protected in accordance with the DPI Fisheries *Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013)* available on the Department's website at http://www.dpi.nsw.gov.au/fishing/habitat/publications/pubs/fish-habitat-conservation.

Adequate riparian buffer zones should be established adjacent to the Belubula River and its tributaries in order to minimise the indirect impacts of the development on waterways.

## Crown Lands

### Crown land – Directly Impacted by Proposal (see Figure 1)

Roads
The following roads will be impacted by infrastructure and activities associated with the mining project:

- Road west of Lot 1 DP 628211,
- Road south of Lot 22 DP 750413 (Dungeon Road),
- Road west of Lots 13, 14, 17, 18 DP 750413, (Koomoorang Road),
- Road south of Lot 1 DP 1192983,
- Road south of Lot 72 DP 750413,
- Road dissects Lot 2 DP 533362.

The Applicant is required to consult with Crown Lands to determine the closure and purchase of roads that will be impacted. Contact David Baber, Project Manager Regional Projects (02) 6883 3326.

Waterways
Dungeon Creek will be impacted by mining infrastructure. The Applicant is required to consult with Crown Lands to determine the purchase of Crown waterway that is impacted.

Tenure / easement
The scale of the water pipeline is too large to determine if there is impact on Crown lands. The Applicant is required to consult with Crown Lands to determine if any further action is required in regards to easements or tenures to secure access to Crown parcels. Contact David Baber, Project Manager Regional Projects (02) 6883 3326.

Stakeholders
The Applicant is required to consult with stakeholders that manage or tenure Crown lands. It is advised that Local Land Services manage Lot 462 DP 1093697 and Lot 7003 DP 1020650.

Lot 12 DP814748, Lots 65 and 49 DP 750413, Lot 105 DP 750413, Lot 135 DP 750373, Lot 136 DP 750373, Lots 67 and 68 DP750413, Lot 7002 DP 1024543, Lot 161 DP 725910, Lot 153 DP750413, Road west Lot 152 DP750413, Road south of Lot 17 DP 750413 and Road south of Lot 72 DP750413 are currently tenured and further details can be obtained by contacting Kay Oxley, Senior Natural Resource Management Officer on (02) 63914334.

### Crown land - Indirectly Impacted by Proposal (see Figure 1)

The following Crown roads, Crown land have the potential to be indirectly impacted by mining activities:

- Lot 12 DP814748 Access, Resting Place Grazing, Licence 377577 David Walter Standing
- Lots 65 and 49 DP 750413 FPR Agriculture, Environmental Protection and Sustainable Grazing Licence 492663 Beryl Anne Cowan
- Lot105 DP 750413, Lot 135 DP 750373,FPR,Agriculture, Environmental protection and Sustainable Grazing Licence 492663, Beryl Anne Cowan
- Lot136 DP 750373, FPR, Agriculture Grazing Special Lease (Perpetual) 70305, Beryl Anne Cowan
- Lots 67 and 68 DP750413, FPR, Grazing Licence 194738, Whim Park Pty Ltd
- Lot 7002 DP 1024543, Public Recreation, Grazing Licence 194738, Whim Park Pty Ltd
- Lot 462 DP 1093697, Camping, Resting Place, Local Land Services
- Adjacent to Lot 462 DP1093697, Crown Land, Crown Land
- Lot 161 DP 725910, FPR, Grazing Licence 205323, Philip John Church

- Lot 157 DP 705323, Access, Preservation of Native Flora and Fauna, Crown Land
- Lot 20 DP 1076130, FPR, Crown Land
- Lot 153 DP750413, FPR, Grazing Licence 308015, Thomas Hasson
- Lot 7300 DP 1147749, FPR, Crown Land
- Lot 7003 DP 1020650, Camping, Local Land Services
- Road west Lot 152 DP750413, Road Enclosure, Enclosure Permit 17788, Thomas Ha

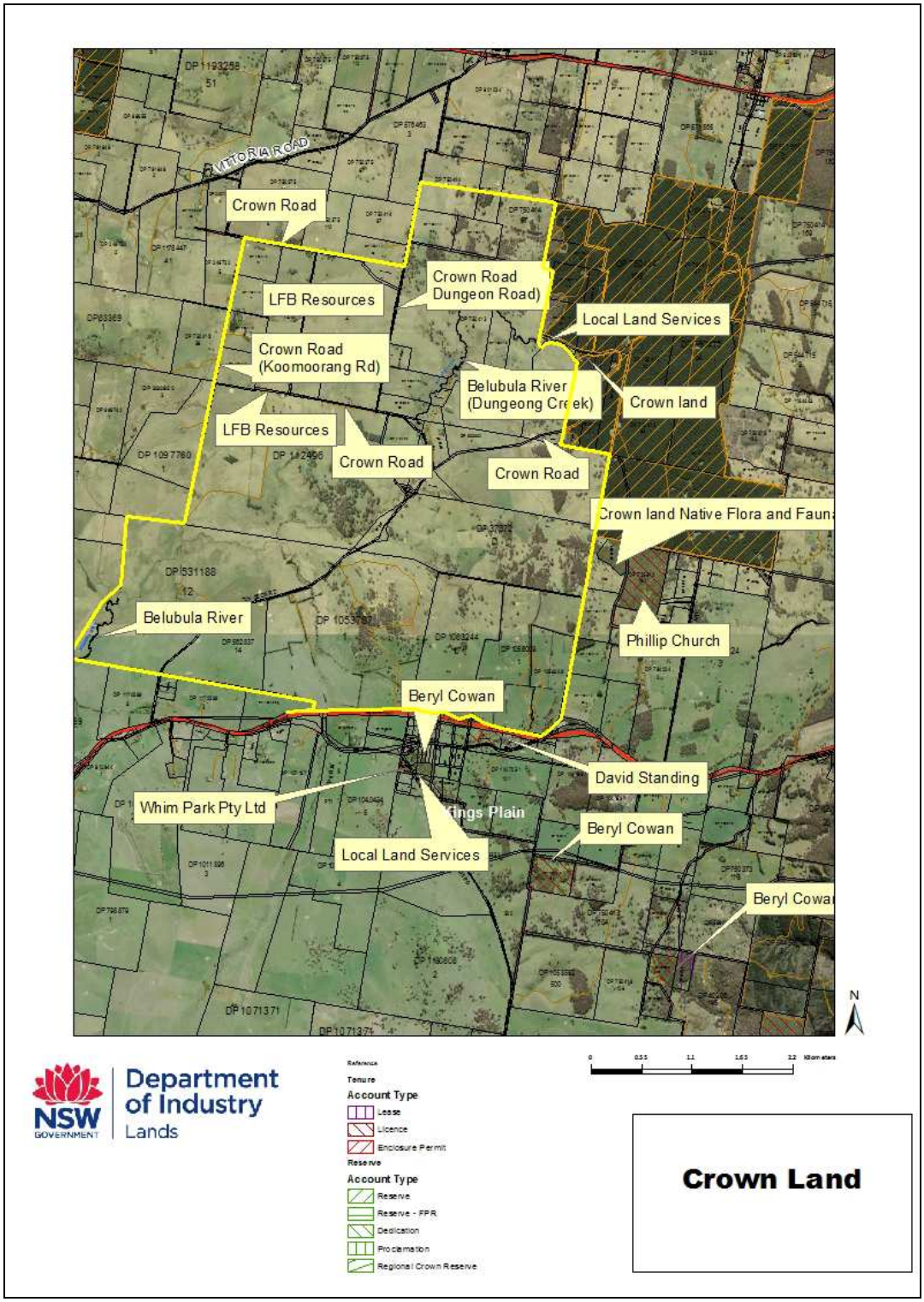


**Figure 1 – Crown Land Directly and Indirectly Impacted by the Proposal**

**END ATTACHMENT A**

Planning & Environment
Resources & Geoscience

DOC18/597332

Dr Mandana Mazaheri
Senior Environmental Assessment Officer
Resource Assessments - Planning Services Division
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Mandana.Mazaheri@planning.nsw.gov.au

Dear Mandana

**McPhillamys Gold Project (SSD 18_9505)**
**Request for Input into Environmental Assessment Requirements**

I refer to your email dated 6 August 2018 inviting the Division of Resources & Geoscience (the Division) to provide comments on the McPhillamys Gold Project (the Project) proposed by Regis Resources Limited (the Proponent).

The relevant units internal to the Division have been consulted where required in generating this advice. Further, the Department of Planning and Environment - Planning Services Division and the Proponent should be aware that matters pertaining to rehabilitation, final landform, environmental impacts of subsidence, subsidence management, mine operator and safety are assumed and assessed by the Resources Regulator.

The Division notes that draft SEARs for the Project include the general requirement for the Environmental Impact Statement (EIS) to include (amongst other aspects of the project) a full description of the development (including that of the geology and the resource); a strategic justification of the development; a list of approvals (including a mining lease) that must be obtained before the development can commence; a consideration of the development against all relevant planning instruments (including the Mining SEPP); and, the suitability of the sites with respect to potential land use conflicts with existing and future surrounding land uses.

The Preliminary Environmental Assessment (PEA) has provided a suitable description of the regional and local geological setting of the deposit (including plans and a cross section). A Joint Ore Reserves Committee (JORC) ore resource/reserve estimate has been provided in the PEA.

Consistent with the intent of the *'Indicative Secretary's Environmental Assessment Requirements (SEARs) for state significant mining developments (October 2015)'*, to ensure the project and its interactions can be understood and assessed by the Division, the EIS should include the following additional specific requirements:

## Pipeline Corridor

The approximate location of the pipeline corridor currently intersects around 21 exploration or mining titles/applications. The Proponent should consult with holders of existing mining and exploration authorities intersected by the corridor. Evidence of consultation should be included in the EIS. The Division can provide contact details to the Proponent on request.

**Biodiversity Offsets**

The Division requests that the Proponent consider potential resource sterilisation in relation to any proposed biodiversity offsets areas. Biodiversity offsets have the potential to preclude access for future resource discovery and extraction and could also potentially permanently sterilise access to mineral resources.

The EIS must therefore clearly illustrate the location (including offsite locations) of any biodiversity offsets being considered for the project (including both the mine site and pipe line corridor) and their spatial relationship to known and potential mineral and construction material resources and existing mining titles and exploration tenements.

The Division requests consultation with both GSNSW and holders of existing mining and exploration authorities affected by planned biodiversity offsets. Evidence of consultation should be included in the EIS.

For further enquiries regarding this matter please contact Mr Adam W. Banister, Senior Advisor Assessment Coordination on (02) 4063 6601 or assessment.coordination@planning.nsw.gov.au

Yours sincerely

Adam W. Banister
**Senior Advisor Assessment Coordination**
20 August 2018

for
Dr David Blackmore
**Executive Director Resource Operations**
**Division of Resources & Geoscience**

NSW EPA

Your reference :
Our reference : EF17/10659; DOC18/552847-01
Contact : Mr Allan Adams; (02) 6333 3804

Mandana Mazaheri
Senior Environmental Assessment Officer
Resource & Energy Assessments
GPO Box 39
Sydney NSW 2001

20 August 2018

Dear Ms Mazaheri

**McPhillamys Gold Project (SSD18_9505) – Environmental Assessments Requirements (EARs)**

I refer to your email dated 6 August 2018 requesting input on the Environmental Assessment Requirements (EARs) for the proposed McPhillamys Gold Project (the project). Please find attached at **Attachment A**, the Environment Protection Authority (EPA) Environmental Assessment Requirements (EARs) for the proposed project. A full list of the relevant guidelines is at **Attachment B**.

The EPA is the environmental regulator for the proposed project, and has the objective to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development, and to reduce the risks to human health and prevent degradation of the environment in accordance with environment protection legislation including the *Protection of the Environment Administration Act 1991* (the POEA Act).

The EPA has reviewed the Preliminary Environmental Assessment (PEA) and in addition to the EAR's, provides the Department of Planning and Environment (DPE) with the following comments/concerns on the proposed project;

- The placement of a Tailings Storage Facility (TSF) with an approximate surface area of 260ha/640acres directly on the headwaters of the Belubula River. The Belubula River flows to Carcoar Dam approximately 26km downstream as it passes through the township of Blayney; downstream of Carcoar Dam various horticultural and livestock enterprises have access to extract water.

- The use of cyanide as a reagent, and subsequent disposal with metalliferous waste rock into the TSF. The EPA is aware that cyanide detoxification will be carried out prior to disposal, however a percentage (estimated less than 30 parts per million) of Weak Acid Dissociable (WAD) cyanide will remain in the slurry pumped to the TSF;

- Section 2.6.3 of the PEA states that the inner face of all embankments would be constructed with materials to have an effective permeability of less than $1x10^{-9}$m/s, although it is not confirmed that the entire floor of the TSF would be constructed to achieve the same level of permeability both at commencement and as the floor expands/extends with each subsequent lift;

- Figure 13 of the PEA identifies several privately-owned residences within close proximity to the proposed open pit; some within approximately 1km.

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Level 102, 346 Panorama Avenue Bathurst NSW 2795
Tel: (02) 63 333800
ABN 30 841 387 271
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In reviewing the PEA, the EPA has focused on the key components of the proposed activity and its potential impacts to the environment and human health. The EPA acknowledges that not all information has been presented in the PEA as the EIS will present a more detailed description of the project. However, in reviewing the information that is available in the PEA with specific regards to the use of cyanide, and the proposed method of tailings management and disposal, the EPA has several concerns as stated above on page 1. The EPA therefore expects that given the constraints of the chosen site and environmental risks of the project, that current leading and world best practices should at a minimum be adopted for all aspects of the project, with specific reference to tailings handling and management.

The EPA advises DPE that the project is being proposed to be undertaken on a scale and in a location with many sensitive receivers, with a potential significant risk to the environment and human health should a failure in management or construction occur, and a potential long-term legacy to the state of NSW. The EPA will therefore be reviewing the EIS with a view that best practice methods and infrastructure should be adopted across the project, and any shortcomings as determined by the EPA will be assessed accordingly.

Should you have any queries regarding this matter, please contact Mr Allan Adams at the Central West (Bathurst) Office of the EPA by telephoning (02) 6333 3804 or email central.west@epa.nsw.gov.au.

Yours sincerely

**DR SANDIE JONES**
**REGIONAL MANAGER CENTRAL WEST**
**Environment Protection Authority**

## Attachment A - McPhillamys Gold Project – EPA – Environmental Assessments Requirements

### Site Layout

- Provide maps, at an appropriate scale, which clearly identifies the proposed site layout relevant to environmental features such as drainage lines, terrain etc, over the life of the Project.

- Provide maps which show land ownership information and impacts assessment information at an appropriate scale.

### Tailings dam management

The EPA has a Tailings Dam Liner Policy 2016 (the tailings dam policy), the tailings dam policy adopts a benchmark requirement for TSF liners to achieve a hydraulic conductivity of $1x10^{-9}$ m/s or less utilising a constructed clay liner of at least 1.0 metre (or a geosynthetic liner). The tailings dam policy does permit the proponent to propose an alternative liner system to the benchmark, however this requires a robust hydrogeological investigation and impact assessment to prove the efficacy of the liner system and/or natural geology to demonstrate the prevention of water pollution. The tailings dam policy does also state that in the event the tailings pose a high risk to the water environment, a liner system that provides a higher level of protection is likely to be required. The EPA therefore expects that the proponent proposes a TSF liner system that will satisfy the tailings dam policy. A copy of the tailings dam policy is included within the **Attachment C** below.

The PEA indicates that the tailings will be pumped to the tailings storage facility as a slurry. The Australian Government has produced a 'Tailings Management – Leading Practice Sustainable Development Program for the Mining Industry' (Australian Government 2016). This document provides guidance on world leading experience and expertise in mine management and planning; in particular, new and advanced methods of tailings disposal. New methods of tailings disposal include, thickened and paste disposal, dry stacking, co-disposal of coarse wastes and tailings, and integrated disposal of coarse waste and tailings along with backfilling open-pits. The underlying substantial benefit to each of the above new methods produces tailings with far less moisture content. Paste or filtered tailings have the advantages of improved water and process chemical recovery, potentially reduced tailings storage volume, reduced seepage, more stable landforms, and reduced chance of overtopping. "Management of tailings across the world is increasingly moving towards pre-disposal thickening and filtering of tailings, with some increase in surface paste tailings disposal and the co-disposal of tailings and coarse-grained waste" (Australian Government 2016). The EPA expects that this proposal utilise best management practice as detailed in the referenced document.

The EPA requests that the proponent undertake a tailings risk assessment based on the estimated tailings composition. The risk assessment should contain sufficient information to enable the EPA to carry out an independent assessment to determine if the tailings pose a high risk to the environment, as per the tailings dam policy, and therefore requiring a higher level of protection as stated in the tailings dam policy. The risk assessment should include detailed discussion of options to dispose of, and handle tailings as described above, which are substantial improvements to the dated method of slurry disposal within valley filled tailings dams.

### Cyanide use

The use of cyanide as a reagent used in mineral processing is not widespread in the state of New South Wales (NSW), and is limited to just several active mine sites located throughout far western NSW. Various literature produced by the Australian Government covering the use of cyanide in the mining industry is available, and these documents highlight the substantial risk to human health and the environment

associated with its use. Despite increased knowledge about cyanide and its management, significant environmental incidents have continued to occur globally.

The threat of cyanide contaminated metalliferous waste entering the groundwater and/or surface waters downstream of the TSF is a great concern to the EPA, and the community, particularly as seepage of tailings waste to groundwater and surface waters is known to have occurred in unlined TSFs. The EPA requests that the proponent provide a detailed justification on the requirement to use cyanide in the context of current mining best practice, as alternatives are known to be available. The EPA notes that as stated in Section 4.4.1 of the PEA, "*due to the nature of the gold within the orebody, the alternative processing method of flotation would not achieve the required recoveries because the majority of the gold is not intimately bound up with sulphide minerals*". As the flotation method was rejected, due to the deposit occurring as fine free gold on the boundaries of other mineral grains/crystals or as occlusions within sulphide minerals; gravity separation and fine grinding was identified as a low cost and effective method to optimise gold recovery.

The EPA therefore requires a detailed geochemical assessment (beyond that described in the PEA) outlining (a) why the 'flotation' method is not suitable, and (b) why cyanide is a 'necessary' reagent required in the proposed method of 'gravity separation', and why no other alternative reagent is suitable.

**Dam safety**

With regards to the engineering and safety of any proposed TSF for the project, the PEA states that the design is required to be prepared to the satisfaction of the NSW Dams Safety Committee (DSC). The EPA acknowledges that the DSC is the primary state government agency with the authority and expertise to ensure the safety of dams. The EPA has a key responsibility to ensure that leakage or seepage to waters (surface/groundwaters) also does not occur by requiring that the tailings dam policy is adhered to. The EPA will therefore liaise with the DSC during the assessment of the EIS to ensure both agencies requirements are communicated without leading to confusion.

**Air issues**

The goal should be to maintain existing rural air quality and protect sensitive receptors, both on and off site from adverse impacts of dust and odour and other relevant air pollutants. Background ambient air levels should be identified to inform the assessment.

Dust is of primary concern with potential emissions from general mining activities, onsite roads, conveyors, transfer points, loading facilities, coal stockpiles, overburden emplacements etc. The EPA notes that the proposal contains a Water Transfer component to source water from mining activities in the Lithgow region. The EPA requests that modelling/estimation is carried out to determine that sufficient water is available for dust control and suppression, in addition to the water required for processing.

The EA should include a detailed air quality impact assessment (AQIA). The AQIA should:

1. Assess the risk associated with potential discharges of fugitive and point source emissions for <u>all stages</u> of the proposal. Assessment of risk relates to environmental harm, risk to human health and amenity.

2. Justify the level of assessment undertaken on the basis of risk factors, including but not limited to:
    a. proposal location;
    b. characteristics of the receiving environment; and
    c. type and quantity of pollutants emitted.

3. Describe the receiving environment in detail. The proposal must be contextualised within the receiving environment (local, regional and inter-regional as appropriate). The description must include but need not be limited to:
    a. meteorology and climate;
    b. topography;
    c. surrounding land-use; receptors; and
    d. ambient air quality.

4. Include a detailed description of the proposal. All processes that could result in air emissions must be identified and described. Sufficient detail to accurately communicate the characteristics and quantity of all emissions must be provided.

5. Include a consideration of 'worst case' emission scenarios and impacts at proposed emission limits.

6. Account for cumulative impacts associated with existing emission sources as well as any currently approved developments linked to the receiving environment.

7. Include air dispersion modelling where there is a risk of adverse air quality impacts, or where there is sufficient uncertainty to warrant a rigorous numerical impact assessment. Air dispersion modelling must be conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2016). http://www.epa.nsw.gov.au/air/appmethods.htm.

8. Demonstrate the projects ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment Operations (Clean Air) Regulation 2010*.

9. Provide an assessment of the project in terms of the priorities and targets adopted under the NSW State Plan 2010 and its implementation plan Action for Air.

10. Detail emission control techniques/practices that will be employed by the proposal.

Greenhouse gas

1. The EA should include a comprehensive assessment of, and report on, the project's predicted greenhouse gas emissions (tCO2e). Emissions should be reported broken down by:
    a) direct emissions (scope 1 as defined by the Greenhouse Gas Protocol – see reference below),
    b) scope 2 and 3 indirect emissions (all other emissions that are a consequence of the mine's activities, including annual emissions for each year of the project; before and after implementation of the project, including annual emissions for each year of the project (construction, operation and decommissioning)).

2. If relevant, greenhouse emission intensity (per unit of production) should be compared before and after the project. Emission intensity should be compared with best practice if possible.

3. Greenhouse emissions should be estimated using an appropriate methodology in accordance with NSW, Australian and International Guidelines (refer guidelines mentioned in Attachment 2).

4. The EA should identify which emissions would be covered by the Federal Government's Carbon Pollution Reduction Scheme.

5. The EA should also evaluate and report on the feasibility of measures to reduce greenhouse gas emissions associated with the project, concentrating on emissions not covered by the CPRS

6. The proponent should also identify if there are any cost-effective opportunities to reduce scope 3 emissions (e.g. by using different methods of supply or distribution).

**Impacts of Noise and Vibration**

Potential impacts on the noise amenity of the surrounding area should be assessed in accordance with the NSW Government's Industrial Noise Policy (INP) and other relevant guidelines mentioned below, accounting for all noise sources associated with the project. In particular, seasonality assessments are to be undertaken to assess the impact of temperature inversions and wind conditions.

The noise assessment must include (but not be limited to) an assessment of the C-weighted noise (low frequency) as well as A-weighted noise.

1. In relation to noise, the following matters should be addressed (where relevant) as part of the Environmental Assessment.

General

2. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline (*DECC, 2009). http://www.environment.nsw.gov.au/noise/constructnoise.htm
3. Operational noise from all industrial activities (including private haul roads and private railway lines) to be undertaken on the premises should be assessed using the guidelines contained in the *Noise Policy for Industry.* http://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017).

4. Detail the proposed hours of operation for each major noise source activity and the monitoring program and justification process that will be utilised to alter mining activities from day and afternoon to 24 hour.

5. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). http://www.environment.nsw.gov.au/noise/vibrationguide.htm.

6. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990). http://www.environment.nsw.gov.au/noise/blasting.htm.

Road

7. Undertake a road traffic noise assessment in accordance with the requirements of the *NSW Road Noise Policy* http://www.environment.nsw.gov.au/noise/traffic.htm.

Note: The NSW Road Noise Policy replaced the Environmental Criteria for Road Traffic Noise from 1 July 2011. Guidance has been developed to assist practitioners and authorities understand which policy is to be applied to projects during the transition period from the Environmental Criteria for Road Traffic Noise (ECRTN) to the Road Noise Policy (RNP).
The guidance material is at http://www.environment.nsw.gov.au/noise/traffic.htm

8. Noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). http://www.environment.nsw.gov.au/noise/traffic.htm

9. Noise from new or upgraded public roads should be assessed using the *Environmental Criteria for Road Traffic Noise* (EPA, 1999). http://www.environment.nsw.gov.au/noise/traffic.htm

**Waste, chemicals and hazardous materials**

The EA should identify all wastes to be generated by all aspects of the project and identify procedures for the handling and management of all wastes produced. The handling of rejects, tailings and overburden material are important aspects for consideration.

Assessment of the potential for acid mine drainage from acid forming materials should be assessed and management /mitigation measures identified.

Management actions for tailings material during processing should be identified, including actions to prevent potential impacts to groundwater, surface water or any other environmental aspect.

Provide details of the quantity and type of both liquid and non-liquid waste generated, handled, processed or disposed of at the premises. Wastes must be classified according to the Waste Classification Guidelines (EPA 2014).

Provide details of how waste will be handled and managed onsite to minimise pollution, including:

a) Stockpile location and management

- Labelling of stockpiles for identification, ensuring that all waste is clearly identified and stockpiled separately from other types of material (especially the separation of any contaminated and non-contaminated waste).
- Proposed height limits for all waste to reduce the potential for dust and odour.
- Procedures for minimising the movement of waste around the site and double handling.
- Measures to minimise leaching from stockpiles into the surrounding environment, such as sediment fencing, geofabric liners etc.

b) Provide details of waste rock emplacement areas with particular attention to:

- The quantity of waste rock likely to be generated;
- Proposed strategies for the handling, reuse/recycling and disposal of waste rock;
- Identification of the history of the waste rock and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material; and
- Designation of transport routes for the transport of waste rock.

Details of procedures for the assessment, handling, storage, transport and disposal of all **hazardous waste** used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.

Details of the type and quantity of any chemical substances (including hydrocarbon (oils and fuels), explosives etc.) to be used or stored and describe arrangements for their safe use and storage.

**Soils**

The EA should include:

1. An assessment of potential impacts on soil and land resources should be undertaken, being guided by *Soil and Landscape Issues in Environmental Impact Assessment* (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:

    - Soil erosion and sediment transport - in accordance with *Managing urban stormwater: soils and construction,* vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; B Waste landfills; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC 2008).

2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

3. Where required, add any specific assessment requirements relevant to the project.

**Water**

The environmental outcomes of the project in relation to water should be that:

- There is no pollution of waters (including surface and groundwater); and
- Polluted water (including process/tailings waters, wash down waters, polluted stormwater or sewerage) is captured onsite and collected, treated and beneficially reused, where safe and practical to do so.

The EA should document the measures that will achieve the above outcomes in the construction, operation and post operations phases of the project. Construction activities will need to demonstrate best practice sediment and erosion control and management in accordance with the reference document *Managing Urban Stormwater: Soils and Construction (NSW Landcom)*

<u>Describe Proposal</u>

1. Describe the project including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.

2. Demonstrate that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.

3. Include a water balance for the including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

<u>Background Conditions</u>

4. Describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal.

5. Describe any drainage lines, creeks lines etc that will be impacted by the project.

6. State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters (http://www.environment.nsw.gov.au/ieo/index.htm). Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values.

7. State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality (http://www.mincos.gov.au/publications/australian_and_new_zealand_guidelines_for_fresh_and_marine_water_quality).

8. State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government.

Impact Assessment

9. Describe the nature and degree of impact that any proposed discharges will have on the receiving environment.

10. Whether the project will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.

11. Identify potential impacts on watercourses and the management/mitigation measures that will be implemented where mining activities occur in proximity to or within a watercourse.

12. Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to:

    - protect the Water Quality Objectives for receiving waters where they are currently being achieved;

    - contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved.

13. Assess impacts on groundwater and groundwater dependent ecosystems.

14. Describe in detail how stormwater will be managed both during and after construction.

15. Provide detailed water management strategies for all disturbance areas, paying particular attention to the waste rock emplacement areas and potential impacts on groundwater and offsite surface water resources including particular reference to the management of channel and overland flows into and within the disturbance area.

16. Provide plans for any proposed relocation/realignment of all creeks and/or drainage lines including design, timelines and completion criteria and sufficient evidence to demonstrate that the proposed plans are achievable, reasonable and feasible in the short and the long term.

Monitoring

17. Describe how predicted impacts will be monitored and assessed over time.

18. The proponent should develop a water quality and aquatic ecosystem monitoring program to monitor the responses for each component or process that affects the Water Quality Objectives that includes, for example:
    - adequate data for evaluating compliance with water quality standards and/or Water Quality Objectives
    - measurement of pollutants identified or expected to be present in any discharge
19. Water quality monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutant in NSW* (2004) (http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf).

## Attachment B: Guidance Material

| Title | Web address |
|---|---|
| **Relevant Legislation** | |
| *Contaminated Land Management Act 1997* | http://www.legislation.nsw.gov.au/#/view/act/1997/140 |
| *Environmentally Hazardous Chemicals Act 1985* | http://www.legislation.nsw.gov.au/#/view/act/1985/14 |
| *Environmental Planning and Assessment Act 1979* | http://www.legislation.nsw.gov.au/#/view/act/1979/203 |
| *Protection of the Environment Operations Act 1997* | http://www.legislation.nsw.gov.au/#/view/act/1997/156 |
| *Water Management Act 2000* | http://www.legislation.nsw.gov.au/#/view/act/2000/92 |
| **Licensing** | |
| Guide to Licensing | www.epa.nsw.gov.au/licensing/licenceguide.htm |
| **Air issues** | |
| **Air Quality** | |
| Approved methods for modelling and assessment of air pollutants in NSW (2016) | http://www.epa.nsw.gov.au/air/appmethods.htm |
| POEO (Clean Air) Regulation 2010 | http://www.legislation.nsw.gov.au/#/view/regulation/2010/428 |
| **Noise and Vibration** | |
| NSW Noise Policy for Industry | http://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017) |
| Interim Construction Noise Guideline (DECC, 2009) | http://www.epa.nsw.gov.au/noise/constructnoise.htm |
| Assessing Vibration: a technical guideline (DEC, 2006) | http://www.epa.nsw.gov.au/noise/vibrationguide.htm |
| NSW Road Noise Policy (DECCW, 2011) | http://www.epa.nsw.gov.au/your-environment/noise/transport-noise |
| NSW Rail Infrastructure Noise Guideline (EPA, 2013) | http://www.epa.nsw.gov.au/your-environment/noise/transport-noise |
| **Human Health Risk Assessment** | |
| Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards (enHealth, 2012) | http://www.eh.org.au/documents/item/916 |
| **Waste, Chemicals and Hazardous Materials and Radiation** | |
| **Waste** | |
| Environmental Guidelines: Solid Waste Landfills (EPA, 2016) | http://www.epa.nsw.gov.au/waste/landfill-sites.htm |
| Draft Environmental Guidelines - Industrial Waste Landfilling (April 1998) | http://www.epa.nsw.gov.au/resources/waste/envguidlns/industrialfill.pdf |
| EPA's Waste Classification Guidelines 2014 | http://www.epa.nsw.gov.au/wasteregulation/classify-guidelines.htm |
| Resource recovery orders and exemptions | http://www.epa.nsw.gov.au/wasteregulation/orders-exemptions.htm |
| European Unions Waste Incineration Directive 2000 | http://ec.europa.eu/environment/archives/air/stationary/wild/legislation.htm |
| EPA's Energy from Waste Policy Statement | http://www.epa.nsw.gov.au/wastestrategy/energy-from-waste.htm |

| | |
|---|---|
| NSW Waste Avoidance and Resource Recovery Strategy 2014-2021 | http://www.epa.nsw.gov.au/wastestrategy/warr.htm |
| **Chemicals subject to Chemical Control Orders** | |
| Chemical Control Orders (regulated through the EHC Act) | http://www.epa.nsw.gov.au/pesticides/CCOs.htm |
| National Protocol - Approval/Licensing of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes - July 1994 | Available in libraries |
| National Protocol for Approval/Licensing of Commercial Scale Facilities for the Treatment/Disposal of Schedule X Wastes - July 1994 | Available in libraries |
| | **Water and Soils** |
| **Acid sulphate soils** | |
| Coastal acid sulfate soils guidance material | http://www.environment.nsw.gov.au/acidsulfatesoil/ and http://www.epa.nsw.gov.au/mao/acidsulfatesoils.htm |
| **Contaminated Sites Assessment and Remediation** | |
| Managing land contamination: Planning Guidelines – SEPP 55 Remediation of Land | http://www.epa.nsw.gov.au/clm/planning.htm |
| Guidelines for Consultants Reporting on Contaminated Sites (EPA, 2000) | http://www.epa.nsw.gov.au/resources/clm/20110650consultantsglines.pdf |
| Guidelines for the NSW Site Auditor Scheme - 2nd edition (DEC, 2006) | http://www.epa.nsw.gov.au/resources/clm/auditorglines06121.pdf |
| Sampling Design Guidelines (EPA, 1995) | http://www.epa.nsw.gov.au/resources/clm/95059sampgdlne.pdf |
| National Environment Protection (Assessment of Site Contamination) Measure 1999 (or update) | http://www.scew.gov.au/nepms/assessment-site-contamination |
| **Soils – general** | |
| Managing land and soil | http://www.environment.nsw.gov.au/soils/landandsoil.htm |
| Managing urban stormwater for the protection of soils | http://www.environment.nsw.gov.au/stormwater/publications.htm |
| Landslide risk management guidelines | http://australiangeomechanics.org/admin/wp-content/uploads/2010/11/LRM2000-Concepts.pdf |
| Site Investigations for Urban Salinity (DLWC, 2002) | http://www.environment.nsw.gov.au/resources/salinity/booklet3siteinvestigationsforurbansalinity.pdf |
| Local Government Salinity Initiative Booklets | http://www.environment.nsw.gov.au/salinity/solutions/urban.htm |
| **Water** | |
| Water Quality Objectives | http://www.environment.nsw.gov.au/ieo/index.htm |
| ANZECC (2000) Guidelines for Fresh and Marine Water Quality | http://www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html |
| Applying Goals for Ambient Water Quality Guidance for Operations Officers - Mixing Zones | Contact the EPA on 131555 |
| Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004) | http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf |

## Attachment C – EPA Tailings Dam Liner Policy

DOC16/626505

Mr David Kitto
Executive Director – Resource Assessments and Business Systems
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mr Kitto

**Tailings Dam Liner Policy**

I refer to the ongoing discussions between the Environment Protection Authority (EPA) and the Department of Planning and Environment (DPE) regarding the EPA's policy in relation to standards for the lining of storage facilities for contaminated tailings and water. As you know, to date the EPA's advice on tailing storage facilities (TSF) has been based on the requirements set out in the EPA's *Environmental Guidelines: Solid Waste Landfills* which aim to "contain leachate and prevent the contamination of surface water and groundwater over the life of the landfill". The guidelines set out criteria requiring a liner of with an in situ hydraulic conductivity of less than $1 \times 10^{-9}$ metres/second.

The EPA has commenced development of a policy on liner systems for tailing storage facilities and contaminated water storages (CWS) at mine sites. Seepage from tailings storage facilities (TSFs) and storage of contaminated mine water storage (CWS) have the potential to be one of the most significant environmental impacts from a mining or processing operation, not only during operations but also long after the closure of the mine or processing plant. Tailings and contaminated mine water pose potential water pollution risks through vertical and lateral seepage of contaminants to groundwater and other water resources. There are many site and contaminant specific issues that require consideration on a case by case basis to appropriately design and construct liner systems to prevent water pollution from occurring.

To inform the policy, the EPA has undertaken a review of best management practice for tailings storage facilities (TSFs) liner standards across Australia and internationally which indicates that for clay liners maximum permeability of $1 \times 10^{-9}$ m/s is best practice.

Accordingly the EPA's policy will adopt a benchmark requirement for liners for TSF and CWS is to achieve a hydraulic conductivity of $1 \times 10^{-9}$ m/s or less with a constructed clay liner of at least 1000mm ~~(~~or a geosynthetic liner~~)~~ providing equivalent or better protection. If the tailings pose a low risk to the environment a liner with higher conductivity than the benchmark requirement may be accepted. This is consistent with the criteria set out in the *Environmental Guidelines: Solid Waste Landfills.*

TSF and CWS liner systems must be designed, constructed and operated to prevent pollution of waters (including surface and ground water) from seepage of contaminants (vertical and lateral) through the base and side walls. A risk assessment process should be used to determine a suitable liner system including appropriate hydraulic conductivity and liner thickness.

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If it can be demonstrated that the tailings pose a low risk to the environment (e.g. inert tailings and the TSF and CWS are in rock with discontinuous fractures), a liner with higher conductivity than the benchmark requirement may be accepted. Similarly, if the tailings pose a high risk to the water environment (e.g. located above high permeability aquifers and unconfined aquifers, in close proximity to a watercourse, presence of shallow groundwater, in close proximity to drinking water supply) a liner system that provides a higher level of protection is likely to be required.

Where an alternative liner system to the benchmark requirements is proposed and/or where the natural geology of the site is proposed to be used as part of the liner system, a robust hydrogeological investigation and impact assessment must be undertaken by a competent entity and adequate justification must be provided to prove the efficacy of the liner system and to demonstrate the construction will be adequate to prevent the pollution of waters.

If you would like to discuss this issue further, please contact me directly.

Yours sincerely

12/12/16

**DAVID FOWLER**
**Director Regulatory Reform and Advice**
**Environment Protection Authority**

Contact officer: DAVID FOWLER
9995 5577

1614401: LGS
Economic Development and Environment

Lithgow CITY COUNCIL
Surrounded by Nature · Steeped in History

21 August 2018

Mandana Mazaheri
Mandana.Mazaheri@planning.nsw.gov.au

Dear Mandana,

**McPhillamys Gold Project (SSD 18_9505), Request for Input into Environmental Assessment Requirements**

I refer to the abovementioned project and your request for submissions for the proposed McPhillamys Gold Project (SSD 18_9505) for developing an open cut mine and a water supply pipeline.

It is noted that McPhillamys Gold project is proposed to be located 8km northeast of Blayney with the proposed Pipeline Development to consist of a pipeline and ancillary infrastructure to transfer water from Centennial's Angus Place Colliery, Springvale Coal Services Operations (SCSO) and Energy Australia's Mt Piper Power Station (MPPS) operations.

Council considers the Draft Environmental Assessment adequately highlights the relevant issues, and has no objection to the project. The draft assessment covers issues of construction and rehabilitation in Council's road reserves. Actual permission to construct and any commercial legal arrangements (e.g. licence) will need to be discussed separately with the component.

Please do not hesitate to contact Miss Lauren Stevens between 8:15am and 11:00am Monday to Friday on (02) 63549999, in Council's Economic Development and Environment should you have any queries in relation to this matter.

Yours sincerely

A Muir
**DIRECTOR OF ECONOMIC DEVELOPMENT & ENVIRONMENT**

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Heritage Council of New South Wales

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File No: SF18/62545
Ref No: DOC18/552764

Ms Mandana Mazaheri
Senior Environmental Assessment Officer
Resource & Energy Assessments, Planning Services
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

By email: Mandana.Mazaheri@planning.nsw.gov.au

Dear Ms Mazaheri

**REQUEST FOR INPUT INTO ENVIRONMENTAL ASSESSMENT REQUIREMENTS: MCPHILLAMYS GOLD PROJECT (SSD 18_9505)**

Thank you for your correspondence dated 06 August 2018 requesting input from the Heritage Council of NSW on the draft Secretary's Environmental Assessment Requirements (SEARs) for the abovementioned development proposal. I am responding as a delegate of the Heritage Council.

It is understood that the proposal relates to the development of an open cut mine and a water supply pipeline in relation to the proposed McPhillamys Gold Project. The proposed works include:

- associated on-site and road infrastructure;
- extracting and processing up to 7 million tonnes of ore a year for 10 to 15 years; and
- progressively rehabilitating the site.

The draft SEARs and the following report have been reviewed:

- *Preliminary Environmental Assessment for the McPhillamys Gold Project,* prepared by R.W. Corkery & Co. Pty. Limited, dated July 2018

It is noted that the mine site does not contain heritage items listed on the State Heritage Register (SHR) or the Schedule 5 of the Local Environmental Plans (LEPs) applicable to the mine site. However, the local heritage items, "'Kareela', homestead and garden", "'Iralee', homestead, gardens and outbuilding" and "Public school and teacher's residence (former)" listed on the Blayney LEP 2012 are located nearby – to the south of the mine site.

The assessment of historic heritage conducted as part of the preliminary environmental assessment identified a few sites of historical heritage significance within the mine site. Therefore, it is recommended that the proposed draft SEARs relating to the historic heritage includes the following requirements:

a. Prepare a Heritage Impact Statement (HIS) or Statement of Heritage Impact (SOHI) (in accordance with the guidelines in the NSW Heritage Manual) which identifies:
   - all heritage items within and near the site, including built heritage, landscapes and archaeology, detailed mapping of these items, and assessment of why the items and site(s) are of heritage significance; and

- detailed mitigation measures to offset potential impacts on heritage values.

The HIS/SOHI must assess heritage impacts of the proposed works on the heritage significance of the site; and the visual impacts of the proposed development on views to and from surrounding heritage items.

b. A historic archaeological assessment is to be prepared by a suitably qualified historical archaeologist in accordance with the documents:

- *Archaeological Assessments Guidelines* (1996)
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (2009)

This assessment should identify what relics, if any, are likely to be present, assess their historic significance and consider the impacts from the proposal on this potential heritage resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. Any mitigation measures should avoid or ameliorate the impact with specific emphasis on *in situ* conservation and interpretation where State significant or substantially intact relics are identified. If harm cannot be avoided, an appropriate Research Design and Excavation Methodology must also be prepared to guide any proposed excavations. The methodology should include appropriate actions to guide archaeological test excavation, salvage or monitoring; stop work provisions should relics be found; appropriate recording, storage and public display provisions for relics following archaeological investigations.

Please note, the Regional Operations Group of the Office of Environment and Heritage may provide separate SEARs in relation to Aboriginal cultural heritage.

If you have any questions regarding the above matter please contact Vibha Upadhyay, Senior Heritage Assessment Officer, at the Heritage Division, Office of the Environment and Heritage by telephone on 02 98738587 or email at vibha.upadhyay@environment.nsw.gov.au.

Yours sincerely

16/08/2018

**Katrina Stankowski**
Senior Team Leader, Regional Heritage Assessments, North
Heritage Division
Office of Environment & Heritage
**As delegate of the Heritage Council of NSW**

DOC18/574141
SSD18_9505

Ms Mandana Mazaheri
Senior Environmental Assessment Officer, Resource & Energy Assessments
Department of Planning and Environment
mandana.mazaheri@planning.nsw.gov.au

Dear Mandana

**McPhillamys Gold Project - Request for Input into SEARs**

I refer to your email dated 6 August 2018 seeking input into the Department of Planning and Environment Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Statement (EIS) for the McPhillamys Gold Project (SSD 9505).

The Office of Environment and Heritage (OEH) understands that the proposal involves the construction of a single circular open cut, waste rock emplacements, a conventional carbon-in-leach processing plant, construction and use of an engineered tailings storage facility, a site access road and intersection with the Mid Western Highway, water management infrastructure and establishment of a stable final landform. OEH also understands that the proposal involves the construction of a pipeline along an approximate 80km corridor from the Centennial Coal Angus Place Colliery and Springvale Coal Services Operations and Energy Australia's Mt Piper Power Station to the mine site near Blayney.

OEH understands that environmental assessment for the mine site had been substantially commenced prior to the Biodiversity Conservation Act 2016 therefore qualifying as a "pending or interim application" under Clause 27 of the BC Act Savings & Transitional Regulation. It is, however our understanding that assessment of the pipeline route has yet to commence. OEH is therefore recommending SEARs using the Framework for Biodiversity Assessment (FBA) for the mine site, while the pipeline should be assessed using the Biodiversity Assessment Method (BAM).

OEH provides our guidelines for the proposed development in **Attachments A** and **B**.

If you have any questions regarding this matter further please contact David Geering on 02 6883 5335 or email david.geering@environment.nsw.gov.au .

Yours sincerely

**PETER CHRISTIE**
**Director, North West**
**Conservation and Regional Delivery**

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20 August 2018

Contact officer: DAVID GEERING
6883 5335

**ATTACHMENT A**

# Standard Environmental Assessment Requirements McPhillamys Gold Project (SSD 9505)

| |
|---|
| **Biodiversity – Mine Site** |
| 1. Biodiversity impacts related to the proposed McPhillamys Gold Project are to be assessed and documented in accordance with the Framework for Biodiversity Assessment, unless otherwise agreed by OEH, by a person accredited in accordance with s142B(1)(c) of the *Threatened Species Conservation Act 1995.*<br>2. *A strategy to offset any residual impacts of the development in accordance with the NSW Biodiversity Offset Policy for Major Projects* |
| **Biodiversity – Pipeline** |
| 3. Biodiversity impacts related to the proposed McPhillamys Gold Project are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the Biodiversity Conservation Act 2016 (s 6.12), Biodiversity Conservation Regulation 2017 (s 6.8) and Biodiversity Assessment Method including details of the measures proposed to address the offset obligation as follows;<br>• The total number and classes of biodiversity credits required to be retired for the development/project;<br>• The number and classes of like-for-like biodiversity credits proposed to be retired;<br>• The number and classes of biodiversity credits proposed to be retired in accordance with the variation rules;<br>• Any proposal to fund a biodiversity conservation action;<br>• Any proposal to conduct ecological rehabilitation (if a mining project);<br>• Any proposal to make a payment to the Biodiversity Conservation Fund (Fund).<br>If requesting the application of the variation rules, the BDAR must contain details of what reasonable steps have been taken to attempt to obtain the required like-for-like biodiversity credits.<br>The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under S6.10 of the Biodiversity Conservation Act 2016 |
| **Aboriginal cultural heritage** |
| 4. The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the McPhillamys Gold Project and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011) and consultation with OEH regional officers. |
| 5. Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS. |

6. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.

**Historic heritage**

7. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:
   a. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),
   b. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),
   c. include a statement of heritage impact for all heritage items (including significance assessment),
   d. consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and
   e. where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

**Water and soils**

8. The EIS must map the following features relevant to water and soils including:
   a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).
   b. Rivers, streams, wetlands, estuaries (as described in s4.1 of the Biodiversity Assessment Method (Pipeline) and s.4.1 of the Framework for Biodiversity Assessment (Mine Site)).
   c. Wetlands as described in s4.1 of the Biodiversity Assessment Method (Pipeline) and s.4.1 of the Framework for Biodiversity Assessment (Mine Site)
   d. Groundwater.
   e. Groundwater dependent ecosystems.
   f. Proposed intake and discharge locations.

9. The EIS must describe background conditions for any water resource likely to be affected by the McPhillamys Gold Project, including:
   a. Existing surface and groundwater.
   b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.

c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters.

d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government.

10. The EIS must assess the impacts of the project on water quality, including:

a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the project protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction.

b. Identification of proposed monitoring of water quality.

11. The EIS must assess the impact of the project on hydrology, including:

a. Water balance including quantity, quality and source.

b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas.

c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems.

d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (eg river benches).

e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water.

f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.

g. Identification of proposed monitoring of hydrological attributes.

**Flooding**

12. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:

a. Flood prone land

b. Flood planning area, the area below the flood planning level.

c. Hydraulic categorisation (floodways and flood storage areas).

13. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 1 in 10 year, 1 in 100 year flood levels and the probable maximum flood, or an equivalent extreme event.

14. The EIS must model the effect of the proposed project (including fill) on the flood behaviour under the following scenarios:

a. Current flood behaviour for a range of design events as identified in 11 above. This includes the 1 in 200 and 1 in 500 year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.

15. Modelling in the EIS must consider and document:

a. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.
b. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.
c. Relevant provisions of the NSW Floodplain Development Manual 2005.

16. The EIS must assess the impacts on the proposed project on flood behaviour, including:
    a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.
    b. Consistency with Council floodplain risk management plans.
    c. Compatibility with the flood hazard of the land.
    d. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
    e. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
    f. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.
    g. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.
    h. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.
    i. Emergency management, evacuation and access, and contingency measures for the development considering the full range or flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.
    j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

**ATTACHMENT B**

# Guidance Material

| Title | Web address |
|---|---|
| **Relevant Legislation** | |
| *Biodiversity Conservation Act 2016* | https://www.legislation.nsw.gov.au/#/view/act/2016/63/full |
| *Coastal Management Act 2016* | https://www.legislation.nsw.gov.au/#/view/act/2016/20/full |
| *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* | http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/ |
| *Environmental Planning and Assessment Act 1979* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N |
| *Fisheries Management Act 1994* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N |
| *Marine Parks Act 1997* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N |
| *National Parks and Wildlife Act 1974* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N |
| *Protection of the Environment Operations Act 1997* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N |
| | |
| *Water Management Act 2000* | http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N |
| *Wilderness Act 1987* | http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N |
| **Biodiversity** | |
| Biodiversity Assessment Method (OEH, 2017) | https://biodiversity-ss.s3.amazonaws.com/Uploads/1494298079/Biodiversity-Assessment-Method-May-2017.pdf |
| Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH, 2017) | https://biodiversity-ss.s3.amazonaws.com/Uploads/1494298198/Serious-and-Irreversible-Impact-Guidance.PDF |
| Fisheries NSW policies and guidelines | http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation |
| List of national parks | http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx |
| Revocation, recategorisation and road adjustment policy (OEH, 2012) | http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm |
| Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010) | http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm |
| **Heritage** | |
| The Burra Charter (The Australia ICOMOS charter for places of cultural significance) | http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf |
| Statements of Heritage Impact 2002 (HO & DUAP) | http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf |

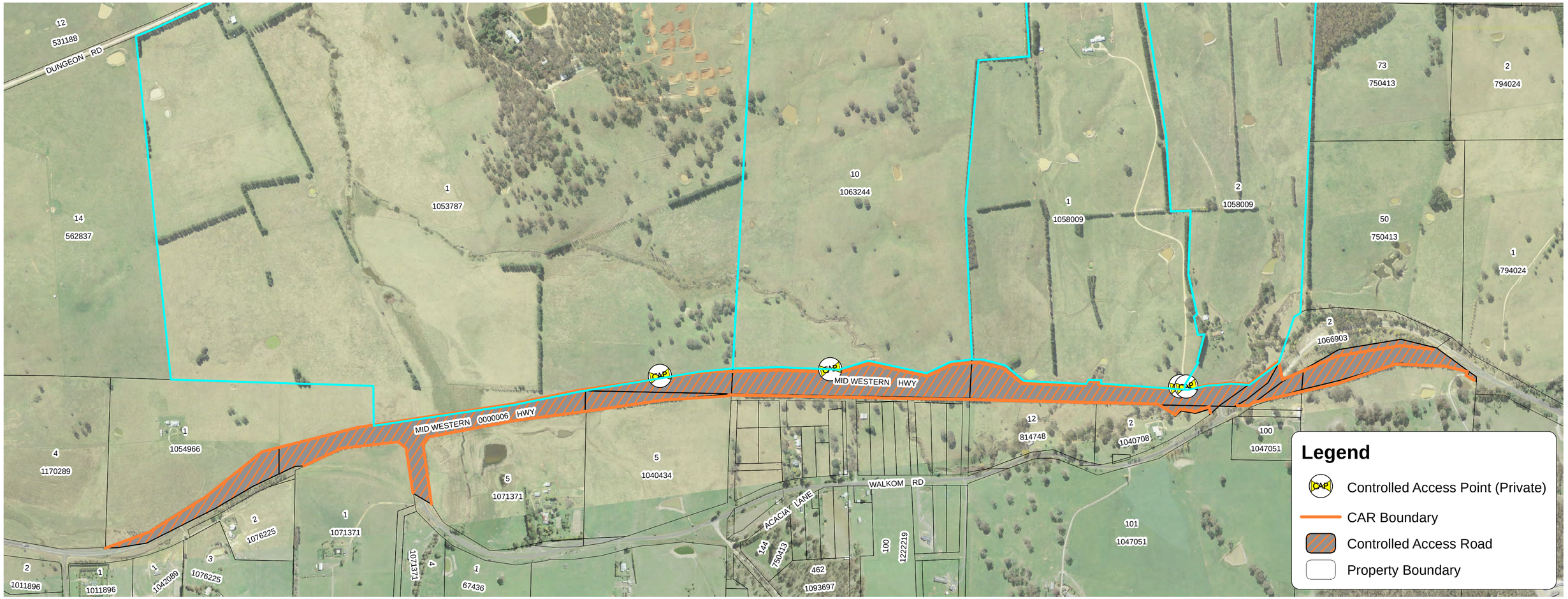
| Title | Web address |
|---|---|
| NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N') | http://www.environment.nsw.gov.au/Heritage/publications/ |
| **Aboriginal Cultural Heritage** | |
| Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010) | http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf |
| Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) | http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf |
| Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011) | http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf |
| Aboriginal Site Recording Form | http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf |
| Aboriginal Site Impact Recording Form | http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf |
| Aboriginal Heritage Information Management System (AHIMS) Registrar | http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm |
| Care Agreement Application form | http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf |
| **Water and Soils** | |
| **Acid sulphate soils** | |
| Acid Sulfate Soils Planning Maps via Data.NSW | http://data.nsw.gov.au/data/ |
| Acid Sulfate Soils Manual (Stone et al. 1998) | http://www.environment.nsw.gov.au/resources/epa/Acid-Sulfate-Manual-1998.pdf |
| Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004) | http://www.environment.nsw.gov.au/resources/soils/acid-sulfate-soils-laboratory-methods-guidelines.pdf<br>This replaces Chapter 4 of the Acid Sulfate Soils Manual above. |
| **Flooding and Coastal Erosion** | |
| Reforms to coastal erosion management | http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm |
| Floodplain development manual | http://www.environment.nsw.gov.au/floodplains/manual.htm |
| Guidelines for Preparing Coastal Zone Management Plans | Guidelines for Preparing Coastal Zone Management Plans<br>http://www.environment.nsw.gov.au/resources/coasts/130224CZMPGuide.pdf |
| NSW Climate Impact Profile | http://climatechange.environment.nsw.gov.au/ |
| Climate Change Impacts and Risk Management | Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation |
| **Water** | |
| Water Quality Objectives | http://www.environment.nsw.gov.au/ieo/index.htm |
| ANZECC (2000) Guidelines for Fresh and Marine Water Quality | www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1 |

| Title | Web address |
|---|---|
| Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones | http://deccnet/water/resources/AWQGuidance7.pdf |
| Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004) | http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf |

L.G.A. - BLAYNEY SHIRE

# PLAN SHOWING CONTROLLED ACCESS ROAD AND CURRENT AGREED ACCESS PONTS
## MID WESTERN HIGHWAY - KINGS PLAINS
## PARISH OF TORRENS COUNTY OF BATHURST

0 100 200 400 600 800 Metres




## Legend

- Controlled Access Point (Private)
- CAR Boundary
- Controlled Access Road
- Property Boundary

Transport Roads & Maritime Services

PIMS



595mm x 297mm (use A2 sheet)

20 August 2018

SF2017/281322; WST17/00197/03

Manager
Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

**Attention: Mandana Mazaheri**

Dear Ms Mazaheri,

**SSD 9505: McPhillamys Gold Project, Blayney**
**Request for input into Secretary's Environmental Assessment Requirements (SEARs)**

Thank you for your email on 6 August 2018 seeking SEARs from Roads and Maritime Services for the proposed McPhillamys Gold Project.

The Preliminary Environmental Assessment has been reviewed. Roads and Maritime notes that the proposal includes:

- Construction, operation and decommissioning of a conventional drill and blast open cut mine.
- Construction of a water transfer pipeline from Springvale, referred as *Pipeline Development* in Appendix 1.
- Extracting and processing up to 7 million tonnes of material per year.
- The gold mine is expected to operate between 10 to 15 years, 7 days per week, 24 hours per day and take two years to construct.
- A construction workforce of more than 200 and operational workforce in the order of 250 people.
- Construction of associated road infrastructure, including site access road intersecting with the Mid Western Highway (HW6). The Mid Western Highway at the proposed mine location is a Controlled Access Road.
- Close and/or realign Dungeon Road in consultation with Blayney and Cabonne Shire Councils, surrounding residents, landholders and Roads and Maritime.

The indicative figures/information has been supplied within the SEARs, and is subject to but not limited to noise, air quality, and visual amenity related impacts which may in turn result in specific restrictions imposed on some activities and therefore modify information outlined within the SEAR's.

Roads and Maritime requests the following issues be addressed in the Environmental Assessment:

- A traffic impact study prepared in accordance with the methodology set out in Section 2 of the *RTA's Guide to Traffic Generating Developments 2002*, including:
  - Hours and days of construction.
  - Schedule for phasing/staging of the project.
- Traffic volumes:
  - Existing background traffic.
  - Project-related traffic for each stage of the project including construction, operation and decommission.
  - Projected cumulative traffic volumes.
- Traffic volumes are to also include a description of:
  - Ratio of light vehicles to heavy vehicles.
  - Peak times for existing traffic.
  - Peaks times for project-related traffic.
  - Transportation hours.
  - Project-related traffic interaction with existing and projected background traffic.
- The origin, destination and routes for:
  - Employee and contractor light traffic.
  - Heavy traffic.
  - Over size and over mass traffic.
- A description of all over size and over mass vehicles and the materials to be transported, including proposed travel routes.
- The impact of traffic generation on the public road network and measures employed to ensure traffic efficiency and road safety during construction, operation and decommissioning of the project.
- The need for improvements to the road network, and the improvements proposed such as road widening and intersection treatments, to cater for and mitigate the impact of project related traffic.
- At the proposed mine location, the Mid Western Highway, pursuant to section 49 of the *Roads Act 1993* (please see *Attachment 1*) is a controlled access road. There are currently four agreed access points along the frontage to the Mid Western Highway with two being coincident. The proposed mine site entrance does not currently match any of the current locations. Once a new access point is agreed in consultation with Roads and Maritime and relevant stakeholders, the remaining current accesses should be removed. Scope for access by Emergency vehicles needs to be considered and catered for appropriately.
- Proposed road facilities, access and intersection treatments are to be identified and be in accordance with *Austroads Guide to Road Design* including Safe Intersection Sight Distance (SISD).
- The layout of the internal road network, parking facilities and infrastructure within the project boundary.
- An assessment of the likely risks to public safety, in particular, transport and use of any dangerous goods, and in accordance with *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* and transporting reagents in accordance with the requirements of *Australian Dangerous Goods Code* and *Australian Standard 4452 Storage and Handling of Toxic Substances.*
- Identification and assessment of potential impacts of mining operations, such as blasting, lighting, visual and drainage, including the pipeline development on the function and integrity of all affected roads.

- The mine site will be visible to motorists using the Mid Western Highway as well as public vantage points to the south and west. Roads and Maritime will await further investigation into impacts of lighting from the site and potential mitigating measures such as establishing visual screens, construction of buildings and structures using non-reflective cladding and colours.
- Local climate conditions that may affect road safety for mine related traffic during construction, operation and decommissioning of the project (e.g. fog, wet and dry weather, icy road conditions).
- A Traffic Management Plan (TMP) developed in consultation with relevant councils and Roads and Maritime. The TMP is to identify and provide management strategies to manage the impacts to project related traffic, including:
    - Haulage of materials to site.
    - The management and coordination of construction and staff vehicle movements to and from site and measures to be employed to limit disruption to other motorists. The management of construction staff access to the work site is to include strategies and measures employed to manage the risks of driver fatigue, road hazards and driver behaviour. This is to include a Driver Code of Conduct.

Roads and Maritime requests the following be addressed in the Environmental Assessment regarding the Pipeline Development as outlined in Appendix 1:

- The Great Western Highway (HW5) is a *Controlled Access Road*, under *section 49* of the *Roads Act 1993* where the proposed pipeline crosses.
- A Construction Management Plan (CMP) is to be developed for the pipeline development in consultation with Roads and Maritime and bounding Councils.
- The CMP is to detail how traffic generation, traffic movements and construction activities on or close to the classified road network will be managed to ensure the safety and traffic efficiency of the classified road network is not compromised by construction activities.

Roads and Maritime appreciates the opportunity to contribute to the SEARs and requests that a copy of the SEARs be forwarded to Roads and Maritime at the same time they are sent to the applicant. If you require further information please contact the undersigned on 02 6861 1453.

Yours faithfully

Andrew McIntyre
Manager Land Use Assessment
Western Region