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QUEANBEYAN-PALERANG REGIONAL COUNCIL CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN



QUEANBEYAN-PALERANG REGIONAL COUNCIL MINERS ROAD DRAFT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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Description	Ramboll Australia Pty Ltd (Ramboll) was engaged by Queanbeyan-Palerang Regional Council to prepare a Construction Environmental Management Plan to adequately describe the management and mitigation of environment impacts resulting from the upgrade works to Miners Road and adjoining areas at Captains Flat in regional New South Wales.

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Appendix 1 Soil Management Plan

Appendix 2 Construction Traffic Diversion Plan

1. INTRODUCTION

This Construction Environmental Management Plan (CEMP) for Queanbeyan-Palerang Regional Council (QPRC) details the environmental controls and mitigation methods required to facilitate the upgrade of Miners Road and Copper Creek Road (the Project) at Captains Flat, New South Wales (NSW) (the Project site).

1.1 Description of Activities

The Project works requires:

- The sealing of:
 - Approximately 670 metres of currently unsealed road on Miners Road between Foxlow Street and Old Mines Road
 - Approximately 200 metres of currently unsealed road from Miners Road to the Captains Flat Sewage Treatment Plant
 - The State Emergency Services (SES) yard of Copper Creek Road
- Drainage improvements and resealing on Copper Creek Road

Refer to Figure 1 for the Project location.

The road sealing works will include:

- Minor regrading of the currently unsealed road surfaces
- Reforming and capping of the road and carpark surfaces through importation of approximately 100mm thick of compacted sub base
- Application of a two-coat spray seal to the compacted sub base.

Drainage improvements on Copper Creek Road will include:

- Formalising drainage either side of the existing road to prevent water flowing across Copper Creek Road into a neighbouring residential property
- Use of imported clean road base material to build up the road surface to allow adequate drainage (table drains) to be reinstated, preventing water running across the road into the driveway of the residence
- A pipe (or equivalent) will be installed at the driveway entrance to the residential property at 2 Copper Creek Road. This will enable permanent two wheel drive access to the residence
- The road will be sealed with the application of a two-coat spray seal to the compacted sub base.

1.2 Purpose of the CEMP

This EMP has been prepared with consideration of the following:

- The proposed construction activities
- The Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004)
- QPRC's Draft Procedure: Environmental Management Plan for Contaminated Land in Council's Care and Control (2021)
- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Contaminated Land Management Act 1997 (CLM Act)
- State Environmental Planning Policy 55 Remediation of Land (SEPP 55)



Legend

Project location



The purpose of the CEMP is to:

- Provide an easily interpreted reference document that allows for the required environmental commitments, safeguards and management measures to be implemented, monitored, audited and improved through the Project
- Document the hazard and risk identification and management process for the Project activities, and to document the systematic process of implementing controls to minimise the potential impacts of the activities on the environment
- Address the environmental management requirements of relevant legislation, regulation and environmental planning instruments.

1.3 Environmental Aspects and Impacts

Environmental aspects and impacts of the Project and Project site have been identified in consideration of the activities required to undertake the road upgrade works. **Section 4** lists the key environmental aspects and the potential environmental impacts resulting from the construction activities.

Environmental Aspect	Potential Impacts or Issues
Air Quality	Dust and particle emissions during construction activities
	Mobilisation of potentially contaminated dust into the air shed
Noise and Vibration	Construction noise associated with the road upgrade works will impact on surrounding sensitive noise receptors
Soil, Surface Water and	Excavation of potentially and known contaminated soils
Groundwater	Groundwater interception
	Potential impacts on surface water and groundwater quality
	Stormwater management
Transport and Access	Generation of up to 85 construction vehicle movements during the two weeks construction period
	Temporary road closures would be required to undertake the works
Waste	Storage of wastes
	Recycling, reuse and disposal of wastes
	Hazardous materials management
Flora and Fauna	Potential for direct or indirect impacts on ecological communities and species of flora and fauna (in native vegetation adjoining the Project) listed under the <i>Biodiversity</i> <i>Conservation Act 2016</i> (BC Act) or the Commonwealth <i>Environmental Protection and</i> <i>Biodiversity Conservation Act 1999</i> (EPBC Act) due to unauthorised earthworks outside the existing road formation
Aboriginal Heritage	Potential impact to items or places of Aboriginal significance due to unauthorised earthworks outside the existing road formation
Non-Indigenous Heritage	Potential impact of items of local or State significance due to unauthorised earthworks outside the existing road formation
Visual	The Project site is located within an established regional mining township setting. Sealing of the roads will formalise the road corridor within the landscape and have little to no impact on visual amenity

Table 1-1: Potential Construction Environmental Impacts

1.4 Residual Contamination

Metalliferous mining occurred within Captains Flat between the 1890s and the 1960s (Pryke 1995). Lead, silver, zinc, sulphur, copper and gold were produced from Captains Flat in that time (NSW Department of Resources and Geoscience 2020). The Lake George Mine now forms part of the NSW Government Legacy Mines Program (former Derelict Mines Program) and is a known source of heavy metal contamination and acid mine drainage impacting the surrounding area (NSW Department of Resources and Geoscience 2020).

Recent soil investigations of the Captains Flat area by Ramboll have identified potential risks to human health and the environment associated with contamination relating to the Lake George (legacy) mine.

1.5 Summary Soil Results

Ramboll undertook fpXRF sampling to determine lead concentrations surrounding Miners Road and Copper Creek Road. Samples were either surface only or to a maximum depth of 0.3 metres. A summary of the fpXRF sampling results relevant to the project site is provided in **Table 1-2**.

Depth (m)	Analyte	No. of Samples	No. of Detects	Minimum (PPM)	Maximum (PPM)	Average (PPM)	No > HIL D (PPM)	No > EIL
0.0-0.1		19	19	19	5,148	1,115	6	5
0.1-0.2	Lead	15	15	31	5,239	1,315	3	3
0.2-0.3		13	13	340	4,191	2,010	6	6

Table 1-2: Preliminary Soil Sampling Lead Results

Table Notes: HIL D is the health investigation level for commercial industrial land use specified as a Tier 1 screening criteria in the National Environment Protection Measure (NEPC 2013). Results are presented in parts per million and provide for indicative assessment only against adopted assessment criteria measured in dry weight mg/kg.

These results indicate exceedances of both the health investigation level (HIL) and ecological investigation level (EIL) for lead contamination. Exceedances were concentrated around the intersection of Old Mines Road and Miners Road and an approximate extent of 100 metres along Miners Road, areas to which this CEMP applies. An individual site of exceedance was also reported towards the southern extent of Miners Road just prior to the eastern bend towards Foxlow Street.

The CEMP has been prepared to reflect that the Project is 'lead risk work.'

2. RELEVANT ENVIRONMENTAL APPROVALS AND LICENCES

This section focuses on the environmental approvals and licences that apply to the Project under relevant legislation, regulations, and environmental planning instruments.

The workplace health and safety requirements for the Project are addressed in the Workplace Health and Safety Plan.

2.1 Environmental Protection and Assessment Act 1979

QPRC has advised that it considered the potential environmental and social impacts of the Project and concluded that it is unlikely to significantly affect the environment. Therefore QPRC has complied with its obligations under Part 5 of the *Environmental Planning and Assessment Act 1979*.

2.2 Work Health and Safety Act 2011

Section 17 of the *Work Health and Safety Act 2011* requires risks to health and safety be eliminated so far as is reasonably practicable

SafeWork Australia and SafeWork NSW provides guidance for determining if occupational exposure/work is likely to be classified as 'lead risk work'. Clause 394 of the *Work Health and Safety Regulation 2017* states that "*lead risk work* means work carried out in a lead process which is likely to cause the blood lead level of a worker carrying out the work to exceed:

- a) for a female of reproductive capacity-5 µg/dL (0.24µmol/L), or
- b) in any other case—20 μ g/dL (0.97 μ mol/L).

Under the regulation 'female of reproductive capacity' means a female other than a female who provides information stating that she is not of reproductive capacity.

The guideline values adopted in this assessment are based on the current occupational blood lead guidelines and are shown in **Table 2-1**.

Site Receptor	SafeWork Australia Category	Occupation Exposure Standard Blood lead concentration (µg/dL)*
	Female of reproductive capacity	5
Onsite Worker	Females not of reproductive capacity and males	20

Table 2-1: Adopted Blood Lead Guideline Values

Lead risk work requires notification to SafeWork NSW.

3. ENVIRONMENTAL MANAGEMENT STRUCTURE

3.1 Management Structure

Table 3-1 identifies the personnel with key environmental management roles and their responsibilities.

Table 3-1: Personn	el and Environm	ental Managemen	t Responsibilities
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Position	Responsibilities
Project Manager (QPRC)	Reviewing and authorising the CEMP and other project plans
	Assigning environmental responsibilities to all project personnel
	Ensuring all project personnel are suitably trained, and possess the necessary skills, to undertake their designated environmental responsibilities
	Continually monitoring of environmental performance to ensure compatibility with policies and objectives and continued effectiveness with policies and objectives
	Communicating environmental performance to Project/Site Engineer and Foreman/Construction Supervisor
	Providing sufficient resources to ensure the CEMP requirements are implemented
Project/ Site Engineer (QPRC)	Ensuring environmental controls are established by the Contractor prior to commencement of construction activities
	Performing environmental inspections as requested by the Project Manager
	Identifying and reporting environmental non-conformance and notifying the Project Manager of the suspected non-conformance
	Ensuring and verifying that corrective action is taken when required for nonconforming work
	Participating in the review of the project environmental system and other relevant environmental meetings and programs
	Ensuring subcontractors fulfil their environment obligations
Foreman/ Construction Supervisor	Ensuring procedures in the CEMP are followed
(QPRC)	Perform surveillance and monitoring of environmental controls to ensure that they are established and maintained in accordance with requirements
	Ensuring that environmental protection requirements are communicated to all personnel and subcontractors under his/her control
	Identifying and reporting environmental non-conformance and notifying the Project/Site Engineer of the suspected non-conformance
	Carrying out the agreed rectification works after identification of non- conformance
	Completing environmental surveillance activities in the Site Diary as required
Contractors	Comply with the requirements of the CEMP as it applies to site environmental management and control.
	Implement the environmental measures and actions as described in the CEMP and the relevant sub-plans through procedures and management plans that comply with this CEMP and the relevant sub-plans.
	Develop and implement procedures for self-checking environmental management compliance with Contractor's procedures and this CEMP.
	Report potential or actual environmental incidents associated with activities at the Project site, and assist as required in the investigation, implementation of corrective actions and recording of the incident.
Site / Project EHS Lead	Identification and monitoring of environmental controls to ensure that they are established and maintained with requirements
	Perform environmental and safety inspections of the project site
	Support the project team in continuously improving environmental management and safety throughout the project

Position	Responsibilities
All Staff	Implementation of the relevant environmental measures described in this CEMP applicable to their activities.
	Stop work in the event of an actual or potential environmental incident.
	After ceasing the activity that is the known or potential source, report potential or actual environmental incidents associated with activities at the project site, and assist as required in the investigation, implementation of corrective actions and recording of the incident.

3.2 Contractor Site Induction

Prior to working on site, all personnel and subcontractors would undertake a contractor site induction, which will address a range of issues including, but not limited to:

- The CEMP (purpose, objectives and key environmental issues)
- Legal requirements including due diligence and duty of care
- Environmental responsibilities
- Conditions of any licences, permits and approvals (if any)
- The Construction Contractor's Environmental Policy
- Significant environmental issues and sensitive environmental areas of the site
- Work health and safety requirements for working in areas of contamination
- Environmental Incident management and reporting process
- Emergency Response Plans
- Protection and maintenance of environmental controls
- Storage location of hazardous materials and MSDS Register
- Finding heritage (Indigenous / Non-Indigenous) items on site
- Environmental control installation must be in place before construction works begins.

4. ENVIRONMENTAL MANAGEMENT

4.1 Resources and Training

4.1.1 Resources

QPRC is committed to providing resources for the following activities:

- Development, implementation, upgrade and review of this CEMP
- Ongoing inspection of site environmental controls
- Document control of environmental records
- Monitoring of environmental performance

The resources for implementing environmental controls include the personnel identified in **Section 2.1**.

4.1.2 Inductions and Training

Site personnel will be provided with general environmental awareness training (including the relevant contents and requirements of this CEMP) as part of the induction process to achieve a level of awareness and competence appropriate to their assigned activities as detailed in **Section 2.2.** Additional training may be required for specific tasks and/or works within areas of lead contamination and will be undertaken on an as needs basis.

The Project Manager will maintain a record of personnel induction and training records.

4.2 Reporting

4.2.1 Environmental Reporting

Environmental reporting is undertaken in accordance with this CEMP and associated regulatory approvals and licences.

4.2.2 Environmental Incidents

An environmental incident may include a spillage or leak, failure of a pollution control device such as a bund or basin, major settlement, collapse of bank or embankment, catastrophic events (i.e. flood or fires), or unauthorised damage to protected vegetation or heritage items. Environmental emergencies, or incidents, can be defined as an occurrence that has caused or has the potential to cause an exceedance or contravention of any relevant environmental act, regulation or licence.

4.2.2.1 Incident Investigation, Reporting and Notification

In the event of an environmental incident causing or threatening material harm to the environment, the Project Manager (QPRC) is to be notified and QPRC's Procedure: *Environmental Management Plan for Contaminated Land in Council's Care and Control* is to be implemented.

All environmental incidents will be investigated and documented, with investigations conducted to determine and manage the cause of the incident. All personnel are encouraged to report incidents or near misses, to ensure continual improvement of procedures, training or equipment.

An incident investigation includes the following key tasks:

- Identification of the cause, extent and responsibility for the incident
- Identification and implementation of the corrective action (short term and long term)
- Identification of the personnel responsible for the corrective action
- Implementation of controls and/or modification of existing procedures to avoid a repeat of the incident
- Documentation of any changes to existing procedures

Environmental incidents and the outcomes of investigations will be recorded. Record keeping is required to ensure evidence of compliance with this CEMP.

The CEMP will be revised to include any relevant findings from incident investigations and/or corrective actions implemented as a result, as appropriate.

4.2.2.2 Complaints

QPRC maintains a postal address (PO Box 90, Queanbeyan 2620) to which written complaints may be sent, an email address (<u>council@qprc.nsw.gov.au</u>) to which electronic complaints maybe transmitted from community members and an online form accessed through the QRPC website that can be filled out. There is also a general enquiries phone number (1300 735 025) where complaints can be received. All complaints are registered and management through its customer relationship management (CRM) system.

Community complaints are considered environmental incidents and are investigated and documented accordingly. Investigations are conducted, which includes provision of feedback to the complainant. Corrective actions are documented and regularly reviewed until completion and sign off.

Correspondence relating to community complaints are filed by the QPRC Project Manager or Site Engineer (as appropriate).

5. IMPLEMENTATION

5.1 Environmental Management Activities and Controls

Environmental management relies on the effective implementation of environmental management measures, which are the controls that will be implemented to mitigate risk and environmental impact. **Table 5-1** identifies the environmental management measures for mitigating potential environmental issues.

5.2 Lead Contamination

Table 5-2 identifies the management activities specific to managing works required within areas of potential lead contamination. Lead is known to cause health effects in humans, especially children and developing foetuses. SafeWork NSW recognises that females with childbearing capacity are the most sensitive receptor at work sites.

Migration of metals into the environment, soils, groundwater and surface water, may cause environmental harm.

The primary routes of exposure to human health and the environment are from dust generation and the transport of soils or dissolved contaminants with surface water. These actions can result in dermal contact, ingestion and inhalation of contaminated soils and water. Activities causing soil disturbance at the site can exacerbate the movement of contaminated soils.

5.2.1 Management Strategy and Mitigation

Section 17 of the WHS Act requires risks to health and safety be eliminated so far as is reasonably practicable. The SafeWork Australia code of practice for managing risks of hazardous chemicals in workplace provides a hierarchy of control measures. This includes (most preferred to least) eliminate hazard, substitution, isolation and implementing engineering controls. SafeWork NSW also advocates elimination of the hazard as the most preferred method of control.

The site management strategy is therefore to temporarily isolate contaminated soil. This strategy is considered appropriate for mitigating potential impacts to both human health and the environment. As the mode of exposure is increased with soil disturbance, measures should also be aimed at minimising dust generation and surface water flow at the site.

The principal hazard mitigation measure is to restrict access to the contaminated area to those that have been inducted to the Project site and informed of the requirements of this CEMP. Where access is granted compliance with the CEMP is required.

Hazard mitigation measures are provided in Table 5-2.

Table 5-1: Environmental Management Controls

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
Air Quality	All personnel will be informed during the site induction of their obligations to minimise potential air quality impacts and	Air quality obligations and management measures to be communicated to personnel during the site induction.	Prior to and during activities	Project Manager (QPRC) Contractor
	dust generation (in particular off site dust migration), and the need to take reasonable and practical measures to minimise impacts	Personnel are to report to the Project Manager (QPRC) any activities that are generating, or have the potential to generate, dust or other air emissions that could have an adverse impact to site or off site sensitive receivers including QPRC staff, Contractors and/or equipment.	During activities	All personnel
	Community complaints, issues or general enquiries regarding the Project can be made via letter, email or online submission via the QPRC website	Maintain and regularly check the avenues available for community complaints, issues and general enquiries.	Prior to and during activities	Project Manager (QPRC)
		Record any dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record measures taken.	During activities (event based)	Project Manager (QPRC)
	Dust suppression will be used during construction activities	Exposed soils will be limited to that necessary for the works to occur and limited in extent at any one time.	During activities	Contractor
		Disturbed areas will be watered to control dust (as required) (specific controls for stockpiles are described under Soil and Contamination below).	During activities	Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
		Excavation works would be suspended during periods of strong winds where dust cannot be adequately suppressed.	During activities	Project Manager (QPRC)
		Provide and maintain an adequate water supply for effective dust/particulate matter suppression/mitigation.	Prior to and during activities During activities	Project Manager (QPRC) Contractor
		Real-time air monitoring will be undertaken on the Project site boundary and at nearest sensitive receptor downwind of excavations. If airborne dust downwind of the Project site is greater than 20% of the airborne dust loading upwind of site, works will stop until further dust controls are be implemented	During activities	Project Manager (QPRC)
Surface Water and Groundwater	All personnel will be informed during the site induction of their obligations to minimise potential surface water and groundwater impacts and the need to take reasonable and practical measures to minimise impacts	Surface water and groundwater obligations and management measures to be communicated to personnel during the site induction. Personnel are to report to the Project	Prior to and during activities During activities	Project Manager (QPRC) Contractor All personnel
	Erosion and sediment controls will be	Manager any activities that are generating, or have the potential to generate, impacts to surface water and/or groundwater that could have an adverse impact on the environment. The erosion and sediment control measures	Prior to and during activities	Project Manager (OPRC)
	installed prior to the commencement of activities	presented in Appendix 1 will be implemented prior to construction.		Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
	Erosion and sediment controls will be inspected and maintained as required on a weekly basis and after a rain event.	The Project site will be inspected on a weekly basis and after a rain event, and any damage or areas required maintenance would be identified, Repairs or maintenance would be completed as soon as practicable.	During activities	Project Manager (QPRC) Contractor
	As soon as practicable following completion of activities in a disturbed area, the surface will be treated to reduce the potential for erosion and sediment loss	Disturbed areas will be sealed (where part of the road formation), or stabilised with grass seed or covered with appropriate material to prevent dust generation. Stabilisation method depends on the future use of the area.	During activities	Project Manager (QPRC) Contractor
	Use of chemicals and fuels will be managed to avoid spills and contamination of soil, surface water and groundwater	All chemicals required for the Project would be stored in accordance with the applicable Safety Data Sheet in an appropriate designated area.	During activities	Project Manager (QPRC) Contractor
		An appropriate spill kit is to be located at the Project site at all times and any spillage is to be immediately cleaned up. In the event of a large or hazardous spill, the Fire Brigade, Police, Ambulance and EPA would be contacted as appropriate.	During activities	Project Manager (QPRC) Contractor
Soil and Contamination	All personnel will be informed during the site induction of their obligations to minimise potential soil and contamination impacts and the need to take reasonable	Implement the management strategies of QPRC's Contaminated Land EMP and the project Work Health and Safety Plan.	Prior to and during activities	Project Manager (QPRC) Contractor
	and practical measures to minimise impacts	Soil and contamination obligations and management measures to be communicated to personnel during the site induction.	During activities	Project Manager (QPRC) Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
		Erosion and sediment control measures are to be installed prior to construction, inspected on a weekly basis, and maintained as required (refer to Appendix 1).	Prior to and during activities	Project Manager (QPRC) Contractor
		Personnel are to report to the Project Manager (QPRC) any activities that are generating, or have the potential to generate, impacts to soil and/or cause contamination and could have an adverse impact on the environment.	During activities	All personnel
		Excavation of contaminated soils is to be completed so that visible airborne dust is not generated. Excavation should not occur on windy days; dust must be suppressed during excavation e.g. through use of a water cart.	During activities	Project Manager (QPRC) Site Supervisor (QPRC) Contractor
	Stockpiles will be managed and maintained to prevent sedimentation of drainage lines and waterways and dust generation	Sediment controls will be installed around stockpiles to prevent sedimentation of roads and/or drainage lines (refer to Appendix 1).	During activities	Project Manager (QPRC) Contractor
		Potentially contaminated material will be stockpiled separately and appropriately contained (bunded) to prevent cross- contamination of materials and/or stormwater (refer to Appendix 1).	Prior to and during activities	Project Manager (QPRC) Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
		Excavated material will either be replaced beneath the road base at the Project site or sampled, classified and disposed of in accordance with the <i>Waste Classification</i> <i>Guidelines</i> .	During activities	Project Manager (QPRC) Contractor
	Contaminated material is to be handled, transported and disposed of in accordance with <i>Waste Classification Guideline</i> (EPA, 2014)	In the event that any material is to be transported for off site disposal or treatment it is to be sampled for analysis in accordance with the <i>Waste Classification Guidelines</i> . Material cannot be removed from the Project site until analysis results are available and waste classification is completed.	During activities	Project Manager (QPRC) Contractor
	As soon as practicable following completion of activities in a disturbed area, the surface will be treated to reduce the potential for	Relevant agreement with affected private property owner to be agreed and documented.	Prior to works	Project Manager (QPRC)
	erosion and sediment loss and stabilise the area	Disturbed areas are to be stabilised with grass seed or covered with appropriate material (as appropriate for future use of the area) to prevent dust generation.	During activities	Project Manager (QPRC) Contractor
Transport and Access	Project works are to be communicated with the affected private property owner and access arrangements to their property agreed	Workers within the vicinity of the affected property are to be made aware of the agreement made.	Prior to works During activities	Project Manager (QPRC)

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
	Closure of Miners Road between Foxlow Street and Old Mines Road, and a section of Copper Creek Road to facilitate the Project activities	The community is to be advised of the proposed road closure (refer to Appendix 2) via signage at the Project site and a notice in the local media. This notice should advise of closure location, duration and the alternative route.	Prior to works (minimum of seven days)	Project Manager (QPRC)
		A Traffic Control Plan (including signage and safety measures) to designate the road closure and traffic diversion is to be developed and implemented.	Prior to works During activities	Project Manager (QPRC) Contractor
	Materials will be contained during transportation to prevent escape of materials during transport	Undertake inspection of vehicles exiting the site so that vehicles are free of mud and dirt. Vehicles that do not meet this requirement will need to be manually cleaned.	During activities	Contractor
		Vehicles entering and leaving the Project site and travelling on public roads will be covered.	As required (each load)	Contractor
		Any dust, soil or other materials deposited on public roads from project associated vehicles will be removed as soon as practicable.	As required	Contractor Site Supervisor (QPRC)
		Transportation of construction materials/ wastes will be managed to maximise vehicle loads and minimise vehicle movements.		Contractor
		Service utilities within the Project site are to be identified and providers consulted with to ensure measure to protect the utility service are in place.	Prior to works	Project Manager (QPRC) Site Supervisor (QPRC) Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
	Prior to construction commencing the relevant utility providers within the Project site are to be notified of the excavation activities and their services adequately protected	Designated waste storage and spoil stockpile areas, including environmental controls, will be established prior to construction.	Prior to activities	Contractor
Waste	Personnel will be informed during the site induction of their obligations to implement the waste management hierarchy	Recycling of waste streams such as paper, cardboard, scrap metal and plastics will be promoted.	During activities	Contractor
		Waste receptacles kept at the Contractor's Compound will have lids to prevent attraction of vermin or pests.	During activities	Contractor
		Compounds and the stockpile area will be maintained in an organised condition, with waste materials to be transported to and stored in the designated storage area.	During activities	Contractor
		Wastes will be collected for disposal at a licensed waste management facility.	During activities	Project Manager (QPRC) Contractor
Cultural Heritage	No earthworks are to occur outside of the existing road formation	All personnel will be informed during the site induction of the requirement to avoid earthworks outside of the existing road formation.	Prior to activities	Project Manager (QPRC) Contractor
		The Project site is to be monitored to confirm that no earthworks occur outside of the existing road formation.	During activities	Project Manager (QPRC) Contractor

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
	All personnel will be informed during the site induction of their obligations to report any finds of potential Aboriginal heritage significance	 In the event that a potential Aboriginal site or relic was identified during the Works. the following would be implemented: 1. All works would cease immediately in the area to prevent any further impacts to the site. 2. Notify the Works' Project Manager. 3. Engage a suitably qualified archaeologist and Registered Aboriginal Party representative to determine the nature, extent and significance of the Aboriginal site and provide appropriate management advice. Management action(s) would vary according to the type of evidence identified, its significance (both scientific and cultural) and the nature of potential impacts. In the event the item is confirmed to be an Aboriginal site, prepare and submit an AHIMS site card for the Aboriginal site. 	During activities	Project Manager (QPRC)
	All personnel will be informed during the site induction of their obligations to report any finds of potential heritage significance	In the event that a potential heritage item is unearthed during construction works would cease and the OEH would be notified.	During activities	Project Manager (QPRC)

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
Biodiversity	No Project activities are to occur in areas of native vegetation	 All personnel will be informed during the site induction of the requirement to avoid areas of native vegetation. This includes: Clearing of native vegetation Stockpiling of materials in areas of native vegetation, including below the drip lines of any trees Earthworks in areas of native vegetation 	Prior to activities	Project Manager (QPRC) Contractor
		The Project site is to be monitored to confirm that no activities occur in areas of native vegetation.	During activities	Project Manager (QPRC) Contractor
Noise and Vibration	All personnel will be informed during the site induction of their obligations to minimise potential noise and vibration emissions and the need to take reasonable and practical measures to minimise impacts	Personnel are to report to the Project Manager any activities that are generating, or have the potential to generate, noise and vibration emissions that could have an adverse impact on offsite sensitive receivers.	During activities	All personnel
		Maintain and regularly check the avenues available for community complaints, issues and general enquiries.	Prior to and during activities	Project Manager (QPRC)
	Community complaints, issues or general enquiries regarding the Project can be made via letter, email or online submission via the QPRC website	Record any noise or vibration complaints, identify cause(s), take appropriate measures to reduce noise or vibration in a timely manner, and record measures taken.	During activities (event based)	Project Manager (QPRC)

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
	Activities will be undertaken within the standard construction hours in accordance with the Interim Construction Noise Guideline (EPA, 2009)	Construction activities that generate audible noise at any premises beyond the boundary of the site will be undertaken within the standard construction hours of:	During activities	Project Manager (QPRC) Contractor
		7:00 am to 6:00pm Monday to Friday8:00am to 1:00pm Saturdays		
		At no time on Sundays or public holidays		
	Reduction of noise generated from onsite activities	Vehicles and machinery would be selected with consideration of noise emissions.	Prior to and during activities	Project Manager (QPRC) Contractor
		Construction equipment with the most effective mufflers, enclosures and low-noise tool bits and blades must be procured and utilised where practicable for the Project.	Prior to and during activities	Project Manager (QPRC) Contractor
		Machines found to produce excessive noise compared to typical noise levels should be removed and replaced or repaired or modified prior to recommencing works.	During activities	Project Manager (QPRC) Contractor
		Where possible construction vehicles and machinery would be turned off or throttled down when not in use.	During activities	Site Supervisor (QPRC) Contractor
		Equipment would be inspected and maintained in accordance with manufacturer's requirements.	During activities	Contractor
		Use less noise-intensive equipment where	During activities	Contractor
		reasonable and feasible.		Site Supervisor (QPRC)

Issue / Objective	Management Measure	Action	Timing / Frequency	Responsibility
		Avoid unnecessary revving of engines and turn off plant that is not being used / required where practicable.	During activities	Contractor Site Supervisor (QPRC)

Table 5-2	General	Hazard	Mitigation	Measures
Table 5-2.	General	i lazai u	riitiyation	ricasules

Category	General Requirements			
Exclusion				
Exclusion Zones	The Project site should be demarcated as an exclusion zone(s). The exclusion zones should only be accessed by persons inducted to this EMP, utility managers working under an EMP developed specifically for the works they are undertaking, or where it forms the only access to a private residence. The exclusion zone(s) should include fencing and signage where the site is readily accessible. Signage will include:			
	DANGER DO NOT ENTER Induction to Environmental Management Plan required.			
	Contact [QPRC Representative [insert name and phone number]] for further information.			
	A map will be displayed defining the exclusion zone.			
	Entities with services crossing the site should be notified of the presence of contamination onsite and advised of requirement to provide an EMP for QPRC approval before completing any works that require soil disturbance.			
	Soil disturbance			
Mandatory administrative controls for any soil disturbance	 If excavation of contaminated soils is required excavation must be completed so that visible airborne dust is not generated. Excavation should not occur on windy days; dust must be suppressed during excavation, such as through use of a water cart. The details of this EMP must be communicated to all onsite workers including external contractors Any soil disturbance works shall occur under the supervision of the QPRC Project Manager or a delegated representative and should be preferentially completed using machinery with an enclosed cabin/s Personnel decontamination shall occur after leaving excavation areas by removing/washing/cleaning dusty work clothes, boots, shoes, tools, phones, hands/face/any other exposed body area. Cleaning should occur using a damp cloth or mop Hands should be washed before eating or drinking, smoking or chewing gum Eating or drinking should be conducted in a clean dust free location Fingernails and toenails should be kept short Showering should occur before returning home. Work gear should be kept separately from other clothing and washed separately. 			
Administrative controls - Machinery Operators	 Where machinery is floated to site a staging area must be established within a clean area of the site, where loading and unloading from the float can safely occur. Machinery should by preference be selected with capacity for An enclosed cabin Cabin air circulation system (air conditioning) equipped with high efficiency filter Cabin seals in good condition to eliminate cabin dust intrusion At completion of works all soil must be removed such that machinery is free of site materials when entering the staging area for loading. 			
Administrative controls – Workers outside assisting excavation	Workers assisting excavation outside of machinery should be minimal. These workers should remain outside of the exclusion zone, upwind of the excavation, and adhere to all general requirements described above.			

Category	General Requirements
PPE	The following PPE shall be worn at all times
	Full length clothing (sleeves and trousers / overalls)
	Orange high visibility upper clothing or vest
	Safety (steel capped) boots
	Protective eyewear
	Hard hat
	• Gloves
	 A P2 dust mask (by workers during excavation who are outside machinery with enclosed cabins.)
	Disposable coveralls for workers required within the exclusion zone outside of vehicle cabins

6. MONITORING AND REVIEW

6.1 Monitoring

QPRC will undertake visual inspections of the activities as identified in **Table 5-1** and described in **Section 6.2.** Monitoring will be undertaken in the event of a complaint, incident, rain event or as described in **Table 5-1**.

In the event monitoring is required, it will be undertaken by suitably qualified and experienced personnel, in accordance with relevant procedures and guidelines, including but not limited to:

- National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, 2013)
- Approved Methods for Sampling and Analysis of Water Pollutants in NSW (EPA, 2004)
- Australian Standard AS 5667.1:1998 Water Quality Sampling Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques and the Preservation and Handing of Samples (Standards Australia, 1998)
- AS/NZS 5667.11:1998. Water Quality Sampling Guidance on Sampling of Groundwaters
- Standard Methods for the Examination of Water and Waste Water, 20th Edition, section 1060 (American Public Health Association, 1998)
- Approved Methods for Sampling of Air Pollutants in New South Wales Guideline (DEC, 2007)
- Industrial Noise Policy (EPA, 2000)
- AS 1055 1997: Acoustics Description and Measurement of Environmental Noise (Parts 1-3) (Standards Australia, 1997)

Specific monitoring requirements are identified within the environmental management measures provided in **Table 5-1**.

6.2 Inspections

Inspections will be undertaken by the QRPC Project Manager (or delegate) to ensure implementation of this CEMP by the Contractor, effectiveness of controls and identification of improvements to achieve satisfactory environmental outcomes.

The QPRC Project Manager is responsible for the adaptation of the control measures to improve performance and documentation of any changes made to this CEMP.

6.3 CEMP Review and Improvement

Continual improvement of the CEMP will be achieved by the continual evaluation of environmental management performance for the purpose of identifying opportunities for improvement.

The Project Manager is responsible for undertaking a regular review of the CEMP. The CEMP will be reviewed on an as needs basis if changes to existing operations occur.

CEMP reviews will be recorded in the document control section of this plan.

7. LIMITATIONS

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to Queanbeyan-Palerang Regional Council dated 28 May 2021 and in accordance with our understanding and interpretation of current regulatory standards and information available at the time of writing the CEMP.

Site conditions may change over time. This report is based on conditions encountered at the site at the time of the report and Ramboll Australia Pty Ltd disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll Australia Pty Ltd's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll Australia Pty Ltd's knowledge as at the date of the assessment.

Ramboll Australia Pty Ltd did not independently verify all of the written or oral information provided to Ramboll Australia Pty Ltd by Queanbeyan-Palerang Regional Council during the course of this investigation. While Ramboll Australia Pty Ltd has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll Australia Pty Ltd was itself complete and accurate.

This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

7.1 User Reliance

This report has been prepared exclusively for Queanbeyan-Palerang Regional Council. It may not be relied upon by any other person or entity without Ramboll Australia Pty Ltd's express written permission.

8. **REFERENCES**

Department of Industry, Planning and Natural resources (DIPNR) 2004. Guideline for the Preparation of Environmental Management Plans.

GHD 2018. Assessment of Remediation Options. Lake George Captains Flat Mine Review. NSW EPA 2021. Captains Flat Surface Soil Testing Report.

NSW Government Resources and Geoscience, Captains Flat (Lake George) Mine accessed on 23 July 2021 available at: <u>https://www.resourcesandgeoscience.nsw.gov.au/landholders-and-</u> <u>community/minerals-and-coal/legacy-mines-program/case-studies/captains-flat-lake-george-mine</u>

NEPC 2013 National Environment Protection Measure. Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999

Pryke, S updated by Van Straaten, J and Walker, A.V. Boom 1995. Boom to Bust - and Back Again Captain's Flat 1883-1995 (2nd ed.). Captain's Flat Residents and Ratepayers Association.

Queanbeyan-Palerang Regional Council (2021). Draft Environmental Management Plan for Contaminated Land in Council's Care and Control.

APPENDIX 1 SOIL MANAGEMENT PLAN



Legend



Project locationSediment fencing/hay bales



APPENDIX 2 CONSTRUCTION TRAFFIC DIVERSION PLAN



Legend



Project locationAlternate routeRoad closure

