

Ulan Coal Modification 6 - Underground Mining Extension

Application Number: **01229**Commencement Date: **18/05/2022**Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Ulan Coal Modification 6 - Underground Mining Extension

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Coal

1.1.4 Estimated start date *

2/01/2023

1.1.4 Estimated end date *

31/08/2035

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The Ulan Coal Complex (UCC) is located approximately 38 km north-east of Mudgee and 19 km north-east of Gulgong in NSW (refer to **Figure 1**). Ulan Coal Mines Pty Ltd (UCMPL) operates the UCC and is a subsidiary of Glencore. Coal mining has been undertaken in the Ulan area since the 1920s. UCMPL was granted NSW Project Approval (PA) 08_0184 under the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) on 15 November 2010 for the Ulan Coal – Continued Operations Project (UCCO Project). The existing UCC operations are also approved by Controlled Activity approvals 2009/5252 and 2015/7511, issued under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Approved mining operations within the UCC consist of underground mining in the Ulan Underground and Ulan West areas as well as open cut mining, and associated infrastructure, coal handling and processing and transport (refer to **Figure 2**). The UCC is currently approved to operate until August 2033.

UCMPL is proposing to extract additional coal resources adjacent to the approved underground mining area. UCMPL has determined that there is a valuable minable resource within the northern portion of the mining lease area MLA 609 and is seeking to extract this coal resource by extending the longwall panels in this area (refer to **Figure 3**).

The Proposed Action would not change the current approved coal extraction rate from UCC of up to 20 million tonnes per annum (Mtpa) and would enable extraction of an additional approximately 25 Mt of product coal. The Proposed Action would extend the life of the mine for an additional two years until August 2035. The Proposed Action includes:

- extension of Ulan Underground longwall panels LWW9 to LWW11 to the west
- widening of Ulan Underground LWW11 by approximately 30m
- extension of Ulan West LW9 to 12 to the north
- three ventilation shafts and associated infrastructure corridors
- five dewatering bores and associated infrastructure corridors
- an alternate access track for surface infrastructure above the proposed additional underground mining area

- an infrastructure corridor and drop borehole to the south-west of Ulan West.

The Proposed Action does not include any currently approved activities within the UCC including the approved conceptual mine plans. While UCMPL has provided conceptual surface infrastructure layouts for assessment, the final location of infrastructure is subject to further exploration and detailed mine planning and development. To retain flexibility in the location of surface infrastructure proposed, a 'maximum parameters' assessment has been completed to accommodate the worst-case potential impacts to biodiversity for future infrastructure configuration options. This approach allows for the full extent of potential biodiversity impacts that may occur as a result of the Proposed Action to be assessed, noting that these impacts would be refined, minimised and offset as required throughout the life of the operation. The 'maximum parameters' impact of the Proposed Action is the subject of this referral.

UCMPL will continue to utilise the existing mine facilities for the life of the operations.

The subject of this referral is the extraction of coal through longwall mining in the proposed additional underground mining area, including changes to the Ulan Underground and Ulan West mining areas and the proposed infrastructure associated with the proposed additional mining operations. The details of the Proposed Action which is the subject of this referral (Referral Area) are shown in **Figure 3**. As stated above, the Proposed Action does not include any currently approved activities within the UCC. The existing approved works, and the continued operation of these works, do not form part of the Proposed Action and if the Proposed Action does not proceed for any reason the existing works will continue as currently approved under NSW approval PA 08_0184 and EPBC Act approvals 2009/5252 and 2015/7511.

It is noted that the supporting technical assessments to this referral have considered a slightly larger mine plan which included the widening of the approved Ulan West LW12 by approximately 180m. The widening of the approved Ulan West LW12 is no longer proposed and does not form part of the Proposed Action that is the subject of this referral. The supporting technical assessments consider the entirety of the Proposed Action and the widening of the approved Ulan West LW12. Accordingly, the supporting technical assessments whilst clearly outlining the predicted impacts of the Proposed Action, are also conservative in nature as they also include the impacts of widening LW12 and therefore overstate the potential impacts.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

EPBC Number	Project Title
2009/5252	Continued Mining Operations and Construction of Associated Infrastructure
2015/7511	Ulan West Extension, Near Mudgee NSW

1.2.5 Provide information about the staged development (or relevant larger project).

UCMPL operates the UCC in accordance with EPBC Approvals 2009/5252 and 2015/7511 (granted in 2010 and 2016 respectively) for Controlled Activities within the approved Project Boundary.

The Proposed Action will maximise resource recovery at UCC through the extension of the underground operations approved under the existing EPBC Act approvals. The extension and widening of longwall panels at Ulan Underground and Ulan West and minor changes to surface infrastructure will enable extraction of an additional approximately 25 million tonnes of product coal, with no changes to the currently approved annual limits of extraction. The Proposed Action will increase the life of the mine for an additional two years until August 2035.

No other changes to the approved operations subject to EPBC Approvals 2009/5252 and 2015/7511 are required as a result of the Proposed Action. It is noted that UCMPL's Modification 4 was referred under the EPBC Act in 2018 (EPBC 2018/8337) and was determined to be 'not a controlled action'.

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The approved UCC operations are subject to Project Approval PA 08_0184, granted under the NSW EP&A Act in 2010 and modified on six occasions with the most recent modification determined on 23 March 2022. The Proposed Action will require a modification to PA 08_0184 under section 4.55(2) of the NSW EP&A Act. Modification under section 4.55(2) of the NSW EP&A Act requires that a development must be substantially the same as that last. The NSW Department of Planning and Environment (DPE) has confirmed that the modification can be characterised as modification to the existing approval and can be assessed and determined under section 4.55(2) of the EP&A Act. Other minor approvals will also be required under the NSW *Mining Act 1992*, the *Protection of the Environment Operations Act 1997*, and the *Water Management Act 2000*.

The modification application under the NSW EP&A Act will be accompanied by a Statement of Environmental Effects (SEE). The SEE is currently being finalised in accordance with the NSW legislation and policies and relevant Commonwealth requirements, and includes detailed assessments of all relevant aspects including water resources, biodiversity, subsidence, air, noise, social, Aboriginal heritage, agriculture and economics. Assessments for water resources, biodiversity and subsidence have been completed to inform the assessment of the Proposed Action in relation to potential impacts on MNES. Assessments in relation to potential impacts to MNES using the relevant Significant Impact Guidelines are provided in **Attachment 3** (biodiversity), **Attachment 4** (groundwater) and **Attachment 5** (surface water).

As noted in **Section 1.2**, the supporting technical assessments are conservative in nature as whilst outlining the predicted impacts of the Proposed Action they also include the widening of the approved Ulan West LW12 which is no longer proposed. It is noted that the SEE for the NSW approval process will be assessed without the Ulan West LW12 widening.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

UCMPL has an established relationship with the surrounding community and other stakeholders and has implemented a process for ongoing engagement regarding its mining operations. A stakeholder engagement program was undertaken by UCMPL specifically in relation to the Proposed Action, utilising existing UCMPL consultation mechanisms in addition to specific activities focused on the Proposed Action. A program of engagement with the Aboriginal community was also undertaken as part of a Cultural Heritage Assessment.

A detailed consultation strategy was developed for the Proposed Action. The strategy included a variety of engagement mechanisms and approaches to afford consultation with all key interested stakeholders while providing a priority focus on landholders and key stakeholder groups at the local level. The consultation process for the Proposed Action was undertaken in stages to align with the key milestones of the environmental assessment process. The key stages of the consultation process are outlined below:

Stage 1 – Issue Scoping Stage. This stage involved preliminary contact with the local community via a briefing to the Ulan Community Consultative Committee (CCC), face to face meetings with directly affected landowners, and a newsletter providing an overview of the Proposed Action, distributed to the surrounding community. Meetings were also held with the NSW DPE, Mid-Western Regional Council and NSW Biodiversity Conservation Division.

Stage 2 – SEE & Social Impact Assessment (SIA) Development. This stage involved engagement during the refinement of the Proposed Action and the preparation of the SEE. This phase continued to build on engagement from the previous Social Impact Assessment, ongoing consultation processes and the consultation commenced within Stage 1. Consultation included meetings with community and agency stakeholders as necessary and provision of updated project information as it became available via mechanisms such as the CCC and a second community newsletter. Engagement with Registered Aboriginal Parties (RAPs) and knowledge holder groups was also undertaken as part of the Aboriginal Cultural Heritage Assessment process in this stage, and included a separate cultural values workshop with RAPs.

Stage 3 — Submission and assessment. This will be the final stage of consultation prior to determination of the NSW modification application and will involve consultation during the SEE public exhibition phase and subsequent assessment and approval process. The main purpose of this stage of consultation will be for interested stakeholders to make formal submissions on the modification application and for UCMPL to respond to issues raised during the public exhibition phase. Note that if the modification is approved, engagement will continue in accordance with current site procedures, taking into consideration outcomes of the assessment process.

1.3.1 Identity: Referring party

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Confirm that you have read and understand this Privacy Notice *

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details	
ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850
Referring party details	
Name	Kirsty Davies
Job title	Principal Environmental Consultant
Phone	0409372344
Email	kdavies@umwelt.com.au
Address	

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details	
ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850

Person proposing to take the action details

Name	Peter Ostermann
Job title	General Manager
Phone	0411204903
Email	peter.ostermann@glencore.com.au
Address	4505 Ulan Road, Ulan NSW 2850

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

UCMPL has a satisfactory record of responsible environmental management.

The Proposed Action would be undertaken in accordance with Glencore's 11.0 Environment Standard (refer to **Attachment 2**). UCMPL maintains an Environmental Management Strategy (EMS) for mining operations as required by Condition 1 of Schedule 5 of PA 08_0184. The EMS describes the controls, procedures and management plans, to protect and preserve environmental and community values; ensure adherence to regulatory and internal Glencore standard requirements and continually improve performance. This includes identification of areas required for management (aspects) and impact identification and management, monitoring and reporting and training of personnel.

The EMS sets out responsibilities that all employees and contractors must adhere to in relation to minimising, mitigating and managing impacts to the environment. The EMS operates under a number of Management Plans in relation to noise and vibration, air quality (including dust), Aboriginal and European heritage, biodiversity, surface and groundwater, waste and chemicals, subsidence, rehabilitation and pollution incident response.

Regular auditing is undertaken to assess performance and compliance with regulatory requirements in accordance with Schedule 5, Condition 8 of the Project Approval. Relevant monitoring programs and management plans will be modified as a result of the Proposed Modification if it is approved, and changes will be incorporated into the EMS as required. No major noncompliance or breach of conditions has occurred at the UCC.

UCMPL also engages with the community via a number of mechanisms including a dedicated Community Consultative Committee (CCC), regular community engagement events, preparation of bi-annual Community Newsletters and through participation and support of community groups and events.

Copies of Management Plans, Annual Compliance reports, CCC meeting minutes, Community Newsletters, monitoring results and compliance audit reports are made available via UCML's website (see www.ulancoal.com.au).

UCMPL was prosecuted by the NSW Environment Protection Authority (EPA) in 2001 under NSW legislation for an uncontrolled release of mine water into the receiving catchment. The incident was a result of pipe damage due to a fallen tree limb. Since this incident Burst Pipe Protection systems were upgraded and the overall surface water management system and the premises water management and monitoring systems, such as routine monitoring and inspection programs to reflect the risk level of these systems have all been upgraded. These are the only proceedings that have been brought against UCMPL in relation to the protection of the environment.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details	
ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850
Proposed designated proponent details	
Name	Peter Ostermann
Job title	General Manager
Phone	0411204903
Email	peter.ostermann@glencore.com.au
Address	4505 Ulan Road, Ulan NSW 2850

1.3.4 Identity: Summary of allocation**Confirmed Referring party's identity**

The Referring party is the person preparing the information in this referral.

ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850
Representative's name	Kirsty Davies
Representative's job title	Principal Environmental Consultant
Phone	0409372344
Email	kdavies@umwelt.com.au
Address	

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850

Representative's name	Peter Ostermann
Representative's job title	General Manager
Phone	0411204903
Email	peter.ostermann@glencore.com.au
Address	4505 Ulan Road, Ulan NSW 2850

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Has the department issued you with a credit note? *

No

1.4.5 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.7 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A? *

No

1.4.8 Would you like to add a purchase order number to your invoice? *

No

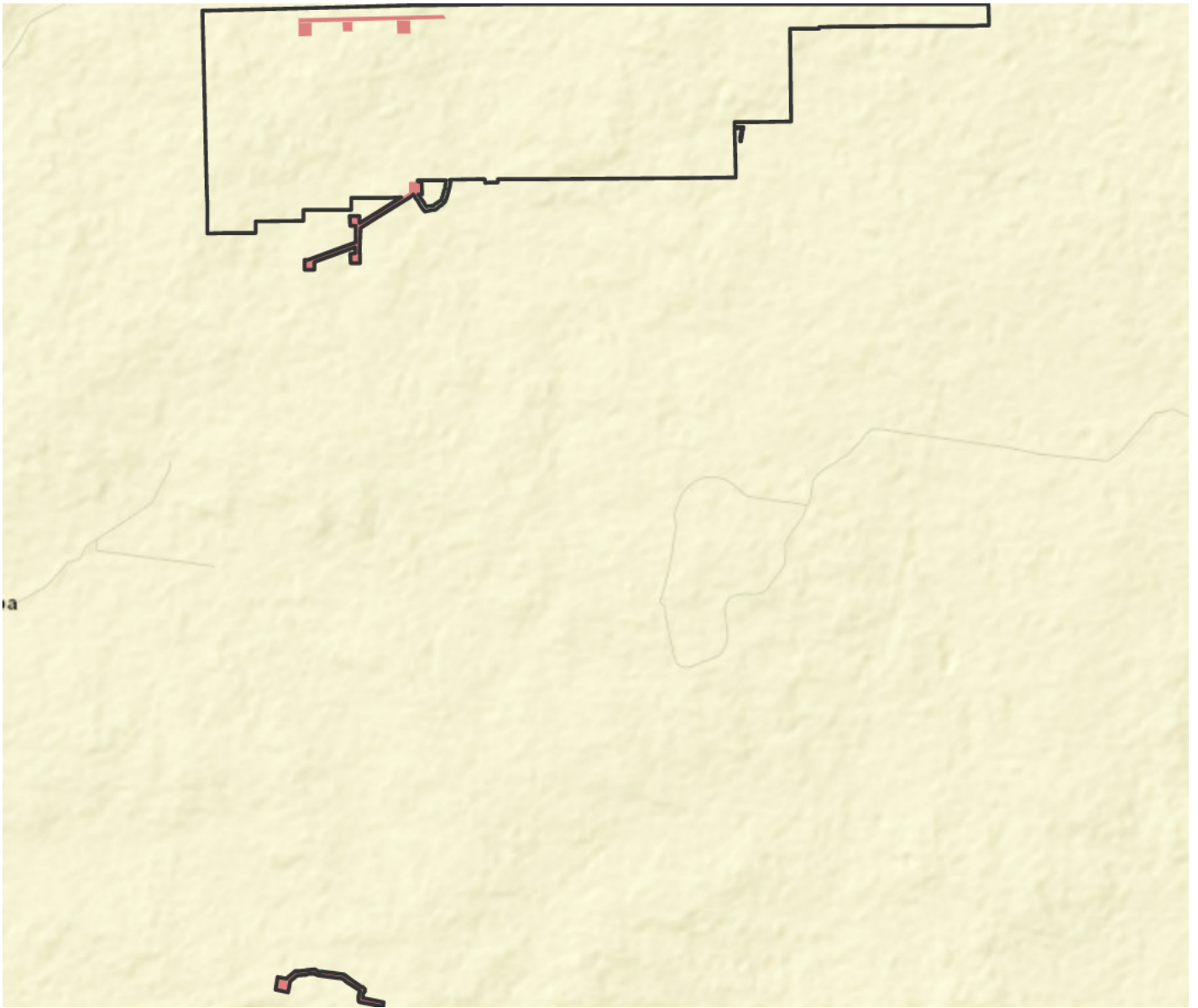
1.4 Payment details: Payment allocation

1.4.10 Who would you like to allocate as the entity responsible for payment? *

Proposed designated proponent

2. Location

2.1 Project footprint



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

4505 Ulan Road, Ulan NSW

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The land pertaining to the Referral Area is predominantly owned by UCMPL, with parcels of Crown land (leased to UCMPL) and portions of privately-owned land (refer to **Figure 4** in **Attachment 1**).

Proposed surface infrastructure is predominantly on UCMPL owned land. Some infrastructure is proposed for Crown land. UCMPL will consult with the NSW Department of Lands regarding works proposed on Crown land.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The UCC is in the Mid-Western Regional Council Local Government Area (LGA), with the village of Ulan located 1.5 km west of the CHPP. The site is located approximately 38 kilometres north-east of Mudgee, 19 kilometres north-east of Gulgong in New South Wales.

The UCC is located within the headwaters of both the Goulburn and Talbragar River systems, separated by the Great Dividing Range, with the Goulburn River system draining east to the Hunter River catchment, and the Talbragar River system draining west to the Macquarie River catchment and eventually into the Murray River. All the tributaries in the approved mining areas are ephemeral by nature. The Referral Area lies primarily within the Mona Creek catchment with some surface infrastructure located in the Cockabutta Creek catchments to the south, both of which are part of the Talbragar River system. Mona Creek is an ephemeral, fourth order watercourse and flows into a north-westerly direction to the Talbragar River. Cockabutta Creek is an ephemeral creek outside of the Referral Area, with no tributaries located within the Referral Area.

Coal mining has been undertaken in the Ulan area since the 1920s. The Referral Area has been subject to ancillary mining activities, agricultural pursuits and contains extant native vegetation. The surrounding land is mainly used for primary industries such as agriculture, forestry and mining, grazing and private rural dwellings.

The slopes and rocky escarpment landscapes of the Referral Area support large areas of relatively intact native vegetation comprising a range of vegetation types. The occurrence of disturbances such as weeds, erosion and pests in these areas is limited, the vegetation comprising largely native species and low-impact introduced species. Much of the broad valley floor/floodplain areas have been historically cleared for agricultural practices, predominantly cattle grazing, which continues in some areas. Due to the agricultural land practices, these valley floor areas now comprise derived grasslands which support a higher abundance and diversity of weed species than the surrounding rocky slope areas. Examples of weed and pest species that were recorded across the Referral Area are provided in **Section 3.2** of this referral.

3.1.2 Describe any existing or proposed uses for the project area.

Current land use within the Referral Area includes non-intensive grazing and ancillary mining activities. Large areas of the Referral Area include intact vegetation.

Due to the underground nature of mining activities, land within the Referral Area would continue to be utilised for limited agricultural use as it is now and ancillary mining activities.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

Cliff lines (i.e. continuous sandstone formations with a height greater than 10 m and slopes greater than 66°) occur across the UCC, including within the Referral Area. The most substantial sections of cliff line are located on the northern side of Brokenback Creek between Longwall 12A and 12B, on the northern side of Mona Creek above Longwall W10 (refer to **Figure 5** in **Attachment 1**).

Subsidence impacts within areas of potential habitat are expected to be similar to previous underground mining at the UCC, with impacts to cliff lines not expected to exceed the subsidence performance measures in the existing NSW Project Approval (PA 08_0184).

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

Within the UCC the landform can be characterised into three main groups; broad valley floors, transitional rocky uplands with gentle to medium slopes of less than 10 per cent and steep hills with plateau surfaces (including vertical cliff lines and steep escarpments). The landforms of the Referral Area include areas of undulating valley floor supporting derived grasslands surrounded by gentle slopes and rocky sandstone escarpment areas supporting forests and woodlands. Cliff lines within the Referral Area are shown on **Figure 5** in **Attachment 1**.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

Field surveys were completed across the Referral Area initially in August and October 2020, with further work completed in January-February 2022 building on the extensive history of flora survey and monitoring at the UCC. These surveys resulted in the identification of approximately 200 flora species. Plants were recorded from all four major vascular plant classes: cycads, conifers, ferns and flowering plants and included trees, tree mallees, shrubs, forbs, grasses, sedges, rushes, reeds, ferns, lithophytes, epiphytes, mistletoes, vines and twiners. Commonly recorded species included narrow-leaved ironbark (*Eucalyptus crebra*), red ironbark (*Eucalyptus fibrosa*), red stringybark (*Eucalyptus macrorhyncha*), rough-barked apple (*Angophora floribunda*), Blakely's red gum (*Eucalyptus blakelyi*), narrow-leaved wattle (*Acacia linearifolia*), Black she-oak (*Allocasuarina littoralis*), sifton bush (*Cassinia sifton*), *Cassinia quinquefaria*, blunt beard-heath (*Leucopogon muticus*), *Poranthera microphylla*, yellow buttons (*Chrysocephalum apiculatum*), blue trumpet (*Brunoniella australis*), *Gonocarpus elatus*, spoon cudweed (*Stuartina muelleri*), threeawn speargrass (*Aristida vagans*), Weeping grass (*Microlaena stipoides*) and reedgrass (*Arundinella nepalensis*). Weed density within the woodland/forest areas is relatively low, however the derived native grassland areas support a moderate diversity and cover of introduced plant species. Introduced species common across the Referral Area include spear thistle (*Cirsium vulgare*), saffron thistle (*Carthamus lanatus*), Paterson's curse (*Echium plantagineum*), flatweed (*Hypochaeris radicata*), smooth catsear (*Hypochaeris glabra*) and prickly pear (*Opuntia stricta*).

No threatened flora species were recorded within the Referral Area during the field survey completed for this assessment and there are no previous records from other studies or on the BioNet Atlas of NSW Wildlife. No species known to be locally significant were recorded. Further information including vegetation community mapping is provided in **Attachment 3**.

Fauna

Field surveys were completed across the Referral Area in August and October 2020, January-February 2021 and January – February 2022. Again, this work builds on the extensive history of fauna survey and monitoring at the UCC. A diversity of species was recorded from all fauna groups. Commonly recorded species included the white-winged triller (*Lalage tricolor*), white-eared honeyeater (*Lichenostomus leucotis*), yellow-faced honeyeater (*Lichenostomus chrysops*), white-throated treecreeper (*Cormobates leucophaea*), striated pardalote (*Pardalotus striatus*), Australian magpie (*Cracticus tibicen*), brown thornbill (*Acanthiza pusilla*), red-necked wallaby (*Macropus rufogriseus*), common wombat (*Vombatus ursinus*), common eastern froglet (*Crinia signifera*), broad-palmed rocket frog (*Litoria latopalmata*), smooth toadlet (*Uperoleia laevigata*), robust ctenotus (*Ctenotus robustus*) and Lesueur's velvet gecko (*Amalosia lesueurii*).

One EPBC listed species was recorded in the Referral Area. The large-eared pied-bat was recorded on three occasions during harp trap surveys near cliff line habitats in the Referral Area outside of the proposed direct impact areas. Only males were captured and no evidence of maternity roosts was recorded. A swift parrot (*Lathamus discolor*) was sighted in 2005, approximately 100 metres west of the Referral Area. State listed (NSW *Biodiversity Conservation Act 2016*) threatened fauna species that were recorded include the grey-crowned babbler, speckled warbler, little eagle, diamond firetail, dusky woodswallow and painted honeyeater. Pest animals were recorded in and around the Referral Area during field surveys including pigs (*Sus scrofa*) and rabbits (*Oryctolagus cuniculus*). Deer tracks (likely fallow deer (*Dama dama*)) were recorded in low numbers.

Grassland and regenerating woodland habitat provides scattered rock and woody debris for reptiles and frogs; and foraging areas for common birds such as the white-winged triller and magpie. Further information is provided in **Attachment 3**.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The soil landscape within the upper reaches of Mona Creek is the Turill soil landscape, with soils of low fertility, well drained but highly susceptible to erosion. The Referral Area will also intersect the Ulan soil landscape, which typically has low fertility, is imperfectly drained and has moderate to high susceptibility to erosion. Subsidence resulting from the Proposed Modification will not impact upon the land capability.

Landforms within the Referral Area are consistent with landforms found in the eastern uplands of the Great Dividing Range, which consist of undulating valley floors to steeper slopes and rocky escarpments and western uplands of the Great Dividing Range, where significant clearing within valleys has occurred for agriculture historically, mainly for grazing.

In the Referral Area, areas of undulating valley floor with more fertile soils support derived grasslands, bordered by forests that may comprise Blakely's red gum (*Eucalyptus blakelyi*), rough-barked apple (*Angophora floribunda*), yellow box (*Eucalyptus melliodora*) and/or white box x grey box (*E. albens* x *E. moluccana*) intergrades. The drier rocky slopes and escarpments at higher elevation support ironbark dominated woodland or forest communities, which may include narrow-leaved ironbark (*Eucalyptus crebra*), red ironbark (*Eucalyptus fibrosa*), red stringybark (*Eucalyptus macrorhyncha*) and black cypress pine (*Callitris endlicheri*).

Sixteen vegetation zones have been mapped in the Referral Area which includes eight plant community types (PCTs) separated into different condition states. Of these, only nine vegetation zones occur within the maximum parameters area. The PCTs present within the Referral Area, include:

- Rough-barked Apple - Red Gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion
- Narrow-leaved Wattle low open forest / very tall shrubland on ridges in northern NSW South Western Slopes Bioregion and southern Brigalow Belt South Bioregion
- Red Ironbark - Black Cypress Pine - stringybark +/- Narrow-leaved Wattle shrubby open forest on sandstone in the Gulgong - Mendooran region, southern Brigalow Belt South Bioregion
- Narrow-leaved Ironbark- Black Cypress Pine - stringybark +/- Grey Gum +/- Narrow-leaved Wattle shrubby open forest on sandstone hills in the southern Brigalow Belt South Bioregion and Sydney Basin Bioregion
- Rough-barked Apple - Blakely's Red Gum - Narrow-leaved Stringybark +/- Grey Gum sandstone riparian grass fern open forest on the southern Brigalow Belt South Bioregion and Upper Hunter region
- White Box x Grey Box - Red Gum - Rough-barked Apple grassy woodland on rich soils on hills in the upper Hunter Valley
- Narrow-leaved Ironbark - Black Pine - Sifton Bush heathy open forest on sandstone ranges of the upper Hunter and Sydney Basin
- Red Ironbark - Brown Bloodwood - Black Pine heathy open forest on sandstone ranges of the Sydney Basin.

Further information including vegetation community mapping is provided in **Attachment 3**.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

The Proposed Action will not impact any Commonwealth Heritage places overseas.

The only known European heritage site in the Referral Area is a timber getting site (known as HS63), located in otherwise undeveloped bushland above the southern part of Longwall 12B where an increase in panel width is proposed. The identified and potential heritage components of the proposed additional underground mining area, including HS63, have been assessed as being of no significance to the heritage fabric of the local area and having no research potential.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Aboriginal heritage values of the UCC have been well documented over its long history.

Parts of the Referral Area have previously been subject to a number of archaeological and cultural heritage investigations that have identified numerous archaeological sites, most of which are artefact scatters or isolated artefacts. Grinding grooves and rockshelters have also been recorded within the Referral Area, and are also present throughout the UCC underground mining areas.

Additional surveys were completed in early 2021 on those parts of the Referral Area that had not previously been subject to archaeological investigations. Consistent with the surrounding area, these surveys found rockshelters, potential grinding grooves, artefact scatters and isolated finds. The Aboriginal archaeology and cultural heritage assessments will be included in the SEE for the Proposed Modification (Proposed Action).

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

The existing UCC is located within the headwaters of both the Goulburn River system and the Talbragar River system. The Great Dividing Range separates these catchments, with the Goulburn River system draining east to the Hunter River catchment, and the Talbragar River system draining west to the Macquarie River catchment and eventually into the Murray River. All the tributaries in the approved mining areas are ephemeral by nature.

The Referral Area lies primarily within the Mona Creek catchment. A small area is located in the Cockabutta Creek catchment to the south. The Mona Creek and Cockabutta Creek catchments are part of the Talbragar River system. Mona Creek is an ephemeral, fourth order watercourse and flows in a north-westerly direction to the Talbragar River. Cockabutta Creek is an ephemeral creek outside the Referral Area. There is one farm dam, owned by UCMPL, located in the north of the Referral Area.

The three main hydrostratigraphic units identified as occurring within and surrounding the UCC are:

1. unconsolidated alluvial and colluvial sediments occurring along watercourses, with the most significant to the Proposed Action being the colluvial sediments of Mona Creek
2. shallow regolith and near surface weathered rock profiles, which can host unconfined groundwater during extended wet periods when the recharge rate exceeds the rate of downward or lateral flow
3. Triassic and Jurassic sandstones which are recharged by rainfall, overlying the Permian coal measures where groundwater is held predominantly as interstitial storage.

The most significant alluvial groundwater systems in the vicinity of the site are associated with tributaries of the Talbragar and Goulburn Rivers. The tributaries most relevant to the Proposed Action is Mona Creek. The sediments in the valley of Mona Creek are identified as alluvium in broad scale geological mapping, however more detailed characterisation work carried out for the Proposed Action has identified

that these sediments are colluvial in nature (refer to **Attachment 4**). The sediments within the Mona Creek valley are spatially limited, and relatively clay bound, with more permeable zones formed in lenses that are not well spatially interconnected.

The shallow regolith and weathered rock profile can host unconfined groundwater during extended wet periods when the recharge rate exceeds the rate of downward or lateral flow.

The bedrock comprises a sequence of Triassic, Jurassic and Permian age sedimentary rocks. Historical reporting has sometimes referred to these units as the deeper hard rock groundwater systems. The coal seams targeted by mining occur within the Permian coal measures and are overlain by Triassic and Jurassic units. These form unconfined, semi-confined and confined groundwater systems where groundwater is held predominantly as interstitial storage. Water yields to bores installed within both the weathered and deeper hard rock groundwater systems within the UCC have been low. There has been extensive depressurisation of the deeper hard rock groundwater systems within and surrounding the UCC, as a result of approved mining operations. At the same time no response has been observed in the groundwater levels in the shallow groundwater systems (i.e. Jurassic formations) that directly overlie the mined underground areas. Further information on groundwater and surface water is provided in **Attachment 4** and **Attachment 5**, respectively.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	Yes	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth heritage places overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no World Heritage properties located within or in the vicinity of the Referral Area.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no National Heritage places located within or in the vicinity of the Referral Area.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Banrock Station Wetland Complex
No	No	Banrock Station Wetland Complex
No	No	Hunter Estuary Wetlands
No	No	Hunter Estuary Wetlands

Direct impact	Indirect impact	Ramsar wetland
No	No	Hunter Estuary Wetlands
No	No	Riverland
No	No	Riverland
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland
No	No	The Macquarie Marshes
No	No	The Macquarie Marshes
No	No	The Macquarie Marshes

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no Ramsar wetlands located within or in the vicinity of the Referral Area. Surface water assessments have concluded that the Proposed Action is likely to have negligible impact on ecosystems and downstream users and any predicted impacts are within the natural variation of the existing creek systems.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
No	No	Androcalva procumbens
No	No	Androcalva procumbens
No	No	Androcalva procumbens
Yes		Anthochaera phrygia
Yes		Anthochaera phrygia
Yes		Anthochaera phrygia

Direct impact	Indirect impact	Species
No	No	<i>Aprasia parapulchella</i>
No	No	<i>Aprasia parapulchella</i>
No	No	<i>Aprasia parapulchella</i>
No	No	<i>Calidris ferruginea</i>
No	No	<i>Calidris ferruginea</i>
No	No	<i>Calidris ferruginea</i>
No	No	<i>Callocephalon fimbriatum</i>
No	No	<i>Callocephalon fimbriatum</i>
No	No	<i>Callocephalon fimbriatum</i>
Yes		<i>Chalinolobus dwyeri</i>
Yes		<i>Chalinolobus dwyeri</i>
Yes		<i>Chalinolobus dwyeri</i>
Yes		<i>Commersonia procumbens</i>
Yes		<i>Dasyurus maculatus maculatus</i> (SE mainland population)
Yes		<i>Dasyurus maculatus maculatus</i> (SE mainland population)
Yes		<i>Dasyurus maculatus maculatus</i> (SE mainland population)
No	No	<i>Delma impar</i>
No	No	<i>Delma impar</i>
No	No	<i>Delma impar</i>
No	No	<i>Dichanthium setosum</i>
No	No	<i>Dichanthium setosum</i>
No	No	<i>Dichanthium setosum</i>
No	No	<i>Euphrasia arguta</i>
No	No	<i>Euphrasia arguta</i>
No	No	<i>Euphrasia arguta</i>
No	No	<i>Falco hypoleucos</i>
No	No	<i>Falco hypoleucos</i>
No	No	<i>Falco hypoleucos</i>
No	No	<i>Galaxias rostratus</i>
No	No	<i>Galaxias rostratus</i>
No	No	<i>Galaxias rostratus</i>
Yes		<i>Grantiella picta</i>
Yes		<i>Grantiella picta</i>
Yes		<i>Grantiella picta</i>
Yes		<i>Hirundapus caudacutus</i>

Direct impact	Indirect impact	Species
Yes		Hirundapus caudacutus
Yes		Hirundapus caudacutus
Yes		Homoranthus darwinioides
Yes		Homoranthus darwinioides
Yes		Homoranthus darwinioides
Yes		Lathamus discolor
Yes		Lathamus discolor
Yes		Lathamus discolor
No	No	Leipoa ocellata
No	No	Leipoa ocellata
No	No	Leipoa ocellata
No	No	Lepidium aschersonii
No	No	Lepidium aschersonii
No	No	Lepidium aschersonii
Yes		Leucochrysum albicans subsp. tricolor
No	No	Macquaria australasica
No	No	Macquaria australasica
No	No	Macquaria australasica
No	No	Numenius madagascariensis
No	No	Numenius madagascariensis
No	No	Numenius madagascariensis
No	No	Nyctophilus corbeni
No	No	Nyctophilus corbeni
No	No	Nyctophilus corbeni
No	No	Nyctophilus corbeni
No	No	Petauroides volans
No	No	Petauroides volans
No	No	Petauroides volans
Yes		Petrogale penicillata
Yes		Petrogale penicillata
Yes		Petrogale penicillata
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Polytelis swainsonii

Direct impact	Indirect impact	Species
No	No	<i>Polytelis swainsonii</i>
No	No	<i>Polytelis swainsonii</i>
No	No	<i>Prasophyllum</i> sp. Wybong (C.Phelps ORG 5269)
No	No	<i>Prasophyllum</i> sp. Wybong (C.Phelps ORG 5269)
No	No	<i>Prasophyllum</i> sp. Wybong (C.Phelps ORG 5269)
No	No	<i>Pseudomys novaehollandiae</i>
No	No	<i>Pseudomys novaehollandiae</i>
No	No	<i>Pseudomys novaehollandiae</i>
Yes		<i>Pteropus poliocephalus</i>
Yes		<i>Pteropus poliocephalus</i>
Yes		<i>Pteropus poliocephalus</i>
No	No	<i>Pycnoptilus floccosus</i>
No	No	<i>Pycnoptilus floccosus</i>
No	No	<i>Pycnoptilus floccosus</i>
No	No	<i>Rostratula australis</i>
No	No	<i>Rostratula australis</i>
No	No	<i>Rostratula australis</i>
No	No	<i>Swainsona recta</i>
No	No	<i>Swainsona recta</i>
No	No	<i>Swainsona recta</i>

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Central Hunter Valley eucalypt forest and woodland
Yes		White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

A detailed assessment of the significance of impacts for each community/species is provided in Section 6 of **Attachment 3 - Part 4**.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

A detailed assessment of the significance of impacts for each community/species is provided in Section 6 of **Attachment 3 - Part 4**.

Direct Impacts of the Proposed Action will disturb up to 37.1 ha of native vegetation (which is known or potential habitat for threatened species) and disturbance to up to 24.1 hectares of vegetation that comprises the White Box – Yellow Box – Blakely's Red Gum Woodland CEEC. This is not an insubstantial area of disturbance, however, given there are significant areas of similar condition native vegetation in the local area, there will not be any material fragmentation or isolation of habitats, and once mining has progressed a significant portion of the final Direct Impact Area will be revegetated, the Proposed Action is not likely to result in a significant impact on any threatened species or ecological communities.

The potential indirect impacts of the Proposed Action (associated with subsidence) are not expected to impact on surface vegetation and habitats in any material way. There is some risk of subsidence affecting cave-roosting microbat species habitats, however evidence from a long history of microbat monitoring studies in the UCC indicates that threatened microbat species, large-eared pied-bat and large bentwinged bat continue to persist in longwall mining areas and there is continued evidence of breeding through capture of lactating females.

Based on the detailed assessments of significance, the Proposed Action is unlikely to result in a significant impact on any threatened species.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

As detailed in Section 6 of **Attachment 3 - Part 4**, within the Referral Area, there is approximately 953 hectares of vegetation supporting known and potential habitat for the listed EPBC Act entities. Of this, only between 27.4 hectares (current layout) and up to 37.1 hectares (for the 'maximum parameters' assessment) would be directly impacted as a result of the construction of the proposed surface infrastructure). The vegetation and habitats of the remainder of the Referral Area would only be subject to potential indirect impacts resulting from subsidence. Based on the current subsidence predictions, and evidence from ecological monitoring of previously mined longwalls at the UCC, there would be negligible impacts on native vegetation and habitats as a result of the proposed underground longwall mining. While the Proposed Action would result in impacts to EPBC Act listed entities, given the relatively small area of direct impact, and the availability of extensive areas of similar quality habitat at the UCC and surrounding locality, the direct impact to up to a maximum of 37.1 ha is not considered to constitute a significant impact to any entities. The Proposed Action is not considered a controlled action due to predicted impacts on endangered communities.

Based on the detailed assessments of significance, the Proposed Action is unlikely to result in a significant impact on any threatened species.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The Proposed Action aims to provide an appropriate balance between accessing economic coal reserves whilst avoiding and minimising potential environmental and community impacts. UCMPL has sought to firstly avoid and then minimise potential impacts on the ecological values of the Referral Area throughout the project planning process. Strategies adopted to avoid or minimise ecological impact as part of the project design phase included:

- design of proposed layouts of the proposed surface infrastructure area (as much as feasible) to avoid areas of White Box Woodland TEC and minimise impacts on potential habitat for EPBC listed species
- where relocating the proposed layout of the surface infrastructure was not possible (due to need for it to be located according to the underlying longwalls), the size of the disturbance footprint for the pipelines, transmission lines, access tracks, ventilation shafts etc. was minimised as much as practicable and infrastructure would be co-located and micro sited to minimise disturbance footprints as far as practicable
- existing disturbed areas, such as access tracks were used as much as possible in the project planning

- progressive decommissioning and rehabilitation of infrastructure would be undertaken as longwall mining progresses.

These avoidance and minimisation strategies would continue to be applied throughout the detailed design phase and a biodiversity due diligence exercise would be conducted to ensure that any biodiversity impacts associated with the final surface infrastructure locations would be the same or less than those assessed within the maximum parameters assessment (refer to Section 1 of **Attachment 3 - Part 1** for further detail).

Where impacts on ecological features are deemed unavoidable, a comprehensive impact mitigation strategy would be prepared that addresses the mitigation of these impacts in the long term. The impact mitigation strategy would be developed to ameliorate the impacts of the Proposed Action on threatened species, endangered populations, TECs and their habitats.

The approved operations at the UCC are undertaken in accordance with the NSW Project Approval, existing EPBC approvals, the Environment Protection Licence (EPL), approved Environmental Management Plans and Strategies. The detailed environmental assessments undertaken to support the environmental impact assessment for the Proposed Action include the identification and development of any management measures required. Should the Proposed Action be approved, updates would be undertaken to the existing Environmental Management Plans and Strategies to incorporate the management requirements resulting from the Proposed Action.

The following biodiversity mitigation measures would be implemented (as far as practicable), to minimise impacts resulting from the Proposed Action:

- maximise the use of existing disturbed areas within the Referral Area for the placement of infrastructure to avoid impact on surrounding vegetation
- implementation of a detailed pre-clearing and tree felling supervision program for proposed surface infrastructure areas following the procedures implemented under the current Biodiversity Management Plan (BMP)
- current weed management and feral fauna management activities (being completed as part of the BMP) would include the Referral Area
- all direct impacts associated with the final surface infrastructure locations would be offset in accordance with the requirements of the NSW Biodiversity Assessment Method.

The Referral Area would be subject to the same ecological monitoring as the remainder of the UCC. A detailed monitoring program for the broader UCC has been developed and described within the BMP, and comprises:

- micro-bat monitoring of rehabilitation, offset areas, subsidence impacts and the broader UCC
- general fauna and fauna habitat monitoring across the rehabilitation, offset areas, subsidence impacts and the broader UCC
- cliff line monitoring above longwall underground mining areas
- floristic monitoring of the UCC, including areas of rehabilitation, offset areas and subsidence impacts.

This monitoring covers a range of techniques (and purposes) and would be extended (where necessary) to include monitoring of the anticipated impacts resulting from the Proposed Action. Particular emphasis would be placed on the assessment of cliff line habitats within the Referral Area immediately prior to subsidence to identify and monitor micro-bats. General flora and fauna monitoring would continue to be completed on a regular basis, as per the BMP.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

All direct impacts associated with the final surface infrastructure locations would be offset in accordance with the requirements of the NSW Biodiversity Assessment Method. Further details are provided in Section 1 of **Attachment 3 - Part 1**.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct Impact	Indirect Impact	Species
No	No	Actitis hypoleucos
No	No	Apus pacificus
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Gallinago hardwickii
Yes		Hirundapus caudacutus
No	No	Motacilla flava
No	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
No	No	Rhipidura rufifrons

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The Proposed Action would involve the direct disturbance of potential habitat for the following species, based on the maximum parameters assessment (refer to Section 6.3.4 of **Attachment 3 - Part 4**):

- Direct disturbance of up to approximately 37.1 ha of potential habitat for the white-throated needletail (*Hirundapus caudacutus*).

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

The white-throated needletail has not been recorded within the Referral Area, however, it has previously been recorded within the UCC area, with one record approximately 3 km east of Area 4 and three records approximately 3 km to the south and south-east of Area 2 (BioNet Atlas, sighting dates 2016-2018). Up to approximately 37.1 ha of potential habitat for the species would be directly disturbed as a result of the Proposed Action for the maximum parameters assessment. The Referral Area is not considered to support an important population (assessed under the vulnerable species and migratory species criteria) of the white-throated needletail. The Proposed Action is unlikely to result in a significant impact on an important population of white-throated needletail.

A detailed assessment of the impact of the Proposed Action on this species is provided in 6.3.4 of **Attachment 3 - Part 4**.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

A detailed assessment of the impact of the Proposed Action on migratory species is provided in Section 6.3.4 of **Attachment 3 - Part 4**. The Proposed Action is not considered a controlled action due to predicted impacts on migratory species. The Referral Area is not considered to support an *important population* of the white-throated needletail. The Proposed Action is unlikely to result in a significant impact on an *important population* of white-throated needletail.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Not applicable.

UCMPL has sought to firstly avoid and then minimise potential impacts on the ecological values of the Referral Area throughout the project planning process. Avoidance and minimisation strategies would continue to be applied throughout the detailed design phase and a biodiversity due diligence exercise would be conducted to ensure that any biodiversity impacts associated with the final surface infrastructure locations would be the same or less than those assessed within the maximum parameters assessment (refer to Section 1 of **Attachment 3 - Part 1** for further detail).

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Not applicable.

All direct impacts associated with the final surface infrastructure locations would be offset in accordance with the requirements of the NSW Biodiversity Assessment Method. Further details are provided in Section 1 of **Attachment 3 - Part 1**.

4.1.6 Nuclear**4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? ***

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not a nuclear action.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Referral Area is over 200 km from the marine environment and will not impact any Commonwealth Marine Areas.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Referral Area is over 1,000 km from the Great Barrier Reef and will not impact the reef.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

Yes

4.1.9.2 Briefly describe why your action has a direct and/or indirect impact on this protected matter. *

Groundwater

Historical coal mining in the area has resulted in the depressurisation of hard rock groundwater systems and corresponding effects on the local hydrogeological regime. The drawdown impact of mining within the Referral Area is generally within the footprint of drawdown for the approved operations as areas surrounding the UCC have already been or will be impacted to a degree by the approved mining.

Predicted impacts on groundwater resources are summarised below with detail provided in **Attachment 4**.

Predicted changes to hydrological characteristics:

- Small to imperceptible reduction to baseflow for the Talbragar River (representing approximately 0.06% of total baseflow).
- No additional significant impacts to flow timing, flow duration, frequency of water flows, recharge rates, aquifer pressure, groundwater table levels, inter-aquifer connectivity, large scale subsidence, other uses, State water resource plans or cumulative impacts are predicted as a result of the Proposed Action.

Predicted changes to groundwater quality:

- As there are no open cut voids associated with Proposed Action there will be no evaporative concentration of salts in groundwaters and therefore there is no mechanism for significant changes to groundwater salinity due to mining.

Groundwater Dependent Ecosystems (GDEs)

No high priority GDEs have been identified in Water Sharing Plans (WSPs) covering the UCC. Riparian vegetation is present; however, these areas will not be impacted by the Proposed Action. The only creek system potentially impacted by the Proposed Action is Mona Creek and riparian vegetation associated with this creek has largely been cleared for agricultural purposes in the areas where longwall panels are proposed.

Three local perched recharge springs (including the GDE feature known as The Drip) located approximately 6 to 10 km north and east of UCC have been assessed, however no impacts as a result of the Proposed Action are predicted as all are disconnected from the regional groundwater.

Surface Water

The Proposed Action would not result in any significant changes to surface water catchments. Predicted impacts on surface water resources are summarised below with detail provided in **Attachment 5**:

- The Proposed Action would have negligible impacts on flow regimes (including flood flow velocities, depths, and extents), remnant ponding, and associated potential impacts on downstream landholders and watercourse stability in Mona Creek and the Talbragar River.
- Predicted baseflow impacts would be negligible, and generally consistent with the existing approved mining operations. This is due to the ephemeral nature of Mona Creek and the predicted subsidence cracking.
- With negligible impacts on baseflows associated with the Proposed Action, it is considered that any influence on water quality associated with changes in flows in the Talbragar River (based on historical data analysis) is not predicted to occur as a result of the Proposed Action.
- The Proposed Action is not expected to have an impact on river/floodplain connectivity as no underground mining is proposed in floodplain areas.
- There would be negligible impact on surface water users and all water take associated with the Proposed Action would be licensed in accordance with the NSW *Water Management Act, 2000* and continue to comply with relevant WSPs.

4.1.9.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.9.6 Describe why you do not consider this to be a Significant Impact. *

A detailed assessment of the significance of impacts on groundwater and surface water resources is provided in Attachment B2 of **Attachment 4** and Table 1 in **Attachment 5**.

4.1.9.7 Do you think your proposed action is a controlled action? *

No

4.1.9.9 Please elaborate why you do not think your proposed action is a controlled action. *

A detailed assessment of the significance of impacts on groundwater and surface water resources is provided in Attachment B2 of **Attachment 4** and Table 1 in **Attachment 5**.

As detailed within **Attachment 4** which assesses impacts on groundwater, the incremental changes predicted to private bores (i.e. less than 2 metres) are not considered significant. The water quality of these bores would not be diminished, as the Triassic sandstone aquifer is recharged by rainfall, not from underlying Permian units. As such, the Proposed Action would not significantly reduce the availability of groundwater in the Triassic units or the water quality for third party users beyond what is already approved. Baseflow losses are expected to occur due to the Proposed Action, however these are predicted to be very small and can be accounted for with water access licences held by UCMPL. No significant impacts to the Goulburn and Talbragar River systems (or associated tributaries) are anticipated in terms of domestic, agricultural or recreational use. The feature known as The Drip would not be impacted as a result of the Proposed Action. The Proposed Action is not considered a controlled action due to predicted impacts on groundwater.

As detailed within **Attachment 5** which assesses impacts on surface waters, the outcomes of environmental studies undertaken to inform the conceptual design for the Proposed Action, and their integration with the approved operations, minimise the potential for impacts on surface water resources. Impacts would be managed within the regime established by NSW water and pollution control legislation, which provides for sustainable water take from water sources, management of water quality by imposition of discharge quality criteria and management of salt loads within sustainable targets by managing water discharges to the environment. The UCMPL water management system was designed to meet legislative requirements and relevant guidelines (e.g. guidelines for treatment of runoff from disturbed areas). These factors reduce the potential for significant impacts on existing surface water resources. The Proposed Action is not considered a controlled action due to predicted impacts on surface waters.

4.1.9.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The Proposed Action aims to provide an appropriate balance between accessing economic coal reserves whilst avoiding and minimising potential environmental and community impacts. UCMPL has sought to firstly avoid and then minimise potential impacts on the water resource values of the Referral Area throughout the project planning process.

Water management at the UCC is undertaken in accordance with the UCC Water Management Plan (WMP) which details the approach to groundwater and surface water management at the UCC. The scope of the WMP includes all activities associated with the management of water at UCC and includes:

- a Site Water Balance
- Goulburn River Diversion Remediation Plan
- Erosion and Sediment Control Plan
- Surface Water Monitoring Program
- Groundwater Monitoring Program
- Surface and Groundwater Response Plan.

The existing WMP will be updated specifically for the Proposed Action and the updated WMP applied to the Proposed Action, including the specific mitigation measures identified in the detailed environmental assessment undertaken for the Proposed Action.

4.1.9.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Not applicable.

All water take associated with the Proposed Action would be licensed in accordance with the NSW *Water Management Act, 2000* and continue to comply with relevant WSPs.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There is no Commonwealth land located within or in the vicinity of the Referral Area.

4.1.11 Commonwealth heritage places overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action will have no impacts on Commonwealth heritage places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth heritage places overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The main alternative to the Proposed Action is to not undertake the operations as proposed which would effectively sterilise the coal resources that would be accessed through the Proposed Action. As the coal is extracted via longwall mining method, the seams must be extracted in sequence and in parallel with the same seams located in the adjacent approved mining area as it is progressed. Any separate future operations would be highly unlikely to be considered commercially viable as the benefits of being able to continue mining within an approved mining area and utilise existing infrastructure may not be available if the Proposed Action does not proceed. The extraction of this

coal now, during existing mining operations and utilising mostly existing infrastructure, is substantially more efficient and would result in reduced environmental impacts compared to establishing a new "greenfield" mine elsewhere, or if the existing operations were closed and then had to be reopened to allow recovery of this resource.

As part of the mine planning process for the Proposed Action a range of mine plan layouts were considered. The layouts considered the potential for significant environmental impact, and additional environmental studies were undertaken in the area to guide this process. The approved mine plan defined the start points for the proposed mine plan, and the nature of the coal resources and other mine planning and geological constraints were considered. The proposed layout is considered to be the optimal layout for efficient recovery of the coal resources and avoidance of environmental impacts.

Potential alternative configurations for proposed surface infrastructure have been addressed through the maximum parameters assessment. While UCMPL has provided conceptual infrastructure layouts for assessment, the final location of infrastructure is subject to further exploration and detailed mine planning. To retain flexibility in the location of surface infrastructure proposed, a maximum parameters assessment has been completed to accommodate the worst-case potential impacts for future infrastructure configuration options. This approach allows for the full extent of potential biodiversity impacts that may occur as a result of the Proposed Action to be assessed, noting that these impacts would be refined, minimised and offset as required throughout the life of the operation. Avoidance of impacts to MNES will be a key consideration in the detailed design process, and a biodiversity due diligence exercise would be conducted to ensure that any biodiversity impacts associated with the final actual infrastructure locations would be the same or less than those assessed within the maximum parameters assessment.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

#1.	Attachment 1	Document	Figures
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1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

#1.	Attachment 2	Document	Glencore Environment Standard
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2.2.5 Tenure of the action area relevant to the project area

#1.	Attachment 1	Document	Figures
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3.1.3 Natural features, important or unique values that applies to the project area

#1.	Attachment 1	Document	Figures
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3.1.4 Gradient relevant to the project area

#1.	Attachment 1	Document	Figures
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3.2.1 Flora and fauna within the affected area

#1.	Attachment 3	Document	Biodiversity Supporting Information
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3.2.2 Vegetation within the project area

#1.	Attachment 3	Document	Biodiversity Supporting Information
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3.4.1 Hydrology characteristics that apply to the project area

#1.	Attachment 4	Document	Groundwater Impact Assessment
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#2.	Attachment 5	Document	Surface Water input
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5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850
Representative's name	Kirsty Davies
Representative's job title	Principal Environmental Consultant
Phone	0409372344
Email	kdavies@umwelt.com.au
Address	

- Check this box to indicate you have read the referral form. *
 - I would like to receive notifications and track the referral progress through the EPBC portal. *
 - By checking this box, I, **Kirsty Davies of Ulan Coal Mines Pty Limited**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *
 - I would like to receive notifications and track the referral progress through the EPBC portal. *
-

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN	80000189248
Organisation name	Ulan Coal Mines Pty Limited
Organisation address	4505 Ulan Road, Ulan NSW 2850
Representative's name	Peter Ostermann
Representative's job title	General Manager
Phone	0411204903
Email	peter.ostermann@glencore.com.au
Address	4505 Ulan Road, Ulan NSW 2850

- Check this box to indicate you have read the referral form. *
- I would like to receive notifications and track the referral progress through the EPBC portal. *

I, **Peter Ostermann of Ulan Coal Mines Pty Limited**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

Check this box to indicate you have read the referral form. *

I would like to receive notifications and track the referral progress through the EPBC portal. *

I, **Peter Ostermann of Ulan Coal Mines Pty Limited**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

I would like to receive notifications and track the referral progress through the EPBC portal. *