Resources Regulator
Department of Regional NSW

APO0001700

Approval to undertake assessable prospecting operations

Maules Creek

16 May 2024

Application summary

Detail	Application
Reference	APO0001700
Date of approval	16 May 2024
Title	CL 375 (1973)
Contact	[redacted]
Project name	Maules Creek
Project location	Maules Creek mine
Activity type	Non-complying exploration activity

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Project

Project details

Assessable prospecting activity APO0001700 relates to the Maules Creek at Maules Creek mine.

The project has the following approved characteristics.

Detail	Proposal
Activity description	Whitehaven Coal Ltd (Whitehaven) is seeking approval to undertake an exploration program at the Maules Creek Coal Mine, located in the Gunnedah Basin of New South Wales (NSW), approximately 17 kilometres (km) north-east of Boggabri (refer Plan 1). The exploration program would occur within both Mining Lease (ML) 1719 and Coal Lease (CL) 375, both of which are held by Aston Coal 2 Pty Ltd (a wholly owned subsidiary of Whitehaven), ICRA MC Pty Ltd and J Power Australia Pty Ltd. The separation of the two titles is stratified, with ML 1719 being applicable to surface exploration activities, and having a depth restriction to 20 metres (m). CL 375 underlies ML 1719 and has a depth restriction of 20 m to 900 m. The exploration program involves open hole drilling, in-situ lithological logging, geophysical logging, coal sampling, laboratory testing and reporting (the Activities) at 10 sites at a depth of ~76 m – 148 m (refer Plan 2). The Activities are proposed to commence in June 2024 and take place over approximately 2 months. A site selection process has been conducted to locate sites within areas of lower potential impact. Machineries such as four-wheel drive, truck-mounted drill rigs, table top rod carriers and site caravan will be used for the Activities. Rehabilitation of disturbed land as a result of the Activities would be conducted in accordance with the requirements and conditions within ML 1719/CL 375, Maules Creek Coal Mine Rehabilitation Management Plan (attached in this application) and as detailed in the rehabilitation objectives and rehabilitation completion criteria prepared for the Activities. All sites will be immediately rehabilitated. Due to the small area of disturbance, risks associated with successful rehabilitation to pre disturbance condition is considered low.

Detail	Proposal
Earthworks or vegetation clearing	There will be no vegetation clearing - CL375 commences at 20m depth of cover
Access to exploration activities	Access for the Activities would require the establishment of temporary access tracks. Eight exploration sites would require temporary access tracks which would involve light grading and driving on paddocks to the desired exploration site location. Any new temporary access tracks would be selected to link drill sites with existing access tracks via the shortest route that minimises environmental impacts. Any temporary access tracks would be slashed in and personnel would not be able to deviate off these areas unless internal approval is provided. All temporary access tracks would have a maximum width of 4 m. It is noted that access exploration sites 2312_01 and 2312_02 would occur via established access tracks
Ancillary activities	Water required for the drilling activities would be sourced from an on site in-pit dam and trucked to the location of the Activities via mine site water cart, as required. Fuel would also be trucked to the location of the Activities as required. No new roads (apart from access tracks), power lines or permanent pipelines would be required. Where required, Whitehaven would implement bushfire hazard reduction measures.
Anticipated start date	30 June 2024
Expected duration (weeks)	approximately 8 weeks
Expected rehabilitation completion date	30 September 2024
Proposed hours of operation	Other 6am to 6pm on a 9 days on and 5 days off roster
On-site employee or contractor numbers	5

State conservation areas

The Maules Creek has not proposed prospecting in a State Conservation Area.

Site description and existing environment

The project comprises the following existing land uses:

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. This land use is consistent with the surrounding area, which is largely an agricultural landscape, comprising primarily grazing and cropping activities dominating the area to the north, south, east and west of Leard State Forest. Additionally, the active open cut mining operations of Boggabri Coal Mine and Tarrawonga Coal Mine are located south-east of the Activities, within the Leard State Forest. Soil disturbance would be limited to the immediate vicinity of the drill hole and may be associated with the use of new temporary access tracks if required. The Activities are not anticipated to change the existing land and soil capability class or soil fertility within the areas associated with the Activities. The impact of the Activities on the surrounding environment would be negligible due to the small disturbance area (i.e. ~1.3 ha), the short-term, progressive and mobile nature of the Activities, and the regeneration and/or rehabilitation of the disturbance areas to the pre-disturbance land use.

The project is located near the following sensitive receptors:

The nearest sensitive receivers include residential dwellings located ~3.6 kilometres (km) from drill site 2312_09. As described above, the land use surrounding the area associated with the Activities comprises agricultural, forestry and coal mining industries. The area associated with the Activities has primarily been subject to historical

agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Two active, open-cut coal mines are located to the south-east of the Activities within the Leard State Forest – Tarrawonga Coal Mine and Boggabri Coal Mine.
The Activities would be undertaken on a working roster of nine days on, five days off. Works would be undertaken between the hours of 6:00 am to 6:00 pm for nine days straight. The Activities would be undertaken in accordance with the acceptable noise criteria prescribed in the Exploration Code of Practice: Environmental Management, being the RBL +10 dB(A) / 15 minutes at any occupied residence. Any work outside of standard hours as prescribed in the Exploration Code of Practice: Environmental Management would occur where acceptable noise criteria can be met, being the RBL +5 dB(A) / 15 minutes at any residence or sensitive receiver. Noise management would follow the Exploration Code of Practice: Environmental Management.

The project is located with the following soil types and properties:

NSW regional soil mapping (DPE, 2024) indicates the area associated with the Activities comprises sodosols. It is noted that NSW regional soil mapping also indicates the presence of vertosols and rudosols proximal to the area associated with the Activities (Plan 7). The Activities are not located on land mapped as biophysical strategic agricultural land (Plan 8). NSW Regional Land and Soil Capability mapping (Department of Planning and Environment [DPE], 2024) indicates that the Activities would be located on land classified as Class 5, which is defined as having severe limitations on land use, respectively (Plan 9). NSW regional soil mapping can additionally provide an estimation of the inherent fertility of soils in NSW. NSW regional soil mapping (DPE, 2024) indicates that most of the area associated with the Activities is classified as having a moderately low fertility profile, which indicates an environment more suitable for grazing purposes than cropping purposes (DPE, 2024). There are no acid sulfate soils mapped in proximity to the Activities.

The project has the following existing surface water sources in the area that are likely to be affected by the activity:

The surface water source within which the Activities would occur relates to the Maules Creek Water Source under the Water Sharing Plan for the Namoi and Peel Unregulated Rivers Water Sources 2012. The Activities would be located proximal to Back Creek, an ephemeral watercourse that runs through the area associated with the proposed Activities (WRM, 2021). Back Creek is a tributary of Maules Creek, which in turn is a tributary of the Namoi River. The Namoi River to Boggabri has a catchment area of 22,600 km2, and flow in the river is regulated by the Keepit Dam, located approximately 56 km west of Tamworth. A substantial number of unnamed tributaries flow into Back Creek (WRM, 2021). The Activities do not propose to utilise surface water from the surface water sources listed above. Water for drilling (where required) would be sourced from an on-site in-pit dam. Above surface tanks would be utilised for the drilling, i.e. no in-ground sumps would be required. Surface water management would follow the Exploration Code of Practice: Environmental Management. Sediment controls would be installed as required.

The project has the following existing groundwater sources that occur in the area that are likely to be affected by the activity:

The groundwater systems in the vicinity of the Activities relate to the Gunnedah-Oxley Basin MDB Groundwater Source under NSW Murray Darling Basin Porous Rock Groundwater Sources 2020. The Activities would require a maximum of approximately 0.027 megalitres (ML) of water per site, which would be sourced from an on-site in-pit dam. Water would be transferred and recycled between sites until new water is required. A maximum of approximately 0.27 ML of water resources would be required for the Activities. Incidental groundwater produced for the duration of the Activities would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities will be managed and disposed of in accordance with the Exploration Codes of Practice: Rehabilitation and by a licenced waste removal contractor. Drillholes would be sealed.

The project is in an area with the following topography, vegetation cover type, density and condition:

The area associated with the Activities is predominantly flat, with gentle slopes from 260 m to 306 m above sea level (Ecoplanning, 2024). The area associated with the Activities has been subject to historical agricultural use and is dominated by open grasslands of varying conditions and quality with some fragmented patches of

timbered natural vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. Photographs of typical existing conditions at each of the sites associated with the Activities are provided as an attachment to this application.

The project will impact the following matters of national environmental significance:

Potentially relevant Matters on National Environmental Significance (MNES) were identified in a search area covering the extent of the Activities (and a 10km buffer) using the Protected Matters Search Tool (PMST) (attached to this application). The PMST indicated that the Activities may relate to three Wetlands of International Importance, which are located greater than 900km (and up to 1,200km) from the Activities. Eight Listed Threatened Ecological Communities were identified as likely to occur within the 10km buffer area encompassing the Activities: • Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions. • Grey Box (Eucalyptus macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia. • Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and Queensland. • Poplar Box Grassy Woodland on Alluvial Plains. • Weeping Myall Woodlands. • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. • Mount Kaputar land snail and slug community. • New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands. A total of 43 Listed Threatened Species were identified as being related to the 10km buffer area, including 18 birds, 2 fish, 6 mammals, 4 reptiles, and 13 flora species. In addition, 9 Listed Migratory Species were identified as being related to the 10km buffer area. The MNES are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process: Please refer to attached document for additional information - APO 1700 1701 application details

The project is in an area with the following threatened species, ecological communities (or habitats):

Threatened species and ecological communities recorded in the area associated with the Activities are provided in Plan 10 attached to this application. The Activities are unlikely to have a significant impact on threatened flora and fauna species due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The Activities would remove approximately 0.09 ha of Plant Community Type (PCT) 101 in regenerating condition and 0.28 ha of PCT 101 in derived native grassland (DNG) condition, and 0.94 ha of PCT 592 in DNG condition. PCT 101 in the study is considered to be associated with the following threatened ecological community (TEC): Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions, listed as Endangered under the BC Act. The proposal would remove 0.37 ha of this TEC. An impact assessment in accordance with Section 7.3 of the Biodiversity Conservation Act (i.e. Test of Significance) has been undertaken (Ecoplanning, 2024). Ecoplanning (2024) found that subject to mitigation measures outlined below and in the Review of Environmental Factors prepared for the Activities, there will be no significant impacts to this TEC (Ecoplanning, 2024). The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. Please refer to attached document for additional information - APO 1700 1701 application details

The project is in an area with the following historic cultural or natural heritage items:

Historic cultural or natural heritage items listed on the World Heritage List, Commonwealth Heritage List, National Heritage Register, or State Heritage Register are not located in proximity to the Activities.

The project is in an area with the following critical habitat/area of outstanding biodiversity value:

No declared areas of outstanding biodiversity value under the Biodiversity Conservation Act 2016 are mapped within the area associated with the Activities. Similarly, no areas declared as critical habitat under the Fisheries Management Act 1994 are mapped within the area associated with the Activities

The project is located in an area with the following location, type and distance to the nearest Aboriginal heritage sites:

An AHIMS database search was conducted in the Aboriginal Cultural Heritage Due Diligence prepared for the Activities (Whincop Archaeology, 2024). Whincop Archaeology identified 99 AHIMS sites in the vicinity of the Activities, 5 of which were located in the immediate area associated with or surrounding the Activities (Plan 4). The following AHIMS Sites are located within the area associated with or surrounding the Activities: • 20-4-1056 • 20-4-1097 • 20-4-1096 • 20-4-0464 • 20-4-0478 The AHIMS database search is provided as an attachment to this application. The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. Two of the proposed drill pads (2312_05 and 2312_09) are located within areas with higher potential to contain Aboriginal objects (i.e. within 200 m of a named water course, 100 m of an unnamed drainage line or 50 m of a known Aboriginal Heritage site) (Whincop Archaeology, 2024). Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones. As such, the exploration sites would be placed to avoid the five Aboriginal sites and/or objects listed above, to ensure that no impacts to Aboriginal cultural heritage are incurred by the Activities

Exploration activities

The following exploration activities have been approved.

Drill holes

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Depth (m)	Block number	Unit letters
2312_07 EDH0015186	RC drill hole			1.59		127	na	na
2312_09 EDH0015188	RC drill hole			1		81	na	na
2312_03 EDH0015182	RC drill hole			0.95		76	na	na
2312_05 EDH0015184	RC drill hole			1		80	na	na
2312_02 EDH0015181	RC drill hole			0.71		57	na	na
2312_01 EDH0015180	RC drill hole			0.76		61	na	na
2312_04 EDH0015183	RC drill hole			1.25		100	na	na
2312_06	RC drill hole			1.28		103	na	na

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Depth (m)	Block number	Unit letters
EDH0015185								
2312_08 EDH0015187	RC drill hole			1.24		99	na	na
2312_10 EDH0015189	RC drill hole			1.28		103	na	na

Other exploration activities

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Block number	Unit letters

Impact management

The project includes the following measures to manage surface water impacts:

The surface water sources relate to the Maules Creek Water Source under the Water Sharing Plan for the Namoi and Peel Unregulated Rivers Water Sources 2012. The Activities would not utilise water from the surface water sources listed above, and would be designed to minimise potential impacts as follows: • Where required, water for drilling would be sourced from an on-site in-pit dam and trucked to each drill site via mine site water cart. • Above surface tanks would be utilised for the storage of water (i.e. no in-ground sumps are required). • Sediment controls installed as required. • Recirculated water and spoil managed and disposed of as per Exploration Codes of Practice: Rehabilitation by a licenced waste removal contractor. • Purposeful avoidance of any drainage lines. • Appropriate water management practices implemented as per Exploration Code of Practice: Environmental Management. Where required, water for drilling would be sourced from an on-site in-pit dam and trucked to each drill site via mine site water cart.

The project includes the following measures to manage groundwater impacts:

The groundwater systems in the vicinity of the Activities relate to the Gunnedah-Oxley Basin Murray Darling Basin Groundwater Source under NSW Murray Darling Basin Porous Rock Groundwater Sources 2020. No groundwater production is expected as part of the proposed exploration activities. If boreholes are found to be producing water, drilling operations will be suspended while a management strategy is implemented in accordance with the Exploration Code of Practice: Produced Water Management, Storage and Transfer. Incidental groundwater produced for the duration of the Activities would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities would be managed and disposed of in accordance with the Exploration Codes of Practice: Rehabilitation and by a licenced waste removal contractor. Drillholes would be sealed.

The project includes the following measures to manage waste and excess materials:

Recirculated water and spoil from drilling activities will be managed and disposed of in accordance with the Exploration Codes of Practice: Rehabilitation and by a licenced waste removal contractor. General domestic waste products and packaging generated during the Activities would be collected and appropriately stored or removed from the area associated with the Activities at the end of each shift. Due to the lack of facilities in the field, mobile toilets will be provided. These would be located within the drill site areas and removed at the end of the Activities. Waste and excess material would be managed in accordance with the Exploration Code of Practice: Environmental Management.

The project includes the following measures regarding the handling, use, storage and transportation of any chemicals and hydrocarbons:

Various chemicals and hydrocarbons may be used for the duration of the Activities to fuel machinery. Fuel would be contained within fuel cells for use in filling up onsite equipment (e.g. drill rig). Adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities. A list of any chemicals and hydrocarbons, in addition to a material safety data sheet would be maintained by Whitehaven and subcontractors.

The project includes the following measures of how noise impacts will be managed to minimise impacts on nearby sensitive receptors:

The Activities would be undertaken on a working roster of nine days on, five days off. Works would be undertaken between the hours of 6:00 am to 6:00 pm for nine days straight. If any work is to be performed outside of standard hours as prescribed in the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021), it would occur where acceptable noise criteria can be met, being the Rating Background Level (RBL) +5 dB(A) / 15 minutes at any residence or sensitive receiver. Noise management would follow the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021)

The project includes the following measures to manage air quality impacts:

Drilling would utilise water injection methods to mitigate dust production. Speed limits when driving on unsealed roads and unsealed access tracks would be reduced where required, for example on windy and dry days. This program would not involve venting or flaring. Air quality management would follow the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021).

Sensitivity of the land to be disturbed

Question	Yes/no
Conservation areas	
Land reserved under the *National Parks and Wildlife Act 1974*?	No
Land subject to a 'conservation agreement' under the *National Parks and Wildlife Act 1974* and/or *the Biodiversity Conservation Act 2016*?	No
Land subject to a 'conservation agreement' under the *National Parks and Wildlife Act 1974* and/or *the Biodiversity Conservation Act 2016*?	No
Land declared as an aquatic reserve under the *Marine Estate Management Act 2014*?	No
Land declared as a marine park under the *Marine Estate Management Act 2014*?	No
Land within State Forests set aside under the *Forestry Act 2012* for conservation values, including Flora Reserves or Special Management (and other) Zones?	No
Land reserved or dedicated under the *Crown Lands Act 1989/Crown Lands Management Act 2016* (as applicable) for the preservation of flora, fauna, geological formations or other environmental protection purposes?	No
Land identified as wilderness or declared a wilderness area under the *Wilderness Act 1987*?	No
Land subject to a Biobanking agreement (established under the now repealed Threatened Species Conservation Act 1995) or a Biodiversity Stewardship agreement established under the Biodiversity Conservation Act 2016?	No
Land subject to a Wildlife Refuge agreement under the *Biodiversity Conservation Act 2016*?	No
Land subject to existing conservation agreements on private land under repealed legislation that continue to have effect (e.g., trust agreements under Native Conservation Trust Act 2001, Property vegetation plans under Native Vegetation Act 2003, Registered property agreements under Native Vegetation Conservation Act 1997)?	No
Drinking water catchment protection areas	

Question	Yes/no
Land declared to be a 'controlled area' or a 'special area' under the *Water NSW Act 2014*?	No
Land declared to be a 'special area' under the *Water Management Act 2000* or *Hunter Water Act 1991*?	No
Sensitive areas	
Land declared as area of outstanding biodiversity value under the *Biodiversity Conservation Act 2016* or critical habitat under Part 7A of the *Fisheries Management Act 1994*?	No
Wetlands of international significance listed under the Ramsar Wetlands Convention?	No
Land designated as a nationally important wetland in the Directory of Important Wetlands?	No
Coastal wetlands mapped under State Environmental Planning Policy (Resilience and Hazards) 2021?	No
Littoral rainforests mapped under State Environmental Planning Policy (Resilience and Hazards) 2021?	No
Coastal zone as defined in the *Coastal Management Act 2016*?	No
Land identified in an environmental planning instrument as being of biodiversity/conservation significance or zoned for environmental conservation, protection and/or management?	No
Waterfront land defined under the *Water Management Act 2000*?	No
Land with a slope greater than 18 degrees measured from the horizontal?	No
Land with potential for soil and water contamination	
Land mapped as Actual Acid Sulfate Soils (AASS) or Potential Acid Sulfate Soils (PASS) on the Acid Sulfate Soils Risk Maps for NSW?	No
Aboriginal protection areas	
Land identified in an environmental planning instrument (such as a State Environmental Planning Policy or Local Environment Plan) as being of Aboriginal cultural significance?	No
Land declared as an Aboriginal place under the *National Parks and Wildlife Act 1974*?	No
Historic or natural heritage protection areas	
Land listed on the World Heritage List, National Heritage List or Commonwealth Heritage List?	No
Land, places, buildings or structures listed on the NSW State Heritage Register?	No
Land identified in an environmental planning instrument (such as a State Environmental Planning Policy or Local Environment Plan) as being of heritage significance or a heritage conservation area?	No
Critical industry clusters	
Land identified as Critical Industry Cluster under State Environmental Planning Policy (Resources and Energy) 2021?	No
Community land	
Public land classified as community land under the *Local Government Act 1993*?	No
Other areas	
Land identified on the authority (e.g., exploration licence or assessment lease) as environmentally sensitive land?	No
Ecology	
Will the activity have a significant effect on threatened species or their habitats?	No
Will the activity have a significant effect on threatened ecological communities or their habitats?	No
Will vegetation be removed as part of access track upgrade works in waterfront land?	No
Aboriginal and European heritage	
Will the activity harm Aboriginal objects as defined under the *National Parks and Wildlife Act 1974*?	No
Will the activity damage any listed heritage items?	No

Attachment 1 – Statement of commitments

Item	Commitment
Activity type	Exploration activity comprising: • 0 diamond drill holes • 10 reverse circulation drill holes • 0 other drill holes • 0 cubic metres of bulk sampling • 0 square metres of new access tracks • 0 lines of seismic testing • 0 square metres of air core drilling • 0 square metres of other drilling
Activity location	Maules Creek mine, within CL 375 (1973).
Activity scope (including any ancillary activities)	Whitehaven Coal Ltd (Whitehaven) is seeking approval to undertake an exploration program at the Maules Creek Coal Mine, located in the Gunnedah Basin of New South Wales (NSW), approximately 17 kilometres (km) north-east of Boggabri (refer Plan 1). The exploration program would occur within both Mining Lease (ML) 1719 and Coal Lease (CL) 375, both of which are held by Aston Coal 2 Pty Ltd (a wholly owned subsidiary of Whitehaven), ICRA MC Pty Ltd and J Power Australia Pty Ltd. The separation of the two titles is stratified, with ML 1719 being applicable to surface exploration activities, and having a depth restriction to 20 metres (m). CL 375 underlies ML 1719 and has a depth restriction of 20 m to 900 m. The exploration program involves open hole drilling, in-situ lithological logging, geophysical logging, coal sampling, laboratory testing and reporting (the Activities) at 10 sites at a depth of ~76 m – 148 m (refer Plan 2). The Activities are proposed to commence in June 2024 and take place over approximately 2 months. A site selection process has been conducted to locate sites within areas of lower potential impact. Machineries such as four-wheel drive, truck-mounted drill rigs, table top rod carriers and site caravan will be used for the Activities. Rehabilitation of disturbed land as a result of the Activities would be conducted in accordance with the requirements and conditions within ML 1719/CL 375, Maules Creek Coal Mine Rehabilitation Management Plan (attached in this application) and as detailed in the rehabilitation objectives and rehabilitation completion criteria prepared for the Activities. All sites will be immediately rehabilitated. Due to the small area of disturbance, risks associated with successful rehabilitation to pre disturbance condition is considered low. Water required for the drilling activities would be sourced from an on site in-pit dam and trucked to the location of the Activities via mine site water cart, as required. Fuel would also be trucked to the location of the Activities as required. No new roads (apart from access tracks), power lines or permanent pipelines would be required. Where required, Whitehaven would implement bushfire hazard reduction measures.
Hours of operation	Other 6am to 6pm on a 9 days on and 5 days off roster
Expected duration (weeks)	approximately 8 weeks
Anticipated start date	30 June 2024
Expected rehabilitation completion date	Estimated 30 September 2024
Maximum area of disturbance	square metres
Agricultural impact	The activity will be undertaken in accordance with Not applicable.

Item	Commitment
Air quality	Drilling would utilise water injection methods to mitigate dust production. Speed limits when driving on unsealed roads and unsealed access tracks would be reduced where required, for example on windy and dry days. This program would not involve venting or flaring. Air quality management would follow the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021).
Protection of water sources	The surface water sources relate to the Maules Creek Water Source under the Water Sharing Plan for the Namoi and Peel Unregulated Rivers Water Sources 2012. The Activities would not utilise water from the surface water sources listed above, and would be designed to minimise potential impacts as follows: • Where required, water for drilling would be sourced from an on-site in-pit dam and trucked to each drill site via mine site water cart. • Above surface tanks would be utilised for the storage of water (i.e. no in-ground sumps are required). • Sediment controls installed as required. • Recirculated water and spoil managed and disposed of as per Exploration Codes of Practice: Rehabilitation by a licenced waste removal contractor. • Purposeful avoidance of any drainage lines. • Appropriate water management practices implemented as per Exploration Code of Practice: Environmental Management. Where required, water for drilling would be sourced from an on-site in-pit dam and trucked to each drill site via mine site water cart. The groundwater systems in the vicinity of the Activities relate to the Gunnedah-Oxley Basin Murray Darling Basin Groundwater Source under NSW Murray Darling Basin Porous Rock Groundwater Sources 2020. No groundwater production is expected as part of the proposed exploration activities. If boreholes are found to be producing water, drilling operations will be suspended while a management strategy is implemented in accordance with the Exploration Code of Practice: Produced Water Management, Storage and Transfer. Incidental groundwater produced for the duration of the Activities would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities would be managed and disposed of in accordance with the Exploration Codes of Practice: Rehabilitation and by a licenced waste removal contractor. Drillholes would be sealed.
Soil and land stability	• Vegetation clearance and surface disturbance would be minimised as much as practicable. • Access for the Activities would occur via established access tracks where possible. Exploration sites where no tracks exist would require temporary access tracks which would involve slashing, light grading or driving on paddocks to the desired exploration site location. Any new access tracks would be selected to link drill sites with existing access tracks via the shortest route that minimises environmental impacts. Any access tracks will be slashed in, and personnel will not be able to deviate off these areas unless internal approval is provided. All access tracks would have a maximum width of 4 metres (m). • Appropriate erosion and sediment controls would be installed as required, consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) at each drill hole. The erosion and sediment controls would remain in place at all sites until the risk of erosion has been reduced to negligible levels through on site rehabilitation. • Above surface tanks would be utilised for drilling, i.e. no in-ground sumps would be required. • Fuel required for the Activities would be contained within compliant fuel cells for use in filling up on-site equipment (e.g. drill rig, compressor). • Adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities.

Item	Commitment
Noise and vibration	The Activities would be undertaken on a working roster of nine days on, five days off. Works would be undertaken between the hours of 6:00 am to 6:00 pm for nine days straight. If any work is to be performed outside of standard hours as prescribed in the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021), it would occur where acceptable noise criteria can be met, being the Rating Background Level (RBL) +5 dB(A) / 15 minutes at any residence or sensitive receiver. Noise management would follow the Exploration Code of Practice: Environmental Management (NSW Resources Regulator, 2021)
Coastal processes and hazards	No management controls and/or mitigation measures for impacts to coastal processes are proposed as this is not considered applicable to the Activities.
Hazardous substances or chemicals	Various chemicals and hydrocarbons may be used for the duration of the Activities to fuel machinery. Fuel would be contained within fuel cells for use in filling up onsite equipment (e.g. drill rig). Adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities. A list of any chemicals and hydrocarbons, in addition to a material safety data sheet would be maintained by Whitehaven and subcontractors.
Wastes and emissions	Recirculated water and spoil from drilling activities will be managed and disposed of in accordance with the Exploration Codes of Practice: Rehabilitation and by a licenced waste removal contractor. General domestic waste products and packaging generated during the Activities would be collected and appropriately stored or removed from the area associated with the Activities at the end of each shift. Due to the lack of facilities in the field, mobile toilets will be provided. These would be located within the drill site areas and removed at the end of the Activities. Waste and excess material would be managed in accordance with the Exploration Code of Practice: Environmental Management.
Vegetation	In addition to the above, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to vegetation include: • All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform. • Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site. • A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. • Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
Threatened fauna and flora species	As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

Item	Commitment
	• Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to threatened species include: • Avoidance of large native trees, including Koala feed tree species. • Avoidance of hollow-bearing trees, dead stags and hollow logs. • All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform. • Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site. • A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. • Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required. Should a threatened species be identified during the Activities, work in the surrounding area would stop immediately and an appropriate ecologist engaged for advice and handling. Whitehaven would facilitate and consult with the relevant authorities in line with the ecologist's recommendations.
Areas of outstanding biodiversity value/critical habitat	
Endangered ecological community or critically endangered ecological community	As described above, a site selection process has been conducted for the Activities to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. Previously cleared/disturbed areas would be utilised for the Activities instead of areas consisting of intact native vegetation. In addition, the following has been considered and would continue to be considered in the site selection process: • Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the

Item	Commitment
	branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to endangered ecological communities and critically endangered ecological communities include: • All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform. • Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site. • A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. • Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
Habitat of a threatened species or ecological community	As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process: • Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to the habitat of threatened species and ecological communities include: • Avoidance of large native trees, including Koala feed tree species. • Avoidance of hollow-bearing trees, dead stags and hollow logs. • All native vegetation will be protected during the entire extent of the works, e.g. temporary fencing, flagging and tree protection. No personnel or machinery are to enter the protected area. • If any fauna are identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, will be notified. Works will not continue until the animal has been rescued. Call WIRES on 1300 094 737.

Item	Commitment
	• During clearing works or construction works, if any native fauna are identified in the works area, works will stop immediately and a qualified Ecologist should be contacted. • Best practise bush regeneration techniques, including disposal of weeds to a licenced waste disposal facility. • All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform. • Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site. • A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. • Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
Key threatening processes	As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process: • Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to the habitat of threatened species and ecological communities include: • Before being used on-site, vehicles and machinery would be inspected and cleaned where required for weeds and seeds. Once mobilised for the Activities, the drill rig and associated support vehicles would remain within the bounds of ML 1719/CL 375 for the duration of the Activities, with movement of equipment being primarily between drill sites (i.e. the fleet used for the Activities would not require interstate movement). Vehicle movements to and from each site would be defined tracks, where possible. • Avoidance of large native trees, including Koala feed tree species. • Avoidance of hollow-bearing trees, dead stags and hollow logs. • All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.

Item	Commitment
	• Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site. • A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. • Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
Barriers to movement of fauna	As described above, access for the Activities would occur via established access tracks where possible. Exploration sites where no tracks exist would require temporary access tracks which would involve slashing, light grading or driving on paddocks to the desired exploration site location. Any new access tracks would be selected to link drill or soil investigation sites with existing access tracks via the shortest route that minimises environmental impacts and the potential for the Activities to endanger, displace or disturb fauna, or create a barrier to their movement. Any access tracks will be slashed in, and personnel will not be able to deviate off these areas unless internal approval is provided. A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
Ecological and biosecurity impacts	null null
Community resources	• Vehicle movements associated with the Activities would be largely limited to land owned by Whitehaven, and the access road from Therribri Road. • Up to 7 personnel would be on-site at any one time, which would not present any significant additional pressures on local temporary accommodation requirements or remove significant economic activity from the local community upon cessation of the Activities.
Natural resources	Natural resources are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process has included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process: • Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for

Item	Commitment
	evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. • For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line. Any incidental groundwater produced would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities would be managed and disposed of as per Exploration Code of Practice: Rehabilitation by a licenced waste removal contractor.
Social impacts	Given the limited workforce required to undertake the exploration activities and the Activities being proposed entirely on Whitehaven-owned land, no management controls or mitigation measures are proposed.
Economic impacts	Given no negative impacts on economic activities or economic stability are anticipated as a result of the Activities, no management controls or mitigation measures are proposed.
Heritage impacts	Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones and historical heritage sites. As such, the Activities are not likely to cause impacts on localities, places, landscapes, buildings or archaeological relics of heritage significance and accordingly, no management controls or mitigation measures are proposed.
Aesthetic impacts	No management controls or mitigation measures are proposed.
Aboriginal cultural heritage	Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones. As such, the exploration sites would be placed to avoid the five Aboriginal sites and/or objects listed above, to ensure that no impacts to Aboriginal cultural heritage are incurred by the Activities. Should an Aboriginal site and/or object be newly identified during the Activities, work in the surrounding area would stop immediately, with temporary fencing erected around the feature and an appropriate archaeologist engaged to investigate the feature. Should the archaeologist determine the feature to be an Aboriginal site and/or object, Whitehaven would facilitate and consult with the relevant authorities in line with the appropriate archaeologist's recommendations.
Land use impacts	As described above, soil disturbance would be limited to the immediate vicinity of the drill hole and may be associated with the use of new access tracks if required. Rehabilitation of disturbed land as a result of the Activities would be conducted in accordance with the requirements and conditions within ML 1719/CL 375 and as detailed in the in the rehabilitation objectives and rehabilitation completion criteria prepared for the Activities. Due to the small area of disturbance, risks associated with successful rehabilitation to pre disturbance condition is considered low.
Transportation impacts	Given the level of impact associated with transportation for the Activities is considered to be negligible, no management controls and/or mitigation measures are proposed.
Matters of national environmental significance	As described above, MNES are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process:

Item	Commitment
	• Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies. • For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line. MNES are unlikely to be impacted by the Activities provided the considerations above are implemented for the duration of the Activities.
Cumulative impacts	No management controls and/or mitigation measures are proposed as no cumulative environmental effects with other existing or likely future activities are anticipated.
Rehabilitation commitments	The activity will be undertaken in accordance with the rehabilitation objectives and targets provided for this project.
Risk assessments	The titleholder must monitor the risks associated with activities and, if the risk associated with an activity changes, implement revised environmental management controls.
Incident management	The NSW Resources Regulator will be notified of all incidents in accordance with the requirements of CL 375 (1973).
Reporting	Reporting to the NSW Resources Regulator and Mining, Exploration and Geoscience – Department of Regional NSW will be in accordance with the legislation and conditions of CL 375 (1973).
Codes of Practice	Maules Creek will be operated in accordance with: • Exploration Code of Practice: Environmental Management Exploration Code of Practice: Rehabilitation Exploration Code of Practice: Produced Water Management, Storage and Transfer
Other (as applicable)	1. No additional terms specified.

Attachment 2 – Definitions

To search for NSW legislation, visit www.legislation.nsw.gov.au. Commonwealth legislation can be found at www.legislation.gov.au.

Word	Definition
Aboriginal object	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Aboriginal place	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Acid Sulfate Soils	Sediments and soils containing iron sulfides which, when exposed to oxygen, generate sulfuric acid. Acid sulfate soils include actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS).
Activity	Any activity carried out in connection with exploration, including: • the use of land • means of accessing land • the carrying out of a work.
Activity approval	An approval to carry out assessable prospecting operations granted under the *Mining Act 1992* / *Petroleum (Onshore) Act 1991* – as relevant.
Actual Acid Sulfate Soils (AASS)	Sediments and soils containing highly acidic soil horizons or layers resulting from the aeration of sediments and soils that are rich in iron sulfides, primarily sulphide.
Applicant	In relation to an exploration activity, the person proposing to carry out the exploration activity.
Aquatic reserve	Has the same meaning as it has in the *Marine Estate Management Act 2014.*
Areas of Outstanding Biodiversity Value (AOBVs)	Has the same meaning as it has in the *Biodiversity Conservation Act 2016*. Note: Areas of declared critical habitat under the now repealed *Threatened Species Conservation Act 1995* have become Areas of Outstanding Biodiversity Value (AOBVs) under the *Biodiversity Conservation Act 2016*.
Assessable prospecting operation	Any prospecting operation that is not exempt development within the meaning of *State Environmental Planning Policy (Resources and Energy) 2021.*
Clearing of vegetation	Any one or more of the following: • cutting down, felling, thinning, lopping, logging or removing vegetation, or • killing, destroying, poisoning, ringbarking, uprooting or burning vegetation.
Complying exploration activities (CEA)	Exploration activities that are considered unlikely to significantly affect the environment as set out in *Exploration guideline: Application and assessment process for exploration activities*.
Critical habitat	Has the same meaning as it has in the *Fisheries Management Act 1994*. Areas of declared critical habitat under the now repealed *Threatened Species Conservation Act 1995* have become Areas of Outstanding Biodiversity Value (AOBVs) under the *Biodiversity Conservation Act 2016.*
Drill hole	A hole made by drilling or boring, but excludes: • sampling and coring using handheld equipment, • petroleum wells.
Drilling	The perforation of the earth's surface crust by mechanical means to form a hole, whether the hole caused by the perforation is vertical, inclined or horizontal, and

Word	Definition
	includes all operations for preventing collapse of the sides of such hole or for preventing it from being filled with extraneous materials including water
Environment	Has the same meaning as it has in the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Environmentally sensitive area of State significance	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Excavation	The removal of the surface layer to a depth greater than 500 mm from the natural surface level.
Exempt development	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Exploration	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Fauna	Has the same meaning as it has in the *National Parks and Wildlife Act 1974*.
Groundwater	Water that occurs beneath the ground surface in the saturated zone.
Habitat	Has the same meaning as it has in *the Biodiversity Conservation Act 2016* or the *Fisheries Management Act 1994* (as relevant).
Harm	In relation to matters of national environmental significance, has the same meaning as 'significant impact' as provided by the 'Significant Impact Guidelines' used to determine whether assessment and approval is required under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*. In relation to the environment, has the same meaning as it has in the *Protection of the Environment Operations Act 1997*. In relation to threatened species or ecological communities, has the same meaning as: • 'harm an animal' in the *National Parks and Wildlife Act 1974* • 'pick a native plant' in the *National Parks and Wildlife Act 1974* • 'harm' in the *Fisheries Management Act 1994*. In relation to an aquifer or waterfront land, has the same meaning as it has in the *Water Management Act 2000*. In relation to Aboriginal places or Aboriginal objects has the same meaning as it has in the *National Parks and Wildlife Act 1974*. In relation to items of heritage significance, has the same meaning as it has in the *Heritage Act 1977*. In relation to protected marine vegetation, has the same meaning as it has in the *Fisheries Management Act 1994*.
Items of heritage significance	Means: • any heritage items listed in one or more of the following: — the Commonwealth Heritage List — the World Heritage List — the National Heritage List — the State Heritage Register — an Environmental Planning Instrument

Word	Definition
	• any relic (being any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is 50 or more years old), or • within State Conservation Areas: — items that are listed on the DECC Historic Heritage Information Management System, or — any deposit, object or material evidence relating to the settlement or occupation of New South Wales or a part of New South Wales (not being Aboriginal settlement or occupation) if the deposit, object or material evidence is more than 25 years old at the date of the interference or removal.
Land	Includes: • the sea or an arm of the sea • a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or non-tidal • a river, stream or watercourse, whether tidal or non-tidal, and • a building erected on the land
Marine vegetation	Has the same meaning as it has in the *Fisheries Management Act 1994*.
Matters of national environmental significance	'Matters of national environmental significance' protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.
Minister	The Minister administering the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Native vegetation	Has the same meaning as it has in the *Local Land Services Act 2013*.
Potential acid sulphate soils (PASS)	Sediments and soils that contain iron sulfides or sulfidic material which have not been exposed to air and oxidised
Produced water	Any form of groundwater that is actively extracted from a borehole or excavation, excluding incidental groundwater mixed with drilling fluids.
Rehabilitation	Has the same meaning as it has in the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Seismic survey	The use of shock waves (generated in the ground using either small explosive charges detonated below the surface, hand-held mechanical hammers or vehicle-mounted hammers) and an array of geophones, which are connected to measuring instruments, to differentiate the geophysical properties of the subsurface of the earth.
Sensitive receiver	Includes: • dwellings • libraries • educational and research institutions (including schools, colleges and universities) • childcare centres • kindergartens • hospitals, surgeries and other medical institutions • places of worship

Word	Definition
	• milking sheds and holding yards associated with dairies • animal boarding or training establishments • aquaculture • intensive livestock agriculture
Site	The land on which an activity is located.
State Conservation Area	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Surface disturbance	Means: • disturbance or exposure of the soil or surface rock layer, or • degradation or deterioration in any manner of the physical surface of land.
Terms	In relation to activity approvals, the terms imposed by the decision-maker on the grant of an activity approval.
Threatened species or ecological communities	Has the same meaning as it has in the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* (as relevant).
Title	An authority under the *Mining Act 1992 /* a title under the *Petroleum (Onshore) Act 1991* – as relevant.
Titleholder	A person or company to whom a title has been issued.
Track	All unsealed routes that will be traversed multiple times, but does not include single pass (ingress and egress) routes or seismic shot and receiver lines.
Waste	Has the same meaning as it has in the *Protection of the Environment Operations Act 1997.*
Water source	Has the same meaning as it has in the *Water Management Act 2000.*
Water land	Has the same meaning as it has in the *Fisheries Management Act 1994.*
Waterfront land	Has the same meaning as it has in the *Water Management Act 2000.*
Wetlands	Has the same meaning as it has in the *Fisheries Management Act 1994*.
Wilderness	Lands identified as wilderness under the *Wilderness Act 1987.*
Wilderness area	Lands (including subterranean lands) declared to be a wilderness area under the *Wilderness Act 1987* or the *National Parks and Wildlife Act 1974.*

Attachment 3 – Review of environmental factors

Air impacts

Provide a brief description of likely impacts to air quality, including the distance to, and impacts on, nearby sensitive receivers.

The Activities are unlikely to impact air quality on nearby sensitive receivers. Any potential impacts to air quality (e.g. wind erosion and dust from disturbed soil, including from driving on access tracks and from operating machinery) would be mitigated using the controls described below.

What is the activity's likely impact due to generation of greenhouse gases emissions or release of chemicals which affect the ozone layer or produce photo-chemical smog?

Negligible

What is the likely level of any impacts?

null Negligible

Outline any proposed management controls and/or mitigation measures.

- The Activities would not involve the venting or flaring of gas.
- Any surface disturbance associated with the Activities would be minimised as far as practicable.
- If required, drilling would utilise water injection methods to mitigate dust production.
- Speed limits when driving on unsealed roads and unsealed access tracks would be reduced where required, e.g. on windy and dry days.
- Air quality management for the Activities would follow the Exploration Code of Practice: Environmental Management.
- The Activities are not considered high dust generating activities.

Water impacts

Provide a brief description of the likely impacts to water quality and/quantity.

The Activities do not propose to utilise surface water. Water required for the Activities would be sourced from an onsite, in-pit dams and transferred to each drill site via a mine site water cart, as required. Water would be transferred and recycled between sites until new water is required. A maximum of approximately 0.27 megalitres of water resources would be required for the Activities. Any incidental groundwater produced would be utilised in the recirculation of drilling fluids and confined to above ground tanks.

What is the activity's impact due to the storage of water?

null Negligible

What is the activity's impact to natural water bodies, wetlands or runoff patterns?

null Negligible

What is the activity's impact due to aquifer interference, including changes to inter-aquifer connectivity?

Negligible

What is the activity's impact due to changes to flooding or tidal regimes?

Negligible null

What are the impacts from any hydraulic fracturing (well stimulation), including through gas and fluid migration?

Negligible

What is the activity's impact due to changes in surface or groundwater quality and quantity?

Negligible

What is the likely level of any water impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

Water impacts

required.

- Sediment controls would be installed as required.
- Recirculated water and spoil from drilling activities would be managed and disposed of in accordance with the Maules Creek Coal Mine Water Management Plan, the Exploration Code of Practice: Rehabilitation and by a licenced waste removal contractor.
- Purposeful avoidance of any drainage lines that may be located proximal to the Activities.
- Appropriate water management practices would be implemented in accordance with the Exploration Code of Practice: Environmental Management.

Soil and stability impacts

Provide a brief description of the likely impacts to soil quality or land stability.

The Activities are unlikely to impact soil quality or land stability. Vegetation clearance and surface disturbance would be minimised as much as practicable. Appropriate erosion and sediment controls would be installed as required, consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) at each drill site. The erosion and sediment controls would remain in place at all sites until the risk of erosion has been reduced to negligible levels through on-site rehabilitation.

No acid sulfate soils are mapped in proximity to the Activities.

What is the activity's impact on the degradation of soil quality including contamination, salinisation or acidification?

Negligible

What is the activity's impact on land with high agricultural capability?

Negligible

What is the activity's impact due to loss of soil from wind or water erosion?

Negligible

What is the activity's impact due to the loss of structural integrity of the soil?

Negligible

What is the activity's impact due to increased land instability with high risks from landslides or subsidence?

Negligible

What is the activity's impact due to any induced seismicity or ground movements associated with fracture stimulation or injection or extraction of groundwater?

Negligible

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

- Vegetation clearance and surface disturbance would be minimised as much as practicable.
- Access for the Activities would occur via established access tracks where possible. Exploration sites where no tracks exist would require temporary access tracks which would involve slashing, light grading or driving on paddocks to the desired exploration site location. Any new access tracks would be selected to link drill sites with existing access tracks via the shortest route that minimises environmental impacts. Any access tracks will be slashed in, and personnel will not be able to deviate off these areas unless internal approval is provided. All access tracks would have a maximum width of 4 metres (m).
- Appropriate erosion and sediment controls would be installed as required, consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) at each drill hole. The erosion and sediment controls would remain in place at all sites until the risk of erosion has been reduced to negligible levels through on site rehabilitation.
- Above surface tanks would be utilised for drilling, i.e. no in-ground sumps would be required.

Soil and stability impacts

- Fuel required for the Activities would be contained within compliant fuel cells for use in filling up on-site equipment (e.g. drill rig, compressor).
- Adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities.

Noise and vibration impacts

Provide a brief description of the likely noise and/or vibration impacts.

The Activities would occur entirely on Whitehaven-owned land. Any noise from vehicles, drilling rigs, plant and machinery impacting on nearby sensitive receivers would be managed and mitigated through implementing the controls and measures below.

What is the likely level of any impacts?

Low adverse

Outline any proposed management controls and/or mitigation measures.

- The Activities would be undertaken on a working roster of nine days on, five days off. On the days explorations works are proposed, the Activities would be undertaken between the hours of 6:00 am to 6:00 pm.
- Work outside of standard hours as prescribed in the Exploration Code of Practice: Environmental Management would only occur where acceptable noise criteria can be met, being the Rating Background Level (RBL) +5dB(A)/(15 min) at any residence or sensitive receiver.
- Noise management would follow the Exploration Code of Practice: Environmental Management.

Coastal locations and processes

Provide a brief description of likely impacts on coastal environments, coastal processes and coastal hazards.

The Activities would not affect coastal processes and hazards, including those under projected climate change conditions. The exploration activities are located more the 180 kilometres (km) west of any coastal processes and hazards.

What is the likely level of any impacts?

Nil/Not applicable

Outline any proposed management controls and/or mitigation measures.

No management controls and/or mitigation measures for impacts to coastal processes are proposed as this is not considered applicable to the Activities.

Hazardous substances and chemicals

Provide a brief description of likely impacts associated with the use, generation, storage or transport of hazardous substances or chemicals.

The Activities are unlikely to result in any impacts associated with the use, generation, storage or transport of hazardous substances or chemicals. Any hazardous substances or chemicals would be managed and mitigated through implementing the controls and measures below.

What is the likely level of the impact associated with the use, generation, storage or transport of hazardous substances or chemicals?

Negligible

Outline any proposed management controls and/or mitigation measures.

- Fuel, drilling chemicals and other hydrocarbons would be contained on site within fuel cells and appropriate containers.

Hazardous substances and chemicals

- Spill events within the exploration activity areas are unlikely as appropriate handling mechanisms for hazardous substances would be undertaken.
- Notwithstanding, adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities.
- A list of any chemicals and hydrocarbons would be maintained by Whitehaven and subcontractors.

Wastes and emissions

Provide a brief description of likely impacts to the environment from the generation or disposal of gaseous, liquid or solid wastes or emissions.

The Activities are unlikely to result in any environmental impacts associated with the generation or disposal of gaseous, liquid or solid wastes or emissions. Any environmental impacts associated with the generation or disposal of gaseous, liquid or solid wastes or emissions would be managed and mitigated through implementing the controls and measures below.

Provide a brief description of likely impacts on areas sensitive to this type of impact.

The Activities are unlikely to impact areas sensitive to the generation or disposal of gaseous, liquid or solid wastes or emissions provided the management controls and mitigation measures outlined below are implemented.

What is the likely level of the impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

- Fuel, drilling chemicals and other hydrocarbons would be contained on site within fuel cells and appropriate containers.
- Spill events within the exploration activity areas are unlikely as appropriate handling mechanisms for hazardous substances would be undertaken.
- Notwithstanding, adequate spill prevention and oil absorbent materials for the management of spills and leaks for all chemicals, fuels and oil on-site would be readily available for the duration of the Activities.
- A list of any chemicals and hydrocarbons would be maintained by Whitehaven and subcontractors.
- Any incidental groundwater produced would be utilised in the recirculation of drilling fluids and confined to above ground tanks.
- Recirculated water and spoil from drilling activities would be managed and disposed of in accordance with the Exploration Code of Practice: Rehabilitation and by a licenced waste removal contractor.
- Vegetation clearance and surface disturbance would be minimised as much as practicable.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- General domestic waste products and packaging generated during the Activities would be collected and appropriately stored or removed from the area associated with the Activities at the end of each shift.
- Due to the lack of facilities in the field, mobile toilets will be provided. These would be located within the drill site areas and removed at the end of the Activities.
- Waste and excess material would be managed in accordance with the Exploration Code of Practice: Environmental Management.

Vegetation

Provide a brief description of any vegetation clearing or modification and the likely impacts to the environment.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

Vegetation

The drilling for the exploration drilling program would involve the development of drill site areas up to 30 m x 30 m (approximately 900 metres squared [m2]).

Site preparation works would primarily involve delineation of the proposed drill site with temporary fencing (or similar) to prevent unauthorised access, exclude stock, and ensure disturbance activities are confined within the area. Grass within the fenced areas may be slashed to minimise bushfire hazard around the working machinery and provide a clear working area for operating personnel. Ground disturbance would be limited to the area of the drill hole itself, with some levelling of drill sites required if located on steep or rough terrain. No other ground preparation/earthworks would be undertaken at the drill sites.

In total, the Activities within ML 1719/CL 375 would involve a surface disturbance area (i.e. sum total of all exploration site areas) of approximately 1.3 hectares (ha). The need for vegetation clearing, however, would be reduced as a truck mounted drill rig would be utilised. This would also promote the potential for rapid re-establishment of vegetation once the Activities cease.

A site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

What is the likely level of the impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

In addition to the above, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to vegetation include:

- All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities.
- Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk).
- Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Threatened species

Provide a brief description of any likely impacts to threatened fauna and flora species.

The Activities are unlikely to have a significant impact on threatened flora and fauna species due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use.

Threatened species

The Activities are unlikely to have a significant impact on threatened flora and fauna species due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use.

The Activities would remove approximately 0.09 ha of Plant Community Type (PCT) 101 in regenerating condition and 0.28 ha of PCT 101 in derived native grassland (DNG) condition, and 0.94 ha of PCT 592 in DNG condition.

PCT 101 in the study is considered to be associated with the following threatened ecological community (TEC): Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions, listed as Endangered under the BC Act. The proposal would remove 0.37 ha of this TEC. An impact assessment in accordance with Section 7.3 of the Biodiversity Conservation Act (i.e. Test of Significance) has been undertaken (Ecoplanning, 2024). Ecoplanning (2024) found that subject to mitigation measures outlined below, there will be no significant impacts to this TEC (Ecoplanning, 2024).

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

A site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

What is the likely level of the impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.

- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to threatened species include:

- Avoidance of large native trees, including Koala feed tree species.
- Avoidance of hollow-bearing trees, dead stags and hollow logs.

Threatened species

- All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities.
- Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk).
- Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Should a threatened species be identified during the Activities, work in the surrounding area would stop immediately and an appropriate ecologist engaged for advice and handling. Whitehaven would facilitate and consult with the relevant authorities in line with the ecologist's recommendations.

Area of outstanding biodiversity value (AOBV) / Critical habitat

Provide a brief description of any likely impacts to AOBV/critical habitat.

No declared areas of outstanding biodiversity value under the Biodiversity Conservation Act 2016 are mapped within the area associated with the Activities. Similarly, no areas declared as critical habitat under the Fisheries Management Act 1994 are mapped within the area associated with the Activities.

What is the likely level of the impacts?

Outline any proposed management controls and/or mitigation measures.

Endangered ecological community or critically endangered ecological community

Is the activity likely to have an adverse effect on an endangered ecological community or critically endangered ecological community? Select as relevant:

N/A

Provide a brief description of any impacts.

The Activities are unlikely to have a significant impact on threatened flora and fauna species due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use.

The Activities would remove approximately 0.09 ha of Plant Community Type (PCT) 101 in regenerating condition and 0.28 ha of PCT 101 in derived native grassland (DNG) condition, and 0.94 ha of PCT 592 in DNG condition.

PCT 101 in the study is considered to be associated with the following threatened ecological community (TEC): Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions, listed as Endangered under the BC Act. The proposal would remove 0.37 ha of this TEC. An impact assessment in accordance with Section 7.3 of the Biodiversity Conservation Act (i.e. Test of Significance) has been undertaken (Ecoplanning, 2024). Ecoplanning (2024) found that subject to mitigation measures outlined below, there will be no significant impacts to this TEC (Ecoplanning, 2024).

The areas associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

Endangered ecological community or critically endangered ecological community

A site selection process has been conducted for the Activities to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. Previously cleared/disturbed areas would be utilised for the Activities instead of areas consisting of intact native vegetation. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

Due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use, the Activities are unlikely to have an adverse effect on an endangered ecological community or critically endangered ecological community.

What is the likely level of the impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

As described above, a site selection process has been conducted for the Activities to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. Previously cleared/disturbed areas would be utilised for the Activities instead of areas consisting of intact native vegetation. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to endangered ecological communities and critically endangered ecological communities include:

- All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities.
- Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk).
- Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Habitat of a threatened species or ecological community

Is the activity likely to have an adverse effect on the habitat of a threatened species or ecological community (including protected aquatic species)? Select as relevant:

N/A

Describe the impacts.

The Activities would remove approximately 0.09 ha of Plant Community Type (PCT) 101 in regenerating condition and 0.28 ha of PCT 101 in derived native grassland (DNG) condition, and 0.94 ha of PCT 592 in DNG condition.

PCT 101 in the study is considered to be associated with the following threatened ecological community (TEC): Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions, listed as Endangered under the BC Act. The proposal would remove 0.37 ha of this TEC. An impact assessment in accordance with Section 7.3 of the Biodiversity Conservation Act (i.e. Test of Significance) has been undertaken (Ecoplanning, 2024). Ecoplanning (2024) found that subject to mitigation measures outlined below there will be no significant impacts to this TEC (Ecoplanning, 2024).

The Activities would remove 1.31 ha of native vegetation. Whilst this vegetation consists of potential foraging habitat for a range of species, no mature trees or hollow bearing trees would be removed as part of the proposal.

One threatened bird species, the Spotted Harrier, was considered to have a moderate likelihood of occurring within the subject site. The proposal would directly remove 1.31 ha of potential foraging habitat for these species across the 10 sites. No breeding habitat would be removed by the proposal. An impact assessment in accordance with Section 7.3 of the BC Act (i.e. Test of Significance) has been undertaken (Ecoplanning, 2024) and found that subject to mitigation measures outlined below significant impacts to this species are unlikely. No additional threatened fauna would be impacted by the proposal.

In consideration of the above, the Activities are unlikely to have a significant impact on the habitat of a threatened species or ecological community due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

This land use is consistent with the surrounding area, which is largely an agricultural landscape, comprising primarily of grazing and cropping activities dominating the area to the north, south, east and west of Leard State Forest. Additionally, the active open cut mining operations of Boggabri Coal Mine and Tarrawonga Coal Mine are located south-east of the Activities, within the Leard State forest.

A site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

What is the likely level of the impacts?

Negligible

Habitat of a threatened species or ecological community

Outline any proposed management controls and/or mitigation measures.

As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to the habitat of threatened species and ecological communities include:

- Avoidance of large native trees, including Koala feed tree species.
- Avoidance of hollow-bearing trees, dead stags and hollow logs.
- All native vegetation will be protected during the entire extent of the works, e.g. temporary fencing, flagging and tree protection. No personnel or machinery are to enter the protected area.
- If any fauna are identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, will be notified. Works will not continue until the animal has been rescued. Call WIRES on 1300 094 737.
- During clearing works or construction works, if any native fauna are identified in the works area, works will stop immediately and a qualified Ecologist should be contacted.
- Best practise bush regeneration techniques, including disposal of weeds to a licenced waste disposal facility.
- All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities.
- Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk).
- Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Key threatening process

Provide a brief description of whether the activity will constitute, or form part of, a key threatening process - or is likely to increase the impact of a key threatening process.

The Activities would contribute to the Key Threatening Process (KTP) clearing of native vegetation (Saving our Species, 2018). The clearing is restricted to historically cleared areas and regenerating native trees and has been considered in the tests of significance described in Sections 9, 11 and 12. As such, it is considered that the Activities would not contribute to any KTPs in any substantial way.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

A site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the

Key threatening process

planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.
- For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line.

Ecoplanning (2024) reports that increased edge effects caused by the Activities may increase the prevalence of exotic species and pathogens within the study area. Further, the clearing of vegetation and emissions from vehicles and machinery will have a minor contribution to human-caused climate change. With adherence to the mitigation measures provided below the proposal will not significantly contribute to these KTPs.

The Activities are unlikely to contribute to any KTPs due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use.

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

As described above, a site selection process has been conducted to locate the sites within areas of lower potential impact for the Activities while still ensuring critical geological information can be collected. Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included ecological exclusion areas. In addition, the following has been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

In addition, mitigation measures that would be implemented for the duration of the Activities to avoid and/or mitigate potential impacts to the habitat of threatened species and ecological communities include:

- Before being used on-site, vehicles and machinery would be inspected and cleaned where required for weeds and seeds. Once mobilised for the Activities, the drill rig and associated support vehicles would remain within the bounds of ML 1719/CL 375 for the duration of the Activities, with movement of equipment being primarily between drill sites (i.e. the fleet used for the Activities would not require interstate movement). Vehicle movements to and from each site would be defined tracks, where possible.
- Avoidance of large native trees, including Koala feed tree species.
- Avoidance of hollow-bearing trees, dead stags and hollow logs.
- All access tracks are to be fully rehabilitated upon the completion of the Activities, and tracks are to be fully rehabilitated to return to their pre-activity landform.
- Appropriate erosion and sediment control measures consistent with Managing Urban Stormwater: Soils and Construction (Landcom, 2004), would be implemented at each site.
- A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities.

Key threatening process
• Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). • Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Barriers to movement of fauna
Provide a brief description regarding the potential of the activity to endanger, displace or disturb fauna or create a barrier to their movement.
The Activities are unlikely to endanger, displace or disturb fauna or create a barrier to their movement. The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. Access for the Activities would occur via established access tracks where possible. Exploration sites where no tracks exist would require temporary access tracks which would involve slashing, light grading or driving on paddocks to the desired exploration site location. Any new access tracks would be selected to link drill or soil investigation sites with existing access tracks via the shortest route that minimises environmental impacts and the potential for the Activities to endanger, displace or disturb fauna, or create a barrier to their movement. Any access tracks will be slashed in, and personnel will not be able to deviate off these areas unless internal approval is provided. All access tracks would have a maximum width of 4 m. A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.
What is the likely level of any impacts?
Negligible
Outline any proposed management controls and/or mitigation measures.
As described above, access for the Activities would occur via established access tracks where possible. Exploration sites where no tracks exist would require temporary access tracks which would involve slashing, light grading or driving on paddocks to the desired exploration site location. Any new access tracks would be selected to link drill or soil investigation sites with existing access tracks via the shortest route that minimises environmental impacts and the potential for the Activities to endanger, displace or disturb fauna, or create a barrier to their movement. Any access tracks will be slashed in, and personnel will not be able to deviate off these areas unless internal approval is provided. A follow-up inspection at each drill site would be undertaken after the Activities are complete to confirm regeneration and/or revegetation performance, determine whether any supplementary measures (e.g. seeding) is required and to confirm there are no ongoing erosion and weed risks as a result of the Activities. Monitoring would involve monthly visual inspections (monitoring frequency may be reduced subject to progression of regeneration and/or revegetation and/or reduced erosion risk). Additional rehabilitation measures (such as supplementary seeding) would be implemented as required.

Ecological and biosecurity impacts

Is the activity likely to have any adverse ecological or biosecurity impacts? Select as relevant:

N/A

Provide a brief description of any impacts.

The Activities are unlikely to have an adverse impact on ecology or biosecurity.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

The exploration drilling program would involve the development of 10 drill pads up to 30 x 30 m (approximately 900 m2).

Site preparation works would primarily involve delineation of the proposed drill site with temporary fencing (or similar) to prevent unauthorised access, exclude any stock, and ensure any disturbance activities are confined within the area. Grass within the fenced areas may be slashed to minimise bushfire hazard around the working machinery and provide a clear working area for operating personnel. Ground disturbance would be limited to the area of the drill hole itself, with some levelling of drill sites required if located on steep or rough terrain. No other ground preparation/earthworks would be undertaken at the drill sites.

In total, the Activities within ML 1719/CL 375 would involve a surface disturbance area (i.e. sum total of all exploration site areas) of approximately 1.31 ha. The need for vegetation clearing, however, would be reduced as a truck mounted drill rig would be utilised. This would also promote the potential for rapid re-establishment of vegetation once the Activities cease.

The Activities would not significantly increase the risk of priority weeds, vermin, biosecurity threats, feral species, or genetically modified organisms being introduced into the area associated with the Activities. The Activities are also unlikely to cause a bushfire risk.

What is the likely level of any impacts?

null Negligible

Outline any proposed management controls and/or mitigation measures.

null null

Community resources

Describe whether the activity is likely to degrade or significantly increase the demand for services and infrastructure resources.

It is estimated that up to 7 personnel (contractors and/or Whitehaven employees) would be on site at any one time. This small workforce presents minimal flow on economic benefits to the local community. In this way, the Activities would not present any significant additional pressures on local temporary accommodation requirements, remove significant economic activity from the local community upon cessation of the Activities, or degrade or significantly increase the demand for services and infrastructure resources.

The Activities are anticipated to result in a negligible increase in traffic on local roads. Vehicle movements associated with the Activities would be largely limited to land owned by Whitehaven, and the access road from Therribri Road.

Describe whether the activity is likely to result in any diversion of resources to the detriment of other communities or natural systems.

The Activities would not likely result in the diversion of resources to the detriment of other communities or natural systems.

What is the likely level of the impact?

Community resources

Negligible

Outline any proposed management controls and/or mitigation measures.

- Vehicle movements associated with the Activities would be largely limited to land owned by Whitehaven, and the access road from Therribri Road.
- Up to 7 personnel would be on-site at any one time, which would not present any significant additional pressures on local temporary accommodation requirements or remove significant economic activity from the local community upon cessation of the Activities.

Natural resources

Describe any likely impacts that would disrupt, deplete or destroy natural resources.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

Commissioning of each site for the exploration drilling would involve the development of drill site areas up to 30 x 30 m (approximately 900 m2).

Site preparation works would primarily involve delineation of the proposed drill site with temporary fencing (or similar) to prevent unauthorised access, exclude any stock, and ensure any disturbance activities are confined within the area. Grass within the fenced areas may be slashed to minimise bushfire hazard around the working machinery and provide a clear working area for operating personnel. Ground disturbance would be limited to the area of the drill hole itself, with some levelling of drill sites required if located on steep or rough terrain. No other ground preparation/earthworks would be undertaken at the drill sites.

In total, the Activities within ML 1719/CL 375 would involve a surface disturbance area (i.e. sum total of all exploration site areas) of approximately 1.3 ha. The need for vegetation clearing, however, would be reduced as a truck mounted drill rig would be utilised. This would also promote the potential for rapid re-establishment of vegetation once the Activities cease.

Any incidental groundwater produced would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities would be managed and disposed of as per Exploration Code of Practice: Rehabilitation by a licenced waste removal contractor.

The impact of the Activities on natural resources would be negligible due to the small disturbance area (i.e. approximately 1.3 ha), the short-term, progressive and mobile nature of the Activities, and the regeneration and/or rehabilitation of the disturbance areas to the pre-disturbance land use.

Describe whether the activity is likely to disrupt existing activities which rely upon natural resources, including forestry, farming or extractive industries (or will reduce options for future activities).

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

This land use is consistent with the surrounding area, which is largely an agricultural landscape, comprising primarily of grazing and cropping activities dominating the area to the north, south, east and west of Leard State Forest. Additionally, the active open cut mining operations of Boggabri Coal Mine and Tarrawonga Coal Mine are located south-east of the Activities, within the Leard State forest.

The Activities would not result in any disruption to existing land uses or activities, or reduce options for future activities.

Describe whether the activity is likely to result in the degradation of any area reserved for conservation purposes.

Natural resources

The Activities would not traverse any areas reserved for conservation purposes. Therefore, the campaign would not degrade any area reserved for conservation purposes.

What is the likely level of the impact?

Negligible

Outline any proposed management controls and/or mitigation measures.

Natural resources are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process has included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.
- For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line.

Any incidental groundwater produced would be utilised in the recirculation of drilling fluids and confined to above ground tanks. Recirculated water and spoil from drilling activities would be managed and disposed of as per Exploration Code of Practice: Rehabilitation by a licenced waste removal contractor.

Social impacts

Describe whether the activity is likely to result in a change to the demographic structure of the community, including changes to the workforce or industry structure of the area/region.

It is estimated that up to 7 personnel (contractors and/or Whitehaven employees) would be on site at any one time. This small workforce presents minimal flow on economic benefits to the local community. In this way, the Activities would not present any significant additional pressures on local temporary accommodation requirements, remove significant economic activity from the local community upon cessation of the Activities, or change the demographic structure of the community.

Describe whether the activity is likely to have an environmental impact that may cause substantial change or disruption to the community, including loss of facilities, reduced links to other communities or loss of community identity.

The Activities would occur entirely on Whitehaven-owned land. As such, the campaign would not result in an environmental impact that would result in substantial change or disruption to the community (i.e loss of facilities, reduced links to other communities or loss of community identity).

Describe whether the activity is likely to result in some individuals or communities being significantly disadvantaged, including a change in the level of demand for community resources (e.g. community facilities / services, and labour force).

The Activities are unlikely to result in individuals or communities being significantly disadvantaged.

Describe whether the activity likely to result in any impacts on the health, safety, privacy or welfare of individuals or communities because of factors such as pollution, odour, noise, vibration, lighting, visual impacts, etc.

The Activities would occur entirely on Whitehaven-owned land. As such, the Activities would not result in any impacts on the health, safety, privacy or welfare of individuals or communities because of factors such as air pollution, odour, noise, vibration and lighting.

Describe if the activity is likely to have any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.

Social impacts

The Activities are unlikely to have any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.

What is the likely level of any social impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

Given the limited workforce required to undertake the exploration activities and the Activities being proposed entirely on Whitehaven-owned land, no management controls or mitigation measures are proposed.

Economic impacts

Provide a brief description of any likely economic impacts.

It is estimated that up to 7 personnel (contractors and/or Whitehaven employees) would be on site at any one time. This small workforce presents minimal flow on economic benefits to the local community. In this way, the Activities would not present any significant additional pressures on local temporary accommodation requirements, remove significant economic activity from the local community upon cessation of the Activities, or degrade or significantly increase the demand for services and infrastructure resources. There is not expected to be any negative impacts on economic activity, economic stability of the Narrabri Local Government Area, or public sector revenue as a result of the Activities.

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

Given no negative impacts on economic activities or economic stability are anticipated as a result of the Activities, no management controls or mitigation measures are proposed.

Heritage impacts

Describe whether the activity is likely to cause impacts on localities, places, landscapes, buildings or archaeological relics of heritage significance.

Historic cultural or natural heritage items listed on the World Heritage List, Commonwealth Heritage List, National Heritage Register, or State Heritage Register are not located in proximity to the Activities.

As such, the Activities are not likely to cause impacts on localities, places, landscapes, buildings or archaeological relics of heritage significance.

What is the likely level of the impact?

Negligible

Outline any proposed management controls and/or mitigation measures.

Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones and historical heritage sites. As such, the Activities are not likely to cause impacts on localities, places, landscapes, buildings or archaeological relics of heritage significance and accordingly, no management controls or mitigation measures are proposed.

Aesthetic impacts

Describe whether the activity is likely to cause impacts on the visual or scenic landscape, including any lighting, venting or flaring of gas.

Aesthetic impacts
The Activities are unlikely to impact on the visual or scenic landscape as all activities associated with the campaign are to be located on land owned by Whitehaven. No venting or flaring of gas is proposed for the Activities.
What is the likely level of any impacts?
Negligible
Outline any proposed management controls and/or mitigation measures.
No management controls or mitigation measures are proposed.

Cultural impacts
Describe the likely impacts associated with any disturbance of the ground surface or any culturally modified trees.
The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing. The Activities would involve ground surface disturbance and therefore have the potential to disturb Aboriginal objects. Notwithstanding, areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones. The exploration sites would be placed to avoid the known Aboriginal sites and/or objects, to ensure that no impacts to recorded Aboriginal cultural heritage are incurred by the Activities. The disturbance footprint of the Activities would be minimised as far as practicable. No culturally modified trees have been recorded within the area associated with the Activities.
Describe whether the activity will affect known Aboriginal objects or Aboriginal places.
An AHIMS database search was conducted in the Aboriginal Cultural Heritage Due Diligence prepared for the Activities (Whincop Archaeology, 2024). Whincop Archaeology identified 99 AHIMS sites in the vicinity of the Activities, 5 of which were located in the immediate area associated with or surrounding the Activities. The following AHIMS Sites are located within the area associated with or surrounding the Activities: • 20-4-1056 • 20-4-1097 • 20-4-1096 • 20-4-0464 • 20-4-0478 Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones. As such, the exploration sites would be placed to avoid the five Aboriginal sites and/or objects listed above, to ensure that no impacts to Aboriginal cultural heritage are incurred by the Activities.
Describe whether the activity is located in areas where landscape features indicate the presence of Aboriginal objects.
Two of the proposed drill pads (2312_05 and 2312_09) are located within areas with higher potential to contain Aboriginal objects (i.e. within 200 m of a named water course, 100 m of an unnamed drainage line or 50 m of a known Aboriginal Heritage site) (Whincop Archaeology, 2024).
Describe whether the activity will affect areas where native title exists or land subject to native title claims, indigenous land use agreements or joint management agreements.
The area associated with the Activities is not located within any areas subject to native title determinations, indigenous land use agreements and/or joint management agreement.

Cultural impacts

It is noted the land associated with the Activities subject to a native title claim submitted by the Gomeroi People.

What is the likely level of any cultural impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

Areas of avoidance for the Activities identified in the planning and scoping of the investigation sites included cultural heritage exclusion zones. As such, the exploration sites would be placed to avoid the five Aboriginal sites and/or objects listed above, to ensure that no impacts to Aboriginal cultural heritage are incurred by the Activities.

Should an Aboriginal site and/or object be newly identified during the Activities, work in the surrounding area would stop immediately, with temporary fencing erected around the feature and an appropriate archaeologist engaged to investigate the feature. Should the archaeologist determine the feature to be an Aboriginal site and/or object, Whitehaven would facilitate and consult with the relevant authorities in line with the appropriate archaeologist's recommendations.

Land use impacts

Provide a brief description of any impacts on land use including any major changes to land use and/or curtailment of other beneficial land uses.

The area associated with the Activities has primarily been subject to historical agricultural operations and is primarily composed of open grasslands of varying conditions and quality with some fragmented patches of timbered vegetation throughout. Former land uses consist of dryland cropping and livestock grazing.

This land use is consistent with the surrounding area, which is largely an agricultural landscape, comprising primarily of grazing and cropping activities dominating the area to the north, south, east and west of Leard State Forest. Additionally, the active open cut mining operations of Boggabri Coal Mine and Tarrawonga Coal Mine are located south-east of the Activities, within the Leard State forest.

Soil disturbance would be limited to the immediate vicinity of the drill hole and may be associated with the use of new access tracks if required.

The Activities are not anticipated to change the existing land and soil capability class or soil fertility within the areas associated with the Activities.

Rehabilitation of disturbed land as a result of the Activities would be conducted in accordance with the requirements and conditions within ML 1719/CL 375 and as detailed in the rehabilitation objectives and rehabilitation completion criteria prepared for the Activities. In summary, rehabilitation activities would include:

- Boreholes grouted using cement mix for ground conditions.
- Follow-up inspections undertaken to confirm regeneration and/or revegetation performance, determine whether supplementary measures are required, and confirm no ongoing erosion and weed risks.
- Additional rehabilitation measures implemented as required.

Due to the small area of disturbance, risks associated with successful rehabilitation to pre disturbance condition is considered low.

The impact of the Activities on land use would be negligible due to the small disturbance area (i.e. approximately 1.3 ha), the short-term, progressive and mobile nature of the Activities, and the regeneration and/or rehabilitation of the disturbance areas to the pre-disturbance land use.

Land use impacts

The Activities are therefore unlikely to result in major changes to land use, including any curtailment of other beneficial land uses.

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

As described above, soil disturbance would be limited to the immediate vicinity of the drill hole and may be associated with the use of new access tracks if required.

Rehabilitation of disturbed land as a result of the Activities would be conducted in accordance with the requirements and conditions within ML 1719/CL 375 and as detailed in the in the rehabilitation objectives and rehabilitation completion criteria prepared for the Activities. Due to the small area of disturbance, risks associated with successful rehabilitation to pre disturbance condition is considered low.

Transportation impacts

Provide a brief description of any significant impacts on transportation.

It is estimated that up to 7 personnel (contractors and/or Whitehaven employees) would be on site at any one time. This small workforce presents a negligible increase in traffic on local roads. Vehicle movements associated with the Activities would be largely limited to land owned by Whitehaven, and the access road from Therribri Road.

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

Given the level of impact associated with transportation for the Activities is considered to be negligible, no management controls and/or mitigation measures are proposed.

Consistency with applicable local strategic planning statements, regional strategic plans or district strategic plans

Provide a brief description of any relevant local strategic planning statements, regional strategic plans or district strategic plans and whether the proposed activity is consistent with these.

The Narrabri Shire 2040 Local Strategic Planning Statement (Narrarbri Strategic Planning Statement) outlines the Narrabri LGA economic, social and environmental land use needs over the next 20 years. The area associated with the Activities will partially occur within the land described in the Narrabri Strategic Planning Statement.

The Narrabri Strategic Planning Statement identifies mining as a key engine industry in the region's economy. With the implementation of appropriate mitigation measures as described in this application, the Activities would be consistent with objectives to sustainably manage mining areas and to sustainably manage and conserve water resources, consistent with Planning Priorities 6 and 18, respectively.

The New England North West Regional Plan 2041 (Regional Plan) was published by the DPE in September 2022 to outline planning priorities and decision-making objectives in the New England North West region for the next two decades. The area covered by the Regional Plan includes the area associated with the Activities.

The Regional Plan acknowledges mining as being a major contributor to the regional economy, and recognises the importance of the mining industry in terms of job creation, both directly and indirectly. With the implementation of appropriate mitigation measures as described in this application, the Activities would be consistent with objectives to sustainably manage mining areas, consistent with Objective 4 of the Regional Plan.

Consistency with applicable local strategic planning statements, regional strategic plans or district strategic plans
What is the likely level of any impacts?
Negligible
Outline any proposed management controls and/or mitigation measures.
No management controls and/or mitigation measures are proposed given the alignment of the Activities with various objectives outlined in the Narrabri Planning Statement.

Matters of national environmental significance
Is the activity likely to impact on any of the following matters of national environmental significance under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*? Select as relevant:
N/A
Provide further details relating to any impacts on matters of national environmental significance.
Potentially relevant Matters of National Environmental Signficance were identified in a search area covering the extent of the Activities (and a 10 km buffer) using the EPBC Protected Matters Search Tool (attached to this application). The PMST indicated that the Activities may relate to three Wetlands of International Importance, which are located greater than 900 km (and up to 1,200 km) from the Activities. Eight Listed Threatened Ecological Communities were identified as likely to occur within the 10km buffer area encompassing the Activities: • Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions. • Grey Box (Eucalyptus macrocarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia • Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and Queensland • Poplar Box Grassy Woodland on Alluvial Plains • Weeping Myall Woodlands. • White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. • Mount Kaputar land snail and slug community. • New England Peppermint (Eucalyptus nova-anglica) Grassy Woddlands. A total of 43 Listed Threatened Species were identified as being related to the 10 km buffer area, including 18 birds, 2 fish, 6 mammals, 4 reptiles, and 13 flora species. In addition, 9 Listed Migratory Species were identified as being related to the 10 km buffer area. However, it is noted that most of the listed species are now within the development footprint of the exiting Maules Creek Coal Mine, and are no longer relevant for impact assessment. The MNES are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process: • Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation. • Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be

Matters of national environmental significance

present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.

- For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line.

MNES are unlikely to be impacted by the Activities provided the considerations above are implemented for the duration of the Activities.

What is the likely level of any impacts?

Negligible

Outline any proposed management controls and/or mitigation measures.

As described above, MNES are unlikely to be impacted due to the short-term, progressive and mobile nature of the Activities, and the regeneration/rehabilitation of the disturbance areas to pre disturbance land use. The site selection process included avoidance of ecological exclusion areas. The following has also been considered and would continue to be considered in the site selection process:

- Minimisation of vegetation clearing, which would be restricted to ground cover, small shrubs and regenerating trees. Any material from vegetation clearing would be stockpiled and kept for rehabilitation.
- Occasional tree branches may require removal to allow for the safe movement or operation of the drill rig. Each branch requiring removal would be inspected for evidence of recent habitation. Should evidence of recent habitation be present, the branch would not be removed without obtaining advice from an ecologist or suitably qualified professional regarding impact minimisation strategies.
- For any sites that are proximal to drainage lines, selecting a location that involves the least potential impacts to the drainage line.

MNES are unlikely to be impacted by the Activities provided the considerations above are implemented for the duration of the Activities.

Cumulative impacts

Is the activity likely to result in cumulative environmental effects with other existing or likely future activities?

No

Describe the impact.

Previous land uses in the locality have resulted in extensive clearing as result of the combined impacts of continued forestry, agricultural and mining operations. These operations are still ongoing in the region. Approved mining activities that relate to the area associated with the Activities include the Maules Creek Coal Mine, Tarrawonga Coal Mine and Boggabri Coal Mine.

The surveys, drilling, sampling, testing and reporting associated with the Activities would contribute to the feasibility of the continued operations at the Maules Creek Coal Mine and would inform further detailed design. The Activities would be undertaken prior to any construction works associated with continued operations at the Maules Creek Coal Mine, and are therefore not considered to result in any cumulative environmental effects associated with the Maules Creek Coal Mine. Notwithstanding, potential impacts arising from the existing Maules Creek Coal Mine have informed this Review of Environmental Factors.

The Activities would also be short-term, progressive and mobile in nature, with disturbance areas regenerated/rehabilitated to pre disturbance land use.

What is the likely level of any impacts?

Negligible

Cumulative impacts

Outline any proposed management controls and/or mitigation measures.

No management controls and/or mitigation measures are proposed as no cumulative environmental effects with other existing or likely future activities are anticipated.

Environmental assessment conclusions

Having regard to the potential significance of the individual impacts of the proposed activity (as well as the aggregation of all the impacts of the activity) determine whether (select as relevant):

the activity is not likely to significantly affect the environment, including threatened species or ecological communities (or their habitats), or declared areas of outstanding biodiversity value/critical habitat.

Provide any further details as relevant.

In summary, Whitehaven Coal Limited considers the Activities would not have a significant impact on the environment given the short-term, progressive and mobile in nature, with disturbance areas regenerated/rehabilitated to pre disturbance land use, and provided the management controls and mitigation measures outlined in this application are implemented.

Attachment 4 – List of supporting documents

- APO0001700_Submission Report_6 May 2024 2:07pm.pdf
  - clip_image001.png
  - clip_image001.png
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  - Ecoplanning_2024_Maules Creek Shallow Bore FFA_v.2.0_final_20240422.pdf
  - Historic Cultural or Natural Heritage Items Record search.pdf
  - Maules Creek Shallow Bores Exploration Program (CL 375) - AOBV and Critical Habitat.pdf
  - MCCM Shallow Bores Exploration Program Site Photographs (RES01216131).pdf
  - MCCP Shallow Bores DD WhinArch 305.pdf
  - Protected Matters - MNES layers - February 9th 2024.pdf
  - Site plans - combined.pdf
  - Site plans - combined.pdf