Australian Government
Department of Climate Change, Energy, the Environment and Water

Statement of Reasons for a Decision on Controlled Action Under the *Environment Protection and Biodiversity Conservation Act 1999*

I, Jennifer Pearson, acting Branch Head, Environment Assessments NSW and ACT Branch, Department of Climate Change, Energy, the Environment and Water (**department**), delegate for the Minister for the Environment and Water (**Minister**), provide the following statement of reasons for my decision of 18 July 2024, under sections 75 and 87 of the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**), that:

a. the proposed action by Clarence Colliery Pty Ltd (**proponent**) to undertake secondary extraction of coal from panels 918 and 920 using panel and partial pillar extraction at the Clarence Colliery, near Lithgow, (EPBC 2024/09856) (**proposed action**), is a controlled action under the EPBC Act and the controlling provisions are sections:
   - Listed threatened species and communities (sections 18 and 18A)
   - A water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E).

b. the relevant impacts of the proposed action are to be assessed by preliminary documentation under Part 8, Division 4 of the EPBC Act.

LEGISLATION

1) The legislative provisions relevant to my decision to which I refer to in my reasons are set out at **Annexure A**.

BACKGROUND

Description of the proposed action

2) Clarence Colliery is an underground coal mining operation in the Western Coalfield of the Sydney Geological Basin, located approximately 10 kilometres (km) east of Lithgow, NSW. Clarence Colliery has a long history of coal mining, using both partial pillar and longwall mining extraction methods.

3) The proposed action is for secondary workings in the Katoomba Coal Seam at panels 918 and 920 using panel and partial pillar extraction (**PPPE**). PPPE is proposed to increase productivity and work safety in an area where the Katoomba Coal Seam narrows from 2.5 to 1.6 metres (m).

4) The proposed action area is estimated to be 145 hectares (ha) based on an angle of draw (**AoD**) of 26.5 degrees around the two approximately 1.5 km long panels. This AoD is typically used to define the likely extent of subsidence effects, based on a 20 millimetre (mm) vertical subsidence threshold.

5) I noted that first workings excavations have commenced in line with the existing not a controlled action – particular manner (**NCA-PM**) referral decision (EPBC 2012/6446; see **Project history**), where the action is 'to undertake partial pillar extraction (bord and pillar underground mining)'.

6) The proposed action includes the full PPPE configuration, which comprises for each panel:

   - first workings – installation of a three spine pillars system, comprising a central 20 m wide pillar and two outer 26.5 m pillars, separated by 5.5 m wide roadways (total width of 84 m)
   - secondary workings, comprising two 85 m wide sub-panels:
     - an advancing sub-panel (a) up one side of the spine pillars
     - a retreating sub-panel (b) down the second side of the spine pillars
   - a 60 m wide barrier pillar – an unmined pillar which separates one panel from the next.

7) The referral documentation states that the PPPE configuration has been designed to maximise coal extraction within subsidence effects limits prescribed in the NSW development consent for mining lease ML 1583, specifically:

   - 100 mm vertical subsidence
   - 3 mm/m tilt
   - 2 mm/m horizontal strain.

8) A coal extraction ratio of 62% is anticipated, which is just above the range of extraction ratios from other parts of Clarence Colliery using partial extraction methods (44-61%).

9) The estimated start date for the proposed action is 1 November 2024.

Description of the environment

10) Most of Clarence Colliery is located on Crown Land, which was zoned RU3 (Forestry) and E3 (Environmental Management) under the *Lithgow Local Environmental Plan 2014.*

11) In May 2022, Newnes State Forest was declared part of the Gardens of Stone State Conservation Area (**SCA**) and is now managed by NSW National Parks and Wildlife Service. The proposed action area is entirely within the Gardens of Stone SCA.

12) Surrounding land uses include extractive industries, rural residential dwellings and recreational activities.

13) Clarence Colliery borders the Blue Mountains National Park (**NP**) to the east and is 1.2 km from Wollemi NP in the northeast. The two NPs form part of the Greater Blue Mountains World Heritage Area (**GBMA**). The straight-line distance to the GBMA from the proposed action area is approximately 5 km. The intervening area has been mined using partial extraction and longwall mining methods under existing approvals.

14) The Clarence Colliery area is characterised by deeply dissected sandstone plateaus typical of the Newnes Plateau landscape with frequent rock formations called 'pagodas', cliffs, steep slopes and gorges. The referral documentation states there are eight pagodas, seven cliffs and 10 minor cliffs in the proposed action area. The steep slopes and cliffs are mostly in the southern and western parts of the proposed action area.

15) Bungleboori Creek flows across the northeast corner of the proposed action area and Paddy's Creek, a tributary to Bungleboori Creek, across the southern end. Bungleboori Creek enters the GBMA at about 8 km downstream and joins the Wollangambe River about 23 km downstream.

16) Vegetation formations in the proposed action area include swamp, dry sclerophyll forest, fringing swamp woodland and montane heath. The forests contain a eucalypt-dominated canopy with disturbed fringes likely to contain some exotic flora species. The swamp and heath ecosystems are dominated by shrubby *Leptospermum* mid and ground layer species with little to no canopy species. The native cover is generally structurally intact, but exotic species are also present.

17) The referral identifies the Newnes Plateau Shrub Swamps, which occur along Bungleboori Creek and its tributaries, and Newnes Plateau Hanging Swamps as meeting the definition of the EPBC listed Temperate Highland Peat Swamps on Sandstone (**THPSS**) ecological community.

Project history

State and Council approvals

18) Mining of coal at Clarence Colliery has been occurring for almost 50 years:

    a) In 1976, Blaxland Shire Council (now Lithgow City Council) approved an underground mining operation in the CCL 705 area of Clarence Colliery operations. The in-perpetuity approval permits partial and total extraction mining methods. Some seams in this area remain to be extracted.

    b) In 1994, Lithgow City Council granted a second in-perpetuity development consent for ML 1353 and ML 1354 authorising longwall mining and some areas of partial extraction. Some seams in this area remain to be extracted.

    c) In 2005, the NSW Minister for Planning approved the development of ML 1583 using partial extraction mining methods (DA 504-00). The 918/920 panels are in ML 1583. DA 504-00 is due to expire on 31 December 2026.

19) DA 504-00 requires Clarence Colliery to prepare an extraction plan for all second workings on the site of the development that are not covered by an existing approved Subsidence Management Plan, to the satisfaction of the Secretary.

20) I noted that a draft Extraction Plan for panels 918/920, and the comments received from consultation with relevant NSW agencies were included in the referral documentation. I noted that the NSW Department of Planning, Housing and Infrastructure (**NSW DPHI**) advised that it is waiting on advice from the NSW Independent Expert Advisory Panel for Mining and Clarence Colliery's responses to NSW agency advice prior to approving the Extraction Plan.

Commonwealth approvals

21) Two referral decisions exist in relation to mining activities in ML 1583 at Clarence Colliery:

    a) A not a controlled action (**NCA**) in relation to EPBC 2009/4882 *Partial Extraction Mining in the 700 Area of Clarence Colliery, Newnes Plateau.*

b) an NCA-PM[1] in relation to EPBC 2012/6446 *Partial Extraction Mining Operations in ML 1583 at the existing Clarence Colliery, NSW*.

22) Potential impacts to listed threatened species and ecological communities and World Heritage and National Heritage places were key considerations in both referral decisions mentioned above. While a water resource, in relation to unconventional gas development and large coal mining development impacts (sections 24 and 24D) had yet to come into effect as a Matter of National Environmental Significance, the interim Independent Expert Scientific Committee (IESC) provided advice on impacts to water resources and dependent assets in relation to EPBC 2012/6446.

23) In both decisions, subsidence effects from the proposed partial pillar extraction methods were assessed as negligible and unlikely to impact the shallow aquifers that support the endangered THPSS ecological community and threatened species that inhabit this community.

24) The interim IESC considered risks from potential contaminant release from leachate retention dams, potential impacts to downstream THPSS and potential disturbance of aquatic habitat immediately downstream of the dam. The interim IESC noted that bord and pillar mining in similar areas had not resulted in surface damage and concluded that monitoring and management actions appeared adequate to protect matters protected under national environment law.

25) Centennial Coal (**the parent company**) has underground mining operations at Springvale Colliery, Angus Place and Airly Mine to the northwest of Clarence Colliery, which have also been the subject of Commonwealth decisions under the EPBC Act.

This referral

26) The current referral is for extraction of two panels in the northwest corner of ML 1583 within the area covered by DA 504-00 and the 2012 NCA-PM decision, and north of the area covered by the 2009 NCA decision. The 145-ha project area represents 4.4% of ML 1583.

Referral decision

27) On 20 June 2024, the proponent submitted a valid referral in accordance with section 68 of the EPBC Act. The proponent stated its belief that the proposal is an NCA for the purposes of the EPBC Act.

[1] Note the PM was in relation to rehabilitation measures required to avoid impacts from exploratory works on the wilderness quality of the Greater Blue Mountains World Heritage Area.

28) On 20 June 2024, in accordance with section 74(1) of the EPBC Act, comments on the referral were invited for a period of 10 business days from the following Commonwealth Ministers having administrative responsibilities relating to the proposed action:

- The Hon Chris Bowen MP, Minister for Climate Change and Energy.
- The Hon Madeleine King MP, Minister for Resources and Minister for Northern Australia.

29) On 20 June 2024, in accordance with section 74(2) of the EPBC Act, The Hon Paul Scully MP, the NSW Minister for Planning and Public Spaces, through his nominated delegate, was invited to comment on the referral.

30) In accordance with section 74(3) of the EPBC Act, the referral was published on the department's website on 20 June 2024, and public comments were invited for a period of 10 business days until 4 July 2024.

31) A request for advice was made to the department's Office of Water Science (**OWS**) to inform this referral decision. On 4 July 2024, OWS provided its advice.

32) On 18 July 2024, in accordance with section 75 of the EPBC Act, I decided that the proposed action is a controlled action and that the following are controlling provisions:

- Listed threatened species and communities (sections 18 and 18A).
- A water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E).

EVIDENCE OR OTHER MATERIAL ON WHICH MY FINDINGS WERE BASED

33) In making my decision under section 75 of the EPBC Act, I gave consideration to the referral decision brief (and its attachments) as prepared by officers of the department, which I signed on 18 July 2024 (**referral decision brief**). Annexure B sets out in full the attachments to the referral decision brief that I considered in my decision (i.e. list excludes decision notice, fee schedules, letters).

34) On the basis of this information, I agreed with the department's recommendation that there was sufficient information available to make a decision under section 75 of the EPBC Act.

Public submissions

35) In accordance with section 75(1A), I considered the public comments received during the public comment period when making my decision about whether the proposed action is a controlled action and which (if any) were controlling provisions. I noted that the public comments were taken into consideration by the department in the discussion and recommendations in the referral decision brief.

36) I noted that six public submissions were received in response to the referral during the public comment period. Two of the submissions were from private individuals and four from environmental interest groups (Bathurst Community Climate Action Network, Lithgow Environment Group, Nature Conservation Council and Wilderness Australia). All of these supported a controlled action decision under the EPBC Act.

37) I noted these submissions raised several issues, including:

- impacts to THPSS ecological community and associated threatened species from aquifer depressurisation and drawdown effects
- impacts on GBMA
- impacts on migratory species
- impacts on rock pagodas arising from fracturing
- cumulative impacts
- that extension of a mining operation is inconsistent with other government policies, including reducing greenhouse emissions and the Nature Positive plan
- environmental track record of the proponent and history of underpredicting subsidence effects
- inadequate subsidence monitoring and water monitoring programs
- need for appropriate administrative responses to any incidence of exceeding subsidence predictions.

38) I noted that Lithgow Environment Group's submission provided documentary evidence of significant impacts to swamps in the area that it alleges are the result of undermining. Their submission suggests that adverse impacts arise not just from longwall mining but from partial extraction methods.

39) I noted the two journal articles included as part of the Lithgow Environment Group submission – the first on impact of mine wastewater discharge to water quality and aquatic ecosystems in the Wollongambe River; the other on ecology and groundwater processes of Newnes Plateau Shrub Swamps. I agreed with the department that - a proposed controlled action decision would be consistent with the second article, and addressed the concern about water quality impacts in the Wollongambe River.

40) I noted that most of the concerns raised in the submissions were considered in the department's recommendation that the proposed action be a controlled action. The exceptions included:

- Impacts to rock pagodas – rock pagodas are not a protected matter under the EPBC Act. To the extent that they could provide habitat for EPBC Act listed species, however, they were considered.
- An extension of coal extractions is inconsistent with Australia's commitment to keep global warming to below 1.5% of preindustrial levels. I noted that:
  - the proposed action is a change in extraction method rather than an extension of coal mining operations,
  - the proposed change is a relatively small increase in the volume of coal from two panels currently approved for first workings.
- Centennial's environmental history – this will be considered at the approval decision stage in accordance with section 136 of the EPBC Act.

Comments from Commonwealth Ministers

41) I noted that Geoscience Australia (**GA**) provided comments on behalf of the Hon Madeleine King MP, Minister for Resources and Minster for Northern Australia, on 3 July 2024. GA stated that it was 'unable to verify the claim of unlikely significant impact on water resources' and that the project 'warrants further consideration in order to understand the susceptibility of these environmental values to changes in groundwater caused by the project'.

42) GA's concerns included:

    a) the tendency of the groundwater model to overpredict groundwater levels at bores associated with shrub swamps,

    b) insufficient testing of geological, hydrogeological and numerical groundwater simulation assumptions in representing the panel and partial pillar extraction in the model.

43) I took account of the matters raised by GA in deciding that the proposed action is a controlled action due to potentially significant impacts on water resources and listed threatened species and communities.

Comments from State Ministers

44) I noted that a representative of the NSW DPHI responded on behalf of the delegated contact for the NSW Minister for Planning and Public Spaces the Hon Paul Scully MP, to advise that the proposed action will not be assessed in a manner specified in Schedule 1 to the Bilateral Agreement made under section 45 of the EPBC Act between the Commonwealth and the New South Wales Government, relating to environmental assessment if it is a controlled action.

FINDINGS ON MATERIAL QUESTIONS OF FACT

Referral of a larger action

45) Section 74A(1) of the EPBC Act states that if the Minister (or delegate) is satisfied the action that is the subject of the referral is a component of a larger action the person proposes to take, the Minister (or delegate) may decide not to accept the referral.

46) I noted that this is a discretionary decision and accordingly, I, as the Minister's delegate, was not obliged to exercise the power.

47) The *Environment Protection and Biodiversity Conservation Act 1999 (Cth) Policy Statement: Staged Developments – Split referrals: Section 74A of the EPBC Act* (**Split Referrals Policy Statement**) provides guidance on when the discretion should be exercised and states that "[a] referred action that is part of a larger action can be refused only if there is a reasonable basis for doing so. The key question for the Minister is: does the splitting of the project reduce the ability to achieve the objects of the Act?"

48) Having regard to the Split Referrals Policy Statement, I considered that the proposed action comprises part of a larger action undertaken by the same person because:

    a) *the referred action is in the same location as a larger action undertaken by the proponent*: the two panels form part of a larger mining operation at Clarence Colliery since 1976,

b) *the referred action is authorised by a single State development consent*: the two panels are within ML 1583, which is the subject of a NSW development consent for coal excavation using partial extraction methods (DA 504-00),

c) *the proposed panels are part of a larger action referred to the Commonwealth in 2012:* EPBC 2012/6446 considered potential impacts across ML 1583 from underground mining using partial pillar extraction (bord and pillar),

d) *there is an overall plan for the larger action that encompasses the referred action / the referred action is within the timeframe of the larger action*: the two panels are next in line for excavation under the broader extraction plan for ML 1583.

49) I noted that the proponent, in their referral, considered the project is part of a staged development.

50) I noted and accepted the department's recommendation that, while clearly part of a larger action, the referral be accepted. I accepted the department's advice that adequate consideration on protected matters can be achieved through accepting the referral.

51) For the above reasons, I agreed with the department's recommendation and decided to exercise my discretion to accept the referral.

52) I also noted that the proponent had not sought to split a larger action into a number of smaller actions and that the referral by the proponent was made on advice from the department that:

a) the proponent's proposed extraction method at panels 918/920 was inconsistent with the earlier NCA-PM referred action description (EPBC 2012/6446); and

b) an assessment of the potential impacts on protected matters under the EPBC Act arising from the proposed extraction method should be referred because it is a different action, and to provide for the identification, avoidance and mitigation of any potentially significant impacts on protected matters.

Part 3 provisions that are controlling provisions

53) As a delegate of the Minister, I was required under section 75 of the EPBC Act to decide whether the referred action is a controlled action, and which provisions of Part 3 (if any) are controlling provisions for the proposed action.

54) Section 67 of the EPBC Act provides that an action is a controlled action if the taking of the action, without the Minister's approval for the purposes of a provision of Part 3, would be prohibited by the provision (the controlling provision for the action).

55) In making my decision I considered all adverse impacts the proposed action has, will have, or is likely to have on matters protected by each provision of Part 3 of the EPBC Act. In making my decision, I did not consider any beneficial impacts the proposed action has, will have or is likely to have on the matters protected by each provision of Part 3 of the EPBC Act.

56) Having regard to the matters relevant to my decision and the information before me, I agreed with the department's recommendation in the decision brief and decided that the proposed action is a controlled action because it is likely to have a significant impact on:

- listed threatened species and communities (sections 18 and 18A)

- a water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E).

A water resource, in relation to a large coal mining development or unconventional gas development (s24D and s24E)

Application of the water trigger

57) The water trigger applies to large coal mining development and unconventional gas development undertaken by a constitutional corporation, the Commonwealth or Commonwealth agency, or person doing the action for the purpose of international or domestic trade.

58) The department's *EPBC Policy Statement – Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments— impacts on water resources* state that a large coal mining development is any coal mining activity that has, or is likely to have, a significant impact on a water resource in its own right; or when considered with other developments, whether past, present, or reasonably foreseeable.

59) I noted that the department considered that the water trigger applies in relation to the proposed action because:

a) Clarence Colliery Pty Ltd, the proponent and person proposing the action is a constitutional corporation,

b) the proposed action is a coal mining activity, that forms part of a larger coal mining development at Clarence Colliery, which is close to other large coal mining operations within the Western Coalfield of the Sydney Geological Basin, and

c) the proposed action is expected to result in subsidence effects and depressurisation of aquifers above the areas of extraction, with potential to impact groundwater and surface water resources.

60) A significant impact is defined as one that is of sufficient scale or intensity as to reduce the current or future utility of the water resource for third party users, including environmental and other public benefit outcomes, or to create a material risk of such reduction in utility occurring.

61) I noted a request for advice was made to the department's Office of Water Science (OWS) to inform this referral decision which was provided by OWS on 4 July 2024.

Water resources

62) I noted that:

a) Clarence Colliery is in the Wollongambe River catchment within the larger Hawkesbury-Nepean River system and that Bungleboori Creek, which drains the proposed action area, flows into the GBMA about 8 km downstream of the proposed action area.

b) The proposed action area is in the Colo River Water Source, managed under the *NSW Water Sharing Plan for the Greater Metropolitan Unregulated River Water Sources 2023*.

c) The underlying groundwater system is part of the Sydney Basin West Groundwater Source and managed under the NSW *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011.* Bore water users tap groundwater resources in the Banks Wall Sandstone above the Mount York Claystone.

d) Environmental users include creeks, rivers and wetlands in the vicinity of the proposed action area that are sustained in some part by a connection to groundwater, including Bungleboori, Paddy's, Nine Mile and Pine creeks and the swamp ecosystems that have developed along these creeks or at seepage faces on surrounding cliffs, and that the swamps meet the definition of the threatened ecological community THPSS.

Assessment of impacts

63) I noted that impacts on water resources are likely to arise from subsidence effects and groundwater depressurisation arising from the proposed action.

Subsidence effects

64) Subsidence effects mean mining-induced deformation of the ground mass, including vertical and horizontal displacements and curvature, which can lead to cracking, buckling and troughs at the land surface. The magnitude of effects, and hence the likelihood and significance of impacts on water resources, depends on the method of extraction and configuration of pillars and panels, height of extraction, and depth and geophysical characteristics of the overburden.

65) I noted that the proposed configuration of panels and pillars was designed to limit pillar loading and subsidence effects to within limits of the NSW development consent and thereby avoid significant impacts on water resources and cliff features in the surrounding area.

66) I noted the conclusions and justifications reached by the proponent from the geotechnical assessments in relation to subsidence effects that:

a) Subsidence effects will be within prescribed limits (see paragraph 7) – the various methods used to estimate subsidence effects from the two panels indicated that maximum vertical subsidence was unlikely to exceed 87 mm, and tilts and strains were likely to be 1.1 mm/m and 1 mm/m, respectively.

b) Surface cracking of the topmost bedrock is considered unlikely – experience from NSW coalfields suggests it rarely occurs where predicted strains are less than 0.5 mm/m tensile and less than 2mm/m compressive.

c) The integrity of the Mount York Claystone will not be compromised (i.e. fracturing of the Mount York Claystone is considered unlikely) – for panels less than 90 m wide (such as 918/920) the most conservative estimate of maximum fracturing height in the Clarence geological environment, based on various empirical and numerical methods, was 70 m (range 34-70 m); and the Mount York Claystone sits between 110-120 m above the Katoomba Coal Seam.

d) Non-conventional subsidence effects (upsidence, valley closure and far field horizontal displacements) are unlikely because:

- they are generally most pronounced in areas with high horizontal stress, such as found in the Southern Coalfield,
- measured horizontal stresses in the project area are comparatively low,
- modelled redistributions of horizontal stress are less than 15 mm within 50 m of the panel and negligible beyond 150 m,
- estimates based on methods in ACARP (2002) suggest valley closure of less than 50 mm and upsidence of less than 30 mm.

67) I noted that the geotechnical reports had been prepared by industry experts and that a range of assessments and modelling methods had been used, which, taken together, provide greater confidence that the maximum effects assumed are conservative. I also noted the independent review by an industry expert who found the modelling generally adequate to support the conclusions reached.

68) I noted that while the department was mostly satisfied with the analyses and conclusions reached in relation to subsidence effects on water resources from the proposed panels, there was uncertainty about the magnitude of the cumulative effect from extraction of nearby panels. For example, the UNSW modelling and observation data from the excavated 906/908/910 panels nearby indicated subsidence >100 mm when the third panel was mined and increased subsidence when flooding of mine voids occur.

69) The department accepted, and I agreed, that the integrity of the Mt York Claystone as a regional aquitard was unlikely to be compromised.

Groundwater effects

70) The creation of voids in the coal seam and the resultant caving and fracturing of overburden and potential activation of lineaments will cause depressurisation of the aquifers around and overlying the coal seam and increased inflows to the extraction area leading to the drawdown of water tables. There is potential for changes in the water quality of aquifers where hydrologic connections are established or enhanced, and mixing of aquifers can occur.

71) In relation to the groundwater model, I noted:

    a) a very detailed regional groundwater model was used to assess the groundwater impacts from the proposed action,

    b) it had been independently reviewed by SLR consulting in accordance with the *Australian Groundwater Modelling Guidelines,*

    c) the review concluded that the conceptualisation of the hydrogeological setting is consistent with observations, the model design is fit-for-purpose and its application consistent with industry-standard practice.

72) In relation to mine water inflows from the proposed action, I noted:

    a) the groundwater model predicts them to be up to 1 ML/day, reducing to less than 0.2 ML/day over the long term,

    b) inflows are expected to come from aquifers below the Mount York Claystone aquitard,

    c) the referral states these inflows are no different to those estimated for partial pillar extraction, which was considered in reaching the NCA-PM decision for EPBC 2012/6446,

    d) the dewatering requirement can be accommodated within the existing water management system and licensing arrangements,

    e) across Clarence Colliery operations, including panels 918/920, total mine inflows are expected to average about 15 ML/day and remain within the approved extraction rate under the mine's two water access licences (up to 21.1 ML/day on average).

73) In relation to the water quality of the shallow and deeper aquifers, I noted that there is unlikely to be inter-mixing because the height of fracturing is not expected to exceed the Mount York Claystone aquitard.

74) In relation to groundwater depressurisation effects, I noted the groundwater model predicts:

    a) depressurisation of the shallower Banks Wall Sandstone aquifer and perched aquifers in the Burralow Formation above the Mount York Claystone layer,

    b) a 10% probability that the water table elevation of the uppermost aquifer will decline by more than 2 m in localised ridgetop areas within the extraction plan area,

    c) a 10% probability that the baseflow contribution to Bungleboori Creek flows will decrease by more than 0.001 ML/day, which is 0.2% of the estimated total baseflow contribution of 0.52 ML/day.

75) I noted that the department had some concerns about the groundwater modelling and presentation of results, which made it difficult to support the proponent's assertions that impacts on water resources will not be significant.

Impacts on economic users

76) I noted that the Water Management Plan reports 256 registered bores within 5 km of Clarence Colliery mine lease areas, including 131 monitoring bores and 80 stock and domestic bores, with the remainder a mix of industrial, exploration, mine dewatering, irrigation and other general uses. I noted that most of the stock and domestic bores are around Clarence village and extract groundwater from within the Banks Wall Sandstone.

77) I noted that the groundwater report:

    a) states there are no known users of groundwater below the Mount York Claystone, so depressurisation of the deeper aquifers is not expected to impact groundwater users,

    b) identifies up to eight boreholes within 5 km of the proposed action area, two of which have water access licences. A drilling depth of 30 m is reported for two of the bores and elsewhere in the referral, it is stated that bore water users are accessing groundwater in the Banks Wall Sandstone.

78) I noted that impacts were assessed in terms of the minimal impact consideration for water supply works defined in the *NSW Aquifer Interference Policy* – i.e. a minimal impact is based on a decline in groundwater elevation at a water supply work of no more than 2 m. The modelled changes in water table elevation for the uppermost aquifer and at the depth of the Mount York Claystone indicate that there are unlikely to be impacts on bore users in the surrounding area.

79) I noted the results of the groundwater modelling suggest that any changes in groundwater elevation in the Banks Wall Sandstone aquifer occur within the project area and do not propagate to the bore users identified within 5 km of the proposed action area.

80) I noted that the department accepted the conclusion of the assessment that impacts to economic users of groundwater in the vicinity of the proposed action will be negligible.

81) I accepted the department's assessment, and agreed with its conclusion, that the impacts to economic users of groundwater in the vicinity of the proposed action will be negligible.

Impacts on groundwater dependent ecosystems

82) In terms of impacts on groundwater dependent ecosystems, I noted:

a) that the areas where drawdowns of up to 2 m are predicted to occur do not coincide with the swamps but are associated with surrounding ridgetop areas in the Burralow Formation,

b) that the groundwater report states that there are unlikely to be significant impacts to swamps in the panel extraction area because the swamps occur in the Banks Wall Sandstone, which is not affected by the decline in the Burralow Formation.

83) However, I noted that the department had concerns that the information in the groundwater modelling report was not sufficiently comprehensive and clear to support the conclusion of negligible impact to swamps in the extraction plan area and that GA reached a similar conclusion in their comments on the groundwater assessment.

Impacts on streamflow

84) The potential impacts on streamflow are through lowering of the shallow water table that supports baseflows in nearby creeks and discharge of mine inflow water into Wollongambe River, which could impact its flow regime and water quality.

85) I noted that the groundwater report indicates negligible impacts on streamflow in nearby creeks due to the proposed action. The model predicts reductions in groundwater contribution to Bungleboori Creek of 0.2%, to Pine Creek (west of the extraction plan area) of 0.4% and to Paddy's Creek (southwest of the extraction plan area) of 0.26% (10^{th} percentile).

86) In relation to the predicted mine water inflow, I noted that:

a) it is pumped to underground storages where it is available for operational use or dewatering,

b) the water management plan states that the mine water undergoes primary and secondary treatment at the surface to remove dissolved metals and to meet the conditions of the NSW Environment Protection Licence (**EPL**),

c) the treated water is transferred to the Colliery's main dam, where it is stored for transfer to Lithgow No 2 Dam (which supplies water to Lithgow) or spills into the Wollongambe River,

d) Clarence Colliery is licensed to discharge up to 25 ML/day into the river system under its EPL; that current discharge rates average around 20 ML/day, and that the predicted 1 ML/day can be accommodated within the site's permitted daily discharge volume.

87) I also noted advice from the interim IESC in relation to the EPBC 2012/6446 referral decision that:

a) the risks associated with discharges from the main dam could be mitigated through appropriate monitoring and management and that NSW Environment and Protection Agency requirements for groundwater and surface water monitoring appeared to be appropriate and adequate,

b) ongoing discharges from the main dam were unlikely to significantly impact THPSS located directly downstream of the main dam because they were not in direct contact with the Wollongambe River.

Avoidance, mitigation and management measures

88) I noted that the referral states that the proposed extraction configuration and methods are designed to limit subsidence effects to within the limits prescribed in the NSW development consent and avoid impacts to shallow groundwater resources and groundwater dependent ecosystems.

89) I noted the NSW development consent requires the proponent to prepare an extraction plan for any secondary workings to the satisfaction of the Secretary of the NSW Department of Planning, that includes a subsidence monitoring program and land, water and biodiversity management plans, which include Trigger Action Response Plans (**TARPs**).

90) I noted that the proponent had prepared and consulted on a draft Extraction Plan for the 918/920 panels and that, at the time of my referral decision, NSW was waiting on advice from the NSW Independent Expert Advisory Panel for Mining and the proponent's responses prior to finalising the Extraction Plan.

91) I noted that triggers requiring an adaptive management response have been defined in relation to subsidence effects, water systems, land features (cliffs and pagoda rocks) and biodiversity, in their respective management plans.

92) I noted that the Subsidence Monitoring Program (**SMP**):

    a) is intended to demonstrate that statutory performance criteria are met, and triggers are not exceeded,

    b) includes monitoring using conventional surface subsidence surveys, near real time far-field subsidence monitoring using Global Navigation Satellite System, surface to seam extensometer monitoring above the first sub-panel to be extracted (918A), in-pillar instrumentation, underground survey monitoring and inspections, and surface inspections,

    c) defines triggers in relation to panel heights and widths during extraction, subsidence effects, height of fracturing and surface cracking, cliff collapse and slope failure.

93) I noted that the referral states that the panel (shortwall) extraction method is flexible and can, if triggers are exceeded, be varied as it is mined. The mine design can be revised on a sub-panel by sub-panel basis and the proponent proposes to prepare and submit sub-panel reports to the NSW DPHI, the Resources Regulator and National Parks and Wildlife Service within one month of the completion of each sub-panel.

94) However, I also noted the concerns of OWS about the adequacy of the monitoring framework, reporting plans and the TARPs, as currently proposed, for protecting water resources and that OWS considered that these should be strengthened.

Precautionary principle

95) I noted the advice from OWS and GA which raised concerns about the conclusions reached in relation to the impacts to water resources and groundwater dependent ecosystems (GDEs), the adequacy of the monitoring design and the adaptive management response proposed to identify and avoid significant impacts to GDEs, including:

- cumulative subsidence effects from nearby extraction panels,

- groundwater model complexity, adequacy of available data to constrain the model, and difficulty identifying the parameters controlling model responses, and appropriateness of a regional scale model for a swamp-scale assessment,
- the tendency of the groundwater model to overpredict groundwater levels at bores associated with shrub swamps,
- insufficient testing of geological, hydrogeological and numerical groundwater simulation assumptions in representing the PPPE method in the model,
- poor communication of results in terms of choice of metrics, graphs and maps, swamp water requirements and relevant impact thresholds to support the contention of negligible impacts to swamps,
- lack of alignment between proposed monitoring subsidence and fracture height sites and areas predicted to have the greatest subsidence,
- loose commitments to actions when triggers are exceeded, including the possibility of continuing mining if the 100 mm vertical subsidence limit is exceeded or fracturing extends into the Mount York Claystone.

96) I also noted:

- PPPE is referred to as a new mining method, not currently practised in Australia. This means there would not be local monitoring data from other sites to validate the model results and provide confidence that the model is reflecting all the relevant parameters,
- the Lithgow Environment Group submission suggests that partial extraction methods may have contributed to significant impacts on swamps in other areas,
- previous instances of subsidence underprediction in relation to Centennial Coal projects (e.g. at Airly Mine) and inconsistencies in maximum subsidence reported for the nearby 906/908/910 panels.

97) Given these uncertainties and the threat of serious or irreversible environmental damage to water resources, including the THPSS, I considered the precautionary principle should apply because there are potentially serious and irreversible impacts on water resources, and associated threatened species and communities, and there is lack of full scientific certainty about the likelihood and magnitude of those impacts.

Conclusion

98) In making this decision, I considered the nature of the proposed action, the referral documentation, line area advice, public and Ministerial submissions and the *Significant Impact Guidelines 1.3 - Coal seam gas and large coal mining developments - impacts on water resources*.

99) The department considered, and I agreed, that the proposed action is:

- likely to have a significant impact on a water resource, despite the proposed subsidence and water monitoring programs and TARPs, because there remains a real possibility of significant impacts on Bungleboori, Paddy's and Pine creeks and groundwater dependent ecosystems within the proposed action area.

- unlikely to have a significant impact on:

  i) the water quality and flow regime of the Wollongambe River, which receives treated mine water from overtopping of Clarence Colliery's main dam because, even if all the mine water make (up to 1 ML/day) were to be discharged to the Wollongambe, it would represent about 5% of the current average daily discharge and is within discharge limits deemed acceptable under existing approvals,

  ii) economic users of groundwater resources in the area due to the relatively few registered users and the relatively small impact of depressurisation on the target aquifer (Banks Wall Sandstone).

100) For the reasons set out above, I found that the proposed action is likely to have a significant impact on a water resource. Accordingly, I decided that sections 24D and 24E are controlling provisions for the action.

Listed threatened species and communities (s18 & s18A)

101) I noted that the department's Protected Matters Search Tool (**PMST**) dated 8 July 2024 identified 62 listed threatened species and four communities that may, are likely, or known to occur within 5 km of the proposed action.

102) I noted the department's assessment that impacts could potentially arise in relation to:

- Temperate Highland Peat Swamps on Sandstone (THPSS) ecological community – Endangered,

and the following threatened species, which are associated with this community or have known groundwater dependencies:

- Blue Mountains Water Skink (*Eulamprus leuraensis*) – Endangered
- Giant Burrowing Frog (*Heleioporus australiacus*) – Vulnerable
- Deane's Boronia (*Boronia deanei*) – Vulnerable
- Smooth Bush-pea (*Pultenaea glabra*) – Vulnerable
- Swamp everlasting Daisy (*Xerochrysum palustre*) – Vulnerable.

Temperate Highland Peat Swamps on Sandstone ecological community – Endangered

<u>Protected matter ecology</u>

103) I noted the department's description of the THPSS ecological community and its identified threats – that:

a) THPSS comprise temporary or permanent swamps with a substrate of peat over sandstone. They generally occur at altitudes from 600 m to 1200 m above sea level and are restricted to the South Eastern Highlands and Sydney Basin Interim Biogeographic Regionalisation of Australia (IBRA) regions.

b) THPSS occur in poorly drained, relatively infertile sites and are dependent on a regular supply of surface or seepage water. In the Newnes Plateau area, two types of swamp are distinguished based on their landscape setting and water dependency:

- Shrub swamps, which form at the base of valleys that are subject to temporary or permanent waterlogging from groundwater, surface water runoff and rainfall. Shrub swamps can occur as headwater swamps in low gradient areas near catchment divides or as valley infill swamps along the valleys of incised second or third order streams.
- Hanging swamps, which form on steep valley sides or cliffs where perched groundwater discharges and are subject to infrequent waterlogging from perched groundwater and recently infiltrated water moving along cracks and joints.

c) Topographic location, hydrology and soils significantly influence the dominant species composition. Headland shrub swamps support shrublands and heathlands, valley infill shrub swamps support closed sedgelands, and hanging swamps support open heath.

d) In the Newnes Plateau area, the THPSS community is associated with a number of threatened species including the Blue Mountains Water Skink (*Eulamprus leuraensis*), Giant Burrowing Frog (*Heleioporus australiacus*) and Deane's Boronia (*Boronia deanei*).

e) The *Approved Conservation Advice for Temperate Highland Peat Swamps on Sandstone* states that due to their generally small size, they are particularly sensitive to changes to hydrology in the region. Mining induced subsidence, upsidence, fracturing and cliff collapse are key threatening processes, known to affect surface and groundwater hydrology. The discharge of mine wastewater into streams upstream of THPSS is another potential threat to these communities.

f) The *Temperate Highland Peat Swamps on Sandstone: ecological characteristics, sensitivities to change, and monitoring and reporting techniques, Knowledge report* states that THPSS are greatly affected when subsidence impacts are severe but demonstrate some tolerance to lower levels of impact.

g) Other identified threats, such as trampling and grazing by stock, damage from introduced animals and weed invasion, fertiliser in runoff, land clearing, residential development, fire and weeds are not likely to result from the proposed action.

Environment within and surrounding the proposed action area

104) I noted that the referral documentation states that:

a) the proposed action area includes 2.77 ha of shrub swamps and 2.66 ha of hanging swamps that meet the definition of THPSS (total of 5.43 ha), corresponding to Lower Nine Mile Swamp (mostly shrub swamp), parts of Paddys Creek Swamp (both shrub swamp and hanging swamp types) and a small area of Pine Swamp (hanging swamp),

b) there are other THPSS immediately upstream and downstream of the proposed action area, including Nine Mile Swamp, Pine Swamp, parts of Paddys Creek Swamp and along Bungleboori Creek downstream and east of the proposed action area, which are mostly of the shrub swamp type, with some areas of hanging swamps.

Potential impacts

105) I noted the department's advice on the impact pathways:

a) THPSS within the extraction plan area could be impacted if subsidence effects result in reductions in groundwater contributions to the swamps, cracking-induced flow losses from the swamps and scouring triggered by cracking and/or base-level lowering of the swamp floor; and

b) nearby THPSS could experience the effects of water table lowering or reductions in inflows from upstream.

c) Other threats identified in the Conservation Advice are not relevant to the proposed action.

106) I noted that the Biodiversity Management Plan states that swamps within the Clarence Colliery mine lease areas have been undermined using partial extraction methods since 1998 and there is no evidence of mining-related damage to any of them. I also noted evidence in the Lithgow Environment Group submission that disputed this claim.

107) I noted the results of the Strata2 report and groundwater modelling, respectively, that:

a) no surface cracking will occur from the proposed action because the estimated tensile and compressive strains are less than 0.5 mm/m, well below the 2 mm/m threshold adopted to limit surface cracking,

b) there is a 10% probability of localised areas of drawdown of up to 2 m of the uppermost aquifer, largely coinciding with ridgeline areas rather than valley floor swamps.

108) I also noted that the groundwater report indicates negligible impacts to streamflow of the nearby Bungleboori, Pine and Paddy's creeks that support THPSS upstream and downstream of the proposed action area (<0.5% reduction in baseflow contribution).

109) I noted the advice of the interim IESC in relation to EPBC 2012/6446 that THPSS downstream of the main dam at Clarence Colliery lack a direct connection to Wollongambe River flows and that the continuation of ongoing water discharge is not likely to have a significant impact on these swamps.

Avoidance, mitigation and management measures

110) I noted that the proposed extraction configuration and methods are designed to limit subsidence effects to within the limits prescribed in the NSW approval DA 504-00 and ensure the height of fracturing above the extraction panels is contained below the Mount York Claystone, a regionally important aquitard between aquifers at the extraction depth and near surface aquifers that sustain the THPSS.

111) I noted that the proposed Biodiversity Management Plan:

a) defines the performance measure for impacts on threatened species and ecological communities as 'negligible environmental consequences' and that TARP responses will be triggered if:

- subsidence and groundwater monitoring identify exceedances of trigger thresholds (as per the Subsidence Monitoring Program and Water Management Plan),
- there is a statistical change in biodiversity, or

- there is a non-negligible change in measured outcomes that is caused by subsidence.

b) proposes a 5-year monitoring program to evaluate the impact of the proposed action against the performance measures with reference to a baseline monitoring dataset, collected between 2021 and 2024 and including 12 Biodiversity Assessment Method (BAM) plots in the extraction plan area, aquatic ecology surveys and fauna surveys.

112) However, I noted that OWS questioned the adequacy of the monitoring and reporting plans and the TARPs, as currently proposed, for protecting water resources and considered they should be strengthened.

Conclusion

113) In making this decision, I considered the nature of the proposed action, the referral documentation, line area advice, public and Ministerial submissions and the *EPBC Act Policy Statement – Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*.

114) The department considered, and I agreed, that the proposed action is likely to have a significant impact on the THPSS threatened ecological community because, despite the proposed subsidence and water monitoring programs and TARPs, there is a real possibility that the proposed action will:

- reduce the extent of an ecological community,
- modify or destroy abiotic factors necessary for the ecological community's survival, including reduction of groundwater levels.

115) For the reasons set out above, I found that the proposed action is likely to have a significant impact on listed threatened species and communities. Accordingly, I decided that sections 18 and 18A are controlling provisions for the action.

Other listed species

116) As outlined above, I considered there was potential for significant impacts from the proposed action on groundwater and, therefore, the potential for the following species, which have known groundwater dependencies, to be significantly impacted:

- Blue Mountains Water Skink (*Eulamprus leuraensis*) – Endangered
- Giant Burrowing Frog (*Heleioporus australiacus*) – Vulnerable
- Deane's Boronia (*Boronia deanei*) – Vulnerable
- Smooth Bush-pea (*Pultenaea glabra*) – Vulnerable
- Swamp everlasting Daisy (*Xerochrysum palustre*) – Vulnerable.

117) I noted that the department considered the above species were likely to be significantly impacted because there is a real chance or possibility the proposed action will:

a) reduce the area of occupancy of the Blue Mountains Water Skink, and,

b) modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Giant Burrowing Frog, Deane's Boronia, Smooth Bush-pea and the Swamp everlasting Daisy are likely to decline.

118) While the referral documentation suggests there is a low likelihood of changes in the baseflow contribution to streams draining the proposed action area and a low likelihood of subsidence impacts on nearby cliffs and steep, rocky slopes, given the uncertainties associated with the proposed mining method (paragraphs 95 to 97), the department considers, and I agreed, that the proposed action may significantly impact the following listed threatened species, which are known or likely to occur in the area and have habitat requirements associated with upland streams or cliffs and steep, rocky slopes, including:

- Littlejohn's Tree Frog (*Litoria littlejohni*) – Endangered
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – Endangered
- Broad-headed Snake (*Hoplocephalus bungaroides*) – Endangered.

I noted the department considered that further information should be sought during the assessment stage in relation to potential impacts on these species.

119) In relation to all other threatened species and communities identified in the PMST, the department considers, and I agreed, that significant impacts are unlikely due to lack of suitable habitat and/or impact pathways.

Part 3 provisions that are not controlling provisions

World Heritage properties (s12 & s15A)

120) I noted in the department's referral decision brief and the PMST report that Clarence Colliery adjoins the Greater Blue Mountains World Heritage Area (**GMBA**) and that the proposed action is about 5 km from the GBMA.

Greater Blue Mountains Area

121) I noted specifically that:

a) The GBMA was inscribed on the World Heritage List in 2000 based on natural heritage values, notably for its representation of the evolutionary adaptation and diversification of eucalypt ecosystems and associated communities of plants and animals that occurred on the Australian continent after the break-up of Gondwana 180 million years ago.

b) The values contributing to its Outstanding Universal Value (**OUV**) include its Gondwanan flora, scleromorphic flora and conservation of significant flora and fauna, its water systems, geodiversity and integrity of its boundary, which have enabled such a diversity of ecosystems. Indigenous custodial relationships with the GBMA landscape are also a key component of its OUV.

c) Mining is an identified threat to the OUV of the GBMA. While mining is no longer permitted in the GBMA, there are numerous coal mining operations around the property, which can have indirect impacts on its values. The determination of the impact pathways from the mining operations around the property are a function of the distance of the mining operations from the property.

d) Potentially significant impacts are considered possible from mining undertaken within 20 km of the GBMA, and possibly at greater distances, if a mine is discharging mine water into a stream that flows into the GBMA.

Potential impacts

122) I noted that the department's assessment of potential impacts on the GBMA was informed by the departmental report *Cumulative impacts of mining on Greater Blue Mountains Area*.

123) I noted that:

a) the proposed action is located approximately 5 km from the GBMA,

b) the licensed discharge point for Clarence Colliery into the Wollongambe River is about 1 km upstream of where the Wollongambe River flows into the GBMA.

124) I noted that given these distances, impacts could arise in relation to the water system component of the OUV of the GBMA from mining induced changes in groundwater table levels and streamflow.

125) I noted that other potential mining effects, such as vegetation clearing, noise, dust and visual amenity were not relevant to the proposed action, and that subsidence effects from the proposed action are too localised to affect the GMBA directly.

Surface water inflows

126) In relation to impacts to surface water inflows into the GBMA, I noted that:

a) the referral states that the inflows (up to 1 ML/day) predicted for the PPPE method are no different to those estimated for partial pillar extraction, which was considered in reaching the previous NCA-PM decision for EPBC 2012/6446,

b) mine inflow water is treated at Clarence Colliery's on-site water treatment facility prior to transfer to the main dam, where it can spill into the Wollongambe River about 1 km upstream from the GBMA or be transferred to Lithgow's water supply system,

c) Clarence Colliery's EPL prescribes the water quality limits for water discharged from the site and that monitoring shows generally good compliance with the EPL conditions, with some occasional exceedances.

Groundwater effects

127) In relation to groundwater effects on the GBMA, I noted that the groundwater modelling indicates drawdown effects arising from the proposed action on regional and groundwater aquifers are localised and unlikely to extend into the GBMA.

Conclusion

128) Based on the information provided in the referral documentation, I decided that the proposed action is unlikely to have a significant impact on the World Heritage values of the GBMA because of:

a) discharges to the Wollongambe River of treated mine water from the extraction panels are unlikely to be discernible from the discharges permitted under existing mine approvals, which set limits on the volume and quality of discharge water, and

b) the localised subsidence effects, relatively low volume of mine water inflow and localised extent of drawdown effects reported in the groundwater modelling report.

129) I noted the concerns raised by Lithgow Environment Group about potential cumulative impacts from the mining on the GBMA. I considered the scale of the effects from the proposed action are not likely to increase water quality effects from Clarence Colliery beyond currently approved levels. Therefore, I decided that sections 12 and 15A were not controlling provisions for the proposed action.

National Heritage places (s15B & s15C)

The Greater Blue Mountains Area

130) I noted that the GBMA was included on the National Heritage List in May 2007 which provides for the protection of the same values encompassed in the World Heritage listing.

131) For the reasons provided in relation to potential impacts on the World Heritage values, I considered that the proposed action is unlikely to have a significant impact on the Area's National Heritage values.

132) I found that sections 15B and 15C were not controlling provisions for the proposed action.

Ramsar wetlands (s16 & s17B)

133) I noted that the PMST report did not identify any Ramsar listed wetland of international importance within or adjacent to the proposed action area.

134) Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to Ramsar listed wetlands of international importance, the proposed action is unlikely to have a significant impact on the ecological character of Ramsar listed wetlands of international importance.

135) For these reasons, I found that sections 16 and 17B were not controlling provisions for the proposed action.

Listed migratory species (s20 & s20A)

136) I noted that the department's PMST report, dated 8 July 2024, identified the potential presence of 11 migratory species within or adjacent to the proposed action area.

137) I noted that based on information available to the department, such as the Species Profile and Threats database and information from the referral documentation, the department considered that there were unlikely to be significant impacts to migratory species because:

a) the wetlands in the proposed action area are unlikely to:

   i) support an ecologically significant population, and

   ii) be of critical importance to any migratory species at particular life-stages,

b) the proposed action is unlikely to substantially modify an area of important habitat for migratory species.

138) For these reasons, I found that sections 20 and 20A were not controlling provisions for the proposed action.

Nuclear action (s21 & s22A)

139) The proposed action does not meet the definition of a nuclear action as defined in the EPBC Act. For this reason, I found that sections 21 and 22A of the EPBC Act are not controlling provisions for the proposed action.

Commonwealth marine environment (s23 & s24A)

140) I noted that the proposed action is not being taken in a Commonwealth marine area.

141) Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to a Commonwealth marine area, the proposed action is unlikely to have a significant impact on the environment in a Commonwealth marine area.

142) For these reasons, I found that sections 23 and 24A of the EPBC Act are not controlling provisions for the proposed action.

Great Barrier Reef Marine Park (s24B & s24C)

143) I noted the proposed action is not being undertaken in the Great Barrier Reef Marine Park.

144) Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to the Great Barrier Reef Marine Park, the proposed action is unlikely to have a significant impact on the Great Barrier Reef Marine Park.

145) For these reasons, I found that sections 24B and 24C of the EPBC Act are not controlling provisions for the proposed action.

Commonwealth land (s26 & s27A)

146) I noted that the proposed action is not being undertaken on Commonwealth land.

147) Further, given the information contained in the referral documentation, the nature and scale of the proposed action and its potential impacts, and the distance to Commonwealth land, the proposed action is unlikely to have a significant impact on the environment on Commonwealth land.

148) For these reasons, I found that sections 26 and 27A of the EPBC Act are not controlling provisions for the proposed action.

Commonwealth Heritage places overseas (s27B & s27C)

149) I noted that the proposed action was not being taken overseas. For this reason, I found that sections 27B and 27C of the EPBC Act are not controlling provisions for the proposed action.

Commonwealth action (s28)

150) I noted the person proposing to take the action is not a Commonwealth agency. For this reason, I found that section 28 of the EPBC Act is not a controlling provision for the proposed action.

Assessment approach decision

151) In deciding that an action is a controlled action, I am required to decide the assessment approach in accordance with section 87 of the EPBC Act.

152) I agreed with the department's recommendation that the proposed action be assessed by preliminary documentation with further information under Part 8 of the EPBC Act, and the reasons provided for this recommendation, being:

a) it is appropriate given the relatively small scale and low complexity of the proposed action,

b) that only two controlling provisions were considered relevant,

c) the relatively low, but well informed, degree of public concern,

d) a low risk of localised, irreversible impacts, which the department considered could be managed through appropriate monitoring and controls following assessment.

153) Under section 87(5) of the EPBC Act, I may decide on an assessment on preliminary documentation only if I am satisfied that the approach will enable an informed decision to be made about whether or not to approve the taking of the action.

154) In making my decision on an assessment approach, I considered the matters outlined in section 87(3) of the EPBC Act as set out and summarised below.

Matter to be considered	**Comment**
Information relating to the action given to the Minister in the referral of the proposal to take the action – s87(3)(a)	In making my decision, I considered the information contained in the referral and decision brief.
Any other information about the impacts of the action considered relevant (including information in a report on the impacts of the action under a policy, plan or program under which the action is to be taken that was given to the Minister under an agreement under Part 10) - s87(3)(b)	I considered the information about the impacts of the action contained in the decision brief.
Any comments received from a State or Territory Minister relevant to deciding the appropriate assessment approach – s87(3)(c)	I noted the letter, dated 20 June 2024, from the NSW Planning Minister's delegate advising that the project would not be assessed in a manner specified in Schedule 1 to the Bilateral Agreement made under section 45 of the EPBC Act relating to environmental assessment between the Commonwealth and NSW Government, if it is a controlled action.
Guidelines (if any) published under s87(6), and matters (if any) prescribed in the regulations – s87(3)(d) and (e).	I noted that no guidelines have been made and no regulations have been prescribed.

155) I noted the department's assessment that while the information provided in the referral documentation was comprehensive, it was not always clearly presented, and conclusions were not always supported. I considered that an informed decision could be made if further information were provided in relation to better characterisation of the water requirements of swamps in the proposed action area, clarification of groundwater impacts given those water requirements, and further consideration of the impacts on groundwater dependent threatened species and threatened species known or likely to use cliff and cave habitats in the area. I decided that the proposed action be assessed on preliminary documentation. As part of the assessment, I noted that the department proposed to request a copy of the finalised NSW approved extraction plan to assist the understanding of the nature and scale of impacts.

Other matters for decision-making

Significant impact guidelines

156) I considered the information in the referral against the *EPBC Act Policy Statements – Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* and *Significant Impact Guidelines 1.3 - Coal seam gas and large coal mining developments – impacts on water resources*. While this material is not binding or exhaustive, I considered the factors identified were adequate for decision making in the circumstances of this referral. I noted there was adequate information available for decision-making for this proposal.

Precautionary principle

157) In making my decision under section 75(1), I am required to take account of the precautionary principle under section 391 of the EPBC Act, to the extent I can do so consistently with the other provisions of the EPBC Act. The precautionary principle is that a lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

158) I considered that the precautionary principle does apply. In recommending a controlled action decision in relation to water resources and threatened species and communities, I considered there are threats of serious or irreversible environmental damage and a lack of full scientific certainty on the extent of this threat. This is discussed in detail at paragraphs 95 to 97.

159) In relation to the protected matters that I decided were not controlling provisions, I did not consider there were threats of serious or irreversible environmental damage given the location and nature of the proposed action. This was based on advice from the department having regard to the referral information and their assessment, which was supported by departmental databases and information systems.

Bioregional Plans

160) In accordance with section 176(5), I am required to have regard to a bioregional plan in making any decision under the EPBC Act to which the plan is relevant.

161) I noted there was no bioregional plan that was relevant to my decision.

Management Plans for Commonwealth Reserves

162) In accordance with section 362(2) of the EPBC Act, the Commonwealth or a Commonwealth agency must not perform its functions or exercise its powers in relation to a Commonwealth reserve inconsistently with a management plan that is in operation for the reserve.

163) I noted that there was no Commonwealth reserve management plan relevant to my decision.

Conclusion – controlled action

164) In conclusion, I was satisfied that the proposed action is likely to have a significant impact on:

- A water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E).
- Listed threatened species and communities (sections 18 and 18A).

165) I therefore decided on 18 July 2024 that the proposed action is a controlled action.

name and position	Jennifer Pearson Director, Northern NSW Assessments Environment Assessments NSW and ACT
signature	
date of decision	30 October 2024

Annexure A – relevant sections of EPBC Act

Section 68 of the EPBC Act relevantly provides:

1) A person proposing to take an action that the person thinks may be or is a controlled action must refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.

2) A person proposing to take an action that the person thinks is not a controlled action may refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.

Section 74 of the EPBC Act relevantly provides:

Inviting other Commonwealth Ministers to provide information

1) As soon as practicable after receiving a referral of a proposal to take an action, the Environment Minister must:

   a) inform any other Minister whom the Environment Minister believes has administrative responsibilities relating to the proposal; and

   b) invite each other Minister informed to give the Environment Minister within 10 business days information that relates to the proposed action and is relevant to deciding whether or not the proposed action is a controlled action.

Inviting comments from appropriate State or Territory Minister

2) As soon as practicable after receiving, from the person proposing to take an action or from a Commonwealth agency, a referral of a proposal to take an action in a State or self-governing Territory, the Environment Minister must, if he or she thinks the action may have an impact on a matter protected by a provision of Division 1 of Part 3 (about matters of national environmental significance):

   a) inform the appropriate Minister of the State or Territory; and

   b) invite that Minister to give the Environment Minister within 10 business days:

      i) comments on whether the proposed action is a controlled action; and

      ii) information relevant to deciding which approach would be appropriate to assess the relevant impacts of the action (including if the action could be assessed under a bilateral agreement).

Inviting public comment

3) As soon as practicable after receiving a referral of a proposal to take an action, the Environment Minister must cause to be published on the Internet:

   a) the referral; and

   b) an invitation for anyone to give the Minister comments within 10 business days (measured in Canberra) on whether the action is a controlled action.

Section 75 of the EPBC Act relevantly provides:

Is the action a controlled action?

1) The Minister must decide:

   a) whether the action that is the subject of a proposal referred to the Minister is a controlled action; and

   b) which provisions of Part 3 (if any) are controlling provisions for the action.

1AA) To avoid doubt, the Minister is not permitted to make a decision under subsection (1) in relation to an action that was the subject of a referral that was not accepted under subsection 74A(1).

Minister must consider public comment

1A) In making a decision under subsection (1) about the action, the Minister must consider the comments (if any) received:

   a) in response to the invitation under subsection 74(3) for anyone to give the Minister comments on whether the action is a controlled action; and

   b) within the period specified in the invitation.

Considerations in decision

2) If, when the Minister makes a decision under subsection (1), it is relevant for the Minister to consider the impacts of an action:

   a) the Minister must consider all adverse impacts (if any) the action:

      i) has or will have; or

      ii) is likely to have; on the matter protected by each provision of Part 3; and

   b) must not consider any beneficial impacts the action:

      i) has or will have; or

      ii) is likely to have; on the matter protected by each provision of Part 3.

Timing of decision and designation

5) The Minister must make the decisions under subsection (1) and, if applicable, the designation under subsection (3), within 20 business days after the Minister receives the referral of the proposal to take the action.

Section 391 of the EPBC Act relevantly provides

391 Minister must consider precautionary principle in making decisions

Taking account of precautionary principle

(1) The Minister must take account of the precautionary principle in making a decision listed in the table in subsection (3), to the extent he or she can do so consistently with the other provisions of this Act.

Precautionary principle

(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

Decisions in which precautionary principle must be considered

(3) The decisions are:

Decisions in which precautionary principle must be considered		
Item	**Section decision is made under**	**Nature of decision**
1	75	whether an action is a controlled action
2	133	whether or not to approve the taking of an action
3	201	whether or not to grant a permit
4	216	whether or not to grant a permit
5	238	whether or not to grant a permit
6	258	whether or not to grant a permit
6A	269AA	whether or not to have a recovery plan for a listed threatened species or a listed threatened ecological community
7	269A	about making a recovery plan or adopting a plan as a recovery plan
7A	270A	whether or not to have a threat abatement plan for a key threatening process
7B	270B	about making a threat abatement plan or adopting a plan as a threat abatement plan
8	280	about approving a variation of a plan adopted as a recovery plan or threat abatement plan
9	285	about making a wildlife conservation plan or adopting a plan as a wildlife conservation plan
10	295	about approving a variation of a plan adopted as a wildlife conservation plan
10A	303CG	whether or not to grant a permit
10AA	303DC	whether or not to amend the list of exempt native specimens
10B	303DG	whether or not to grant a permit
10C	303EC	about including an item in the list referred to in section 303EB
10D	303EN	whether or not to grant a permit
10E	303FN	about declaring an operation to be an approved wildlife trade operation
10F	303FO	about declaring a plan to be an approved wildlife trade management plan
10G	303FP	about declaring a plan to be an accredited wildlife trade management plan
10H	303GB	whether or not to grant an exceptional circumstances permit

Decisions in which precautionary principle must be considered		
Item	**Section decision is made under**	**Nature of decision**
11	316	about making a plan for managing a property that is included in the World Heritage List and is entirely within one or more Commonwealth areas
11A	324S	about making a plan for managing a National Heritage place
12	328	about making a plan for managing a wetland that is designated for inclusion in the List of Wetlands of International Importance kept under the Ramsar Convention and is entirely within one or more Commonwealth areas
13	338	about making a plan for managing a Biosphere reserve entirely within one or more Commonwealth areas
13A	341T	about endorsing a plan for managing a Commonwealth Heritage place
14	370	about approving a management plan for a Commonwealth reserve

Annexure B – Documents included in Attachments A, B and C of the referral briefing package

A	Referral documentation – provided by the proponent
A1	Referral
A2	Referral definitions, acronyms, summary of all attachments and overview of Figures used throughout the form.
A3	Description of the Panel and Partial Extraction using Shortwall Mining Technique.
A4	Extraction Plan Main Report is an overarching document describing the proposed mining operations for 918 and 920 Panels, summary of related Management Plans and technical reports as well as consultation and statutory compliance tables.
A5	Supporting appendices (1, 2, 3 and 4) to the Extraction Plan Main Report. Appendix 1 includes DPE endorsement letters, Appendix 2 includes compliance tables, Appendix 3 contains consultation details and Appendix 4 contains a supporting risk assessment.
A6	Strata2 geotechnical and subsidence assessments, predictions and impacts on surface features.
A7	Strata2 addendum report specifically focussing on cliffs, minor cliffs and pagoda impact assessment.
A8	UNSW geotechnical and subsidence assessment for the 918 and 920 Panels.
A9	Contains Appendix 7 (MSEC subsidence contour model), Appendix 8 (SCT subsidence, geotechnical and groundwater review), Appendix 9 (Hebblewhite subsidence peer review-stage1) and Appendix 10 (Hebblewhite subsidence peer review-stage2).
A10	Part 1 of the Groundwater Assessment Model Report by JBS&G.
A11	Part 2 of the Groundwater Assessment Model Report by JBS&G.
A12	Part 3 of the Groundwater Assessment Model Report by JBS&G. Includes Appendix A (Pilot Point Distribution) and part of Appendix B (Distribution of Model Boundary Conditions).
A13	Part 4 of the Groundwater Assessment Model Report by JBS&G. Includes Appendix B (Distribution of Model Boundary Conditions) and part of Appendix C (Distribution of Hydraulic Properties).
A14	Part 5 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A15	Part 6 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A16	Part 7 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A17	Part 8 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A18	Part 9 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A19	Part 10 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A20	Part 11 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties).
A21	Part 12 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix C (Distribution of Hydraulic Properties) and part of Appendix D (Distribution of Calibration Residual).
A22	Part 13 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix D (Distribution of Calibration Residual).

A23	Part 14 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix D (Distribution of Calibration Residual).
A24	Part 15 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix D (Distribution of Calibration Residual), Appendix E (Parameter Identifiability), Appendix F (Selected Groundwater Works Summaries) and Appendix G (Distribution of Calibration Target Groundwater Elevation).
A25	Part 16 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix G (Distribution of Calibration Target Groundwater Elevation).
A26	Part 17 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix G (Distribution of Calibration Target Groundwater Elevation).
A27	Part 18 of the Groundwater Assessment Model Report by JBS&G. Includes part of Appendix G (Distribution of Calibration Target Groundwater Elevation), Appendix H (Uncertainty Analysis Convergence), and part of Appendix I (Additional Prediction Results - Deterministic).
A28	Part 19 of the Groundwater Assessment Model Report by JBS&G. Includes Appendix L with peer review undertaken by SLR.
A29	The Water Management Plan supports the Extraction Plan and includes baseline surface and ground water, impact performance measures, proposed monitoring and TARPs.
A30	The Land Management Plan supports the Extraction Plan and includes details on cliffs, minor cliffs, steep slopes, pagodas as well the monitoring program, performance measures and TARPs.
A31	The Biodiversity Management Plan supports the Extraction Plan and includes baseline biodiversity, monitoring programs, performance indicators and TARPs.
A32	The Heritage Management Plan supports the Extraction Plan and includes Aboriginal Archaeological and Historic heritage impact assessment, baseline, monitoring, performance measures and TARPs.
A33	The Built Features Management Plan supports the Extraction Plan and includes details on built features within the proposed action area, monitoring, performance measures and TARPs.
A34	The Public Safety Management Plan supports the Extraction Plan and includes details regarding risks and management of public safety within the proposed action area including, monitoring, performances measures and TARPs.
A35	The Subsidence Monitoring Program supports the Extraction Plan and provides details of the proposed subsidence monitoring programs, performances measures, TARPS and consultation.
A36	The Aboriginal Cultural Heritage Management Plan provide Centennial with a consistent approach to Centennial's consultation with the local Aboriginal communities regarding Aboriginal cultural heritage matters as well as identifying consistent minimum standards and processes for Aboriginal cultural heritage identification, monitoring and management across Centennial's western operations including Clarence.
A37	A series of tables listing out the existing primary and secondary approvals and authorisations as well as EPBC related Polices, Guidelines and Explanatory notes.
A38	The Environmental Management Strategy provides an effective management framework to identify and control potential environmental impacts to achieve compliance with environmental legislation and regulatory requirements applicable to Clarence Colliery.
A39	Centennial Environment and Community Policy
A40	The Western Region Historic Heritage Management Plan (HHMP) provides a consistent approach to historic heritage identification, recording and management across Centennial western region sites including Clarence.

A41	Groundwater monitoring results including review of observed anomalies and possible mining-induced groundwater related impacts during the reporting period (1 January 2023 to 31 December 2023).
A42	Part 1 of a number of reports/surveys presenting biodiversity monitoring results from annual and seasonal biodiversity monitoring at Clarence over 2023.
A43	Part 2 of a number of reports/surveys presenting biodiversity monitoring results from annual and seasonal biodiversity monitoring at Clarence over 2023, including baseline aquatic ecology monitoring within the proposed action area.
A44	Part 3 of a number of reports/surveys presenting biodiversity monitoring results from annual and seasonal biodiversity monitoring at Clarence over 2023, including baseline aquatic ecology monitoring within the proposed action area.
A45	Consists of a series of Figures (eleven in total) including Figure 1 through to Figure 11. Relevant Figures are referenced and referred to throughout the referral form.
A46	The Assessment of Significance assesses the potential significance of the impacts from the partial extraction of the 918 & 920 Panels ('the proposed action') on MNES listed under the EPBC Act.
A47	Responses to feedback and questions from NSW Regulators, in relation to the 918 and 920 panels Extraction Plan. This is in the form of questions and answer.
A48	Hydrogeological Comparative Analysis between Double-Sided Lifting and Panel and Partial Pillar Extraction.
B	**Other information**
B1	EPBC 2012-6446 NCA-PM referral decision notice
B2	NSW Department of Planning, Housing and Industry advice on status of Extraction Plan
B3	Interim IESC advice for EPBC 2012-6446
B4	Request to Office of Water Science for advice
B5	Office Water Science advice
B6	Protected Matter Search Tool report - 8 July 2024
B7	Greater Blue Mountains Area statement of outstanding universal value
B8	Cumulative impacts of mining on Greater Blue Mountains Area report
C	**Public comments**
C1	Public comments summary
C2	Submission by Lithgow Environment Group (LEG)
C3	Belmer et al. paper on water quality impacts in Wollongambe (submitted by LEG)
C4	Benson&Baird paper on ecology and groundwater dependency of swamps (submitted by LEG)
D	**Minister comments**
D1	Geoscience Australia comment on Referral for Clarence Colliery
D2	NSW DPHI advice on assessment under the Bilateral Agreement