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Independent Planning Commission

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# **Cadia Continued Operations Project**

## **Mining and Petroleum Gateway Panel Conditional Gateway Certificate Report**

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25 October 2024



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## Defined Terms

ABBREVIATION	DEFINITION
<b>AIP</b>	NSW Aquifer Interference Policy
<b>Applicant</b>	Cadia Holdings Pty Limited, a wholly owned subsidiary of Newcrest Mining Limited
<b>BSAL</b>	Biophysical Strategic Agricultural Land
<b>BSAL Protocol</b>	Strategic Regional Land Use Policy – Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land (NSW Government, 2013)
<b>CVO</b>	Cadia Valley Operations
<b>DCCEEW</b>	NSW Department of Climate Change, Energy, the Environment and Water
<b>EP&amp;A Act</b>	<i>Environmental Planning and Assessment Act 1979</i>
<b>Gateway Application</b>	Cadia Continued Operations Project Gateway Application GA-74105771, submitted to the Department of Planning, Housing and Infrastructure on 30 July 2024
<b>Gateway Application Report</b>	Gateway Report - Cadia Continued Operations Project MS-051_Final v3, prepared for Cadia Holdings Pty Ltd by Minesoils Pty Ltd and dated July 2024
<b>Gateway Panel</b>	Mining and Petroleum Gateway Panel
<b>GDEs</b>	Groundwater dependent ecosystems
<b>ha</b>	Hectares
<b>IESC</b>	Commonwealth Independent Expert Scientific Committee
<b>LSC</b>	Land and Soil Capability
<b>Material</b>	Material listed in Section 5 of this report
<b>MLs</b>	Mining Leases
<b>Project</b>	Cadia Continued Operations Project
<b>Resources SEPP</b>	<i>State Environmental Planning Policy (Resources and Energy) 2021</i>
<b>Site</b>	The Cadia Continued Operations Project site, as defined in Section 2 of this report
<b>STSFx</b>	Southern Tailings Storage Facility extension

# 1. Introduction

1. On 30 July 2024, Cadia Holdings Pty Limited (**Applicant**) applied for a Gateway Certificate (GA-74105711) (**Gateway Application**) for the proposed Cadia Continued Operations Project (**Project**). The Project involves the continuation of and extension to underground mining at the existing Cadia mine.
2. The Gateway Application has been submitted to the Mining and Petroleum Gateway Panel (**Gateway Panel**) pursuant to sections 2.24 and 2.29 of the *State Environmental Planning Policy (Resources and Energy) 2021 (Resources SEPP)* because the Project involves the disturbance of Biophysical Strategic Agricultural Land (**BSAL**) outside the existing Mining Lease area.
3. Professor Neal Menzies, as Chair of the Gateway Panel, nominated himself, Dr Clinton Foster PSM and Mr Hugh Middlemis to constitute the Panel determining the Gateway Application in accordance with section 2.40 of the Resources SEPP.
4. In accordance with section 2.31 of the Resources SEPP, this report states the Gateway Panel's reasons for the formation of the opinions in the Conditional Gateway Certificate issued on this day for the Project (and the reasons for the making of any recommendations included in the Certificate).
5. The terms of reference for the Gateway Panel in determining this Gateway Application are those set out in sections 2.31(4) and 2.31(5) of the Resources SEPP.
6. The role of the Gateway Panel is to assess the impacts of State significant mining or coal seam gas proposals on strategic agricultural land and its associated water resources before a development application is lodged. The Gateway Panel's assessment is conducted against targeted scientific criteria relating to agricultural and water impacts. There are certain matters that the Gateway Panel cannot take into account, such as historic applications, any past planning law breaches by the Applicant or the reputation of the Applicant. Additionally, the Gateway Panel is not involved in the Department of Planning and Environment's assessment of State significant development applications.

# 2. The Gateway Application Area

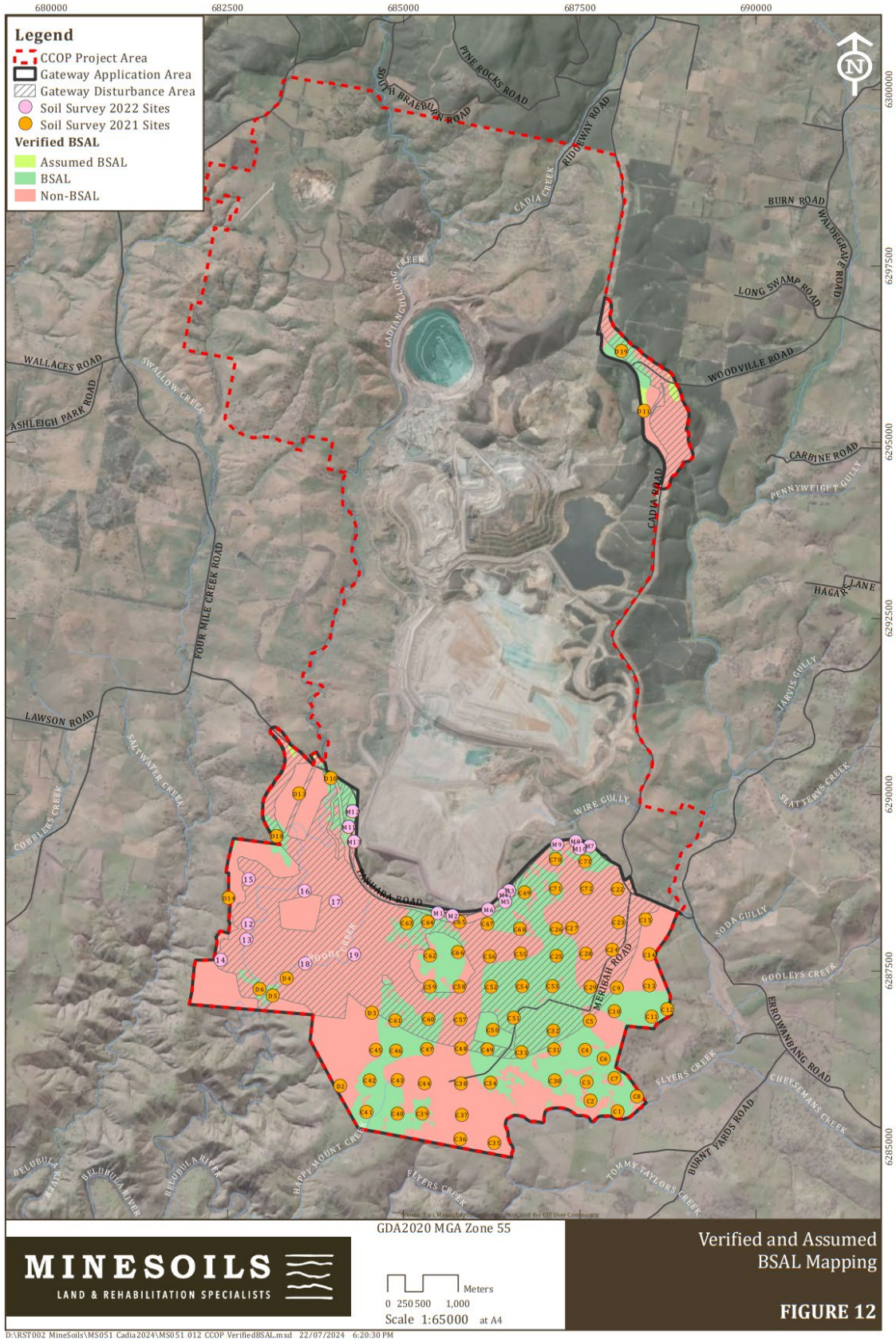
7. The Gateway Application relates to the Cadia mine which is located approximately 25 kilometres south-south-west of Orange, in the Central West region of NSW.
8. The **Gateway Application Area** sits outside the existing mining tenements and is illustrated in Figure 1 below. The area within the Gateway Application Area that will be disturbed by the Project (**Gateway Disturbance Area**) is also illustrated in Figure 1.
9. Verified and assumed BSAL within the Gateway Application Area is illustrated in Figure 2 (below).







Figure 2 – Verified and Assumed BSAL Mapping  
 (Source: Gateway Application Report: Figure 12)



### 3. The Gateway Application

10. The Gateway Application Report, dated 25 July 2024 (**Gateway Application Report**) states that the Project involves the “*continuation of operations beyond 2031 (for a period of 25 years from the date of approval, nominally to 2050) using existing and approved but not constructed infrastructure and supporting site services*”.
11. The Project proposes:
  - Continuation of operations beyond 2031 (for a period of 25 years from the date of approval, nominally to 2050) using existing and approved but not constructed infrastructure and supporting site services
  - Continuation of and extension to underground mining within the Cadia East and Ridgeway mining areas, and associated changes in subsidence surface expression
  - The continued emplacement of tailings from ore processing over the life of the continued operations within existing approved storage facilities and an extension of the existing Southern Tailings Storage Facility (Southern Tailings Storage Facility extension or **STSFX**)
  - Development of an additional water storage on Cadiangullong Creek (known as the South Water Storage) to provide improved security of water supply
  - Realignment of portions of Panuara Road and Cadia Road to maintain public safety and account for the above project features
  - Changes to site infrastructure and facilities to enable ongoing mining operations.
12. According to the Gateway Application Report, the Project would extend the Southern Tailings Storage Facility onto land that is verified BSAL in accordance with the *Strategic Regional Land Use Policy - Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land (BSAL Protocol)* and the Applicant is seeking a Gateway Certificate in relation to that land.
13. The Project would result in disturbance of up to 1,253 ha with the Gateway Application Area of which 378 ha is verified BSAL.

### 4. Consultation

14. Pursuant to section 2.30 of the Resources SEPP, this Gateway Application was referred to the Commonwealth Independent Expert Scientific Committee (**IESC**) and the NSW Minister for Water. The Gateway Panel received the following advice on the proposal:
  - advice from the IESC (received 10 October 2024); and
  - advice from the NSW Minister for Regional Water (received 16 October 2024).
15. The Gateway process is an independent scientific assessment of the impact of new State significant mining and coal seam gas proposals on strategic agricultural land and its associated water resources. The process does not involve public consultation. The Project is also the subject of a State significant development application that is subject to public consultation in accordance with the *Environmental Planning and Assessment Act 1979 (EP&A Act)*.

## 5. Material

16. In considering the Gateway Application, the Gateway Panel reviewed the following documents (**Material**):
- Gateway Application Report, dated 25 July 2024;
  - BSAL Site Verification Assessment, dated 25 July 2024;
  - Soil Survey Summary and Soil Profile Descriptions, dated July 2024;
  - Certificate of Analysis, dated July 2024;
  - Land and Soil Capability Assessment Ratings, dated July 2024;
  - Site and Technology Selection Report, dated July 2024;
  - IESC Advice, dated 10 October 2024;
  - Advice (including an attached technical assessment by DCCEEW-Water Group) from the NSW Minister for Regional Water, dated 16 October 2024; and
  - [Groundwater Productivity in NSW – 2013](#), NSW Department of Primary Industries (Office of Water).

## 6. Strategic agricultural land verification

### *Biophysical Strategic Agricultural Land (BSAL)*

17. As described in paragraph 12, the Gateway Application Report confirms that part of the Gateway Application Area is classified as BSAL in accordance with the BSAL Protocol.
18. The Gateway Panel finds the Applicant's methodology for the verification of BSAL to be in accordance with the BSAL Protocol and that it is acceptable for a Gateway Application.
19. The Gateway Application Report states that the Gateway Disturbance Area covers 1,253 ha and the Project would impact up to 378 ha of BSAL.

### *Critical Industry Cluster land*

20. The Gateway Application Report states there is no Critical Industry Cluster land within the Gateway Application Area. The Gateway Panel accepts this conclusion and notes that Critical Industry Cluster land is confined to the Upper Hunter region of NSW.

## 7. Consideration of impacts on BSAL

21. The Gateway Panel has considered the proposed development's impact on BSAL, duration of impact and proposed mitigation measures in respect of any such impact in accordance with section 2.31(4) and (5) of the Resources SEPP. The Gateway Panel's findings are set out below.

### *Section 2.31(4)(a)(i) Impacts on the land through surface area disturbance and subsidence*

22. The Gateway Panel finds that 378 ha of verified BSAL land will be impacted:
- the majority of this area is agricultural land that will be buried under the STSFx. In this area, an Agricultural Impact Risk Ranking consequence value of 1 (Severe and/or permanent damage - Irreversible impacts) and probability of A (Almost certain) is appropriate.



- a smaller area of BSAL land currently used for forestry is located to the northeast of the mine and may be impacted by subsidence. There will be no direct ground disturbance in this area, and the impacts to existing forestry practices are expected to be negligible; an Agricultural Impact Risk Ranking consequence value of 4 (*Minor damage and/or short-term impact to agricultural resources or industries - Can be managed as part of routine operations*) and probability of B (*Likely*) is appropriate.

23. The Gateway Panel recommends that the EIS:

- gives consideration to the long-term monitoring and maintenance of the STSFx with respect to the potential for settling/subsidence to influence water flows, potentially causing water to concentrate in defined flow paths and reducing the overall stability of the landform;
- establishes a baseline to allow any subsidence in the northeastern area over the life of the Project to be determined; and
- considers opportunities for additional avoidance and reductions in impacts to BSAL.

*Section 2.31(4)(a)(ii) Impacts on soil fertility, effective rooting depth or soil drainage*

24. The Gateway Panel finds that construction of the STSFx will result in burial of the existing agricultural land surface. A new land surface consisting of tailings material will have altered soil fertility and soil drainage. Effective rooting depth cannot be estimated on the basis of existing information. It is anticipated that land in the tailings storage area (STSFx tailings area and tailings embankment) will be permanently removed from agricultural land use.

25. The Gateway Panel recommends that the EIS includes a management plan to ensure that the land proposed to be temporarily disturbed by the Application is rehabilitated to the highest practically achievable Land and Soil Capability (LSC) class appropriate for agriculture at the end of the Project.

*Section 2.31(4)(a)(iii) Increases in land surface micro-relief, soil salinity, rock outcrop, slope and surface rockiness or significant changes to soil pH*

26. The Gateway Panel finds that construction of the STSFx will result in the existing land surface being buried and a new surface consisting of tailings material being created. This new surface is likely to have reduced micro-relief and reduced surface rockiness without rock outcrops. Levels of soil salinity and soil pH cannot be estimated on the basis of existing information.

27. The Gateway Panel recommends that the EIS addresses the matters identified in section 2.31(4)(a)(i) and (ii).

### *Section 2.31(4)(a)(iv) Impacts on highly productive groundwater*

28. The Gateway Panel finds that the Gateway Disturbance Area directly overlies mapped areas of the Orange Basalt Groundwater Source, which is classified as a highly productive aquifer. Although there is evidence to indicate that the Orange Basalt may be discontinuous in these areas, and may potentially not meet the high yield criterion (>5 L/s), the Panel notes advice from DCCEEW-Water Group that the highly productive categorisation applies to a whole groundwater resource as defined in a water sharing plan, not to the specific groundwater conditions that may be able to be mapped at a particular location. The Panel finds that the Gateway Report does not provide an assessment of potential groundwater impacts consistent with AIP requirements, as required by the SEPP, although it reports that such an assessment is in progress.
29. The Gateway Panel recommends that the EIS:
- demonstrates an improved understanding of surface water and groundwater resources, surface water-groundwater interactions and groundwater dependent ecosystems (GDEs), including:
    - relevant baseline information on water quality, hydrological connectivity and flow regimes;
    - the results of site-specific investigations to confirm the presence and groundwater-dependence of aquatic, terrestrial and/or subterranean GDEs in and near the Project area;
  - describes proposed Project activities in more detail so that potential impact pathways to water resources can be determined with greater certainty;
  - includes an impact pathway diagram to refine and communicate understanding of how and where the Project may impact water resources;
  - identifies and quantifies potential surface and groundwater impacts, including:
    - the likely extent and magnitude of groundwater level and water quality changes from underground mining, tailings deposition and water management infrastructure, including construction and operation of the STSFx, water storage and creek diversion;
    - changes to hydraulic connection between aquifers, especially in the subsidence zones;
    - additional water take requirements during and post mining;
    - impacts to GDEs, landholder bores and licensed water users;
    - demonstrates the ability to obtain additional water entitlements where required;
  - assesses the Project against the minimal impact considerations of the AIP for highly productive aquifers including drawdown and water quality impacts to high priority GDEs, high priority culturally significant sites and water supply works;
  - sets out proposed impact avoidance and mitigation measures
  - includes a detailed description of a monitoring program to assess the effectiveness of the avoidance and mitigation strategies and detect any residual impacts; and
  - includes a cumulative impact assessment that explicitly considers the existing Cadia Valley Operations (**CVO**) project and other relevant land and water uses in and near the Project area.

### *Section 2.31(4)(a)(v) Fragmentation of agricultural land uses*

30. The Gateway Panel finds that the Application will not result in the fragmentation of agricultural land uses as there will be a permanent 378 ha reduction in the area of verified/assumed BSAL land bounding the existing mine. The Application therefore meets the criterion and no recommendations have been made.

*Section 2.31(4)(a)(vi) Reduction in the area of BSAL*

31. The Gateway Panel finds that the Application will result in a permanent 378 ha reduction in the area of verified/assumed BSAL land.
32. The Gateway Panel recommends that the EIS addresses the matters identified in section 2.31(4)(a)(i) and (ii) and (iv).

*Section 2.31(5)(a) Duration of any impacts*

33. The Gateway Panel finds that the impacts on BSAL:
- will be permanent and severe in the STSFx area to the south of the existing mine; and
  - will be permanent in the area to the north-east of the existing mine, and while they are unlikely to substantially alter the forestry production system, they will very likely permanently impact the highly productive Orange Basalt Groundwater Source, as mapped by the former NSW Department of Primary Industries (Office of Water) in [Groundwater Productivity in NSW – 2013](#).
34. The Gateway Panel recommends that the EIS addresses the matters identified in section 2.31(4)(a)(i) and (ii) and (iv).

*Section 2.31(5)(b) Proposed mitigation measures in respect of any impacts*

35. No mitigation measures are proposed for the STSFx area. In other areas soil stripping and reuse will be implemented to mitigate impacts.
36. The Gateway Panel recommends that the EIS:
- includes a management plan to ensure that the land proposed to be temporarily disturbed by the Application is rehabilitated to a Land and Soil Capability (LSC) class appropriate for agriculture at the end of the Project.
  - includes management/mitigation plans for groundwater and connected surface water systems consistent with AIP requirements.

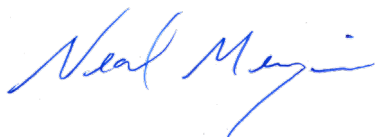


## 8. Consideration of impacts on Critical Industry Cluster land

37. The Gateway Panel has considered the proposed development's impact on Critical Industry Cluster land, as well as the duration of impact and proposed mitigation measures in respect of any such impact in accordance with sub-sections 2.31(4) and (5) of the Resources SEPP.
38. The Gateway Application Report states that there is no Critical Industry Cluster land within the Gateway Application Area. The Gateway Panel accepts this finding and therefore finds that the proposed development will not have a significant impact on any critical industry based on its consideration of the following:
- Section 2.31 (4)(b)(i) Any impacts on the land through surface area disturbance and subsidence*
39. Nil impacts.
- Section 2.31 (4)(b)(ii) Reduced access to, or impacts on, water resources and agricultural resources*
40. Nil impacts.
- Section 2.31 (4)(b)(iii) Reduced access to support services and infrastructure*
41. Nil impacts.
- Section 2.31 (4)(b)(iv) Reduced access to transport routes*
42. Nil impacts.
- Section 2.31 (4)(b)(v) The loss of scenic and landscape values*
43. Nil impacts.
- Section 2.31 (5)(a) Duration of any impacts*
44. Not applicable.
- Section 2.31 (5)(b) Proposed mitigation measures in respect of any impacts*
45. Not applicable.

## 9. Determination

46. The Gateway Panel has assessed the Gateway Application against the relevant criteria set out in section 2.31 of the Resources SEPP and has had regard to the duration of potential impacts and any proposed avoidance, mitigation, offset or rehabilitation measures.
47. Based on its consideration of the Material, the Gateway Panel is of the opinion that the proposed development:
- does not meet the following relevant criteria and therefore may significantly reduce the agricultural productivity of the impacted BSAL in relation to those criteria:
    - section 2.31(4)(a)(i)
    - section 2.31(4)(a)(ii)
    - section 2.31(4)(a)(iii)
    - section 2.31(4)(a)(iv)
    - section 2.31(4)(a)(vi)
  - meets the following relevant criterion in relation to the fragmentation of agricultural land uses:
    - section 2.31(4)(a)(v)
  - meets the following relevant criteria and therefore will not have a significant impact on a Critical Industry:
    - section 2.31(4)(b)(i)
    - section 2.31(4)(b)(ii)
    - section 2.31(4)(b)(iii)
    - section 2.31(4)(b)(iv)
    - section 2.31(4)(b)(v)
    - section 2.31(4)(b)(vi)
48. Overall, the Gateway Panel is of the opinion that the proposed development does not meet all of the relevant criteria set out above and has therefore determined the application by issuing a conditional Gateway Certificate in accordance with section 2.31 of the Resources SEPP.
49. The reasons for the formation of this opinion are set out in sections 7 and 8 of this report.



Neal Menzies (Chair)  
Member of the Mining and  
Petroleum Gateway Panel



Clinton Foster  
Member of the Mining and  
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Hugh Middlemis  
Member of the Mining and  
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