MINING, EXPLORATION & GEOSCIENCE
Department of Regional NSW

RDOC23/11627
10 February 2023

Ellena Tsanidis
Energy, Industry & Compliance Division
Planning & Assessment Group
Department of Planning and Environment
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ADVICE RESPONSE Re: Euston Mineral Sands Project (SSD-53674728) – Secretary's Environmental Assessment Requirements

Dear Ellena

I refer to your correspondence dated 31/01/2023 inviting the Department of Regional NSW – Mining, Exploration & Geoscience (MEG) to provide comments on the Euston Mineral Sands Project (SSD-53674728) – Secretary's Environmental Assessment Requirements (the Project) submitted by Iluka Resources Limited (the Proponent).

MEG has reviewed the information supplied in relation to the abovementioned Project and requires that the Project's Environmental Impact Statement refers to and includes all requirements set out in the Regional NSW – Mining, Exploration & Geoscience Secretary's Environmental Assessment Requirements:

- Attachment 1 - Iluka Resources - Euston Mineral Sands Project - MEG SEARs (RDOC23/11626)
- Appendix A – Resources Regulator response and Mining Development Rehabilitation Standard SEARs (RDOC23/18818)

For further advice on this matter, please contact Adam Banister, Senior Advisory Officer, Industry Advisory & Mining Concierge unit - Industry Development branch on 02 4063 6860 or mining.concierge@regional.nsw.gov.au.

Sincerely

Scott Anson
Manager Industry Advisory & Mining Concierge
Industry Development
Department of Regional NSW – Mining, Exploration & Geoscience

for
Tony Linnane
Executive Director Strategy, Performance & Industry Development
Department of Regional NSW – Mining, Exploration & Geoscience

Mining, Exploration & Geoscience

Secretary's Environmental Assessment Requirements

for proposed significant state development applications requiring consultation under Schedule 2 Part 2(3) of the Environmental Planning & Assessment Regulation 2000

Project	Euston Mineral Sands Project
Reference Number:	RDOC23/11626
Issue date of SEARs:	13 February 2023
Type of Approval:	Mining operation - open cut
Proponent:	Iluka Resources Limited
SSD Number:	SSD-53674728
LGA:	Wentworth and Balranald
Mineral:	Heavy mineral sands including; Ilmenite, rutile, leucoxene, zircon, monazite and rare earth minerals (oxides)

In preparing the environmental assessment requirements concerning an application for Significant State Development, the Planning Secretary must consult relevant public authorities and have regard to the need for the requirements to assess any key issues raised by those public authorities.

This development may require approval under the *Mining Act 1992* to be issued by the Department of Regional NSW – Mining, Exploration & Geoscience (MEG). The proponent must apply to MEG for the relevant approval (mining lease) during the development assessment process, or once consent has been granted, and before the commencement of any mining or ancillary activity.

A development application under the *Environmental Planning and Assessment Act 1979* must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

Environmental Impact Statement (EIS) requirements for mining

1. Project description

The proponent is to supply a comprehensive overview and description of all aspects of the project, including:

- location map showing the project area, mining titles, nearest town/s, major roads etc
- status of all existing titles (including mining and exploration), and development consents in place and/or a timeline to obtain necessary approvals
- any relationships between the resource and existing mines or other infrastructure
- nature of the operation (for example, underground block caving) and ore mineral/s to be extracted.

2. Geology

The Proponent is to supply a summary of the geological components of the mineral resource, including:

- a description of the local and regional geology including supporting maps and diagrams
- a summary of the stratigraphic unit or units within which the resource is located and relationships or conflicts between mineralisation controls (lithology, structure, rheology, local/regional faults)
- a description of the physical characteristics and dimensions of the mineral resource, with representative plans and cross-sections including each ore body/lens (if appropriate), drill holes and the area proposed for extraction. Drill logs should be included or appended
- details of the ore and waste rock, including mineralogy and deleterious elements
- evidence of geological and grade (or quality) continuity of mineralisation in the deposit such as
  - contaminants and/or ore specifications
  - model grade domains
  - an independent audit of the model
  - details of assumptions that have been used for converting resources to reserves.

3. Mineral Resources and Ore Reserves

The Proponent is to supply the most recent resource and reserve statement. The Proponent should also provide a summary of the mineral resource classifications and justification for each category.

- Include a full and updated resource/reserve statement that has been prepared in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of the Joint Ore Reserves Committee (the JORC code). It is preferred that a significant amount of the resources are estimated to at least indicated or equivalent high-level of confidence.

MEG understands that it may not be feasible to convert all Inferred Resources to Indicated (or higher) level of confidence. The Proponent needs to demonstrate that there are sufficient resources to support the majority of the initial life of mine production schedule. Any contribution from Inferred Resources to the schedule needs to be justified.

4. Resource recovery and mine design

The Proponent is to supply evidence that the resource extraction is sustainable and maximised. Such evidence will include:

- a summary of resources that may be sterilised or excluded, with justification. Where the proposed mining/production scheme excludes resources that would normally be regarded as potentially economic by current industry standards, MEG requires appropriate economic and/or technical justification for the proposed mining/production scheme
- a description of how the proposed mine plan and extraction method maximises resource recovery and is achievable and consistent with current industry best practice.

- specify why the mine design has been chosen (noting resource, design, commercial/economic constraints) and why this is the best outcome; detailing the options considered in arriving at the final landform design
- a summary of the processing and recovery methods including equipment and mining loss and dilution
- all economic, environmental, geological, geotechnical and other constraints to the recovery of the resource/reserve impacting the project.

5. Life of mine schedule

The proponent must supply a life of mine production schedule for each year of operation of the mine and for the life of the project. The production schedule is to include:

- details of run-of-mine and product metal (tonnes/ounces), low-grade ore-mineralised waste and waste rock tonnage planned to be extracted for each year and for the life of the project, and an estimate of the saleable product produced for each year and the life of the project
- in terms of text, plans or charts, show the proposed extent and sequence of the development

6. Geotechnical assessment

The proponent is to supply a full geotechnical assessment that supports mining methods and mine design that includes, but is not limited to:

- consideration of local geological structure and its influence on stability and ground control/coal mine strata control. General and relevant site conditions including; depths of cover, geological, hydrogeological, hydrological, geotechnical, topographic and climatic conditions
- a geotechnical assessment of slope stability concerning proposed high walls, low walls and overburden emplacement to achieve long-term operational and rehabilitation outcomes; or confirmation that this will be undertaken before development application/submission of an EIS.

7. Project economics, royalty and target market

The proponent is to supply an assessment of project economics including:

- price forecasts by product type used by the proponent. MEG requires these forecasts to analyse the proponent's calculations of royalty value and export value
- CAPEX & OPEX necessary for the project broken down into the various sub-categories and equipment types. Include any changes that the project will have on existing mine infrastructure and broader mine infrastructure - rail, processing plant etc
- estimates of employment generation broken down into direct & indirect, ongoing & construction and operator & contract workers as full-time equivalent (FTE) roles
- total royalty generated annually and over the life of the project
- relationship and interaction with other mines and detail the project impacts on the existing mine and surrounding mines
- year-by-year production schedule and why this is the optimum schedule

- project funding source and assurance of ongoing project and operations funding from the proponent or parent. MEG is seeking the proponent's commitment to advancing the project.
- transport types and routes from site to market.

8. Rehabilitation and final landform

The proponent must supply an analysis of the proposed rehabilitation and final landform including:

- rehabilitation methodology, objectives and outcomes, including life-of-mine tailings management strategy
- conceptual final landform design (including any voids) accounting for mine design, engineering feasibility, economic feasibility and balance of environmental and social outcomes
- post-mining land use and barriers or limitations to effective rehabilitation.

It should be noted that rehabilitation is assessed by the Resources Regulator. The Regulator does not provide any endorsement of the proposed rehabilitation methodologies presented in the EIS. Under the conditions of a mining authority granted under the *Mining Act 1992* and conditions of the Mining Amendment (Standard Conditions of Mining Leases — Rehabilitation) Regulation 2021, the Resources Regulator requires an authority holder to adopt a risk-based approach to achieving the required rehabilitation outcomes.

A detailed rehabilitation strategy is to be presented to the Rehabilitation & Securities Panel (RASP). See the section below for further information on RASP.

For further information on mine rehabilitation follow this link.

9. Spatial Data

The Proponent is to supply the following shapefile(s) and/or coordinates to enable MEG's internal mapping and assessment of the project:

- The project/development application area(s).
- Discreet features within the project area, for example mine extraction area/pit, ventilation shafts, underground entry portal/box cut, mine infrastructure area, rail loop, ancillary water storage dam(s), tailings dam(s).

Discreet project features must be in separate files and labelled clearly to demarcate from the main project area. Data must be supplied in GDA 1994 MGA coordinate system, UTM projection and shape files in ESRI shape file format.

Spatial data is to be sent to mining.concierge@regional.nsw.gov.au on submission of the EIS.

All above information should be summarised in the EIS, with full documentation appended. If deemed commercial-in-confidence, the resource summary included in the EIS must commit to providing MEG with full resource documentation via MEG's Resource and Economic Assessment process.

Additional matters for attention

Resource and Economic Assessment

Before any determination by the relevant consent authority, MEG is responsible for ensuring the efficient and optimised development of the resource.

This is assessed by undertaking a Resource & Economic Assessment (REA), as part of MEG's review process at the Environmental Impact Statement stage. The REA allows detailed assessment of the resource/reserve estimates and social and economic benefits to NSW as stated in the project and supporting material.

MEG's analysis concentrates on geological, mining and economic aspects of the project and will confirm if the production schedule and economics are considered feasible.
The REA should take place approximately six weeks before submission of the EIS.

The REA can be arranged by contacting the Industry Advisory & Mining Concierge Unit on 02 4063 6860 or via email at mining.concierge@regional.nsw.gov.au

Biodiversity offsets

MEG requests that the Proponent consider potential resource sterilisation in relation to any proposed biodiversity offsets areas. Biodiversity offsets have the potential to preclude access for future resource discovery and extraction and could also potentially permanently sterilise access to mineral resources.

The EIS must therefore clearly illustrate the location (including offsite locations) of any biodiversity offsets being considered for the project and their spatial relationship to known and potential mineral and construction material resources and existing mining & exploration titles.

MEG requests consultation with both the Geological Survey of NSW – Land Use Assessment team and holders of existing mining and exploration authorities affected by planned biodiversity offsets. Evidence of consultation should be included in the EIS.

Mining Titles

As the Project seeks to extract prescribed mineral(s) under the *Mining Act 1992* (heavy mineral sands including; Ilmenite, rutile, leucoxene, zircon, monazite and rare earth minerals (oxides)), the Proponent must obtain the appropriate mining title(s), such as a mining lease, from MEG allowing for mineral extraction.

The EIS for a project should clearly identify existing mineral titles, mineral title applications and the final proposed mining lease area(s) for the project site and areas surrounding the proposed project area and address the environmental impacts and management measures for the mining and mining purpose activities as licensed under the *Mining Act 1992*.

A development application under the *Environmental Planning and Assessment Act 1979* must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent.

Where a proposal includes Crown Land the proponent is required to comply with the Commonwealth *Native Title Act 1993* and undertake the right to negotiate process for the Crown Lands within the current exploration licence area(s) if proof of extinguishment cannot be determined.

For ancillary mining activities a proponent holding a mining lease granted in respect of mineral/s may, in accordance with the lease conditions, carry out any ancillary mining activity on that land (see definition of ancillary mining activity in clause 7 of the Mining Regulations 2016).

There is a subset of ancillary mining activity that the legislation defines as 'designated ancillary mining activity' (defined in section 6(6) of the *Mining Act 1992*).

A proponent seeking to undertake a designated ancillary mining activity outside a mining area, but in the immediate vicinity of and that directly facilitates the mining lease in respect of mineral(s), must apply for one of the following:

1. A separate mining lease for the designated ancillary mining activity which authorises the carrying out of the activity. (This provides the holder with the right to access the mining area to undertake the ancillary mining activity, however does not provide the holder with the right to mine).
2. A condition on an existing mining lease that regulates the carrying out of the designated ancillary mining activity in an off-title area. (See section 6(2) of the *Mining Act 1992*). The ancillary mining activity condition will include the survey plan of the designated ancillary mining activity area on which the designated ancillary mining activity is (or is proposed to be) located.

Appendices

Appendix A – Resources Regulator response and Mining Development Rehabilitation Standard SEARs

Approvals

Position	Approval	Date
Endorsing Officer: Adam W. Banister Senior Advisor Industry Advisory & Mining Concierge Industry Development (02) 4063 6534	Approved in CM9	10 February 2023
Approving Officer: Scott Anson Manager Industry Advisory & Mining Concierge Industry Development (02) 4063 6972	Approved in CM9	10 February 2023

Appendix A

Resources Regulator
Department of Regional NSW

3rd February 2023

Dominik Spodniewski
Iluka Resources Limited
Level 17, 240 St Georges Terrace
Perth WA 6000
Dominik.spodniewski@iluka.com

Via: Major Projects Portal

Dear Dominik,

I refer to the Euston Mineral Sands Project submitted to the Resources Regulator on Wednesday 1st February 2023 (SSD-53674728). The Resources Regulator has reviewed the request.

Based on the review of the request for SEARs and supporting documents, the Resources Regulator advises that the standard SEARs are recommended in this instance (see attachment).

REGULATORY REQUIREMENTS IF APPROVED

The proponent will be required to comply with rehabilitation requirements under the mining authorisation(s) when undertaking works associated with the proposal.

The Resources Regulator may undertake assessments of the mine operators' proposed mining activities under the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulation as well as other WHS regulatory obligations.

BACKGROUND

The Mining Act Inspectorate within the Resources Regulator undertake risk-based compliance and enforcement activities in relation to obligations under the *Mining Act 1992*. This includes undertaking assessment and compliance activities in relation to mine rehabilitation activities and determination of security deposits.

The Mine Safety Inspectorate within the Resources Regulator is responsible for ensuring the mine operators' compliance with the Work Health and Safety (WHS) legislation, in particular the effective

management of risks associated with the principal hazards as specified in the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

CONTACT

Should you require any further information or clarification, please contact the Regulator on 1300 814 609 (Press Option 2 Press Option 5) or email nswresourcesregulator@service-now.com.

Yours sincerely,

Matthew Newton

Principal Inspector Environment and Rehabilitation Operations

Resources Regulator

Resources Regulator
Department of Regional NSW

ADVICE RESPONSE

Mining Development Rehabilitation Standard SEARs

The environmental assessment that accompanies the development application must include a description and assessment of any exploration activities that will be undertaken throughout the mine life. This must also address the progressive rehabilitation of areas disturbed by exploration activities.

The environmental assessment that accompanies the development application must include a separate section entitled 'Rehabilitation Strategy' which addresses the following matters as relevant.

Final Land Use(s)

Identification and assessment of final (i.e. post-mining) land use options.

Identification and justification of the preferred final land use outcome(s), including a discussion of how the final land use(s) are aligned with relevant local and regional strategic land use objectives and surrounding land uses.

Identification of how the rehabilitation of the project will relate to the rehabilitation strategies of any neighbouring mines within the region, with a particular emphasis on the coordination of rehabilitation activities along common boundary areas.

Rehabilitation objectives and domains

Inclusion of a set of project rehabilitation objectives that clearly define the outcomes required to achieve the final (post-mining) land use for each mining domain. Each mining domain must have a stated final land use and rehabilitation objectives (which describe the desired features and/or characteristics of the final land use domain). Rehabilitation objectives must include, where relevant, target vegetation communities.

Progressive Rehabilitation

The expected time frames for progressive rehabilitation.

Mine layout and scheduling, including maximising opportunities for progressive final rehabilitation. The final rehabilitation schedule should be mapped against key production milestones (i.e. ROM tonnes) of the mine layout sequence before being translated to indicative timeframes for each stage of rehabilitation throughout the mine life. The mine plan should maximise opportunities for progressive rehabilitation.

Conceptual final landform design

Inclusion of drawings at appropriate scales identifying key attributes of the final landform, including final landform contours, section views, significant water management features/structures, the location of the proposed final land use(s) and integration with existing and surrounding landforms.

Barriers or limitations to effective rehabilitation

Identification and description of those aspects of the site or operations that may present barriers or limitations to effective rehabilitation, including an assessment of high-risk rehabilitation landforms (such as high walls, steep slopes, waste rock dumps, etc). This should include (as relevant):

- *an assessment and life of mine management strategy of the potential for geochemical constraints to rehabilitation (e.g. acid metalliferous drainage, spontaneous combustion etc.), particularly associated with the management of overburden/interburden and reject material. This assessment should utilise any relevant data from previous exploration programs to characterise the geochemical properties of the materials and identify appropriate management strategies. This should include any emplacement strategies (e.g. how materials are emplaced to minimise oxidation and leachate), capping strategies, the source of capping materials, associated volume of capping materials required, routine sampling and testing;*

- *the processes that will be implemented throughout the mine life to design and ensure the long-term stability of the rehabilitated landforms, including how characteristics of the existing and surrounding landform can be incorporated into the final landform design. This should include identifying and adopting geomorphic design principles to achieve a natural and stable landform outcome. It should also include a constraints and opportunities analysis of alternative final landforms giving consideration to geotechnical stability, geomorphic stability (soil types, soil erosion, etc), water management, integration with the characteristics of the surrounding natural landform and minimising sterilisation of land post-mining. For large and complex sites, there should be a commitment to undertake landform evolution modelling throughout the mine life to address long-term erosion and stability risks.*

- *a life of mine tailings management strategy, which details measures to be implemented to avoid the exposure of tailings material that may cause environmental risk, as well as to ensure the geotechnical and geomorphic stability of the rehabilitated landform of the tailing's storage facility. This should include any capping strategies, the source of capping materials and associated volume of capping materials required. It should also include a constraints and opportunities analysis of different tailings management techniques (e.g. co-disposal, dewatering tailings, integrated landforms, etc) and of alternative techniques to reduce the amount of tailings and reliance on conventional tailing storage facilities. Justification of the proposed tailings management strategy should be provided to demonstrate that it is the most feasible and environmentally sustainable option.*

Where a void, is proposed to remain as part of the final landform, include:

- *a constraints and opportunities analysis of final void options, including backfilling, to justify that the proposed design is the most feasible and environmentally sustainable option to minimise the sterilisation of land post-mining.*

- *a preliminary geotechnical assessment to identify the likely long term stability risks associated with the proposed remaining high wall(s) and low wall(s) along with associated measures that will be required to minimise potential risks to public safety; and*

- *outcomes of the surface and groundwater assessments in relation to the likely final water level in the void. This should include an assessment of the potential for fill and spill along with measures required be implemented to minimise associated impacts to the environment and downstream water users.*

Where the mine includes underground workings:

- *determine (with reference to the groundwater assessment) the likelihood and associated impacts of groundwater accumulating and subsequently discharging (e.g. acid or neutral mine drainage) from the underground workings post cessation of mining; and*
- *consideration of the likely controls required to either prevent or mitigate against these risks as part of the closure plan for the site.*

Where an ecological land use is proposed, demonstrate how the revegetation strategy (e.g. seed mix, habitat features, corridor width, aspect, etc.) has been developed in consideration of the target vegetation community(s).

Where the intended land use is agriculture, demonstrate that the landscape, vegetation and soil is capable of supporting this land use. In addition, demonstrate that the proposed location of the rehabilitated agricultural area is not isolated within the landscape and that there is ready access to water and relevant infrastructure (e.g. power, roads etc.) to support agricultural activities.

Relevant policies and guidelines

Consider the following relevant policies and guidelines.

- *Mine Rehabilitation (Leading Practice Sustainable Development Program for the Mining Industry, Australian Government, 2016)*
- *Mine Closure (Leading Practice Sustainable Development Program for the Mining Industry, Australian Government, 2016)*
- *Strategic Framework for Mine Closure (ANZMEC-MCA, 2000)*
- *Guidelines on Tailings Dams – Planning, Design, Construction, Operation And Closure – Revision 1 (ANCOLD, July 2019)*
- *Integrated Mine Closure: Good Practice Guide (ICMM, 2019)*