Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W2964/2025/1
Applicant	Iluka Resources Limited
ACN	008 675 018
File number	APP-0028564
Premises	North Capel Operations Yeardy Road CAPEL WA 6271 Legal description Being all of mining tenements M70/257, M 70/651, M70/959, M70/962, M70/970, M70/978, M70/990, M70/1083 and M 70/1128, and part of mining tenements M70/279, M70/386 & M70/1082 As defined by the premises map in Schedule 1 of the works approval
Date of report	21 July 2025
Decision	Works approval granted

Melissa Chamberlain

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Melissa Chamberlain
A/MANAGER PROCESS INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the proposed infrastructure. As a result of this assessment, works approval W2964/2025/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 15 April 2025, Iluka Resources Limited (Iluka; the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application seeks approval for construction works related to the expansion of storage areas and the premises boundary at the North Capel Operations site, a mineral sands processing facility located approximately 200 kilometers south of Perth and 4.5 kilometers north of the township of Capel.

The premises relates to the categories and assessed production / design capacity under Schedule 1 of the Environmental Protection Regulations 1987 (EP Regulations) which are defined in works approval W2964/2025/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W2964/2025/1.

The application proposes the following:

- Construction of a Stockpile Storage Area (SSA) to store coal, Heavy Mineral Concentrate (HMC) or other products for use in the North Capel Synthetic Rutile (SR) process.
- Establishment of an overburden placement area for the material excavated from the SSA.
- Utilisation of the existing Ryans Road Stockpile Area (RRSA) for coal storage.
- Temporary use of the existing Iron-man Gypsum (IMG) storage pad for coal storage.

Background

Iluka's North Capel facility, operating under licence L4557/1986/19, is a mineral sands processing site focused on the production of Synthetic Rutile (SR) - a high-grade titanium dioxide product derived from ilmenite. The process involves heating, screening, and magnetic and electrostatic separation to extract ilmenite, zircon, and other valuable minerals from HMC.

Coal is a critical reductant in the SR process, facilitating the conversion of iron in ilmenite to metallic iron. The process is optimised for locally sourced coal, which possesses the necessary properties for efficient reduction. However, disruptions in local coal supply and uncertainty surrounding the future of coal mining in Western Australia have prompted Iluka to trial imported coal, which typically requires blending due to its lower suitability.

To mitigate supply risks and maintain production efficiency, Iluka is expanding its coal storage capacity at North Capel to stockpile high-quality coal when available. Existing disturbed land has been used for coal storage, but these areas are nearing capacity, necessitating the proposed expansion.

In addition, Iluka requires increased HMC storage capacity. HMC is transported to North Capel

from other mine sites, primarily their Cataby mine. Beginning in January 2026, deliveries from the Balranald operation in New South Wales are also expected. Approval for importing Balranald HMC was granted by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) on 6 January 2025. Due to limited storage capacity at both Balranald and Cataby, centralising HMC storage at North Capel is essential.

2.3 Application details

Stockpile Storage Area (SSA) and SSA Overburden Placement Area

Iluka proposes to construct and operate a new SSA at its North Capel site, with a maximum storage capacity of 326,900 m³ and an estimated operational life of approximately seven years. The SSA will be located on previously disturbed land within tenement M70/257, formerly used for tailings sands and slime dams. These slime dams were excavated and repurposed as backfill for mining voids, leaving the area open and disturbed.

To optimise the storage footprint, Iluka plans to remove approximately 98,350 m³ of sand from the SSA site. This material will be used to construct perimeter bunds around the SSA to provide wind protection. An additional 17,480 m³ of sand will be stockpiled in an adjacent void to the west of the SSA, designated as the SSA Overburden Placement Area, for future use in rehabilitation activities.

Stockpiled SSA overburden material, primarily consisting of inert coarse tailings sand with 96% silica (SiO_2) and a neutral pH of 7, is considered environmentally benign when properly managed. Its chemical stability and non-reactive nature greatly reduce the potential for leaching or contamination, limiting emission risks to dust lift-off during dry conditions and sediment-laden stormwater runoff during rainfall.

The SSA will feature a compacted limestone pad and a limestone-lined drainage swale designed to direct surface runoff to a settling pond and pump pond. Water collected in the pump pond will be transferred to the existing Co-product Disposal (CPD) Dams via an electric pump, with a diesel pump available as backup during heavy rainfall events.

Ryans Road Stockpile Area (RRSA)

The RRSA is a long-established storage area at North Capel, used for coal since 2016 and mineral sands - including HMC, ilmenite (magnetic fraction), and non-magnetic stockpiles -since 2001. Located across tenements M70/990, M70/386, and M70/279, the site transitioned from agricultural land to mining support infrastructure in the 1990s. It has a maximum storage capacity of 396,000 m³ for coal and 402,000 m³ for mineral sands.

The RRSA is low-lying and sheltered from prevailing winds, with coal stored in the northern section and mineral sands in the south, separated by a limestone bund. Environmental controls include a compacted limestone floor elevated more than 1 m above the highest annual groundwater level, a limestone perimeter bund to prevent surface water inflow, and internal drainage features such as rock chutes and a fines fallout basin that direct clean surface flows westward. A drainage channel along Ryans Road captures any potential discharge for onsite management.

Iron-man Gypsum (IMG) Storage Pad

Constructed in 2024 under a mining proposal to support IMG harvesting from the CPD Dams, the IMG Storage Pad has been temporarily repurposed for coal storage due to the idling of SR1 delaying the need for IMG harvesting. The coal stored here is intended for immediate use in the SR2 kiln, with an estimated 140,000 tonnes (approximately 12 months' supply) expected to be stored. Iluka has proposed reclassifying the pad from a waste dump to a Run-of-Mine (ROM) pad in its 2025 mining proposal update.

The pad was engineered with environmental safeguards, including a compacted limestone base elevated over 1 m above the annual high groundwater level, perimeter bunds to prevent surface

water ingress, and a drainage swale with a rock-filtered outlet. Coal stockpiles are formed with low profiles (1:3.5 slope), pad-rolled to maintain shape and reduce wind exposure, and inspected daily for signs of smouldering, bund integrity, and stormwater management. Dust control measures include limiting coal movement and applying water to access roads, avoiding direct spraying of coal to prevent spontaneous combustion risks linked to moisture content.

Approval of existing infrastructure

Although some infrastructure was developed under a mining proposal approved by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), the RRSA and IMG Pad have not undergone a formal risk assessment by DWER and are not currently included in site licence L4557/1986/19. In accordance with the department's *Guideline: Industry Regulation Guide to Licensing*, a works approval is not the appropriate mechanism to authorise the use of existing infrastructure, as it applies solely to new construction or upgrades that may result in emissions or discharges. However, to minimise operational disruptions and streamline the approvals process, the department will consider short-term operation of the RRSA and IMG Pad as part of this works approval assessment, with a comprehensive risk assessment to be undertaken through a future licence amendment - the appropriate regulatory pathway for evaluating changes to prescribed premises operations.

3. Legislative context

3.1 Part IV of the EP Act

Ministerial Statement 768, concerning the duplication of the synthetic rutile plant capacity, was withdrawn on April 7. The withdrawal was made under section 47A(3)(b) of the EP Act and stated that impacts of the proposal can be satisfactorily mitigated through licensing or other regulatory controls under this Act or other written laws. Specifically, the proposal's implementation can be managed under:

- Part V of *the Environmental Protection Act 1986* (Licence L4557/1986/19)
- The *Rights in Water and Irrigation Act 1914* (Licence to take water GWL161847)
- Relevant legislation administered by DEMIRS.

3.2 Mining Act 1978 (WA)

To facilitate the temporary use of the IMG pad for coal storage and to update relevant Mine Activity Types, Iluka has submitted a revised Mining Proposal and Mine Closure Plan (Revision 4.2) to DEMIRS. The applicant has confirmed that the proposed SSA activities are consistent with the tenement conditions of M70/257, and that the use of the IMG pad for coal storage aligns with the conditions of M70/1082.

On 18 June 2025, DEMIRS confirmed that a related Mining Proposal was under assessment and provided a comprehensive list of site approvals issued by DEMIRS. Two approvals were identified as particularly relevant to this works approval assessment:

- Reg ID 121260 Mining proposal: This proposal is for the excavation and refurbishment of two of Iluka's Neutralised unused acid (NUA) dams and construct a trafficable pad for the storage of the harvested product which is soil ameliorant (IMG). The storage pad is to be constructed to include a perimeter bund and drainage chute to the south.
- Reg ID 86317 Mining proposal: The North Capel operations include a range of mining and support facilities such as the North Capel Synthetic Minerals (NCSM) plant, SR plants, storage dams for various materials, an inert waste pit, and a monazite storage facility. It also encompasses infrastructure like offices, workshops, washdown and laydown areas, power systems, and internal roads.

On 11 July 2025, DEMIRS issued an approval for the mining proposal Reg ID 500455 for the stockpile storage area and product storage shed – North Capel.

3.3 Radiation Safety Act 1975 and Work Health and Safety (Mines) Regulations

Radiation management at the premises is conducted in accordance with Iluka's Southwest Operations Radiation Management Plan (RMP) (Iluka, 2024a), which has been formally approved by DEMIRS and the Radiological Council of Western Australia (RCWA). Iluka has also provided documentation confirming DEMIRS' authorisation to import radioactive materials, including HMC, under the approved RMP.

4. Location and siting

4.1 Meteorology - wind

Figure 1 includes wind rose diagrams sourced from the application, which show that strong winds at the North Capel site typically occur during winter, predominantly from the north, northwest, and west. In summer, wind patterns shift, with easterly winds prevailing in the morning and southwesterly winds in the afternoon.

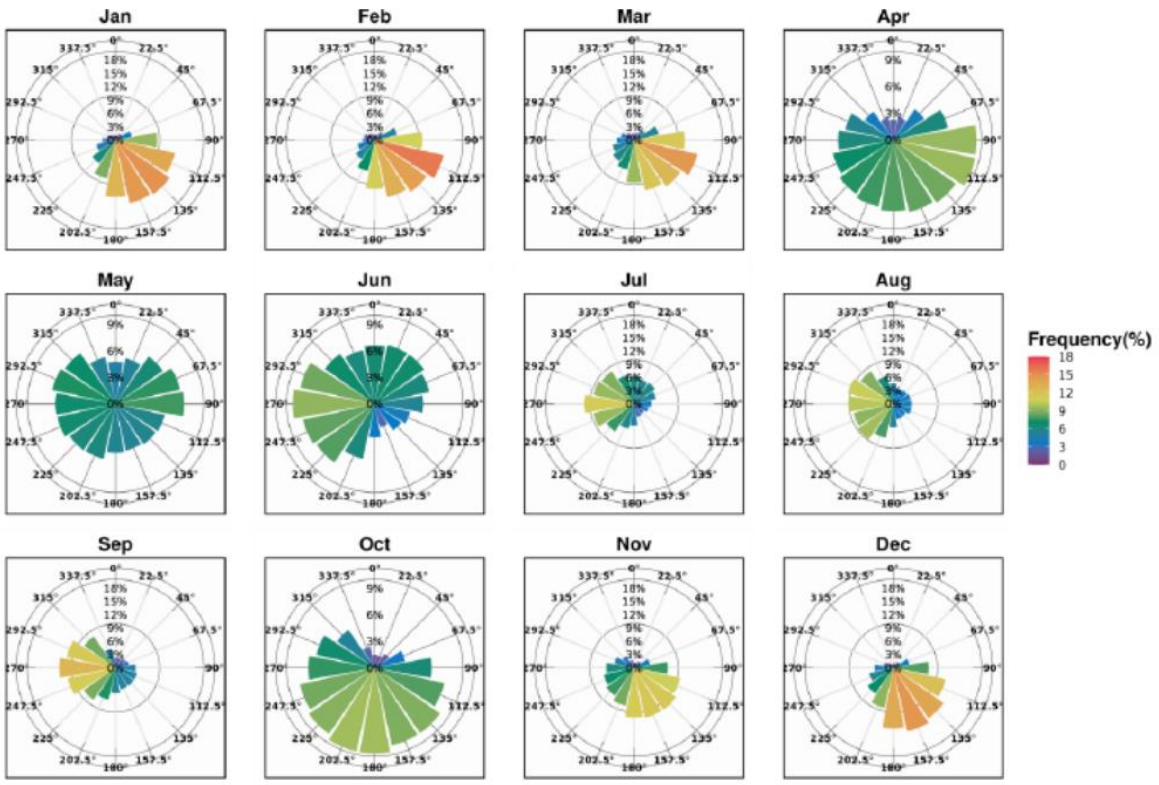

Figure 1: Monthly wind frequency rose (BoM station: 9603)

It is important to note that the wind roses presented reflect historical wind speed and direction data from the Busselton Airport weather station (BoM ID: 9603) and should not be relied upon for forecasting future conditions.

5. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk*

Assessments (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

5.1 Source-pathways and receptors

Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls

Dust	**Construction:** earthworks, and movement of vehicles/ equipment.
	Operation: handling, loading, and unloading of products, vehicle movements and dust generation from stockpiles in windy conditions
		Air / windborne pathway	**Construction:**
			• Water trucks used on unsealed roads.
			• Vehicle movements controlled; speed restrictions enforced.
			• Activities suspended during excessively windy conditions.
			Operation:
			• Dust control agent (Gluon) applied to HMC stockpiles.
			• SSA exposed batter hydromulched.
			• Overburden at SSA Placement Area flat-topped and placed at least 0.7 m below existing landform.
			• Stockpile height limited to 10m.
			• Daily inspections will be conducted for stockpile profile maintenance, perimeter bund checks, and stormwater management.
			Coal stockpile management:
			• A batter ratio of 1:3.5 is not exceeded.
			• Stockpiles will be pad rolled to control dust.
			• Coal movement will be minimised to prevent dust.
			• Water will be applied to access roads, avoiding coal stockpiles to prevent spontaneous combustion.
			• Suitable dust suppressants for coal stockpiles will be investigated.
			<u>Dust monitoring</u>
			• Osiris nephelometric samplers with telemetry communications to be installed.
			• These units will provide live Total Suspended Particles (TSP) and PM10 measurements and 24-hour averages, powered by solar energy.
			• Action trigger levels to be set at:
			  ○ TSP: 100 µg/m³ (1-hour average)
			  ○ PM10: 50 µg/m³ (1-hour average)
			• If trigger levels are exceeded, site personnel will be notified by email, and management controls will be implemented.

Emission	Sources	Potential pathways	Proposed controls
			• If materials handling in high wind conditions may cause dust to cross the boundary and impact the environment, the activity will be ceased until conditions are more suitable.
Noise	Vehicle and equipment use	Air / windborne pathway	• Construction limited to Mon–Sat, 07:00–18:00. • Compliance with Environmental Protection (Noise) Regulations 1997. • Community complaints managed via Iluka hotline or Process Operator. • Complaints logged in Cintellate system; corrective actions tracked.
Sediment-laden stormwater	Stockpiling of coal, HMC and/or overburden material	Infiltration or run-off	• All storage areas elevated >1 m above highest groundwater level. • SSA, RRSA, and IMG pad constructed with 200 mm compacted limestone pad (≥95% MDD) and perimeter bunds. • Coal leachate pH 5–7; Balranald HMC pre-treated to remove sulfides. • Daily inspections of stockpile profile (1:3.5 slope), bunds, and stormwater systems. **SSA:** • 2 m limestone-lined swale directs runoff via rock-pitched channel to a settling pond, then pumped to existing CPD Dams. • System designed for 1-in-100-year rainfall. **SSA Overburden Placement Area:** • Overburden (inert coarse tailings sand, 96% SiO_2, pH 7) is low-risk and placed in adjacent void, 700 mm below landform. **IMG Pad:** • Drainage swale with rock-filtered outlet discharges south of pad. **RRSA**: • Internally draining; water directed west via rock chutes and fines fallout basin. • Overflow captured in eastern drainage channel along Ryans Road for onsite management. **Existing licence controls (L4557/1989/19):** • Process and surface water treated via onsite biofilter and discharged to Elgin Drain through authorised emission point at Bentley Road v-notch weir. • Emissions limits and monitoring conditions apply.
Smoke	Spontaneous combustion of coal stockpiles	Air / windborne pathway	• Daily inspections for smouldering and hot spots. • Any application of water on-site will avoid coal stockpiles to reduce combustion risk. • Stockpiles will be pad rolled to reduce the risk of wind promoting spontaneous combustion.

Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure 1 below provide a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Closest residential receptor	Approximately 1.1 km southwest of the SSA.
Environmental receptors	**Distance from prescribed activity**
Groundwater: Busselton-Capel Proclaimed Groundwater Area.	SSA base elevation ranges from RL 19 m AHD (southeast) to RL 17 m AHD (northwest). Groundwater levels at these locations are 10.5 m AHD and 9 m AHD, respectively. The base of the settling pond is at RL 12 m AHD, with groundwater at 8 m AHD. Depth to groundwater across the SSA ranges from 4 to 8 m, with the shallowest point (4 m) at the settling pond.
Surface water: Capel River System Proclaimed Surface Water Area	Gynudup Brook runs adjacent to the western boundary of the premises, approximately 200 m west of the SSA. The Elgin Main Drain, constructed in 1958, traverses the premises, with its closest point located approximately 200 m east of the RRSA.
Soil characteristics and acid sulfate soil (ASS)	The site is predominantly composed of dunal sands from the Spearwood Formation, underlain by clay-rich deposits of the Guildford Formation. The SSA area is previously mined and backfilled, expected to contain tailings sand and minor remnant clay from former slime dams. Although mapped as moderate to high ASS risk below 3 m depth, prior disturbance and backfilling reduce the likelihood of encountering acid sulfate soils during construction.
Threatened Ecological Communities (TECs) and native vegetation	The SSA, SSA Overburden Placement Area, RRSA, and IMG Pad are located within operational areas extensively disturbed prior to 2002 due to historic mining. No TECs were identified within the project footprint. Given the pre-disturbed nature of the site and limited vegetation, no additional environmental impacts are anticipated beyond those already associated with existing activities.

5.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 5.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 5.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works approval W2964/2025/1that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence amendment is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the infrastructure i.e. stockpiling of materials. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence amendment application.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction of SSA: Earthworks, vehicle movements and movement of overburden material	Noise	**Pathway:** Air/windborne pathway **Impact:** Health or amenity	Closest residential receptor ~ 1.1 km southwest of SSA	Refer to Table 1	C = minor L = rare **Low Risk**	Y	N/A	The delegated officer considers the emission risk to be effectively managed under the conditions of the existing licence (L4557/1989/19) and the Environmental Protection (Noise) Regulations 1997.
	Dust				C = minor L = rare **Low Risk**			The delegated officer considers the emission risk to be effectively managed by applicant's proposed controls and under the conditions of the existing licence (L4557/1989/19). General provisions of the EP Act also apply.
	Sediment-laden stormwater	**Pathway:** Overland runoff and/or infiltration to groundwater **Impact:** Ecosystem disturbance and/or impact to surface or groundwater water quality	Closest surface water receptor located within ~ 200 m Depth to groundwater at least 4 m		C = minor L = rare **Low Risk**			
Operation (including time-limited-operations operations)								
Operation of storage areas: Stockpiling of coal and heavy mineral concentrate (HMC)	Noise	**Pathway:** Air/windborne pathway **Impact:** Health or amenity	Closest residential receptor ~ 1.1 km southwest of SSA	Refer to Table 1	C = minor L = rare **Low Risk**	Y	N/A	The delegated officer considers the emission risk to be effectively managed under the conditions of the existing licence (L4557/1989/19) and the Environmental Protection (Noise) Regulations 1997.
	Dust	**Pathway:** Air/windborne pathway **Impacts:**	Closest residential receptor ~ 1.1 km southwest of SSA		C = moderate L = unlikely **Medium Risk**	Y	Conditions 1 and 6	The delegated officer considers the applicant's key proposed operational controls both adequate and necessary to mitigate emission risks and has

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		Health or amenity						incorporated them into the works approval accordingly.
	Sediment-laden stormwater	**Pathway**: Overland runoff and/or infiltration to groundwater **Impact:** Ecosystem disturbance and/or impact to surface or groundwater water quality	Closest surface water receptor located within ~ 200 m Depth to groundwater minimum of 4 m		C = minor L = unlikely **Medium Risk**	Y	Conditions 1 and 6	The delegated officer considers the applicant's key proposed infrastructure controls both adequate and necessary to mitigate emission risks and has incorporated them into the works approval accordingly. Existing licence L4557/1989/19 includes provisions for managing stormwater runoff and surface water emissions to the Elgin Drain, encompassing treatment standards, emission limits, and monitoring requirements.
	Smoke from spontaneous combustion of coal	**Pathway:** Air/windborne pathway **Impacts:** Health or amenity	Closest residential receptor ~ 1.1 km southwest of SSA		C = moderate L = unlikely **Medium Risk**	Y		The delegated officer considers the applicant's key proposed operational controls both adequate and necessary to mitigate emission risks and has incorporated them into the works approval accordingly.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

6. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 9 June 2025.	None received.	N/A
Local Government Authority advised of proposal on 17 June 2025.	None received.	N/A
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal 18 June 2025.	DEMIRS replied on 18 June 2025 confirming that a related Mining Proposal was under assessment and providing a summary of related approvals.	The department has noted the information provided in Section 3.3. The onus is on the applicant to ensure that all necessary approvals from other agencies are in place.
Applicant was provided with draft documents on 9 July 2025.	Applicant provided additional clarification on operational matters such as stockpile batter ratios, bunding height and stormwater management controls.	The works approval and decision report have been updated to reflect this additional detail.

7. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. Department of Water and Environmental Regulation 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Department of Water and Environmental Regulation 2024. *Amended Licence L4557/1986/19: North Capel Operations – Iluka Resources Limited,* Perth, Western Australia.