Lynas Find Project

Application Number: **01429** Commencement Date: **20/09/2022** Status: **Reopened**

1. About the project

1.1 Project details

1.1.1 Project title *

Lynas Find Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Other

1.1.4 Estimated start date *

1/01/2025

1.1.4 Estimated end date *

31/12/2027

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The proposed action (Lynas Find Project) is a component of a larger project - the Pilgangoora Project, operated by Pilbara Minerals Ltd (PLS) (see link to web page for a description of the project). The Pilgangoora Operations are located about 80 km SSE from Port Hedland in the Pilbara region of Western Australia (Att 1 - Figure 1 - General Location). Mining operations commenced at Pilganoora in 2018. The Pilgangoora ore bodies form one of the largest hard rock lithium deposits in the world and is considered strategically important within the global lithium supply chain.

The Lynas Find Project involves establishment of a small open pit mining operation (Att 2 Figure 2 - Proposed site layout). Mining will be undertaken using routine open pit mining methods - land clearing and site preparation, drill and blast, excavation and haulage of material, and closure and rehabilitation. Waste rock will be transported by truck to a waste rock landform which may also be used to store waste rock from other locations in the broader project. Ore will be transported to an existing process plant where it will be crushed and processed to produce lithium and tantalite concentrates for export.

The Pilgangoora Project Development Envelope consists of 394.86 ha, shown as the 'Survey Area' in Att 2 Figure 2 - Proposed site layout. The Lynas Find disturbance footprint within this Development Envelope will cover an area of 87.34 ha, comprised of the open pit (26.32 ha) and the waste rock landform (61.02 ha). Included in the proposed footprint is a disturbance buffer around the landforms of approximately 23 ha. This allows for peripheral disturbance for associated mining infrastructure, such as access roads, infrastructure corridors and topsoil stockpiles.

Additionally within the Development Envelope, 37.54 ha will be classified as an avoidance area, which will not be disturbed by PLS mining activities.

Mining of the Lynas Find Project is expected to take place over approximately three years (2025 to 2027). At the completion of mining, waste rock from other sources will be used to backfill the open pit and the surface will be rehabilitated.

Mining at Lynas Find will require vegetation clearing and removal of a portion of rocky ridge that represents a fauna habitat for the Northern Quoll. This activity is the primary basis for this referral. Transport and processing activities associated with Lynas Find will be undertaken under existing approvals under Western Australian legislation and are not considered directly in this referral.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

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1.2.5 Provide information about the staged development (or relevant larger project).

The referral addresses an expansion of the existing Pilganoora Project into a new area. The existing operation has had no impact on any matters of national environmental significance (MNES). However, the project is now proposing expansion into an area with the potential for impact to MNES.

The Lynas Find Project comprises a small open pit operation with waste rock disposed to a waste rock landform. The lithium and tantalum ore will be hauled by truck for treatment at an existing mineral processing plant. The project will be operated in conjunction with the broader Pilgangoora Project which will continue operating under existing approvals, during and after the life of the Lynas Find Project. Lynas Find is scheduled to be an important source of ore between 2025 and 2027, producing 2.5 million tonnes of ore with a total material movement of 22 million tonnes.

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

This referral is being made under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999. In compiling this referral, reference has been to made to key guidelines and supporting documents, including the Commonwealth's Significant Impact Guidelines 1.1 and the EPBC Act referral guideline for the endangered Northern Quoll (Dasyurus hallucatus). The Significant Impact Guidelines provide guidance as to the interpretation of significance in determining the level of impact. In the case of this referral it will be used in respect of five listed species (one Endangered, four Vulnerable). The Northern Quoll is listed as Endangered and the referral guideline has been used to determine the requirement for a referral.

Environmental approvals for this project will also be required under Western Australian legislation. These approvals will include a Mining Proposal and a Mine Closure Plan (under the Mining Act 1978) and a Native Vegetation Clearing Permit (under the Environment Protection Act 1986 (Part V)). Supporting guidelines relevant to these approvals will be referenced. Note that the broader Pilgangoora Project already holds approvals under these acts but additional approvals will be required for Lynas Find.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Following several interactions and communication with all relevant Stakeholders, PLS does not expect any objection to the development of the Lynas Find project. This includes Traditional Owners and Pastoral Stations.

With regard to Indigenous stakeholders, the Project Area is located within the Nyamal Native Title Determination area (Federal Court File No WAD6028/1998, and Tribunal File No. WC 1999/008). The Project has been communicated to the Nyamal group via the PLS-Nyamal Implementation Committee, which is part of the ongoing quarterly reporting process from PLS to the Nyamal Group.

As part of the Heritage Protection Agreement between PLS and the Nyamal Group, the project area has been subjected to two heritage surveys (archaeological and ethnographic) conducted in April 2017 and February 2021 in accordance with Nyamal Heritage protocols. No indigenous heritage sites have been recorded within the Project Area.

The company also has a Pastoral Agreement with the lessee of Wallareenya Pastoral Station, on which the Project Area occurs. The Pastoral Agreement requires ongoing consultation with the pastoralist, a requirement to erect suitable stock-proof fencing to restrict access by cattle, and to promptly erect suitable stock-proof fencing around mine pits on the Pastoral Lease that are no longer in use, to prevent access by cattle. Consultation also includes discussions with regard to mine closure.

1.3.1 Identity: Referring party

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	96158360046
Organisation name	Talis Consultants Pty Ltd
Organisation address	PO Box 454 Leederville WA 6903

Referring party details

Name	Greg Barrett
Job title	Principal Environmental Consultant
Phone	1300251070
Email	greg.barrett@talisconsultants.com.au

Address	PO Box 454 Leederville

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	95112425788
Organisation name	Pilbara Minerals Ltd
Organisation address	Level 2, 146 Colin Street West Perth WA 6005

Person proposing to take the action details

Name	Eulogio Almanza
Job title	Principal Environment
Phone	+61 8 6266 6266
Email	eulogio.almanza@pilbaraminerals.com.au
Address	Level 2, 146 Colin Street West Perth WA 6005

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Yes, Pilbara Minerals Ltd has a satisfactory record of responsible environmental management.

Pilbara Minerals Ltd (PLS) has not been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources. The proposed action will be undertaken in accordance with their Environmental Policy (see Att 3 - Environmental Policy).

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Pilbara Minerals Ltd (PLS) has an Environment Policy that governs its activities (Att 3 - Environmental Policy). The Policy includes commitments to "make environmental protection an integral part of business operations and of equal importance with other key operational and strategic business objectives" and to "ensure we are always compliant with all applicable environmental laws and regulations".

Environmental management is integrated into the normal work practices at Pilbara Minerals by setting clear objectives and targets, having sound systems and controls, ongoing data collection and regular environmental monitoring and reporting.

Since the commencement of the Pilgangoora Project PLS have embraced the expanded environmental responsibility and continue to meet or exceed statutory requirements. Risks associated with environmental incidents are managed through risk assessments, introduction of preventative measures, ongoing review and monitoring, and where necessary, effective and efficient mitigation actions.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	95112425788
Organisation name	Pilbara Minerals Ltd
Organisation address	Level 2, 146 Colin Street West Perth WA 6005

Proposed designated proponent details

Name	Eulogio Almanza
Job title	Principal Environment
Phone	+61 8 6266 6266
Email	eulogio.almanza@pilbaraminerals.com.au
Address	Level 2, 146 Colin Street West Perth WA 6005

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	96158360046
Organisation name	Talis Consultants Pty Ltd
Organisation address	PO Box 454 Leederville WA 6903
Representative's name	Greg Barrett
Representative's job title	Principal Environmental Consultant
Phone	1300251070
Email	greg.barrett@talisconsultants.com.au
Address	PO Box 454 Leederville

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	95112425788
Organisation name	Pilbara Minerals Ltd
Organisation address	Level 2, 146 Colin Street West Perth WA 6005
Representative's name	Eulogio Almanza
Representative's job title	Principal Environment
Phone	+61 8 6266 6266
Email	eulogio.almanza@pilbaraminerals.com.au
Address	Level 2, 146 Colin Street West Perth WA 6005

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

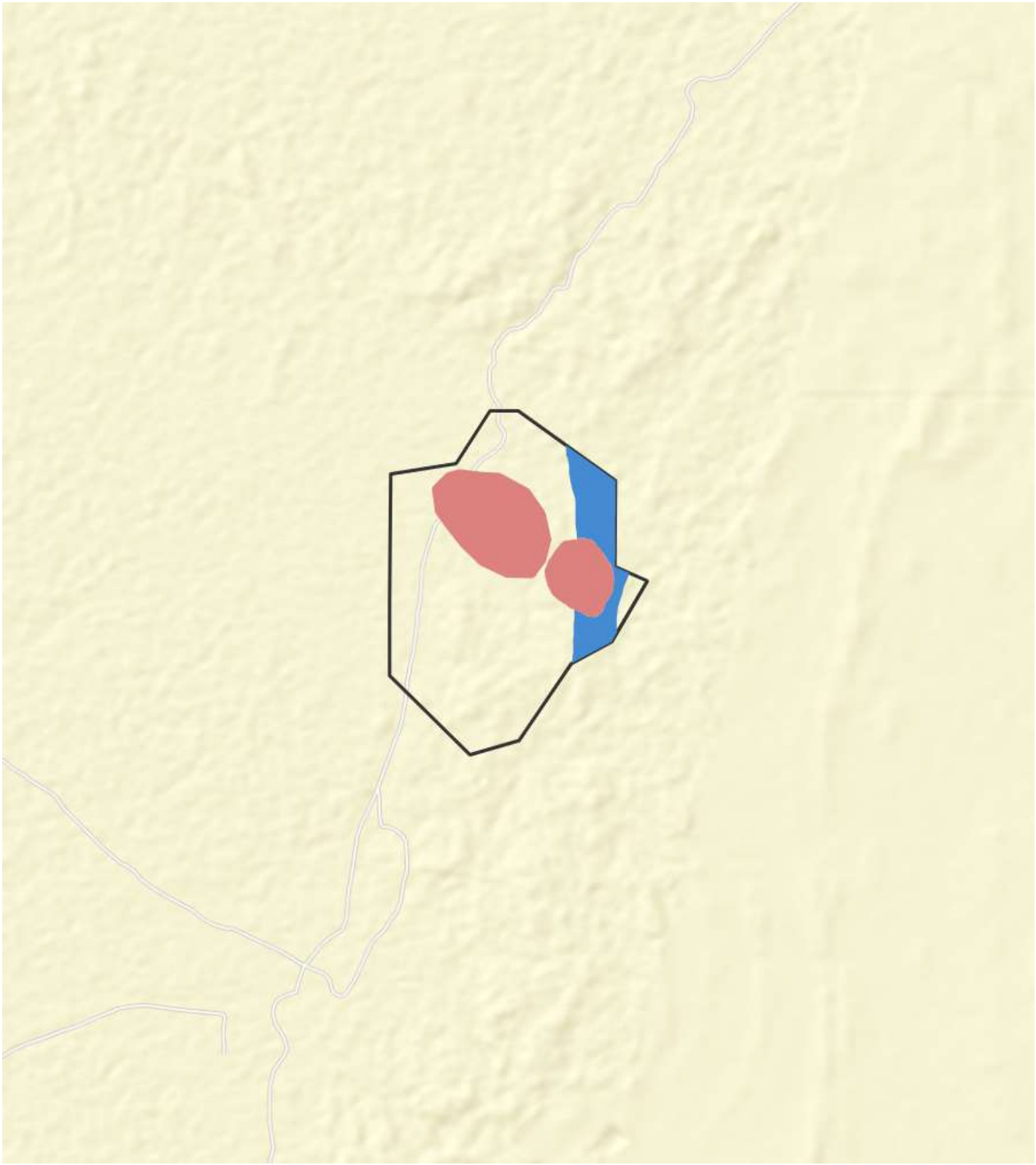
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Pilgangoora Mine, Western Australia

2.2.2 Where is the primary jurisdiction of the proposed action? *

Western Australia

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Lynas Find open pit will occur on mining tenure issued under the Western Australian Mining Act 1978 (Att 2 - Figure 2 - Proposed site layout). The tenements are held by Pilgangoora Operations Pty Ltd, a subsidiary of Pilbara Minerals Ltd. The Lynas Find Project occurs across two tenements - M45/1266 and E45/2287. The former tenement is a Mining Lease and suitable for the proposed activity. E45/2287 is an Exploration Licence and will require conversion to a Mining Lease for the project to proceed. An application for the Mining Lease will be lodged with the Western Australian Department of Mines, Industry Regulation and Safety (DMIRS) in Q2 2023.

The area also occurs on Wallareenya Station, a pastoral lease administered by the Western Australian Pastoral Lands Board under the Land Administration Act 1997 (see Att 1 Figure 1 - General Location).

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Project Area has been affected by mining and mineral exploration activities, and by cattle grazing. Field survey investigations (see Att 4 - Biological Survey) reported that "Vegetation is predominantly in very good condition with the main disturbances being low to moderate cattle grazing and vegetation clearing for mining activity." The areas proposed for disturbance in this proposal have existing mining, mineral exploration and cattle grazing disturbance.

There are no nearby towns with Port Hedland being the closest at approximately 80 km north-northwest of the proposed action. Wallareenya Station homestead is approximately 30 km north-northwest of the proposed action. Indee Station is more than 30 km northwest, Woodgina Camp is more than 30 km southwest, Yandeyarra community is more than 50 km southwest, and South Hedland is more than 75 km north.

3.1.2 Describe any existing or proposed uses for the project area.

The Project Area has been affected by mining and mineral exploration activities, and by cattle grazing. Mining and cattle grazing are also the dominant land uses in the surrounding areas.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

There are no natural features and/or any other important or unique values relevant to the project area.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The area of the open pit features a crest of approximately 230 m AHD. The crest is associated with a ridgeline running north-south. Elevation decreases either side of the ridgeline with the waste rock landform occurring on land with a current elevation of approximately 200 m AHD, declining further to the west (see Att 5 Figure 3 - Topography).

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

The project area occurs within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA, version 7) (see Att 4 - Biological Survey) which classifies the Australian continent into regions (bioregions) of similar geology, landform, vegetation, fauna and climate characteristics. The Bioregion is characterised by vast coastal plains and inland mountain ranges with cliffs and deep gorges. Vegetation is predominantly mulga low woodlands or snappy gum over bunch and hummock grasses.

The Pilbara Bioregion is further subdivided into the Chichester (PIL1), Fortescue (PIL2), Hamersley (PIL3) and Roebourne (PIL4) Sub-regions. The Lynas Find project area lies entirely within the Chichester Sub-region. The Chichester Sub-region comprises the northern section of the Pilbara Craton and is comprised of undulating Archaean granite and basalt plains and includes significant areas of basaltic ranges. Plains support a shrub steppe characterised by Acacia inaequilatera over Triodia wiseana hummock grasslands, while Eucalyptus leucophloia tree steppes occur on ranges.

The project area has been identified as potential habitat for a number of threatened fauna species. Six fauna habitats are described for the Study Area:
• FH1 – Boulder rock outcrops (4%)
• FH2 – Platy rock outcrops (1%)
• FH3 – Low hills (54%)
• FH4 – Sandy plains (3%)
• FH5 – Stony gullies (2%)
• FH6 – Stony plains (17%).

Of these, FH1 was identified as key habitat for the northern quoll with other habitats potentially used by a number of threatened species for foraging. Fauna and fauna habitats are discussed in further detail in section 4.1. An earlier targeted survey confirmed the presence of the Northern Quoll across the ridgeline on which the Lynas Find open pit is proposed (see Att 6 - Northern Quoll targeted survey).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The biological survey (Att 4 - Biological Survey) recorded nine vegetation types within the project area. The ridgeline featured vegetation type 10a, described as “Tall, isolated shrubs of Acacia inaequilatera, Atalaya hemiglauca and Acacia colei over a low sparse shrubland of Hibiscus sturtii, Acacia acradenia, *Aerva javanica, and Triodia wiseana, Triodia brizoides and Triodia chichesterensis mid open hummock grassland” and covered an area of 10.15 ha. The adjoining hills featured vegetation types 11a and 11b covering a combined area of 125.02 ha. These vegetation types both included an Acacia shrubs over a hummock grassland. The remaining six vegetation occurred on minor creeklines or the surrounding plains. Of the overall project area of 393.8 ha, 73 ha (18.5%) was already disturbed (inclusive of rehabilitated areas where revegetation has not yet re-established). Each vegetation type is described in detail in the biological survey report in section 4.2.2 (p40-51).

One vegetation type (6a) is synonymous with a vegetation type recorded in earlier baseline surveys for the Pilgangoora project, the remaining eight are different from previously described.

Across the project area, 64.6% of the project area supported native vegetation in very good condition (254.48 ha). A further 16.9% of the vegetation was recorded as in good condition while 18.5% is degraded (disturbed). Vegetation condition is discussed in further detail in the biological survey report in section 4.2.3 (p52-53).

No Weeds of National Significance were recorded. Three weed species were recorded – Cenchrus ciliaris (buffel grass), Cenchrus setiger (birdwood grass) and Aerva javanica (kapok). All three are common throughout the Pilbara region.

During the biological survey, soils type was recorded at each sample point. Soils ranged from sands through to loams (see Att 4 - Biological Survey, Appendix C).

Overall, the soil and vegetation is broadly reflective of that encountered elsewhere in the Pilbara with the vegetation being predominantly in very good condition.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth heritage places occur within the project area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Project Area is located within the Nyamal Native Title Determination area (Federal Court File No WAD6028/1998, and Tribunal File No. WC 1999/008).

A Native Title Mining Agreement was signed in 2016 between PLS and the Nyamal Aboriginal Corporation (NAC), which is still in place. As part of its Heritage Protection conditions, the project area has been subjected to two heritage surveys (Archaeological and Ethnographic) conducted in April 2017 and February 2021 in accordance with Nyamal Heritage protocols. No indigenous heritage sites have been recorded within the Project Area.

It is recognised that according to DPLH Register of Aboriginal Sites, site 37226 – *Pilgangoora Historic Aboriginal Camp* overlaps the proposed Lynas Find project. PLS has investigated the site in consultation with DPLH and the relevant knowledge holders, and confirm that the project and its associated activities do not impact the Heritage Site.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

A hydrological and hydrogeological review was undertaken for the Lynas Find Project (Att 7 - Hydrological and Hydrogeological Assessment). The hydrological investigation noted that the proposed pit is at the top of regional catchment boundaries - there will be no natural flow into or around the pit. Similarly, the waste rock landform is also near the top of the catchment boundary with minimal upstream flows affecting it. The study recommended bunding of the landform to prevent loss of sediment to local creek systems. PML will adopt this measure.

With regard to groundwater, the study notes that there are no nearby groundwater dependent ecosystems or groundwater users that may be detrimentally impacted by dewatering at Lynas Find. Monitoring to better understand dewatering requirements was recommended and will be adopted.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S27B	Commonwealth heritage places overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no World Heritage areas at or near the Proposed Action.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The nearest listed National Heritage Place is the Dampier Archipelago over 200 km from the Proposed Action. A nominated place, North Pole Dome / Meentheena, is almost 40 km away.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The nearest Ramsar wetland is over 140 km away (Eighty Mile Beach). A proposed Ramsar addition is over 130 km away (Fortescue Marshes). There is no hydrological connection between the area of the proposed action and either of these areas.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
No	No	Calidris ferruginea
Yes	Yes	Dasyurus hallucatus
No	No	Erythrotriorchis radiatus
No	Yes	Falco hypoleucos
No	No	Liasis olivaceus barroni
No	Yes	Macroderma gigas
No	Yes	Macrotis lagotis
No	No	Numenius madagascariensis
No	No	Pezoporus occidentalis
Yes	Yes	Rhinonicteris aurantia (Pilbara form)
No	No	Rostratula australis

Ecological communities

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4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Northern Quoll (Endangered) *Dasyurus hallucatus*

The Northern Quoll was listed as Endangered in 2005. An important factor in the Endangered listing was the threat posed by the cane toad whereby northern quolls were seen to be seriously impacted after ingesting cane toads, and the likely expansion of the cane toad from Queensland and the Northern Territory into Western Australia. Recently, there is some evidence that quoll have developed avoidance strategies in areas where they co-exist with cane toads and the risk posed by toads may not be as significant a risk as originally foreseen.

Within the Lynas Find project area, direct impacts will include permanent clearing of 4.62 ha of denning habitat that co-occurs with the proposed pit, a further 82.48 ha of foraging habitat, and partial fragmentation of connected habitat. (Att 6 - Northern Quoll targeted survey)

Other than loss and partial fragmentation of habitat, other impacts include injury or fatality during land clearing operations; injury or fatality arising from vehicle interactions; and entrapment in infrastructure e.g. storage containers. Indirect impacts may include noise and dust associated with temporary mining activity, leading to short term compromise of some potential foraging habitat.

Pilbara Leaf-nosed Bat (Vulnerable) *Rhinonicteris aurantia*

The Pilbara leaf-nosed bat was recorded using acoustic recorders on two occasions, most recently in the Lynas Find Biological Survey (see Att 4 - Biological Survey, p77-79). The project area does not feature any roosting habitat but one roost was identified 2 km to the north (which has not been active since recorded). This site will not be disturbed by this project. The occurrence of the acoustic records indicates that some habitat within the project area may be used for foraging. Based on a previous ecological assessment of the species, the FH1 and FH5 habitats are of moderate quality and the remaining habitats are of low quality.

Direct impacts expected for the Pilbara Leaf-nosed Bat relate to habitat loss and fragmentation, as well as potential other impacts from injury or fatality during land clearing operations or vehicle interactions; and entrapment in infrastructure e.g. storage containers. Indirect impacts may include noise, light and dust associated with temporary mining activity, leading to short term compromise of some potential foraging habitat.

Ghost Bat (Vulnerable) *Macroderma gigas*

No evidence of the presence of ghost bats (sightings, scats, food scraps) was recorded during the survey. However, the project area does contain some low quality roosting habitat (category 4 - nocturnal roost caves with opportunistic usage) and potential foraging habitat.

On this basis, the likely impact of the project on the ghost bat is not so great as to represent a significant impact to a species listed as Vulnerable.

As there is no evidence of ghost bat presence, only indirect impacts are expected, relating to dust, noise and light impacts leading to the short term compromise of habitat.

Greater Bilby (Vulnerable) *Macrotis Lagotis*

Suitable habitat for the Greater Bilby occurs in the project area across the sandy plains, stony plains and low hills habitats (FH3, FH4 and FH6). Extensive foot transects were walked across these habitats at 10-20 m intervals. No burrows were located, and no tracks or other traces were recorded. It is unlikely the species is currently present.

This species has the potential to occupy the project area in the future as bilbies can be relatively transient across their distribution. However, no historical burrows were observed suggesting they have not occupied the area in recent times.

No direct impacts are predicted for the Greater Bilby as they are not expected to be present in the project area, however indirect impacts relating to dust, noise and light from the operation may impact this species.

Grey Falcon (Vulnerable) *Falco hypoleucos*

The main habitat of the Grey Falcon is timbered lowland plains, particularly Acacia shrublands that are crossed by tree-lined watercourses. Local records are centred on the Turner River. At its closest point, the Turner River is 23 km from the project area. The plains habitat in the project area is suitable foraging habitat for this species, and within range of the population likely to be nesting in the Turner River riparian zone. No nesting habitat is present in the project area. This species was not recorded during surveys.

Indirect impacts expected for the Grey Falcon relate to dust and noise from the operation potentially compromising the short term viability of foraging habitat.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Northern Quoll (Endangered)

In considering whether the potential impact on the Northern Quoll is significant, the following comments are made:

- Denning habitat extends along the ridgeline to the north and to the south (Att 8 Figure 4 - Northern Quoll critical habitat) and 9.8% of the mapped denning habitat will be disturbed. Mapping undertaken for the targeted survey indicates that denning habitat does not extend beyond the mapped area to the south but extends beyond the extent of mapping to the north, eventually intercepting riverine habitat (the Turner River East).
- The establishment of the pit only partially fragments the north-south habitat and foraging habitat is continuous along the ridgeline. Foraging habitat (on the basis of 1 km from denning habitat) is very extensive. Based on the denning habitat mapping which extends approximately 5 km north-south, the broader area contains approximately 1,000 ha of foraging habitat of which 82.72 ha (8.2%) will be disturbed.
- There are examples of the species persisting in areas with a long history of mining disturbance (e.g. Koolan Island).

On this basis, it is clear the project will have a localised impact on the Northern Quoll. However, in considering the extent of local habitat and the ongoing connectivity of foraging habitat (denning habitat is naturally fragmented), it is PLS's view that a significant impact on the species whereby the local population would be significantly reduced or lose viability, was not clearly identified.

Pilbara Leaf-nosed Bat (Vulnerable)

The Pilbara Leaf-nosed Bat was recorded during surveys. However, there is no roosting habitat within the project and potential foraging habitat is of low-moderate quality. On this basis, the likely impact of the project on the Pilbara Leaf-nosed Bat is not so great as to represent a significant impact to a species listed as Vulnerable.

Ghost Bat (Vulnerable)

Despite the presence of low quality roosting habitat and potential foraging habitat, no evidence of the presence of the Ghost Bat was recorded during the survey. On this basis, the likely impact of the project on the ghost bat is not so great as to represent a significant impact to a species listed as Vulnerable.

Greater Bilby (Vulnerable)

While the Greater Bilby has the potential to occupy the project area, no evidence of the presence of the Greater Bilby was recorded during surveys. This includes historical burrows indicating they are not present now or in recent times. On this basis, the likely impact of the project on the greater bilby is not so great as to represent a significant impact to a species listed as Vulnerable.

Grey Falcon (Vulnerable)

The Grey Falcon may forage across the project area but there is no nesting habitat and the species was not recorded during surveys. Local records show the Turner River as preferred habitat but this is 23 km from the project area at its closest point.

On this basis, the likely impact of the project on the grey falcon is not so great as to represent a significant impact to a species listed as Vulnerable.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

This project has the potential to impact only one MNES - threatened species and communities. Data obtained from desktop and field surveys identified five species of threatened fauna for which there was some potential for impact. A significant impact could not be identified for four of those species, as outlined in section 4.1.4.2. In the case of the Northern Quoll, it is clear the project will have an impact on the local population, primarily through the loss of some denning and foraging habitat (4.62 ha and 82.72 ha respectively). However, it could not be clearly established that the impact was sufficiently significant to comprise a controlled action.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Surveys identified important habitat for the Northern Quoll. Due to the location of the ore body, some of this habitat will be disturbed. The remainder of this habitat within the project area has been placed within an avoidance area where no disturbance will occur.

Avoidance measures include the relocation of the waste rock landform from its original proposed location south of the Lynas Find Pit and on the ridgeline that supports denning habitat, towards the north-west of the project away from denning habitat. This was done to ensure the footprint of the waste rock landform and its associated tracks do not disturb critical habitat of the Northern Quoll. PLS has proposed an Avoidance Area (see Att 2) to formalise avoidance of this habitat.

Amongst the mitigation measures PLS will include are speed restrictions on vehicles (60 km/h), dust control on roads and access tracks, regular site environmental inspections with corrective measures for any unexpected impacts, and development of a Northern Quoll Management Plan to be implemented before any work commences.

At the conclusion of mining, the open pit will be backfilled with waste rock. This will partially restore the local landform and will assist with dispersal of quoll along the ridgeline. A Rehabilitation Plan will include the construction of artificial dens for Northern Quolls, which are currently on a trial phase at the Pilgangoora Project.

Additional to these measures, PLS is proposing the following measures:

- Assessment of dens along the ridgeline
  - identified sites used or potentially used as dens;
  - mapping their occurrence and assessing their physical conditions e.g. temperature and humidity.
- Monitoring of the local Northern Quoll population for the life of the Lynas Find Project.
- Implementation of an Avoidance Area across the ridgeline to the north and south of the pit (see Att 2 Figure 2 - Proposed site layout).

The potential for pre-disturbance capture and release of Northern Quoll will be assessed in consultation with the Western Australian Department of Biodiversity, Conservation and Attractions.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

The proponent will consider a contribution to the Pilbara Environmental Offsets Fund managed by the Western Australian Department of Water and Environmental Regulation. Details are yet to be determined but potentially may involve establishment of habitat structures to support the long term maintenance of the local Northern Quoll population.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
No	No	Actitis hypoleucos
No	No	Apus pacificus
No	No	Calidris acuminata

Direct impact	Indirect impact	Species
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Charadrius veredus
No	No	Glareola maldivarum
No	No	Hirundo rustica
No	No	Motacilla cinerea
No	No	Motacilla flava
No	No	Numenius madagascariensis

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

Suitable habitat for migratory species does not occur within the area of the Proposed Action. Some suitable seasonal habitat may occur at the Turner River but this occurs 23 km to the west and will not be affected by the Proposed Action.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

Drilling records for the Lynas Find resource show a mean level of radiation of 0.24 Bq/g. Material containing less than 1 Bq/g is exempt from radiation-related regulation and is not triggered under the EPBC Act.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not in or near the marine environment.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is in Western Australia.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action does not involve coal mining or coal seam gas.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action does not occur on or near Commonwealth land.

4.1.11 Commonwealth heritage places overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action occurs within Australia.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth heritage places overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The location of the Lynas Find open pit is associated with a high grade spodumene (lithium) deposit identified through mineral exploration. The only alternative is to not mine the resource, in which case royalty and tax revenue to government will be reduced.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

#1.	Att 1 Figure 1 - General Location	Document	General location of the Lynas Find project
#2.	Att 2 Figure 2 - Proposed site layout	Document	Proposed site layout of the Lynas Find project
#3.	Pilgangoora Project	Link (Webpage)	https://www.pilbaraminerals.com.au/our-com...

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

#1.	Referral guidelines	Link (Webpage)	https://www.dcceew.gov.au/sites/default/files/...
#2.	Significant Impact Guidelines	Link (Webpage)	https://www.dcceew.gov.au/sites/default/files/...

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

#1.	Att 3 - Environmental Policy	Document	Pilbara Minerals Environmental Policy

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

#1.	Att 3 - Environmental Policy	Document	Pilbara Minerals Environmental Policy

2.2.5 Tenure of the action area relevant to the project area

#1.	Att 1 Figure 1 - General Location	Document	General location of the Lynas Find project
#2.	Att 2 Figure 2 - Proposed site layout	Document	Proposed site layout of the Lynas Find project

3.1.1 Current condition of the project area's environment

#1.	Att 4 - Biological Survey	Document	Biological survey for Lynas Find survey area

3.1.4 Gradient relevant to the project area

#1.	Att 5_Figure 3 - topography	Document	Topography of the Lynas Find project area

3.2.1 Flora and fauna within the affected area

#1.	Att 4 - Biological Survey	Document	Biological survey for Lynas Find survey area
#2.			

	Att 6 - Northern Quoll targeted survey	Document	Targeted survey for Northern Quolls in the Lynas Fi…
#3.	An Interim Biogeographic Regionalisation for Australia	Link (Webpage)	https://www.dcceew.gov.au/environment/land…
#4.	Chichester subregion	Link (Webpage)	https://www.dpaw.wa.gov.au/images/docume…

3.2.2 Vegetation within the project area

#1.	Att 4 - Biological Survey	Document	Biological survey for Lynas Find survey area

3.4.1 Hydrology characteristics that apply to the project area

#1.	Att 7 - Hydrological and Hydrogeological Assessment	Document	Hydrological and Hydrogeological survey of the Lyn…

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

#1.	Att 4 - Biological Survey	Document	Biological survey for Lynas Find survey area
#2.	Att 6 - Northern Quoll targeted survey	Document	Targeted survey for Northern Quolls in the Lynas Fi…
#3.	A review of ghost bat ecology, threats and survey requirements	Link (Journal article)	https://www.agriculture.gov.au/sites/default/fil…
#4.	A review of Pilbara leafnosed bat ecology, threats and survey requirements	Link (Journal article)	https://www.dcceew.gov.au/sites/default/files/…
#5.	Artificial dens employed in trial to help save crashing northern quoll numbers	Link (News article)	https://www.abc.net.au/news/2022-05-24/arti…
#6.	Northern Quoll referral guidelines	Link (Webpage)	https://www.agriculture.gov.au/sites/default/fil…
#7.	The ecology of an insular population of North Quolll Dasyurus hallucatus	Link (Dissertation or thesis)	https://researchrepository.murdoch.edu.au/id…
#8.	Threatened species of the Northern Territory - Northern Quoll	Link (Webpage)	https://nt.gov.au/__data/assets/pdf_file/0005/…

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

#1.	Significant Impact Guidelines	Link (Webpage)	https://www.dcceew.gov.au/sites/default/files/…

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

#1.	Att 8 Figure 4 - Northern Quoll critical habitat	Document	Northern Quoll critical habitat map in the Lynas Fin…

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

#1.	Att 2 Figure 2 - Proposed site layout	Document	Proposed site layout of the Lynas Find project

4.1.6.3 (Nuclear) Why your action is unlikely to have a direct and/or indirect impact

#1.	Att 9 - Radiation Memo	Document	Supporting information for assessment of radiation …

5.2 Declarations

● Awaiting Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	96158360046
Organisation name	Talis Consultants Pty Ltd
Organisation address	PO Box 454 Leederville WA 6903
Representative's name	Greg Barrett
Representative's job title	Principal Environmental Consultant
Phone	1300251070
Email	greg.barrett@talisconsultants.com.au
Address	PO Box 454 Leederville

☐ Check this box to indicate you have read the referral form. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

☐ By checking this box, I, **Greg Barrett of Talis Consultants Pty Ltd**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

● Awaiting Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	95112425788
Organisation name	Pilbara Minerals Ltd
Organisation address	Level 2, 146 Colin Street West Perth WA 6005
Representative's name	Eulogio Almanza

Representative's job title	Principal Environment
Phone	+61 8 6266 6266
Email	eulogio.almanza@pilbaraminerals.com.au
Address	Level 2, 146 Colin Street West Perth WA 6005

☐ Check this box to indicate you have read the referral form. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

☐ I, **Eulogio Almanza of Pilbara Minerals Ltd**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

● Awaiting Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☐ Check this box to indicate you have read the referral form. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *

☐ I, **Eulogio Almanza of Pilbara Minerals Ltd**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☐ I would like to receive notifications and track the referral progress through the EPBC portal. *