Northern Silica Sand Mining Project

Application Number: **01692** Commencement Date: **03/03/2023** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Northern Silica Sand Mining Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Mineral sand mine

1.1.4 Estimated start date *

1/07/2024

1.1.4 Estimated end date *

30/06/2044

1.2 Proposed Action details

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

The Northern Silica Project (NSP) is a propsoed silica mine within a known silica province that extends from Cape Bedford to Cape Flattery, located 15km to the southwest of the Port of Cape Flattery and immediately adjacent (to the south) to the world's largest high quality silica sand mine, Cape Flattery Silica Mine (CFSM).

The NSP consists of a series of proposed mining leases (MLAs) that are detailed in Table 1.1 (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 1.1.1, p.11).

The NSP proposed Project Area is approximately 5695.71 hectares (ha) illustrated in Figure 1.4 (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP, Section 1.1.1, p.10) with a disturbance footprint of 1055.17 ha illustrated in Figure 1.3 (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP, Section 1.1.1, p.9).

Mining Operations

The NSP will consist of silica mining via a loader or potentially dry bucket wheel system which will feed silica sand to trommels or vibrating screens. Sand will then be pumped as a slurry to a processing plant with capacity up to 6 Mtpa. Processing will be via an innovative and modular CDE Global Australia Pty Ltd (CDE)-Diatreme designed plant that minimises iron contamination, delivering a low iron content silica product. During mining operations, a dozer will also be used to undertake progressive vegetation and topsoil stripping along with rehabilitation, subject to a progressive rehabilitation and closure plan (PRCP).

Mining will typically occur across 12-month mining panels, aligned northwest to southeast, although the size of panels will be subject to further analysis during the next stage of feasibility studies. The intention is for mining panels to progressively exploit the dune, migrating towards coastal areas. All mining will be conducted above the water table.

Bulk stockpiles of processed material will be located within MLA100308 from where product will be conveyed to the Port of Cape Flattery via conveyor. From here it will be loaded on to oceangoing vessels (OGVs) for export. The design of stockpiles and associated dewatering within MLA100308 is yet to be engineered but is expected to include proprietary CDE-EVO wash systems and water returns to the processing plant via return water line. An area for stockpiling will also be located within MLA100313, on Ports North freehold land (9BS223, 10BS224), limited to an emergency source of 50kt of silica product in the event of conveyor failure.

The preferred route for conveyance will be through the CFSM ML2965 either by commercial agreement with CFSM or by way of a s316 easement/transportation lease under the Queensland *Mineral Resources Act 1989*. In the event of an issue associated with achieving this lease, MLA100308 includes a beachfront access strip through to Ports North land.

Maritime Infrastructure

Within the port, Diatreme will require access to a barge ramp to support initial construction as well as relevant maritime infrastructure for export of the silica product. At present, the following options (in order of preference) are being considered by Diatreme:

1. 1.Use of an existing barge ramp operated by CFSM in port limits and the use of the existing Port ofCape Flattery wharf (and conveyor structure) which is owned by Ports North but operated by CFSMas the lessee. This option involves no new maritime infrastructure being developed for the NSP,although some minor modification to existing structures may be required. This option is subject to asuitable commercial and operational agreement being reached with CFSM and Ports North.
2. Construction of a new rock barge facility within the limits of the port to support initial construction and then use of the same structure for transhipment of silica product to a moored ocean-going vessel (OGV). The mooring arrangement for the OGV could either be at the existing berth of the Port of Cape Flattery Wharf (if there is capacity and the activity is permitted by the Port and CFSM)or else the construction of mooring dolphins seaward of the existing wharf.
3. Construction of a new barge facility as per option 2 and constructing a permanent extension to the existing wharf (e.g. via lengthening and/or widening of the wharf structure). This option allows for NSP operations to occur completely in parallel with existing CFSM operations.

There are ongoing commercial discussions with CFSM and the Far North Queensland Ports Corporation Limited (‘Ports North’) regarding the ability to share existing infrastructure. These discussions are also being supported by investigations by the Queensland Department of Resources (DoR). Pending these discussions, a final option will be selected. However, this is anticipated to take several months and therefore all three options will be subject to environmental assessment.

Site Access

Access to the NSP site is proposed through one of two alternate access routes:

1. Starcke-Northern Silica Access 1 – this is a ~10 km long access route connecting from the Starcke Highway (Mount Webb Wakooka Road) to the western end of MLA100308. This is the preferred access route for the site.
2. Starcke-Northern Silica Access 2 – this is a ~18 km long access route that follows a gazetted road from the Starcke Highway through to the coast and then travels north to connect to the southern end of MLA100308.

Access 1 is a more direct and shorter route but is subject to landowner negotiations as it crosses additional freehold lots outside the Aboriginal freehold land of the Hopevale Congress RNTBC.

Site access may also occur by sea through the Port of Cape Flattery but this will be dependent on the maritime infrastructure developed. It is noted that the distance between Cooktown and the port may make any sea-based commuting for workers unfeasible.

Operational Infrastructure and Water Use

Operational infrastructure for the project will include upgrades to the Starcke Highway, development of an all-weather access to the site (via one of the above access routes), construction of an 80-100 person camp, site offices, workshop, laboratory, crib room, amenities building, potable water plan, fuel storage facilities, diesel/solar hybrid power, water supply, settling ponds and sewage treatment facilities. The utilisation of the airstrip at Cape Flattery is subject to ongoing communications with CFSM. Personnel will be transported from Hope Vale and Cooktown by bus, air or water taxi.

The source of raw water supply to site will be provided by a bore(s) located within MLA100308. Current estimates indicate an annual water supply will be required of up to 3,500ML.

Raw water will be pumped from the bore to the Potable Water Treatment Plant (PWTP) via a pipeline run along the site access road. Pipelines would generally consist of 100 mm diameter polyethylene mains and be run along the ground to allow inspection and repair as required. Fire breaks to these mains would be established to prevent damage in the event of a bushfire. Water treatment will be via an Ultrafiltration (UF) Membrane water treatment plant. Disinfection would be achieved with UV and chlorination. Potable water will be treated to ensure water quality for human consumption complies with the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines.
After water treatment it is proposed that the potable water is stored in a proprietary steel or poly tank reservoir to provide 3 days storage in the event of source failure. The reservoir would be located approximately 200 m west of the office location close to the MLA boundary halfway up the ridge and placed on an elevated platform to achieve an elevation of approximately RL 60 m to provide sufficient head pressure. The final location will be determined during detailed design.

Runoff water from the mine infrastructure area will be stored within stormwater detention ponds and be transferred to the mine process treatment plant for the water to be re-used on site. Runoff from the network of haul roads will be captured in table drains discharges to vegetated areas via turn outs at regular intervals.

Additional to drinking water supply, up to 3ML/yr will be required to feed mining, infrastructure and port operations. This will be based on a bore(s) within MLA100308. It is expected 80-85% of water abstracted for operations will be returned to dunes and will be confirmed through comprehensive groundwater studies.

The NSP is within the Jeannie Sub-Catchment area under the Cape York Water Plan. Under the Cape York Water Management Protocol, there is no unallocated water under the Cape York Peninsula Heritage Area (CYPHA) reserve or the general reserve. Additionally, the volume of water required for the NSP is expected to exceed the availability of water that could otherwise be obtained through trading with existing allocation holders. Therefore, Diatreme is currently seeking an allocation of water from the strategic reserve (which currently holds 25,000 ML/yr). The NSP is expected to constitute a project of regional significance for the purposes of the W*ater Plan (Cape York) 2019* and Diatreme can make an application for a Water Licence under the *Water Act 2000* for such an allocation.

Diatreme is currently in discussions with the Queensland Department of Regional Development, Manufacturing and Water (RDMW) regarding this allocation. Applications and negotiations will continue in parallel with environmental studies to obtain the relevant allocation.

The NSP will have the following direct and indirect impacting processes within the terrestrial and marine environment:

Landside/terrestrial

- Vegetation clearing
- Landform changes
- Drainage changes
- Groundwater extraction
- Noise and dust
- Vehicle movement

Marine

- Vessel movements (inshore)
- Vessel movements (offshore/shipping channels)
- Product loading (and potential spill/material loss)
- Construction noise (underwater)

Further details on the direct and indirect impacts associated with NSP project elements are in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP, Section 4, p.59).

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

No

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

Commonwealth

- *Environment Protection and Biodiversity Conservation Act 1999* - the NSP is expected to be a controlled action and therefore will require approval under the Act
- *Native Title Act 1993* - there are multiple Native Title holders for the land subject to the NSP and therefore works will need to be subject to a Native Title agreement
- *Great Barrier Reef Marine Parks Act 1975* - while NSP activities will not be within the marine park, ship movements for export will occur through the marine park and therefore assumed to require a Marine Park Permit
- Maritime safety and navigational legislation and policies - these will govern ship movements associated with the project

State

- *Mineral Resources Act 1989* - the NSP will require Mining Leases under the Act; the Act also provides the basis for negotiating access agreements across other leases (e.g. CFSM lease)
- *Environmental Protection Act 1994* - the NSP is currently subject to a Voluntary EIS process under the Act; the Act also requires the development of a PRCP
- *Aboriginal Cultural Heritage Management Act 2003* - as the NSP will be subject to an EIS, a Cultural Heritage Management Plan will be required under the Act with each affected Aboriginal party
- *Sustainable Resource Communities Act 2017* - as the NSP will be subject to an EIS and involves a mining project, a Social Impact Assessment and Social Impact Management Plan will be required under the Act
- *Water Act 2000* and associated Water Plan and protocols - a water allocation/licence will be required for extraction and use of water for mining activities
- *Planning Act 2016* and supporting legislation and instruments - these will govern any ‘downstream’ operational and structural approvals.

Strategic Context

The target mineral for the NSP is silica sand. This has been identified of importance in new state and national polices. Both the Commonwealth Government and the Queensland Government have recently announced policies regarding Australia's 'new economy' minerals. These generally constitute what Geoscience Australia describes as 'critical minerals' in Australia's Critical Minerals Strategy 2019 prepared by the Department of Industry, Innovation and Science (2019):
Critical minerals are metals and non-metals that are considered vital for the economic well-being of the world's major and emerging economies, yet whose supply may be at risk due to geological scarcity, geopolitical issues, trade policy or other factors. Among these important minerals are metals and semi-metals used in the manufacture of mobile phones, flat screen monitors, wind turbines, electric cars, solar panels, and many other high-tech applications. (p1)

As a critical component in the manufacture of mobile phones, flat screen monitors, and solar panels, silica is a key resource target for attention in the short term.

The Department of State Development, Infrastructure, Local Government and Planning has also issued its New Economy Minerals: Investment Opportunities in Queensland's Minerals Provinces (DSDILGP 2021). This strategy also lists silica as one of a range of new economy minerals in both the solar technology and electric vehicles & energy storage sectors. The strategy notes that:
New economy minerals are essential in the manufacture of many emerging technologies, including electric vehicles, renewable energy products, low-emission power sources, consumer devices such as smartphones and tablets, and high-tech products used in advanced manufacturing for medical, defence and scientific research applications. (p7)

The Australian Government's Australia's Critical Minerals Strategy 2019 (Department of industry, Innovation and Science 2019):
… aims to refine Australia's policy settings to enable the resources sector to supply the growing markets for raw and refined critical minerals. It is a key part of the Australian Government's broader plan for Australia's resources sector, set out in the National Resources Statement. The Strategy sets out actions to refine the settings in Australia's critical minerals market in three key areas. (p7)

These three areas listed are:

- promote investment into Australia's critical minerals sector and downstream processing activities
- provide incentives for innovation to lower costs and increase competitiveness
- connect current and pipeline critical minerals projects with infrastructure development.

It is expected that growing support will be given to critical minerals such as silica in coming years, underpinning the need for the NSP.

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. *

While Diatreme has a long-standing relationship with Hopevale Congress and has preliminary consultation with both Congress and the Walmbaar Aboriginal Corporation, formal consultation, including statutory processes under the Native Title Act and Aboriginal Cultural Heritage Act are yet to commence and will occur in parallel with EIS assessments.

At present there is no completed consultation documentation available.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

See our Privacy Policy to learn more about accessing or correcting personal information or making a complaint. Alternatively, email us at privacy@awe.gov.au.

☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	54010830421
Organisation name	BMT Commercial Australia Pty Ltd
Organisation address	4000 QLD

Referring party details

Name	Jeremy Daniel Visser
Job title	Senior Environmental Consultant
Phone	0738316744
Email	Jeremy.Visser@bmtglobal.com
Address	348 Edward Street, Brisbane QLD 4000

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	44659896563
Organisation name	NORTHERN SILICA PTY LTD
Organisation address	4151 QLD

Person proposing to take the action details

Name	Neil McIntyre
Job title	Chief Executive Officer
Phone	+61 7 3397 2222
Email	neil.mcintyre@diatreme.com.au
Address	Unit 8, 55-61 Holdsworth Street, Coorparoo, Qld, 4151

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

Yes

Joint Venture Name	Business Address	ABN/ACN	Responsible Person	Email
Cape Silica Holdings Pty Ltd	4151 QLD	45659896189		

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. *

The proponent for the works is Northern Silica Pty Ltd. This is a newly formed company and therefore does not have a substantial track-record.

Northern Silica Pty Ltd is a wholly-owned subsidiary of Cape Silica Holdings Pty Ltd which is owned by a Joint Venture between Diatreme Resources Ltd and Sibelco. Diatreme is the major JV partner (90.01%) and controls both Northern Silica and Cape Silica Holdings. Diatreme's environmental track-record, therefore, is the most relevant in relation to establishing environmental management history.

Diatreme has not committed any breaches of environmental legislation in the States that it has operated in nor under Commonwealth law. To date, Diatreme has undertaken exploration activities across it's EPM within the Cape Bedford region and targeted investigations for the Galalar Silica Sands Project (located south of Northern Silica) without any instance of environmental harm or nuisance. Diatreme works closely with local indigenous partners (e.g. Congress) to ensure that all exploration and mine planning works respect local indigenous heritage and land access arrangements.

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

Diatreme currently has adopted an Environment Policy (see attached EnvironmentalPolicy2014) and a Sustainability Policy to govern all of its operations. Under these policies, Diatreme has committed to the following key actions:

- Benchmarking of new silica projects against the Initiative for Responsible Mining Assurance (IMRA) Standard for Responsible Mining 2018 and Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) Rating Tool
- Preparation of an ISO14001 accredited Environmental Management System to govern all Diatreme activities, including at a mine-operational level
- Development of project-specific management plans to govern all relevant aspects of mining activities, including infrastructure construction, mining and processing, maritime operations, cultural heritage, and progressive closure and rehabilitation.

Additionally, under the Environment Policy (see attached EnvironmentalPolicy2014), Diatreme has made the following key commitments:

- Complying with the requirements of all relevant legislation and regulations and applying responsible standards wherelaws do not exist
- Managing environmental risk, ensuring that all material risks are identified, objectively assessed, monitored and responded to in an appropriate manner

- Minimising environmental impacts through the implementation of environmental management plans for operational activities
- Preventing pollution, and developing response plans for emergency situations
- Reducing our environmental footprint by efficient use of resources, management of water and energy consumption and management of waste and emissions
- Continually improving environmental management practices and performance
- Developing a workplace culture where all personnel, consultants and contractors understand and appreciate theirenvironmental responsibilities.

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	44659896563
Organisation name	NORTHERN SILICA PTY LTD
Organisation address	4151 QLD

Proposed designated proponent details

Name	Neil McIntyre
Job title	Chief Executive Officer
Phone	+61 7 3397 2222
Email	neil.mcintyre@diatreme.com.au
Address	Unit 8, 55-61 Holdsworth Street, Coorparoo, Qld, 4151

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	54010830421
Organisation name	BMT Commercial Australia Pty Ltd
Organisation address	4000 QLD
Representative's name	Jeremy Daniel Visser
Representative's job title	Senior Environmental Consultant
Phone	0738316744
Email	Jeremy.Visser@bmtglobal.com

Address	348 Edward Street, Brisbane QLD 4000

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	44659896563
Organisation name	NORTHERN SILICA PTY LTD
Organisation address	4151 QLD
Representative's name	Neil McIntyre
Representative's job title	Chief Executive Officer
Phone	+61 7 3397 2222
Email	neil.mcintyre@diatreme.com.au
Address	Unit 8, 55-61 Holdsworth Street, Coorparoo, Qld, 4151

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

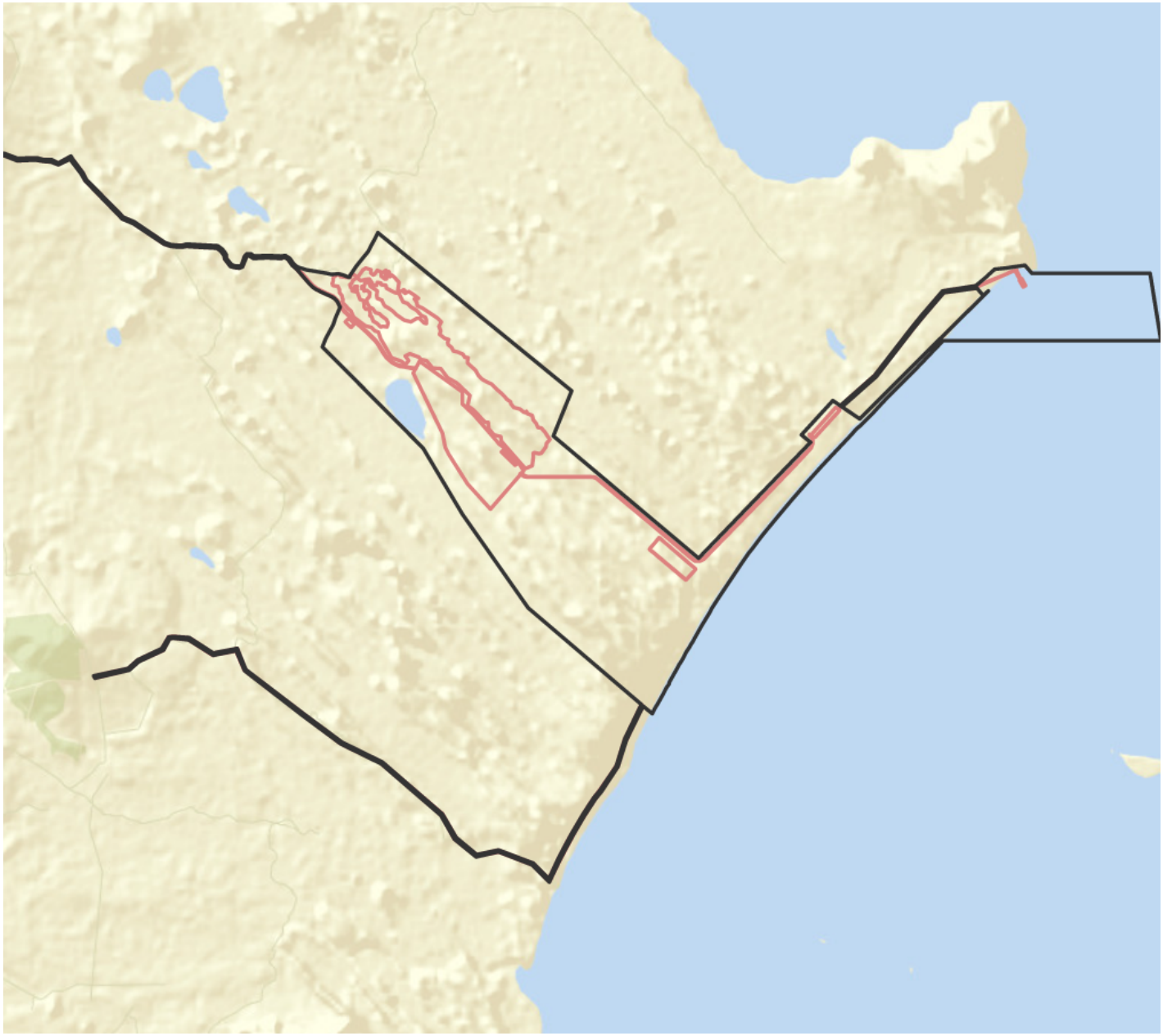
1.4 Payment details: Payment allocation

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? *

Corner Mount Webb and Wakooka Roads, Hope Vale

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

Queensland

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 NSP will occur on the following lots:

- Lot 35 on SP232620, Aboriginal freehold, held by Hopevale Congress
- Lot 9 on BS223, freehold land, held by Far North Queensland Ports Corporation Ltd
- Lot 10 on BS224, freehold land, held by Far North Queensland Ports Corporation Ltd
- Lot 8 on SP104579, Aboriginal freehold land, held by Darrba Land Trust
- Unnamed road reserve between Mount Webb Wakooka Road and coast

The NSP will be undertaken subject to a series of Mining Leases across these lots. See further in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 1, Table 1.1, p.11.

3. Existing environment

3.1 Physical description

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

The NSP (also referred to as 'the Project Area') is located approximately 200km north of Cairns, 50km north of Cooktown and 30km east of Hope Vale in Far North Queensland. NSP is immediately adjacent to the mining lease held by CFSM. The Project Area and adjacent lots are within a rural zone code under the Hope Vale Aboriginal Shire Council Planning Scheme 2017.

The majority of the land use within the Project Area is considered a managed resource protection, with minor areas considered marsh/wetlands, lake and utilities (proposed access roads only). The majority of the land use adjacent to the Project Area is considered managed resource protection marsh/wetlands and lakes with a land use of mining approximately 3 km north-east of the Project Area.

The regional geology ranges from Middle Devonian to Lower Carboniferous rocks, Palaeozoic geosynclinal formations and intrusive granites and Mesozoic sediments, to a variety of Tertiary and Quaternary deposits. The local geology of the GSSP is dominated by unconsolidated Quaternary silica sands deposited within elongated dunes that cover most of the site and extend northwards towards Cape Flattery.

The climate is a typical coastal tropics area with distinct wet and dry season and is significantly influenced by the yearly variability exerted by El Nino Southern Oscillations.

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

A summary of existing and proposed uses of which the Project Area would be undertaken are described in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 1, Table 1.1, p.11.

Landside/Terrestrial

At present the onshore components Project Area supports minimal use and is retained in an undisturbed condition. Under the Hope Vale Aboriginal Shire Planning Scheme it is zoned for rural use (HVASC, 2014); however, as the planning scheme currently provides only for rural and township zoning and as the land is also mapped as subject to a range of environmental overlays, this zoning does not necessarily indicate existing or future rural uses. The eastern part of the Project Area also overlaps the proposed Lakeland Important Agricultural Area, identified through the Queensland Agricultural Land Audit (DAF, 2013). This indicates the agricultural potential of the land, primarily based on soil types, but does not represent planning for future use of the area.

By contrast, under the Cape York Regional Plan, the key interests the development of mineral resources and associated promotion of economic opportunities and development, especially within the Cape York to Cape Bedford resource area, is identified as part of the strategic planning framework for the region (DSDIP, 2014). Thus, while not subject to existing development or formal planning arrangements, the development of the NSP aligns with the general use intent for the area.

The land immediately north of the Project Area, including the area crossed by MLA100310, has been subject to ongoing silica mining since the 1960s, as part of the CFSM. This land consists of a range of uses, including active mining, processing and infrastructure areas, previously mined areas in varying states of rehabilitation, and areas that remain undisturbed (or minimally disturbed) by mining operations. Silica mining operations cause a lowering of the landscape but do not usually involve the development of large 'voids' (and associated lakes). The disturbed areas of the CFSM, therefore, are anticipated to be restored to similar condition to pre-disturbance, with the exception of some changes in the overall height of the landscape.

The Project Area also covers two onshore lots that form part of the core port land for the Port of Cape Flattery. These are currently zoned as Waterfront Precincts and support low-scale industrial activity associated with movement of silica product from the CFSM to maritime infrastructure.

Marine

The marine components of the Project Area are within the Port of Cape Flattery. The port currently exclusively supports the export of silica product from the CFSM, at a rate of ~3Mtpa. This occurs through a single wharf structure that supports mooring of OGVs. Silica product is conveyed along the structure to vessels via a conveyor. The wharf structure is owned by Ports North but managed by CFSM while the supporting conveyor and loading infrastructure is owned and operated by CFSM. The land and waters within the declared port limits surrounding the wharf are part of the Great Barrier Reef World Heritage Area but are excluded from the boundaries of both the Federal and State Marine Parks.
CFSM also has a private barge ramp and small jetty structure located in the bay northwest of Cape Flattery. As a private structure this does not form part of the port assets but is located within port limits.

Based on current rates of production, vessels load and depart from the port with silica product at a rate of one per week. From the port, vessels transit east/northeast to the main shipping channel (~2.5 km east of the wharf).

No other marine activities currently occur in the marine component of the Project Area due to exclusions associated with port limits.

References

- Department of Agriculture and Fisheries, Queensland (2013), Queensland Agricultural Land Audit, State of Queensland, Brisbane.
- Department of State Development, Infrastructure and Planning, Queensland (2014), Cape York Regional Plan, State of Queensland, Brisbane.
- Hope Vale Aboriginal Shire Council (2014), Hope Vale Aboriginal Shire Council Planning Scheme, Hope Vale Aboriginal Shire Council, Hope Vale.

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

As outlined above, the marine components of the Project Area are within the Great Barrier Reef (GBR) region, including the GBR World Heritage Area (WHA) and National Heritage Property (NHP). This area is recognised for its outstanding universal value and natural heritage value and is discussed further below.

Onshore, the dune landscape of the Cape Flattery to Cape Bedford resource region is a significant local landform that high local amenity and environmental values. Within this landscape, there are a series of freshwater lake systems either perched or fed through groundwater system, which potentially represent key ecological features. The most significant of these features of the Project Area is a large lake within MLA100309 that will be subject to further investigation as part of environmental studies. The Project Area also supports a range of wetlands, waterways and drainage features, as described below.

As most of the Project Area has not been disturbed, it is expected to support a variety of cultural heritage values. These are being investigated and assessed further in consultation with Traditional Owners as part of the design of the NSP.

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 floor level of the mine is yet to be finalised but will be above the existing water table (likely 10-30 m below ground surface level (bgsl) with greater depths at the dune crests and very shallow depths in the interdune slacks of the landscape).

The maritime components will be within the existing Port of Cape Flattery which has a declared berthing and approach depth of -14.1mLAT

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.

As part of a large coastal dune system, the Project Area supports a range of coastal vegetation and ecological communities. The key vegetation communities consist of:

- *Neofabricia myrtifolia* and *Neoroepera banksii* open to closed heath, comprising the largest portion of the Project Area
- *Araucaria cunninghamii* low closed forest to open forest / littoral rainforest, comprising the second largest portion of the Project Area and including areas that may constitute threatened ecological community (TEC)
- Other heath communities, including *Thryptomene oligandra* open heath, dwarf open heath and swamp heath
- Coastal/foredune tussock grassland, forblands and shrublands
- Sedgelands associated with perennial dunefield lakes
- *Melaleuca arcana* low open forest

More information on these communities and their occurrence is provided in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 2.3, p.31.

These habitats support a range of flora and fauna species commonly associated with littoral and dune environments. Key fauna species known or likely to occur include a range of bats, shorebirds and waders, and coastal mammals and reptiles while the surface waterways and wetlands support saltwater crocodiles. Key flora species include a range of orchids and other species common in heathlands.

Species and communities that are listed matters are discussed further in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 3, p.35.

Lacustrine and palustrine waterbodies mapped by the Queensland government (Wetlandinfo - see below) are classified as high ecological significance (HES) wetlands. HES wetlands are mapped across the north-western transport route, throughout the main mining are (MLA100308) and to the north-east.

There is no reefs or shoals mapped adjacent to the NSP Project Area or in the broader study area. The closest reef or shoal mapped is the coastal islands which are also ~10km away to the south-east of the wharf. The rocky shores on and around Cape Flattery headland may support some sparse macroalgae or coral species but this is yet to be confirmed and will be further investigated as part of assessment studies. Through previous surveys, including benthic habitat assessments undertaken by BMT in 2021, the remainder of the marine environment in and around the Cape Flattery Wharf and immediate port limits is known to consist of bare sandy substrate and does not support and significant habitat features.

Seagrass communities may occur within the embayment south of Cape Flattery but are not expected to be extensive due to the exposed nature of the bay.

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

As part of a large coastal dune system, the Project Area supports a range of coastal vegetation and ecological communities. The key vegetation communities consist of:

- *Neofabricia myrtifolia* and *Neoroepera banksii* open to closed heath, comprising the largest portion of the Project Area
- *Araucaria cunninghamii* low closed forest to open forest / littoral rainforest, comprising the second largest portion of the Project Area
- Other heath communities, including *Thryptomene oligandra* open heath, dwarf open heath and swamp heath
- Coastal/foredune tussock grassland, forblands and shrublands
- Sedgelands associated with perennial dunefield lakes
- *Melaleuca arcana* low open forest

These communities occur across land zone 2: Quaternary coastal sand deposits (coastal dunes). This includes coastal dunes and swales, sand plains, and freshwater lakes and swamps enclosed by the dunes. Soils include rudosols, tenosols (siliceous or calcaeous sands), podosols and organosols.

See response in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 2.3, p.31 and Section 3.2.1 of this application.

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.

The marine components of the Project Area occur within the GBRWHA. This consists of all lands and waters seaward of the low water mark in the Project Area.

For the purposes of the Referral, the NSP will introduce new loading and shipping activities within the GBRWHA. Additionally, if arrangements cannot be reached to use existing maritime infrastructure, the NSP will also introduce new maritime structures that extend into the GBRWHA in the form of a rock jetty, mooring dolphins and possible extension of the Port of Cape Flattery Wharf which is a trestle structure.

There GBRWHA could also be affected by landside activities that cause discharges into the marine environment. However, for the NSP there will be no controlled or uncontrolled releases of this nature for the following reasons:

- There are no watercourses that drain through the mining and processing area to the marine environment
- All processing activities will occur at least 1km inland from the marine environment and process water will be reinfiltrated into groundwater within the mining and processing area
- As processing does not involve the use of any chemicals, there will be no ‘mine affected water’ or other pollutants that could be discharged into the marine environment.

Within the Project Area, the GBRNHP follows the same boundaries as the GBRWHA

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

The NSP occurs on Aboriginal freehold land which is subject to two Native Title determinations, represented by Hopevale Congress and Walmbaar Aboriginal Corporation.

A search of the Project area (#124361) on the DSDATSIP Database was conducted on 24 November 2022 with no buffer. The search returned are attached and indicate a range of indigenous artefacts are anticipated to occur in the area. Note this database is publicly available for searching, subject to registration. The information is therefore not considered to be culturally sensitive.

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. *

The Project Area is within the Cape Flattery Dune Lakes area of the Jeannie River basin, as defined in the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*. The Jeannie River Basin is 3,000km2 and located along the southern section of the Cape York Region, along the eastern coast of Cape York Peninsula.

Within the Project Area there are two main catchments, formed by the ridge along the coastal foredunes. Seaward of this ridge there are several small coastal creeks, providing surface drainage of the foredunes as well as capturing and groundwater infiltrating through the dunes. Landward of the ridge, there are a series of larger waterways, including ephemeral and permanent features, together with wetlands and lakes. These features are not connected to any significant watercourse in the area but rather provide surface drainage from rainfall. Water from these systems drains into the dunes and underlying groundwater system.

These features are noted as ‘unmapped’ under the Queensland *Water Act 2000*, indicating that further assessments are required by DoR to determine if the features are ‘watercourses’ or ‘drainage features’ for the purposes of the Act.

There are 16 lakes and ponds in the dune fields of Cape Flattery and this includes a total of 0.3km2 of dune lake and 14.4km2 of window dune lakes overall at Cape Flattery according to Directory of Important Wetlands Australia (DIWA) Wetland Info. There is one dune lake within MLA100308. This dune lake is approximately 0.85 km2 in size.

A preliminary characterisation of the local hydrogeological regime has been conducted for the site. This characterised the regime as follows:

- A shallow, unconfined Quaternary sand dune aquifer is the primary groundwater resource in the area. The dune system is likely to function as a single groundwater system based on existing drilling results which indicate few clay units and aquitards. Direct rainfall recharge primarily during the wet season is likely to recharge the aquifer annually. The water table will likely be deep (10 to 30m depth) beneath the dune crests and very shallow (near surface) in the interdune slacks. Groundwater is expected to flow towards the coast in a general south-east direction with local variability around wetlands and creeks. Discharge from the dune sand aquifer is expected to include offshore discharge, discharge to surface water and evapotranspiration. It is assumed that there is significant hydraulic connection between groundwater and surface water in the Project Area. The freshwater-saltwater interface is expected to be diffuse and strongly influenced by seasonal offshore discharge.
- An unconfined to semi-confined aquifer associated with deeper alluvium is inferred beneath the dune sand sequence. This is based on previous drilling observations at the GSSP and anecdotal experience from the CFSM project. This is broadly analogous to the geology encountered at the Project Area. This aquifer is expected to be less than the dune sands due to a higher percentage of fine-grained material. The aquifer would receive recharge mainly from vertical seepage from the dunes above and would discharge offshore to the coast. The thickness of this unit and the degree of hydraulic connection between the two aquifer systems is not well understood.
- A regional fractured groundwater system associated with the underlying Mesozoic sedimentary units (i.e. Hodgkinson Formation). It is anticipated that there is very limited hydraulic connection between the bedrock and the overlying unconsolidated aquifer systems.

Initial testing of groundwater from pre-wet season indicates electrical conductivity (EC) of groundwater is fresh, ranging from 48 to 220µS/cm, and pH was slightly acidic to neutral, ranging from 6 to 7.2.

A conceptual hydrogeological model for the area is presented in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 2.2.4, Table 2.1, p.29.

The study area lies within a broadly crenulate-shaped beach and dune system spanning from Cape Bedford in the south and Cape Flattery in the north. The coastal waters are largely protected from oceanic swell within the GBR lagoon; however the coastline is exposed to relatively uninterrupted lagoon wind/wave fetches (~30 km).

There are numerous offshore and nearshore reefs and islands that will influence the coastal wave climate and littoral sediment transport regime. This influence is evident in the tombolo shoreline features along the southern flank of the crenulate embayment.
Coastal currents in the NSP study area will be primarily driven by tide and wind but may also be influenced to a lesser extent by regional circulation and by wave action in the littoral zone.

As the catchment for the marine environment is mostly undeveloped (except for the CFSM mining activities) water quality in the embayment south of Cape Flattery is anticipated to be mostly clean and high quality. No specific water quality monitoring data is available for this area, however.

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	Yes	Yes
S15B	National Heritage	Yes	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	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
S27B	Commonwealth Heritage Places Overseas	No	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
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.

Direct impact	Indirect impact	World heritage
Yes	Yes	Great Barrier Reef

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

Yes

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

The maritime aspects of the project will occur within the Great Barrier Reef World Heritage Area. Direct impacts on a World Heritage Area will include inshore and offshore vessel movements, production loading (spills/material loss) and underwater construction noise (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.1, p.79).

There will be no indirect impacts as there will be no emissions or discharges from the landside activities that will enter the marine environment. This is primarily due to the absence of any surface drainage from the mining and processing areas to the marine environment and because all ‘discharges’ will involve infiltration to groundwater, rather than to surface water.

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

No

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

In accordance with the Significant Impact Guidelines 1.1 (DoE, 2013), the significant impact criteria for the GBRWHA and GBRNHP relate to key attributes of the areas that contribute to their heritage status. Based on the EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area (DoE, 2014), the following key attributes that contribute to the Outstanding Universal Value (OUV) of the GBRWHA are potentially relevant to the Project Area:

- Nesting turtles – this corresponds to potential turtle nesting along the beaches south of Cape Flattery
- Unique and varies seascapes and landscapes – this corresponds to the Cape Flattery headland
- Human interaction with the natural environment – this corresponds to any ongoing use of the marine environment by Traditional Owner groups in the Project Area and surrounds
- Dugong, species of dolphins, marine turtles and species of birds.

In addition to the above it should be noted that:

- The proposed mining area is buffered from the coast by at least 1km
- There will be no direct or indirect surface water discharges or runoff from the project that could affect the GBR lagoon.
- The mining process does not generate sediment that will contribute to downstream erosion and sedimentation, there will be vegetated buffers between mining operations and watercourses and mineral processing does not use chemical agents except for biodegradable flocculants.
- Conveyors and stockpile areas near the coast will be strictly controlled as will be loading and unloading operations at the port. If spillage does occur the pure silica is not expected to impact on world heritage values as it is not a contaminant of concern.
- Groundwater will be managed to ensure no drawdown occurs from groundwater dependant habitat features or results in changes in flow regimes from creeks and waterways into the GBR lagoon. This will be demonstrated through calibrated groundwater numerical modelling.

While specific to the World Heritage listing of the GBRWHA these same attributes align with the listing values for the GBRNHP. These attributes provide the basis for understanding the potential impact of the NSP on both heritage areas.

Table 4.14 (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.8, p.73) presents the significant impact assessment for both the GBRWHA and GBRNHP based primarily on these relevant attributes. As the NSP will utilise an existing port area and will not have significant impact on relevant marine and avifauna species, it will not cause a loss of any key attribute or associated value of the GBRWHA or GBRNHP.

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

No

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

As per response to Section 4.1.1.6 of the application, there are no significant impacts anticipated to the GBRWHA and therefore the NSP is not considered to be a controlled action *on this provision*.

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

Specific management plans will be developed during in response to the results of impact assessments (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 5, pp.75-76).

At a minimum, impacts will be avoided, mitigated and minimised through a series of key measures, including:

- Marine environmental controls aligned with existing regulatory and port controls for vessel safety, spill risk management, ballast water exchanges, vessel collisions, biosecurity, megafauna collisions and groundings.
- Avoiding all discharges to the marine environment or to surface water systems that drain to the marine environment.

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

No offsets are required or proposed.

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.

Direct impact	Indirect impact	National heritage
Yes	No	Great Barrier Reef

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

Yes

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

The maritime aspects of the project will occur within the Great Barrier Reef National Heritage Place. Direct impacts on the National Heritage Place will include inshore and offshore vessel movements, production loading (spills/material loss) and underwater construction noise R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.1, p.59).

There will be no indirect impacts as there will be no emissions or discharges from the landside activities that will enter the marine environment. This is primarily due to the absence of any surface drainage from the mining and processing areas to the marine environment and because all ‘discharges’ will involve infiltration to groundwater, rather than to surface water.

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

No

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

In accordance with the Significant Impact Guidelines 1.1 (DoE, 2013), the significant impact criteria for the GBRNHP and GBRWHA relate to key attributes of the areas that contribute to their heritage status. Based on the EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area (DoE, 2014), the following key attributes that contribute to the Outstanding Universal Value (OUV) of the GBRNHP are potentially relevant to the Project Area:

- Nesting turtles – this corresponds to potential turtle nesting along the beaches south of Cape Flattery
- Unique and varies seascapes and landscapes – this corresponds to the Cape Flattery headland
- Human interaction with the natural environment – this corresponds to any ongoing use of the marine environment by Traditional Owner groups in the Project Area and surrounds
- Dugong, species of dolphins, marine turtles and species of birds.

In addition to the above it should be noted that:

- The proposed mining area is buffered from the coast by at least 1km
- There will be no direct or indirect surface water discharges or runoff from the project that could affect the GBR lagoon.
- The mining process does not generate sediment that will contribute to downstream erosion and sedimentation, there will be vegetated buffers between mining operations and watercourses and mineral processing does not use chemical agents except for biodegradable flocculants.
- Conveyors and stockpile areas near the coast will be strictly controlled as will be loading and unloading operations at the port. If spillage does occur the pure silica is not expected to impact on world heritage values as it is not a contaminant of concern.
- Groundwater will be managed to ensure no drawdown occurs from groundwater dependant habitat features or results in changes in flow regimes from creeks and waterways into the GBR lagoon. This will be demonstrated through calibrated groundwater numerical modelling.

While specific to the World Heritage listing of the GBRWHA these same attributes align with the listing values for the GBRNHP. These attributes provide the basis for understanding the potential impact of the NSP on both heritage areas.

Table 4.14 (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.8, p.73) presents the significant impact assessment for both the GBRWHA and GBRNHP based primarily on these relevant attributes. As the NSP will utilise an existing port area and will not have significant impact on relevant marine and avifauna species, it will not cause a loss of any key attribute or associated value of the GBRWHA or GBRNHP.

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

No

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

As per response to Section 4.1.1.6 of the application, there are no significant impacts anticipated to the GBRNHP and therefore the NSP is not considered to be a controlled action *on this provision*.

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

Specific management plans will be developed during in response to the results of impact assessments (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 5, pp.75-76).

At a minimum, impacts will be avoided, mitigated and minimised through a series of key measures, including:

- Marine environmental controls aligned with existing regulatory and port controls for vessel safety, spill risk management, ballast water exchanges, vessel collisions, biosecurity, megafauna collisions and groundings.
- Avoiding all discharges to the marine environment or to surface water systems that drain to the marine environment.

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

No offsets are required or proposed.

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.

—

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. *

There are no Ramsar wetlands in the area.

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	Acriopsis emarginata
No	No	Balaenoptera musculus
No	Yes	Calidris canutus
No	Yes	Calidris ferruginea
No	No	Carcharodon carcharias
No	Yes	Caretta caretta
No	Yes	Charadrius leschenaultii
No	Yes	Chelonia mydas
No	No	Cyclophyllum costatum
No	No	Dasyurus hallucatus
Yes	No	Dendrobium bigibbum
Yes	No	Dendrobium johannis
No	Yes	Dermochelys coriacea
No	No	Egernia rugosa

Direct impact	Indirect impact	Species
Yes	No	Eremochloa muricata
No	Yes	Eretmochelys imbricata
No	No	Erythrotriorchis radiatus
No	No	Falco hypoleucos
No	No	Fregetta grallaria grallaria
No	No	Hipposideros semoni
No	Yes	Hirundapus caudacutus
Yes		Leichhardtia araujacea
No	Yes	Lepidochelys olivacea
No	Yes	Limosa lapponica baueri
No	No	Litoria dayi
No	No	Macroderma gigas
No	No	Mesembriomys gouldii rattoides
Yes	No	Myrmecodia beccarii
No	Yes	Natator depressus
No	Yes	Numenius madagascariensis
No	No	Phaius pictus
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Phlegmariurus dalhousieanus
No	No	Phlegmariurus squarrosus
No	Yes	Pristis pristis
No	Yes	Pristis zijsron
No	No	Probosciger aterrimus macgillivrayi
No	No	Pteropus conspicillatus
No	Yes	Rhincodon typus
Yes	No	Rhinolophus robertsi
Yes	No	Rostratula australis
No	No	Saccolaimus saccolaimus nudicluniatus
No	No	Sphyrna lewini
No	No	Stiphodon semoni
No	No	Turnix olivii
No	No	Tyto novaehollandiae kimberli
No	No	Vappodes phalaenopsis
No	No	Xeromys myoides

Ecological communities

Direct impact	Indirect impact	Ecological community
Yes	No	Littoral Rainforest and Coastal Vine Thickets of Eastern Australia

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. *

Threatened ecological communities

- Littoral rainforest and coastal vine thickets of Eastern Australia ('Littoral Rainforest TEC')

There ***will be*** a ***direct impact*** on the Littoral Rainforest TEC as this occurs within areas that require clearing for development of project infrastructure (slurry pipeline, conveyor, stockpile). Conservative estimates of clearing are up to 3.9 ha, likely to be less subsequent to refiement of infrastructure layout and on-ground mapping.

Within the attached Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), the occurrence of the community is described in Section 3.4.1 (pp. 37-38), the impacting processes in Section 4.1 (p. 59) and the assessment of impacts specific to the TEC in Section 4.2 (pp. 59-61).

Threatened species

Flora

- Cooktown orchid (*Dendrobium bigibbum*)
- Chocolate tea tree orchid (*Dendrobium johannis*)
- *Eremochloa muricata*
- Ant plant (*Myrmecodia beccarii*)

There ***may be*** a ***direct impact*** on each of the four species of threatened flora that could occur in the area (Cooktown orchid, chocolate tea tree orchid, ant plant, *E. muricata*) if they species occur in the clearing footprint for the project. This impact would consist of the direct clearing of these species. However, for each of the four species, translocation will likely be possible. Where this occurs, the direct impact will consist of the movement of individual specimens and any mortality that occurs during the translocation process.

Within the attached Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), the occurrence of each species is described in Table 3.1 (pp. 46-47), the impacting processes in Section 4.1 (p. 59) and the assessment of impacts specific to each species in Section 4.3 (pp. 61-63).

Fauna - direct impacts

- Large-eared horseshoe bat (*Rhinolophus robertsi*)
- Australian painted snipe (*Rostratula australis*)

Both the large-eared horseshoe bat and the Australian painted snipe potentially utilise habitat in the area that may be cleared. Therefore, there ***may be*** a ***direct impact*** to these species from clearing. Even where there is no direct impact, there ***may be*** an ***indirect impact*** to these species from construction and operational works (e.g. disturbance from noise and movement of persons, vehicles and machinery).

Within the attached Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), the occurrence of each species is described in Table 3.1 (pp. 42, 45), the impacting processes in Section 4.1 (p. 59) and the assessment of impacts specific to each species in Section 4.6 (pp. 69-70) for the Australian painted snipe and Section 4.7 (pp. 71-72) for the large-eared horseshoe bat).

Fauna - indirect impacts

- Red knot (*Calidris canutus*)
- Curlew sandpiper (*Calidris ferruginea*)
- Great knot (*Calidris tenuirostris*)
- Greater sand plover (*Charadrius leschenaultii*)
- Lesser sand plover (*Charadrius mongolus*)
- White-throated needletail (*Hirundapus caudacutus*)
- Western Alaskan bar-tailed godwit (*Limosa lapponica baueri*)
- Eastern curlew (*Numenius madagascariensis*)
- Loggerhead turtle (*Caretta caretta*)
- Green turtle (*Chelonia mydas*)
- Hawksbill turtle (*Eretmochelys imbricata*)
- Olive Ridley turtle (*Lepidochelys olivacea*)
- Flatback turtle (*Natator depressus*)
- Freshwater sawfish (*Pristis pristis*)
- Green sawfish (*Pristis zijsron*)
- Whale shark (*Rhincodon typus*)

There ***may be*** an ***indirect impact*** on shorebird (red knot, curlew sandpiper, great knot, greater sand plover, lesser sand plover, Western Alaskan bar-tailed godwit, eastern curlew) species. This would be associated with construction phase noise and disturbance and operational noise and movement of maintenance vehicles along the coast.

There ***may be*** an ***indirect impact*** on the white-throated needletail. This would be associated with construction and mining noise and disturbance adjacent to habitat the species may use for foraging.

There ***may be*** an ***indirect impact*** on marine turtles (loggerhead turtle, green turtle, hawksbill turtle, olive Ridley turtle, flatback turtle). This would be associated with construction phase noise (if occurring during nesting season), operational noise and movement of maintenance vehicles along the coast (if occurring during nesting season), and vessel strike risk at the port.

There ***may be*** an ***indirect impact*** on the whale shark and freshwater and green sawfish species. This would be associated with vessel strike risk at the port.

Within the attached Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), the occurrence of each species is described in Table 3.1 (pp. 40-49), the impacting processes in Section 4.1 (p. 59) and the assessment of impacts specific to each species in Section 4.4 (pp. 63-64) for shorebirds, Section 4.5 (pp. 66-69) for marine turtles, whale shark and sawfish, and Section 4.6 (pp. 69-71) for the white-throated needletail.

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

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

There will be temporary loss of up to 3.9ha of Littoral Rainforest TEC. In accordance with the Significant Impact Criteria 1.1 (DoE, 2013), this could be a significant impact but will be temporary until rehabilitation occurs. Success rates for rehabilitation are anticipated to be high, especially where cleared material and seedbank are retained. See R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.2, pp.59-61.

For all other matters, a significant impact assessment in accordance with the Significant Impact Guidelines 1.1 (DoE, 2013) and EPBC Act Policy 3.21 (DAWE, 2020) identifies no significant impact is likely. See R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Sections 4.3 to 4.7, pp.61-72.

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

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

The action may be a controlled action on the basis of impacts to the Littoral Rainforest TEC.

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. *

The design of the NSP is being developed and refined. Diatreme will minimise environmental impacts through the following design, siting and operational management measures:

1. Designing the mining footprint to ensure all mining works occur above the water table.
2. Confirm the extent of occurrence of Littoral Rainforest TEC and modify infrastructure footprints where possible to minimise overlap.
3. Develop appropriate buffers between mining and infrastructure areas and sensitive ecological communities, waterways and wetlands.
4. Confirm the occurrence of threatened plants in the Project Area and modify infrastructure footprints where possible to minimise overlap.
5. Locate key operational and noise-generating areas away from sensitive habitats, such as bird and bat roosting areas.
6. Development of performance limits for surface and ground water systems based on at least 12 months of data collection, and subsequent design of release activities in accordance with these performance limits.
7. Development of an adaptive management approach for the extraction and re-infiltration of groundwater so as to ensure levels of extraction and return align with the needs of groundwater-dependent ecosystems and other groundwater values. This will include the development of a monitoring bore network with associated triggers for actions which will in turn inform a refined approach to mineral processing and other operational activities.
8. Development of a progressive rehabilitation and closure plan (PRCP) based on vegetation types, soils types and proposed landforms for the mining areas which will in turn inform the mining plan for the NSP.

Through this process, Diatreme seeks to avoid direct impacts to MNES features and sensitive components of the environment as much as possible, with ongoing operations to be driven by progressive and adaptive approaches to groundwater and vegetation management.

Additional to these key features, Diatreme also intends to implement a series of standard management practices for mining, with key features relevant to the environmental risk profile of the NSP. These management arrangements will include:

- If necessary, the development and implementation of translocation and/or propagation and planting regimes for threatened plant species, including ongoing monitoring and management until species reach maturity.
- Erosion and sediment controls and stormwater management to protect surface and ground water quality, including the use of buffers to surface drainage areas.
- Landside biosecurity measures associated with avoiding the introduction of pest species and diseases to the Project Area, together with reactive controls associated with controlling any introduction, spread or outbreak.
- Marine environmental controls aligned with existing regulatory and port controls for vessel safety, spill risk management, ballast water exchanges, vessel collisions, biosecurity, megafauna collisions and groundings.
- Clearing controls to ensure relocation of fauna during clearing works (e.g. spotter-catchers), to be informed by Species Management Programs and similar tools under the Queensland *Nature Conservation Act 1992.*
- Ongoing monitoring to inform the success of management measures, with adaptation as necessary.

These measures will be developed further through subsequent environmental studies for the NSP and will be informed by the results of any field surveys and technical assessments.

The project will also develop a net benefit plan (NBP) that outlines a range of additional environmental mitigation, compensation and offset measures that are developed by the proponent. The NBP will respond to the proponent’s corporate ESG framework and sustainability targets as well as identify actions and contribute funding toward regional projects and initiatives that lead to additional environmental and community benefits over and above development conditions and any statutory offset requirements.

See R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 5, pp. 75-76.

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

To be determined as part of impact assessment. At a minimum, Diatreme will explore opportunities to undertake offset works associated with littoral rainforest communities.

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	Yes	Actitis hypoleucos
No	Yes	Anous stolidus
No	Yes	Anoxypristis cuspidata
No	Yes	Apus pacificus
No	No	Balaenoptera edeni
No	No	Balaenoptera musculus
No	Yes	Calidris acuminata
No	Yes	Calidris canutus
No	Yes	Calidris ferruginea
No	Yes	Calidris melanotos
No	No	Carcharhinus longimanus
No	No	Carcharodon carcharias
No	Yes	Caretta caretta
No	Yes	Charadrius leschenaultii
No	Yes	Chelonia mydas
No	Yes	Crocodylus porosus
No	Yes	Cuculus optatus
No	Yes	Dermochelys coriacea
No	Yes	Dugong dugon
No	Yes	Eretmochelys imbricata
No	Yes	Fregata ariel
No	Yes	Fregata minor
No	Yes	Gallinago hardwickii
No	Yes	Hirundapus caudacutus
No	No	Hirundo rustica
No	Yes	Lepidochelys olivacea
No	No	Limnodromus semipalmatus
No	Yes	Limosa lapponica
No	Yes	Megaptera novaeangliae
No	Yes	Mobula alfredi
No	Yes	Mobula birostris
No	Yes	Monarcha frater
No	Yes	Monarcha melanopsis
No	Yes	Myiagra cyanoleuca
No	Yes	Natator depressus

Direct impact	Indirect impact	Species
No	Yes	Numenius madagascariensis
No	Yes	Orcaella heinsohni
No	No	Orcinus orca
No	Yes	Pandion haliaetus
No	No	Phaethon lepturus
No	Yes	Pristis pristis
No	Yes	Pristis zijsron
No	Yes	Rhincodon typus
No	Yes	Rhipidura rufifrons
No	Yes	Sousa sahulensis
No	Yes	Sternula albifrons
No	Yes	Symposiachrus trivirgatus
No	Yes	Tringa nebularia

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

Yes

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

Bird Species

Shorebirds, seabirds and other coastal migratory birds primarily utilise habitat within the coastal and intertidal strip as well as the marine environment and offshore islands. These species consist of:

- Common sandpiper (*Actitis hypoleucos*)
- Common noddy (*Anous stolidus*)
- Fork-tailed swift (*Apus pacificus*)
- Sharp-tailed sandpiper (*Calidris acuminata*)
- Red knot (*Calidris canutus*)
- Curlew sandpiper (*Calidris ferruginea*)
- Pectoral sandpiper (*Calidris melanotos*)
- Great knot (*Calidris tenuirostris*)
- Greater sand plover (*Charadrius leschenaultii*)
- Lesser sand plover (*Charadrius mongolus*)
- Oriental cuckoo (*Cuculus optatus*)
- Lesser frigatebird (*Fregata ariel*)
- Great frigatebird (*Fregata minor*)
- Latham's snipe (*Gallinago hardwickii*)
- White-throated needletail (*Hirundapus caudacutus*)
- Bar-tailed godwit (*Limosa lapponica*)
- Black-winged monarch (*Monarcha frater*)
- Black-faced monarch (*Monarch melanopsis*)
- Satin flycatcher (*Myiagra cyanoleuca*)
- Eastern curlew (*Numenius madagascariensis*)
- Osprey (*Pandion haliaetus*)
- Rufous fantail (*Rhipidura rufifrons*)
- Little tern (*Sternula albifrons*)
- Spectacled monarch (*Symposiachrus trivirgatus*)

As these species primarily occur in the coastal and marine environment, potential impacts to each species will primarily be from construction phase noise and disturbance as well as any operational noise and movement of maintenance vehicles. However, this is expected to be minimal comparative to the existing situation to the ongoing port operations and noting that construction can be phased around low impact seasons or periods where required. There ***may be*** an ***indirect impact*** on each of these species.

Within the Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), detailed descriptions of each species is provided within Table 3.2 (pp. 51-53), description of impacting processes is provided in Section 4.1 (p. 59) and application of these processes to bird species is provided in Section 4.4 (pp. 63-65) for shorebird and seabird species,,and Section 4.6 (pp. 69-71) for the other bird species.

Marine Species

Marine megafauna can utilise habitat within the coastal and intertidal strip as well as the estuarine environments. Some of these impacts can include construction and vessel movement in the marine environment, with impacts such as mining, clearing and landscape changes in the estuarine environment. These species consist of:

- Dugong (*Dugong dugon*)
- Humpback whale (*Megaptera novaeangliae*)
- Australian snubfin dolphin (*Orcaella heinsohni*)
- Australian humpback dolphin (*Sousa sahulensis*)
- Loggerhead turtle (*Caretta caretta*)
- Green turtle (*Chelonia mydas*)
- Salt-water crocodile (*Crocodylus porosus*)
- Leatherback turtle (*Dermochelys coriacea*)
- Hawksbill turtle (*Eretmochelys imbricata*)
- Olive Ridley turtle (*Lepidochelys olivacea*)
- Flatback turtle (*Natator depressus*)
- Narrow sawfish (*Anoxypristis cuspidata*)
- Reef manta ray (*Mobula alfredi*)
- Freshwater sawfish (*Pristis pristis*)
- Green sawfish (*Pristis zijsron*)
- Whale shark (*Rhincodon typus*)

Marine impacts relevant to megafauna relate primarily to the loss of any habitat that could occur within the footprint of the proposed barge ramp and any infrastructure associated with use or expansion of the port wharf. Vessel movements could also lead to impacts on megafauna such as vessel strike, both in the Project Area and adjoining shipping channels. There ***may be*** an ***indirect impact*** on each of these species.

Landside impacts relevant to crocodiles will be any habitat loss in wetland and supporting habitats. There ***may be*** a ***direct impact*** on this species.

Within the Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf), detailed descriptions of each species is provided within Table 3.2 (pp. 53-55), description of impacting processes is provided in Section 4.1 (p. 59) and application of these processes to marine fauna species is provided in Section 4.5 (pp. 66-69).

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

No

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

Significant Impact responses are detailed in R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 4.4-4.7 p.63-72. Based on the application of the Significant Impact Guidelines 1.1 (DoE, 2013), the EPBC Act Policy Statement 3.21 (DoEE, 2017) and the Wildlife Conservation Plan for Seabirds (DAWE, 2020), the project is not expected to cause a significant impact to any species as none of the listed criteria are met.

Specifically:

- For bird species, the Project Area does not support important habitat or lifecycle processes (e.g. breeding, feeding) that are significant at a population scale. While there are no counts available, occurrence of bird species in the area is expected to be at low density and opportunistic only; no significant aggregations are known and the habitat provided is common to the broader region. Migratory shorebirds breed internationally, seabirds breed offshore or at other known locations outside the Project Area, and other coastal birds are likely to overfly and opportunistically forage in the area rather than occur as key populations.
- For marine species, the Project Area does not support important habitat or lifecycle processes exception potential nesting for turtles on the beach and for crocodiles in wetlands. This is due to the lack of high value marine habitat in the Project Area combined with existing disturbance at the port. Nesting activities for turtles will be in low density and will not be directly affected by project activities which will occur behind the dunes. Wetlands utilised by crocodiles are unlikely to be impacted due to safety risks; this habitat is also well represented across the region.

The lack of key habitat and processes means that any impacts will not be significant at a population level.

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

No

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

As there is no significant impact expected on migratory species, there is no controlled action under this provision.

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

The design of the NSP is being developed and refined. Diatreme will minimise environmental impacts through the following design, siting and operational management measures:

1. Designing the mining footprint to ensure all mining works occur above the water table.
2. Confirm the extent of occurrence of Littoral Rainforest TEC and modify infrastructure footprints where possible to minimise overlap.
3. Develop appropriate buffers between mining and infrastructure areas and sensitive ecological communities, waterways and wetlands.
4. Confirm the occurrence of threatened plants in the Project Area and modify infrastructure footprints where possible to minimise overlap.
5. Locate key operational and noise-generating areas away from sensitive habitats, such as bird and bat roosting areas.
6. Development of performance limits for surface and ground water systems based on at least 12 months of data collection, and subsequent design of release activities in accordance with these performance limits.
7. Development of an adaptive management approach for the extraction and re-infiltration of groundwater so as to ensure levels of extraction and return align with the needs of groundwater-dependent ecosystems and other groundwater values. This will include the development of a monitoring bore network with associated triggers for actions which will in turn inform a refined approach to mineral processing and other operational activities.
8. Development of a progressive rehabilitation and closure plan (PRCP) based on vegetation types, soils types and proposed landforms for the mining areas which will in turn inform the mining plan for the NSP.

Through this process, Diatreme seeks to avoid direct impacts to MNES features and sensitive components of the environment as much as possible, with ongoing operations to be driven by progressive and adaptive approaches to groundwater and vegetation management.

Additional to these key features, Diatreme also intends to implement a series of standard management practices for mining, with key features relevant to the environmental risk profile of the NSP. These management arrangements will include:

- If necessary, the development and implementation of translocation and/or propagation and planting regimes for threatened plant species, including ongoing monitoring and management until species reach maturity.
- Erosion and sediment controls and stormwater management to protect surface and ground water quality, including the use of buffers to surface drainage areas.
- Landside biosecurity measures associated with avoiding the introduction of pest species and diseases to the Project Area, together with reactive controls associated with controlling any introduction, spread or outbreak.
- Marine environmental controls aligned with existing regulatory and port controls for vessel safety, spill risk management, ballast water exchanges, vessel collisions, biosecurity, megafauna collisions and groundings.
- Clearing controls to ensure relocation of fauna during clearing works (e.g. spotter-catchers), to be informed by Species Management Programs and similar tools under the Queensland *Nature Conservation Act 1992.*
- Ongoing monitoring to inform the success of management measures, with adaptation as necessary.

These measures will be developed further through subsequent environmental studies for the NSP and will be informed by the results of any field surveys and technical assessments.

The project will also develop a net benefit plan (NBP) that outlines a range of additional environmental mitigation, compensation and offset measures that are developed by the proponent. The NBP will respond to the proponent's corporate ESG framework and sustainability targets as well as identify actions and contribute funding toward regional projects and initiatives that lead to additional environmental and community benefits over and above development conditions and any statutory offset requirements.

See R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, Section 5, pp. 75-76.

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

No offsets expected to be required.

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. *

The NSP is not a nuclear action.

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.

—

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 Project Area is >15km west of the Commonwealth Marine Area and will not have direct impacts to the marine environment of this area. Shipping and vessel movements associated with the NSP will occur primarily in coastal waters and in designated shipping lanes. At the point that these lanes extend into the Commonwealth Marine Area, the impact of any shipping from the NSP will be negligible comparative to existing shipping traffic as they will be subject to existing controls including the Northeast Shipping Management Plan. For this reason the Commonwealth Marine Area is not considered to be an MNES feature that will be subject to specific impact from the NSP.

It is also noted that the recent decision for the Cape Flattery Silica Sands Project (EPC 2022/09376) did not include the Commonwealth Marine Area as a controlling provision for the activity. As this project involves similar shipping arrangements to the NSP, it is understood the same approach would be followed for the NSP.

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. *

As the Project Area is located within port limits, it is outside the GBR Marine Park (GBRMP).

The only project-related activities that will occur in the GBRMP will be shipping activities. Based on one OGV movement per week, the NSP will contribute <1% to the total volume of shipping traffic that occurs within the GBRMP and therefore would have a negligible effect comparative to existing shipping traffic.

Note also the NSP does not include dredging or similar activities which could otherwise cause water quality impacts into the GBRMP. The NSP also utilises an existing port facility rather than introducing maritime infrastructure and operations in a new area and therefore avoids indirect impact associated with habitat disturbance in areas adjoining the GBRMP.

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 NSP is not a coal seam gas or large coal mine project.

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.

—

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 NSP does not involve 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. *

There are no Commonwealth Heritage Places Overseas in the area.

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:

- Threatened Species and Ecological Communities (S18)

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)
- 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? *

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible. *

An alternate timeline will not change the impact profile of the works.

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

No

4.3.5 Briefly describe why an alternative location for your proposed action was not possible. *

There are alternative options for maritime infrastructure, road corridors and conveyor alignments but all are contained within the overall project area. See further Section 1.1.3 of Supporting Information Report (R.A11701.005.01_EPBC-ReferralSupportingMaterial_NSP.pdf, pp. 14-18).

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible. *

The NSP consists of two key elements: mining/processing and maritime export. There are no alternatives to mining/processing other than to not undertake the activity.

The alternative to maritime export is to export by land. Ultimately, as there is an insufficient domestic market, this would require eventual maritime export through a port facility. The closest port facility (other than the Port of Cape Flattery) for export would be the Port of Cairns or Port of Townsville (there is insufficient capacity at Port of Cooktown and ports further north). To export to these areas would be cost prohibitive and significant increase the footprint of the project.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

No

5. Lodgement

5.1 Attachments

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Critical Minerals Strategy 2019 Australia's Critical Minerals Strategy 2019	01/01/2019	No	High
#2.	Document				

New Economy Minerals Investment Opportunities New Economy Minerals: Investment Opportunities in Queensland's Minerals Provinces		01/10/2020	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Environment Policy Environment Policy		No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Cape York Regional Plan Cape York Regional Plan	10/08/2014	No	High
#2.	Document	Hope Vale Planning Scheme Hope Vale Planning Scheme	01/09/2014	No	High
#3.	Document	Supporting Information Report Supporting material report	02/03/2023		High
#4.	Link	Queensland Agricultural Land Audit Queensland Government			High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	DSDSATSIP Database Results Results from DSDSATSIP Database search		No	High
#2.	Document	DSDSATSIP Database Results - Map Results from DSDSATSIP Database search		No	High
#3.	Link	Aboriginal and Torres Strait Islander Cultural Heritage Database Department of Seniors, Disability Services, and Aboriginal and Torres Strait Islander Partnerships			High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

4.1.1.2 (World Heritage) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

4.1.1.6 (World Heritage) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	GBRWHA Outstanding Universal Value EPBC Referral Guidelines EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area	30/04/2014	Yes	High
#2.	Document	Significant Impact Guidelines 1.1 Matters of National Environmental Significance, Significant impact guidelines 1.1	01/01/2013	No	High
#3.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

4.1.2.2 (National Heritage) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

4.1.2.6 (National Heritage) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	GBRWHA Outstanding Universal Value EPBC Referral Guidelines EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area	01/05/2014	No	High
#2.	Document	Significant Impact Guidelines 1.1 Matters of National Environmental Significance, Significant impact guidelines 1.1	31/12/2012	Yes	High
#3.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	EPBC Act Policy Statement 3.21 Guidelines for EPBC Act listed shorebirds			High
#2.	Document	Significant Impact Guidelines 1.1 Matters of National Environmental Significance, Significant impact guidelines 1.1	31/12/2012	Yes	High
#3.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

4.1.5.6 (Migratory Species) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	EPBC Act Policy Statement 3.21 Guidelines for EPBC Act listed shorebirds		No	High
#2.	Document	Significant Impact Guidelines 1.1 Matters of National Environmental Significance, Significant impact guidelines 1.1	31/12/2012	Yes	High
#3.	Document	Wildlife Conservation Plan for Seabirds Wildlife Conservation Plan for Seabirds	01/01/2020	No	High

4.1.5.10 (Migratory Species) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	01/03/2023	No	High

4.3.5 Why an alternative location for your proposed action was not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Supporting Information Report Supporting material report	02/03/2023	No	High

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	54010830421
Organisation name	BMT Commercial Australia Pty Ltd
Organisation address	4000 QLD
Representative's name	Jeremy Daniel Visser
Representative's job title	Senior Environmental Consultant
Phone	0738316744
Email	Jeremy.Visser@bmtglobal.com
Address	348 Edward Street, Brisbane QLD 4000

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, **Jeremy Daniel Visser of BMT Commercial Australia 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. *

Completed 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	44659896563
Organisation name	NORTHERN SILICA PTY LTD
Organisation address	4151 QLD
Representative's name	Neil McIntyre
Representative's job title	Chief Executive Officer
Phone	+61 7 3397 2222
Email	neil.mcintyre@diatreme.com.au
Address	Unit 8, 55-61 Holdsworth Street, Coorparoo, Qld, 4151

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, **Neil McIntyre of NORTHERN SILICA PTY 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. *

Completed 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, **Neil McIntyre of NORTHERN SILICA PTY 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. *