

Date	1 September 2022	Reference	21WAU-0060-08/ T210234
Proponent	BCI Minerals		
Project	Mardie Project		
Purpose	Ministerial Statement 1175 – Condition 7-8 to 7-11 - Marine Pest Management Procedures		

1. Purpose

Ministerial Statement 1175 (MS1175) for the Mardie Project (the Project) was published on 24 November 2021. BCI Minerals is the Proponent of MS1175 which authorises implementation of the Project subject to conditions and procedures. This document outlines the Marine Pest Management Procedures for mitigating the risk of Introduced Marine Pests (IMPs) and managing all vessels and immersible equipment operating during the Project prior to mobilisation, as required by Condition 7-8 to 7-11 of Ministerial Statement 1175:

7-8 The proponent shall ensure the implementation of the proposal achieves the following outcome:

(1) No introduction of marine pests into the state or within the state as a result of the proposal.

7-9 To achieve the environmental outcome in 7-8 (1), prior to construction the proponent shall develop and submit to the CEO procedures for managing all vessels and immersible equipment prior to mobilisation and during the proposal to the requirements of the CEO, on advice of the Department of Primary Industries and Regional Development.

7-10 The proponent shall not commence any marine construction or dredging activities until the CEO has confirmed by notice in writing that the marine pest management procedures required by condition 7-9 have been prepared to the CEO's satisfaction on advice from DPIRD.

7-11 The proponent shall implement the procedures required by condition 7-9 during the construction of the proposal.

These procedures were developed in accordance with relevant federal and state legislation, policies and guidelines that provide proponents and operators with best practice management of IMPs.

2. Relevant legislation

The procedures outlined in this document adhere to the following relevant federal and state regulations concerning IMPs:

FEDERAL:

- *Biosecurity Act (2015) and Biosecurity Regulations (2016)*
- *Biosecurity Amendment (Ballast Water and Other Measures) Act 2017 (Amendment Act)*
- *Biosecurity (Ballast Water and Sediments) Determination 2017*
- *Australian Ballast Water Management Requirements 2017*
- *National Biofouling Management Guidelines (Commonwealth of Australia 2009) (Voluntary Guidelines)*
- *Marine Pest Plan 2018-2023 (DAWR, 2018)*

STATE:

- *Aquatic Resources Management Act (2016)*
- *Fish Resources Management Act (1994) and Regulations (1995)*
- *Pearling Act (1990)*
- *Ports Authority Act (1999) and Regulations (2001)*
- *Biodiversity Conservation Act (2016)*
- *Environmental Protection Act (1986)*
- *Biosecurity and Agricultural Management Act (2007)*

3. IMP Risks

3.1. Risk Areas

Nodes are the locations to, or from which, a potential marine pest is transported. Nodes can be broad like a port or region, or as refined as a structure within a port or harbour such as a mooring or pylon. Nodes with IMP translocation risk for the Mardie Project include:

- Anchorage/mooring areas
- Trestle Jetty pilings and structure in intertidal and sub-tidal zones
- Outfall and intake pipelines in intertidal and sub-tidal zones
- Substrate surrounding and below the trestle jetty
- Transshipment channel with increased/deeper area of soft bottom substrate and reduced coverage of existing benthic communities
- Transshipment turning basin

Vectors are the mechanism by which a potential marine pest can be translocated from donor to receiving node. Primary vectors of concern include biofouling on vessel hulls and other surfaces, ballast water, or other internal water or sediment carried by a vessel or marine equipment.

3.2. Risk Species

The Mardie area has not been surveyed specifically for IMPs, however Benthic Communities and Habitat surveys by O2 Marine have not identified any IMPs to date. This section identifies marine pest species which are most likely to be introduced to Mardie as a result of the Project (Table 1). These species were selected from a combination of sources.

1. The primary source is NIMPCGs original Monitoring Design Excel Template (MDET) which considers the salinity and temperature tolerance range for these a range of invasive marine species with the intention that designers of monitoring programs could refine their target species list to the environmental conditions at the site. MDET was originally developed in line with the Australian Marine Pest Monitoring

Guidelines¹. Known environmental conditions at the Mardie Project location were used to refine the marine pest species. The habitat composition at the Mardie Project site is predominantly soft substrate, however hard substrate (coral reefs, rocky rubble, limestone pavement) is also found in localised areas. Habitats available at Mardie, therefore, have potential to support all NIMPCG trigger list species identified from environmental tolerances. We acknowledge the NIMPCG has been superseded at the federal level by the Marine Pest Sectoral Committee (MPSC) as the government body responsible for coordination of Australia’s marine pest risk management arrangements. The MPSC coordinates a national approach to marine pest biosecurity to stop the spread of marine pests and provide expert scientific, technical and policy advice on marine pest related biosecurity issues to the National Biosecurity Committee (NBC)².

2. The second method was through the consideration of the more recently updated Australian Priority Marine Pest List (APMPL) for marine pests that are at risk of introduction and causing harm in Australian waters³ These species on the APMPL are identified as the highest risk at both a National (MPSC) and State (Department of Primary Industries and Primary Development) level and development of monitoring at Mardie should focus on these species.

3. Third, species on the Western Australian Prevention List for Introduced Marine Pests (WAPLIMP; DPIRD, 2016) - which lists species of concern to the protection of WA aquatic resources – were investigated to assess their potential for transfer at Mardie. Species on the WAPLIMP includes those IMPs on the NIMPCG list and APMPL, along with species that are prescribed as noxious fish under the *Fish Resources Management Regulations 1995*. Each species was investigated for environmental tolerances prior to addition to the list below. Where research was not available to indicate this clearly, a precautionary approach was taken.

Table 1 IMP species considered a threat under national and state (WA) lists that are at risk of translocation to Mardie, Western Australia

Species phylum	Species name	Hard Substrate	Soft Substrate (epifauna)	Soft Substrate (infauna)	Plankton/pelagic
Ballast Water					
Bacillophyta/diatoms	<i>Chaetoceros concavicornis</i>				✓
	<i>Chaetoceros convolutus</i>				✓
Cnidaria	<i>Blackfordia virginica</i>				✓
Ctenophore	<i>Beroe ovata</i>				✓
	<i>Mnemiopsis leidyi</i>				✓

1 DAFF (2010) Australian marine pest monitoring guidelines. Version 2.0. In Department of Agriculture, F. A. F. (Ed.). Commonwealth of Australia

2 Department of Agriculture and Water Resources 2018, *MarinePestPlan 2018–2023: the National Strategic Plan for Marine Pest Biosecurity*, Department of Agriculture and Water Resources, Canberra, May. CC BY 4.0.

3 The Australian Priority Marine Pest List <https://www.marinepests.gov.au/what-we-do/apmpl>

Species phylum	Species name	Hard Substrate	Soft Substrate (epifauna)	Soft Substrate (infauna)	Plankton/pelagic
Dinophyceae	<i>Alexandrium monilatum</i>			✓	✓
	<i>Pfiesteria piscicida</i> [^]			✓	✓
Ballast Water and Hull Fouling					
Annelida	<i>Hydroides dianthus</i>	✓			✓
Arthropoda	<i>Carcinoscorpius rotundicauda</i> [^]		✓		
Asciacea	<i>Didemnum spp.</i>	✓			✓
Chlorophyta	<i>Caulerpa racemosa</i>	✓	✓		✓
Crustacea/Brachyura	<i>Hemigrapsus sanguineus</i>	✓			✓
	<i>Hemigrapsus takanoi/penicillatus</i>	✓	✓		✓
	<i>Pachygrapsus fakaravensis</i> [^]	✓	✓		✓
	<i>Rhithropanopeus harrisi</i> [*]	✓	✓		✓
Crustacea/Cirripedia	<i>Balanus eburneus</i>	✓			✓
	<i>Balanus glandula</i> [^]	✓			✓
	<i>Solidobalanus (Hesperibalanus)fallax</i> [^]	✓	✓		
	<i>Chthamalus proteus</i> [^]	✓			✓
Mollusca/Bivalvia	<i>Anadara transversa</i> [^]	✓			✓
	<i>Anomia nobilis</i> [^]	✓			✓
	<i>Brachidontes pharaonic</i> [^]	✓			✓
	<i>Crassostrea ariakensis</i> [^]	✓	✓		✓
	<i>Crassostrea gigas</i>	✓			✓
	<i>Crassostrea virginica</i> [^]	✓	✓		✓
	<i>Ensis directus</i>			✓	✓
	<i>Geukensia demissa</i> [^]	✓	✓		✓
	<i>Mya arenaria</i>			✓	✓
	<i>Mytilopsis sallei</i> [*]	✓	✓		✓
	<i>Mytella strigata/charruana</i>	✓	✓		✓
	<i>Perna viridis</i> [*]	✓			✓
	<i>Potamocorbula amurensis</i> [^]		✓	✓	
	<i>Perna perna</i> ⁺	✓			✓
Mollusca/gastropoda	<i>Crepidula fornicate</i>	✓	✓		✓
	<i>Rapana venosa</i>	✓	✓		✓
Pisces	<i>Siganus luridus</i>	✓			✓
	<i>Siganus rivulatus</i>	✓			✓

Species phylum	Species name	Hard Substrate	Soft Substrate (epifauna)	Soft Substrate (infauna)	Plankton/pelagic
Porifera	<i>Cliona thosoina</i> [^]	✓			✓
	<i>Gelliodes fibrosa</i> [^]	✓	✓		✓
Rhodophyta	<i>Bonnemaisonia hamifera</i>	✓	✓		✓
	<i>Grateloupia turuturu</i>	✓			✓

*Also listed on APMPL.

+ Not listed on NIMPCG list, but on APMPL and suited to environmental conditions at Mardie.

[^]Not Listed in NIMPCG list or APMPL, but on WAPLIMP and may be suited to environmental conditions at Mardie.

4. Procedures

The Western Australian Department of Primary Industries and Regional Development (DPIRD) is the lead agency responsible for developing and implementing the necessary management arrangements and biosecurity control activities to restrict the introduction and translocation of IMP species in the WA aquatic environment.

Under the WA Fish Resources Management Act 1994 it is an offense to knowingly introduce or translocate a non-endemic fish species to WA waters – this includes aquatic organisms in ballast water or on hull fouling. The following procedures will address minimum requirements for marine biosecurity for the life of the Project which includes the proposed regulation of Ballast Water Exchange, Biofouling Management and monitoring protocols. Any breach of the requirements of this section must be immediately reported to DPIRD (08) 6551 4444 or 24-hour emergency hotline 1800 815 507 or by email to aquatic.biosecurity@dpiird.wa.gov.au.

For the purposes of this section, a 'Ship' is defined as a vessel of any type (commercial or recreational) and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms (including barges and other non-powered floating plant).

Procedures around marine pest management are focused on prevention of introduction and subsequent transfer to other marine environments through vessel management. Vessel operators for the Mardie Project are required to comply with these procedures which are detailed in relevant guidance documents (referred below).

Development of a Vessel Management Procedure (VMP) in consultation with Pilbara Ports Authority (PPA) will provide all Port users with a practical document that defines the marine pest risk minimisation processes required prior to entrance of vessels and immersible equipment into Mardie Port waters.

4.1. Ballast Water

The discharge of ballast water for any vessel mobilised during the Project shall be managed consistently with the mandatory requirements of the Federal Department of Agriculture, Fisheries and Forestry (DAFF) and the Australian Ballast Water Management Requirements⁴.

Ballast water that does not meet DAFF Biosecurity requirements shall not be discharged within State waters. Confirmation of exchange at sea, treatment or other risk management measure application required prior to site entry.

In addition, the Maritime Arrivals Reporting System (MARS) requires pre-arrival reporting regarding ballast water biosecurity. All vessels arriving internationally are required to use MARS prior to arrival on site and domestic vessels are also encouraged to participate in this program.

4.2. Biofouling Management

Biofouling refers to the attachment of marine growth to any external part of a ship (including the hull, rudders, propellers and other hull appendages), internal seawater systems (e.g., sea chests and engine cooling pipes), or any equipment attached to or on board the ship (e.g., anchor chains). A ship's biofouling may contain marine organisms that are pests and have potential to be transferred long distances through transport via vessel hull or niche areas. If these organisms become established at the project location, they can seriously impact the marine environment.

Non-trading vessels, such as dredge vessels and associated plant are highlighted as a high-risk item as they are slow moving, generally spend substantial lengths of time in coastal waters and have numerous hull niches to transport marine organisms.

Vessel operations during the Project shall be consistent with the following relevant mandatory biofouling requirements:

- Anti-Fouling and In-Water Cleaning Guidelines⁵
- National Biofouling Management Guidelines for Commercial Vessels⁶.
- National Biofouling Management Guidance for Non-Trading Vessels⁷

Any activity that has the potential to disturb or dislodge biofouling on a ship and/or the ship's antifoul coating should be prohibited and only undertaken following consultation with DPIRD and endorsement Pilbara Ports Authority through an application process. Such activities include (but are not limited to):

- In-water hull cleaning

⁴ Available from the Commonwealth Department of Agriculture Fisheries and Forestry or <http://www.agriculture.gov.au/SiteCollectionDocuments/biosecurity/avm/vessels/ballast/australianballast-water-management-requirements.pdf>

⁵ Available from the Commonwealth Department of Agriculture Fisheries and Forestry or <http://www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/pests-diseases/marinepests/antifouling-consultation/antifouling-guidelines.pdf>

⁶ Available from the Commonwealth Department of Agriculture Fisheries and Forestry or <https://www.marinepests.gov.au/sites/default/files/Documents/commercial-vessels-biofoulingguidelines.pdf>

⁷ Available from the Commonwealth Department of Agriculture Fisheries and Forestry or <https://www.marinepests.gov.au/sites/default/files/Documents/non-trading-vessel-biofouling-guidelines.pdf>

- Cleaning of internal seawater systems (including sea-chests and engine cooling pipes)
- Propeller ‘polishing’ (cleaning)
- Careening (i.e., the practice of beaching ships for hull cleaning and antifouling removal).

BCI Minerals may consider approving such activities in exceptional circumstances, such as where a net environmental benefit or immediate safety risk can be demonstrated. Such applications should be directed to DPIRD.

All operational and non-trading vessels must undertake the DPIRD Vessel Check process⁸. The Risk Assessment Report generated by Vessel Check will contain detailed summary and a range of recommended management options to reduce the vessel risk status. Note that all vessels entering the state of WA may be subject to inspection by DPIRD’s compliance team to check the vessel is not carrying an IMP. To assist vessel managers with effective vessel management and risk assessment, the Fisheries branch of DPIRD have created the Vessel Check tool, available at: [Vessel Check \(fish.wa.gov.au\)](https://vesselcheck.fish.wa.gov.au/)¹⁰

4.3. Monitoring

Monitoring to identify any IMPs will be implemented during the Project to allow BCI Minerals to rapidly identify and respond to a potential marine pest invasion. A monitoring program that aligns with the IMP risks presented by the project will be designed in collaboration with DPIRD and implemented during the project.

This monitoring program may include or supplement the State Wide Array Surveillance Program (SWASP)⁹. The program is based on samples of marine growth being collected on settlement arrays with DNA extracted and compared against a reference library of DNA from known marine pest species. If a match is found this would indicate the potential presence of that species.

⁸ <https://vesselcheck.fish.wa.gov.au/>

⁹ <https://www.awe.gov.au/sites/default/files/documents/swasp.pdf>