SECOND ADDENDUM

TO THE SMITH BAY WHARF DRAFT EIS

ADDITIONAL INFORMATION

PREPARED BY KANGAROO ISLAND PLANTATION TIMBERS

DECEMBER 2020

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The Second Addendum to the Draft Environmental Impact Statement (Draft EIS) has been prepared by Kangaroo Island Plantation Timbers Ltd (KIPT). The proposed development is subject to both Commonwealth and South Australian environmental impact assessment legislation. The Second Addendum to the Draft EIS provides information requested by the State Planning Commission.

KIPT has relied on information provided by specialist consultants, government agencies and other parties, and has taken all reasonable steps to review the information contained in the document and to ensure it is correct at the date of submission. KIPT does not take responsibility for the accuracy or completeness of the information.

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PLATES

LIST OF APPENDICES

PREFACE

Between 20 December 2019 and 21 January 2020, around 211,000 hectares of western Kangaroo Island was subject to wildfire and the controlled burning activities associated with wildfire suppression. Of the area affected, around 8% is commercial timberland, including 14,369 ha owned by Kangaroo Island Plantation Timbers (KIPT), the developer of the proposed Kangaroo Island Seaport at Smith Bay.

The summer fires of 2019-20 also affected large areas of mainland Australia, including over 100,000 ha of commercial timberlands. The salvage of those plantations that has occurred since the fires has proven the economic case for the planned salvage of the Kangaroo Island plantations, once the KI Seaport is constructed.

In preparation for its salvage operation, KIPT has drawn from the experience of its mainland counterparts, including several who worked on the salvage operations following the Ash Wednesday fires of 1983. Under their guidance, the Company has commenced harvesting operations to stockpile and preserve some of the higher value timber using water storages available on-island, in anticipation of receiving approval for the construction of the port.

During and following the fires, the Company received the support of its shareholders, stakeholders and project partners, who share the vision of a vibrant and profitable forest sector on Kangaroo Island. Their commitment has not wavered during the Covid 19 pandemic, which has ravaged the global economy in 2020, and created further pressure on the island and those businesses already affected by the fires, particularly tourism.

While global demand for sustainably produced timber products continues to grow, market turbulence and geo-politics presents new challenges to Australian exporters. Australia itself is a net importer of timber products, which means

there is ample scope for the domestic market to absorb product which would otherwise have been exported. As part of its recovery strategy to the 2019-20 fires, KIPT and its project partners have examined diversification options for marketing the fire-affected wood. Opportunities to semi-process the fire affected timber on-island which are currently being investigated by the Company would provide market diversification strategies essential to building and maintaining a profitable export business.

What's missing of course, is a port on Kangaroo Island from which the timber grown on the island can be shipped to markets elsewhere in Australia or overseas.

KIPT is reassured that the recommendations of the SA Government's Independent Review into South Australia's 2019-20 Bushfire Season will mitigate the risk and consequences of future bushfires on Kangaroo Island. Since the report was published, KIPT has had several constructive discussions with the Minister for Emergency Services, the Minister for Environment and Water, and the Minister for Primary Industries and Regions about actions to mitigate the particular risks posed by large tracts of native vegetation in close proximity to farming, tourism and forestry businesses. KIPT has also agreed with the Country Fire Service to form the first Forest Industry Brigade in South Australia under the Fire and Emergency Services (Miscellaneous) Amendment Bill 2018, which will further strengthen our ability to respond to and suppress future wildfires.

KIPT lodged the Response Document for the Smith Bay Draft EIS and Addendum on 23 March 2020, representing the final component of the EIS documentation required to be prepared by KIPT for the proposed KI Seaport. The EIS process had followed extensive engagement with several government departments which culminated in an Adequacy Check by DPTI of all materials, prior to submission by KIPT, and publication by the (then) Minister for Planning in preparation for the two periods of public consultation which followed in 2019 (14 weeks in total).

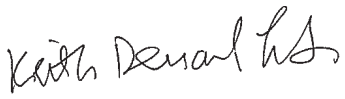
On 17 June the Department of Planning, Transport and Infrastructure (DPTI) issued to KIPT 44 Draft Conditions of Approval which included Traffic and Transport (Condition 25), Marine Pest Management (Conditions 16, 17 & 18) and

Plans (Conditions 5, 7 & 8). These conditions were consistent with the Secondary Approvals process as had been explained to KIPT by DPTI under the Major Projects pathway.

On 30 October 2020 the Chair of the State Planning Commission wrote to KIPT to advise the current Minister for Planning had considered the Assessment Report and related materials for the proposed KI Seaport and required more information on three aspects of the development; traffic and road network issues; marine pest management; and further detailed engineering plans for the KI Seaport. KIPT was invited to submit information for further assessment.

The information sought is largely detail which had been itemised in the Draft Conditions of Approval and was to be provided as part of the secondary approvals process. In responding to the 30 October letter, KIPT notes the provision of materials in this Addendum does not constitute a change to the information previously provided in the Draft EIS, as no alteration to the design of the seaport and statement of environmental affects as described in Draft EIS are proposed by the Company.

As the first anniversary of the 2019-20 wildfires draws near, KIPT welcomes the opportunity to bring forward the timing of information that was to be supplied as part of the secondary approvals process for the proposed KI Seaport. It is our belief that the change in timing of the provision of this information will provide the Minister and the community of South Australia greater assurance of the benefits that this project will bring to Kangaroo Island.



Keith Lamb
Managing Director
Kangaroo Island Plantation Timbers

01. INTRODUCTION

1.1 INVITATION TO PROVIDE FURTHER INFORMATION

The Chair of the State Planning Commission (SPC) wrote to Kangaroo Island Plantation Timbers (KIPT) on 30 October 2020 inviting KIPT to submit further information about three matters: traffic and road network issues; marine pest management; and further detailed engineering plans for the proposed KI Seaport at Smith Bay, Kangaroo Island.

The Chair advised such material would be submitted for further assessment pursuant to section 47 of the *Development Act 1993* (SA).

1.2 KIPT RESPONSE

This Addendum represents KIPT's response to this request. It contains no new material which could be characterised as significantly affecting the substance of the Draft EIS, or the impacts of the proposed development. In all respects, the further information provided is consistent with the material which has already been published and was the subject of 14 weeks of public consultation in 2019.

In particular, we note:

- Traffic and road network: the further material provides detail about matters canvassed in Chapter 21 of the Draft EIS and in the Response Document. We note:
  - the volume of timber to be harvested and transported to Smith Bay each year has not changed
  - the use of feeder or local roads which connect the plantations to the collector and arterial roads has not changed
  - all of the roads which would be used are suitable for use by vehicles that comply with the General Mass Limits for heavy vehicles
  - the base case logistics strategy and the primary mitigation strategy remains the same i.e. to use 19.0 m semi-trailers, or high productivity vehicles where that is permitted by the National Heavy Vehicle Regulator (NHVR)
  - the regulatory environment has not changed
  - KIPT's commitment to fund the maintenance of the feeder roads has not changed.

  The extra detail provided addresses the issue of operating hours (the subject of feedback from stakeholders), the specific roads which would be used in each of the five years of the salvage harvest, the use of high productivity vehicles and other measures to mitigate the impacts of transporting timber to the port.
- Marine and pest management: the further material comprises three management plans prepared in consultation with Biosecurity SA (PIRSA) since the Response Document was lodged in March 2020, and an example of a biofouling management plan used by Maritime Constructions (KIPT's construction partner) to manage the risk of vessels introducing marine pests to Smith Bay during construction.
- Plans: the various plans (10 in total) provide details of the proposed design. In all respects these plans confirm the KI Seaport remains as described in the Draft EIS and the subsequent Addendum Report i.e. a 650 m piled jetty structure supporting a suspended deck jetty; the use of a floating pontoon for the wharf which is held in place by restraining dolphins; an enclosed conveyor system to transport wood chips from the on-land stockpile to the ship's holds; and all of the on-land components fit within the boundaries of the Smith Bay site. An engineering report is also provided which confirms the structures can be built as designed.

02. TRAFFIC AND ROAD NETWORK ISSUES

2.1 CONSULTATION

Traffic and road network Issues were addressed in Chapter 21 and Appendix P of the Draft EIS, and in sections 1.3.2, , Chapter 3, section 6.1 (pp 153-154), section 6.2 (pp 258-260), section 6.3 (pp 371-380) and section 6.4 (pp 388-390 and pp 434-436) of the Response Document.

Since receiving the request from the SPC on 30 October 2020, KIPT has met with the CEO of Kangaroo Island Council in Adelaide on 6 November to discuss the Minister's request for further information and seek his guidance about how KIPT should engage with the Council. It was agreed we should present to an informal gathering of Council to appraise elected members of the traffic and road network issues associated with the salvage of the fire-affected timber, which would be completed over a period of about five years. KIPT was invited to present to Council at the informal gathering scheduled for Thursday 26 November.

KIPT met the Minister for Infrastructure and Transport on 25 November. The Minister advised he had asked the CE of the Department of Infrastructure and Transport (DIT) to work with KIPT and the Council so that KIPT could provide a timely response to the Minister for Planning.

KIPT met with the CEO of the DIT and his senior executives on three occasions (1 December, 3 December and 8 December) and also exchanged correspondence. These discussions focused on the route options, operating hours, vehicle options, other measures to mitigate the impact of the haulage operation, and potential funding options should any road upgrades or improvements be required. The notion of a tri-partite road management agreement for the salvage harvest was canvassed (see Section 2.2 below).

On Wednesday 18 November the SA Government announced a six-day state-wide 'circuit breaker' lockdown in response to a Covid 19 outbreak. As a consequence, the informal gathering of Council scheduled for Thursday 26 November 2020 was cancelled.

With the early lifting of the lockdown, KIPT was able to meet with the CEO of the Kangaroo Island Council on 26 November on Kangaroo Island. We drove along the main haulage routes (Playford Highway and North Coast Road) and discussed the issues which the haulage operation would entail, and canvassed options for addressing these issues including the use of Traffic Management Plans to address the impacts on the feeder roads. KIPT provided the CEO with the five-year salvage harvest schedule and maps of the routes (see Section 2.3.4) so that Council's traffic engineers could conduct their own assessment of the traffic and road network issues. Council staff subsequently discussed these issues with the Managing Director of Harvestco, the haulage contractors appointed by KIPT for the first stage of the salvage harvest, which will commence in January 2021.

KIPT presented to a rescheduled informal gathering on Wednesday 16 December 2020. The presentation, which is available on Council's website, covered the freight task, the traffic and road network impacts, and options to mitigate these impacts.

2.2 ROAD MANAGEMENT AGREEMENT

KIPT and DIT have discussed the benefits of a tripartite road management agreement between the Kangaroo Island Council, the DIT and KIPT, which would provide clarity and certainty for all stakeholders.

The agreement would recognise the timing of the salvage harvest program (described in Table 2-1 below). A separate agreement may be considered by the parties for road management in the years that follow.

All parties would commit to working together in good faith to reach this agreement, the objectives of which would be to:

- agree the parameters for transporting the salvage harvest to Smith Bay
- maximise safety and minimise community impacts
- implement the least cost solution (i.e. all parties' costs, capital and operating)
- agree protocols for monitoring implementation and impacts.

The benefits of a road management agreement was canvassed with Kangaroo Island Council at the informal gathering on 16 December.

The DIT has agreed to lead a joint assessment of the routes discussed in Section 2.3.4 (i.e. involving Kangaroo Island Council, KIPT and DIT) which will establish the condition of the roads and what, if any, upgrades may be required. This work is scheduled to be completed by late January 2021.

Once the route assessment has been completed, negotiations will be required between all parties to resolve how any upgrades would be funded and delivered to enable the safe use of the roads between the forests and the proposed Seaport.

In good faith, KIPT has indicated to DIT it is willing to make a contribution towards the cost of sealing the unsealed section of North Coast Road. DIT has agreed to engage directly with the Commonwealth Government about federal contributions to funding any road improvements that may be required.

A draft Memorandum of Understanding, which is the precursor to a formal road management agreement, has been provided to the CE of DIT for consideration by the Crown Solicitor's Office (see Appendix A1), DIT and KIPT have agreed to use best endeavours to complete a draft of the road management agreement by the end of February 2021.

2.3 USE OF THE ROAD NETWORK

2.3.1 IMPACT OF THE 2019–20 BUSHFIRES ON COMMERCIAL TIMBER PLANTATIONS

The total estimated standing stock of timber after the fires is 4.9 Mt, of which 60% (around 3.0 Mt) will be commercially salvageable timber from all plantations (i.e. including independent growers) and transported to Smith Bay. This is less than half the planned production prior to the fires, which at 6.5 Mt took into account standing stock and future growth during the period to the final trees were harvested.

In addition to the impact on total production, the damaged caused by the fires means the time available to salvage timber that still has commercial value has been reduced from over 10 years to no more than five to six years following the fires.

The estimated freight task to support the salvage operation is summarised in Table 2-1 below.

These volumes are consistent with the Draft EIS which specified a maximum harvest of 730 ktpa (refer p. 460).

All of the KIPT-owned plantations will be replanted after harvest, except for those plantations where the trees naturally regrow from the stump (coppice), and the second harvest or rotation is expected to commence 10 years after replanting. Thereafter, approximately 10% of the standing timber (i.e. 450 ktpa) will be harvested and exported each year from the KI Seaport.

Pre-bushfires, KIPT had planned to produce two products: pine (softwood) logs and blue gum (hardwood) wood chips. The company still intends to service both of these markets, with some modification likely required to take into account demand and quality impact of the fires. The market for blue gum woodchips is sensitive to contamination, and the charcoal that may persist on the outer bark and in occluded knots of branches is likely to impact price received. Alternatives to the woodchip market currently being investigated includes peeler logs for plywood production. In the event that blue gum from the fire-affected forests is exported in log form, the chip-handling facility would still be required for woodchip production from the area of forests unaffected by fire, which could be staged to coincide with production from the new crop to be re-established immediately after the current fire-affected crop is removed. The market for pine logs, like blue gum logs, is less sensitive to contamination and no change is anticipated to the handling strategy for the pine, except for the timing and the total volume to exported as described above.

The impact of the possible change in export is immaterial for the consideration of roads and transport, except to say that if the log-export strategy is pursed for the salvage period (2021 to 2025), the most common form of product to be transported to Smith Bay will be logs rather chip.

TABLE 2-1 ESTIMATED ANNUAL VOLUME OF TIMBER TO BE TRANSPORTED TO KI SEAPORT FOR THE SALVAGE HARVEST

Year	Total standing stock of timber (kt)	Planned salvage via KI Seaport (kt)
2021*	247	150
2022	1,172	712
2023	1,172	712
2024	1,172	712
2025	1,172	712
Total	4,936	2,998

*Assumes harvest and delivery to Smith Bay for stockpiling begins in the last quarter of 2021.

2.3.2 OPERATING HOURS

In response to the feedback from the public consultation process (see Response Document p.377), KIPT will operate within a self-imposed curfew. The standard operating hours will be Monday to Friday, 6.00 am to 6.00 pm excluding public holidays, with the option of working a half day on Saturdays (6.00 am to 12.00 noon) from time to time to make up for delays caused by various factors such as poor weather, road works etc.

The KI Seaport itself will operate 24 hours a day when ships are being loaded, but no timber products would be delivered to the site outside of the standard operating hours referred to above.

2.3.3 ROUTE OPTIONS

The route options for transporting salvage timber to the KI Seaport are constrained by the quality of the north-south roads on western and central Kangaroo Island.

- **Stokes Bay Road** (connecting Playford Highway and North Coast Road): Although Stokes Bay Road is a good quality, all-weather route, it is sub-optimal for use by timber trucks because of the steep descent leading to the junction with North Coast Road.
- **McBrides Road** (connecting Bark Hut Road and North Coast Road): McBrides Road is not suitable in its current condition. McBrides Road could only be used on a short-term or campaign basis when plantations in the immediate vicinity are being harvested.
- **Ropers Road/Gap Road** (connecting Playford Highway and North Coast Road): is not suitable because Ropers Road cannot be used without significant modification where it crosses the Cygnet River; such works would require approval from the Commonwealth Government under the Environmental Protection and Biodiversity Conservation Act because the works would affect habitat for the endangered Glossy Black Cockatoo; an EIS would be required to assess the impacts of such works; this would impose significant delays; and KIPT has been advised it is unlikely the Commonwealth would approve such activities in any case (see Draft EIS, Appendix P – KIPT Route Options Ecological Assessment).
- **Ten Trees Road** (connecting Playford Highway to North Coast Road) could be used, although the road is unsealed.

Given the condition of Stokes Bay Road and McBrides Road, there is no option which would allow timber to be delivered to the KI Seaport from the west along North Coast Road. The only viable option, therefore, is to approach the KI Seaport along North Coast Road from the east. This conclusion was evident to both KIPT and the Kangaroo Island Council when we began working together on these issues in August 2016.

2.3.4 ROUTES TO SMITH BAY FOR SALVAGE HARVEST

Figures 2-1 to 2-5 show the routes which would be used to transport timber from the plantations to Smith Bay in each of the five years of the salvage harvest, and the volume of material which would travel along each road section.

2.3.5 VEHICLE TYPE

There are three vehicle options for transporting timber on the routes shown in Section 2.3.4.

As discussed in the Draft EIS, it is legal to use a standard 19.0 m semi-trailers with a payload of up to 28 tonnes on all of the roads shown on Figures 2 1 to 2 5. A better option, however, would be to use a high productivity vehicle (HPV) approved by the National Heavy Vehicle Regulator (NHVR). The use of such vehicles would significantly reduce the number of vehicle movements, be safer, reduce all of the impacts associated with the haulage operation including the amount of wear and tear on the roads and the associated cost of maintaining these roads.

Two specific HPV are under consideration:

- A 7 axle, 23 m PBS (i.e. performance based standards) truck and dog trailer, known as a quad dog, with a payload of 38 tonnes. This vehicle is similar to vehicles used to haul logs throughout the Adelaide Hills for Forestry SA; the Adelaide Hills is a more challenging and heavily trafficked road environment than Kangaroo Island.
- An 8 axle, 23 m PBS truck and dog trailer with a payload of 45 tonnes.

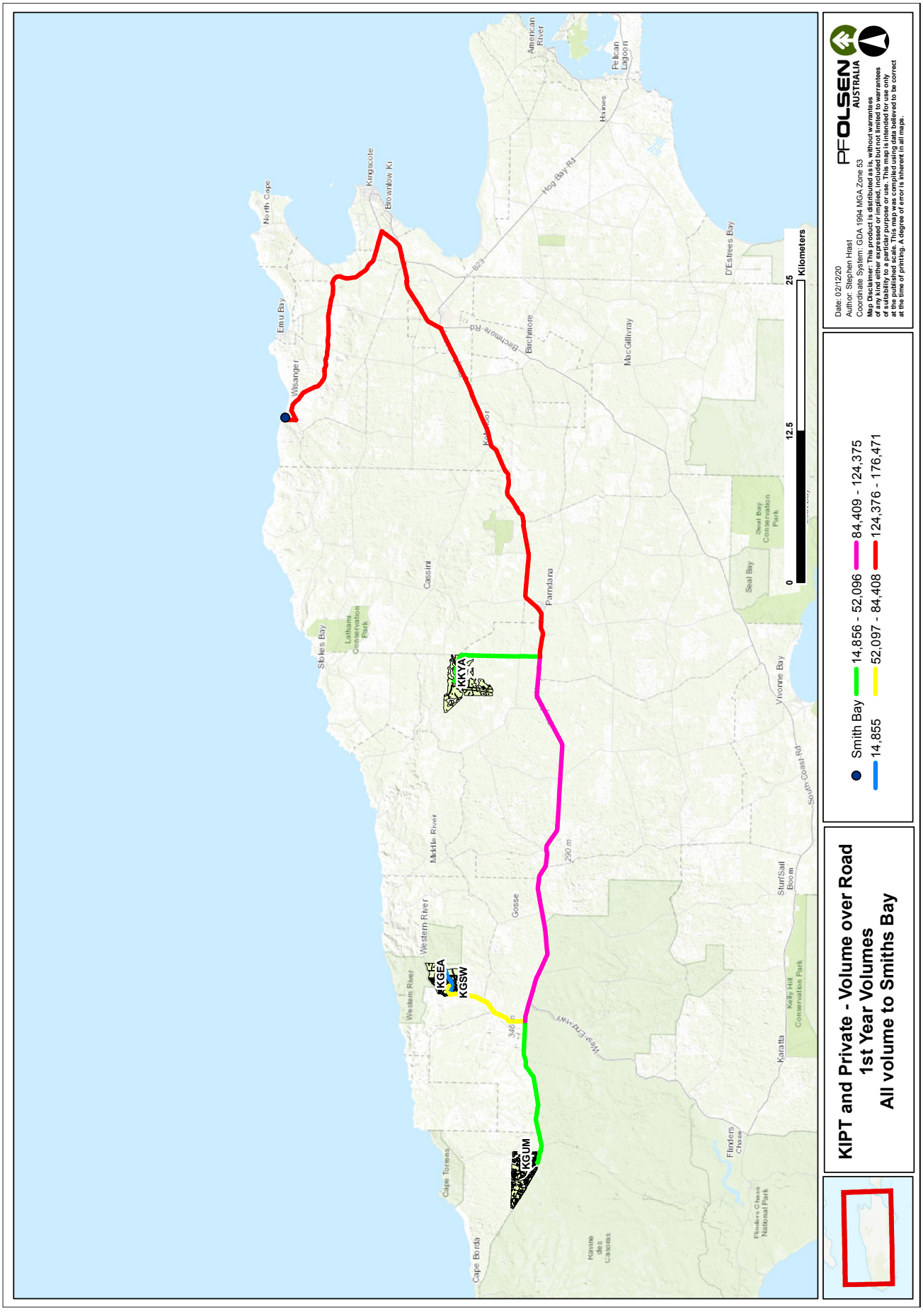


FIGURE 2-1 YEAR ONE – ALL VOLUMES OVER ROADS TO SMITH BAY

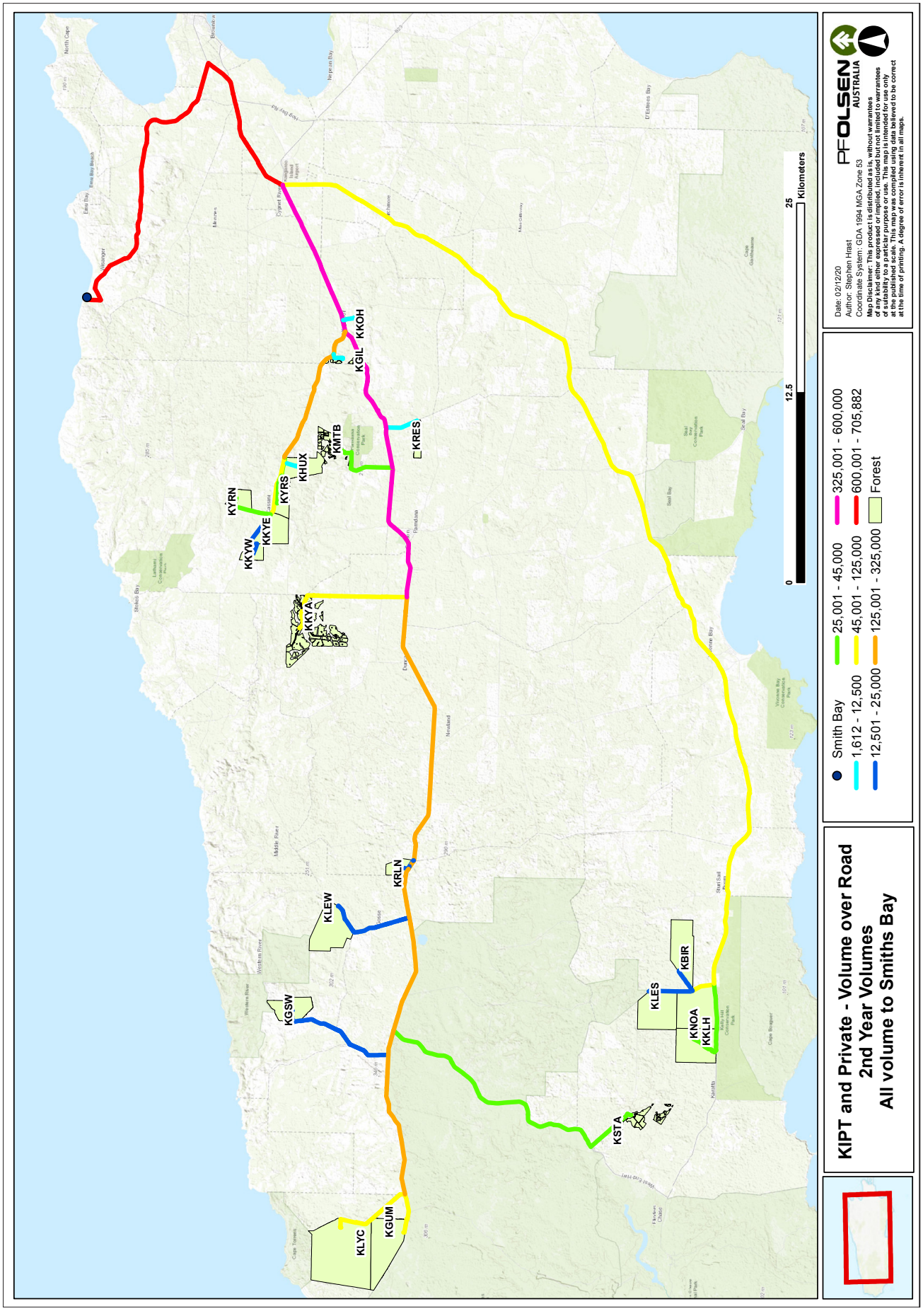


FIGURE 2-2 YEAR TWO – ALL VOLUMES OVER ROADS TO SMITH BAY

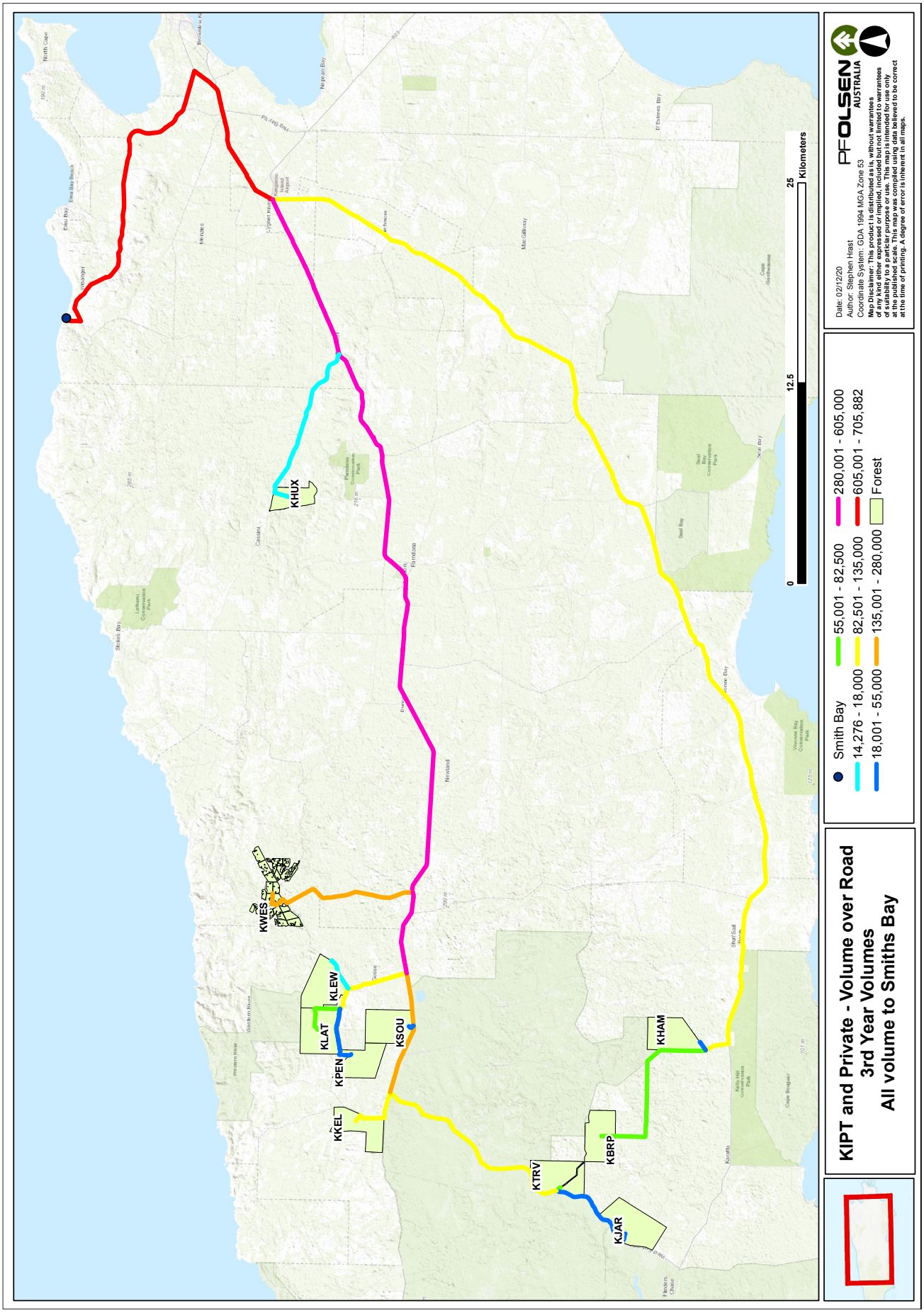


FIGURE 2-3 YEAR THREE – ALL VOLUMES OVER ROADS TO SMITH BAY

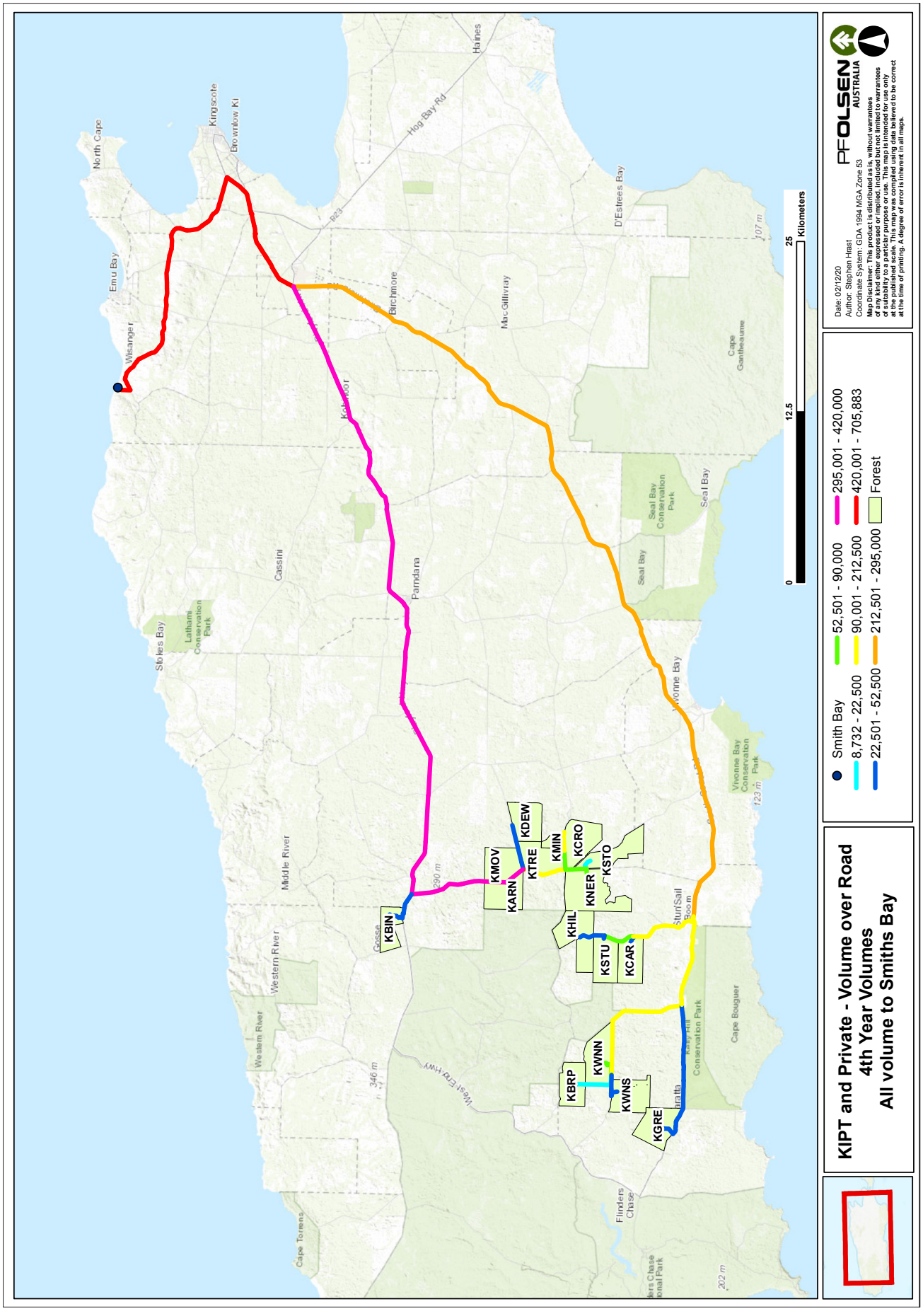


FIGURE 2-4 YEAR FOUR – ALL VOLUMES OVER ROADS TO SMITH BAY

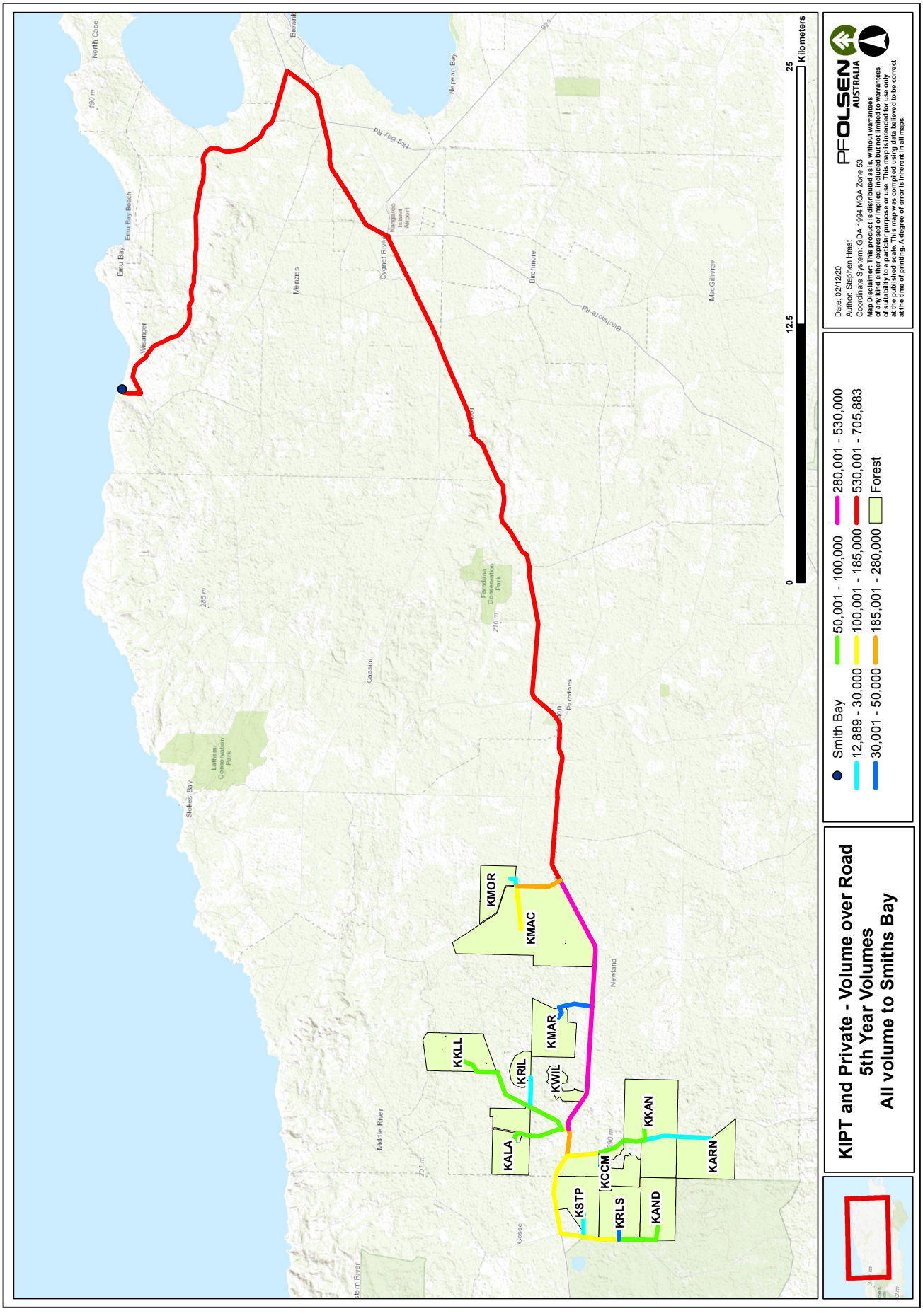


FIGURE 2-5 YEAR FIVE – ALL VOLUMES OVER ROADS TO SMITH BAY

These vehicles consist of a rigid three-axle truck towing a four or five axle folding dog trailer at a total length of 23 m. KIPT would prefer to use one or other of these quad dog combinations, the benefit of which in terms of trips to Smith Bay is shown in Table 2-2.

2.3.6 ROAD CONDITION

Pavement

Table 2-3 lists all of the roads which would be used for the salvage harvest according to their status in the road hierarchy on Kangaroo Island and notes the condition of the road pavement.

TABLE 2-2 TRIPS TO SMITH BAY FOR THE SALVAGE HARVEST

	Volume of timber to be delivered to KI Seaport (tonnes)	Trips (i.e. one way) to Smith Bay		
		19.0 m semi-trailer	7 axle quad dog	8 axle quad dog
2021	150,000	6000	3947	3333
2022	712,000	28,480	18,737	15,822
2023	712,000	28,480	18,737	15,822
2024	712,000	28,480	18,737	15,822
2025	712,000	28,480	18,737	15,822
Total	2,998,000	119,920	78,895	66,622

TABLE 2-3 ROADS TO BE USED FOR THE SALVAGE HARVEST

Road type and road name	Pavement type
Council controlled feeder roads	
Jump Off Road	Unsealed
Snug Cove Road/Colmans Road	Unsealed
Baxters Road	Unsealed
North Coast Road/Berrymans Road	Unsealed
Gosse Ritchie Road	Unsealed
Turkey Lane/Johncock Road	Unsealed
Coopers Road	Unsealed
Tin Hut Road	Unsealed
Mount Taylor Road	Unsealed
McBrides Road	Unsealed
Bark Hut Road	Unsealed
Yacca Jacks Road	Unsealed
Timber Creek Road	Unsealed
Church Road	Unsealed
Council controlled collector roads	
West End Highway	Sealed
South Coast Road	Sealed
Playford Highway (West End Highway to Parndana)	Sealed
Playford Highway (Gumridge to West End Highway)	Sealed
North Coast Road (Playford Highway to Emu Bay Road)	Sealed
North Coast Road (Emu Bay Road to Freeoak Road)	Unsealed
DIT controlled arterial roads	
Playford Highway (east of Parndana)	Sealed

The condition of road pavement is a material factor affecting how the trucks are driven. It is one of many factors addressed with the use of Traffic Management Plans (see Section 2.5.4 below).

Intersections

Table 6 of the KIPT Access Route Assessment report published in Appendix P of the Draft EIS summarises the sight distance requirements for the various junctions, as well as proposed treatments to mitigate any shortfalls. Generally, the shortfalls can be addressed by minor works such as:

- trimming vegetation on along the approaches to intersections to improve sight lines
- installing signage to provide advance warning of the presence of a junction
- installing Give Way signage to highlight priority at certain junctions (e.g. the junction of Turkey Lane, Johncock Road and Mays Road)
- realigning the junction to rationalise the approach (e.g. the junction of Church and Baxters Road)
- sealing the apron for a minimum of 10 m from the junction (e.g. Timber Creek/Playford Highway junction)
- installing portable variable message signage when certain roads are used (e.g. at the junction of Bark Hut Road and Playford Highway).

The condition of the intersections and the appropriate mitigation measures would be addressed in the Traffic Management Plans for each plantation/feeder road.

Plantation entry and exit points

The existing entry and exit points for the plantations will be used for the salvage harvest. Issues such as the condition of the road surface, sight lines, and signage will be addressed in the Traffic Management Plan for each plantation.

2.4 TRAFFIC AND ROAD NETWORK IMPACTS

2.4.1 IMPACT ON THE ROAD NETWORK

The impact on the road network will be greatest along the section of the route that is already the most heavily trafficked, which is Playford Highway from the intersection of Birchmore Road to the intersection of North Coast Road.

This section of Playford Highway is part of South Australia's arterial road network, and the DIT is responsible for upgrading and maintaining this road. Shoulder widening works are currently being undertaken on this section of road and DIT indicated further work is being investigated.

Elsewhere the increase in traffic volumes will be proportionately larger because the current traffic volumes are lower – generally less than 100 vehicles a day. Nevertheless, much of the feeder road network has very little traffic, which means the practical impact on the network will be negligible.

2.4.2 IMPACT ON THE ROADS

The movement of timber products to the KI Seaport will add to the wear and tear of the road network. The impact on the roads will be greatest along the last 10 kilometres of North Coast Road, which is unsealed. There are a number of options for mitigating these impacts which are discussed below in Section 2.5.

2.4.3 IMPACT ON OTHER USERS AND ADJOINING LAND USES

The most significant impact will be on other road users and adjoining land uses along the 10 kilometre, unsealed section of North Coast Road. The haulage operation will give rise to concerns about the impact of the dust on neighbouring land users and on other road users, and concerns about safety.

2.4.4 IMPACT ON NATIVE FAUNA

As discussed in the Draft EIS (see pages 470 and 475), there is insufficient data available from any source that could be used to quantify the likely impacts on native fauna. However, KIPT would be responsible for a small increase (approximately 7% using semi-trailers) in the total volume of traffic on Kangaroo Island, which means the existing local and tourist traffic would remain the most significant contributor to fauna deaths on the roads.

There is no evidence to suggest heavy vehicles are disproportionately responsible for roadkill, even allowing for such variables as the time of day at which vehicles are travelling.

The Kangaroo Island Council, the South Australian Government, the Commonwealth Government (which jointly funded the upgrading of the Kangaroo Island airport with the South Australian Government) and the tourism industry on Kangaroo Island have a common goal of increasing visitor numbers to Kangaroo Island, which would inevitably mean increasing road use and greater adverse impacts on native fauna. All parties implicitly accept that roadkill is an unavoidable consequence of road-based transport on Kangaroo Island, as it is throughout regional Australia.

2.4.5 SCHOOL BUSES

A map provided by Kangaroo Island Community Education (KICE) shows school buses use North Coast Road, Birchmore

and Playford Highway. The options for mitigating impacts are discussed below.

2.5 MITIGATING TRAFFIC AND ROAD NETWORK IMPACTS

2.5.1 OVERVIEW

The routes shown in Section 2.3.4 have a number of inherent characteristics which mitigate some of the impacts associated with the salvage haulage operation. For example, the routes:

- maximise the use of sealed road network west of Kingscote and minimise the use of unsealed roads, which is the safest, all-weather option available, and minimises road maintenance costs
- maximise the use of the arterial road network, thereby minimising Council's road maintenance costs
- minimise travel distances to Smith Bay
- minimise the number of road junctions used – for example on the journey to Smith Bay along Playford Highway there is just one junction – a left turn from Playford Highway onto North Coast Road
- we understand the sealed roads comply with Australian standards and have been designed for general mass vehicles, which means there should be no issues with shoulder widths, sight lines, swept paths or the quality of the road pavement at junctions if KIPT uses 19.0 m semi-trailers or HPVs which fit within the same swept path.

The DIT concur with the analysis of the route options discussed in Section 2.3.4.

2.5.2 USE OF HIGH PRODUCTIVITY VEHICLES

KIPT has appointed Harvestco for the first phase of the salvage harvest, which is to harvest 140,000 tonnes of high quality soft wood and store the wood under water in a dam on the Macgill plantation. Harvestco have commenced with a program designed and agreed with SA Power Networks (SAPN) to maintain the security of powerlines transiting the KIPT estate, by selectively harvesting and stockpiling in the field, trees within a 10 m buffer of the adjoining plantations. The SAPN powerline program is expected to be completed by end January 2021. Following that, Harvestco will begin transporting the higher value logs from selected softwood plantations for wet storage at Macgill plantation. The wet storage program will continue until either the port is constructed, or the water-storages are full.

Harvestco have applied to the NHVR for permission to use either a 7 axle quad dog or an 8 axle quad dog. As 7 axle quad dogs have been operating in the Adelaide Hills for many years, KIPT expect the NHVR will approve their use on Kangaroo Island for the first phase on the salvage harvest.

If the NHVR approves their use, KIPT will use quad dogs for the entire salvage operation. The use of a quad dog combination would deliver significant safety and productivity improvements, including:

- **Fewer trips:** As shown in Table 2-2, a 7 axle quad dog would reduce the total number of trips by 34%, and the 8 axle quad dog would reduce this number by 44%, which means the impacts associated with noise, dust, impacts on other roads users, native fauna etc. would be reduced to the same degree.
- **Road upgrades not required:** Both combinations have a sweep path that complies with the PBS Level 1 requirements specified by the NHVR, which means these vehicles use as much road space through a corner as a typical 19 m semi-trailer configuration. None of the roads shown in Section 2.3.4 would therefore need to be re-engineered or re-aligned to accommodate quad dogs.
- **Safer:** Fewer trips is inherently safer. Moreover, the quad dogs have a lower centre of gravity when fully loaded compared to a semi-trailer, which reduces the risk of truck rollover. The 8 axle quad dog is actually safer than the 7 axle quad dog because it has the lowest centre of gravity.
- **Road surface protection:** The wear and tear on the roads is reduced by the combined impact of two factors. Firstly, wear and tear is reduced in direct proportion to the reduction in trips – less trips means less wear and tear. Secondly, the equivalent standard axle (ESA, which is a method of standardising various axle configurations and loads and determining their impacts on road pavements) for the 7 axle quad dog is 15% less than a semi-trailer per trip, and an 8 axle quad dog is 30% less.

The DIT has advised they have no objections to the use of the 7 axle or 8 axle truck and dog configurations, subject to the NHVR's formal route access process and the upgrading of any road junctions (if required).[1]

[1] Correspondence from Tony Braxton-Smith, Tuesday 15 December 2020 (2018/23878/01).

2.5.3 ROAD UPGRADES

Feeder roads

All of the feeder roads are unsealed and generally will require more regular grading during the salvage harvest. In some cases, attention to junctions may be required e.g. the junction of Mount Taylor Road and Playford Highway.

KIPT has committed to fund the necessary upgrades and maintenance of all feeder roads, and after the harvest of each plantation has finished the relevant feeder road will be left in a condition which is no worse than it was immediately before the harvest began.

KIPT has also committed to upgrading Freeoak Road (which connects the KI Seaport site to North Coast Road) to a higher standard as part of the development and the junction of Freeoak and North Coast Road.

Collector and arterial roads

All of the remaining collector roads on the proposed routes are generally in good condition, and have been designed for use by general mass vehicles and therefore should be suitable for such use as is, with the exception of the last 10 kilometres of North Coast Road as discussed in Sections 2.4.2 and 2.4.3.

The best option to mitigate the impacts associated with using the unsealed section of North Coast Road is to seal this section of road.

2.5.4 MANAGEMENT MEASURES

Traffic Management Plans

Traffic Management Plans (TMPs) will be prepared to address the specific issues associated with transporting timber from each plantation to Smith Bay. The TMP includes a survey of the route to be used and a risk-based analysis of the associated hazards, with input from relevant stakeholders including the Kangaroo Island Council. Each TMP would specify the controls to be applied to each hazard (risk). Such controls could include engineering works (i.e. road improvements), speed limits, vegetation clearance, signage and other communications. Each TMP would be approved by the relevant road authority.

A copy of the TMP template is provided as Appendix A2.

A separate traffic management plan would be prepared in consultation with KICE and the Department of Education to manage the impact on all school bus routes.

Accredited haulage contractors

KIPT will only engage haulage contractors who are accredited under the National Heavy Vehicle Accreditation Scheme. This accreditation encompasses:

- Mass management – to ensure correct loading and prevent over-loading
- Vehicle maintenance – to ensure trucks and trailers are maintained to manufacturers specifications (maximise safety and minimise environmental impacts associated with noise, emissions etc.)
- Fatigue management – to ensure driver safety and the safety of all other road users.

Driver Code of Behaviour

A Driver Code of Behaviour will be developed to reinforce the commitment to maximising road safety and addressing the concerns of affect communities and other users of the road network. The Code of Behaviour will address:

- noise and the use of engine brakes
- dust and measures to mitigate the associated nuisance impacts
- 50 km/h speed limits to mitigate damage to unsealed roads
- load security
- mass limits
- enabling passing traffic
- road works
- times of travel
- general driving behaviour.

A 1300 complaints number will be clearly visible on the back of the trailers. A copy of Harvestco's Driver Code of Behaviour for the first stage of the fire salvage harvest is included as Appendix A3.

03. MARINE PEST MANAGEMENT

3.1 REQUEST FOR FURTHER INFORMATION

The State Planning Commission (SPC) invited KIPT to prepare a Marine Pest Management Plan, in consultation with the Department of Primary Industries and Regions South Australia (PIRSA). The Marine Pest Management Plan should contain measures to address the risk of aquatic pest and disease transfer from Port Adelaide, including but not limited to the following issues:

1. No uptake or exchange of ballast water to occur within Port Adelaide (within Gulf St Vincent is acceptable), for all vessels using or servicing the facility (including tugs).
2. Developing biofouling management plans for each vessel or barge used (including tugs), both during construction and operation of the facility, in line with International Maritime Organisation (IMO) guidelines and templates.
3. Ensuring all vessels used (including tugs), both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufacturers specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).

3.2 CONSULTATION

KIPT engaged Environmental Projects to commence drafting management plans for the KI Seaport following the submission of the Response Document in March 2020. PIRSA provided comments on the draft biosecurity plans in July 2020 and, where practicable, the draft documents were amended.

Environmental Projects met with representatives of Biosecurity SA (PIRSA) on Tuesday 10 November 2020 to discuss the letter dated 30 October 2020 and KIPT's intended approach to biosecurity matters at the proposed KI Seaport, and there has also been email correspondence between the two parties.

Work to date has focussed on drafting the management principles that will underpin the biosecurity management plans. The plans will be completed after the Minister for Planning has approved the development.

Other agencies (including but not limited to the Commonwealth Department of Agriculture, Water and the Environment, the Kangaroo Island Landscape Board, South Australian Research and Development Institute (SARDI), and the Environment Protection Authority) will also be consulted after the development has been approved.

3.3 BIOSECURITY MANAGEMENT FRAMEWORK

The management framework for addressing biosecurity risks during the construction and operation of the proposed KI Seaport is shown in Figure 3-1. The complexity evident in the framework arises because there are a number of government departments which have jurisdiction over some of the biosecurity issues, but no single body has jurisdiction over all biosecurity issues; the biosecurity issues during construction are not necessarily the same as the issues during port operations; and the responsibility for managing biosecurity issues rests with KIPT and its contractors, and these too will differ from construction to operations.

The key features of the biosecurity management framework include:

- an overarching Biosecurity Management Plan that establishes the strategic setting for all of the biosecurity issues relevant to the KI Seaport
- separate management plans (i.e. subordinate plans) for marine and terrestrial biosecurity issues, because these issues are administered under separate legislation and by separate agencies
- separate plans for construction and operational activities, as the two phases of the project present different risks and therefore require different management strategies.

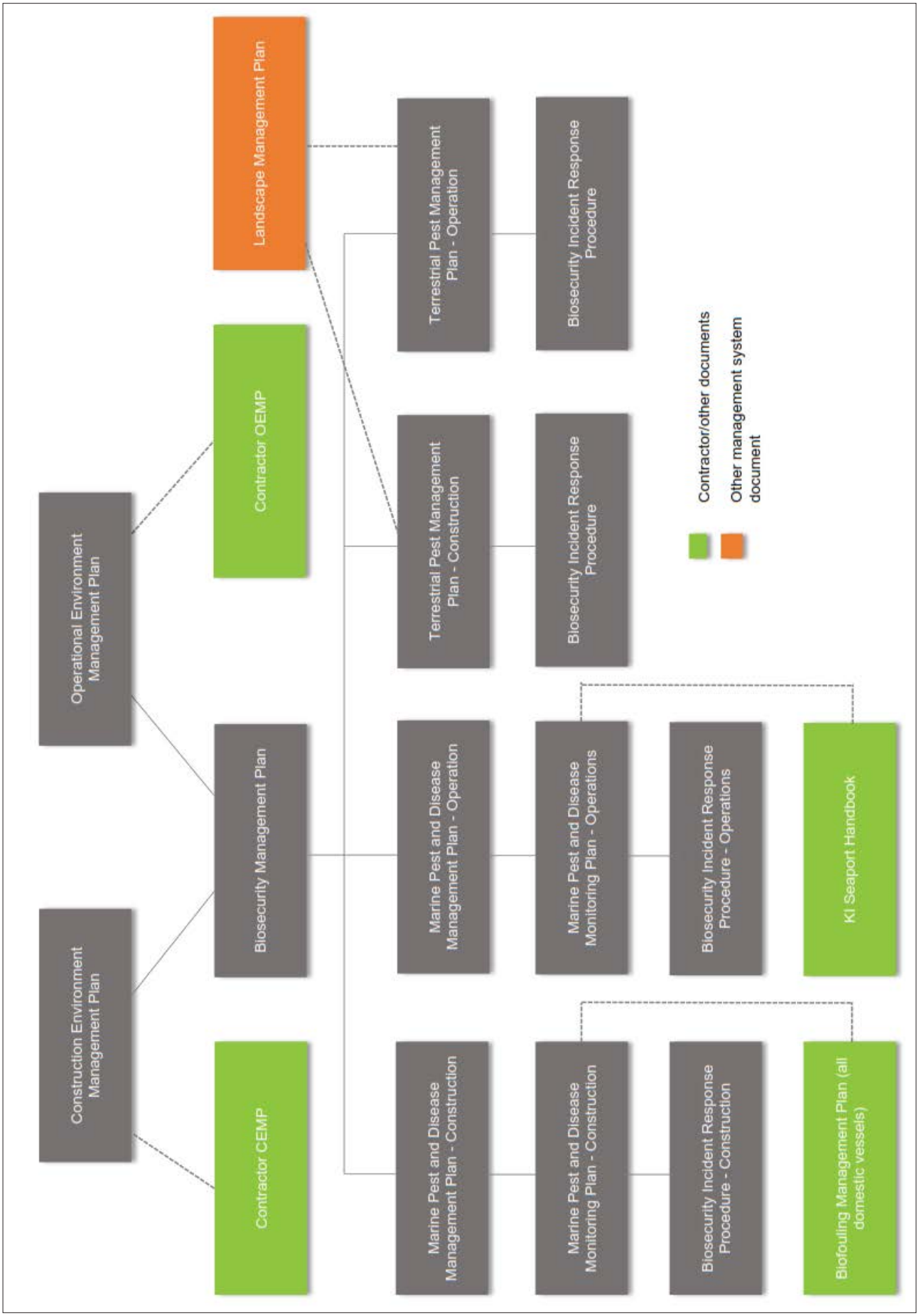


FIGURE 3-1 BIOSECURITY MANAGEMENT FRAMEWORK FOR THE PROPOSED KI SEAPORT

The focus to date has been on developing fit-for-purpose and user-friendly management plans required for construction. The plans required for operations will be completed while the port is being built and will need to be approved before operations can commence.

During construction, vessels arriving on Kangaroo Island pose the biggest biosecurity risk. A risk assessment process will be used to manage this risk:

- the majority of the vessels will arrive at Kangaroo Island and remain for the duration of the construction program and these vessels pose a lower risk to the biosecurity status of Kangaroo Island
- a tug and dumb barge will make numerous trips to and from the South Australian mainland to Kangaroo Island to transport materials and consumables, which will pose a higher biosecurity risk because there will be a greater exposure to marine pests and diseases in Port Adelaide
- additional protocols will be developed in consultation with PIRSA for higher risk vessels.

3.4 ADDITIONAL INFORMATION REQUESTED BY THE SPC

Table 3-1 shows how KIPT will address each of the issues raised by the SPC.

TABLE 3-1 HOW ISSUES RAISED BY THE SPC WILL BE ADDRESSED

Issue	Relevant Plan	Comments
• No uptake or exchange of ballast water to occur within Port Adelaide for all vessels using or servicing the facility (including tugs). (Note an exchange within Gulf St Vincent is acceptable).	• Biosecurity Management Plan. • Specific management strategies will be included in the: - Marine Pest Management Plan – Construction - Marine Pest Management Plan – Operations - Contractor Construction Environmental Management Plan.	• As a general rule tugs and barges do not require ballast water and this is the likely case during construction activities for the KI Seaport.
• Developing biofouling management plans for each vessel or barge used (including tugs), both during construction and operation of the facility, in line with International Maritime Organisation (IMO) guidelines and templates.	• Biosecurity Management Plan. • Specific management strategies will be included in the: - Marine Pest Management Plan – Construction - Marine Pest Management Plan – Operations - Contractor Construction Environmental Management Plan - Vessel Biofouling Management Plan.	• *Maritime Constructions* will develop a specific Biofouling Management Plan for each vessel prior to its departure to Kangaroo Island. • Vessel Biofouling Management Plans will be developed in accordance with IMO guidelines and templates.
• Ensuring all vessels used (including tugs), both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufacturers specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).	• Biosecurity Management Plan. • Specific management strategies will be included in the: - Marine Pest Management Plan – Construction - Marine Pest Management Plan – Operations - Contractor Construction Environmental Management Plan - Vessel Biofouling Management Plan.	• *Maritime Constructions* will develop a specific Biofouling Management Plan for each vessel prior to its departure to Kangaroo Island. • Vessel Biofouling Management Plans will be developed in accordance with IMO guidelines and templates.

In response to the SPC's request for further information, the following supporting documentation is provided in Appendix B – Marine Pest Management:

- Draft Biosecurity Management Plan (Appendix B1).
- Draft Marine Pest Management Plan – Construction (Appendix B2).
- Draft Marine Pest Management Plan – Operations (Appendix B3).
- Example Biofouling Management Plan Developed by Maritime Constructions (Appendix B4).

04. PLANS

4.1 REQUEST FOR FURTHER INFORMATION

This section of the report responds to the request to provide further detailed plans. The content is summarised in the sections below and the plans themselves are presented in Appendix C.

The plans provide detail which was not presented (because it was not required) for the Draft EIS or the Addendum Report. There are no changes and no new features or elements in the plans that would give rise to any new impacts or change the nature or extent of the impacts already described and assessed in the material which has already been presented to the SPC and was the subject of two rounds of public consultation.

4.2 SITE LAYOUT PLAN

A site layout plan identifying all structures to be constructed on the site is presented as Appendix C1.

4.3 DESIGN PLANS FOR MARINE STRUCTURES

The following design plans are included in Appendix C – Plans:

- An overall offshore plan showing the design of the suspended jetty, linkspan bridge, mooring dolphins, floating pontoon (berth), conveyor and mobile ship loader (Appendix C2).
- An overall offshore section showing the piled jetty structure, floating pontoon and a berthed vessel in relation to the shore and seabed of Smith Bay (Appendix C3).
- A part plan which shows the transition from the shore to the jetty and a partial elevation for the same section (Appendix C4).
- A plan showing the general arrangement of the abutment (i.e. where the jetty connects to the on-land pavement) (Appendix C5).
- A typical section of the piled jetty showing the precast concrete deck, conveyor gallery, light poles and lightpole baseplates (Appendix C6).
- A process flow diagram (Appendix C7).
- A section illustrating the in feed system for woodchips (Appendix C8).
- A section showing the reclaim and ship-loading system (Appendix C9).
- A wharf layout plan and elevation (Appendix C10).

PLATE 1 CLOSED CONVEYOR OF THE TYPE TO BE USED AT THE KI SEAPORT

4.4 ENGINEERING REPORT

In response to the request from the SPC for further information, KIPT commissioned Maritime Constructions (MC) to provide an engineering report, which is included in this report (see Appendix C11, MCE0457_LET_004_Construction Engineering Report). KIPT and MC have entered into an alliance agreement to design and construct the KI Seaport at Smith Bay.

MC note:

- Bathymetric, geotechnical and geophysical/seismic investigations were undertaken during the project conceptualisation stage of the development to fully understand the site conditions and ensure the proposed designs were constructable.
- The construction risk due to the site's geotechnical conditions steered the design away from a 'conventional' piled retaining structure and towards construction methodologies which avoided fixed structures and minimised pile quantities.
- The changes to the design of the port which was the subject of the Addendum Report took account of the physical site characteristics, and the suspended jetty has been designed to avoid tension loads in the jetty piles and accommodate the construction loads.
- A wave buoy was installed onsite for 15 months between July 2016 and September 2017, and the data collected determined the environmental characteristics of Smith Bay, the design parameters (loads) and the selection and availability of plant to construct the facility.

MC confirms that the design presented in the Addendum to the Environmental Impact Statement is fully considered, has been through a rigorous design development stage, and has been designed and engineered in accordance with the conditions to be encountered on site. The design as presented in the Addendum to the Draft EIS can be constructed in the manner described.

APPENDICES

LIST OF APPENDICES

Appendix A – Traffic and Road Network Issues

Appendix A1 – Draft Memorandum of Understanding

-DRAFT-

Kangaroo Island Seaport Road and Traffic Management Measures
Memorandum of Understanding
Xx December 2020

1) Parties

The parties (**Parties**) to this Memorandum of Understanding (**MOU**) are:

Kangaroo Island Plantation Timbers Ltd (ACN 091 247 166) Level 3, 60 Hindmarsh Square, Adelaide, SA 5000 (**KIPT**)

and

Kangaroo Island Council (ABN 93 741 277 391) of 43 Dauncey Street, Kingscote, SA 5223 (**KIC**)

and

Department for Infrastructure and Transport (**DIT**).

2) Background

(a) KIPT as the majority owner of timber plantations on Kangaroo Island (**KI**) proposes to build a seaport (**Seaport**) at Smith Bay, to export forest products on behalf of itself and other forest owners on KI.

(b) A series of fires occurring between 20 December 2019 and 21 January 2020 impacted the majority of KIPT and third party owned forests on KI. A planned salvage strategy will focus on recovering the economic value of fire affected timber, together with other timber not affected by fires, in order to return the land on KI to productive use.

(c) Timing of the salvage is critical in order to maximise the value of timber to be recovered.

(d) The Seaport is subject to a Major Projects process, currently before State Government for approval. The Minister for Planning is seeking evidence that any proposed management measures or road upgrades will be implemented (any proposed upgrades will require consultation with and agreement of the relevant road authorities i.e. KIC and/or DIT).

(e) This MOU sets out terms , from which more detailed planning and funding arrangements can be determined.

3) Objectives

The parties commit to work co-operatively and in good faith to achieve the following objectives:

a) To agree the parameters which will apply for transporting the timber salvaged from fire-affected plantations on KI, to the proposed Seaport at Smith Bay.
b) To agree a process for detailed planning and management with the aim of delivering agreed outcomes for the commencement of operations at the Seaport, at a date no later than 15 months following approval by the Minister of Planning.
c) To maximise safety and minimise community impacts.
d) To implement the least cost solution i.e. the lowest total (all parties) long-term cost (capital and operating cost).
e) To agree protocols for monitoring these objectives and periodically reviewing the progress towards the objectives.

4) Parameters

a) The parameters which will apply for transporting the salvage harvest to the Seaport are set out in Clause 8 and in Schedule 1 of this MOU.
b) The route to be used for the salvage harvest is described in Schedule 2 [maps].

5) Conditions Precedent

The implementation of the agreements (if any) reached in pursuit of the objectives outlined in Clause 3 is subject to the Minister for Planning approving the Seaport. This MOU does not presume or imply such approval will be forthcoming.

6) Term of the MOU

a) This MOU will apply for a period of six years, or until such time as the economic harvest of the current crop of plantation timber has been completed.
b) The parties envisage a subsequent MOU will apply to the future production of timber from crops to be established following removal of the current crop.

7) Variations

a) This MOU may be varied or modified at any time with the consent of all of the Parties.

8) Applicable Parameters

a) The parties agree:

i) All plantation timber products for the salvage harvest will be delivered to the Seaport by 19.0m semi-trailers (i.e. general mass vehicles) or any high productivity vehicle (HPV) authorised for such use by the National Heavy Vehicle Regulator.
ii) The conditions which will apply to such use are set out in Schedule 1.
iii) The routes to be used to deliver timber for the salvage harvest are specified in Schedule 2 .
iv) The safest and least impactful option is to use HPV.
v) Further work is required to identify:
   (1) upgrades and improvements to the routes listed in Schedule 1.
   (2) the optimal vehicle configuration which will present the best overall result for the community and the forest owners.
   (3) the arrangements for funding upgrades and improvements, and the maintenance of these roads.
   (4) the arrangements for monitoring and reporting the use of the road network and the impacts of such use.
vi) The work specified in v) above is intended to be completed by end of January 2021 and in any event no later than March 2021 to enable implementation by the commencement of timber transportation to the Seaport at a date no later than 15 months following development approval by the Minister of Planning.
vii) This MOU provides evidence that any proposed management measures or road upgrades will be implemented (any proposed road upgrades will require consultation with and agreement of the relevant road authorities i.e. KIC and/or DIT).

SCHEDULE 1: CONDITIONS TO APPLY TO THE USE OF 19.0 M SEMI-TRAILERS TO TRANSPORT TIMBER PRODUCTS TO THE SEAPORT

1. Freight Task – Salvage Operation

The total estimated standing stock after the fires is 4.9 Mt. However, it is estimated that the likely volume of salvage from all plantations (including independent growers), to be transported to Smith Bay, will be 3.0 Mt. This is less than half planned production prior to the fires (6.95 Mt).

These numbers are subject to ongoing review and are time dependent, i.e. the salvage resource will decrease over time due to the combined effect of reduced moisture content and natural decay.

In addition to the impact on total production, the damage caused by the fires means the time available to salvage timber which still has commercial value is reduced from over 10 years to within the next five to six years.

For the purposes of this MOU, the estimated freight task to support the salvage operation is summarised in Table 1 below.

Table 1: Estimated annual production of timber to be transported to KI Seaport

	Before Fires GMT	After Fires GMT	
Calendar year		Total available in harvested areas	Estimated recoverable
2020	510,000		
2021	800,000	246,750	176,471
2022	490,000	1,172,000	705,882
2023	510,000	1,172,000	705,882
2024	500,000	1,172,000	705,882
2025	510,000	1,172,000	705,882
2026	510,000		
2027	510,000		
2028	600,000		
2029	600,000		
2030	700,000		
2031	710,000		
Total	6,950,000	4,934,750	2,999,999

source	Figure 4-2 Draft EIS	Woodstock model	PF Olsen maps

2. Preferred Principle (Main Road) Route to KI Seaport

The options for transporting salvage timber to the KI Seaport are constrained by the quality of the north–south roads on western and central Kangaroo Island.

The preferred option is to approach the Seaport along North Coast Road from the east. The last 10 km of North Coast Road from the east side to Smith Bay is unsealed.

KIPT has already committed to upgrade Freeoak Road and the intersection of Freeoak and North Coast roads to enable trucks to deliver to the KI Seaport site.

KIPT is prepared to enter into an arrangement with the State Government and the Council to deliver an upgrade (sealing) of the last 10 km of North Coast Road on the preferred eastern route to the relevant standard, for purposes of enabling the safe, efficient transport of timbers from the salvage operation in a manner that will minimise the associated community and environmental impacts.

3. Vehicle Type

Timber will be delivered to the Seaport by standard 19.0 m semi-trailers (i.e. general mass vehicle), with a payload of up to 28 tonnes, or any HPV authorised for such use by the National Heavy Vehicle Regulator.

4. Funding of Upgrade(s) of Principle Route

To facilitate this road upgrade, KIPT will enter into an agreement with the State Government and Council, the terms of which are to be negotiated, to provide certainty of on-going access for KIPT HPVs, on the basis that an agreed contribution by KIPT to the total cost of funding the upgrade. The State will also seek a funding contribution from the Commonwealth Government and make a contribution in its own right. KIPT will provide support where required for such funding applications.

Contributions to any other upgrades required to accommodate safe access along routes between forests and the proposed Seaport will be subject to further negotiations.

5. Operating Hours for Council Controlled Roads

The standard operating hours for timber vehicle movements will be Monday to Friday, 6.00 am to 6.00 pm excluding public holidays, and with the option of working a half-day on Saturdays (6.00 am to 12.00 noon) from time to time to make up for delays caused by various factors such as poor weather, road works etc.

6. Traffic Management Plans

Traffic management plans will be prepared to address the specific issues associated with each plantation e.g. access and egress from the plantation to the public road network, communication with neighbouring land users and other stakeholders, speed limits, signage, site lines and vegetation clearance etc.

A separate Traffic Management Plan will be prepared to manage the impact on all school bus routes.

7. Road Funding for Council Controlled Roads

KIPT has committed to repair/maintain the local or feeder roads that connect individual plantations to the nearest collector road; that is, at the end of the harvest campaign the roads will be at least as good as they were at the beginning of the campaign. This commitment applies to 15 council controlled local roads, all of which are unsealed. (See Table 2.)

Table 2: Council controlled local roads to be used for timber haulage

1	Jump Off Road
2	Snug Cove Road/Colmans Road
3	Baxters Road
4	North Coast Road/Berrymans Road
5	Gosse Ritchie Road
6	Turkey Lane/Johncock Road
7	Coopers Road
8	Tin Hut Road
9	Mount Taylor Road
10	Stokes Bay Road/North Coast Road
11	McBrides Road
12	Bark Hut Road
13	Yacca Jacks Road
14	Timber Creek Road
15	Church Road

SCHEDULE 2: ROUTES TO DELIVER TIMBER TO SMITH BAY USING 19.0 M SEMI-TRAILERS BY YEAR

(see attached maps)

Appendix A2 – Draft Traffic Management Plan

KI Seaport

Traffic Management Plan Template

Working Draft

Traffic Management Plan Template

This Traffic Management Plan template (TMP) has been designed to assist in developing and implementing a safe and efficient haulage operation to transport timber products from plantations to the KI Seaport at Smith Bay.

The TMP is to be completed by Kangaroo Island Plantation Timbers (KIPT) or its delegate. KIPT must consult with relevant stakeholders. The TMP is to be approved by the relevant road authority e.g. the Department of Infrastructure and Transport, for arterial roads, and the Kangaroo Island Council for all other public roads. Where both road authorities are involved, a single TMP is to be used.

A route survey and a risk-based hazard analysis should be completed, with input from relevant stakeholders.

Examples of risks and examples of control measures are shown in Table 1, and the risk assessment criteria and risk assessment matrix are shown in Figure 2.

The TMP is to be supplemented by maps and photographs wherever possible.

Table 1:Overview of freight task

TMP prepared by	Company	
	Authorised officer	
	Phone number	
	Email	
	Date	
TMP approved by	Road authority	
	Authorised officer	
	Phone number	
	Email	
	Date	
Stakeholders consulted		
Reason for preparing TMP		
Duration of operation		
Date of next review		
Estimated volume of timber to be carted		
Location of plantation/coupe		
Journey covered by TMP		
Roads to be used		
Exit and entry points from/to public road and plantation	Attach detailed maps	
Vehicles to be used	Type	
	Max length	
	Max weight	
	Axles	
Vehicle frequency per day	Number of loaded trucks leaving	

Table 2: Examples of risk and examples of control measures

Examples of risk	**Examples of control measures**
Narrow windy roads	Speed limits
Unsealed road surface	Curfews
Reduced sight distance	UHF communication
Concealed driveways or intersections	Scrub cutting
Schools, school crossings and school bus routes	Warning signs
Local traffic	Stakeholder communication and awareness
Tourist traffic	Driver training
Livestock on roads	
Native fauna	
Poor UHF communications	
Poor visibility due to inclement weather	
Steep descent	

Table 3: Severity of consequences

Category	Level	Environment/Socio-economic	Community/Reputational	Legal
A	Negligible effect	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders
B	Minor effect	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders
C	Moderate effect	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders
D	Major effect	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders
E	Disastrous effect	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders	To be completed in consultation with stakeholders

Table 4: Likelihood of event occurring

Level		Criteria
1	Virtually impossible	Has almost never occurred elsewhere in similar situations but is conceivable over the next 100 years.
2	Unlikely	Has occurred a few times elsewhere in similar situations. May occur within decades.
3	Possible	An occasional occurrence elsewhere in similar circumstances. May occur within the next few years.
4	Likely	A regular occurrence elsewhere in similar situations. Likely to occur within months.
5	Virtually certain	A very frequent occurrence elsewhere in similar situations. Expected to occur within days to weeks, or ongoing.

Table 5: Risk assessment matrix

			Likelihood				
			1 Virtually impossible	2 Unlikely	3 Possible	4 Likely	5 Virtually certain
Consequence	1	Negligible effect	1 (low)	2 (low)	3 (Low)	4 (low)	5 (medium)
	2	Minor effect	2 (low)	4 (low)	6 (medium)	8 (medium)	10 (high)
	3	Moderate effect	3 (low)	6 (medium)	9 (medium)	12 (high)	15 (extreme)
	4	Major effect	4 (low)	8 (medium)	12 (high)	16 (extreme)	20 (extreme)
	5	Disastrous effect	5 (medium)	10 (high)	15 (extreme)	20 (extreme)	25 (extreme)

>=0	0-low	Low risks will be maintained under review, but it is expected that existing controls will be sufficient, and no further action will be required to treat them unless they become more severe.
>=5	5-medium	Medium risks can be expected to form part of routine operations, but they will be explicitly assigned to relevant managers for action, maintained under review and reported upon at senior management level.
>=10	10-high	High risks demand attention at the most senior management level to ensure that they are mitigated and controlled as rapidly as possible. They are reported on at the executive level.
>=17	17-extreme	Extreme risks demand urgent attention at the most senior (including executive) level and must be immediately controlled. Operations must cease if the risk cannot be controlled.

Table 6: Hazards and controls

Hazard	Yes/no	Risk rating	Control
Load			
• Product (e.g. logs, chip)			
– logs			
– woodchip			
– other (specify)			
• Volume (max)			
• Weight (max)			
• Height (max)			
Road condition			
• Narrow roads			
• Unsealed road surface			
• Shoulder widths			
• Other road surface issues			
• Bridges			
• Culverts			
• Steep roads			
• Intersections			
• Concealed entrances			
• Flooding			
• Poor sight lines			
Presence of sensitive receptors			
• Schools			
• School crossing			
• School bus route			
• Residences along route			
• Seasonal traffic i.e. tourism			
• Livestock on roads			
• Other			
Other conditions			
• Poor UHF communication			
• Vision at dusk and dawn			
• Presence of native fauna			
• Noise			
• Dust			
• Overhanging trees			
• Other			

Table 7: Route survey

Road section and description (attach map)	Length	Hazards	Controls

Table 8: Additional comments or observations

1	
2	
3	
4	
5	
6	

Table 9: Road authority use

	Department of Infrastructure and Transport	Kangaroo Island Council
Road pavement type and condition		
Suitability for expected loads		
Lane and shoulder widths		
Sweep path issues		
Vertical clearances		
Community impact issues		
Other		

Appendix A3 – Code of Behaviour

Fire Salvage Kangaroo Island

Driver Code of Behaviour

Harvestco Group of Companies
Safety by Choice, Not by Chance
408 Bolger's Road • Devon North • Victoria 3971 • Australia • admin@harvestcogroup.com.au • 03 5185 1401 • 0428 581 401

INTRODUCTION

Harvestco has been selected to provide the Harvest and Haulage services for KIPT and are privileged to have been selected to perform the operations on the Island. Harvestco is a well respected Company that operates in several forestry regions including Adelaide Hills, and are very aware of the concerns around Log Trucks that the communities and other road users have, it is our duty to remove or address as many of those concerns as possible whilst maintaining the safety of our staff and the community.

This Code of Behaviour has been written with road safety as its number one priority and also addresses the concerns of affected communities and other users of the road. It is designed to reduce the impact of log truck traffic using the Islands roads, and meet KIPT's Social Charter as per below in particular the Red highlighted points

Kangaroo Island Plantation Timbers Ltd
Some practicalities about how we will operate

KIPT seeks to be a good citizen on Kangaroo Island. This means a number of things:

- we want to be a good and fair employer;
- we want to be a good and fair company to do business with for our partners, contractors and other suppliers;
- we want to be a good neighbour to people owning adjacent properties and to everyone on the western end of the Island;
- we want to be a good neighbour to the tourism industry and all who share the roads we will use; and
- we want to help maintain and enhance the Island's unique natural environment.

We want to operate safely and have zero injuries. This means:

- we will have policies and procedures that must be followed;
- we will not prioritise productivity or financial outcomes over workplace health and safety;
- we will integrate workplace health and safety into all our business planning; and
- all workers, whether directly employed or employed by contractors, must take practical ownership of health and safety in our shared workplace.

We particularly understand that the plantation forestry industry has a long and chequered history on Kangaroo Island - starting things that it then lacked the capacity to complete. We acknowledge the impact of this on the Island and its residents.

We believe that the Kangaroo Island Sea Port unlocks a sustainable industry that will, as soon as harvesting starts and forever thereafter, be as important to Kangaroo Island as tourism and agriculture are now.

However, we do not expect the bright future for forestry on Kangaroo Island to be achieved without hard work and a consistent pattern of investment. This requires us to form partnerships with companies with a variety of forestry skills and capacities. We will fairly share the benefits of estate productivity, benign topography and, in time, a supportive community. In return we require a focus on and commitment to lowest sustainable cost operations.

We (and our partners and contractors) will deal respectfully with the people we want to embrace our industry in the future. We will conduct ourselves with the humility appropriate to acknowledge the past failures of the forestry industry, even if those failures were not our own.

CODE OF BEHAVIOUR

Issues and Actions

Harvestco's major concerns about log truck use of the Islands roads include safety of all road users, impact on neighbours and houses near haulage routes, and the road network (in particular the gravel roads). In addition, there are a number of community concerns that can also be addressed by demonstrating that Harvestco will try to meet community expectations wherever possible.

These issues are outlined in more detail below, with corresponding actions that will be implemented by Harvestco to address them.

NOISE

Issue

Engine brakes are a very important and effective component on modern trucks. They decrease the need to use the vehicle brakes, reducing brake overheating and fading, therefore increasing the safety of the vehicle on long downhill runs. Unfortunately, they can be very noisy and annoying in residential areas. Log Trucks on remote low usage roads are noisy compared to the usual vehicle traffic

Action

All Harvestco vehicles are fitted with Silent Engine brakes and Euro 5 or 6 engines which will ensure our vehicles are as quiet as possible. We will take into account farmhouses and other single residences on remote roads, and ensure vehicles travel at a reduced speed to minimise the noise impact particularly at night.

DUST

Issue

When operating on dry dusty roads, dust is caught in wheel rims and brake drums and held by centrifugal force. This dust can be carried for many miles and once the truck stops falls to the road. Unfortunately, this is quite often at intersections in townships and can cause annoyance to residents. Log Trucks using rural gravel roads can generate a lot of dust around rural properties and for other road users.

Action

When we have been operating on dusty roads we will do as much as practicable to drop as much dust as we can before reaching towns. This may include stopping at the end of dusty roads and backing up or tapping rims with a mallet. Harvestco will limit speed on gravel roads to 50KPH to minimise dust and even slower past residences if needed.

ROAD SURFACE/DAMAGE

Issue

When operating on roads that are not frequently used by heavy vehicles damage to road surface can occur.

Action

When operating on gravel roads Harvestco will limit speed to 50KPH, ensure CTI is used correctly, ensure axle weights are correct, monitor weather conditions, communicate arising damage with KIPT/KI Council to maintain, and drive to the conditions

LOAD SECURITY

Issue

Many complaints are received about small pieces of wood and other debris falling from log trucks. Many of these are from empty jinkers and skels on their return journeys.

Action

When loaded, care will be taken to ensure that loose pieces of wood and bark are unable to fall from the vehicle. Once the truck is unloaded all remaining loose debris will be removed before leaving. We will observe the National Load Restraint Guide and ensure loads are crowned.

MASS LIMITS

Issue

Overloaded trucks can dramatically increase rate of road wear and roughness.

Action

We will load trucks to keep within legal mass limits. We will liaise with NHVR and KI Council to ensure that no bridge or road mass limits are exceeded and obtain necessary permits where required. For vehicles allowed to travel at higher mass limits, care will be taken to ensure that appropriate permits are obtained and the Higher Mass Limit (HML) routes followed.
All vehicles will be fitted with electronic weighing systems and the loads printed off and load CSV file shared with KIPT.

ALLOWING TRAFFIC TO PASS

Issue

On narrow, hilly and winding roads, loaded log trucks generally travel slower than other vehicles. It is well known that many drivers get impatient when travelling behind a slower truck.

Action

Loaded trucks must pull over when traffic builds up behind them to allow traffic to pass.We will, as much as practicable (when safe and appropriate), slow down and pull to the side of the road to allow traffic to pass. When travelling behind another truck we will take into account the passing opportunities for other vehicles and not travel too close.

ROAD WORKS

Issue

Increased road use will mean increased road maintenance. Although signs are erected on roadwork sites, many complaints are received from road workers about trucks and other vehicles travelling too fast between these signs. This creates a hazardous and unacceptable work environment.

Action

We will take extra care when travelling through roadworks and behave in a courteous and responsible manner.

TRAVELLING THROUGH TOWNS AND SCHOOL CROSSINGS

Issue

Due to their size and appearance the public is very aware when log trucks travel through small towns and are often under the impression that they are travelling too fast.

Action

When travelling through small towns we will use extra care to keep our speed and noise down, particularly in the vicinity of school crossings.

TIMES OF TRAVEL

Issue

We are aware that at certain times some roads have extra traffic on them. Many of these vehicles are not accustomed to driving these roads and can create extra hazards This may be due to specific events or at times when tourist traffic increases.

Action

When we are aware of any increase in traffic flow we will take this into account and adjust our travel times or driving behaviour to suit. We will also familiarise ourselves of school bus travel times on remote roads and take due care.

GENERAL DRIVING BEHAVIOUR

Issue

Log trucks are very obvious on public roads. The forest industry is often judged by the public by the driving behaviour of log truck drivers. Behaviour such as tailgating and travelling in convoys with no space between trucks is unsafe and results in much criticism from the public and authorities. UHF radio traffic can be heard by other radio users therefore it is important that appropriate language is used.

Action

Log Trucks must not tailgate other vehicles or travel too close behind other log trucks. UHF radio traffic must be civil and courteous.

SPEED

Issue

Log trucks should be travelling at the appropriate speed for the conditions. This will enable them to stay on the correct side of the road, and reduce the effects of road damage to the inside shoulder areas of the pavement near the edge line.

Action

Trucks are to travel at a speed that is appropriate for the particular section of road that will enable them to stay on the correct side of the road. Trucks, both loaded and empty, are not to exceed the posted speed limit. All travel on gravel roads is be under 50KPH unless specified in the Haulage Route Assessment or permit

Appendix B – Marine Pest Management

Appendix B1 – Draft Biosecurity Management Plan

KI Seaport

Biosecurity Management Plan

Working Draft

KANGAROO ISLAND PLANTATION TIMBERS

Table of Contents

NOTE THAT COMMENTS FROM PIRSA (BIOSECURITY) HAVE BEEN CONSIDERED. FURTHER CONSULTATION WILL OCCUR WITH DAWE AND KANGAROO ISLAND LANDSCAPE BOARD (AND PIRSA IF REQUIRED) TO FINALISE THE DOCUMENT

1. INTRODUCTION

Kangaroo Island Plantation Timbers (KIPT) propose to establish and operate the KI Seaport using an environmental management framework (EMF) that is consistent with Australian Standards (i.e. AS/NZS ISO 14001:2016 *Environmental Management Systems*).

The framework described in Chapter 26 of the Smith Bay Wharf Draft Environmental Impact Statement (Draft EIS) provides an overarching strategy to manage potential environmental impacts during the construction of the KI Seaport. Construction activities at Smith Bay will ultimately be managed through the development and implementation of Environmental Management Plans (EMPs) addressing all relevant construction activities.

The overall goal of the Biosecurity Management Plan (BMP) is to avoid, mitigate, manage and/or control any potentially adverse impacts of port construction and operational activities associated with the development on the biological, physical, social or economic environment. The BMP will also give effect to any approval conditions imposed, and all commitments made by KIPT.

The Plan must be read in conjunction with the following management plans:

- Construction Environmental Management Plan
- Operational Environmental Management Plan
- Marine Pest and Disease Management Plan – Construction
- Marine Pest and Diseases Management Plan – Operations
- Terrestrial Pest Management Plan – Construction
- Terrestrial Pest Management Plan – Operations.

1.1 Management Framework

The proposed management framework for biosecurity is presented in Figure 1-1.

The Biosecurity Management Plan provides the framework for how biosecurity issues will be managed during the construction and operation of the KI Seaport. The management measures that will be implemented are detailed in the relevant management plans for marine pests and diseases and terrestrial pests.

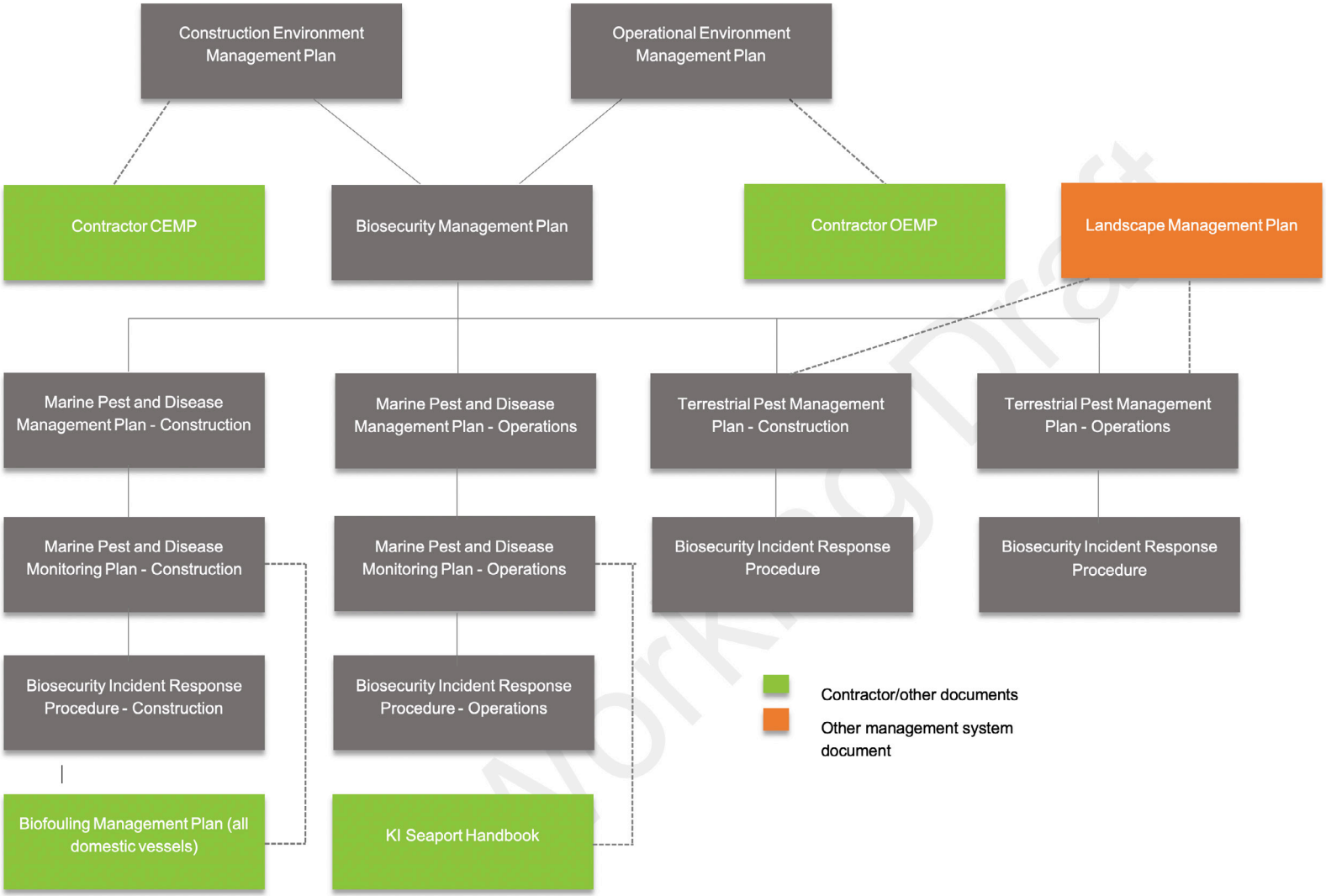


Figure 1-1: Biosecurity Management Framework (pls note the change from 'Operation' to 'Operations' in this figure to apply consistency with the bullet points above?

1.2 Project Overview

Timber product (logs and woodchips) will be transported to Smith Bay and stored before loading on to vessels for export. The KI Seaport will consist of a deep-water port and associated onshore facilities to handle and load these products into Panamax-size vessels, with the option of using smaller Handymax-size vessels as requirements dictate.

The Biosecurity Management Plan will apply to the operation and construction of all components of the KI Seaport:

- Port/off-shore components:
  - navigation aids
  - floating pontoon wharf with wharf furniture (fenders, bollards, kerbs etc.)
  - restraint dolphins for restraint of pontoon
  - mooring dolphin at either end of wharf for vessel head and stern lines
  - linkspan bridge
  - approach (causeway and suspended deck)
  - tug mooring facility/pen.
- On-shore activities/components:
  - storage areas for logs and woodchips
  - internal access roads
  - site access road to North Coast Road
  - stormwater drainage and retention system
  - site security fencing and lighting
  - site offices, product testing room and crib/lunchroom
  - generator, diesel tanks and associated spill bunding.
- Materials handling activities/components:
  - receival, stockpile, reclaim and export conveyor system (including receival, screen and resize facility, stockpile management system, reclaim hopper/s, export/causeway conveyor, shiploader feed conveyor, shiploader)
  - truck weighbridge
  - truck wash facilities (if required).

The Biosecurity Management Plan will apply to all operators and users of the facility. With relevant plans, the Biosecurity Management Plan will be included in contractor documentation and provided to future users of the KI Seaport.

The Biosecurity Management Plan has been developed in consultation with relevant government agencies to address any concerns.

1.3 Structure

This BMP provides a high-level overview of biosecurity issues that are present at the KI Seaport. Details on the management measures are provided in the relevant sub-management plans as shown in Figure 1-1. The BMP provides the legal framework, development conditions, relevant objectives, reporting requirements and management plan review.

1.4 Objectives

The objectives of the Biosecurity Management Plan are:

- to minimise risks to the biosecurity status of Kangaroo Island and its waters.

The values to be protected include:

- terrestrial ecosystems
- marine ecosystems
- industry.

1.5 Assessment Criteria and Monitoring

The achievement of the objectives of the Biosecurity Management Plan will be measured using the assessment criteria presented in Table 1-1.

Table 1-1: Assessment criteria and monitoring for biosecurity

Assessment criteria	Monitoring
No significant impact to the biosecurity status of Kangaroo Island	Monitor for presence of any marine pests and/or diseases. Monitor for presence of any terrestrial pests and/or diseases.

1.6 Roles and Responsibilities

All personnel involved in the project including KI Seaport employees, contractors and sub-contractors, are required to comply with this Biosecurity Management Plan, and in accordance with all relevant Acts, Policies and Regulations.

Table 1-2 outlines the roles and responsibilities for the implementation of the Biosecurity Management Plan.

Table 1-2: Roles and responsibilities {needs to be consistent with other Plans and CEMP-S}

Role	Responsibility
KIPT	Responsible for implementing requirements set for the development by development approval conditions and in legislation, regulation, codes of practice, and industry standards and implementing its environmental policy to minimise impacts and demonstrate commitment to sustainable practices. Ultimately responsibility for compliance.
KIPT Approvals Manager	Reporting compliance measures and performance to KIPT Board and Executive and to government. Managing communications to government agencies.
KIPT Environment Manager	Ensure the Biosecurity Management Plan is implemented, and update documentation as required to reflect environmental legislation, design or operational changes. Coordinate monitoring programs and reporting to authorities. Communicate with and support the KIPT Approvals Manager Manage environmental incidents and responses. Ensure KIPT environmental policy is reviewed annually. Manage environmental matters in relation to stakeholder engagement. Coordinate environmental awareness training and implement sustainability initiatives.
Seaport Project Director	Promoting the culture of environment protection and providing clear expectations and guidelines. Reporting to the KIPT Executive. Overseeing the involvement of all internal and external stakeholders and addressing issues raised. Supporting the Environment Manager in ensuring BMP Specifications are met. Identifying issues or concerns for Contractor CEMP implementation. Intervening, if required, to ensure any deviation from Contractor CEMP requirements are corrected.
KI Seaport Operations Manager/s	Ensuring that all environmental management requirements in the Biosecurity Management Plan are clearly communicated to all relevant staff through appropriate inductions and other training where necessary. Providing operations staff with written instructions/protocols/methods regarding environmental management requirements and responsibilities. Ensuring all necessary environmental approvals and licences are secured before operations begin. Ensuring and monitoring compliance of activities with conditions of relevant licences, permits and the Biosecurity Management Plan. Liaising with PIRSA, KI Landscape Board and other regulatory authorities as required. Intervening, if required, to ensure any deviation from EMF requirements is corrected Notifying any legislative breaches or environmental incidents to authorities in conformity with statutory requirements. Responding to any complaints received.
Seaport Contractor Construction Site Supervisor/s	Ensuring that all requirements in the BMP are clearly communicated to all relevant contractors via appropriate inductions. Reporting to the Seaport Project Manager/s. Communicating any written instructions/protocols/methods regarding BMP requirements and responsibilities. Adhering to any requirements in environmental approvals and licences relevant to any activities. Monitoring compliance with conditions of relevant licences, permits and the BMP.

Role	Responsibility
	Intervening, if required, to ensure any deviation from BMP requirements is corrected. Notifying any legislative breaches or environmental incidents to authorities in conformity with statutory requirements. Reporting and responding to any complaints received, as per KIPT requirements.
Seaport Staff/Contractors	Understand and respect environmental responsibilities and diligently follow all environmental procedures communicated to them by their supervisor/s. Completing all required inductions and/or environmental awareness training before starting work on site. Reporting any environmental incidents and complaints as per approved procedure. Identifying and communicating any improvements for environmental management.
Port Operator	Ensure compliance with the *Harbors and Navigation Act 1993.* Ensure the Biosecurity Management Plan is implemented. Ensure all staff have undertaken relevant biosecurity training. Development and implementation of documentation to meet the relevant Biosecurity Standards (see Appendix A) for a First Point of Entry.
Vessel Master	Ensure that the Australian Ballast Water Management Requirements under the *Biosecurity Act 2015* are met. Compliance with the Commonwealth Anti-fouling and in-Water Cleaning Guidelines. Compliance with National Biofouling Management Guidelines for Commercial Vessels. Completion of the KI Seaport Pre-entry Risk Assessment (See Marine Pest and Disease Management Plan – Operations).

1.7 Stakeholder Engagement

Relevant stakeholders include:

- Commonwealth Department of Agriculture, Water and Environment (DAWE)
- Department of Infrastructure, Transport, Regional Development, and Communications (DITRDC)
- Department of Primary Industries and Regions South Australia – Biosecurity SA (PIRSA)
- South Australian Research and Development Institute (SARDI)
- South Australian Environment Protection Authority (EPA)
- KI Landscape Board
- Landscape South Australia Kangaroo Island
- Yumbah Aquaculture
- Flinders Port Holdings.

The Biosecurity Management Plan has been developed in consultation with the following stakeholders:

- Commonwealth Department of Agriculture, Water and Environment (DAWE)
- PIRSA
- Landscape South Australia Kangaroo Island.

1.8 Training

All KI Seaport staff and contractors will be required to undertake training in environmental management as part of their induction to the site and its activities before any construction or operational activities could begin. Induction training will address:

- background to the KI Seaport
- approval conditions, and the role of the EMF
- legislative requirements of the company and individuals
- key personnel and roles
- KI Seaport EMPs
- environmental issues at the site and relevant management plans and procedures
- community issues related to the project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and Incident reporting and management procedure
- emergency response plan.

Job-specific training will also be required. The KI Seaport Project Manager/s will be responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

1.9 Environmental Aspects

Environmental aspects are defined as elements of an organisation's activities, products or services that cold interact with the environment. A significant environmental aspect has, or could have, a significant environmental impact (AS/NZS ISO 14001:2016).

Activities associated with the operation of the KI Seaport have the potential to introduce pest species and/or diseases that could affect the biosecurity status of Kangaroo Island and must be managed appropriately. The aspects of the development related to biosecurity risk include:

- pile installation 650 m into Smith Bay
- ballast water discharge
- biofouling
- in-water and dry dock vessel cleaning
- stowaways on shipping vessels and/or construction equipment
- soil and plant material on construction equipment and operational equipment (from mainland South Australia)
- soil and plant material on construction and operational equipment (i.e. forestry traffic) moving from one part of Kangaroo Island to another.

Potential impacts associated with these aspects include:

- introduction of aquatic pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus* and the oyster disease Pacific oyster mortality syndrome (POMS)) that could harm industry
- introduction of vertebrate or invertebrate pest species and/or diseases that could harm native fauna, flora, ecosystems and industry
- translocation of weeds, pests and/or diseases to other areas of Kangaroo Island
- introduction or translocation of microalgae that could result in human health impacts via consumption of contaminated shellfish.

The significant environmental aspects for the development were identified from the environmental assessment and are shown in Table 1-3.

Table 1-3: Environmental aspects, objectives and potential impacts to be managed at the KI Seaport

Environmental aspect	Objectives	Activity	Potential impacts
Biosecurity • introduction or spread of pest plants, pest animals and/or diseases • ballast water discharge • biofouling (including in-water and dry dock vessel cleaning) • stowaways on shipping vessels	No introduction of new pest plants or pest animals, nor material increase in the abundance or area of existing pest plant or pest animals. No introduction or spread within Kangaroo Island, of plant or animal diseases. To minimise the risks to the biosecurity status of Kangaroo Island. To minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters.	Shipping activity – sea freight as a vector for pests and diseases. On-shore operational activities – importation of equipment and/or consumables as a vector for pests and diseases. On-shore operational activities – timber product transport and/or movement of consumables within Kangaroo Island as a vector for pests and diseases. Construction shipping activity – movement of plant as a vector for pests and diseases. On-shore construction activities – importation of equipment and or consumables as a vector for pests and diseases. Shipping activity – ballast water discharge as a vector for the introduction of microalgae (that result in harmful algal blooms).	• adverse impacts (disease, predation, increased competition, reduction in habitat) on flora and fauna from pest plants, pest animals and/or diseases • financial impacts to industry as a result of new pest plants, pest animals and/or diseases on the Island • introduction of pest species and/or diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry • introduction of POMS into Kangaroo Island aquaculture oyster leases • introduction of vertebrate or invertebrate pest species and/or diseases that could harm native fauna, flora, ecosystems and industry • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish • harmful algal blooms that impact aquaculture operations at Smith Bay
Generation of waste and discharges • waste generation • ballast water discharge	No introduction of marine pests. No introduction of new pest plants or pest animals, nor material increase in the	On-shore activities . Shipping – ballast water and biofouling. Off-shore construction activities. On-shore construction activities.	• generation of wastes requiring disposal • incorrect storage of waste that attracts pest animals • marine pollution and effects on marine communities • potential introduction of pest species and diseases (particularly the abalone disease

Environmental aspect	Objectives	Activity	Potential impacts
	abundance or area of existing pest plant or pest animals. No introduction of plant or animal diseases.		AVG, the abalone parasite *Perkinsus* and the oyster disease POMS) • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish • harmful algal blooms that impact aquaculture operations at Smith Bay

2. LEGAL REQUIREMENTS AND GUIDELINES

The following environmental legislation, regulations and guidelines provide the regulatory framework around which the BMP is based.

2.1 International Legislation

The Australian Government fulfils its international biosecurity obligations and protects Australia's resources from biosecurity threats by implementing the *Biosecurity Act 2015*. A risk assessment approach is used to assess an import proposal or new information on a biosecurity risk in accordance with all international obligations, statutes and values (DAWE 2019).

One of the more significant environmental issues associated with the project is the biosecurity risk arising from the discharge of ships' ballast water. Australia is a signatory to the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BMW Convention) (IMO 2004) which came into effect on 8 September 2017.

Parties to the BWM Convention undertake to fully implement the provisions of this Convention and its annex to prevent, minimise and ultimately eliminate the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments.

Chapter 5 of the Biosecurity Act reflects this Convention by regulating the biosecurity risks associated with the discharge of ballast water by domestic and foreign vessels in Australian waters. The ballast water management provisions of the Act came into effect on the same day as the Convention. The 'base' position of the Commonwealth under the Biosecurity Act is that it is an offence for a vessel to discharge ballast water into Australian seas – that is to the limits of the exclusive economic zone (EEZ) that extend 200 nautical miles from the Australian shoreline or to the limits of the continental shelf, whichever is the greater.

Biofouling (the marine plants and animals that attach and grow on the submerged parts of a vessel) from international vessels such as cruise ships, cargo and fishing vessels as well as private recreational vessels is also a major pathway for the introduction of exotic pest species and aquatic diseases into Australian waters. Biofouling can also translocate marine pests and diseases from one part of the Australian coastline to another. The Department of Agriculture, Water and the Environment (DAWE) is currently undertaking activities to develop new biofouling standards that are consistent with the direction of the International Maritime Organization (IMO) (DAWE 2020b).

2.2 Commonwealth Legislation

The following Commonwealth legislation, national codes of practice and plans are applicable to the Biosecurity Management Plan:

- *Biosecurity Act 2015*
- Biosecurity Regulations 2016
- Anti-fouling and in-Water Cleaning Guidelines (Commonwealth of Australia 2015)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2009a)
- National Biofouling Management Guidance for Non-Commercial Vessels (Commonwealth of Australia,2009b)
- Australian Ballast Water Management Requirements, Version 8 (DAWE 2020a)
- Marine Pest Plan 2018-2023: National Strategic Plan for Marine Biosecurity (DAWR 2018)
- National Invasive Ant Biosecurity Plan 2018–2028 (EIC 2019)

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, (ANZECC & ARMCANZ, 2000)
- National Plant Biosecurity Strategy 2010 (Plant Health Australia 2010)
- National Forest Biosecurity Surveillance Strategy 2018–2023 (Plant Health Australia 2018).

2.3 South Australian Legislation

The following South Australian legislation and supporting documentation is applicable to biosecurity management:

- *Landscape South Australia Act 2019* – from 1 July 2020
- *Plant Health Act 2009*
- *Fisheries Management Act 2007*
- *Livestock Act 1997*
- *Environment Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- South Australian Biosecurity Policy 2020–2023 (PIRSA)
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia, 2017
- Plant Quarantine Standard (established under the *Plant Health Act 2009*).

It should be noted that a new piece of legislation (the South Australian Biosecurity Act) is currently available for public consultation (late 2020). The new Act will consolidate a number of existing Acts and provide for a simpler, modern and integrated framework for managing biosecurity.

2.4 Development Approval Requirements

INSERT APPROVAL CONDITIONS HERE

2.5 First Point of Entry

Subject to approval, it is anticipated that KIPT (or the port operator) will apply for Smith Bay to be determined as a first point of entry under the Biosecurity Act (section 229 of the *Biosecurity Act 2015*). This will facilitate movement of international goods out of Smith Bay (i.e. export only).

Before a port can be determined as a first point of entry, the Department of Agriculture, Water and the Environment (DAWE) will first assess its general eligibility based on the biosecurity risks posed by the proposed port's operations.

Once DAWE has determined that the risks can be acceptably managed, all operators facilitating international arrivals at the port must be assessed to ensure they comply with regulatory standards. The port must also meet the requirements in section 58 of the Biosecurity Regulation 2016. The First Point of Entry Biosecurity Standards (Ports), provides a guide for operators on how to meet these regulatory requirements (DAWR 2017).

2.5.1 Definition

A first point of entry (FPOE) broadly describes the place, usually an international port, where an alien (i.e. a passenger), and/or goods on board a transport vehicle (e.g. aircraft and marine vessels) makes initial contact to enter a country.

The proposed KI Seaport is designed for the export of timber products grown and harvested on Kangaroo Island. Domestic cargo loaded onto a vessel that is subject to biosecurity control (an international vessel) becomes exposed and is subject to biosecurity control. Consequently, requirements under biosecurity legislation apply.

2.5.2 Regulatory obligations for incoming vessels

FPOEs are established in Australia (including its external territories – Norfolk Island, Christmas Island, and the Cocos (Keeling) Islands) under the Commonwealth *Biosecurity Act 2015* (the Biosecurity Act) to manage potential biosecurity threats that aliens and/or goods may pose to human health, animals, plants and/or the environment. The Act, which replaced the *Quarantine Act 1908*, provides for the prevention, elimination, minimisation and management of biosecurity risks, and for other related purposes. The Biosecurity Act applies immediately goods and conveyances enter Australia and its territorial coastal sea, which generally extends 12 nautical miles (NM) from the coast. The Act is administered by the Department of Agriculture, Water and the Environment (DAWE).

The Biosecurity Act groups individual biosecurity risks and their corresponding requirements into four chapters – human health; goods; conveyances; and ballast water and sediment.

The Act, under section 229(1), empowers the Director of Biosecurity or the Director of Human Biosecurity to determine that a specified port in Australian territory is a FPOE for:

(a) vessels generally, or a specified class of vessels, that are subject to biosecurity control;
(b) specified goods, or a specified class of goods:
    (i) that are subject to biosecurity control; or
    (ii) in relation to which an exposed goods order is in force.

For the purposes of the Act and pursuant to subsection 229(1b), goods are defined under section 19(1) of the Act to include an animal; a plant (whether moveable or not); a sample or specimen of a disease agent; a pest; mail; any other article, substance or thing (including, but not limited to, any kind of moveable property).

It is mandatory requirement that all international vessels arriving in Australian territory arrive at a docking area that has been determined to be a FPOE under section 229 of the *Biosecurity Act 2015*, unless permission has been granted by the DAWE to dock at a non-first point of entry under section 247(2) of the Act. At the FPOE, the documentation of arriving ships and, if necessary, the ships themselves will be subject to inspection.

2.5.3 State legislation

Vessels entering South Australian waters are also subject to state legislation.

The *Fisheries Management Act 2007* provides for the control of noxious and exotic aquatic organisms, which include the implementation of management controls under the Act which prohibit (unless via a permit) the escape or release of exotic fish, and/or deposit of exotic fish (aquatic organisms) and plants into any South Australian waters. Noxious species are regulated under section 78.1 of the *Fisheries Management Act 2007*. Offences include the possession of noxious species and also bringing them into State waters, which would be the case if biofouling was attached to a vessel. The release of exotic species into State waters is regulated under section 78.2 of the *Fisheries Management Act 2007*, which would apply to hull cleaning that could potentially release exotic species.

The *Livestock Act 1997* provides for the management of notifiable diseases including acts causing or likely to cause livestock (e.g. aquaculture stock) to become affected with a notifiable condition and bringing a notifiable disease into the state.

The EPA Code of Practice for Vessel and Facility Management (Marine and Inland Waters) also applies at the KI Seaport and during construction.

2.5.4 The KI Seaport

Activities at the KI Seaport will include loading of woodchips into cargo holds via permanent barge-mounted materials handling infrastructure. Timber logs will be transferred from the storage yard to the pontoon by truck and will be loaded into the cargo holds by vessel cranes. No equipment on the ships will come to shore for loading activities.

As a result of discussions with relevant federal government agencies, the KI Seaport will need to be a FPOE. This assertion is justified by the fact that there is no existing port on Kangaroo Island, and therefore, the proposed construction of the port at Smith Bay requires that a FPOE be established to facilitate the export of goods from Australia. Accordingly, KIPT will make a formal application seeking to designate the KI Seaport as a FPOE (for the export of goods only).

DAWE is the Australian Government regulator that has the responsibility for monitoring compliance with both import and export legislation and will enforce laws and take action to address non-compliance where deemed necessary.

2.5.5 Border services at KI Seaport

The whole of Australian Government process for operators seeking to establish or expand international services is coordinated by Department of Infrastructure, Transport, Regional Development and Communications (DITRDC). DITRDC coordinates advice that is provided to the Australian Government in consultation with the Department of Home Affairs (DHA), the Department of Agriculture Water and the Environment (DAWE), and other relevant agencies.

Broadly, there is a formal four-phase procedure in the application for gazettal of a facility as a FPOE. An outline of the process and information on the roles of various government agencies is provided in the advisory document produced by the Australian Government: <https://www.infrastructure.gov.au/aviation/international/files/applying-for-border-services.pdf>.

Subject to a successful proposal to apply for gazettal as a FPOE, the relevant Australian Government agencies will work closely with KIPT (or the port operator) to establish a border services capability, provided that all agreed infrastructure requirements have been met.

2.5.6 Biosecurity Standards

If KIPT's application to become a FPOE is supported, KIPT (and operators of the KI Seaport) will be required to comply with relevant FPOE biosecurity standards. Specifically, KIPT and operators of the KI Seaport will be subject to section 58 of the Biosecurity Regulation 2016. A guide to meeting section 58 of the Biosecurity Regulation 2016 is available at: <https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/biosecurity/avm/vessels/point-entry-ports.pdf>.

As the KI Seaport will not be used to import goods to Australia, the facility will be required to comply with the FPOE biosecurity standards which apply to export-only operations. Details of the minimum sets of

standards that will apply to the KI Seaport for the purposes of export operations only (i.e. no imports) are provided in Appendix A. The relevant standards include:

- Biosecurity Incident Response Standard
- Waste Goods Management Standard
- General Port Facility Standard
- Biosecurity Risk Awareness Standard
- Environmental Management Standard.

The relevant standards are provided in Appendix A.

3. OTHER PROGRAMS

3.1.1 National Priority List

The National Priority List of Exotic Environmental Pests, Weeds and Diseases is a list of weeds, pests and diseases that are exotic to Australia, under eradication or have limited distribution (abbreviated to the National Priority List). The Chief Environmental Biosecurity Officer released an interim list of priority exotic environmental pests, weeds and diseases in October 2019 and the final list was released in November 2020 (DAWE 2020c). The National Priority List has sub-categories for marine pests, freshwater invertebrates, aquatic animal diseases, native animal diseases, plant diseases, vertebrates and weeds and freshwater algae. These pests, weeds and diseases are the focus of government investment and action, including funding through the Priority Pest and Disease Planning and Response. The overall list is maintained by the Environment Invasives Committee who consult with the Plant Health Committee, Animal Health Committee and the Marine Pest Sectoral Committee.

3.1.2 Kangaroo Island Biosecurity Strategy 2017–2027

The objectives of the Kangaroo Island Biosecurity Strategy are:

- Systems are in place for the early detection of biosecurity threats to Kangaroo Island.
- A strategic, targeted risk-based response prioritises current and emerging biosecurity threats.
- Biosecurity requirements, roles and responsibilities are clearly defined for all agencies, industries and the community.
- Kangaroo Island has the capability to respond to high-risk biosecurity threats.
- Management of existing pests, weeds and diseases is coordinated across the public and private sectors to limit their spread and impact.
- Effective leadership, planning, evaluation and improvement of Kangaroo Island's biosecurity system.

3.1.3 Feral Cat Eradication Program

The Kangaroo Island Feral Cat Eradication Program aims to eradicate feral cats from Kangaroo Island by 2030. The program is being led by the KI Landscape Board and the Kangaroo Island Council. The program is funded by the Australian Government with in-kind support from the Department for Environment and Water (DEW) and further contributions and support from Agriculture KI, PIRSA, Nature Foundation South Australia and other public donations.

The program is divided into three stages:

- Stage 1 included trials of feral cat control techniques and establishing baseline data (2016–2019).
- Stage 2 is the eradication of cats from Dudley Peninsula and gradual phasing out of pet cat ownership on Kangaroo Island (2019–2023, eradication of cats commenced in May 2020).

- Stage 3 will involve rolling out the successful eradication techniques to the rest of Kangaroo Island (2023–2030).

3.1.4 Kangaroo Island Too Good to Spoil Project 2013–2018

The Australian Government allocated funding for the Too Good to Spoil Project to undertake various activities in order to increase the biosecurity protection for Kangaroo Island. This program focussed on increasing the awareness of visitors to Kangaroo Island about the importance of protecting the biosecurity status of the Island.

4. REGULATORY AUTHORITIES

4.1 Biosecurity Management and Ballast Water – The Commonwealth

The Commonwealth Government of Australia has jurisdiction over Australian seas. Australian seas extend to the limits of the exclusive economic zone (EEZ) – that is 200 nautical miles from the Australian shoreline or to the limits of the continental shelf, whichever is the greater. Australian seas include the territorial sea of Australia that extends from the mean low water mark (or from a straight baseline as the case may be) for a distance of 12 nautical miles.

South Australian coastal waters extend three nautical miles from the mean low water mark or a straight baseline. Jurisdiction over these waters is vested in the adjacent State (in this case South Australia).

Any overlap of jurisdiction between the Commonwealth and a state, within the coastal waters of a state, is addressed by various agreements between the Commonwealth and the states that were entered into in the 1970s and 1980s and formalised by dedicated Commonwealth and state legislation.

The Commonwealth has the power to make laws over the movement of international vessels into and out of the proposed KI Seaport, even though it lies within waters over which South Australia has jurisdiction. It has done so in the case of ballast water management and interstate and international shipping. Ballast water regulation is exclusively the responsibility of the Commonwealth.

4.2 Biosecurity Management – State Responsibility

Weeds and pests in South Australia are managed by the *Landscape South Australia Act 2019* (which replaced the *Natural Resources Management Act 2004* in July 2020). Regional Landscape Boards were established under the *Landscape South Australia Act 2019* and work together with relevant state agencies to administer this Act in the terrestrial and marine environments.

Biosecurity SA is a division of the Department of Primary Industries and Regions South Australia (PIRSA) that provides leadership in biosecurity policy development and emergency response at a state-level. PIRSA is the administering agency for the *Fisheries Management Act 2007*, the *Aquaculture Act 2001*, *Livestock Act 1997* and *Plant Health Act 2009*. PIRSA are the primary agency for regulating vessel movements and managing biofouling in South Australian waters.

The Environment Protection Authority (EPA) is responsible for the implementation of the *Environment Protection Act 1993,* Environment Protection (Water Quality) Policy 2015 and the Code of Practice for Vessel and Facility Management (Marine and Inland Waters) (Ballantine 2017). This Code requires that operators must not perform in-water hull cleaning, that results in the removal of applied surface coating material (e.g. antifouling coatings) without written approval from the EPA. This code of practice applies to State Waters.

5. EXISTING ENVIRONMENT

5.1 Overview

Introduced species and diseases are a major threat to the biosecurity status of Kangaroo Island.

The most common sources of the introduction of invasive marine pests and diseases are via shipping (biofouling and ballast water), aquaculture and the aquarium industry (Kinloch et al. 2003; Hewitt & Campbell 2010).

Ballast water is water taken on board by vessels to maintain stability and trim. Ballast water can contain thousands of aquatic microbes, plants and animals, which can then be released locally as the vessel releases ballast water.

Biofouling (the marine plants and animals that attach and grow on the submerged parts of a vessel) from international vessels is also a major pathway for the introduction of exotic pest species and aquatic diseases into Australian waters. Biofouling can also translocate marine pests and diseases from one part of the Australian coastline to another.

The key vectors of marine pests and diseases that require mitigation during the construction and operation of the KI Seaport include:

- biofouling on vessel hulls and other external niches (such as propulsion units, steering gear and thruster tunnels)
- biofouling of vessels' internal niches (such as sea chests, strainers, seawater pipe work, anchor cable lockers and bilge spaces)
- biofouling on equipment that routinely becomes immersed in water (including but not limited to cutters, ladders)
- discharge of ballast water.

Terrestrial pests and diseases can also have a significant impact on the biosecurity status of Kangaroo Island.

The key vectors of terrestrial pests (including plants) and diseases that require mitigation during the construction and operation of the KI Seaport include:

- earthmoving equipment that may have soil or plant material in external niches
- importation of terrestrial plants to be used in landscaping
- importation of plants, animals or food items to Kangaroo Island
- vehicle movements from mainland South Australia to Kangaroo Island
- waste management processes that may attract vermin or feral animals
- hitch-hikers or stowaways (organisms) on international vessels that arrive at the KI Seaport.

5.2 Terrestrial Environment

Kangaroo Island's potato and apiary industries are free of major diseases that are found on the mainland (KINRMB 2017b). Kangaroo Island is a sanctuary for Ligurian bees (PIRSA 2020a) and the local population is considered a genetically pure strain. Apiary products are restricted from entry into Kangaroo Island unless they have been tested and verified as free of disease. The seed potato industry is considered to be relatively pest and disease free (KINRMB 2017a). The industry is protected by the *Plant Health Act 2009* which provides for biosecurity measures relating to potatoes (for consumption) as well as seed potatoes.

Kangaroo Island is currently free of the Giant Pine Scale Beetle (*Marchalina hellenica*), a biosecurity threat to pine forestry and timber production (PIRSA 2019).

The Island is notable for the absence of European rabbits (*Oryctolagus cuniculus*) and red foxes (*Vulpes vulpes*) (KINRMB 2009). The Commonwealth Department of the Environment and Energy (now the Department of Agriculture, Water and the Environment) declared Kangaroo Island free from feral goats and that the effective eradication of feral deer from the Island has also been achieved (Price 2018).

The study area is dominated by weeds, reflecting the overall degraded nature of the vegetation (EBS 2018). Of the 19 weed species recorded within the study area during the field survey, four are listed as declared under the NRM Act, which were:

- African boxthorn (*Lycium ferrocissimum*)
- bridal creeper (*Asparagus asparagoides f. asparagoides*)
- horehound (*Marrubium vulgare*)
- soursob (*Oxalis pes-caprae*).

Bridal creeper, which was found on the study site as scattered individuals, is also a Weed of National Significance (WoNS). Horehound and soursob were common throughout the study area.

Landscape South Australia Kangaroo Island has developed a list of declared pest plants under the *Landscape South Australia Act 2019* that have been detected on the Island and those declared pest plants yet to be recorded on Kangaroo Island (NRKI 2017b). Landscape South Australia Kangaroo Island has also developed a list of priority weeds to be managed, which includes horehound and bridal creeper (Landscape South Australia Kangaroo Island 2018).

Phytophthora is a soil-borne parasitic fungus that attacks the roots of plants and can cause significant plant death in affected vegetation communities. In South Australia, dieback caused by phytophthora has been found within a number of high-rainfall areas, including Kangaroo Island (Government of South Australia 2006). There is no record of phytophthora in the study area; however, it has been recorded within the local area (DEWNR 2012) and the study area is considered a moderate risk area for the pathogen (Government of South Australia 2006).

5.3 Marine Environment

More than 250 introduced marine species have been recorded in Australia (DAWR 2018b), including more than 20 in Kangaroo Island waters (Wiltshire et al. 2010). No introduced marine species have previously been recorded near Smith Bay, including during the marine surveys undertaken in 2016, 2018 and 2019. The closest records to the east are of the European fan worm at the Bay of Shoals and a number of species at Kingscote, and to the west a barnacle and a number of ascidians at Western River Cove (Wiltshire et al. 2010).

There is a land-based abalone farm adjacent to the KI Seaport, operated under three aquaculture licences. A series of intake and discharge pipelines service the facility and are located in the waters of Smith Bay adjacent to the KI Seaport.

The two most significant abalone diseases relevant to the study area are *abalone viral ganglioneuritis* (AVG), which has been detected in wild abalone stock in Victoria and in abalone farms in Victoria and Tasmania (but not in South Australia), and the abalone parasite *Perkinsus*, which is already present (and have persistent, high levels of infection) in the wild abalone populations in South Australia at Neptune Island and at the south-eastern tip of Yorke Peninsula (PIRSA 2018).

There are five aquaculture licences for oysters on Kangaroo Island, three are located at American River and two are in Nepean Bay. Pacific oysters (*Magallana gigas*) are susceptible to the disease Pacific oyster mortality syndrome (POMS). In February 2018, the first detection of POMS in South Australia was discovered in feral oysters in the Port River (PIRSA 2020).

6. MANAGEMENT MEASURES

Specific management measures to address terrestrial pests and diseases are provided in the Terrestrial Pest Management Plan – Construction and the Terrestrial Pest Management Plan – Operations.

Specific management measures to address marine biosecurity issues are provided in the Marine Pest and Disease Management Plan – Construction and Marine Pest and Disease Management Plan – Operations.

All management measures have been developed to meet the requirements of relevant regulatory requirements.

A port handbook will be developed to provide all relevant information to vessels visiting the KI Seaport.

7. BIOSECURITY INCIDENT RESPONSE

7.1 Definition

A biosecurity incident of the type that could occur during construction and operation of the KI Seaport, is defined as:

> *an unintentional, unforeseen or uncontrolled exposure to an exotic pest and/or disease. The incident may be marine or terrestrial in nature. The definition includes the introduction of a new pest and/or disease as well as the translocation of a new pest and/or disease from another part of Kangaroo Island.*

Specific biosecurity incident reporting procedures have been developed by KIPT for the construction and operation of the KI Seaport. Refer to:

- Marine Pest and Disease Management Plan – Construction
- Marine Pest and Diseases Management Plan – Operations
- Terrestrial Pest Management Plan – Construction
- Terrestrial Pest Management Plan – Operations.

7.2 National Response to Biosecurity Incidents

When a pest or disease outbreak occurs in Australia, which is also referred to a biosecurity incident, arrangements are in place to allow for a rapid nationally-coordinated response.

An outbreak will be managed on the ground either by the Department of Agriculture, Water and the Environment (DAWE) or the primary industries agency, in the state or territory in which the outbreak occurs (in South Australia this will be the Department of Primary Industries and Regions).

The Biosecurity Incident Management System (BIMS) has been developed to provide guidance on the management of biosecurity incident responses and initial recovery operations in Australia. The BIMS is the same system used by other Australian emergency response service agencies, including the State Emergency Service (National Pest and Disease Outbreak 2020).

Four response plans have been developed by the relevant organisation that acts as the national coordinator of the government-industry partnership to actively manage a biosecurity incident and include:

- AUSVETPLAN – Australian Veterinary Emergency Plan which is made up of a series of manuals to manage a disease outbreak relating to animal health (developed by Animal Health Australia <https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/>).
- AQUAVETPLAN – sets out the preferred to approach to diseases that affect aquatic animals, including finfish, crustaceans and molluscs (developed by the Department of Agriculture, Water and the Environment in conjunction with animal health experts <https://www.agriculture.gov.au/animal/aquatic/aquavetplan>).
- PLANTPLAN – the agreed technical response plan used for emergency plant pest incidents (developed by Plant Health Australia <https://www.planthealthaustralia.com.au/biosecurity/incursion-management/plantplan/>).
- EMPPlan – Emergency Marine Pest Plan provides the response to pest emergencies in Australia's marine environment (developed by the Department of Agriculture, Water and the Environment in conjunction with marine pest experts <https://www.agriculture.gov.au/pests-diseases-weeds/marine-pests/empplan>).

8. REPORTING REQUIREMENTS

Any sightings of suspected and/or confirmed pest species and/or diseases are to be reported to KI Seaport project manager/s and relevant authorities in conformity with statutory requirements.

Compliance reporting will be undertaken in accordance with relevant licences/permits issued by government regulators.

8.1 Non-conformance

Any observed impacts to the biosecurity status of Kangaroo Island are to be reported to the KI Seaport project manager/s. Should the presence of pests or diseases be attributed to activity associated with operation of the KI Seaport, work must cease immediately, and KI Seaport operation manager/s and project manager/s are to be notified. Appropriate corrective action will be undertaken in conjunction with guidance from relevant government departments and regulators.

Non-conformances will be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

9. MANAGEMENT PLAN REVIEW

The Biosecurity Management Plan will be subject to regular review by KIPT. The review process will be undertaken in the event of:

- changes to applicable legislation
- operational changes
- improvements to the management plan and/or framework
- other relevant changes.

Management plan review will include a review of progress against the biosecurity objectives presented in Table 1-3.

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Appendix a

FPOE Biosecurity Standards

Table 9-1: Biosecurity incident response standard

Standard	Evidence	Responsibility	Applicable to KI Seaport
Biosecurity incident preparedness	Written evidence [a] that is easily accessible to staff and that includes: • clearly articulated requirement to isolate and contain biosecurity risk and report it immediately to the department • nominated contacts responsible for initiating an immediate response on behalf of the first point of entry • where there are no approved treatment providers close to the port, specific arrangements approved by the Department of Agriculture and Water Resources (now DAWE) for containing detected or suspected exotic pests • for common user facilities, all operators acknowledge and accept their responsibility for biosecurity incident preparedness and response through contractual arrangements or under their terms and conditions for use of common user berths.	Port authorities that manage general areas of the port must have incident preparedness plans for these areas. Individual operators must have incident preparedness plans for all berths they own/lease or operate within the first point of entry where goods and conveyances subject to biosecurity control are managed. Owners or managers of common user berths must include compliance with biosecurity response and preparedness plans in their terms and conditions of use to ensure users are aware of their obligations. Berth managers should make these plans available to the department when required.	Yes
	Access arrangements in place that enable treatment providers to undertake urgent responses (for example, fogging treatment of premises) in a timely manner.	Port authority. Berth operators.	Yes
Containment of risk – insect or pest infestation	Infrastructure and equipment easily accessible to enable an incident response including: • permethrin based knockdown spray • appropriately sized tarpaulins for containment of infested goods.	Entities (for example, berth operators) that operate physical areas within the first point of entry where goods or conveyances subject to biosecurity control are managed.	Yes
	Hardstand [b] available for isolation of infested goods.	Entities (for example, berth operators) that operate physical areas within the first point of entry where goods and conveyances subject to biosecurity control are managed. Not required at berths that do not land goods.	No
Containment of risk – spillage	Appropriate accessible equipment for dealing with spillage, including brooms, shovels, buckets, absorbent litter, tarpaulins and a supply of department-approved disinfectant.	Berth operators. Not required at berths that do not land goods.	No

a. *Port operators can also provide written evidence using the Department's First Point of Entry Biosecurity Risk Management template. Other forms of written evidence (such as extracts from existing plans) are also acceptable.*

b *The hardstand does not need to be permanently designated for this purpose, but must be available for use at short notice, segregated from other goods and secured from unauthorised access.*

Table 9-2: Waste goods management standard

Standard	Evidence	Responsibility	Applicable to KI Seaport
Waste goods – collection and treatment (vessels)	Arrangement for the collection and treatment of waste goods subject to biosecurity control from international vessels arriving at the port: 1. Arrangement with a department-approved waste management provider, or 2. Held on board the vessel, or 3. Where option 1 is not available, an alternative arrangement approved by the Department of Agriculture and Water Resources.	Shipping line/master of vessel. The department is responsible for notifying shipping lines of their responsibilities in this area. Owners/operators of berths facilitating non-commercial vessels (including yachts) subject to biosecurity control.	Yes
Waste goods – collection and treatment (onshore)	Arrangement for the collection and treatment of waste goods subject to biosecurity control from the port and berth precincts: 1. Arrangement with department-approved waste management provider, or 2. If option 1 is not viable, an alternative arrangement approved by the Department of Agriculture and Water Resources.	Entities that operate physical areas within the first point of entry where goods and conveyances subject to biosecurity control are managed, for example: • port authority • berth operators. Not required at berths that do not land goods.	No
Waste goods – containment	Approved biosecurity waste receptacle to be made available for disposal of waste goods subject to biosecurity control and loose items of biosecurity risk that do not form part of the documented consignment [a]. Waste goods subject to biosecurity control must be: 1. Double bagged, or 2. Stored in re-usable receptacles that are sealed or closed securely to prevent escape of live insects or seeping of biosecurity waste goods. Receptacles must be: • Maintained free of cracks, tears and damage that could prevent them from effectively containing waste goods subject to biosecurity control • Cleaned and disinfected with approved disinfectants at an approved rate before re-use if they have come into contact	Entities that operate physical areas within the first point of entry where goods and conveyances subject to biosecurity control are managed, for example: • port authority • berth operators. Not required at berths that do not land goods.	No

Standard	Evidence	Responsibility	Applicable to KI Seaport
	with waste goods subject to biosecurity control.		
Waste goods – security	Waste bags/receptacles must be: • clearly marked as 'biosecurity waste' • secure.	Entities that operate physical areas within the first point of entry where goods and conveyances subject to biosecurity control are managed, for example: • port authority • berth operators. Not required at berths that do not land goods.	No
Dunnage	International dunnage that does not have an ISPM 15 stamp must be: 1. Returned to the vessel or 2. Stored in a clearly marked and secured dunnage container prior to treatment by a department approved provider within 14 days, or 3. Stored in a clearly marked and secured dunnage container prior to collection by department-approved waste management provider.	Individual berth operators. Not required at berths that do not land goods.	No

a. *For example, soil, seeds, bags, fruit cartons or plant or animal contamination.*

Table 9-3: General port facility standard

Standard	Evidence	Responsibility	Applicable to KI Seaport
Signage [a]	Capacity for the display of appropriate biosecurity signage or messaging when required.	Port authority. Individual berth operators.	Yes
Office facilities [b] **at sites where biosecurity officers are permanently assigned and where there is no department office nearby**	Provision of a secure area of adequate size to accommodate workstations, computers, printers, photocopiers and general supplies storage.	Port authority responsible for determining where facilities will be provided and how costs of provision of office space will be attributed to port operators.	TBC
Amenities	Access to clean, serviced toilets.	Port authority. Individual berth operators.	Yes
Parking/access	Provision of designated parking areas for staff, close to sites where biosecurity officers and human biosecurity officers are to perform functions under the *Biosecurity Act 2015*. Ready access (and escort if required) to berth or other areas where biosecurity officers and	Port authority. Individual berth operators.	Yes

	human biosecurity officers are to perform functions under the *Biosecurity Act 2015*.		

a. *Signage or content for messaging will be provided by Department of Agriculture and Water Resources or Department of Health.*

b. *Requirements will be based on number of staff located permanently at the port.*

Table 9-4: Biosecurity risk awareness standard

Standard	Evidence	Responsibility	Applicable to KI Seaport
Awareness	Biosecurity awareness package (provided by the Department of Agriculture and Water Resources) is made available to relevant staff members. Biosecurity awareness information is included in induction packages and berth handbooks.	Port authorities, berth managers and operators, and shipping lines are responsible for their staff. The department is responsible for notifying shipping lines of their responsibilities in this area. Owners or managers of common user berths must include adherence to biosecurity risk awareness and reporting requirements in their terms and conditions of use to ensure users are aware of their obligations.	Yes
Biosecurity risk reporting	Procedures (including contact numbers) for reporting biosecurity incidents are accessible to all staff. **At common-user facilities** Operators acknowledge and accept their responsibility for ensuring staff are aware of and report biosecurity risk; operators should do this through contractual arrangements and in their terms and conditions for use of common user berths.	Port authorities, berth managers and operators, and shipping lines are responsible for their staff. The department is responsible for notifying shipping lines of their responsibilities in this area. Owners or managers of common user berths must include adherence to biosecurity risk awareness and reporting requirements in their terms and conditions of use to ensure users are aware of their obligations.	Yes

Table 9-5: Environmental management standard

Standard	Evidence	Responsibility	Applicable to KI Seaport
Feral animal control	Regular trapping / baiting / surveillance regimes. Documentation of activity provided to the department on request.	Port authority for general areas of the port precinct Port authority for general areas of the port precinct. Berth manager at common user facility. Individual berth operators	Yes

Standard	Evidence	Responsibility	Applicable to KI Seaport
Rodent control	Regular trapping/baiting/surveillance regimes. Documentation of activity provided to the department on request.	Port authority for general areas of the port precinct. Berth manager at common user facility. Individual berth operators.	Yes
Vegetation control	Regular vegetation control regimes including mowing/pruning/weed spraying activities to prevent establishment and flowering of exotic species. Documentation of activity to be provided to the department on request.	Port authority for general areas of the port precinct. Berth manager at common user facility. Individual berth operators.	Yes
Management of pooling water	Activities to manage pooling water, including monitoring sites such as drains, tyres, construction bollards and tanks. Where necessary, water accumulation points are treated to prevent vector breeding.	Port authority for general areas of the port precinct. Berth manager at common user facility. Individual berth operators.	Yes
Rubbish management	Rubbish management strategies.	Port authority for general areas of the port precinct. Berth manager at common user facility. Individual berth operators.	Yes

Appendix B2 – Draft Marine Pest and Disease Management Plan – Construction

KI Seaport

Marine Pest and Disease Management Plan – Construction

Working Draft

KANGAROO ISLAND PLANTATION TIMBERS

Table of Content

NOTE THAT COMMENTS FROM PIRSA (BIOSECURITY) UP TO DECEMBER 2020 HAVE BEEN CONSIDERED, WITH SOME OUTSTANDING COMMENTS REMAINING IN THE DOCUMENT FOR FUTURE DISCUSSSION AND CLOSE OUT (WHICH WILL LIKELY BE AFTER TO APPROVAL)

1. INTRODUCTION

Kangaroo Island Plantation Timbers (KIPT) propose to establish and operate the KI Seaport using an Environmental Management Framework (EMF) that is consistent with Australian Standards (i.e. AS/NZS ISO 14001:2016 *Environmental Management Systems*).

The framework described in Chapter 26 of the Smith Bay Wharf Draft Environmental Impact Statement (Draft EIS) provides an overarching strategy to manage potential environmental impacts during the construction and operation of KI Seaport.

The overall goal of the Marine Pest and Disease Management Plan – Construction (MPDMPC) is to avoid, mitigate, manage and/or control any potentially adverse impacts of construction activities associated with the development on the biological, physical, social or economic environment. The MPDMPC will also give effect to any approval conditions imposed, and all commitments made by KIPT. The MPDMPC is considered a sub-management plan of the Biosecurity Management Plan (BMP).

The MPDMPC must be read in conjunction with the following management plans:

- Biosecurity Management Plan
- Construction Environmental Management Plan
- Terrestrial Pest Management Plan – Construction.

A separate set of management plans will be developed for the operation of the KI Seaport.

1.1 Project Overview

Timber product (logs and woodchips) will be transported to Smith Bay and stored before loading on to vessels for export. The KI Seaport will consist of a deep-water port and associated onshore facilities to handle and load these products into Panamax-size vessels, with the option of using smaller Handymax-size vessels as requirements dictate.

The MPDMPC will apply to the construction of all components of the proposed KI Seaport:

- Port/off-shore components:
  - navigation aids
  - floating pontoon wharf with wharf furniture (fenders, bollards, kerbs etc.)
  - restraint dolphins for restraint of pontoon
  - mooring dolphin at either end of wharf for vessel head and stern lines
  - linkspan bridge
  - approach (causeway and suspended deck)
  - tug mooring facility/pen.
- On-shore activities/components:
  - storage areas for logs and woodchips
  - internal access roads
  - site access road to North Coast Road
  - stormwater drainage and retention system
  - site security fencing and lighting
  - site offices, product testing room and crib/lunchroom
  - generator, diesel tanks and associated spill bunding.

The practical implementation of the MPDMPC is structured around environmental aspects and key construction activities that have a potential risk for environmental impact. The implementation of the management controls to lower risks to acceptable levels is therefore required. The MPDMPC is applicable to the marine activity zone as shown in Figure 1. The marine activity zone will include navigation aids and any tug mooring facilities associated with construction activity.

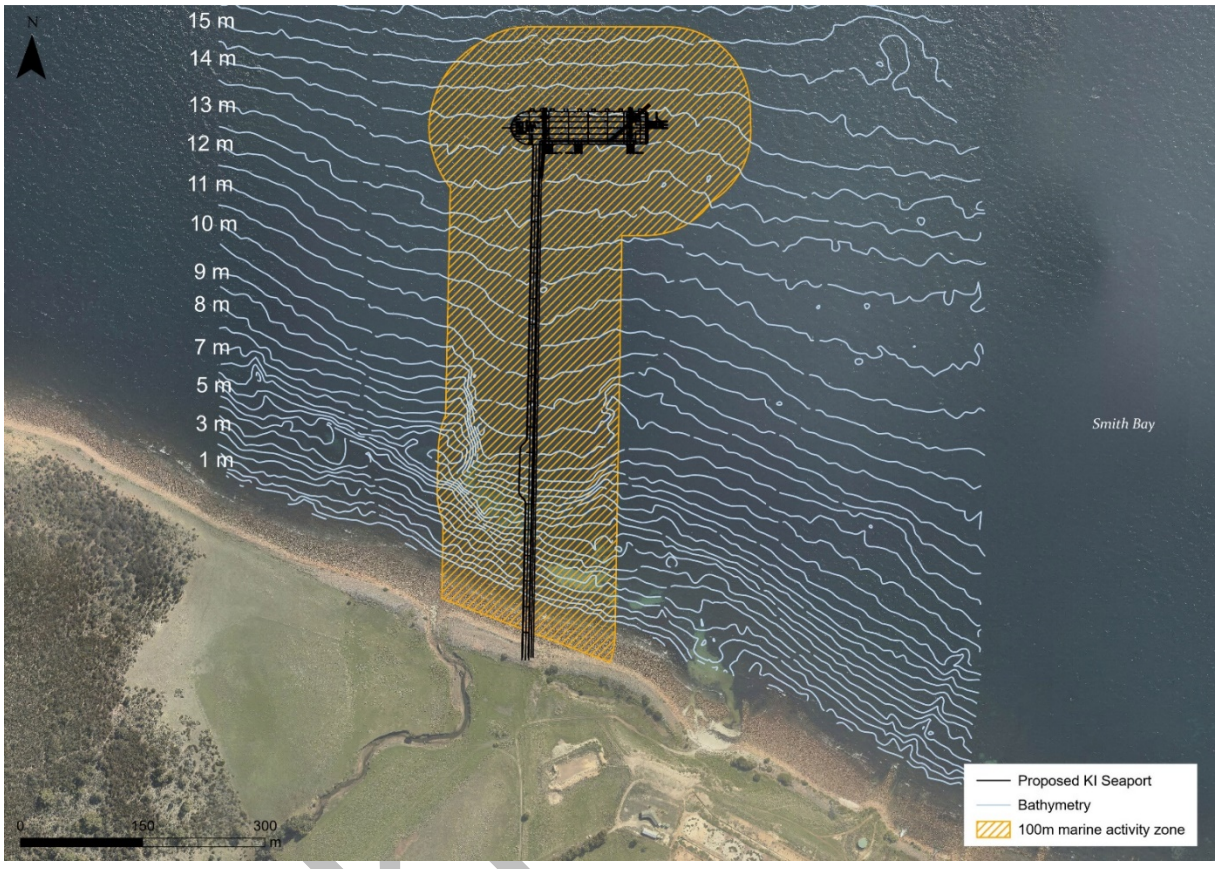

Figure 1: Proposed marine activity zone – Construction

1.2 Structure/Purpose

The purpose of the MPDMPC is to:

- describe the management measures for mitigating the risk of the introduction of marine pests and diseases into Smith Bay during the construction of the proposed KI Seaport
- provide the notification process in the event that a suspected marine pest or disease is found in Smith Bay
- describe the assessment process that will be adopted to grant entry of vessels into the construction site.

The BMP provides the overarching management framework for all biosecurity issues at the construction site and the MPDMPC is a sub-management plan of the BMP.

1.3 Roles and Responsibilities

All personnel involved in the project including KI Seaport employees, contractors and sub-contractors, are required to work in accordance with this MPDMPC, and in accordance with all relevant Acts, policies and regulations.

Table 1-1 outlines the roles and responsibilities for the implementation of the Plan. Throughout detailed planning and construction phases, names will be allocated to the roles prescribed in the MPDMPC.

Table 1-1: Roles and responsibilities {needs to be updated to be consistent with other Plans and the CEMP-S}

Role	Responsibility
KIPT	Responsible for implementing requirements set for the development by development approval conditions and in legislation, regulation, codes of practice, and industry standards and implementing its environmental policy to minimise impacts and demonstrate commitment to sustainable practices. Ultimately responsibility for compliance.
Seaport Project Director	Promoting the culture of environment protection and providing clear expectations and guidelines. Overseeing the involvement of all internal and external stakeholders and addressing issues raised. Supporting the Project Manager/Environment Manager in resourcing project teams. Ensuring resources are provided to implement the Environmental Management Framework (EMF). Intervening, if required, to ensure any deviation from EMF requirements is corrected Reporting to the KIPT Board.
KI Seaport Project Manager/s	Ensuring that Marine Pest and Disease Management Plan requirements are communicated to all relevant contractors and consultants involved in construction and operational activities at the KI Seaport. Overseeing the development and implementation of the Marine Pest and Disease Management Plan – Construction. Ensuring that sufficient funds are available to implement the Marine Pest and Disease Management Plan – Construction. Monitoring performance and reporting on progress against Marine Pest and Disease Management Plan – Construction objectives. Intervening, if required, to ensure any deviation from EMF requirements is corrected. Reviewing and updating the Marine Pest and Disease Management Plan as required.
KIPT Approvals Manager	Reporting compliance measures and performance to KIPT Board and Executive and to government. Managing communications to government agencies.
KI Seaport Construction Manager/s	Ensuring that all environmental management requirements in the Marine Pest and Disease Management Plan are clearly communicated to all relevant staff through appropriate inductions and other training where necessary. Providing staff with written instructions/protocols/methods regarding environmental management requirements and responsibilities. Ensuring all necessary environmental approvals and licences are secured before construction begins. Ensuring and monitoring compliance of activities with conditions of relevant licences, permits and the MPDMPC. Liaising with DEW, PIRSA, DAWE, EPA and other regulatory authorities as required. Intervening, if required, to ensure any deviation from EMF requirements is corrected.

Role	Responsibility
	Notifying any legislative breaches or environmental incidents to authorities in conformity with statutory requirements. Responding to any complaints received.
KI Seaport Contractors	All contractors taking their environmental responsibilities seriously and diligently following all environmental procedures communicated to them by their supervisors Undertaking all required inductions and/or environmental awareness training before starting work on site. Reporting any environmental incidents to the Construction Manager immediately.
KIPT Environment Manager	Ensure the Marine Pest and Disease Management Plan – Construction is implemented, and update documentation as required to reflect environmental legislation, design or operational changes. Coordinate monitoring programs and reporting to authorities. Communicate with and support the KIPT Approvals Manager. Manage environmental incidents and responses. Ensure KIPT environmental policy is reviewed annually. Manage environmental matters in relation to stakeholder engagement. Coordinate environmental awareness training and implement sustainability initiatives. Coordinating the risk assessment process for all incoming vessels to Smith Bay.
Vessel Master	Ensure that the Australian Ballast Water Management Requirements under the Commonwealth Biosecurity Act are met. Compliance with the Commonwealth Anti-fouling and in-Water Cleaning Guidelines. Compliance with National Biofouling Management Guidelines for Commercial Vessels. Completion of the KI Seaport Pre-entry Risk Assessment Questionnaire.

1.4 Stakeholder Engagement

The following stakeholders are relevant for the MPDMPC:

- Commonwealth Department of Agriculture, Water and Environment (DAWE)
- Department of Infrastructure, Transport, Regional Development, and Communications (DITRDC)
- Department of Primary Industries and Regions South Australian – PIRSA Biosecurity SA
- South Australian Research and Development Institute (SARDI)
- South Australian Environment Protection Authority (EPA)
- Landscape South Australia Kangaroo Island
- Yumbah Aquaculture
- Flinders Port Holdings.

The MPDMPC has been developed in consultation with PIRSA and has been approved for use before any activities commence in the Project area.

1.5 Training

All KI Seaport staff and contractors will be required to undertake training in environmental management as part of their induction to the site and its activities before any construction or operational activities could begin. Induction training will address:

- background to the KI Seaport
- approval conditions, and the role of the EMF

- legislative requirements of the company and individuals
- key personnel and roles
- KI Seaport EMPs
- discovery protocols for exotic marine species
- environmental issues at the site and relevant management plans and procedures
- community issues related to the project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and Incident reporting and management procedure
- emergency response plan.

Job-specific training will also be required. The KI Seaport Project Manager/s will be responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

1.6 Environmental Aspects

Environmental aspects are defined as elements of an organisation's activities, products or services that could interact with the environment. A significant environmental aspect has, or could have, a significant environmental impact (AS/NZS ISO 14001:2016).

Numerous activities associated with the construction and operation of the KI Seaport have the potential to introduce marine pests and diseases that could affect the biosecurity status of Kangaroo Island and therefore must be managed appropriately. The aspects of the development related to marine pests and diseases include:

- pile installation 650 m into Smith Bay
- ballast water discharge
- biofouling
- in-water and dry dock vessel cleaning (see Section 4.3.4)
- hitch-hikers or stowaways (organisms) on shipping vessels and/or construction equipment.

Potential impacts associated with these aspects include:

- introduction of pest species and diseases (particularly the abalone disease AVG, the abalone parasite *Perkinsus* and the oyster disease Pacific Oyster Mortality Syndrome (POMS)) that could harm industry
- introduction of vertebrate or invertebrate pest species and/or diseases that could harm native fauna, flora, ecosystems and industry
- translocation of marine pests and/or aquatic diseases to other areas of Kangaroo Island or South Australia
- introduction or translocation of microalgae that could result in human health impacts via consumption of contaminated shellfish.

The significant environmental aspects for the development were identified from the environmental assessment and are shown in Table 1-2.

Table 1-2: Environmental aspects, objectives and potential impacts to be managed at the KI Seaport

Environmental aspect	Objectives	Activity	Potential impacts
Biosecurity • introduction or spread of pest plants, pest animals and/or diseases • ballast water discharge • biofouling (including in-water and dry dock vessel cleaning) • stowaways on shipping vessels	No introduction of new pest plants or pest animals, nor material increase in the abundance or area of existing pest plant or pest animals. No introduction or spread within Kangaroo Island, of marine pests or aquatic diseases. To minimise the risks to the biosecurity status of Kangaroo Island. To minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters.	Shipping activity – sea freight as a vector for pests and diseases. On-shore operational activities – importation of equipment and/or consumables as a vector for pests and diseases. Construction shipping activity – movement of plant as a vector for marine pests and aquatic diseases. Shipping activity – ballast water discharge as a vector for the introduction of microalgae (that result in harmful algal blooms).	• adverse impacts (disease, predation, increased competition, reduction in habitat) on flora and fauna from pest plants, pest animals and/or diseases • financial impacts to industry as a result of new pest plants, pest animals and/or diseases on the Island • introduction of pest species and/or aquatic diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry • introduction of POMS into Kangaroo Island aquaculture oyster leases • introduction of vertebrate or invertebrate pest species and/or aquatic diseases that could harm native fauna, flora, ecosystems and industry • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish
Generation of waste and discharges • waste generation • ballast water discharge	No introduction or spread within Kangaroo Island of marine pests and/or aquatic diseases. To minimise the risk of harmful algal blooms occurring in Smith Bay.	Shipping – ballast water and biofouling. Off-shore construction activities.	• generation of wastes requiring disposal • marine pollution and effects on marine communities • potential introduction of pest species and diseases (particularly the abalone disease AVG, the abalone parasite *Perkinsus* and the oyster disease POMS) • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish • harmful algal blooms that impact aquaculture operations at Smith Bay

2. LEGAL REQUIREMENTS AND GUIDELINES

The following environmental legislation, regulations and guidelines provide the regulatory framework around which the MPDMPC is based:

2.1 Commonwealth Legislation

The following Commonwealth legislation, guidelines and national plans are applicable to the MPDMPC:

- *Biosecurity Act 2015*
- Biosecurity Regulations 2016
- Anti-fouling and in-Water Cleaning Guidelines (Commonwealth of Australia 2015)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2009a)
- National Biofouling Management Guidance for Recreational Vessels (Commonwealth of Australia, 2009b)
- Australian Ballast Water Management Requirements, Version 8 (DAWE 2020a)
- Marine Pest Plan 2018-2023: National Strategic Plan for Marine Biosecurity (DAWR 2018a)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, (ANZECC & ARMCANZ, 2000).

2.2 South Australian Legislation and Documentation

The following South Australian legislation and supporting documentation is applicable to marine pest and disease management:

- *Landscape South Australia Act 2019*
- *Livestock Act 1997*
- *Fisheries Management Act 2007*
- *Environment Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- South Australian Biosecurity Policy 2020-2023 (PIRSA 2020)
- Kangaroo Island Natural Resources Management Board's Biosecurity Strategy for Kangaroo Island (KINRMB 2017)
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia, 2017.

KIPT will ensure that all its employees have relevant permits and that contractors provide copies of their permits and licences to KIPT. Contractors will also be required to be responsible for ensuring their staff had relevant permits and licences before they commence work on the site. The MPDMPC will adhere to the conditions of these licences, ensuring that all on-site works are compliant.

It should be noted that a new piece of legislation (the South Australian Biosecurity Act) is currently available for public consultation (late 2020). The new Act will consolidate a number of existing Acts and provide for a simpler, modern and integrated framework for managing biosecurity.

2.3 Development Approval Requirements

{insert approval conditions here}

3. EXISTING ENVIRONMENT

Introduced species and diseases are a major threat to the biosecurity status of Kangaroo Island.

The most common sources of the introduction of invasive marine pests and diseases are via shipping (biofouling and ballast water), aquaculture and the aquarium industry (Kinloch et al. 2003; Hewitt & Campbell 2010).

Ballast water is water taken on board by vessels to maintain stability and trim. Ballast water can contain thousands of aquatic microbes, plants and animals, which can then be released locally as the vessel releases ballast water.

Biofouling (the marine plants and animals that attach and grow on the submerged parts of a vessel or immersed structure) from international vessels is also a major pathway for the introduction of exotic pest species and aquatic diseases into Australian waters. Biofouling can also translocate marine pests and diseases from one part of the Australian coastline to another.

The key vectors of marine pests and diseases that require mitigation during the construction of the KI Seaport include:

- biofouling on vessel hulls and other external niches (such as propulsion units, steering gear and thruster tunnels)
- biofouling of vessels' internal niches (such as sea chests, strainers, seawater pipe work, anchor cable lockers and bilge spaces)
- biofouling on equipment that routinely becomes immersed in water (including but not limited to cutters, ladders, jack-up legs)
- discharge of ballast water
- movement of vessels from Port Adelaide to Smith Bay.

3.1 Marine Environment

More than 250 introduced marine species have been recorded in Australia (DAWR 2018b), including more than 20 in Kangaroo Island waters (Wiltshire et al. 2010). No introduced marine species have previously been recorded near Smith Bay, including during the marine surveys undertaken in 2016, 2018 and 2019 by SEA. The closest records to the east are of the European fan worm at the Bay of Shoals and a number of species at Kingscote, and to the west a barnacle and a number of ascidians at Western River Cove (Wiltshire et al. 2010).

There is a land-based abalone farm adjacent to the KI Seaport, operated under three aquaculture licences. A series of intake and discharge pipelines service the facility and are located in the waters of Smith Bay adjacent to the KI Seaport.

The two most significant abalone diseases relevant to the study area are abalone viral ganglioneuritis (AVG), which has been detected in wild abalone stock in Victoria and in abalone farms in Victoria and Tasmania (but not in South Australia), and the abalone parasite *Perkinsus*, which is already present (and have persistent, high levels of infection) in the wild abalone populations in South Australia at Neptune Island and at the south-eastern tip of Yorke Peninsula.

There are five aquaculture licences for oysters on Kangaroo Island, three are located at American River and two are in Nepean Bay. Pacific oysters (*Magallana gigas*) are susceptible to the disease Pacific oyster

mortality syndrome (POMS). In February 2018, the first detection of POMS in South Australia was discovered in feral oysters in the Port River (PIRSA 2018).

3.1.1 Invasive marine species (IMS)

The Australian Priority Marine Pest List (APMPL) has been developed by the Australian Government (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)) (MPSC 2018). A priority list was developed previously by the CSIRO (Hayes et al. 2005). The APMPL identifies nine of Australia's significant marine pests. This list includes three established and six exotic species.

The Chief Environmental Biosecurity Officer released an interim list of priority exotic environmental pests, weeds and diseases in October 2019 (abbreviated to the National Priority List) and the final list was released in November 2020. The process to develop the list was led by ABARES and involved technical experts and key stakeholders (DAWE 2020b). The National Priority List has sub-categories for marine pests, freshwater invertebrates and aquatic animal diseases.

The APMPL and National Priority List are used in conjunction when managing exotic pests. Each list uses different criteria for species selection.

All exotic species are of concern to the South Australian Government, but the Department of Primary Industry and Regions South Australia (PIRSA) (2017b) listed a number of marine pests of most concern. Many of these, and other species, have been declared 'noxious' under the *Fisheries Management Act 2007* and are also listed on the PIRSA website (PIRSA 2015).

Some of the species from these lists are already established in Kangaroo Island waters, including the European fan worm *(Sabella spallanzanii)* and the vase tunicate *(Ciona intestinalis),* or elsewhere in South Australia, including the aquarium weed *(Caulerpa taxifolia)* and the European green shore crab *(Carcinus maenas)*. Others are established elsewhere in Australia and are considered to be potential threats to South Australia, including the Northern Pacific sea star *(Asterias amurensis)*, Japanese seaweed *(Undaria pinnatifida)* and New Zealand screwshell *(Maoricolpus roseus).* The Asian green mussel *(Perna viridis)* and Chinese mitten crab *(Eriocheir sinensis)* are both listed on the APMPL and are considered a threat to South Australia.

Table 3-1 presents a list of species that are relevant to Smith Bay. The table includes species that are:

- species that are included in the APMPL
- species that are included in the National Priority List
- species that are declared noxious in South Australia
- or species that are recorded on Kangaroo Island.

Further information is provided below for the species ranked high priority in the national list.

Table 3-1 also identifies which species are known in the north-west Pacific region which is the region that most international vessels will be arriving from.

The vectors of marine pest animals, pest plants and aquatic diseases most relevant to the operation of the KI Seaport are the disposal of ship ballast water, which can contain cysts, larvae or juveniles, and biofouling (encrusting organisms) on ship hulls that can detach or spawn. Although ballast water and biofouling are the two most common vectors for marine pests (NCMCRS 2010), other vectors during construction include anchors, anchor chains and mooring lines.

Introduced marine species can rapidly increase in numbers after a disturbance, the removal of competitive indigenous species, or the provision of unoccupied hard surfaces (wharf structures).

Management measures are provided in Section 4.

Table 3-1: Introduced marine species relevant to Smith Bay

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Ascidians	*Ascidiella aspersa*	European sea squirt					Y	
Ascidians	*Botrylloides leachi*						Y	Y
Ascidians	*Botryllus schlosseri*						Y	Y
Ascidians	*Ciona intestinalis*	vase tunicate			Y		Y	Y
Ascidians	*Didemnum* spp. (exotic strains only)	(carpet sea squirt)		Y *(D. vexillum)*		Y		Y
Ascidians	*Styela clava*							Y
Ascidians	*Styela plicata*						Y	Y
Bryozoans	*Bugula flabellata*							Y
Bryozoans	*Bugula neritina*						Y	Y
Bryozoans	*Schizoporella errata*							
Bryozoans	*Tricellaria occidentalis*							Y
Bryozoans	*Watersipora arcuata*							Y
Bryozoans	*Watersipora subtorquata*							Y
Crustaceans	*Balanus eburneus*	(a barnacle)						Y
Crustaceans	*Balanus reticulatus*	(a barnacle)						Y
Crustaceans	*Balanus improvisus*	(a barnacle)				Y		Y
Crustaceans	*Megabalanus rosa*	(a barnacle)						Y
Crustaceans	*Megabalanus tintinnabulum*	(a barnacle)					Y	

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Ctenophore	*Mnemiopsis leidyi*	comb jelly				Y		
Crustaceans	*Carcinus maenas*	European green shore crab	Y		Y	Y		Y
Crustaceans	*Charybdis japonica*	lady crab		Y		Y		Y
Crustaceans	*Eriocheir sinensis*	Chinese mitten crab	Y	Y	Y	Y		Y
Crustaceans	*Hemigrapsus sanguineus*	Japanese shore crab				Y		Y
Crustaceans	*Hemigrapsus takanoi/penicillatus*	Pacific crab				Y		Y
Crustaceans	*Rhithropanopeus harrisii*	Harris' mud crab	Y		Y	N	N	N
Crustaceans	*Pseudodiaptomus marinus*	(a copepod)						Y
Echinoderms	*Asterias amurensis*	Northern Pacific sea star	Y		Y	Y		Y
Fish	*Neogobius melanostomus*	round goby				Y		
Fish	*Siganus rivulatus*	rabbit fish				Y		
Fish	*Tridentiger bifasciatus*	shimofuri goby						Y
Macroalgae	*Bryopsis plumosa*	(green macroalga)					Y	Y
Macroalgae	*Caulerpa cylindracea*	(green macroalga)			Y			
Macroalgae	*Caulerpa taxifolia*	(green macroalga)			Y	Y		Y
Macroalgae	*Cladophora prolifera*	(green macroalga)					Y	Y
Macroalgae	*Codium fragile* ssp. *tomentosoides*	(green macroalga)				Y	Y	Y
Macroalgae	*Grateloupia turuturu*	(red macroalga)				Y		Y
Macroalgae	*Hincksia sandriana*	(brown filamentous macroalga)					Y	Y
Macroalgae	*Polysiphonia brodiei*	(red macroalga)					Y	Y

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Macroalgae	*Sargassum muticum*	Asian seaweed				Y		Y
Macroalgae	*Ulva lactuca*						Y	Y
Macroalgae	*Ulva taeniata*						Y	Y
Macroalgae	*Undaria pinnatifida*	Japanese seaweed/kelp	Y		Y	Y		Y
Microalgae	*Alexandrium catenella*						Y	Y
Microalgae	*Alexandrium minutum*						Y	Y
Microalgae	*Alexandrium tamarense*						Y	Y
Microalgae	*Gymnodinium catenatum*						Y	Y
Microalgae	*Heterosigma akashiwo*						Y	Y
Molluscs	*Corbula amurensis*	Asian clam				Y		Y
Molluscs	*Crassostrea gigas*	Pacific oyster			Y		Y	Y
Molluscs	*Crepidula fornicata*	American slipper limpet				Y		
Molluscs	*Ensis directus*	jack-knife clam				Y		
Molluscs	*Limnoperna fortunei*	golden clam						Y
Molluscs	*Maoricolpus roseus*	New Zealand screwshell			Y	Y		
Molluscs	*Musculista senhousia*	Asian date mussel				Y		Y
Molluscs	*Mya arenaria*	soft shell clam				Y		
Molluscs	*Mytilopsis sallei*	black-striped mussel	Y	Y		Y		Y
Molluscs	*Perna canaliculus*	New Zealand green-lipped mussel	Y			N	N	

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Molluscs	*Perna perna*	brown mussel	Y			Y		
Molluscs	*Perna viridis*	Asian green mussel	Y	Y	Y	Y		Y
Molluscs	*Pinctada albina sugillata*	pearl oyster			Y			
Molluscs	*Rapana venosa*	rapa whelk				Y		Y
Molluscs	*Corbula gibba*	European clam, basket shell				Y		
Polychaetes	*Hydroides ezoensis*							Y
Polychaetes	*Hydroides sanctaecrucis*							Y
Polychaetes	*Marenzelleria* spp	red-gilled mudworm				Y		
Polychaetes	*Sabella spallanzanii*	European fan worm			Y	Y	Y	

3.1.2 Diseases

Due to the proximity of the existing abalone farm to the KI Seaport, it will be essential that measures were taken to ensure that no abalone-related diseases were introduced. Yumbah Kangaroo Island is part of the Abalone Health Accreditation Program and is required to implement a biosecurity plan for the operations. The biosecurity plan is audited against the National Biosecurity Plan Guidelines for the Australian Land-based Abalone Industry (Spark et al. 2018). Mitigation measures that will be implemented at the KI Seaport to maintain this accreditation are detailed in the Terrestrial Pest Management Plan – Construction and Terrestrial Pest Management Plan – Operations.

The two most significant diseases are abalone viral ganglioneuritis and the parasite *Perkinsus*.

Abalone viral ganglioneuritis

Abalone viral ganglioneuritis (AVG) causes mass mortalities of abalone (PIRSA 2009). A 2006–2007 outbreak in Victoria, within 40 km of the South Australian border, resulted in severe economic loss through a catch that was more than halved. Very little is known about the virus, including how it infects abalone or how long it survives outside the host (PIRSA 2009). There is a risk that it may spread into South Australia through potential vectors such as translocation of stock, discharge from aquaculture facilities, launch and retrieval of anchors or pots, abalone fishing and the use of abalone as berley or bait (PIRSA 2009). Shipping, however, has not been identified as a possible vector. Transmission of AVG has been demonstrated through the water column.

AVG is currently exotic to South Australia.

Abalone parasite Perkinsus

Abalone parasite *Perkinsus* is a genus of protozoan parasites that have been implicated in the death of clams, oysters and abalone worldwide (Goggin & Lester 1995). In South Australia, the native species *Perkinsus olseni* has been known to infect both greenlip and blacklip abalone, causing mortalities or reducing market value in both cultured and wild stocks (PIRSA 2009). Abalone are more susceptible to *Perkinsus* at higher temperatures, and outbreaks are therefore more prevalent north-west of Kangaroo Island; locations known to have persistent, high levels of infection include Neptune Island and the south-eastern tip of Yorke Peninsula (Goggin & Lester 1995). The parasite is transmitted through the release of zoospores from the blistered or decaying mollusc tissue (Theil et al. 2004). The zoospores are motile (capable of motion) and can survive in saltwater for several weeks (DAFF 2012).

3.1.3 Paralytic shellfish poisoning

Paralytic shellfish poisoning (PSP) is not listed in any of the recognised aquatic animal health references (e.g. OIE 2019; Spark et al. 2018) or related documents. This disease may pose a risk to abalone (Seger et al. 2020) however there is currently some conjecture over this (Dowsett et al. 2011; Cheshire 2020).

3.1.4 Diseases – Oyster

Ostreid herpesvirus 1 microvariant (OsHV-1) is the cause of Pacific Oyster Mortality Syndrome (POMS). POMS is a considerable threat to the oyster industry and is currently present in the feral oyster population in Port Adelaide. A recent project undertaken by PIRSA (FRDC Project No. 2018-090) involved hydrodynamic modelling to improve existing early detection surveillance and emergency disease response for the Ostreid herpesvirus. The results of the modelling produced new boundaries for disease management areas or biosecurity zones for the South Australian oyster industry.

The disease management area is used by PIRSA for early detection surveillance monitoring as well as POMS emergency management. A portion of the KI Seaport is located within the disease management area as shown on Figure 3-1. In the event that a significant population of Pacific Oysters became established at the KI Seaport, additional management and monitoring requirements would potentially be required.

The disease management area for Kangaroo Island is shown in Figure 3-1.

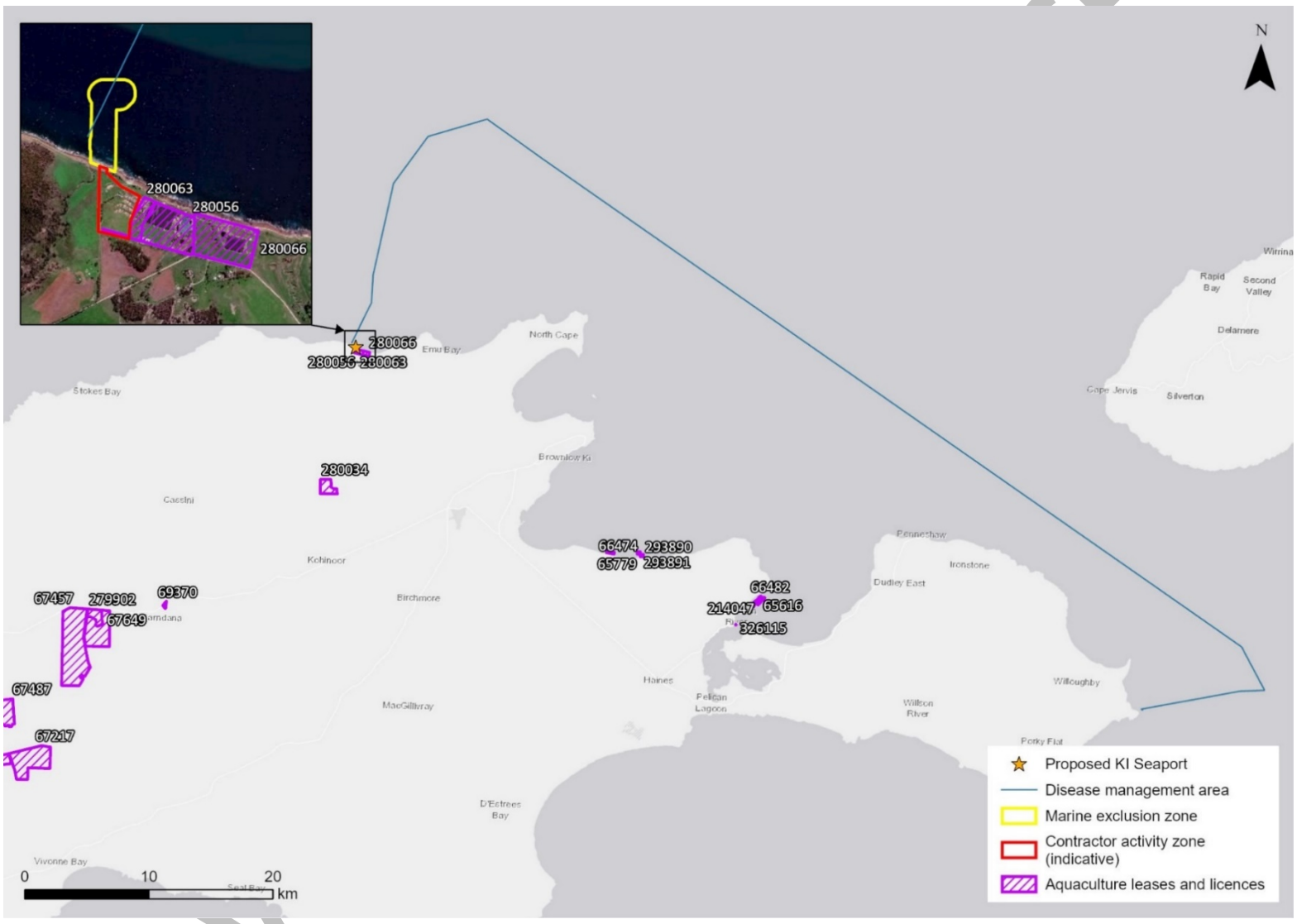

Figure 3-1: Disease Management Area for Kangaroo Island (disease management area sourced from Roberts et al. 2020)

3.1.5 Aquaculture

The Australian Government has published the National Biosecurity Plan Guidelines for the Australian land-based abalone industry (Spark et al. 2018); the document provides a framework for industry to support the development of site-specific biosecurity plans for individual farms. Spark et al. (2018) also identifies the reportable diseases of abalone which are acknowledged as those diseases that present the greatest risks to the farmed abalone industry as well as risks presented by the aquaculture sector to the wild catch sector.

The reportable diseases (Spark et al. 2018) are *Abalone viral ganglioneuritis* (AVG) a viral pathogen that is endemic to Australia, Abalone Withering Disease (*Xenohaliotis californiensis*) which is caused by an exotic bacterial pathogen (to date this has not been reported in Australia) and *Perkinsus olseni* (a zoo-parasite) that is endemic to Australia and is frequently found in farmed stock (Cheshire 2020). There is no evidence available on whether *Perkinsus olseni* is present at Yumbah's facility on Kangaroo Island or has previously been detected.

The principle safeguard to protect aquaculture operations will be to ensure that all vessels using the KI Seaport adhere to the requisite management arrangements in relation to ballast water treatment.

4. MANAGEMENT MEASURES

4.1 Vessel Profiles

During construction, there will be two general streams of vessels that will be used for construction activity at the proposed KI Seaport; vessels that will move to Kangaroo Island and remain for the duration of the construction program and another group (typically a tug and dumb barge) that will be used to transport materials to the construction site from Port Adelaide.

The two streams have a different biosecurity risk profile. Vessels remaining on Kangaroo Island pose an initial risk to the biosecurity status of Kangaroo Island and the vessels that will be transporting materials from Port Adelaide will pose a higher risk to Kangaroo Island due to the repeated visits back to Port Adelaide and subsequent exposure to marine pests.

Vessels that remain on Kangaroo Island will be managed primarily by the implementation of a Biofouling Management Plan. Each vessel will have a dedicated Biofouling Management Plan developed prior to departure to Kangaroo Island. The vessel will be required to meet the Low Risk classification rating prior to its deployment to Kangaroo Island. Documentation will be verified by the Port Operator. The vessel will then be approved for use at the construction site (see Figure 4-1).

Vessels that will make regular trips back and forth from mainland South Australia will be managed as per the procedure described in Section 4.2.

4.2 Risk Assessment Procedure – Vessels

This section describes the risk assessment methodology used to assess the likelihood of a particular contracted vessel and/or immersible equipment carrying an invasive marine species prior to undertaking activities at the Smith Bay construction site.

This risk assessment methodology uses a consistent, transparent approach that has been developed to help determine what mitigating actions or further assessments are required. Conversely it also provides a basis for justification for when further management measures are assessed as not required.

The information required to complete the risk assessment is presented as a score sheet (Appendix C). This form should be completed by the vessel/immersible equipment operator and returned to the KIPT Environment Manager to review and complete the risk assessment. Vessel owners will also be required to provide documentation to verify the completed vessel risk assessment score sheet (VRASS). Documentation should include (but is not limited to):

- Biofouling Management Plan
- inspection records (in-water and haul-out inspections)
- ballast water management records (if applicable)
- records of any applications of anti-fouling coating
- vessel's operational history.

A flow chart of the risk assessment process is provided as Figure 4-1. The objective of the risk assessment is to identify the inherent level of invasive marine species risk that a contracted vessel or its immersible equipment poses to the receiving environment. This will allow KIPT to establish management measures to mitigate the identified risks to an acceptable level, which may include not granting entry to a vessel.

The application of the risk assessment procedure will be undertaken in consultation with PIRSA. Completed Vessel/Equipment Risk Assessment Questionnaires will be provided to PIRSA, and consultation will occur with respect to the determined biosecurity risk status and any required management measures prior to the vessel/equipment's mobilisation.

International vessels that will be visiting Smith Bay will be managed under the Maritime Arrivals Reporting System (MARS) by the Federal Government.

4.3 Risk Categories

Establishment of three risk categories as described below for vessels:

- **LOW** – low likelihood of introducing exotic marine pests and diseases (no additional management measures required).
- **UNCERTAIN** – likelihood of introducing exotic marine pests and diseases (precautionary approach adopted, additional management measures required).
- **HIGH** – high likelihood of introducing exotic marine pests and diseases (additional management measures required).

4.3.1 Risk factors – Vessels

The key risk assessment factors considered by the vessel pre-entry risk assessment include:

- vessel type
- inspection history
- internal treatment/inspection history
- external treatment and inspection history
- vessel desiccation period during mobilisation
- presence and age of fouling control coating
- presence or absence of internal treatment systems
- climatic region of operation
- residence time in Port Adelaide
- stationary or slow periods of operation and climatic region
- type of vessel activity

- adherence to Australian Ballast Water Management Requirements, v.8
- implementation of a Biofouling Management Plan and Record Book (as required by the IMO Biofouling Guidelines and National Biofouling Management Guidelines).

4.3.2 Risk factors – Submersible equipment

The key risk assessment factors considered by the equipment pre-entry risk assessment include:

- climatic region
- nearshore/offshore deployment
- duration of deployment
- out of water mobilisation period
- biofouling maintenance regime.

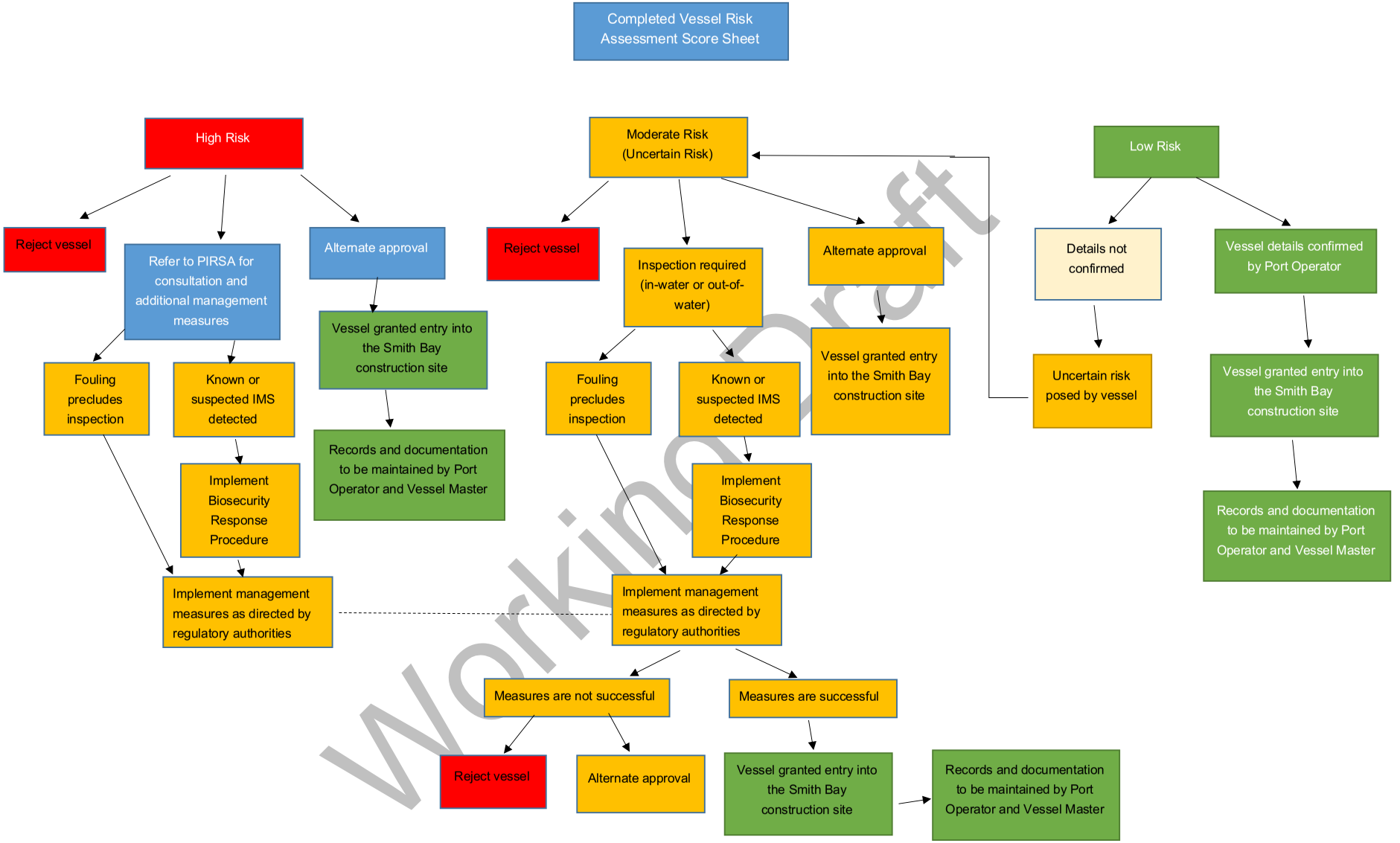

Figure 4-1: Vessel risk assessment flow chart

The most effective risk management measures for biofouling comprise of specific marine pest inspections by suitably qualified marine experts with experience in biofouling inspections and treatment (if required). If the risk reduction measures are planned and their outcomes formally documented, then the results of inspections, treatments and associated field evidence can be used to support and justify the risk reduction scores and outcomes, as determined by the vessel risk assessment processes.

4.3.3 Ballast water

Ballast water management will be managed in accordance with the Australian Ballast Water Management Guidelines, v.8 (<https://www.agriculture.gov.au/biosecurity/avm/vessels/marine-pest-biosecurity/ballast/australian-ballast-water-management-requirements>) and the prohibition of ballast water uptake from Port Adelaide. Further management measures are provided in Table 4-1.

4.3.4 In-water cleaning

No in-water cleaning would be permitted on Kangaroo Island during construction of the KI Seaport. Dry dock cleaning will only be permitted to occur at a specialised facility with all relevant licences issued by the EPA. Licence conditions would be developed in consultation with PIRSA for the operation of a dry dock cleaning facility.

4.4 Risk Categories and Response Procedures

PIRSA will be consulted with respect to the determination of the biosecurity risk category. As part of this consultation, the completed risk assessment questionnaire will be provided to PIRSA. In the event of a vessel being determined to be of uncertain or high risk, PIRSA will be consulted with respect to the decision on which, if any, management measures should be applied.

The risk management procedures for vessels will use the following response criteria as determined by the vessel risk assessment.

For vessels assessed as a **LOW RISK** (Figure 4-1):

Low Risk Management Option: Confirmation of Vessel History Documentation.

Vessel information will be submitted to a KIPT Environment Manager prior to arrival of the vessel at Smith Bay, to confirm that the vessel's operational history, anti-fouling coating and ballast water management details, as used in the risk assessment, are accurate and reliable.

For vessels assessed as an **UNCERTAIN RISK** apply one of the following risk management measures (Figure 6.2):

Uncertain Risk Management Option 1: Reject Vessel

Subject to availability the vessel may be rejected and replaced with a more suitable vessel.

Uncertain Risk Management Option 2: Inspection

One in-water inspection or one out-of-water vessel inspection will be undertaken at a port or other location nominated by the Vessel Operator. The inspection is to occur within seven days prior to final departure to the Smith Bay construction site, either directly or via supply port(s).

Findings of the inspection will either determine the vessel as Low Risk or require the implementation of further management measures before the vessel could be granted entry to Kangaroo Island or South Australian waters.

If the vessel is required to visit any supply ports during transit to the Smith Bay construction site, the duration at any one port must not exceed a continuous period of seven days (Note: additional management requirements may be necessary as a result of this inspection); or

Uncertain Risk Management Option 3: Alternative Approval

The above management options (Options 1 and 2) have been previously accepted by State and Commonwealth regulators and provide an alternative to compulsory vessel and immersible equipment inspection. Should an alternative approach be proposed, prior approval from the lead regulatory agency should be sought, detailing and supporting the proposed course of action.

For vessels assessed as a **HIGH RISK** apply the following risk management measure (Figure 4-1):

High Risk Management Option 1: Reject Vessel

Subject to availability the vessel may be rejected and replaced with a more suitable vessel.

High Risk Management Option 2: Refer Vessel to PIRSA

If the vessel is considered High Risk, the vessel will be referred to PIRSA Biosecurity for consultation and further management measures (which would include in-water or out-of-water inspections plus other measures deemed necessary by PIRSA).

If the vessel is required to visit any supply ports during transit to the Smith Bay construction site, the duration at any one port must not exceed a continuous period of seven days (Note: additional management requirements may be necessary as a result of this inspection); or

High Risk Management Option 3: Alternative Approval

The above management options (Options 1 and 2) have been established through the development of this Management Plan and provide an alternative to compulsory vessel and immersible equipment inspection. Should an alternative approach be proposed, prior approval from the lead regulatory agency should be sought, detailing and supporting the proposed course of action.

4.5 General Management Measures

Ocean-going tugs, will bring the pontoon to Smith Bay from its original location in south-east Asia. These tugs are likely to use seawater ballast tanks.

Tugs will also be used to tow barges to and from Smith Bay for construction activity. Similarly, barges will be used to transport piles from Port Adelaide to Kangaroo Island. Tugs from Port Adelaide will be managed conservatively to avoid the risk transmitting the Pacific Oyster Mortality Syndrome (POMS) virus. All piling activity will be undertaken from a piling barge.

Tugs will also be required to berth timber vessels during operation of the KI Seaport.

Obligations for complying with the requirements of all applicable legislation in relation to ballast water and biofouling management normally remain with the vessel owner or master of that vessel.

Any seawater used by tugs for ballast purposes will be subject to the ballast water management provisions of the *Biosecurity Act 2015*.

Table 4-1: Management measures for biosecurity – marine construction

Management Measure	Responsibility	Identifier
Biosecurity signage will be installed at the site entry and exit and on site.	Construction Manager	BIOSEC1
Arrival of all international vessels at a first port of entry that complies with the relevant biosecurity standards (section 58 of the Biosecurity Regulations 2016).	Vessel Master	BIOSEC7
International vessels must comply with the requirements of the *Biosecurity Act 2015.*	Vessel Master	BIOSEC6
To avoid attracting nuisance species to the study area the following measures will be implemented: • secure storage of waste (lids on bins) • regular collection of waste from the site • dedicated crib facilities for employees and contractors to take meal breaks • induction training for operators to help them identify pest animal species • appropriate biosecurity signage to remind operators to report any sightings of pest species • implementation of control measures for pest species that have been detected • good housekeeping practices to minimise the number of areas that could harbour pest plants or animals • regular site inspections for pest species • regular site inspections of waste storage facilities.	Construction Manager	BIOSEC10
Equipment used during construction would meet the national and South Australian standards for biofouling management (Anti-fouling and in Water Cleaning Guidelines (DoA 2015), SA EPA Code of Practice for vessel and facility management (marine and inland waters) 2017).	Construction Manager	BIOSEC15
No in-water or dry dock cleaning will be permitted at the KI Seaport.	Construction Manager	BIOSEC16
Operating procedures for construction and operation will be developed in consultation with Biosecurity SA to reduce the risk of discharging unacceptable ballast water into Smith Bay. No uptake or exchange of ballast water to occur within Port Adelaide (within Gulf St Vincent is acceptable), for all vessels using or servicing the facility (including tugs).	KIPT Environment Manager	BIOSEC17
Adherence to the Ballast Water Management Guidelines.	Vessel Master	BIOSEC18
Other than in exceptional circumstances, vessels will discharge foreign-sourced ballast water on the high seas (that is, further than 200 nautical miles from the Australian shoreline) before entering the Australian EEZ, in conformance with the *Biosecurity Act 2015.*	Vessel Master	BIOSEC35
No abalone or oyster products allowed to enter the study area via Freeoak Road or via the KI Seaport.	Construction Manager	BIOSEC19

Management Measure	Responsibility	Identifier
The pontoon is required to complete vessel pre-arrival reporting using the Maritime Arrivals Reporting System (MARS) administered by DAWE.	Vessel Master	BIOSEC22
The vessel (pontoon) will be required to comply with all directives issued by DAWE relating to biosecurity during any inspections.	Vessel Master	BIOSEC23
The pontoon (purchased in South Korea as a barge) has been sandblasted and repainted with anti-fouling paint and will be inspected by Australian engineers before arrival at Smith Bay.	KIPT Construction Manager	BIOSEC24
The use of anti-fouling paints, including any cleaning of the vessel's hull, will comply with Commonwealth and South Australian pollution requirements.	Vessel Master	BIOSEC25
Investigation (during detailed design) of potential surface treatments or alternative structures to minimise the impact from exotic species.	KIPT Environment Manager	BIOSEC26
Implementation of the Marine Pest and Disease Monitoring Plan.	KIPT Environment Manager	BIOSEC21
The Marine Pest and Disease Monitoring Plan will be developed in consultation with SARDI, Biosecurity SA and Landscape South Australia Kangaroo Island. Marine pest surveillance will be implemented via the Monitoring Plan.	KIPT Environment Manager	BIOSEC27
Any marine surveillance equipment (boats and diving equipment) used during construction will be decontaminated in accordance with standard industry protocols to prevent the spread of any aquatic diseases.	KIPT Environment Manager	BIOSEC28
Regular review and update of the Marine Pest and Disease Monitoring Plan.	KIPT Environment Manager	BIOSEC29
Marine pest surveillance which will include regular diving and inspection of monitoring infrastructure (e.g. settlement arrays and crab traps) and associated sediments for pest species. Shoreline searches for exotic marine species will also be conducted (refer to the Marine Pest and Disease Monitoring Plan).	KIPT Environment Manager	BIOSEC30
Ship's crews will be made aware of Kangaroo Island biosecurity requirements.	Vessel Master	BIOSEC32
In the event of a biosecurity incident on Kangaroo Island, strict controls will be implemented at the site in accordance with all directions given by regulatory authorities.	Construction Manager	BIOSEC33
The operators (KIPT and the Port Management Officer) will maintain open communication channels with stakeholders, including Landscape South Australia Kangaroo Island and Biosecurity SA/PIRSA, to have access to current information on pest outbreaks on Kangaroo Island.	KIPT Environment Manager	BIOSEC34

Management Measure	Responsibility	Identifier
Other than in exceptional emergency circumstances, vessels will discharge foreign-sourced ballast water on the high seas (that is, further than 200 nautical miles from the Australian shoreline) before entering the Australian EEZ, in conformance with the *Biosecurity Act 2015.*	Vessel Master	BIOSEC35
Vessels must comply with the SA EPA Code of Practice for vessel and facility management (marine and inland waters) 2017.	Vessel Master	BIOSEC36
In the case that there was a discovery (including suspected) of a new exotic marine organism at the Smith Bay construction site the following measures will be put into place: • implementation of the marine biosecurity response procedure • subscriptions to biosecurity alerts will be maintained to ensure up-to-date information on current pest outbreaks was readily available • the organism will be reported immediately to the relevant authorities via the Fishwatch 24-hour hotline • any cases of suspected aquatic diseases will be reported immediately to the relevant authorities via the Fishwatch 24-hour hotline • all directions issued by PIRSA will be followed • practical response plans and strategies for the control of key pest species will be developed and implemented (as required) in consultation with SARDI, Landscape South Australia Kangaroo Island, Biosecurity SA and DAWE.	KIPT Environment Manager Construction Manager	BIOSEC37
Before a vessel is granted entry to the Smith Bay construction site, a pre-entry risk assessment is to be completed. The risk assessment will consider: • anti-fouling coating • review of the biofouling record book • the vessel's operating profile and docking cycle. Cleaning and maintenance schedule.	KIPT Environment Manager Vessel Master	BIOSEC38
International vessels will require an International Anti-fouling Certificate.	Vessel Master	BIOSEC40
Operators of tugs and barges must maintain a biofouling record book in accordance with the requirements of the National Biofouling Management Guidelines for Non-trading Vessels, 2009.	Vessel Master	BIOSEC42
Induction sessions for construction staff will include: • a component on aquatic abalone diseases, including abalone and oyster diseases • implementing the relevant biosecurity measures, such as the prohibition on imports of honey, apiary products and unwashed potatoes, and weed identification • information on how to identify pest animal species, the potential damage they could cause and how to report sightings • importance of good housekeeping to minimise attraction of feral animals and vermin • information on potential pests and diseases that can be translocated by biofouling	Construction Manager	BIOSEC41

Management Measure	Responsibility	Identifier
general information on the importance of biosecurity measures for Kangaroo Island.		
In the event of a vessel emergency any equipment or persons that were transferred to the vessel (either by air or sea) will be free of any soil, plant and animal material.	Construction Manager	BIOSEC47
Implementation of the marine biosecurity response procedure.	Construction Manager	BIOSEC48
Each vessel will have a Biofouling Management Plan developed in accordance with Appendix I of MEPC Resolution MEPC.207 (62) of 2011: 'Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.'	Vessel Master	BIOSEC51
All vessels used, both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufacturers application specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).	Vessel Master	BIOSEC52

5. MARINE PEST MONITORING

Marine pest surveillance will be undertaken in accordance with the Marine Pest and Disease Monitoring Program.

The focus of the monitoring program will be the detection of any potential Invasive Marine Species (IMS) and will be a combination of:

- plankton tow and subsequent analysis of plankton using environmental DNA molecular analysis
- settlement plates or arrays
- crab traps
- shoreline searches.

All discoveries of potential IMS will be reported to PIRSA using the Biosecurity Incident Response Procedure (Marine) – see Table 6-1. PIRSA will then undertake reporting to DAWE in accordance with national protocols.

5.1 Adopted Approach

Table 3-1 identifies IMS that are relevant to the proposed wharf at Smith Bay. This list is subject to change depending on:

- the port of origin for incoming vessels
- new IMS in the port of origin
- changes to the National Priority List
- new reports of IMS in South Australian or Australian waters.

A target species list has not been adopted for the monitoring program however the focus will be on using current technologies to identify any invasive marine species that may be detected in Smith Bay and then subsequently implementing the relevant reporting procedure.

6. BIOSECURITY INCIDENT RESPONSE

6.1 Definition

A biosecurity incident of the type that could occur during construction (and operation) of the KI Seaport is defined as:

> *an unintentional, unforeseen or uncontrolled exposure to an exotic pest and/or disease. The incident may be marine or terrestrial in nature. The definition includes the introduction of a new pest and/or disease as well as the translocation of a new pest and/or disease from another part of Kangaroo Island.*

6.2 National Response to Biosecurity Incidents

When a pest or disease outbreak occurs in Australia, which is also referred to a biosecurity incident, arrangements are in place to allow for a rapid nationally-coordinated response.

An outbreak will be managed on the ground either by the Department of Agriculture, Water and the Environment (DAWE) or the primary industries agency, in the state or territory in which the outbreak occurs (in South Australia this will be the Department of Primary Industries and Regions).

The Biosecurity Incident Management System (BIMS) has been developed to provide guidance on the management of biosecurity incident responses and initial recovery operations in Australia. The BIMS is the same system used by other Australian emergency response service agencies, including the State Emergency Service (National Pest and Disease Outbreak 2020).

Four response plans have been developed by the relevant organisation that acts as the national coordinator of the government-industry partnership to actively manage a biosecurity incident and include:

- AUSVETPLAN – Australian Veterinary Emergency Plan which is made up of a series of manuals to manage a disease outbreak relating to animal health (developed by Animal Health Australia <https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/>).
- AQUAVETPLAN – sets out the preferred to approach to diseases that affect aquatic animals, including finfish, crustaceans and molluscs (developed by the Department of Agriculture, Water and the Environment in conjunction with animal health experts <https://www.agriculture.gov.au/animal/aquatic/aquavetplan>).
- PLANTPLAN – the agreed technical response plan used for emergency plant pest incidents (developed by Plant Health Australia <https://www.planthealthaustralia.com.au/biosecurity/incursion-management/plantplan/>).
- EMPPlan – Emergency Marine Pest Plan provides the response to pest emergencies in Australia's marine environment (developed by the Department of Agriculture, Water and the Environment in conjunction with marine pest experts <https://www.agriculture.gov.au/pests-diseases-weeds/marine-pests/empplan>).

6.3 Reporting Procedure

The reporting process to be adopted for a biosecurity incident during construction is provided in Table 6-1. A flow chart for marine biosecurity incident reporting is provided in Figure 6-1.

During construction the marine construction activity zone will not be a designated First Port of Entry.

Table 6-1: Biosecurity incident response during construction of the KI Seaport

Biosecurity Incident Response	Construction
Definition	A biosecurity incident is an unintentional, unforeseen or uncontrolled exposure to exotic pests and/or diseases.
Timeframe for reporting	The Contractor must report suspected cases of an exotic pest and/or disease immediately (within 24 hours of discovery).
Examples of Biosecurity Incidents	Discovery of a suspected exotic marine organism on a vessel or in the water.
Training	All staff must complete the project induction training prior to entering the site.
Report	Biosecurity incidents must be reported via the: 1. Local PIRSA biosecurity officer – (Kingscote office - 8553 4949). 2. Exotic marine pests or disease – reported to Fishwatch 1800 065 522. 4. Report to KI Seaport Construction Manager. 5. Reported on the KIPT internal reporting system.

Biosecurity Incident Response	Construction
Marine pests	1. Attempt to identify marine organism as either a crustacean, ascidian, fish, seagrass, macroalgae, mobile invertebrate etc. 2. Photograph suspected marine pest in situ. 3. Record location, depth, substrate, number of organisms, other relevant details. 4. Report as soon as possible to Fishwatch 1800 065 522 and follow any additional directions (if any are given by an authorised officer under the *Fisheries Management Act 2007*).

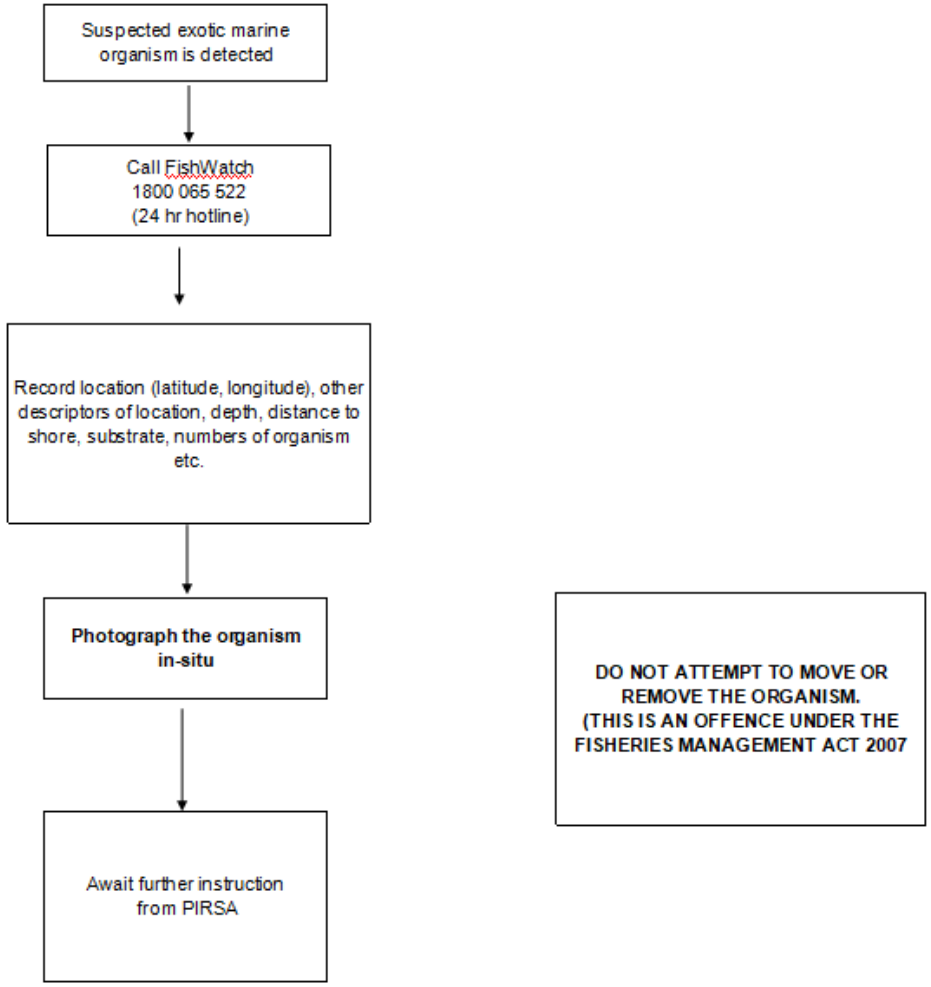

Figure 6-1 Marine biosecurity incident response procedure – Construction

7. REPORTING REQUIREMENTS

Annual reporting on the results of the monitoring plan will be provided to relevant authorities which include:

- PIRSA
- Landscape South Australia Kangaroo Island
- DAWE.

Any discoveries of potential introductions of exotic marine pests or diseases will to be reported to KI Seaport project manager/s and relevant authorities. Refer to the Biosecurity Incident Response Procedure (Marine) (Figure 6-1 and Table 6-1).

Compliance reporting will be undertaken in accordance with relevant licences/permits issued by government regulators.

8. MANAGEMENT PLAN REVIEW

The MPDMPC will be subject to regular review by KIPT. The review process will be undertaken in the event of:

- changes to applicable legislation
- operational changes
- new or emerging IMS
- changes to the local environment at Smith Bay
- results of the Marine Pest and Disease Monitoring Plan/Program
- improvements to the management plan and/or framework
- other relevant changes.

References

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Appendix a

Summary of Marine Surveys Undertaken for the Smith Bay EIS

PREVIOUS MARINE ECOLOGICAL SURVEYS

A total of four marine ecological surveys were undertaken by SEA Pty Ltd for the Smith Bay Wharf Draft EIS.

The substrate within approximately 150 metres of the shore at Smith Bay consists mainly of rock and reef with a relatively thin veneer of sand that has accumulated in places over the rock. The near-shore section of reef consists of both sheet silcrete reef and loose rock. Further offshore (>10 metres depth) the seafloor consists of a mixture of rubble, shell grit and sand.

The marine communities within approximately 150 metres of shore consist of mixed reef and seagrass communities. The seagrasses *Posidonia sinuosa* and *Amphibolis* spp. (*A. antarctica* and *A. griffithii*), which are long-lived species and considered to be particularly important ecologically, grow in patches among the rocks in depths up to 10 metres, and continuously over a mixed substrate of sand, pebble and shell fragment at greater depths (i.e. approximately 11–12 metres). There are isolated, small patches of *Zostera nigricaulis*, which is a relatively short-lived primary coloniser that tends to recover from disturbance much more rapidly than *Posidonia* spp. and *Amphibolis* spp.

In the zone <10 metres deep, the seafloor cover is approximately 60 per cent macro-algae, 30 per cent seagrass and 10 per cent bare rock or sand. In the deeper water (>10 metres) the cover is initially dense seagrass (80–100 per cent cover), decreasing with increasing depth to a sparse cover (10 per cent) at a depth of 15 metres. The seafloor in the deeper water (15 metres) is predominantly bare rubble, shell grit and sand.

A further survey of the revised location of the pontoon and approaches (as presented in the Addendum to the Smith Bay EIS) was undertaken by divers to provide a better understanding of the benthic communities that may be affected by the development. The community of fauna inhabiting the rocky intertidal shore was also surveyed at three locations.

As expected, the seagrass communities that were present closer to shore were much sparser in the deeper water (14-17 m), with the cover ranging from zero to 5% of mainly *Posidonia sinuosa*, with occasional patches of *Amphibolis* sp and *Halophila australis*.

Two additional crab species (the smooth seagrass crab and the bristled sponge crab) were found during the subtidal survey, but neither is of particular conservation significance. Similarly, the intertidal survey revealed a typical assemblage of fauna, none of which is of particular conservation significance.

No introduced species were recorded in Smith Bay during the marine surveys.

Table 0-1: Taxa recorded during the marine surveys at Smith Bay

Species	Common name (after Edgar 2008 unless denoted by #)	Reef/Mixed habitat (0–9 m)	Dense to medium seagrass (9–12 m)	Medium to sparse seagrass (12–16 m)
Macroalgae				
Acrocarpia paniculata	Bushy tangleweed	1		
Avrainvillea clavatiramea	Giant lobes#		1	
Botryocladia sonderi	Red grapeweed	1–2	1	1
Caulerpa brownii	Brown's caulerpa	2		
Caulerpa cactoides	Cactus caulerpa	1		1–2
Caulerpa flexilis	Fern caulerpa	1		

Species	Common name (after Edgar 2008 unless denoted by #)	Reef/Mixed habitat (0–9 m)	Dense to medium seagrass (9–12 m)	Medium to sparse seagrass (12–16 m)
Caulerpa flexilis var. muelleri	Mueller's fern caulerpa	1–2		
Caulerpa sedoides	Bubble caulerpa	1–2	1	1
Cladosiphon filum	Brown spaghetti weed		3	3
Codium pomoides	Sea apple	2	1–2	2
Codium spongiosum	Green spongeweed			1
Colpomenia sinuosa	Sinuous bullweed		1–2	3
Cystophora brownii	Brown's cystophora	1		
Cystophora expansa	Expansive cystophora	1–2		
Cystophora monilifera	Three-branched cystophora	2–3		
Cystophora moniliformis	Zigzag cystophora	1–2		
Cystophora retorta	Open-branched cystophora	1		
Cystophora siliquosa	Slender cystophora	2–3		
Cystophora subfarcinata	Bushy cystophora	2		
Dictyosphaeria sericea	Liverwort seaweed	2–3	1	
Gloiosaccion brownii	Poseidon's fingers	1–2		
Gracilaria sp.	Yellow antlers#	1–2		
Haliptilon roseum	Rosy coralline	1–3	1–2	
Laurencia spp.	Laurencias#	1		
Lobophora variegata	Peacockweed	1–3	1	
Metagonionlithon sp.	Articulated corallines#	1–2	1	
Osmundaria prolifera	Twisted red strapweed	1		
Peyssonnelia spp.	Lobed red algae	1–2	1	
Rhodophyta spp.	Filamentous red algae			2
Sargassum subgenus Arthrophycus	Sargassums#	1–3		
Sargassum subgenus Phyllotrichia	Sargassums#	1		
Sargassum subgenus Sargassum	Sargassums#	1-2		
Scaberia aghardii	Brown fingerweed	1–3		
Sporolithon durum	Rhodolith			2
Zonaria spiralis	Spiral fanweed	1		
Seagrasses				
Amphibolis antarctica	Wire weed	2	1–3	1–2
Amphibolis griffithii	Griffith's sea nymph	2	1	

Species	Common name (after Edgar 2008 unless denoted by #)	Reef/Mixed habitat (0–9 m)	Dense to medium seagrass (9–12 m)	Medium to sparse seagrass (12–16 m)
Halophila australis	Southern paddlegrass	1		1
Posidonia coriacea	Thin-leafed strapweed	1	1	
Posidonia sinuosa	Smooth strapweed	1–2	3	1–3
Zostera nigricaulis	Black-stemmed eelgrass	1	1–2	1
Fish				
Acanthaluteres brownii	Spiny-tailed leatherjacket	2		
Achoerodus gouldii	Western blue groper	2		
Aetapcus maculatus	Warty prowfish	1		
Austrolabrus maculatus	Black-spotted wrasse	1		
Cheilodactylus nigripes	Magpie perch	1		
Chelmonops curiosus	Western talma	1		
Dactylophora nigricans	Dusky morwong	1		
Dotolabrus aurantiacus	Castelnau's wrasse	1		
Enoplosus armatus	Old wife	1		
Girella zebra	Zebra fish	2		
Helcogramma decurrens	Black-throated threefin	1		
Kyphosus sydneyanus	Silver drummer	2		
Meuschenia hippocrepis	Horseshoe leatherjacket	1–2		
Notolabrus parilus	Brown-spotted wrasse	1	1	
Notolabrus tetricus	Blue-throated wrasse	1–2		
Omegaphora armilla	Ringed toadfish		1	1
Othos dentex	Harlequin fish	1		
Parascyllium ferrugineum	Rusty catshark		1	
Parascyllium variolatum	Varied catshark	1		
Parequula melbournensis	Southern silverbelly		1	
Pictilabrus laticlavius	Senator wrasse	1		
Pseudocaranx sp.	Trevally	3		
Scorpis aequipinnis	Sea sweep	2		
Siphonognathus beddomei	Pencil weed whiting	1		
Stipecampus cristatus	Ringed-back pipefish			1
Tilodon sexfasciatus	Moonlighter	2		
Trachurus novaezelandiae	Yellowtail scad		3	
Mobile invertebrates				

Species	Common name (after Edgar 2008 unless denoted by #)	Reef/Mixed habitat (0–9 m)	Dense to medium seagrass (9–12 m)	Medium to sparse seagrass (12–16 m)
Acrosterigma cygnorum	Western heart cockle			1
Amblypneustes sp.	Egg urchin			2
Anthaster valvulatus	Mottled sea star	1		1–2
Astralium squamiferum	Seagrass star	1		
Austrodomidia octodentata	Bristled sponge crab			1
Calliostoma armillatum	Pink top shell		1	
Cenolia trichoptera	Orange feather star	3		
Centrostephanus tenuispinus	Western hollow-spined urchin		1	1
Coscinasterias muricata	Eleven-armed sea star		1	1–2
Echinaster arcystatus	Pale mosaic sea star	1		
Echinaster glomeratus	Orange reef star	1	1	1–2
Equichlamys bifrons	Queen scallop	1		2–3
Fusinus australis	Southern spindle	1	1	
Goniocidaris tubaria	Stumpy pencil urchin			1
Haliotis laevigata	Greenlip abalone	1		
Haliotis scalaris	Grooved abalone	1	1	2
Heliocidaris erythrogramma	Purple urchin			1
Jasus edwardsii	Southern rock lobster	1		
Luidia australiae	Southern sand star		1	1
Meridiastra gunii	Gunn's six-armed star	1		1
Mimachlamys asperrimus	Doughboy scallop	2		1–3
Naxia aurita	Smooth seagrass crab			
Nectocarcinus integrifrons	Seagrass swimmer crab			1
Nectria pedicelligera	Multi-spined sea star	1	1	1
Pagurid sp.	Grey hermit	1		
Paguristes frontalis	Southern hermit crab	1		1
Pentagonaster dubeni	Vermilion biscuit star	3	1–3	1–3
Petricia vernicina	Cushion sea star	1		1
Phasianella australis	Painted lady	3	1	3
Phasianella ventricosa	Swollen pheasant shell	1–2	1	
Phasianotrochus eximus	Giant kelp shell	1		
Phyllacanthus irregularis	Western slate-pencil urchin	1–2		

Species	Common name (after Edgar 2008 unless denoted by #)	Reef/Mixed habitat (0–9 m)	Dense to medium seagrass (9–12 m)	Medium to sparse seagrass (12–16 m)
Pinna bicolor	Razor clam		1	1
Plagusia chabrus	Red bait crab	1		
Plectaster decanus	Mosaic sea star	1		1
Pleuroploca australasia	Tulip shell	1	2	1–2
Sepia apama	Giant Australian cuttlefish			1
Stchopodid spp.	Sea cucumbers	1–2	1	1–2
Tellina victoriae	Rough tellin#	1		
Thyone okeni	Burrowing holothurian#		1	
Tucetona flabellata	Fan-like dog-cockle			1
Uniophora granifera	Granular sea star	1		
Sessile invertebrates				
Ascidiacea spp.	Unidentified ascidians	1		1
Botrylloides magnicoecum	Magnificent ascidian	1		
Bryozoa spp.	Erect byozoans		2	2–3
Clavelina spp.	Colonial ascidians	1	1	
Erythropodium hicksoni	Encrusting soft coral	1		
Herdmania grandis	Red-mouthed ascidian	2	1	1–2
Iodictyuum phoeniceum	Purple bryozoan	1		
Orthoscuticella ventricosa	Orange filamentous bryozoan	1		
Parmularia smeatoni	Little fan bryozoan		1	
Phallusia obesa	Obese ascidian			1
Plesiastrea versipora	Green coral	1		
Polycarpa clavata	Club ascidian	1	1–2	
Polycarpa viridis	Mauve-mouthed ascidian	1–3	2–3	2
Porifera spp.	Sponges	2–3	1–2	1
Pyura spp.	Sea tulip	1–2	1	2
Sycozoa ceribriformis	Brain ascidian		1–2	1–2
Sycozoa murrayi	Murray's ascidian	2		2

^Mixed habitat refers to mixed reef, seagrass and sand habitat to 8 m. Abundances are expressed as categories: 1 = 1 or 2 individuals or small patches; 2 = 3–10 individuals or patches, 3 = >10 individuals or patches, or a continuous distribution.

Intertidal surveys

The intertidal area of Smith Bay consists almost entirely of round rocks and boulders that have been weathered and smoothed by wave action.

The results of the intertidal survey are summarised in Table 0-2. The most abundant species was the small gastropod *Nodilittorina unifasciata* with abundances in the range 10–290 across all replicates. Other gastropods were *Nerita atamentosa* and *Austrocochlea concamerata* (Plate 1) and the limpet *Notoacmea* sp. (Plate 2). Grapsid crabs (Plate 3) were recorded at all sites (most replicates), and the isopod *Ligia australiensis* was recorded in some replicates of sites B01 and B02.

Plate 1. Intertidal gastropod *Austrocochlea concamerata*

Plate 2. Limpet *Notoacmea* sp.

Plate 3. Grapsid crab

Table 0-2:Taxa recorded during intertidal survey in September 2019 (SEA 2019)

Site	B01					B02					B03				
Species	Replicates			Mean	Std. err.	Replicates			Mean	Std. err.	Replicates			Mean	Std. err.
	1	2	3			1	2	3			1	2	3		
Nerita atramentosa	2	3	1	2.0	0.6	2	1	3	2.0	0.6	14	17	24	18.3	3.0
Austrocochlea concamerata	4	3	1	2.7	0.9	5	5	16	8.7	3.7	43	8	43	31.3	11.7
Notoacmea sp.	3	-	-	1.0	1.0	-	-	4	1.3	1.3	3	1	3	2.3	0.7
Nodilittorina unifasciata	260	10	90	120.0	73.7	290	185	110	195.0	52.2	127	285	42	151.3	71.2
Undifferentiated barnacle	-	-	-	0.0	0.0	-	-	-	0.0	0.0	-	-	5	1.7	1.7
Undifferentiated grapsid crab	-	1	10	3.7	3.2	9	3	-	4.0	2.6	2	5	1	2.7	1.2
Ligia australiensis	-	5	9	4.7	2.6	5	-	-	1.7	1.7	-	-	-	0.0	0.0
Galeolaria caespitosa	-	-	-	0.0	0.0	-	-	-	0.0	0.0	1	-	-	0.3	0.3

Note: std. err. = standard error of mean.

Appendix b

Preliminary Smith Bay Vessel Risk Assessment Scoresheet

Vessel Risk Assessment Score Sheet (VRASS)

Type of Anti-fouling Coating		Score
AFC type is known, suited to vessel activity + speed and is <2 years old = 2.0 ACC type is unknown, unsuited, absent or > 2 years at mobilisation = 3.0		
Age of Anti-fouling Coating at mobilisation date		**x**
Documented age of AFC will be:	1 year old, absent or unknown = 3.0 between 6-12 months = 2.0 3-6 months = 1.0 1-3 months = 0.5 <1 month = 0.1 <14 days = 0.0	VALUE
Documented date of AFC renewal: / /		
IMS infection risk - Location of "home" ports/main supply base since last AFC		**x**
Region/s of the home ports or long term supply bases since last AFC renewal have included: *(Insert highest scoring region only)*	Tropical region = 3.0 Subtropical region = 2.0 Only temperate = 1.0	VALUE
IMS infection risk - number of stationary/slow speed periods over 7 days		**x**
No of weeks of rest or <6 knots of port or coastal waters (<100 m) since last-haul out for cleaning	No of 7 day periods divided by 2 =	VALUE
IMS infection risk - region of the stationary/slow speed periods		**x**
Region/s of the ports or coastal waters where above stationary or slow speed periods occurred included: *(Insert highest scoring region only)*	Tropical = 3.0 Subtropical = 2.0 Temperate = 1.0	VALUE
IMS biofouling survival risk		**x**
No haul-out cleaning and inspection prior to Survey	= 1.0	VALUE
One independent in-water inspection prior to the day premobilisation inspection period	= 0.5	
Two independent in-water inspections prior to the 7 day premobilisation inspection period	= 0.3	
One independent haul-out inspection prior to the 7 day premobilisation inspection period	=0.3	
Infection risk - internal niches (ie seawater pipework, anchor, bilge)		**x**
Above checks will include seawater system flushing, check strainers, anchor cable locker, other niches	Yes = 0.5 No = 1.0	VALUE
Subsequent mobilisation by deck cargo, hard stand, or road freight will provide a continuous total hauled-out period that is:	<7 day = 1.02 7-13 days = 0.8 14-27 days = 0.3 >28 days = 0.1	VALUE
IMS infection risk - from ballasted / trim tank seawater		**x**
Seawater onboard of tropical or subtropical origin:	None/no discharge - 0.0 Seawater of subtropical origin may need discharge =2.0 Seawater of tropical origin may need discharge = 3.0	VALUE
Compliance with Australian Ballast Water Management Guidelines, Version 8	Intended = 0.0 Not possible = 3.0	VALUE
Vessel Risk Score	**Total Score**	
If score >80 = High risk: premobilisation inspection action required		
If score 20-80 = Moderate risk: Confirmatory independent inspection and/or potential actioning required		
If score <20 = Low risk: Vessel details require checks/confirmation only		

Appendix B3 – Draft Marine Pest and Disease Management Plan – Operation

KI Seaport

Marine Pest and Disease Management Plan – Operation

Working Draft

KANGAROO ISLAND PLANTATION TIMBERS

Table of Content

NOTE THAT COMMENTS FROM PIRSA (BIOSECURITY) UP TO DECEMBER 2020 HAVE BEEN CONSIDERED, WITH SOME OUTSTANDING COMMENTS REMAINING IN THE DOCUMENT FOR FUTURE DISCUSSSION AND CLOSE OUT (WHICH WILL LIKELY BE AFTER APPROVAL). CONSULTATION WILL ALSO BE REQUIRED WITH DAWE.

1. INTRODUCTION

Kangaroo Island Plantation Timbers (KIPT) propose to establish and operate the KI Seaport using an environmental management framework (EMF) that is consistent with Australian Standards (i.e. AS/NZS ISO 14001:2016 *Environmental Management Systems*).

The framework described in Chapter 26 of the Smith Bay Wharf Draft Environmental Impact Statement (Draft EIS) provides an overarching strategy to manage potential environmental impacts during the construction and operation of KI Seaport.

The overall goal of this Marine Pest and Disease Management Plan — Operations (MPDMPO) is to avoid, mitigate, manage and/or control any potentially adverse impacts of port operation activities associated with the development on the biological, physical, social or economic environment. The MPDMPO will also give effect to any approval conditions imposed, and all commitments made by KIPT. The Plan is considered a sub-management plan of the Biosecurity Management Plan (BMP).

The Plan must be read in conjunction with the following management plans:

- Biosecurity Management Plan
- Operational Environmental Management Plan
- Terrestrial Pest Management Plan – Operations.

1.1 Project Overview

Timber product (logs and woodchips) will be transported to Smith Bay and stored before loading on to vessels for export. The KI Seaport will consist of a deep-water port and associated onshore facilities to handle and load these products into Panamax size vessels, with the option of using smaller Handymax size vessels as requirements dictate.

The Marine Pest and Disease Management Plan – Operations (MPDMPO) will apply to the operation of all components of the KI Seaport:

- Port/off-shore components:
  - navigation aids
  - floating pontoon wharf with wharf furniture (fenders, bollards, kerbs etc.)
  - restraint dolphins for restraint of pontoon
  - mooring dolphin at either end of wharf for vessel head and stern lines
  - linkspan bridge
  - approach (causeway and suspended deck)
  - tug mooring facility/pen.

The practical implementation of the MPDMPO is structured around environmental aspects and key operational activities that have a potential risk for environmental impact. The implementation of the management controls to lower risks to acceptable levels is therefore required. The implementation of management measures is required for the extent of the harbour as shown in Figure 1-1.

{to be inserted}

Figure 1-1: Extent of the harbour

1.2 Structure/Purpose

The purpose of the MPDMPO is to:

- describe the management measures for mitigating the risk of the introduction of marine pests and diseases in Smith Bay
- provide the notification process in the event that a suspected marine pest or disease is found in Smith Bay for when an international vessel is in port and when there is no international vessel in port
- describe the assessment process that will be adopted to grant entry of vessels to the KI Seaport.

The BMP provides the overarching management framework for all biosecurity issues at the KI Seaport and the MPDMPO is a sub-management plan under the BMP.

1.3 Roles and Responsibilities

All personnel involved in the project including KI Seaport employees, contractors and sub-contractors, are required to work in accordance with this MPDMPO, and in accordance with all relevant Acts, Policies and Regulations.

Table 1-1 outlines the roles and responsibilities for the implementation of the Plan. Throughout detailed planning and operation phases, names will be allocated to the roles prescribed in the Marine Pest and Disease Management Plan — Operations.

Table 1-1: Roles and responsibilities {needs to be updated to be consistent with other Plans and the CEMP-S}

Role	Responsibility
KIPT	Responsible for implementing requirements set for the development by development approval conditions and in legislation, regulation, codes of practice, and industry standards and implementing its environmental policy to minimise impacts and demonstrate commitment to sustainable practices. Ultimately responsibility for compliance.
KIPT Approvals Manager	Reporting compliance measures and performance to KIPT Board and Executive and to government. Managing communications to government agencies.
Seaport Environment Manager	Implementing and maintaining the MPDMPO. Approving Contractor CEMPs and monitoring Contractor performance and compliance.

Role	Responsibility
	Reporting Contractor performance and compliance to KIPT Executive and Approvals Manager. Coordinating KIPT's management and monitoring plans. Communicate with and support the KIPT Approvals Manager. Liaising with community groups and government agencies/authorities. Closing out all environmental incidents and response. Managing environmental matters in relation to stakeholder engagement. Coordinating environmental awareness training and implement sustainability initiatives. Providing input into site inductions. Assisting the Seaport Director, Project Manager/s, Construction Site Supervisor/s, Staff/Contractors in relation to compliance with these specifications.
Seaport Project Director	Promoting the culture of environment protection and providing clear expectations and guidelines. Reporting to the KIPT Executive. Overseeing the involvement of all internal and external stakeholders and addressing issues raised. Supporting the Environment Manager in ensuring CEMP Specifications are met. Identifying issues or concerns for Contractor CEMP implementation. Intervening, if required, to ensure any deviation from Contractor CEMP requirements are corrected.
KI Seaport Project Manager	Ensuring that Marine Pest and Disease Management Plan – Operation requirements are communicated to all relevant contractors and consultants involved in construction and operational activities at the KI Seaport. Overseeing the development and implementation of the Marine Pest and Disease Management Plan — Operations. Ensuring that sufficient funds are available to implement the Marine Pest and Disease Management Plan — Operations. Monitoring performance and reporting on progress against Marine Pest and Disease Management Plan — Operations objectives. Intervening, if required, to ensure any deviation from EMF requirements is corrected. Reviewing and updating the Marine Pest and Disease Management Plan — Operations as required.
KI Seaport Operations Manager/s	Ensuring that all environmental management requirements in the Marine Pest and Disease Management Plan — Operations are clearly communicated to all relevant staff through appropriate inductions and other training as necessary. Providing staff with written instructions/protocols/methods regarding environmental management requirements and responsibilities. Ensuring all necessary environmental approvals and licences are secured before construction begins. Ensuring and monitoring compliance of activities with conditions of relevant licences, permits and the Marine Pest and Disease Management Plan — Operations. Liaising with DEW, PIRSA, DAWE, EPA and other regulatory authorities as required. Intervening, if required, to ensure any deviation from EMF requirements is corrected. Notifying any legislative breaches or environmental incidents to authorities in conformity with statutory requirements. Responding to any complaints received.
KI Seaport Contractors	All contractors taking their environmental responsibilities seriously and diligently following all environmental procedures communicated to them by their supervisors.

Role	Responsibility
	Undertaking all required inductions and/or environmental awareness training before starting work on site. Reporting any environmental incidents to the Operations Manager immediately.
Port Operator	Ensure the MPDMPO is implemented. Ensure all staff have undertaken relevant biosecurity training. Development and implementation of documentation to meet the relevant Biosecurity Standards for a First Point of Entry.
Vessel Master	Ensure that the Australian Ballast Water Management Requirements under the Commonwealth Biosecurity Act are met. Compliance with the Commonwealth Anti-fouling and in-Water Cleaning Guidelines. Compliance with National Biofouling Management Guidelines for Commercial Vessels. Completion of the KI Seaport Pre-entry Risk Assessment Questionnaire.

1.4 Stakeholder Engagement

The following stakeholders are relevant for the MPDMPO:

- Commonwealth Department of Agriculture, Water and Environment (DAWE)
- Department of Infrastructure, Transport, Regional Development, and Communications (DITRDC)
- Department of Primary Industries and Regions South Australia – PIRSA Biosecurity SA
- South Australian Research and Development Institute (SARDI)
- South Australian Environment Protection Authority (EPA)
- Landscape South Australia Kangaroo Island
- Yumbah Aquaculture
- Flinders Port Holdings.

The MPDMPO has been developed in consultation with relevant government agencies and has been approved for use before any activities commence on the Project area.

1.5 Training

All KI Seaport staff and contractors will be required to undertake training in environmental management as part of their induction to the site and its activities before any operational activities could begin. Induction training will address:

- background to the KI Seaport
- approval conditions, and the role of the EMF
- legislative requirements of the company and individuals
- key personnel and roles
- KI Seaport EMPs
- discovery protocols for exotic marine species
- environmental issues at the site and relevant management plans and procedures
- community issues related to the project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and Incident reporting and management procedure
- emergency response plan.

Job-specific training will also be required. The KI Seaport Project Manager/s will be responsible for overseeing training, through the relevant functional (e.g. environment) and area managers.

1.6 Environmental Aspects

Environmental aspects are defined as elements of an organisation's activities, products or services that could interact with the environment. A significant environmental aspect has, or could have, a significant environmental impact (AS/NZS ISO 14001:2016).

Numerous activities associated with the operation of the KI Seaport have the potential to introduce marine pests and diseases that could affect the biosecurity status of Kangaroo Island and therefore must be managed appropriately. The aspects of the development related to marine pests and diseases include:

- ballast water discharge
- biofouling
- in-water and dry dock vessel cleaning (see Section 4.2.4)
- stowaways on shipping vessels.

Potential impacts associated with these aspects include:

- introduction of pest species and diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus* and the oyster disease Pacific Oyster Mortality Syndrome (POMS)) that could harm industry
- introduction of vertebrate or invertebrate pest species and/or diseases that could harm native fauna, flora, ecosystems and industry
- translocation of marine pests and/or aquatic diseases to other areas of Kangaroo Island
- introduction or translocation of microalgae that could result in human health impacts via consumption of contaminated shellfish.

The significant environmental aspects for the development were identified from the environmental assessment and are shown in Table 1-2.

Table 1-2: Environmental aspects, objectives and potential impacts to be managed at the KI Seaport

Environmental aspect	Objectives	Activity	Potential impacts
Biosecurity • introduction or spread of pest plants, pest animals and/or diseases • ballast water discharge • biofouling (including in-water and dry dock vessel cleaning) • stowaways on shipping vessels	No introduction of new pest plants or pest animals, nor material increase in the abundance or area of existing pest plant or pest animals. No introduction or spread within Kangaroo Island, of marine pests or aquatic diseases. To minimise the risks to the biosecurity status of Kangaroo Island. To minimise the risk of the development adversely impacting the biosecurity status of locations other than Kangaroo Island and its waters.	Shipping activity – sea freight as a vector for pests and diseases. Shipping activity – ballast water discharge as a vector for the introduction of microalgae (that result in harmful algal blooms).	• adverse impacts (disease, predation, increased competition, reduction in habitat) on flora and fauna from pest plants, pest animals and/or diseases • financial impacts to industry as a result of new pest plants, pest animals and/or diseases on the Island • introduction of pest species and/or aquatic diseases (particularly the abalone disease AVG and the abalone parasite *Perkinsus*) that could harm industry • introduction of POMS into Kangaroo Island aquaculture oyster leases • introduction of vertebrate or invertebrate pest species and/or aquatic diseases that could harm native fauna, flora, ecosystems and industry • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish
Generation of waste and discharges • waste generation • ballast water discharge	No introduction or spread within Kangaroo Island of marine pests and/or aquatic diseases. To minimise the risk of harmful algal blooms occurring in Smith Bay.	Shipping – ballast water and biofouling.	• generation of wastes requiring disposal • marine pollution and effects on marine communities • potential introduction of pest species and diseases (particularly the abalone disease AVG, the abalone parasite *Perkinsus* and the oyster disease POMS) • harmful algal blooms that result in human health impacts due to consumption of contaminated shellfish • harmful algal blooms that impact aquaculture operations at Smith Bay

2. LEGAL REQUIREMENTS AND GUIDELINES

The following environmental legislation, regulations and guidelines provide the regulatory framework around which the MPDMPO is based:

2.1 Commonwealth Legislation

The following Commonwealth legislation, guidelines and national plans are applicable to the Plan:

- *Biosecurity Act 2015*
- Biosecurity Regulations 2016
- Anti-fouling and in-Water Cleaning Guidelines (Commonwealth of Australia 2015)
- National Biofouling Management Guidelines for Commercial Vessels (Commonwealth of Australia 2009a)
- National Biofouling Management Guidance for Recreational Vessels (Commonwealth of Australia, 2009b)
- Australian Ballast Water Management Requirements, Version 8 (DAWE 2020a)
- Marine Pest Plan 2018–2023: National Strategic Plan for Marine Biosecurity (DAWR 2018a)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, (ANZECC & ARMCANZ, 2000).

2.2 South Australian Legislation and Documentation

The following South Australian legislation and supporting documentation is applicable to marine pest and disease management:

- *Fisheries Management Act 2007*
- *Environment Protection Act 1993*
- Environment Protection (Water Quality) Policy 2015
- South Australian Biosecurity Policy 2020-202 (PIRSA 2020)
- Kangaroo Island Natural Resources Management Board's Biosecurity Strategy for Kangaroo Island (KINRMB 2017)
- Code of Practice for vessel and facility management (marine and inland waters) (EPA South Australia, 2017.

KIPT will ensure that all its employees have relevant permits and that contractors provide copies of their permits and licences to KIPT. Contractors will also be required to be responsible for ensuring their staff had relevant permits and licences before they commence work on the site. The MPDMPO will adhere to the conditions of these licences, ensuring that all on-site works are compliant.

It should be noted that a new piece of legislation (the South Australian Biosecurity Act) is currently available for public consultation (late 2020). The new Act will consolidate a number of existing Acts and provide for a simpler, modern and integrated framework for managing biosecurity.

2.3 Development Approval Requirements

{insert approval conditions here}

3. EXISTING ENVIRONMENT

Introduced species and diseases are a major threat to the biosecurity status of Kangaroo Island.

The most common sources of the introduction of invasive marine pests and diseases are via shipping (biofouling and ballast water), aquaculture and the aquarium industry (Kinloch et al. 2003; Hewitt & Campbell 2010).

Ballast water is water taken on board by vessels to maintain stability and trim. Ballast water can contain thousands of aquatic microbes, plants and animals, which can then be released locally as the vessel releases ballast water.

Biofouling (the marine plants and animals that attach and grow on the submerged parts of a vessel) from international vessels is also a major pathway for the introduction of exotic pest species and aquatic diseases into Australian waters. Biofouling can also translocate marine pests and diseases from one part of the Australian coastline to another.

The key vectors of marine pests and diseases that require mitigation during the operation of the KI Seaport include:

- biofouling on vessel hulls and other external niches (such as propulsion units, steering gear and thruster tunnels)
- biofouling of vessels' internal niches (such as sea chests, strainers, seawater pipe work, anchor cable lockers and bilge spaces)
- biofouling on equipment that routinely becomes immersed in water (including but not limited to cutters, ladders, jack-up legs)
- discharge of ballast water
- movement of vessels from Port Adelaide to Smith Bay.

3.1 Marine Environment

More than 250 introduced marine species have been recorded in Australia (DAWR 2018b), including more than 20 in Kangaroo Island waters (Wiltshire et al. 2010). No introduced marine species have previously been recorded near Smith Bay, including during the marine surveys undertaken in 2016, 2018 and 2019 by SEA. The closest records to the east are of the European fan worm at the Bay of Shoals and a number of species at Kingscote, and to the west a barnacle and a number of ascidians at Western River Cove (Wiltshire et al. 2010).

There is a land-based abalone farm adjacent to the KI Seaport operated under three aquaculture licences. A series of intake and discharge pipelines service the facility and are located in the waters of Smith Bay adjacent to the KI Seaport.

The two most significant abalone diseases relevant to the study area are abalone viral ganglioneuritis (AVG), which has been detected in wild abalone stock in Victoria and in abalone farms in Victoria and Tasmania (but not in South Australia), and the abalone parasite *Perkinsus*, which is already present (and have persistent, high levels of infection) in the wild abalone populations in South Australia at Neptune Island and at the south-eastern tip of Yorke Peninsula.

There are five aquaculture licences for oysters on Kangaroo Island, three are located at American River and two are in Nepean Bay. Pacific oysters (*Magallana gigas*) are susceptible to the disease Pacific oyster

mortality syndrome (POMS). In February 2018, the first detection of POMS in South Australia was discovered in feral oysters in the Port River (PIRSA 2018).

3.1.1 Invasive marine species (IMS)

The Australian Priority Marine Pest List (APMPL) has been developed by the Australian Government (Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)) (MPSC 2018). A priority list was developed previously by the CSIRO (Hayes et al. 2005). The APMPL identifies nine of Australia's significant marine pests. This list includes three established and six exotic species.

The Chief Environmental Biosecurity Officer released an interim list of priority exotic environmental pests, weeds and diseases in October 2019 (abbreviated to the National Priority List) and the final list was released in November 2020. The process to develop the list was led by ABARES and involved technical experts and key stakeholders (DAWE 2020b). The National Priority List has sub-categories for marine pests, freshwater invertebrates and aquatic animal diseases.

The APMPL and National Priority List are used in conjunction when managing exotic pests. Each list uses different criteria for species selection.

All exotic species are of concern to the South Australian Government, but the Department of Primary Industry and Regions South Australia (PIRSA) (2017b) listed a number of marine pests of most concern. Many of these, and other species, have been declared 'noxious' under the *Fisheries Management Act 2007* and are also listed on the PIRSA website (PIRSA 2015).

Some of the species from these lists are already established in Kangaroo Island waters, including the European fan worm *(Sabella spallanzanii)* and the vase tunicate *(Ciona intestinalis),* or elsewhere in South Australia, including the aquarium weed *(Caulerpa taxifolia)* and the European green shore crab *(Carcinus maenas)*. Others are established elsewhere in Australia and are considered to be potential threats to South Australia, including the Northern Pacific sea star *(Asterias amurensis)*, Japanese seaweed *(Undaria pinnatifida)* and New Zealand screwshell *(Maoricolpus roseus).* The Asian green mussel *(Perna viridis)* and Chinese mitten crab *(Eriocheir sinensis)* are both listed on the APMPL and are considered a threat to South Australia.

Table 3-1 presents a list of species that are relevant to Smith Bay. The table includes species that are:

- species that are included in the APMPL
- species that are included in the National Priority List
- species that are declared noxious in South Australia
- or species that are recorded on Kangaroo Island.

Further information is provided below for the species ranked high priority in the national list.

Table 3-1 also identifies which species are known in the north-west Pacific region which is the region that most international vessels will be arriving from.

The vectors of marine pest animals, pest plants and aquatic diseases most relevant to the operation of the KI Seaport are the disposal of ship ballast water, which can contain cysts, larvae or juveniles, and biofouling (encrusting organisms) on ship hulls that can detach or spawn. Although ballast water and biofouling are the two most common vectors for marine pests (NCMCRS 2010), other vectors during construction include anchors, anchor chains and mooring lines.

Introduced marine species can rapidly increase in numbers after a disturbance, the removal of competitive indigenous species, or the provision of unoccupied hard surfaces (wharf structures).

Management measures are provided in Section 4.

Table 3-1: Introduced marine species relevant to Smith Bay

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Ascidians	*Ascidiella aspersa*	European sea squirt					Y	
Ascidians	*Botrylloides leachi*						Y	Y
Ascidians	*Botryllus schlosseri*						Y	Y
Ascidians	*Ciona intestinalis*	vase tunicate			Y		Y	Y
Ascidians	*Didemnum* spp. (exotic strains only)	(carpet sea squirt)		Y *(D. vexillum)*		Y		Y
Ascidians	*Styela clava*							Y
Ascidians	*Styela plicata*						Y	Y
Bryozoans	*Bugula flabellata*							Y
Bryozoans	*Bugula neritina*						Y	Y
Bryozoans	*Schizoporella errata*							
Bryozoans	*Tricellaria occidentalis*							Y
Bryozoans	*Watersipora arcuata*							Y
Bryozoans	*Watersipora subtorquata*							Y
Crustaceans	*Balanus eburneus*	(a barnacle)						Y
Crustaceans	*Balanus reticulatus*	(a barnacle)						Y
Crustaceans	*Balanus improvisus*	(a barnacle)				Y		Y
Crustaceans	*Megabalanus rosa*	(a barnacle)						Y
Crustaceans	*Megabalanus tintinnabulum*	(a barnacle)					Y	
Ctenophore	*Mnemiopsis leidyi*	comb jelly				Y		

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Crustaceans	*Carcinus maenas*	European green shore crab	Y		Y	Y		Y
Crustaceans	*Charybdis japonica*	lady crab		Y		Y		Y
Crustaceans	*Eriocheir sinensis*	Chinese mitten crab	Y	Y	Y	Y		Y
Crustaceans	*Hemigrapsus sanguineus*	Japanese shore crab				Y		Y
Crustaceans	*Hemigrapsus takanoi/penicillatus*	Pacific crab				Y		Y
Crustaceans	*Rhithropanopeus harrisii*	Harris' mud crab	Y		Y	N	N	N
Crustaceans	*Pseudodiaptomus marinus*	(a copepod)						Y
Echinoderms	*Asterias amurensis*	Northern Pacific sea star	Y		Y	Y		Y
Fish	*Neogobius melanostomus*	round goby				Y		
Fish	*Siganus rivulatus*	rabbit fish				Y		
Fish	*Tridentiger bifasciatus*	shimofuri goby						Y
Macroalgae	*Bryopsis plumosa*	(green macroalga)					Y	Y
Macroalgae	*Caulerpa cylindracea*	(green macroalga)			Y			
Macroalgae	*Caulerpa taxifolia*	(green macroalga)			Y	Y		Y
Macroalgae	*Cladophora prolifera*	(green macroalga)					Y	Y
Macroalgae	*Codium fragile* ssp. *tomentosoides*	(green macroalga)				Y	Y	Y
Macroalgae	*Grateloupia turuturu*	(red macroalga)				Y		Y
Macroalgae	*Hincksia sandriana*	(brown filamentous macroalga)					Y	Y
Macroalgae	*Polysiphonia brodiei*	(red macroalga)					Y	Y
Macroalgae	*Sargassum muticum*	Asian seaweed				Y		Y

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Macroalgae	*Ulva lactuca*						Y	Y
Macroalgae	*Ulva taeniata*						Y	Y
Macroalgae	*Undaria pinnatifida*	Japanese seaweed/kelp	Y		Y	Y		Y
Microalgae	*Alexandrium catenella*						Y	Y
Microalgae	*Alexandrium minutum*						Y	Y
Microalgae	*Alexandrium tamarense*						Y	Y
Microalgae	*Gymnodinium catenatum*						Y	Y
Microalgae	*Heterosigma akashiwo*						Y	Y
Molluscs	*Corbula amurensis*	Asian clam				Y		Y
Molluscs	*Crassostrea gigas*	Pacific oyster			Y		Y	Y
Molluscs	*Crepidula fornicata*	American slipper limpet				Y		
Molluscs	*Ensis directus*	jack-knife clam				Y		
Molluscs	*Limnoperna fortunei*	golden clam						Y
Molluscs	*Maoricolpus roseus*	New Zealand screwshell			Y	Y		
Molluscs	*Musculista senhousia*	Asian date mussel				Y		Y
Molluscs	*Mya arenaria*	soft shell clam				Y		
Molluscs	*Mytilopsis sallei*	black-striped mussel	Y	Y		Y		Y
Molluscs	*Perna canaliculus*	New Zealand green-lipped mussel	Y			N	N	
Molluscs	*Perna perna*	brown mussel	Y			Y		

Group	Species	Common name	APMPL	National Priority List	PIRSA concern	Declared noxious	Recorded on Kangaroo Island	Known from NW Pacific Bioregion
Molluscs	*Perna viridis*	Asian green mussel	Y	Y	Y	Y		Y
Molluscs	*Pinctada albina sugillata*	pearl oyster			Y			
Molluscs	*Rapana venosa*	rapa whelk				Y		Y
Molluscs	*Corbula gibba*	European clam, basket shell				Y		
Polychaetes	*Hydroides ezoensis*							Y
Polychaetes	*Hydroides sanctaecrucis*							Y
Polychaetes	*Marenzelleria* spp	red-gilled mudworm				Y		
Polychaetes	*Sabella spallanzanii*	European fan worm			Y	Y	Y	

3.1.2 Diseases

Due to the proximity of the existing abalone farm to the KI Seaport, it is essential that measures are taken to ensure that no abalone-related diseases were introduced. Yumbah Kangaroo Island is part of the Abalone Health Accreditation Program and is required to implement a biosecurity plan for the operations. The biosecurity plan is audited against the National Biosecurity Plan Guidelines for the Australian Land-based Abalone Industry (Spark et al. 2018). Mitigation measures that will be implemented at the KI Seaport to maintain this accreditation include:

- Domestic animals (e.g. cats and dogs) will be prevented from accessing operational areas of the KI Seaport (Identifier BIOSEC53, R20*)
- Vermin baiting would be undertaken if live rodents, droppings or nests are observed (Identifier BIOSEC54, (R21*).

* Note the R reference is taken from the relevant management measure in the National Biosecurity Plan Guidelines for the Australian Land-based Abalone Industry (Spark et al. 2018).

(See also the Terrestrial Pest Management Plan – Construction and Terrestrial Pest Management Plan – Operations).

The two most significant diseases are abalone viral ganglioneuritis and the parasite *Perkinsus*.

Abalone viral ganglioneuritis

Abalone viral ganglioneuritis causes mass mortalities of abalone (PIRSA 2009). A 2006–2007 outbreak in Victoria, within 40 km of the South Australian border, resulted in severe economic loss through a catch that was more than halved. Very little is known about the virus, including how it infects abalone or how long it survives outside the host (PIRSA 2009). There is a risk that it may spread into South Australia through potential vectors such as translocation of stock, discharge from aquaculture facilities, launch and retrieval of anchors or pots, abalone fishing and the use of abalone as berley or bait (PIRSA 2009). Shipping, however, has not been identified as a possible vector. Transmission of AVG has been demonstrated through the water column.

AVG is currently exotic to South Australia.

Abalone parasite Perkinsus

Perkinsus is a genus of protozoan parasites that have been implicated in the death of clams, oysters and abalone worldwide (Goggin & Lester 1995). In South Australia, the native species *Perkinsus olseni* has been known to infect both greenlip and blacklip abalone, causing mortalities or reducing market value in both cultured and wild stocks (PIRSA 2009). Abalone are more susceptible to *Perkinsus* at higher temperatures, and outbreaks are therefore more prevalent north-west of Kangaroo Island; locations known to have persistent, high levels of infection include Neptune Island and the south-eastern tip of Yorke Peninsula (Goggin & Lester 1995). The parasite is transmitted through the release of zoospores from the blistered or decaying mollusc tissue (Theil et al. 2004). The zoospores are motile (capable of motion) and can survive in saltwater for several weeks (DAFF 2012).

3.1.3 Paralytic shellfish poisoning

Paralytic shellfish poisoning (PSP) is not listed in any of the recognised aquatic animal health references (e.g. OIE 2019, Spark et al. 2018) or related documents. This disease may pose a risk to abalone (Seger et al. 2020) however there is currently some conjecture over this (Dowsett et al. 2011; Cheshire 2020).

3.1.4 Diseases – Oyster

Ostreid herpesvirus 1 microvariant (OsHV-1) is the cause of Pacific Oyster Mortality Syndrome (POMS). POMS is a considerable threat to the oyster industry and is currently present in the feral oyster population in Port Adelaide. A recent project undertaken by PIRSA (FRDC Project No. 2018-090) involved hydrodynamic modelling to improve existing early detection surveillance and emergency disease response for the Ostreid herpesvirus. The results of the modelling produced new boundaries for disease management areas or biosecurity zones for the South Australian oyster industry.

The disease Management area is used by PIRSA for early detection surveillance monitoring as well as POMS emergency management. A portion of the KI Seaport is located within the disease management area as shown on Figure 3-1. In the event that a significant population of Pacific Oysters became established at the KI Seaport, additional management and monitoring requirements will potentially be required.

The disease management area for Kangaroo Island is shown in Figure 3-1.

Figure 3-1: Disease Management Area for Kangaroo Island (disease management area sourced from Roberts et al. 2020)

3.1.5 Aquaculture

The Australian Government has published the National Biosecurity Plan Guidelines for the Australian land-based abalone industry (Spark et al. 2018); the document provides a framework for industry to support the development of site-specific biosecurity plans for individual farms. Spark et al. (2018) also identifies the reportable diseases of abalone which are acknowledged as those diseases that present the greatest risks to the farmed abalone industry as well as risks presented by the aquaculture sector to the wild catch sector.

The reportable diseases (Spark et al. 2018) are Abalone viral ganglioneuritis (AVG) a viral pathogen that is endemic to Australia, Abalone Withering Disease (*Xenohaliotis californiensis*) which is caused by an exotic bacterial pathogen (to date this has not been reported in Australia) and *Perkinsus olseni* (a zoo-parasite) that is endemic to Australia and is frequently found in farmed stock (Cheshire 2020). There is no evidence available on whether *Perkinsus olseni* is present at Yumbah's facility on Kangaroo Island or has previously been detected.

The principle safeguard to protect aquaculture operations is to ensure that all vessels using the KI Seaport adhere to the requisite management arrangements in relation to ballast water treatment.

4. MANAGEMENT MEASURES

4.1 Risk Assessment Procedure – Vessels

This section describes the risk assessment methodology used to assess the likelihood of a particular contracted vessel and/or immersible equipment carrying an invasive marine species prior to undertaking activities at the KI Seaport.

This risk assessment methodology uses a consistent, transparent approach that has been developed to help determine what mitigating actions or further assessments are required. Conversely it also provides a basis for justification for when further management measures are assessed as not required.

The information required to complete the risk assessment is presented as a score sheet (see Appendix B). This form should be completed by the vessel/immersible equipment operator and returned to the KIPT Environment Manager to review and complete the risk assessment. Vessel owners will also be required to provide documentation to verify the completed vessel risk assessment score sheet (VRASS). Documentation should include (but is not limited to):

- Biofouling Management Plan
- inspection records (in-water and haul-out inspections)
- ballast water management records (if applicable)
- records of any applications of anti-fouling coating
- vessel's operational history.

A flow chart of the risk assessment process is provided as Figure 4-1. The objective of the risk assessment is to identify the inherent level of invasive marine species threat a contracted vessel or its immersible equipment poses to the receiving environment. This will allow KIPT to establish management measures to mitigate the identified threats to an acceptable level, which may include not granting entry to a vessel.

The application of the risk assessment procedure will be undertaken in consultation with PIRSA. Completed Vessel / Equipment Risk Assessment Questionnaires will be provided to PIRSA, and consultation will occur

with respect to the determined biosecurity risk status and any required management measures prior to the vessel/equipment's mobilisation.

International vessels that will be visiting Smith Bay will be managed under the Maritime Arrivals Reporting System (MARS) by the Federal Government.

4.2 Risk Categories

Establishment of three risk categories as described below for vessels:

- **LOW** – low likelihood of introducing exotic marine pests and diseases (no additional management measures required).
- **UNCERTAIN** – likelihood of introducing exotic marine pests and diseases (precautionary approach adopted, additional management measures required).
- **HIGH** – high likelihood of introducing exotic marine pests and diseases (additional management measures required).

4.2.1 Risk factors – Vessels

The key risk assessment factors considered by the vessel pre-entry risk assessment include:

- vessel type
- inspection history
- internal treatment/inspection history
- external treatment and inspection history
- vessel desiccation period during mobilisation
- presence and age of fouling control coating
- presence or absence of internal treatment systems
- climatic region of operation
- stationary or slow periods of operation and climatic region
- type of vessel activity
- adherence to Australian Ballast Water Management Requirements, v. 8
- implementation of a Biofouling Management Plan and Record Book (as required by the IMO Biofouling Guidelines and National Biofouling Management Guidelines).

4.2.2 Risk factors – Submersible equipment

The key risk assessment factors considered by the equipment pre-entry risk assessment include:

- climatic region
- nearshore/offshore deployment
- duration of deployment
- out of water mobilisation period
- biofouling maintenance regime.

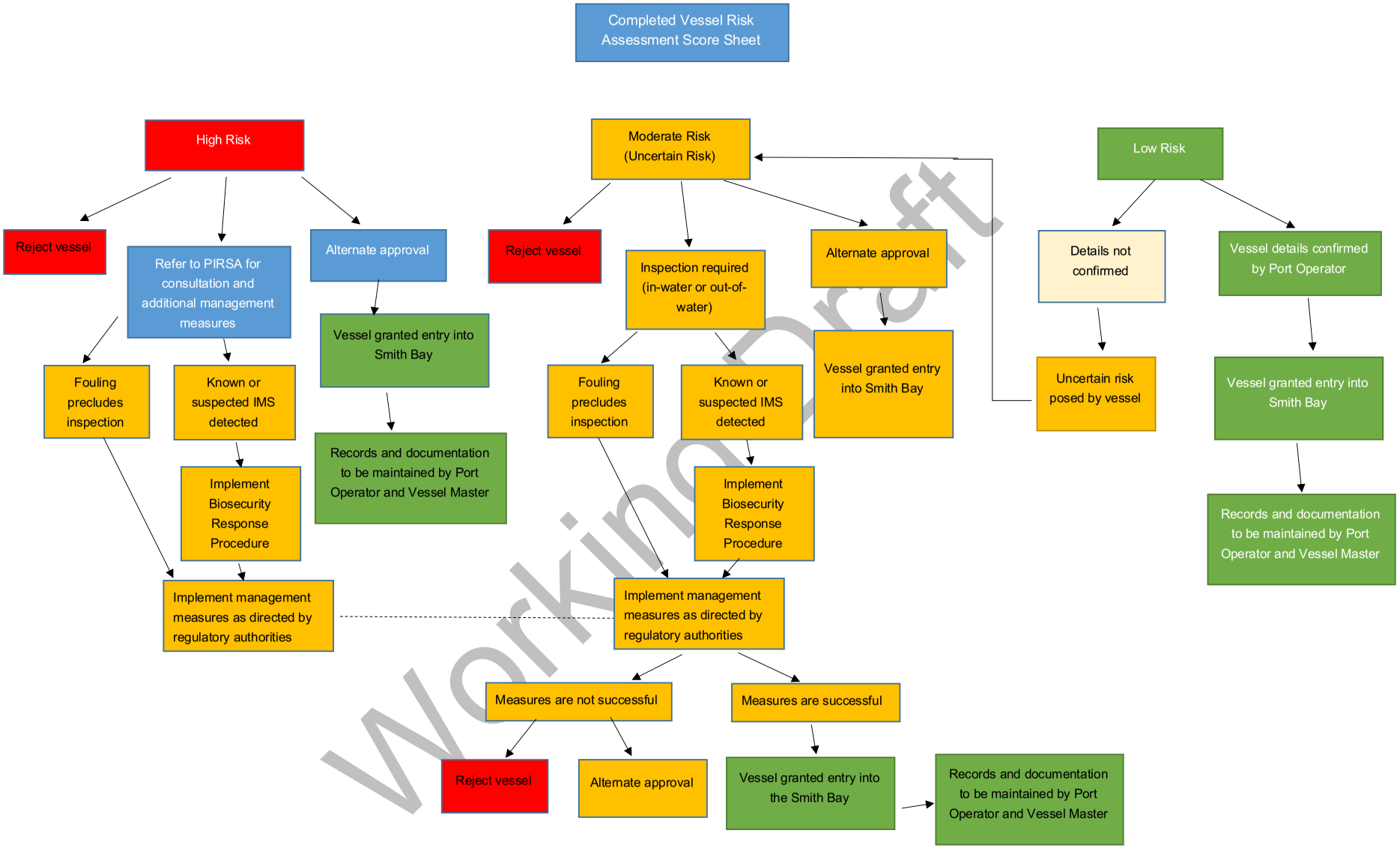

Figure 4-1: Vessel risk assessment flow chart

The most effective risk management measures for biofouling comprise of specific marine pest inspections by suitably qualified marine expert with experience in biofouling inspections and treatment (if required). If the risk reduction measures are planned and their outcomes formally documented, then the results of inspections, treatments and associated field evidence can be used to support and justify the risk reduction scores and outcomes, as determined by the vessel risk assessment processes.

4.2.3 Ballast water

Ballast water management will be managed in accordance with the Australian Ballast Water Management Guidelines, v. 8 <https://www.agriculture.gov.au/biosecurity/avm/vessels/marine-pest-biosecurity/ballast/australian-ballast-water-management-requirements> and the prohibition on ballast water uptake from Port Adelaide. Further management measures are provided in Table 4-1.

4.2.4 In-water cleaning

No in-water cleaning would be permitted on Kangaroo Island during operation of the KI Seaport. Dry dock cleaning will only be permitted to occur at a specialised facility with all relevant licences issued by the EPA. Licence conditions would be developed in consultation with PIRSA for the operation of a dry dock cleaning facility.

4.3 Risk Categories and Response Procedures

As detailed in Section 5, DAWE and/or PIRSA will be consulted with respect to the determination of the biosecurity risk category. As part of this consultation, the completed risk assessment questionnaire will be provided to DAWE. In the event of a vessel being determined to be of uncertain or high risk, DAWE will be consulted with respect to the decision on which, if any, management measures should be applied.

The risk management procedures for vessels will use the following response criteria as determined by the vessel risk assessment.

For vessels assessed as a **LOW RISK** (Figure 4-1):

Low Risk Management Option: Confirmation of Vessel History Documentation.

• Vessel information will be submitted to a KIPT Environment Manager/Port Operator prior to arrival of the vessel at the KI Seaport, to confirm that the vessel's operational history, anti-fouling coating and ballast water management details, as used in the risk assessment, are accurate and reliable.

For vessels assessed as an **UNCERTAIN RISK** apply one of the following risk management measures (Figure 4-1):

Uncertain Risk Management Option 1: Reject Vessel

• Subject to availability the vessel may be rejected and replaced with a more suitable vessel.

Uncertain Risk Management Option 2: Inspection

• One in-water inspection or one out-of-water vessel inspection will be undertaken, at a port or other location nominated by the Vessel Operator. The inspection is to occur within seven days prior to final departure to the KI Seaport, either directly or via supply port(s).

Findings of the inspection will either determine the vessel as Low Risk or require the implementation of further management measures before the vessel could be granted entry to Kangaroo Island or South Australian waters.

If the vessel is required to visit any supply ports during transit to the KI Seaport, the duration at any one port must not exceed a continuous period of seven days (Note: additional management requirements may be necessary as a result of this inspection); or

Uncertain Risk Management Option 3: Alternative Approval

• The above management options (Options 1 and 2) have been previously accepted by State and Commonwealth regulators and provide an alternative to compulsory vessel and immersible equipment inspection. Should an alternative approach be proposed, prior approval from the lead regulatory agency should be sought, detailing and supporting the proposed course of action.

For vessels assessed as a **HIGH RISK** apply the following risk management measure (Figure 4-1):

High Risk Management Option 1: Reject Vessel

Subject to availability the vessel may be rejected and replaced with a more suitable vessel.

High Risk Management Option 2: Refer Vessel to PIRSA

If the vessel is considered High Risk, the vessel will be referred to PIRSA Biosecurity for consultation and further management measures (which would include in-water or out-of-water inspections plus other measures deemed necessary by PIRSA).

If the vessel is required to visit any supply ports during transit to the KI Seaport, the duration at any one port must not exceed a continuous period of seven days (Note: additional management requirements may be necessary as a result of this inspection); or

High Risk Management Option 3: Alternative Approval

The above management options (Options 1 and 2) have been established through the development of this Management Plan and provide an alternative to compulsory vessel and immersible equipment inspection. Should an alternative approach be proposed, prior approval from the lead regulatory agency should be sought, detailing and supporting the proposed course of action.

4.4 Port Handbook

A port handbook will be developed to provide all relevant information to vessels visiting the KI Seaport.

4.5 General Management Measures

General management measures for marine pests and diseases are provided in Table 4-1.

Table 4-1: Management measures for biosecurity – Marine operations

Management measure	Responsibility	Identifier
Biosecurity signage will be installed along the suspended deck, pontoon, site entry, site exit and throughout the site.	Operations Manager	BIOSEC1
International vessels must comply with the requirements of the *Biosecurity Act 2015.*	Vessel Master	BIOSEC6
Arrival of all international vessels at a first port of entry that complies with the relevant biosecurity standards (section 58 of the Biosecurity Regulations 2016).	Port Management Officer Vessel Master	BIOSEC7
The discovery of a suspected marine pest must be reported to the relevant authorities via the SA Fishwatch hotline 1800 065 522.	Operations Manager	BIOSEC12
No in-water or dry dock cleaning of vessels will be permitted at the KI Seaport.	Port Management Officer Operations Manager	BIOSEC16
Operating procedures for operation will be developed in consultation with Biosecurity SA to reduce the risk of discharging unacceptable ballast water into Smith Bay. No uptake or exchange of ballast water to occur within Port Adelaide (within Gulf St Vincent is acceptable), for all vessels using or servicing the facility (including tugs).	Operations Manager KIPT Environment Manager	BIOSEC17
Adherence to the Ballast Water Management Guidelines.	Vessel Master	BIOSEC18
No abalone or oyster products will be allowed to enter the study area via Freeoak Road or via the KI Seaport.	Operations Manager	BIOSEC19
Particular attention will be paid to risks associated with the introduction of abalone-related diseases to Smith Bay, including potentially refusing ships from ports where there are known novel abalone diseases (to be implemented under the port operating agreement).	Operations Manager	BIOSECXX
Investigation (during detailed design) of potential surface treatments or alternative structures to minimise the impact from exotic species.	KIPT Environment Manager	BIOSEC26
The Marine Pest and Disease Monitoring Plan will be developed in consultation with EPA, SARDI, Biosecurity SA and Landscape South Australia Kangaroo Island.	KIPT Environment Manager	BIOSEC27
Any marine surveillance equipment (boats and diving equipment) used during operation will be decontaminated in accordance with standard industry protocols to prevent the spread of any aquatic diseases.	KIPT Environment Manager	BIOSEC28

Management measure	Responsibility	Identifier
Regular review and update of the Marine Pest and Disease Monitoring Plan.	KIPT Environment Manager	BIOSEC29
Marine pest surveillance which will include regular diving and inspection of monitoring infrastructure (e.g. settlement arrays and crab traps) and associated sediments for pest species. Shoreline searches for exotic marine species will also be conducted (refer to the Marine Pest and Disease Monitoring Plan).	KIPT Environment Manager	BIOSEC30
Ship's crews will be made aware of Kangaroo Island biosecurity requirements.	Vessel Master	BIOSEC32
In the event of a biosecurity event on Kangaroo Island, biosecurity control measures will be implemented at the KI Seaport in accordance with all directions given by regulatory authorities.	Operations Manager	BIOSEC33
The operators (KIPT and the Port Management Officer) will maintain open communication channels with stakeholders, including Landscape South Australia Kangaroo Island and Biosecurity SA, to have access to current information on pest outbreaks on Kangaroo Island.	Operations Manager	BIOSEC34
Other than in emergency circumstances, vessels will discharge foreign-sourced ballast water on the high seas (that is, further than 200 nautical miles from the Australian shoreline) before entering the Australian EEZ, in conformance with the *Biosecurity Act 2015.*	Vessel Master	BIOSEC35
Vessels must comply with the SA EPA Code of Practice for vessel and facility management (marine and inland waters) 2017.	Vessel Master	BIOSEC36
In the case of detection of a suspected exotic marine organism at the KI Seaport the following measures will be implemented: • implementation of the marine biosecurity response procedure • subscriptions to biosecurity alerts will be maintained to ensure up-to-date information on current pest outbreaks was readily available • immediate reporting of the suspected detection via the Fishwatch 24-hour hotline • all directions issued by PIRSA will be followed • practical response plans and strategies for the control of key pest species will be developed and implemented (as required) in consultation with SARDI, Landscape South Australia Kangaroo Island, Biosecurity SA and DAWE.	Operations Manager KIPT Environment Manager	BIOSEC37
Before a vessel is granted entry to the KI Seaport, a pre-entry risk assessment is to be completed. The risk assessment will consider: • anti-fouling coating • review of the biofouling record book • the vessel's operating profile and docking cycle • cleaning and maintenance schedule.	KIPT Environment Manager Vessel Master	BIOSEC38

Management measure	Responsibility	Identifier
International vessels will require a current International Anti-fouling Certificate.	Vessel Master	BIOSEC40
Induction sessions for construction staff will include: • a component on aquatic abalone diseases, including abalone and oyster diseases • implementing the relevant biosecurity measures, such as the prohibition on imports of honey, apiary products and unwashed potatoes, and weed identification • information on how to identify pest animal species, the potential damage they could cause and how to report sightings • importance of good housekeeping to minimise attraction of feral animals and vermin • information on potential pests and diseases that can be translocated by biofouling • general information on the importance of biosecurity measures for Kangaroo Island.	Construction Manager	BIOSEC41
Operators of tugs and barges must maintain a biofouling record book in accordance with the requirements of the National Biofouling Management Guidelines for Non-trading Vessels, 2009.	Vessel Master	BIOSEC42
No plant material (excluding timber products) or food will be transferred from Smith Bay to the vessel during ship-loading at the KI Seaport.	Operations Manager	BIOSEC43
Regular inspections along the port infrastructure during ship-loading activities for any pest animals that may have hitch-hiked on the vessel.	Operations Manager	BIOSEC44
Should any rodents be detected on board, standard precautions will be adopted, such as the use of physical barriers on mooring lines.	Vessel Master Operations Manager	BIOSEC45
Full de-barking of any logs that will ultimately be exported without fumigation.	Operations Manager	BIOSEC46
In the event of a vessel emergency any equipment or persons that were transferred to the vessel (either by air or sea) will be free of any soil, plant and animal material.	Operations Manager	BIOSEC47
Implementation of the marine biosecurity response procedure.	Operations Manager	BIOSEC48
Logs and woodchips exported from Smith Bay to north Asia will be shipped on a relatively small number of nominated log and chip vessels.	Operation Manager	BIOSEC49
The port operating agreement will require shipping operators to implement a biofouling management plan and maintain relevant records.	Operation Manager	BIOSEC50

Management measure	Responsibility	Identifier
Each vessel will have a Biofouling Management Plan developed in accordance with Appendix I of MEPC Resolution MEPC.207 (62) of 2011: 'Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species'.	Vessel Master	BIOSEC51
All vessels used, both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufacturers application specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).	Vessel Master	BIOSEC52

4.6 Management of Infrastructure

Table 4-2 provides specific management measures that apply to infrastructure at the KI Seaport.

Table 4-2: Implementation of biofouling management measures for infrastructure

Aspect	Responsible party	Biofouling mitigation measures	Implementation
Port owned vessels: • tugs • pilot boats.	Port Operator/KIPT	Vessel risk assessment prior to entry to the KI Seaport. National Biofouling Management Guidelines for Non-trading Vessels. SA EPA Code of Practice for vessel and facility management (marine and inland waters).	Implementation of a port handbook which includes information on biosecurity requirements.
Visiting vessels: • timber vessels.	Vessel owner	Pre-arrival reporting for international vessels to DAWE via MARS. Vessel risk assessment prior to entry to the KI Seaport. International Anti-Fouling Certificate. National Biofouling Management Guidelines for Commercial Vessels. SA EPA Code of Practice for vessel and facility management (marine and inland waters).	Implementation of a port handbook which includes information on biosecurity requirements.
Immersible equipment: • navigation aids.	KIPT	Regular inspection of structures in alignment with the Inspection and Maintenance Schedule. Photographs and video footage to be taken during maintenance inspections. Any suspected IMS to be reported to PIRSA.	Inspection and Maintenance Schedule.
In-water structures: • jetty pylons • restraint dolphins • mooring bollards • ladders • fender support frames • mooring dolphins.	KIPT	Regular inspection of structures in alignment with the Inspection and Maintenance Schedule. Photographs and video footage to be taken during maintenance inspections. Any suspected IMS to be reported to PIRSA. Investigations during detailed design on the establishment of native biodiversity on jetty piles.	Inspection and Maintenance Schedule.

5. MARINE PEST MONITORING

Marine pest surveillance will be undertaken in accordance with the Marine Pest and Disease Monitoring Program.

The focus of the monitoring program will be the detection of any potential Invasive Marine Species (IMS) and will be a combination of:

- plankton tow and subsequent analysis of plankton using environmental DNA molecular analysis
- settlement plates or arrays
- crab traps
- shoreline searches.

All discoveries of potential IMS will be reported to PIRSA using the Biosecurity Incident Response Procedure (Marine) – see Table 6-1. PIRSA then report discoveries to DAWE via national reporting protocols.

5.1 Adopted Approach

Table 3-1 identifies IMS that are relevant to the proposed wharf at Smith Bay. This list is subject to change depending on:

- the port of origin for incoming vessels
- new IMS in the port of origin
- changes to the Environmental Priority List
- new reports of IMS in South Australian waters or Australian waters.

A target species list has not been adopted for the monitoring program however the focus will be on using current technologies to identify any invasive marine species that may be detected in Smith Bay and then subsequently implementing the relevant reporting procedure.

6. BIOSECURITY INCIDENT RESPONSE

6.1 Definition

A biosecurity incident of the type that could occur at the KI Seaport, during operation is defined as:

> *an unintentional, unforeseen or uncontrolled exposure to an exotic pest and/or disease. The incident may be marine or terrestrial in nature. The definition includes the introduction of a new pest and/or disease as well as the translocation of a new pest and/or disease from another part of Kangaroo Island.*

6.2 National Response to Biosecurity Incidents

When a pest or disease outbreak occurs in Australia, which is also referred to a biosecurity incident, arrangements are in place to allow for a rapid nationally-coordinated response.

An outbreak will be managed on the ground either by the Department of Agriculture, Water and the Environment (DAWE) or primary industries, in the state or territory in which the outbreak occurs (in South Australia this would be the Department of Primary Industries and Regions).

The Biosecurity Incident Management System (BIMS) has been developed to provide guidance on the management of biosecurity incident responses and initial recovery operations in Australia. The BIMS is the same system used by other Australian emergency response service agencies, including the State Emergency Service.

Four response plans have been developed by the relevant organisation that acts as the national coordinator of the government-industry partnership to actively manage a biosecurity incident and include:

- AUSVETPLAN – Australian Veterinary Emergency Plan which is made up of a series of manuals to manage a disease outbreak relating to animal health (developed by Animal Health Australia <https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/>).
- AQUAVETPLAN – sets out the preferred to approach to diseases that affect aquatic animals, including finfish, crustaceans and molluscs (developed by the Department of Agriculture, Water and the Environment in conjunction with animal health experts <https://www.agriculture.gov.au/animal/aquatic/aquavetplan>).
- PLANTPLAN – the agreed technical response plan used for emergency plant pest incidents (developed by Plant Health Australia <https://www.planthealthaustralia.com.au/biosecurity/incursion-management/plantplan/>).
- EMPPlan – Emergency Marine Pest Plan provides the response to pest emergencies in Australia's marine environment (developed by the Department of Agriculture, Water and the Environment in conjunction with marine pest experts <https://www.agriculture.gov.au/pests-diseases-weeds/marine-pests/empplan>).

6.3 Operation of the KI Seaport – When an International Vessel is in Port

When an international vessel is in port, the vessel remains under the control of the Australian Government for biosecurity matters.

Subject to the designation of the KI Seaport as a First Point of Entry under the *Biosecurity Act 2015*, Table 6-1 provides the biosecurity incident response at the KI Seaport when an international vessel is in port. Figure 6-1 provides a flow chart for the biosecurity incident response.

Table 6-1: Biosecurity incident response during operation of the KI Seaport – When an international vessel is in port

Biosecurity Incident Response	Operations
Definition	A biosecurity incident is an unintentional, unforeseen or uncontrolled exposure to exotic pests and/or diseases.
Timeframe for reporting	Port users must report suspected cases of an exotic pest and/or disease immediately (within 24 hours).
Examples of biosecurity incidents	Discovery of any hitch-hiker species (vertebrate or invertebrate) on international vessels. Discovery of a suspected exotic marine organism on a vessel or in the water.

Biosecurity Incident Response	Operations
Training	All operational staff at KI Seaport (First Point of Entry port) are to complete biosecurity awareness training before commencing work at the KI Seaport. <http://www.agriculture.gov.au/Documents/seaports-biosecurity-elearning/index.html>. <http://www.agriculture.gov.au/import/before/pests>.
Isolate	Suspected or detected biosecurity risks must be isolated immediately: • Isolate risks found at the port using barriers to prevent any movement through the area. • Segregate all goods away from the suspected biosecurity risk – domestic or otherwise – using an impervious barrier or a minimum pallet width from other goods and the boundary fencing. • Display a "Biosecurity Area – Authorised persons only" sign to indicate the biosecurity isolation area. • Port Users are responsible for setting up the biosecurity exclusion zone on the hardstand area and for erecting biosecurity signage in the area.
Contain	All biosecurity risks must be contained where safe to do so. • Spillages must be swept up, double bagged and disposed of in a biosecurity receptacle. • Use knockdown spray to contain the spread of flying or mobile insects e.g. moths, lady bugs, stink bugs. • Collect a specimen to assist with identification. • Ants, bees and wasps can be very dangerous so do not disturb them. Take a photo and record the location. If detected on cargo, do not move it. Instead, take measures to isolate it. • Close doors or create partitions to restrict movement. • Use tarpaulins to contain contamination or pest infestation. A 240L biosecurity spill response kit containing knockdown spray, DAWE approved disinfectant and other biosecurity response equipment is stored onsite. Port Users are responsible for ensuring knockdown spray, DAWE approved disinfectant and other biosecurity incident response equipment are accessible. Waste is managed by an external DAWE approved provider.
Report	Biosecurity risks and incidents must be reported via the: 1. Local biosecurity officer: (08) 8201 6054 (24/7) outside of business hours this line will divert to the on-call seaports officer. 2. See. Secure. Report hotline number: 1800 798 636. 3. Report a Biosecurity Concern using the online form <https://www.agriculture.gov.au/pests-diseases-weeds/report#form>. 4. Report to KI Seaport Operations Manager. 5. Reported on the KIPT internal reporting system.
Marine pests – details to record	1. Attempt to identify marine organism as either a crustacean, ascidian, fish, seagrass, macroalgae, mobile invertebrate etc. 2. Photograph suspected marine pest in situ. 3. Record location, depth, substrate, number of organisms, other relevant details. 4. Report as soon as possible to Fishwatch 1800 065 522 and follow any additional directions (if any are given by an

Biosecurity Incident Response	Operations
	authorised officer under the *Fisheries Management Act 2007*). 5. Do not attempt to move or remove the suspected marine organism. This is potentially an offence under the *Fisheries Management Act 2007.*
Treat	Port Users are responsible for arranging appropriate treatment for a biosecurity incident. Treatment providers must be provided access to undertake urgent responses in a timely manner. In the event of an incident a department (DAWE) approved treatment provider will be contacted for immediate assistance <http://www.agriculture.gov.au/import/arrival/arrangements/sites>. If a departmentally approved treatment provider is not used to respond to a biosecurity risk, the treatment must be performed under supervision by a biosecurity officer at a fee for service. A department (DAWE) approved disinfectant will be used when decontaminating equipment, spillage areas or situations as directed by the Department of Agriculture, Water and the Environment.

{placeholder – to be developed}

Figure 6-1: Marine biosecurity incident response – Operations

6.4 Operation of the KI Seaport – When no international vessels are in the port

In the event that a suspected marine pest is discovered when there is not an international vessel in the port, the vessel would remain under South Australian government biosecurity control. i.e. the port would not be an active FPOE.

Table 6-2: Biosecurity incident response during operation of the KI Seaport – When no vessels are in port

{placeholder – to be developed}

7. REPORTING REQUIREMENTS

Annual reporting on the results of the MPDMPO (see Section 5) will be provided to relevant authorities which include:

- PIRSA
- Landscape South Australia Kangaroo Island
- DAWE.

Any discoveries of potential introductions of exotic marine pests or diseases are to be reported to KI Seaport project manager/s and relevant authorities. Refer to the Biosecurity Incident Reporting Procedure (see Table 6-1 and Table 6-2).

Compliance reporting will be undertaken in accordance with relevant licences/permits issued by government regulators.

7.1 Non-conformance

Any discoveries of potential introductions of exotic marine pests or diseases will be reported to the KI Seaport project manager/s and relevant authorities. Work will cease immediately, and the KI Seaport operation manager/s and project manager/s will be notified. Appropriate corrective action will be undertaken in conjunction with guidance from relevant government departments and regulators.

Non-conformances will be reported to the KI Seaport project manager/s and appropriate corrective action undertaken.

8. MANAGEMENT PLAN REVIEW

The MPDMPO will be subject to regular review by KIPT. The review process will be undertaken in the event of:

- changes to applicable legislation
- operational changes
- new or emerging IMS
- changes to the local environment at Smith Bay
- results of the Marine Pest and Disease Monitoring Plan/Program
- improvements to the management plan and/or framework
- other relevant changes.

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Appendix a

Smith Bay Vessel Risk Assessment Scoresheet

Vessel Risk Assessment Score Sheet (VRASS)

Type of Anti-fouling Coating		Score
AFC type is known, suited to vessel activity + speed and is <2 years old = 2.0 ACC type is unknown, unsuited, absent or > 2 years at mobilisation = 3.0		
Age of Anti-fouling Coating at mobilisation date		**x**
Documented age of AFC will be:	1 year old, absent or unknown = 3.0 between 6-12 months = 2.0 3-6 months = 1.0 1-3 months = 0.5 <1 month = 0.1 <14 days = 0.0	VALUE
Documented date of AFC renewal: / /		
IMS infection risk - Location of "home" ports/main supply base since last AFC		**x**
Region/s of the home ports or long term supply bases since last AFC renewal have included: *(Insert highest scoring region only)*	Tropical region = 3.0 Subtropical region = 2.0 Only temperate = 1.0	VALUE
IMS infection risk - number of stationary/slow speed periods over 7 days		**x**
No of weeks of rest or <6 knots of port or coastal waters (<100 m) since last-haul out for cleaning	No of 7 day periods divided by 2 =	VALUE
IMS infection risk - region of the stationary/slow speed periods		**x**
Region/s of the ports or coastal waters where above stationary or slow speed periods occurred included: *(Insert highest scoring region only)*	Tropical = 3.0 Subtropical = 2.0 Temperate = 1.0	VALUE
IMS biofouling survival risk		**x**
No haul-out cleaning and inspection prior to Survey	= 1.0	VALUE
One independent in-water inspection prior to the day premobilisation inspection period	= 0.5	
Two independent in-water inspections prior to the 7 day premobilisation inspection period	= 0.3	
One independent haul-out inspection prior to the 7 day premobilisation inspection period	=0.3	
Infection risk - internal niches (ie seawater pipework, anchor, bilge)		**x**
Above checks will include seawater system flushing, check strainers, anchor cable locker, other niches	Yes = 0.5 No = 1.0	VALUE
Subsequent mobilisation by deck cargo, hard stand, or road freight will provide a continuous total hauled-out period that is:	<7 day = 1.02 7-13 days = 0.8 14-27 days = 0.3 >28 days = 0.1	VALUE
IMS infection risk - from ballasted / trim tank seawater		**x**
Seawater onboard of tropical or subtropical origin:	None/no discharge - 0.0 Seawater of subtropical origin may need discharge =2.0 Seawater of tropical origin may need discharge = 3.0	VALUE
Compliance with Australian Ballast Water Management Guidelines, Version 8	Intended = 0.0 Not possible = 3.0	VALUE
Vessel Risk Score	**Total Score**	
If score >80 = High risk: premobilisation inspection action required		
If score 20-80 = Moderate risk: Confirmatory independent inspection and/or potential actioning required		
If score <20 = Low risk: Vessel details require checks/confirmation only		

Appendix B4 – Draft Biofouling Management Plan

MARITIME CONSTRUCTIONS

BIOFOULING MANAGEMENT PLAN

VESSEL: 'MOSMAN'

Thevenard jetty Restoration Project, SA

Client: Flinders Ports

Internal Project Number: MC.E.0466

Document Control

Document No.		MCE_0466_REP_001_Biofoul Mosman			
Document Title		Biofouling Management Plan; Vessel MOSMAN – Thevenard Concrete Jetty Remediation			
Rev.	**Date**	**Issue type**	**Originator**	**Review by**	**Approval by**
0	30/7/2018	Rev 0	Simon Spencer	Simon Spencer	Matt Haskett

Introduction

This Biofouling Management Plan is in accordance with Appendix I of MEPC Resolution MEPC.207 (62) of 2011: 'Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species'.

Biofouling means the accumulation of aquatic organisms such as micro-organisms, plants, and animals on surfaces and structures immersed in or exposed to the aquatic environment. Biofouling can include microfouling (microscopic organisms including bacteria and diatoms and the slimy substances that they produce) and macrofouling (e.g. barnacles, tubeworms, or fronds of algae). Biofouling on ships entering the waters of States may result in the establishment of invasive aquatic species which may pose threats to human, animal and plant life, economic and cultural activities and the aquatic environment.

Ship Particulars

Ships Name	MOSMAN
Flag State	Australia
Port of Registry	Adelaide
Official number	10523
Gross tonnage	43.1
Type (LR Classified)	TUG
Regulation Length	14.51 m
Beam	4.47 m
International call sign and MMSI	-
Ship Owners (current)	Maritime Constructions

AFS Specification Particulars/Operating Profile

Typical operating speed (knots)	N/A
Period underway/activity (%)	N/A
Expected lay-up periods (anchored, moored) (weeks)	N/A
Typical operating region or trading routs	South Australia
Planned duration between disassembly	5 yr
Expected dry-docking country (if known)	AUSTRALIA

Description of Areas on the Ship Susceptible to Biofouling

The diagram below indicates the areas particularly susceptible to biofouling, including niche areas and seawater systems access points in the internal seawater systems.

Figure 1 - Areas particularly susceptible to biofouling

Niche areas relevant for this vessel are identified in the table below:

General Hull and Appendages		**Niche areas**	
	Flat-bottom	X	Sea chests
	Vertical sides	X	Inlet gratings
	Bow dome		Sea inlet pipes
	Bilge Keels		Bow and stern thrusters
	Stabilizer fins	X	Propeller and shaft
X	Rudder	X	Rope Guards
X	Dock Block Positions		Box coolers
X	A-bracket / stern tube		Moon Pools
X	Cathodic protection anodes and systems		Free-flood spaces / voids
	Draft and hull markings		Other

Description of the Antifouling systems

Anti-fouling system applied	**Area/Location applied**	**DFT**	**Expected life time**	**Manufacturer**	**If requirements for cleaning - method should be specified**	**AFS Certificate**
*Products(s)/systems applied**	Below water (5 coats)		36 mths	Wattyl SEAPRO CU120 ANTIFOULING	N/A	N/A
	Hull Above water (3 coats)		36 mths	Wattyl Poly U750	N/A	N/A
Detail any immersed area where AFS are not applied or installed	Propellers – these are inspected and cleaned every 2 years					
Marine Growth Prevention Systems (MGPSs) dosing frequency	N/A					
List seawater systems without fitted MGPSs, and presence and location of box coolers	Main engines and generators (cooling system) incorporates a seawater circulation system for engine cooling – Same valve and pipe work used for all engine components (not connected to Ballast system).					
Operating profile required for AFS to be effective	Effective in all Australian waters. Standard operating speed at 12 knots, effective for 36 months. Refer Product data sheet https://www.wattylpc.com/documents/pcm/tds/Seapro%20CU120%20Antifouling.pdf					
Other specifications relevant for AFS performance, if any.	N/A					
Previous reports on AFS performance (if available)	N/A					

Biofouling management action plan to minimize transfer of invasive aquatic species

Ship area (to be completed for areas particularly susceptible to biofouling -see previous)	**Planned management action** and frequency (e.g. Inspections, cleaning, repairs and maintenance)	**Management action if ship operates outside its usual operating profile**
External hull surfaces:		
Vertical sides	2 year slipping schedule	N/A – typically no biofouling occurs on vessel hull due to vessel being elevated above water platform
Flat Bottom	2 year slipping schedule	
Docking block positions	N/A	
Boot-top	2 year slipping schedule	
Hull appendages and fittings		
Bilge Keels	N/A	Review geographical area of travel for threat of potential invasive species before and after operating out of normal parameters.
A-brackets	2 year slipping schedule	
Stabilizer fins	2 year slipping schedule	
CP anodes	2 year slipping schedule	
Steering, propulsion and positioning:		
Propellers	2 year slipping schedule	Review geographical area of travel for threat of potential invasive species before and after operating out of normal parameters.
Stern tube seal	2 year slipping schedule	
Rope Guards	2 year slipping schedule	
Propulsor body and ring	2 year slipping schedule	
Anchor and chain	Wash on recovery	
Chain locker	2 year slipping schedule	
Rudder	2 year slipping schedule	
Rudder recesses (pintle recesses, lifting tubes etc.)	2 year slipping schedule	
Thruster propeller(s)	N/A	
Thruster bodys(s)	N/A	
Thruster rope guards/shaft seals	N/A	
Tunnel(s)	N/A	
Tunnel grates	N/A	
Intake and internal seawater systems		
Engine cooling systems	Maintenance Specific	Review geographical area of travel

	(usage dependent) Internal inspection annually Heat exchangers cleaned annually	for threat of potential invasive species before and after operating out of normal parameters.
Sea chests (identify number, position, box cooler presence)	Maintenance Specific (usage dependent) Internal inspection every year	
Emergency fire-fighting systems	N/A	
Auxiliary services system	Maintenance Specific (usage dependent)	
Potable water generation	N/A	
Ballast water uptake	N/A	
Ancillary systems	N/A	
Other systems (itemize each)	N/A	

Operation and maintenance of the anti-fouling systems

Timing of operational and maintenance activities
Schedule of planned inspections, repairs, maintenance and renewal of AFS

Class requirements every 5 years. AFS expected life - 36 Months

In-water cleaning and maintenance procedures
Schedule of planned maintenance procedures to be completed between dry-docking events
Treatment /cleaning conducted and detailed operational procedures, chemicals, discharge standards applied to specific areas

Diver to perform hull inspection for project specific requirements when travelling to new areas after a certain period of time (as above). If required targeted cleaning can be performed. Not class requirement

Operation of on board treatment processes
MGPS fitted, internal seawater systems covered by the system associated maintenance and inspection schedule and procedures.
Operational frequency and cleaning/maintenance requirements on completion

N/A – Internal system is freshwater

Planned biofouling management if MGPS is temporarily out of operation
Document procedures

N/A – biofouling inspection is carried out before each project deployment.

Safety procedures for the ship and crew

Safety procedures to be followed during ships inspection
Details of specific operational and safety restrictions, including those associated with the management systems that affected the ship and/or the crew

Divers and slip coordinators (sub-contractors) to perform slipping events and inspections

Disposal of Biological Waste

Procedures or the disposal of biological waste generated by treatment/cleaning processes
When the cleaning is conducted by, or under the direct supervision of, the ship owner, master or crew

Slip coordinators to dispose of bio fouling responsibly

Biofouling Record Book

Recording requirement
Documentation to be kept to verify operations/treatments

This is not a Class requirement and therefore not used aboard this vessel. All records for each vessels are maintained within the company's asset register

Crew Training and Familiarization

Provisions for crew training and familiarisation
Document procedures

Project induction – including reference to the project EMP and this BMP

Vessel Operating Procedure

Attachments

1. Vessel Biosecurity Report - MOSMAN
2. Biofouling Inspection Report - MOSMAN

Document Number	MCE_0466_REP_001_Biofoul Mosman	Attachment 1
Project	Thevenard Jetty Restoration	
Client	Flinders Ports	

Vessel History Summary Report – Biosecurity

Vessel Name	*Mosman*
Date Completed	30 July 2019
Completed by	Simon Spencer

The following summary details the history of the vessel in regard to biosecurity risk and provides the project stakeholders with a clear understanding of the vessels history and potential threat to the aquatic ecosystem at the project location.

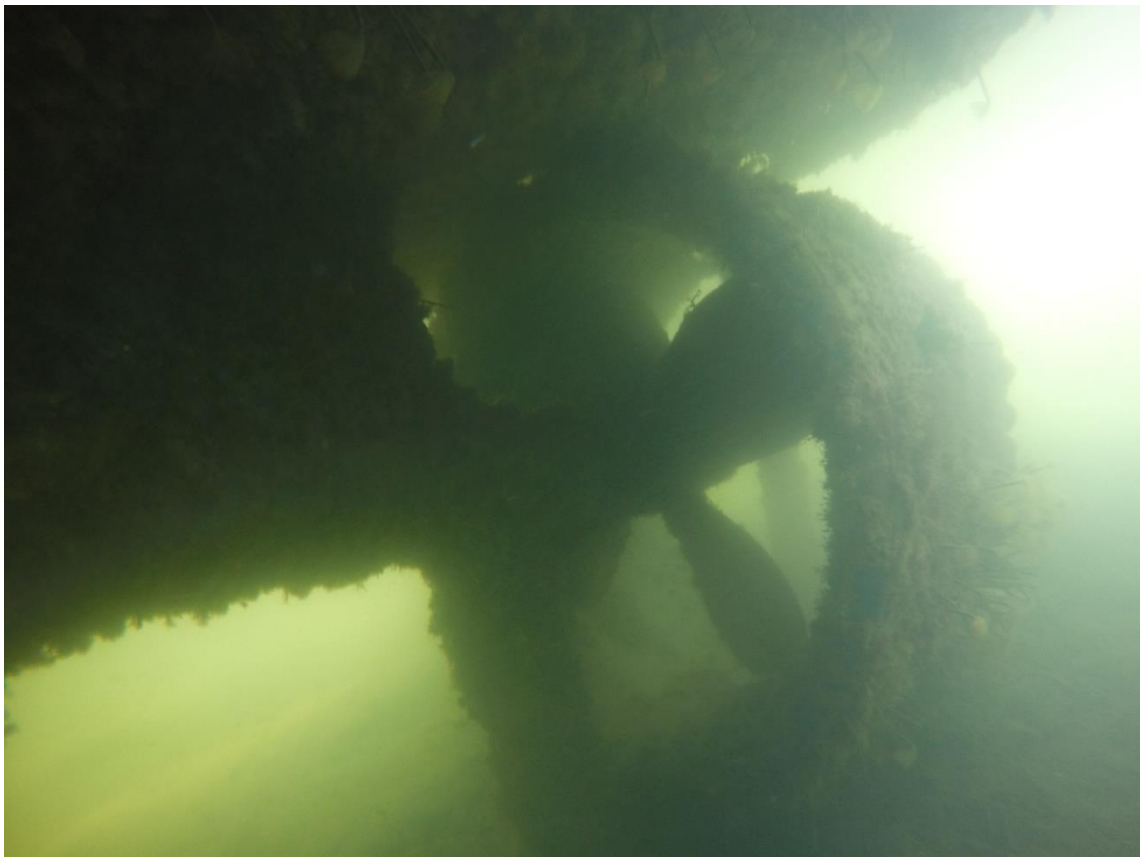
Question	**Response**
Where is the vessel currently located?	Port Adelaide, SA
Where was the vessel previously located?	Port Adelaide, SA (and metro waters)
How long was it sitting in that previous location?	>2yrs
Is there seawater (ballast) storage onboard?	N/A
What are the known biosecurity threats or invasive species of concern in that previous location?	N/A
When was the vessel last slipped and where?	31/05/2018
Is there anti-fouling coating on the vessel?	No
What sort of anti-fouling paint and when was it last applied?	N/A
When was the vessel hull last cleaned?	May 2018
Are there any visible signs of biological growth / organisms anywhere on the vessel?	No.
Provide general information on the vessel's history?	Vessel is used as a general TUG for various Adelaide metro coastline vessel movements
Additional Comments	Vessel was cleaned in water via diving contractor. All Biofouling removed 30/7/19.

Document Number	MCE_0466_REP_001_Biofoul Mosman	Attachment 2
Project	Thevenard Jetty Restoration	
Client	Flinders Ports	

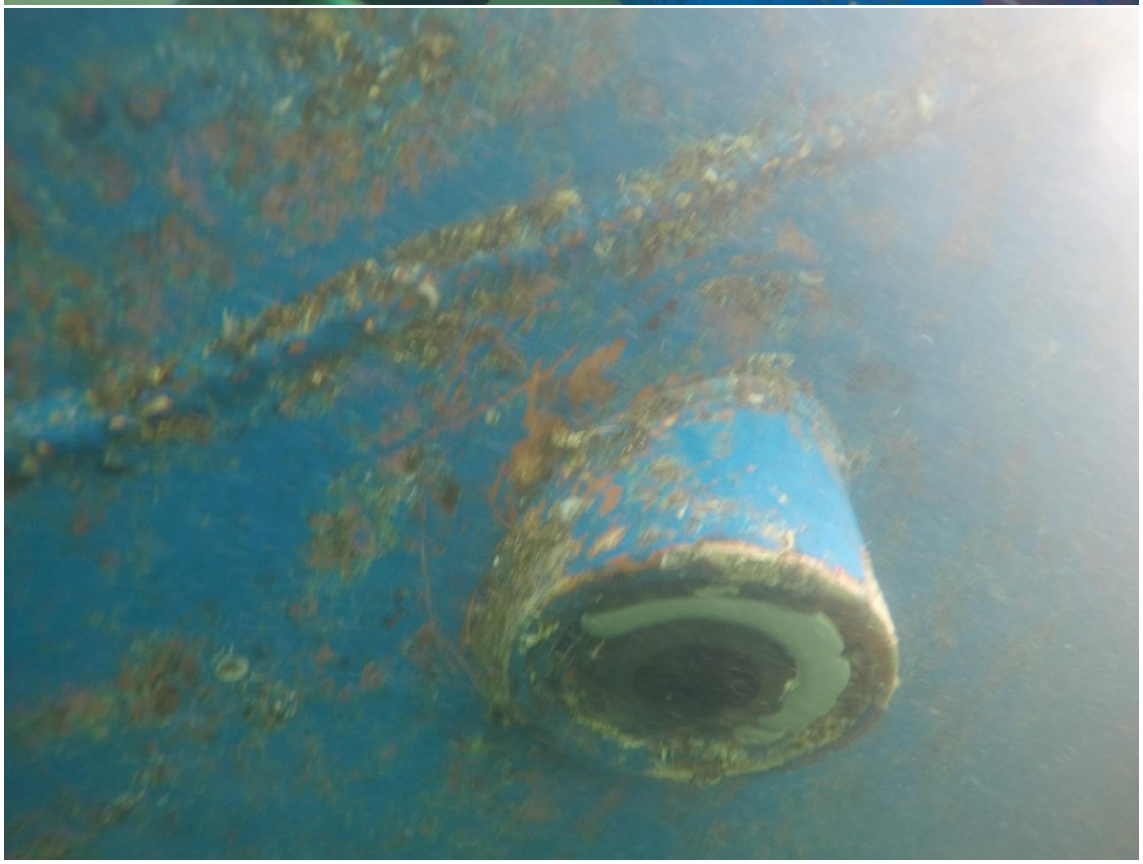
Biofouling Inspection Photo Report	
Vessel Name	*Mosman*
Date Completed	30 July 2019
Completed by	Simon Spencer & Diving Contractor

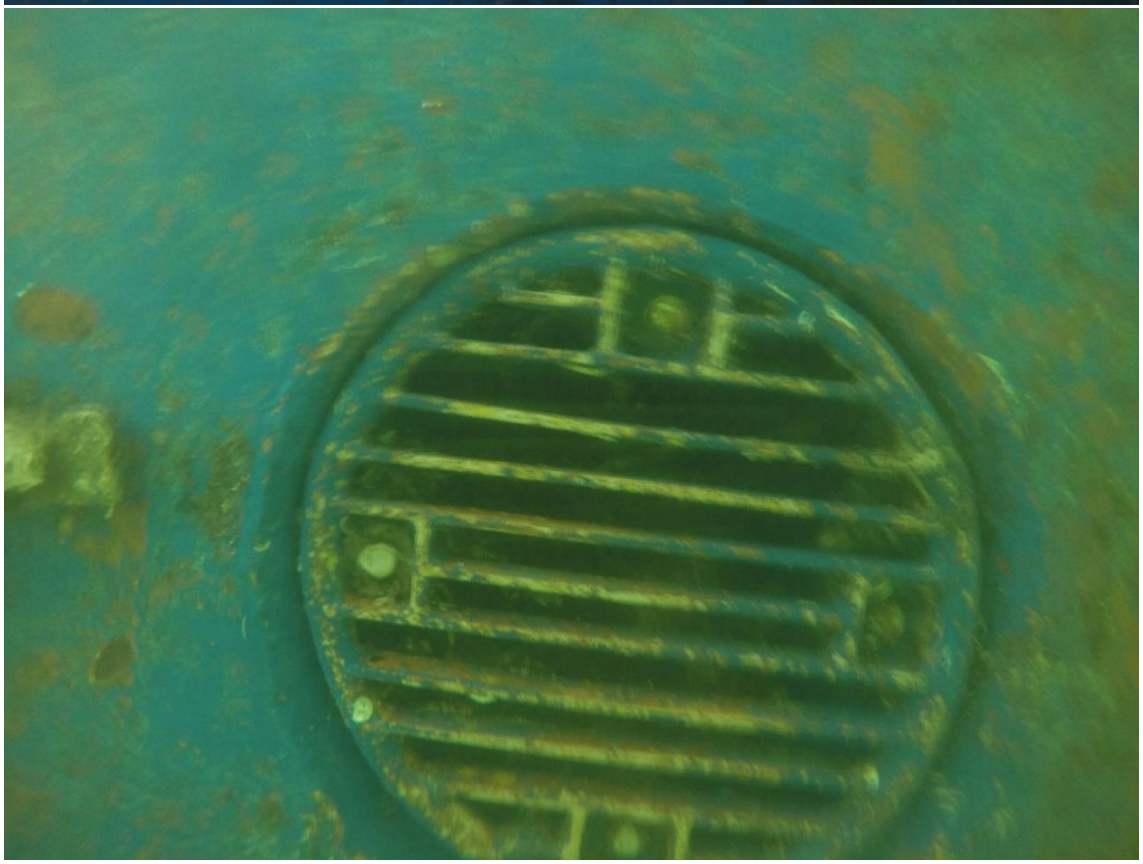
Mosman in water Hull Clean – Photos taken 30th July 2019

Pre-Clean



Post Clean





Appendix C – Plans

SEPTIC TANK AND WASTEWATER COLLECTION / PUMP OUT / TREATMENT
WEIGH BRIDGE (LOCATION AND DIMENSION TO BE CONFIRMED)
PREFERRED GRID SUPPLY HV
TRUCK ENTRY / EXIT
BLOCKWORK RETAINING WALL
DIESEL GENERATOR AND FUEL STORAGE
ADMINISTRATION / AMENITIES BUILDING (3@3 x 6 m) WITH RAINWATER TANK FOR CLEAN WATER OPERATIONS
INDICATIVE SITE ACCESS ROAD
CONVEYOR SPANS ABOVE PUBLIC ROAD TO ALLOW TRAFFIC ACCESS
ROAD EASEMENT
TRANSFORMER AND MAIN SWITCH BOARD PAD
PROVIDE CULVERT AND HEADWALLS UNDER PUBLIC ROAD
STACKER RECLAIM CONVEYOR
STACKER FEED CONVEYOR
FREEOAK ROAD
JETTY OUTLOADING CONVEYOR
12 m
FIREWATER TANKS (TOTAL 300kL MIN)
WORK SHOP/STORE
CAR PARK
DETENTION BASIN
DIESEL DELIVERY BUND
PRIVATE PROPERTY
SAMPLE LAB (2x3m)
SERVICES MOUNTED ON CONVEYOR
UNLOADING PAD
SCREEN HOUSE PAD
POROUS ROCK WEIR / LEVEL SPREADER
ATTRILL LANE (UNMADE)
SCREEN HOUSE
STACKER / RECLAIMER PAD
EMERGENCY OVERFLOW FROM DETENTION BASIN
FEED HOPPER
CHIP RECEIVALS HOPPER
STACKER FEED CONVEYOR
WASTE TO PLANTATION BIN / TRUCK
EXISTING DWELLING TO BE REMOVED
CHECKING STATION (15m x 30m) (TWO BAY COVERED SHELTER)
LOG STORAGE YARD STORAGE 1.5 Ha
OPEN SWALE DRAIN
20m
CONCRETE FOREBAY SEDIMENT DEBRIS TRAP
RETENTION BASIN
DETENTION BASIN
LIGHT VEHICLE ACCESS PATH
LAND PARCEL BOUNDARY
VEGETATED SWALES
CONCRETE FOREBAY SEDIMENT & DEBRIS TRAP
LANDSCAPE BUFFER IRRIGATED FROM RETENTION BASIN
EMERGENCY OVERFLOW FROM DETENTION BASIN
POROUS ROCK WEIR / LEVEL SPREADER

LEGEND

- PROPOSED DRAINAGE CHANNEL
- PROPOSED STORMWATER CULVERT
- VEGETATED BUFFER STRIP
- SERVICES CORRIDOR
- PROJECT BOUNDARY
- EXISTING EASEMENT

NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE
A	ISSUED FOR PLANNING ASSESSMENT	

POSITION	NAME	SIGNATURE
DRAFTING CHECK		
ORIGINATE/ DESIGN		
INDEPENDENT CHECK		
TECHNICAL APPROVAL		
PROJECT APPROVAL		
CLIENT APPROVAL		

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KANGAROO ISLAND PLANTATION TIMBERS

Kellogg Brown & Root Pty Ltd
ABN 91 007 660 317

TITLE
K.I. PLANTATION TIMBERS
KANGAROO ISLAND PORT TERMINAL
CONCEPT LAYOUT OPTION L1

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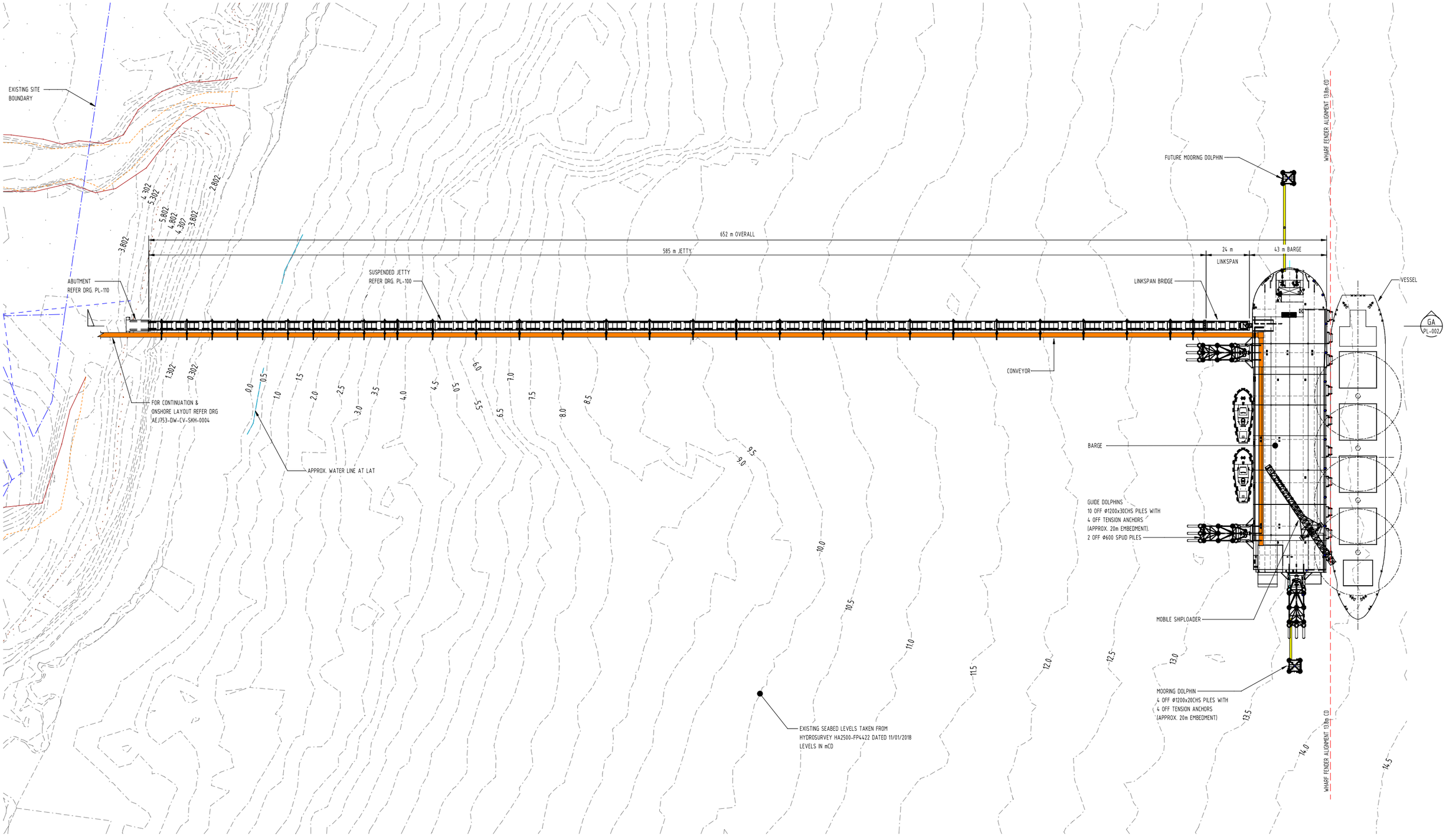

OVERALL OFFSHORE PLAN

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KANGAROO ISLAND SEAPORT
K.I. PLANTATION TIMBERS
PLANNING
OVERALL OFFSHORE PLAN

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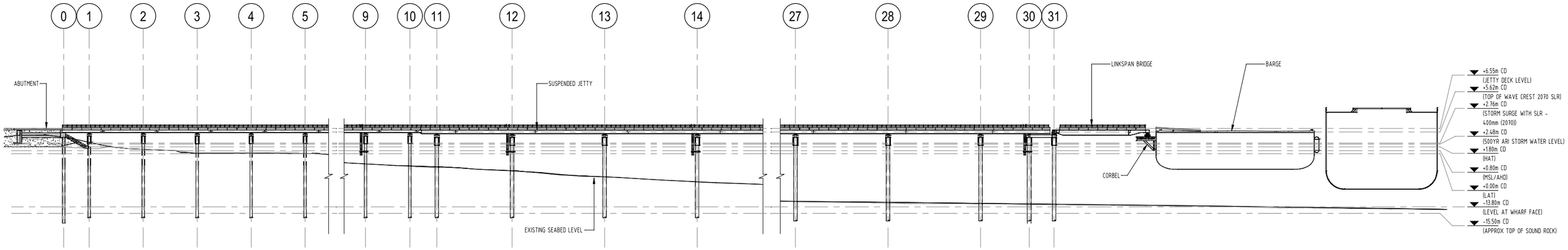

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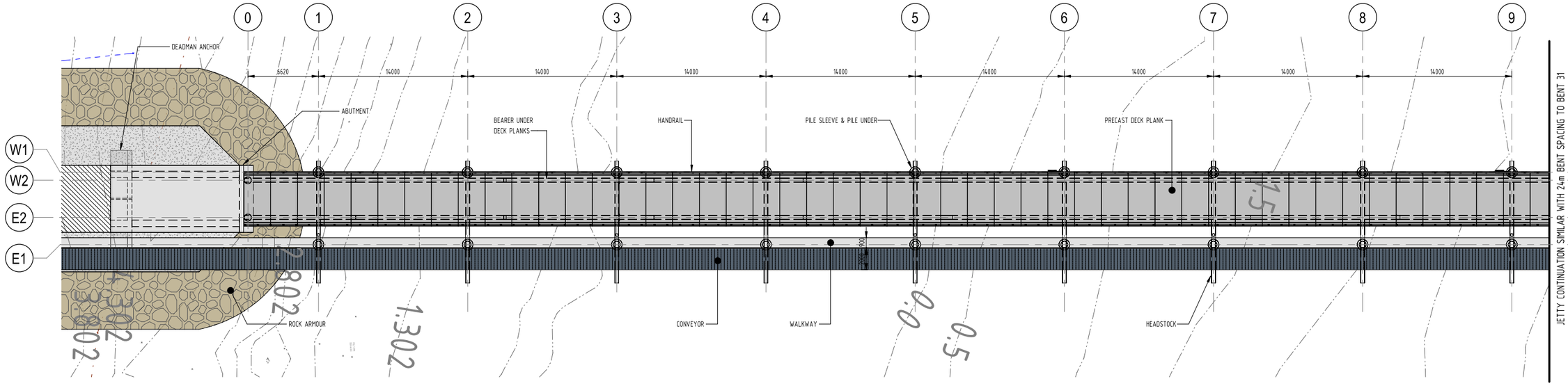

JETTY PART PLAN

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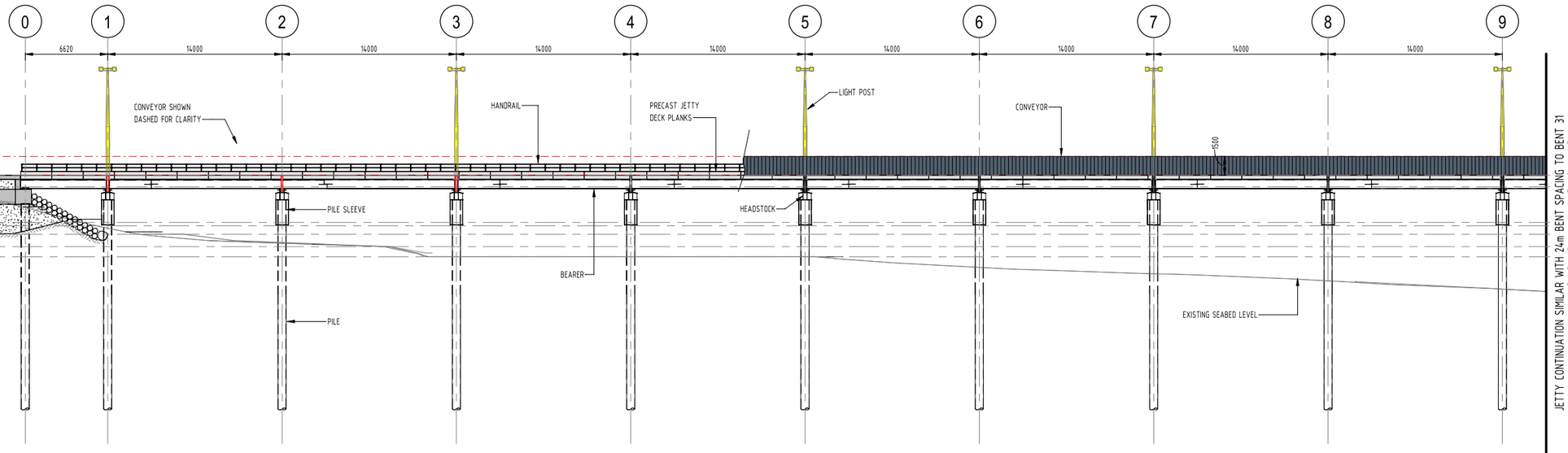

PART ELEVATION

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PLANNING
PART PLAN & ELEVATION

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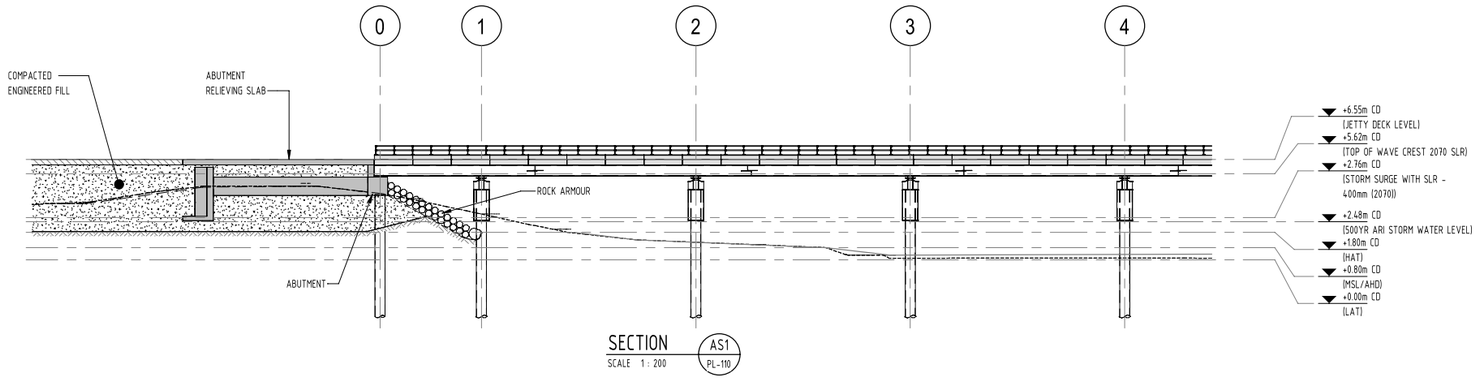

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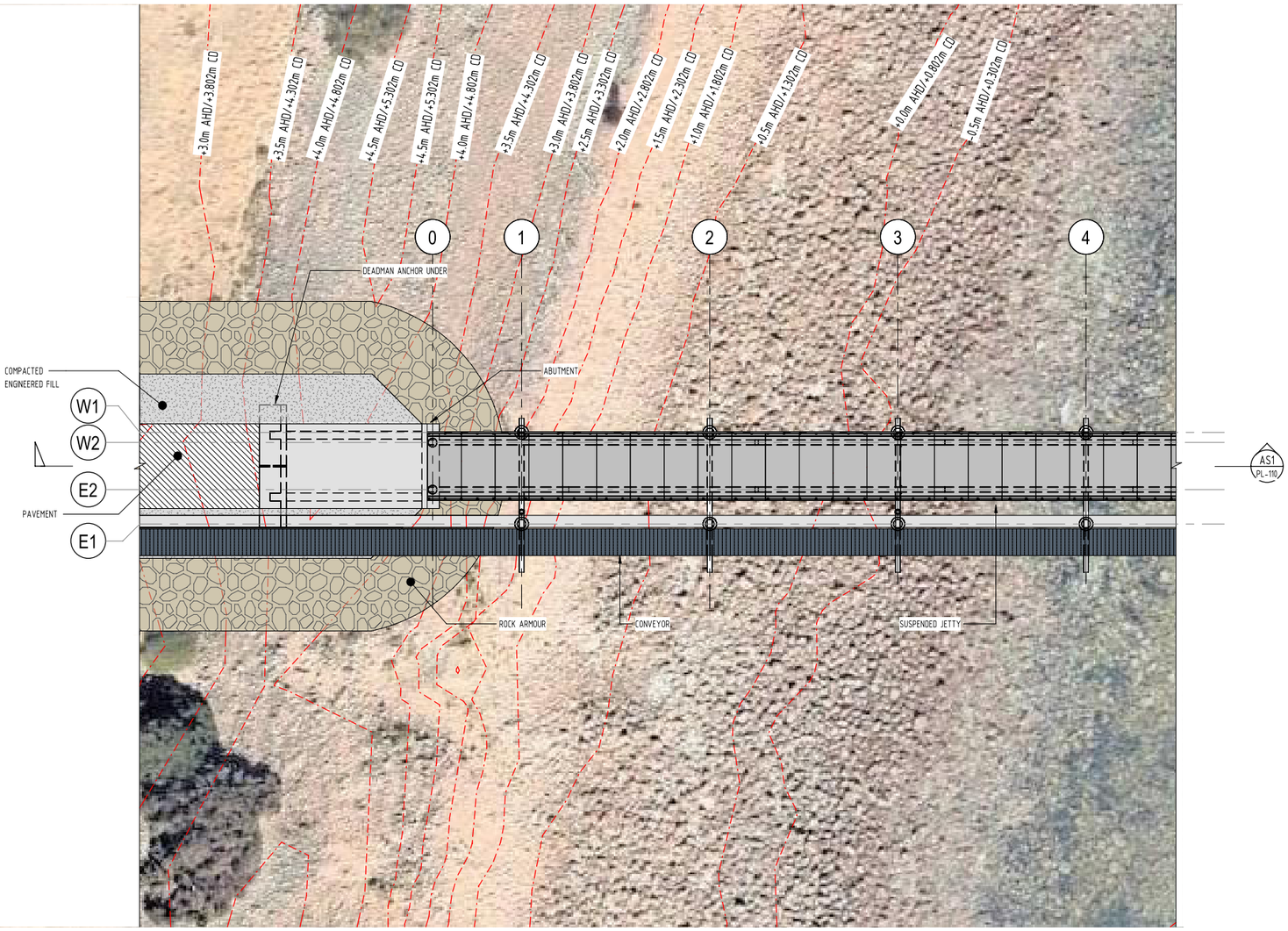

ABUTMENT - PLAN
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MARITIME CONSTRUCTIONS

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KANGAROO ISLAND SEAPORT
K.I. PLANTATION TIMBERS
PLANNING
ABUTMENT GENERAL ARRRANGEMENT

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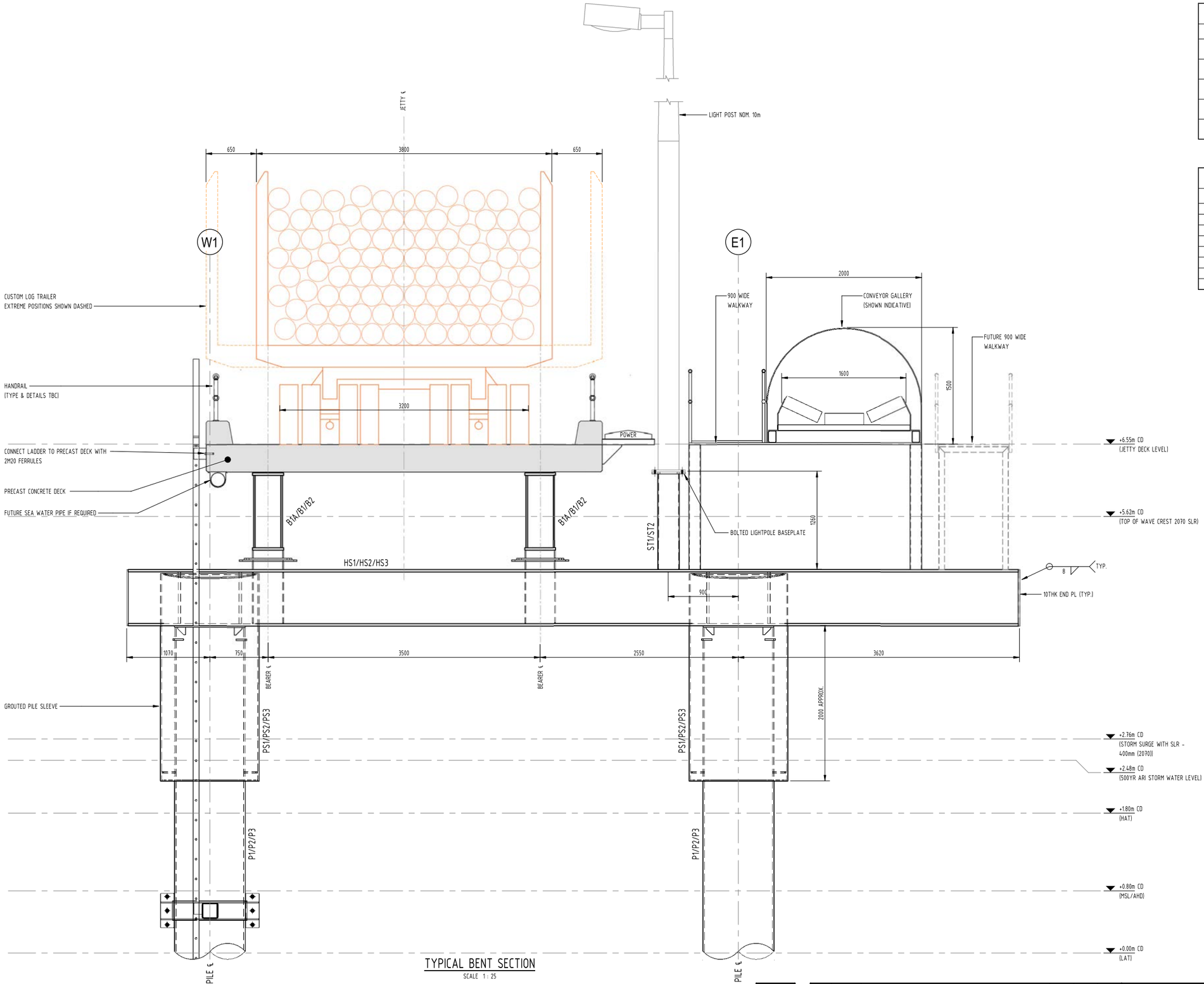

TYPICAL BENT SECTION

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FRAMING SCHEDULE - JETTY		
MARK:	SIZE:	COMMENTS:
B1	725x400 BOX SECTION	BEARER. 16 THK. WEB + 20 THK. FLANGE. REFER DETAILS.
B1A	725x400 BOX SECTION	BEARER. 16 THK. WEB + 25 THK. FLANGE. REFER DETAILS.
B2	1000x400 BOX SECTION	BEARER. 20 THK. WEB x 32 THK. FLANGE. REFER DETAILS.
HS1	650x375 BOX SECTION	HEADSTOCK. 16 THK. WEB + 25 THK. FLANGE. REFER DETAILS.
HS2	725x450 BOX SECTION	HEADSTOCK. 16 THK. WEB + 32 THK. FLANGE. REFER DETAILS.

PILE SCHEDULE - JETTY		
MARK:	SIZE:	COMMENTS:
P1	660.0x12.7 CHS	JETTY PILE
P2	914.0x20.0 CHS	JETTY PILE
P3	1016.0x25.0 CHS	JETTY PILE
PS1	1070x16.0 CHS	PILE SLEEVE
PS2	1320.0x16.0 CHS	PILE SLEEVE
PS3	1425.0x25.0 CHS	PILE SLEEVE
ST1	273.1x9.3 CHS	LIGHT POLE STUB
ST2	273.1x9.3 CHS	LIGHT POLE STUB

KANGAROO ISLAND PLANTATION TIMBERS

MARITIME CONSTRUCTIONS

INFORMATION ISSUE
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRAFT.	ENG.	CHKD.
A	27.11.20	ISSUED FOR PLANNING ASSESSMENT	SAR	MCD	MCD
B	04.12.20	ISSUED FOR PLANNING ASSESSMENT	SAR	MCD	MCD

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KANGAROO ISLAND SEAPORT
K.I. PLANTATION TIMBERS
PLANNING
TYPICAL BENT SECTION

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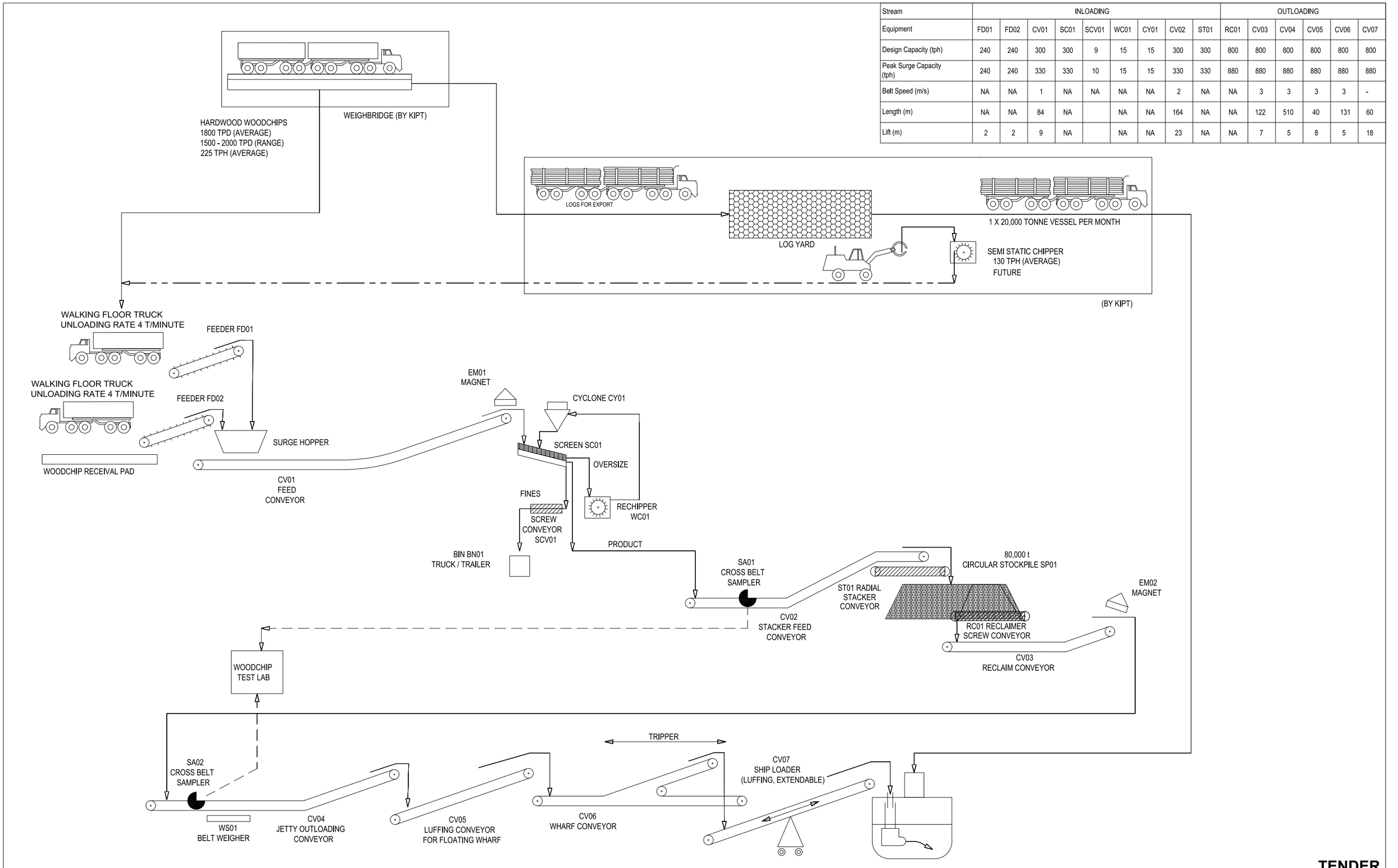
Stream	INLOADING									OUTLOADING					
Equipment	FD01	FD02	CV01	SC01	SCV01	WC01	CY01	CV02	ST01	RC01	CV03	CV04	CV05	CV06	CV07
Design Capacity (tph)	240	240	300	300	9	15	15	300	300	800	800	800	800	800	800
Peak Surge Capacity (tph)	240	240	330	330	10	15	15	330	330	880	880	880	880	880	880
Belt Speed (m/s)	NA	NA	1	NA	NA	NA	NA	2	NA	NA	3	3	3	3	-
Length (m)	NA	NA	84	NA		NA	NA	164	NA	NA	122	510	40	131	60
Lift (m)	2	2	9	NA		NA	NA	23	NA	NA	7	5	8	5	18



TENDER

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
B	ISSUED FOR TENDER		C.RYE	B.H.	D.J.	20.06.19
A	ISSUED FOR REVIEW		C.RYE	B.H.	D.J.	24.05.19

GHD Tower, Level 3
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Drawn	C.RYE	Designer	D.NOWLAND
Drafting Check	G.HUBER	Design Check	M.PEATTIE
Approved (Project Director)		Dean Joannides 2019.06.21 14:19:13+10'00'	
Date			
Scale		This Drawing must not be used for Construction unless signed as Approved	

Client: PROJECT CO
Project: KI WOODCHIP EXPORT FACILITY
Title: PROCESS FLOW DIAGRAM

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Drawing No: 31-37160-M001
Rev: B

Plot Date: 20 June 2019 - 3:31 PM
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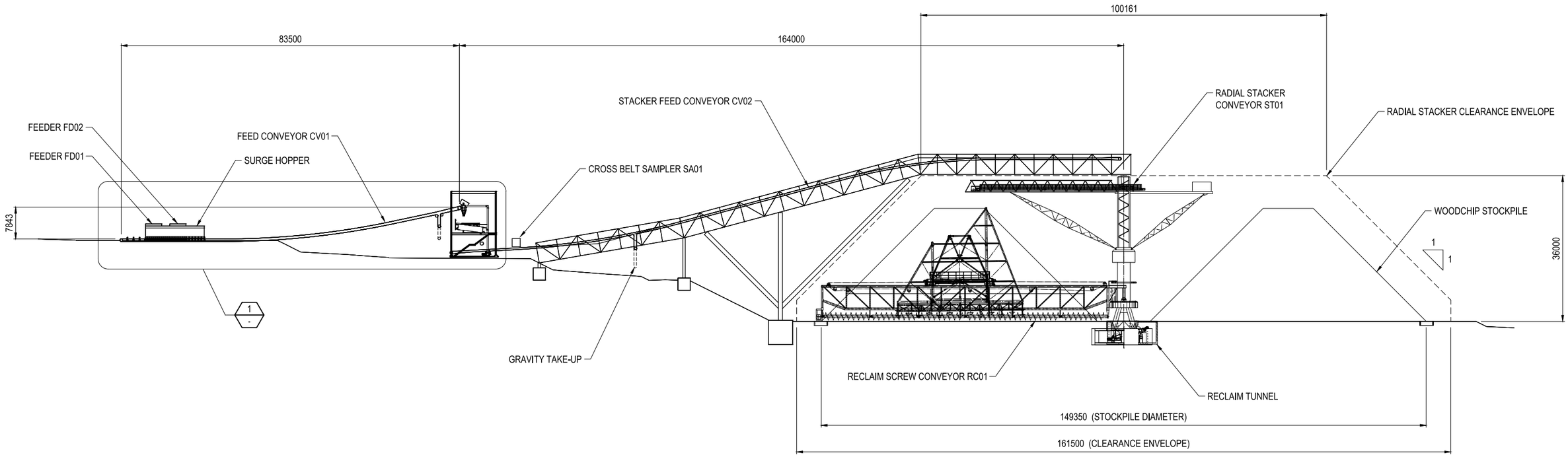

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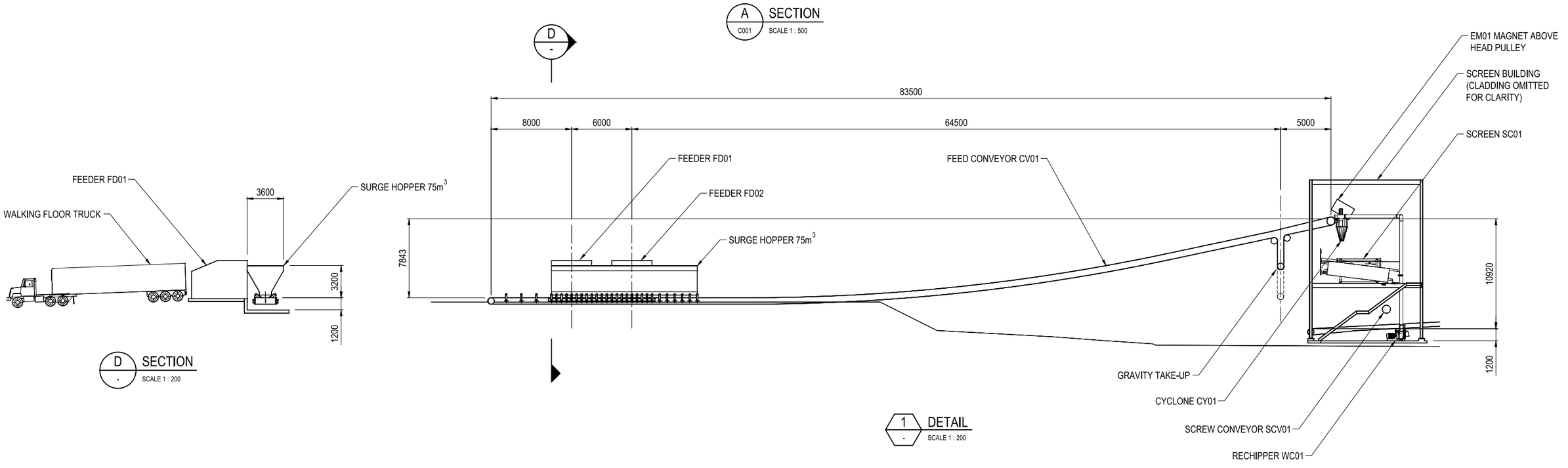

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1 - DETAIL
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TENDER

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A	ISSUED FOR REVIEW		C.RYE	B.H.	D.J.	24.05.19

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SCALE 1:500 AT ORIGINAL SIZE

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Drawn	C.RYE	Designer	D.NOWLAND
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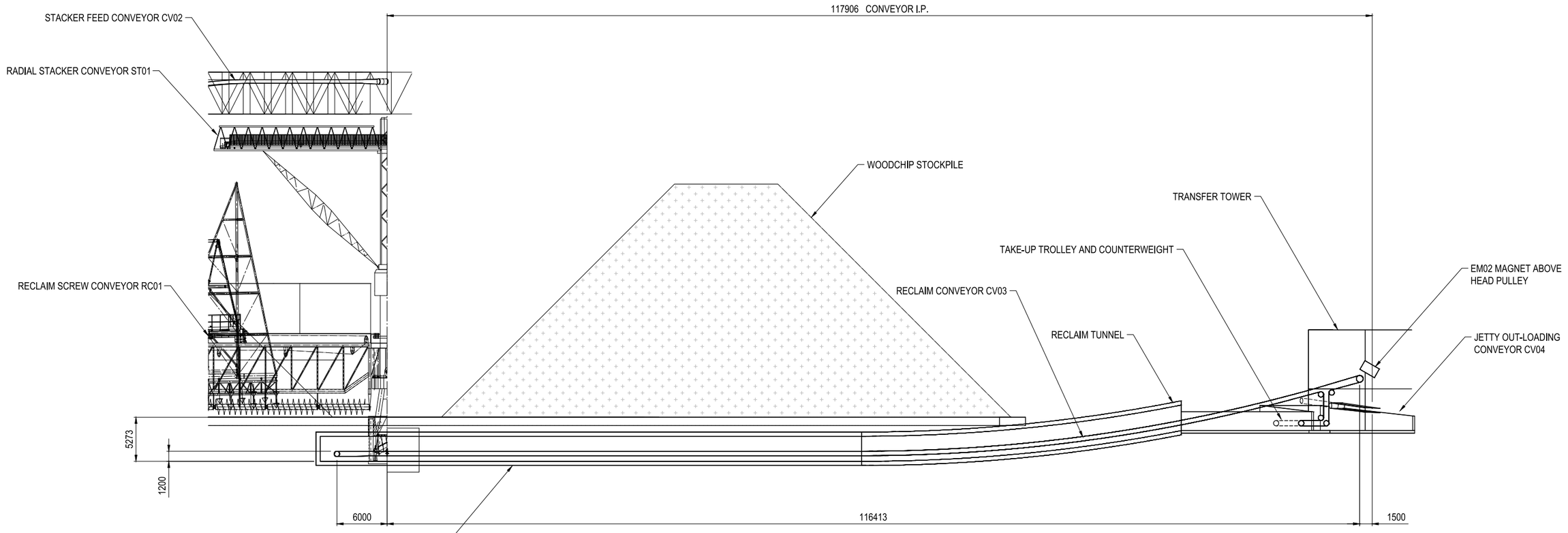
Approved (Project Director)	Dean Joannides		
Date	2019.06.21 14:19:46+10'00'		
Scale	AS SHOWN	This Drawing must not be used for Construction unless signed as Approved	

Client PROJECT CO
Project KI WOODCHIP EXPORT FACILITY
Title IN FEED SYSTEM ARRANGEMENT

Original Size A1
Drawing No: 31-37160-M002
Rev: B

Plot Date: 20 June 2019 - 3:20 PM Plotted by: Gordon Huber Cad File No: \\ghdnet\ghd\AU\Newcastle\Projects\22\19397\CADD\Drawings\Woodchip\31-37160-M002.dwg



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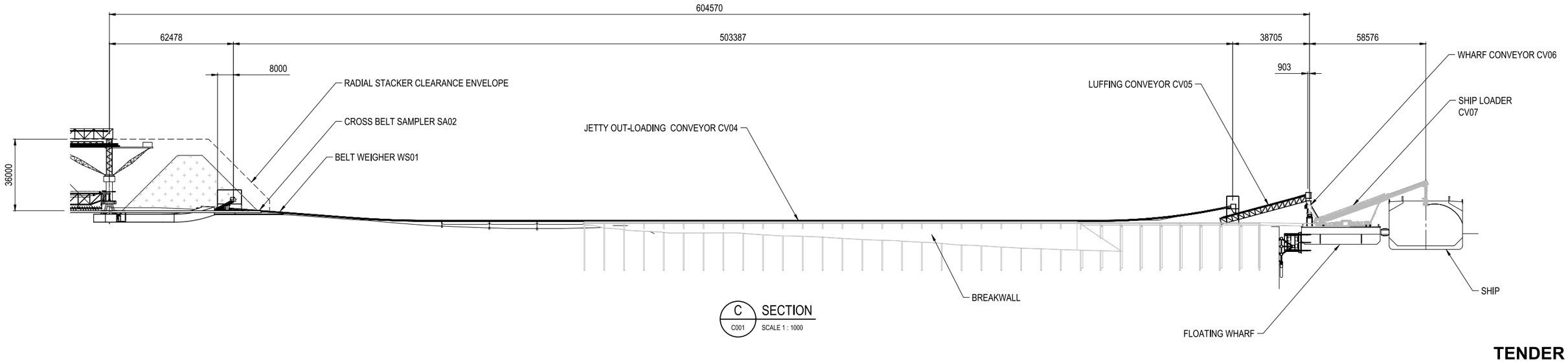

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A	ISSUED FOR REVIEW	C.RYE	B.H.	D.J.	24.05.19

Note: * indicates signatures on original issue of drawing or last revision of drawing

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SCALE 1:250 AT ORIGINAL SIZE

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Drawn C.RYE		Designer D.NOWLAND	
Drafting Check G.HUBER		Design Check M.PEATTIE	
Approved (Project Director)	Dean Joannides 2019.06.21 14:20:55+10'00'		
Date			
Scale AS SHOWN	This Drawing must not be used for Construction unless signed as Approved		

Client PROJECT CO
Project KI WOODCHIP EXPORT FACILITY
Title RECLAIM AND SHIPLOADING SYSTEM ARRANGEMENT

Original Size A1
Drawing No: 31-37160-M003
Rev: B

Plot Date: 20 June 2019 - 3:19 PM
Plotted by: Gordon Huber
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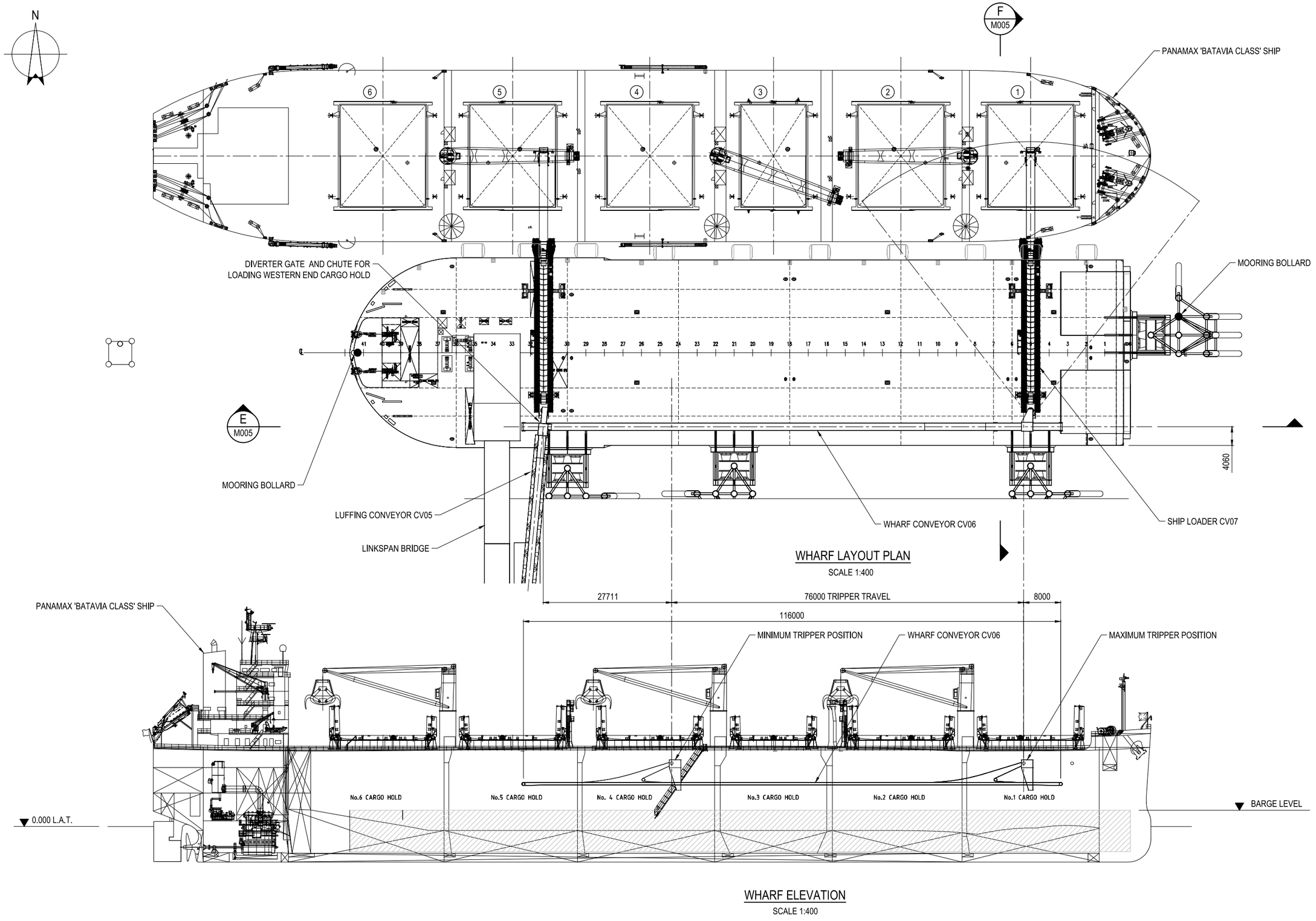

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A	ISSUED FOR REVIEW	C.RYE	B.H.	D.J.	24.05.19

Note: * indicates signatures on original issue of drawing or last revision of drawing

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Drawn	C.RYE	Designer	D.NOWLAND
Drafting Check	G.HUBER	Design Check	M.PEATTIE
Approved (Project Director)	Dean Joannides 2019.07.05 16:14:16+10'00'		
Date			
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Client PROJECT CO
Project KI WOODCHIP EXPORT FACILITY
Title FLOATING WHARF
DETAILS - SHEET 1 OF 2

Original Size A1 Drawing No: 31-37160-M004 Rev: C

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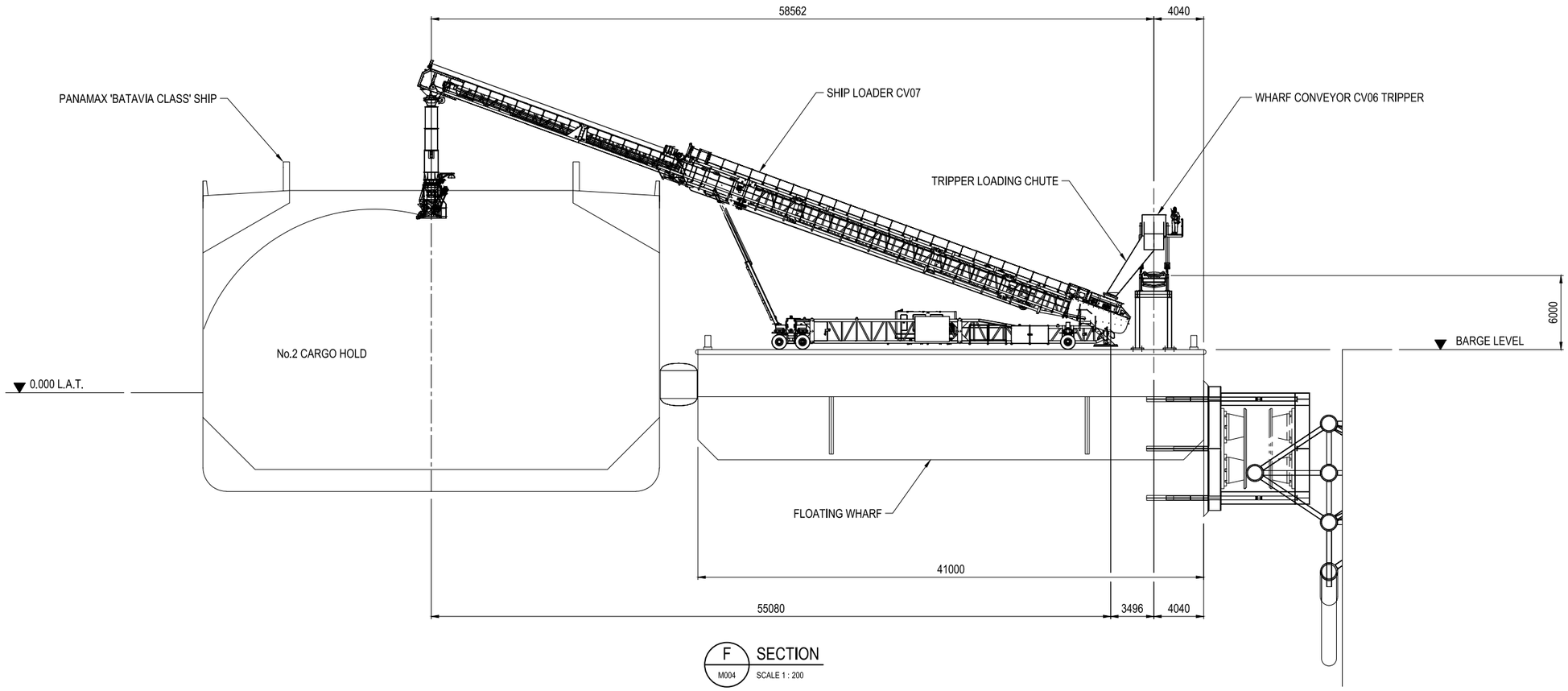

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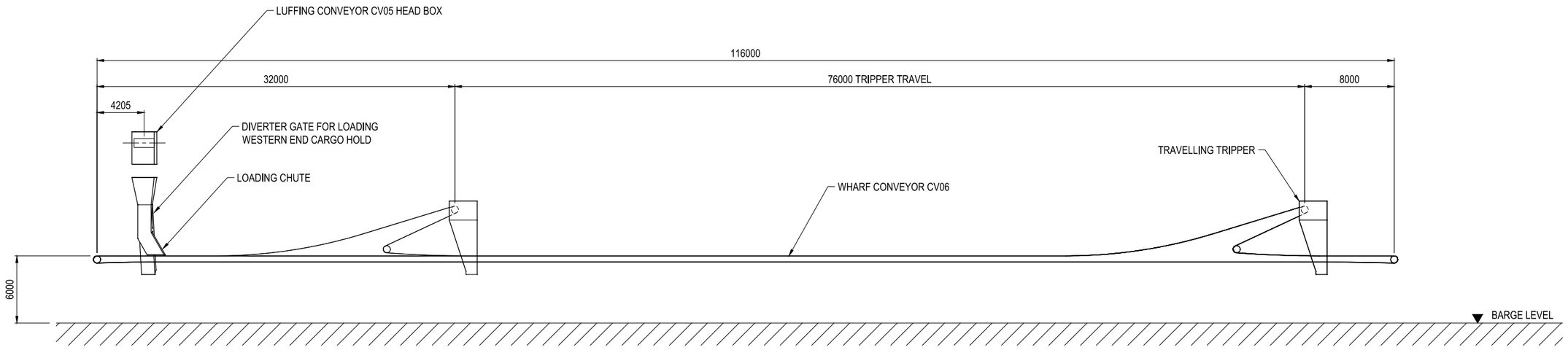

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TENDER

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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B	ISSUED FOR TENDER		C.RYE	B.H.	D.J.	20.06.19
A	ISSUED FOR REVIEW		C.RYE	B.H.	D.J.	24.05.19

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

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Drawn	C.RYE	Designer	D.NOWLAND
Drafting Check	G.HUBER	Design Check	M.PEATTIE
Approved (Project Director)	Dean Joannides 2019.07.05 16:15:51+10'00'		
Date			
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Client PROJECT CO
Project KI WOODCHIP EXPORT FACITLITY
Title FLOATING WHARF
DETAILS - SHEET 2 OF 2

Original Size A1
Drawing No: 31-37160-M005
Rev: C

Plot Date: 28 June 2019 - 10:37 AM Plotted by: Col Rye Cad File No: \\ghdnet\ghd\AU\Newcastle\Projects\22\19397\CADD\Drawings\Woodchip\31-37160-M005.dwg

Design & Construct
Timber Export Facility, Smith Bay

Kangaroo Island Plantation Timbers

Construction Engineering Report

Prepared By: Maritime Constructions Pty Ltd
Date 13 November 2020
Document ID MCE0457_LET_004_Construction Engineering Report

MARITIME CONSTRUCTIONS

TABLE OF CONTENTS

1.1. PROJECT BACKGROUND

Maritime Constructions is a South Australian family owned SME with marine construction expertise. MC have been working with Kangaroo Island Plantation Timbers (KIPT) since 2015 to develop a constructable and cost-effective log export facility on Kangaroo Island, and are engaged by KIPT under a Design and Construct Alliance Agreement to design and construct a timber export facility at Smith Bay. This nature of engagement between Client and experienced marine Contractor ensures that constructability is at the fore during concept development and detailed design.

1.2. PHYSICAL SITE CONDITIONS

During the project conceptualisation stage, bathymetric, geotechnical and geophysical/seismic investigations were undertaken in order to fully understand the site conditions and ensure that any proposed designs were constructable.

The geophysical investigation identified a likely slip fault line on the Smith Bay site, and the inferred ground conditions indicated estuarine muds and sands of minimal thickness (average of 1.0-3.0m thick) overlaying a cobbles and boulders matrix (referred to as *Reflector 1* in the geophysical reports) overlaying a mudstone/siltstone rock (referred to as *Reflector 2* in the geophysical reports).

Due to the slip fault line on the site, fixed structures (like a continuous sheet pile wall) have been avoided in design concepts. The presence of the high-level rock (mudstone/siltstone interface referred to as *Reflector 2*) also means that there is a high probability of piles reaching early refusal (i.e. limited penetration into the seafloor) prior to enough pile embedment being achieved to achieve sufficient lateral toe resistance. In these instances of early pile refusal, the inside of the pile would need to be internally drilled and the pile re-driven after drilling in order to advance the pile into the rock layer.

1.3. DRAFT EIS SUBMISSION - CONCEPTS

The construction risk due to the site geotechnical conditions steered the design away from a “conventional” piled type wharf retaining structure and towards construction methodologies which avoided fixed structures and minimised pile quantities. The design submitted in 2018 in the Draft EIS involved a solid rock armoured causeway extending from shore to deeper water connected to a floating barge which provides wharf laydown space and truck turnaround capacity. Dredging was also required to provide adequate water depth with the dredge material used as fill for the solid causeway. The key benefits of this construction option were:

- **Reduced construction time.** By reducing the amount of site works (in particular the quantity of marine piling) the construction time on-site is significantly reduced. The

floating wharf is prepared offsite at a shipyard in a controlled environment and incorporated into the site construction works at the end of the site construction period.

- **Reduced construction risk.** By reducing the amount of piling works the construction option is significantly less sensitive to the otherwise difficult geotechnical conditions encountered and presented onsite.

This design concept (with dredging) was the subject of the Draft Environmental Impact Statement (EIS) and community consultation.

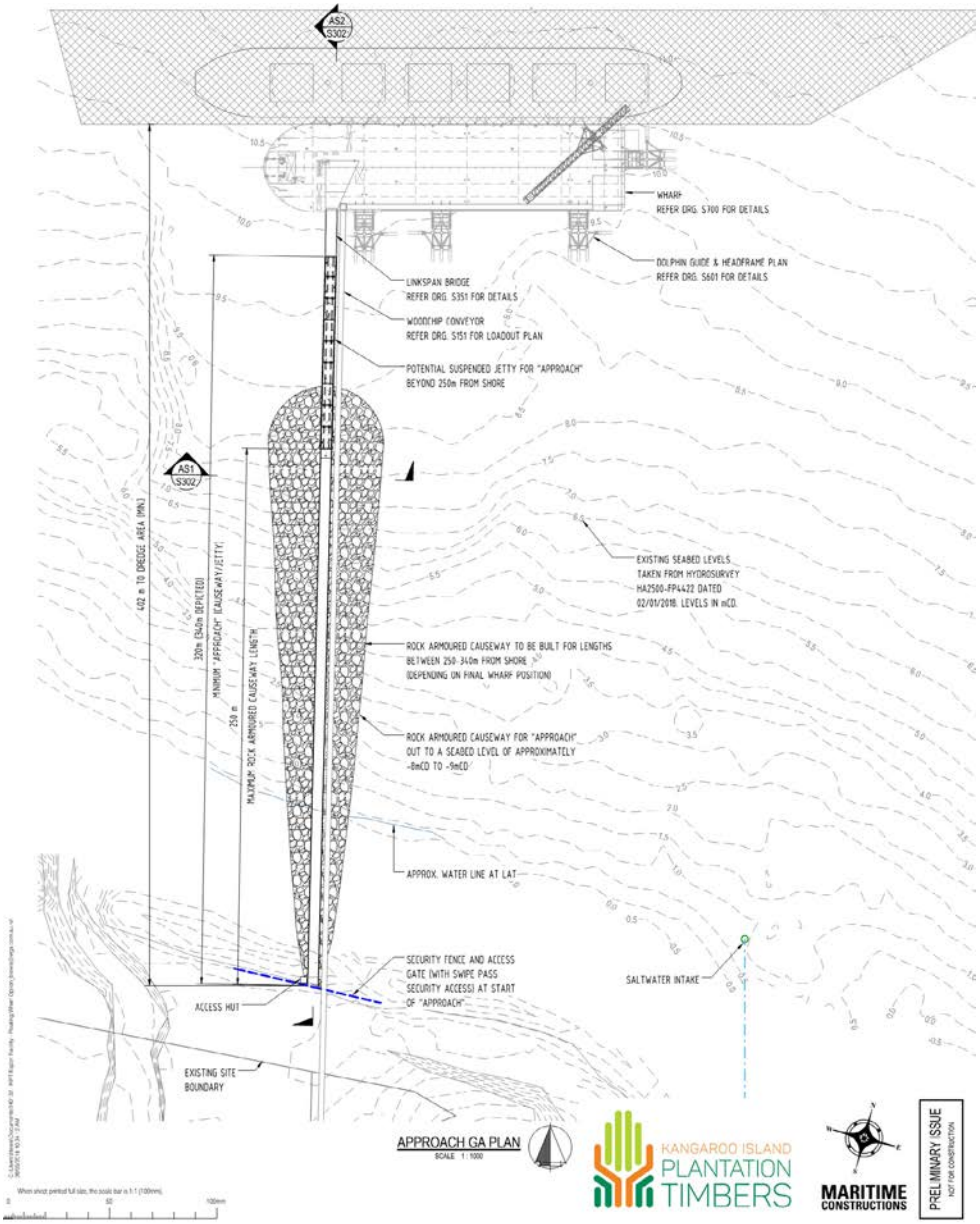

Figure 1 – Draft EIS General Arrangement

1.4. ADDENDUM OF THE SMITH BAY WHARF DRAFT EIS

In response to community and agency feedback from the Draft EIS submission, an addendum to the Smith Bay Wharf Draft EIS was submitted in October 2019 which:

- **Deleted dredging.** The dredging was removed from the construction scope entirely and instead the length of the accessway to the floating wharf was increased.
- **Deleted the solid armour lined rock filled causeway.** The solid causeway was deleted and replaced with an open piled suspended jetty the full length.

These amendments were made by KIPT in order to address some potential community and agency concerns about the impact on coastal processes caused by the solid causeway and possible turbidity impacts caused by dredging. To ensure that the change in design of the port facility could be constructed with the physical site characteristics in mind, the suspended jetty has been designed to:

- **avoid tension loads in jetty piles.** The jetty has been engineered to ensure that the jetty piles do not need to be driven into the mudstone/siltstone rock layer which is encountered onsite. This design philosophy ensures that even in the event of early pile refusal rock drilling is not required.
- **accommodate construction loads.** The jetty has been over-engineered to accommodate the construction loads of cranes and piling equipment. This philosophy minimises the amount of marine plant that is required onsite and maximises the available working conditions onsite.

The revised concept submitted in the Addendum to the Draft EIS is shown following.

Figure 2 –EIS Addendum Revised Concept

1.5. ENVIRONMENTAL CONDITIONS

During the development phase of the project a wave buoy was installed onsite and recorded wave height, wave periods and wave directions. The wave buoy was onsite for a period of approximately 15 months between July 2016 and September 2017 and this data has been used to determine the environmental characteristics of the Smith Bay site in the context of:

- **design parameters (loads).** The wave data confirms the loads which the designer must use during the design of the structures on site (e.g. pile sizes, pile quantities, rock socket details etc)
- **constructability (plant selection and availability).** The wave data informs the contractor on the plant and equipment which is required onsite to construct the facility

Hs [m]	Peak Period [s]										Grand Total
	<2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	>18	
0-0.25	0.01%	0.43%	0.01%	0.00%	0.38%	0.90%	0.17%	0.05%	0.02%	0.00%	1.97%
0.25-0.5	0.00%	0.84%	0.07%	0.03%	0.49%	15.86%	18.90%	6.96%	1.30%	0.22%	44.67%
0.5-0.75		1.43%	0.39%	0.13%	0.25%	4.15%	13.50%	10.29%	2.38%	0.34%	32.87%
0.75-1		0.49%	1.66%	0.20%	0.12%	0.91%	3.16%	4.15%	1.40%	0.15%	12.24%
1-1.25		0.00%	1.41%	0.17%	0.11%	0.33%	1.05%	1.48%	0.50%	0.06%	5.13%
1.25-1.5			0.68%	0.11%	0.16%	0.09%	0.35%	0.52%	0.16%	0.02%	2.08%
1.5-1.75			0.25%	0.02%	0.14%	0.03%	0.09%	0.15%	0.02%		0.71%
1.75-2			0.09%	0.01%	0.08%	0.02%	0.02%	0.01%	0.00%	0.00%	0.24%
2-2.25			0.01%	0.02%	0.03%	0.01%					0.07%
2.25-2.5				0.00%	0.00%	0.01%					0.01%
2.5-2.75				0.00%	0.00%	0.00%					0.01%
2.75-3											
Grand Total	**0.02%**	**3.19%**	**4.58%**	**0.71%**	**1.75%**	**22.31%**	**37.24%**	**23.61%**	**5.79%**	**0.79%**	**100.00%**

Hs [m]	Wave Direction [deg]											Grand Total
	0-30	30-60	60-90	90-120	120-150	150-180	180-210	210-240	240-270	270-300	300-330	330-360	
0-0.25	0.41%	0.35%	0.21%	0.00%					0.00%	0.01%	0.47%	0.52%	1.97%
0.25-0.5	10.88%	3.49%	0.38%	0.00%						0.00%	10.83%	19.08%	44.67%
0.5-0.75	7.05%	2.63%	0.08%								11.92%	11.19%	32.87%
0.75-1	2.40%	0.25%	0.00%								5.50%	4.08%	12.24%
1-1.25	0.90%	0.06%									2.56%	1.61%	5.13%
1.25-1.5	0.25%	0.04%									1.13%	0.66%	2.08%
1.5-1.75	0.08%	0.01%									0.43%	0.19%	0.71%
1.75-2	0.02%										0.13%	0.09%	0.24%
2-2.25	0.01%										0.03%	0.03%	0.07%
2.25-2.5	0.00%										0.00%	0.01%	0.01%
2.5-2.75											0.00%	0.01%	0.01%
2.75-3													
Grand Total	**22.00%**	**6.84%**	**0.66%**	**0.01%**					**0.00%**	**0.01%**	**33.01%**	**37.46%**	**100.00%**

Figure 3 – Wave Climate (direction, period and wave height)

The environmental (sea state) conditions at Smith Bay indicate a principal wave climate from the northern quadrant, long period swell as the dominant sea state, and significant wave heights of less than H_{sig}=0.75m encountered approximately 80% of the time. From a marine constructability point of view, this wave climate supports the construction of the dolphins (restraint and mooring) from marine plant (both floating and jack-up barges) consistent with the parameters described in the EIS.

1.6. CONSTRUCTION STAGING AND PROGRAMME

The construction principally involves three separate marine work packages.

- **Suspended jetty.** The jetty will be constructed using a conventional launch-out overhand type construction approach. Working from the shore outwards with construction work principally performed from a crane supported by the jetty structure, steel piles will be driven to design depth, steel headstocks and girders will be lifted into position and then the concrete deck will be installed on top of the steel girders to complete the jetty. This is a conventional construction approach and has been used regularly by Maritime Constructions (and other marine contractors to construct open piled jetty structures). This construction approach is progressive and sequential and will take approximately 300 days to complete the full length of the jetty at Smith Bay. A typical example below from recent MC project.

Figure 4 –Conventional overhand jetty construction – working from the deck

- **Dolphins.** The facility consists of a number of dolphin structures used to restraint the floating wharf (and for mooring purposes). This type of structure is conventional in

marine construction, and consists of vertical piles installed from marine plant, and then a jacket sleeved over the pre-installed vertical piles and the pile and jacket grouted together. This then creates a fully framed structure which can resist large horizontal loads (either from mooring loads or from the pontoon loads). The construction of each restraint dolphin will take approximately 60 days, requiring approximately 180 days to complete the three restraint dolphins at Smith Bay. This construction activity will be performed from marine plant and will occur whilst the jetty is being constructed. A typical dolphin construction from a recent MC project is shown following.

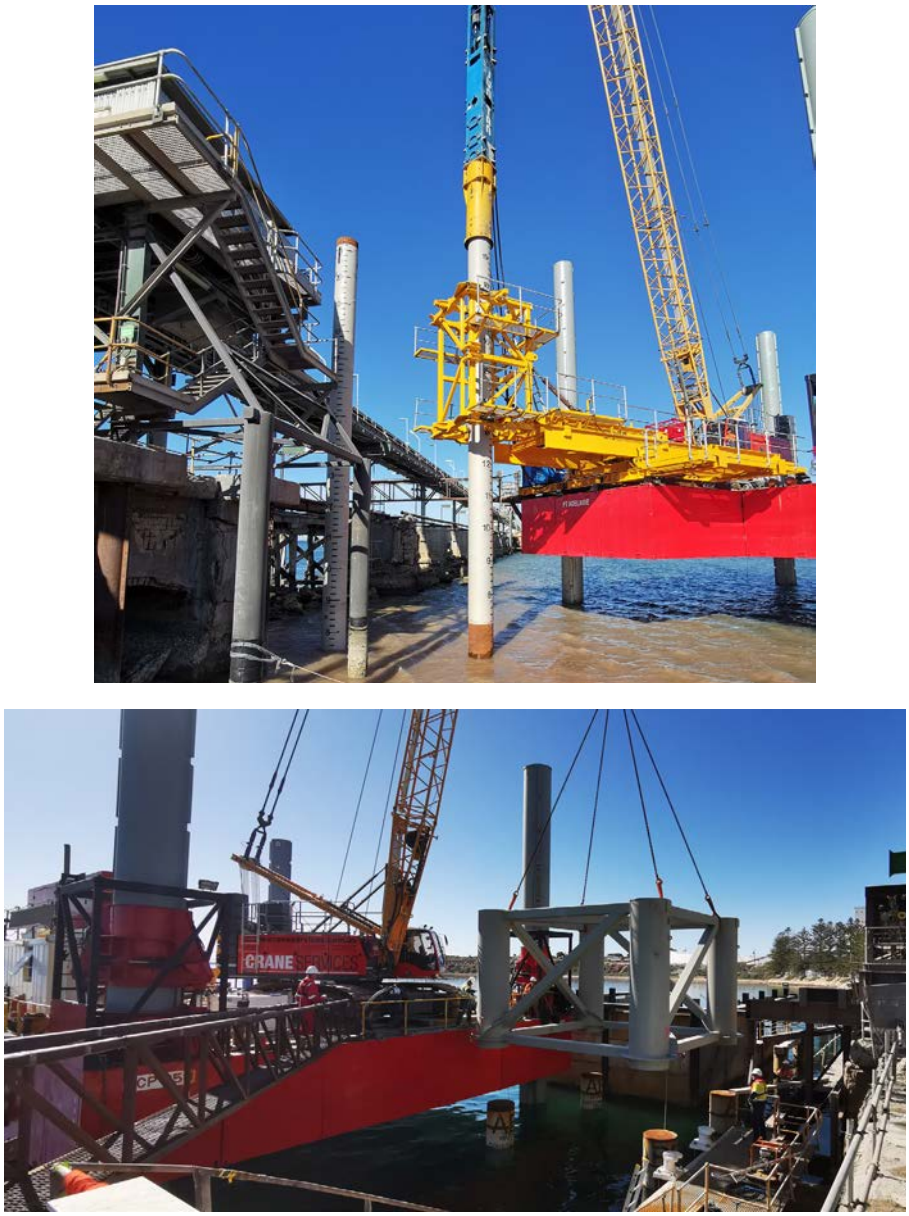

Figure 5 – *Jacket install over vertical piles*

- **Floating wharf.** The facility consists of a floating wharf permanently connected to the restraint dolphins to provide a wharf face for the loadout of cargo from shore and onto a ship. Although this type of floating wharf is “unconventional” in South Australia, it has successfully been adopted in other locations in Australia (e.g. Melville Island) and is also the style of facility proposed for the new Kimberly Marine Support Base. The process of connecting the pontoon into the dolphins is reasonably simple, and involves the use of high capacity mooring winches and tug assistance to draw the pontoon into the restraint dolphin piles to facilitate the positive engagement of the pontoon to the dolphins. This approach is similar to the berthing process that ships adopt which uses a combination of ships power (e.g. thrusters), tug assistance and winches to berth in a controlled manner.

Figure 6 – *Melville Island – Floating wharf and approach jetty*

1.7. CONCLUSION

Maritime Constructions confirms that the design presented in the Addendum to the Environmental Impact Statement is fully considered, has been through a rigorous design development stage, and has been designed and engineered in accordance with the conditions expected to be encountered on site. The design as presented in the Addendum to the EIS can be constructed in the manner described in the EIS.