Port Kembla Gas Terminal

Environmental Management Strategy Stage 2A and 2B Marine Berth Construction and Dredging – Land and Marine Based

Australian Industrial Energy

11 February 2022

→ The Power of Commitment

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Acronyms

Acronym	Definition
ACM	Asbestos Containing Materials
AHIP	Aboriginal Heritage Impact Permit
AIE	Australian Industrial Energy
AQMP	Air Quality Management Plan
AS	Australian Standards
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soil Management Plan
BaP	Benzo(a)Pyrene
BC Act	*Biodiversity Conservation Act 2016*
BCD	Biodiversity and Conservation Division of DP&E
Berth 101	MBD Site Compound
CSSI	Critical State Significant Infrastructure
CSP	Contaminated Spoil Protocol
CTMP	Construction Traffic Management Plan
DEMP	Dredge and Excavation Management Plan
DP&E	Department of Planning and Environment
DP&E - Water	Department of Planning and Environment - Water
ECR	Emplacement Cell Report
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection Biodiversity Conservation Act 1999*
EPBC Regulations	*Environment Protection and Biodiversity Conservation Regulations 2000*
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
FFMP	Flora and Fauna Management Plan
GML	General Mass Limit
H:V	Ratio of horizontal distance to vertical rise
HM	Harbour Muds
HSHS	Harbour Silts
HSE	Health, Safety and Environment
HUFP	Heritage Unexpected Finds Protocol
ILALC	Illawarra Local Aboriginal Land Council
LNG	liquefied natural gas
KPIs	Key Performance Indicators
m^3	Cubic metres
MARPOL	The International Convention for the Prevention of Pollution from Ships

Acronym	Definition
MBD	Marine Berth Construction and Dredging
MBD Site Compound	Berth 101
MHF	Major Hazard Facility
MLA	Marine Loading Arms
MNES	Matters of National Environmental Significance
NPW Act	*National Parks and Wildlife Act 19741974*
NTU	Nephelometric Turbidity Unit (Turbidity)
NVMP	Noise and Vibration Management Plan
NZS	New Zealand Standards
OHDSCA	Outer Harbour Dredged Spoil Containment Area
ORF	Onshore Receiving Facilities
PANSWPANSW	Port Authority of NSWNSW
PASS	Potential Acid Sulfate Soils
PIRMP	Pollution Incident Response Management Plan
PKGT	Port Kembla Gas Terminal
PKGT EIS	Port Kembla Gas Terminal Environmental Impact Statement
PKHD	Port Kembla Height Datum
PMS	Planned Maintenance System
POEO Act	*Protection of the Environment Operations Act 1997*
POMP	Port Operations Management Plan
PVC	Polyvinyl Chloride
Roads Act	*Roads Act 1993*
RL	Reduced level
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policy
SMEC	SMEC Australia Pty Ltd
SMP	Spoil Management Plan
SMPEP	Shipboard Marine Pollution Emergency Plan
SOPEP	Shipboard Oil Pollution Emergency Plan
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
TEQ	Toxic Equivalence Quotient
TfNSW	Transport for NSW
The Project	Port Kembla Gas Terminal Project
The site	The MBD Site Compound and Emplacement Cell
VTIC	Vessel Traffic Information Centre
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*
WM Act	*Water Management Act 2000*
WQMP	Water Quality Monitoring Plan

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1. Introduction

1.1 Overview

This Environmental Management Strategy (EMS) has been developed to provide the overall strategic framework for environmental management for the Port Kembla Gas Terminal (PKGT) Project (the Project). This EMS has been prepared by GHD Pty Ltd (GHD) on behalf of Australian Industrial Energy (AIE) to apply to construction activities associated with the Stage 2A and Stage 2B of the Project. This Stage 2A and Stage 2B EMS supersedes the Stage 2A EMS.

This EMS overarches the other associated Environmental Management Sub-plans, which together describe the proposed structure for environmental management and the monitoring requirements for the Project. This EMS addresses the requirements of the Port Kembla Gas Terminal Environmental Impact Statement (PKGT EIS) and associated Infrastructure Approval (SSI 9471) and Environment Protection Licence (EPL) No. 21529.

1.2 Background

AIE is developing the Project which involves the development of a liquefied natural gas (LNG) import terminal at Port Kembla, south of Wollongong, NSW. The Project will be the first of its kind in NSW and will provide a simple and flexible solution to the state's gas supply challenges.

NSW currently imports more than 95 percent of the natural gas it uses from other eastern states. In recent years, gas supplies to the Australian east coast market have tightened, resulting in increased natural gas prices for both industrial and domestic users.

The Project provides an immediate solution to address the predicted shortages and will result in significant economic benefits for both the Illawarra region and NSW. The Project will have a capacity to deliver more than 100 petajoules of natural gas, equivalent to more than 70 percent of NSW gas needs and will provide between 10 to 12 days of natural gas storage in case of interstate supply interruption. LNG will be sourced from worldwide suppliers and transported by LNG carriers to the gas terminal at Port Kembla where it will be re-gasified for input into the NSW gas transmission network.

The Project has been declared Critical State Significant Infrastructure (CSSI) in accordance with Section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (NSW) and Schedule 5 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). The Project received Infrastructure Approval from the Minister for Planning and Public Spaces on 29 April 2019.

The construction of the Project is primarily associated with the establishment of a new berth facility at Port Kembla to enable an LNG carrier to berth alongside the Floating Storage and Re-gasification Unit (FSRU) and new infrastructure to connect the terminal to the existing gas network. Excavation and dredging would be required to establish the new berth facility, with spoil deposited in a cell (referred to as the 'Emplacement Cell') in the Outer Harbour.

The development has progressed to Stage 2A and Stage 2B works located at Berth 101 (referred to as the 'Marine Berth Construction and Dredging (MBD) Site Compound') and the Outer Harbour Dredged Spoil Containment Area (referred to as 'OHDSCA' or the Emplacement Cell). Collectively, these two locations are referred to as "the site". The Stage 2A works include:

– Completion of excavation works undertaken during Stage 1 (including transport of spoil materials to the Emplacement Cell Construction Site).
– Construction of the quay wall at the MBD Site Compound.
– Construction of Onshore Receiving Facilities (ORF) at the MBD Site Compound (including construction of Wharf Topside Area, Utility Area, and Common Area).
– Installation and commissioning of power, communications, and potable water.
– Installation of gas pipeline within the MBD Site Compound as part of ORF.

The Stage 2B works include:

– Continuation of Stage 2A works.

– Excavation and dredging of the MBD Site Compound in the Inner Harbour and the Emplacement Cell in the Outer Harbour.
– Construction of the Emplacement Cell in the Outer Harbour.
– Marine based construction activities including installation of navigational aids and revetments at the MBD Site Compound.

1.3 Purpose and scope

This EMS has been prepared in accordance with the PKGT EIS and associated Infrastructure Approval (SSI 9471) and EPL No. 21529. It describes how the management measures and commitments in the PKGT EIS, Infrastructure Approval (SSI 9471) and EPL No. 21529 relating to environmental management and compliance are to be implemented by the Principal Contractor's during Stage 2A and Stage 2B construction of the Project. Specifically, this plan includes requirements to:

- Ensure environmental management procedures outlined in the Sub-plans to this EMS are incorporated into a comprehensive framework to facilitate appropriate management throughout the life of the Project.
- Ensure that controls are properly implemented, regularly monitored, and audited to assess their effectiveness.
- Ensure processes for resourcing and implementing this EMS are developed to provide certainty of delivery.
- Demonstrate compliance with statutory, legislative and consent conditions.
- Minimise impacts on the community and the environment.
- Ensure timely and efficient response to environmental incidents and complaints.
- Monitor, review, and report on environmental impacts of construction activities.

This EMS provides the framework for environmental management during Stage 2A and Stage 2B and should be read in conjunction with associated Environmental Management Sub-plans.

This EMS provides the strategic context for environmental management and is consistent with Australian Standards (AS)/New Zealand Standards (NZS) ISO 14001:2015 – *Environmental management systems*.

2. Project overview

2.1 Site description

The site of the Project is situated at Port Kembla within the Illawarra region of NSW, about 80 kilometres south of Sydney. Port Kembla is mainly characterised by an existing import and export terminal and multiple other business, cargo, logistics, bulk goods, and heavy industrial facilities in the vicinity.

Port Kembla is situated about two kilometres south of the centre of Wollongong. Other localities surrounding Port Kembla and the Project site include Mangerton, Mount St. Thomas and Figtree to the north-west; Unanderra to the west; Berkeley to the south-west; and Cringila, Lake Heights, Warrawong and the residential region of Port Kembla to the south.

The zoned land use in the region includes special use and industrial use at Port Kembla and a mix of primarily residential and commercial uses at the surrounding localities. Major infrastructure in the region of Port Kembla includes the Princes Highway, which is a major state and regional highway connecting Sydney and Wollongong and regional areas further south. Princes Highway provides access to Port Kembla through turnoffs at Masters Road, Five Islands Road and Northcliffe Drive and is broadly utilised including by heavy vehicles from the port.

The South Coast railway line runs along the periphery of Port Kembla including the stations Port Kembla, Port Kembla North, Cringila and Lysaghts. The rail line services commuters and is also used to transport bulk solid goods like coal, grain, copper and steel from Port Kembla. The environmental features of Port Kembla and the surrounding region are limited given the extensive industrial, commercial and residential development. Waterways in the region include the Gurungaty Waterway, Allans Creek, American Creek and Byarong Creek. Green space includes JJ Kelly Park and Wollongong Golf Club to the north and a larger open area to the south-west.

The Project will be predominantly located within land zoned for dedicated port and industrial uses. Berth and wharf facilities, as well as the FSRU, would be situated at Berth 101 at the Inner Harbour, while the gas pipeline would extend around the periphery of port operations from Berth 101 to a tie-in point at Cringila. The Emplacement Cell will be located in the Outer Harbour. A site overview is provided as Figure 2.1.

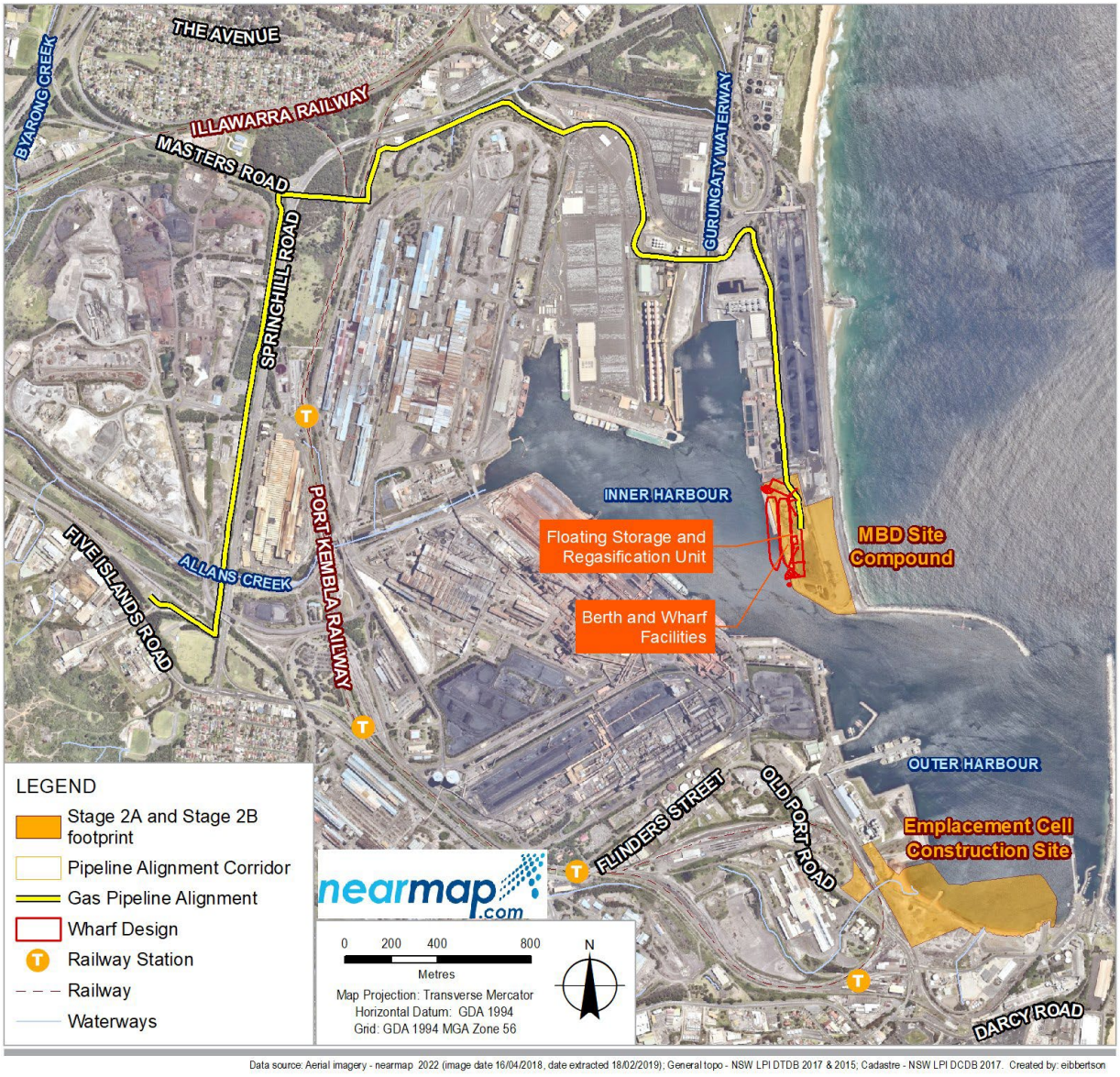

Figure 2.1 Site overview

2.2 Project construction scope of works

2.2.1 Overview

The Project construction scope of work has been divided into three main packages (with associated activities), as outlined in Table 2.1. Construction staging of the Project has been approved in accordance with Condition 3 of Schedule 4 of Infrastructure Approval (SSI-9471) as per correspondence from the Department of Planning and Environment (DP&E) dated 27 October 2021. A copy of the approval staging is included in Appendix B. This EMS applies only to the works associated with Stage 2A and Stage 2B.

Table 2.1 Construction stages/work packages

Stage	Package	Proposed commencement	Activities
1	Early Enabling Works	May 2021	Demolition of Berth 101, removal of structures and land based excavation works, and Cone Penetration Testing in the Outer Harbour to inform Emplacement Cell design and relocation of bunker oil pipeline.
2A	Marine Berth Construction – Land Based	January 2022	Completion of excavation works undertaken during Stage 1. Transport of spoil materials for storage at the Emplacement Cell Construction Site.
			Quay wall construction.
		February 2022	Installation of communications conduit, potable water line, and 11kV power cable and pad-mount substations within MBD Site Compound.
		April 2022	Construction of the ORF, which comprises three areas: Wharf Topside Area; Utility Area; and Common Area.
		June 2022	Pipeline construction and associated ancillary infrastructure within MBD Site Compound delivered as part of ORF scope.
2B	Marine Berth Construction and Dredging – Land and Marine Based	March 2022	Continuation of Stage 2A with the addition of the following activities:
			Excavation/dredging of the MBD Site Compound in the Inner Harbour and construction of the Emplacement Cell in the Outer Harbour.
			Marine based construction activities including installation of navigational aids and revetment shore protection.
3	Pipeline installation including tie-ins (NGP)	June 2022	Construction of an 18” onshore natural gas pipeline approximately 6.3km in length from the Berth 101 site boundary to tie-in facility at Cringila for connection to the Eastern Gas Pipeline. Pipeline construction to occur concurrently with Jemena, subject to separate set of management plans.

*Proposed dates and may be subject to change.

The following will be undertaken as part of the Stage 2A land-based works:

– Construction of the quay wall at MBD Site Compound incorporating finalisation of excavation works undertaken during Stage 1 (including transport of spoil materials to Emplacement Cell Construction Site).
– Installation of and commissioning of power, communications, and potable water.
– Construction of ORF at MBD Site Compound (including construction of Wharf Topside Area, Utility Area, and Common Area).
– Installation of gas pipeline within the MBD Compound site.

The following will be undertaken as part of the Stage 2B land and marine-based works:

– Continuation of Stage 2A works.
– Installation of site facilities and preparatory earthworks at Emplacement Cell Construction Site.

– Marine-based construction activities including installation of silt curtains, navigational aids, and revetment shore protection at the MBD Site Compound.
– Construction of the Emplacement Cell in the Outer Harbour.
– Excavation and dredging of the MBD Site Compound in the Inner Harbour.

An outline of the tasks associated with Stage 2A and Stage 2B is provided in Section 2.3 through Section 2.7. The site includes the MBD Site Compound, the Emplacement Cell Construction Site, and the Emplacement Cell located in the Outer Harbour. The location of the Stage 2A and Stage 2B works is shown in Figure 2.2.

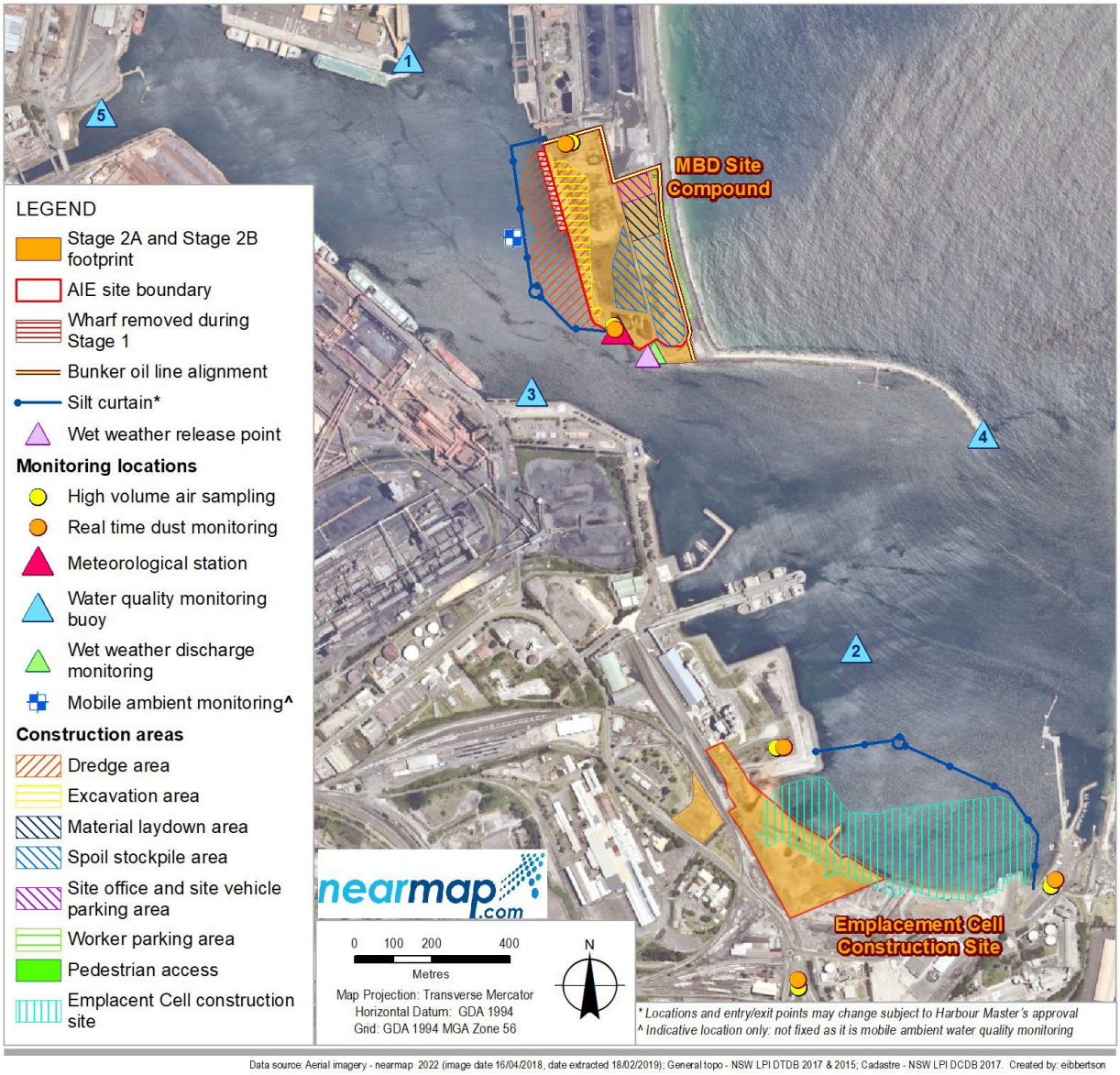

Figure 2.2 Stage 2A and Stage 2B works and location of MBD Site Compound, Emplacement Cell and Emplacement Cell Construction Site

2.2.2 Traffic

Road traffic generated by Stage 2A and Stage 2B will be controlled through the gate on Sea Wall Road. Heavy vehicle movements will be generated by the delivery of materials, equipment, and plant to the MBD Site Compound and transport of stockpiled material to the Emplacement Cell Construction Site.

In addition to the material that has already been transported to Emplacement Cell Construction Site (Outer Harbour Laydown Area) during Stage 2A, up to 30,000 cubic metres (m^3) of material from the MBD Site Compound is anticipated to be transported via road to the Emplacement Cell Construction Site during Stage 2B.The activities associated with this task will involve loading, road transportation via truck and trailer (approximately 30-tonne capacity), unloading, stockpiling, and management of the stockpiles.

Light vehicle movements will be generated from construction workers accessing the MBD Site Compound and Emplacement Cell Construction Site. Parking will be provided for up to approximately 100 workers at the MBD Site Compound and approximately 37 workers at the Emplacement Cell Construction Site (refer to Figure 2.3 and Figure 2.4).)

Road traffic movements will be undertaken in accordance with the Stage 2A and Stage 2B Construction Traffic Management Plan (CTMP).

The road traffic generated by Stage 2B will mainly be associated with the delivery of the quarry materials from quarries located in the surrounding area. It is anticipated that about 40-50 daily truck movements will be required, consisting of three to five axle semi-trailers or rigid truck and five axle dog-trailers of less than 40 tonnes (GML). The activities will take place during the standard daytime construction working hours, averaging approximately eight heavy truck movements per hour (four vehicles in and out of site). The total number of vehicles required for the operation will be 12-16.

The majority of traffic generated during Stage 2B activities will be marine traffic movements during dredging operations. Marine traffic navigation and management will be undertaken in accordance with a Port Navigation Plan, herein referred to as the Port Operations Management Plan (POMP). The POMP has been produced by the Stage 2B Principal Contractor in consultation with the Port Authority of NSW (PANSW) and is consistent with the principles in the CTMP for Stage 2A.

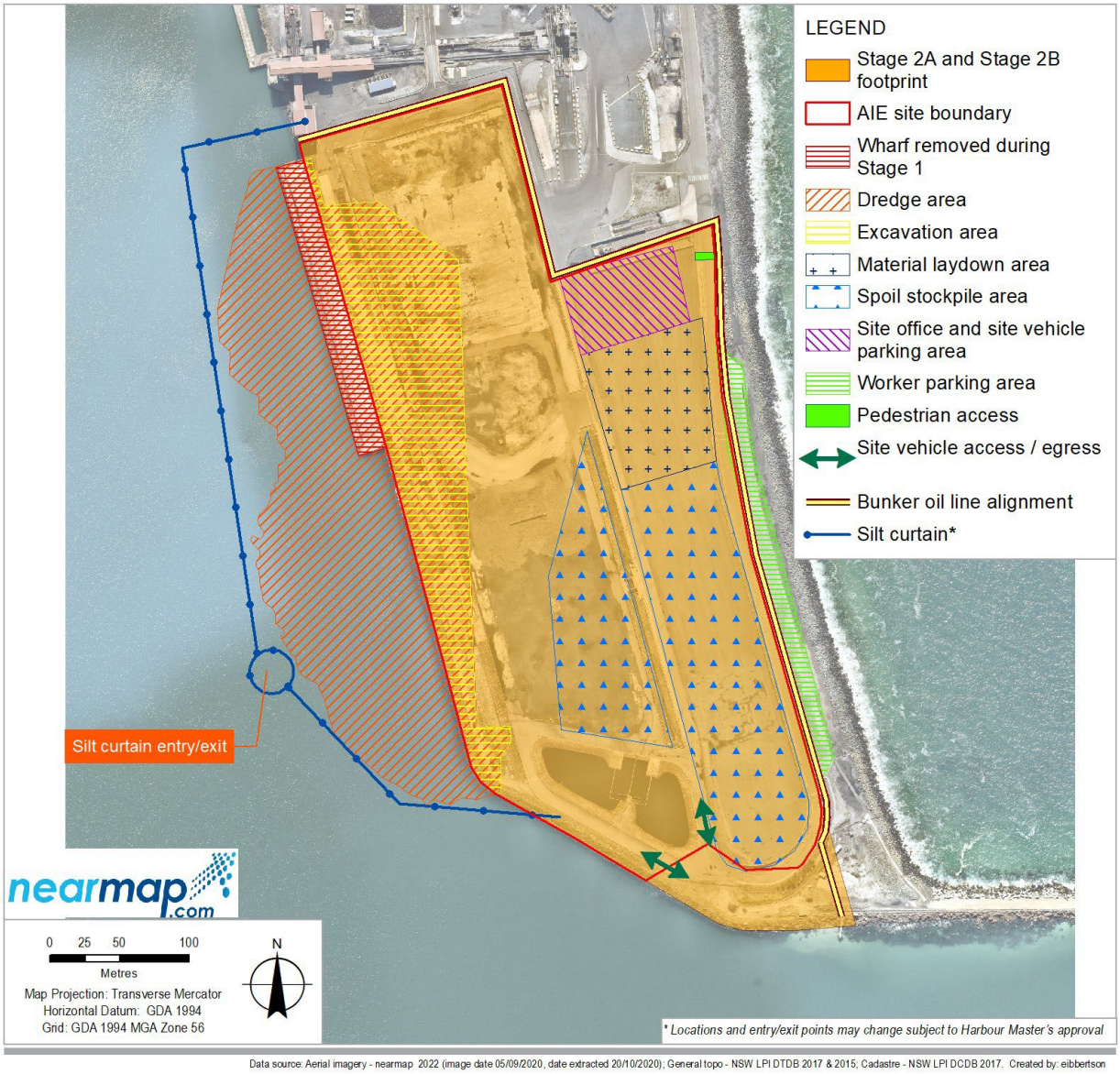

Figure 2.3 Layout of MBD Site Compound

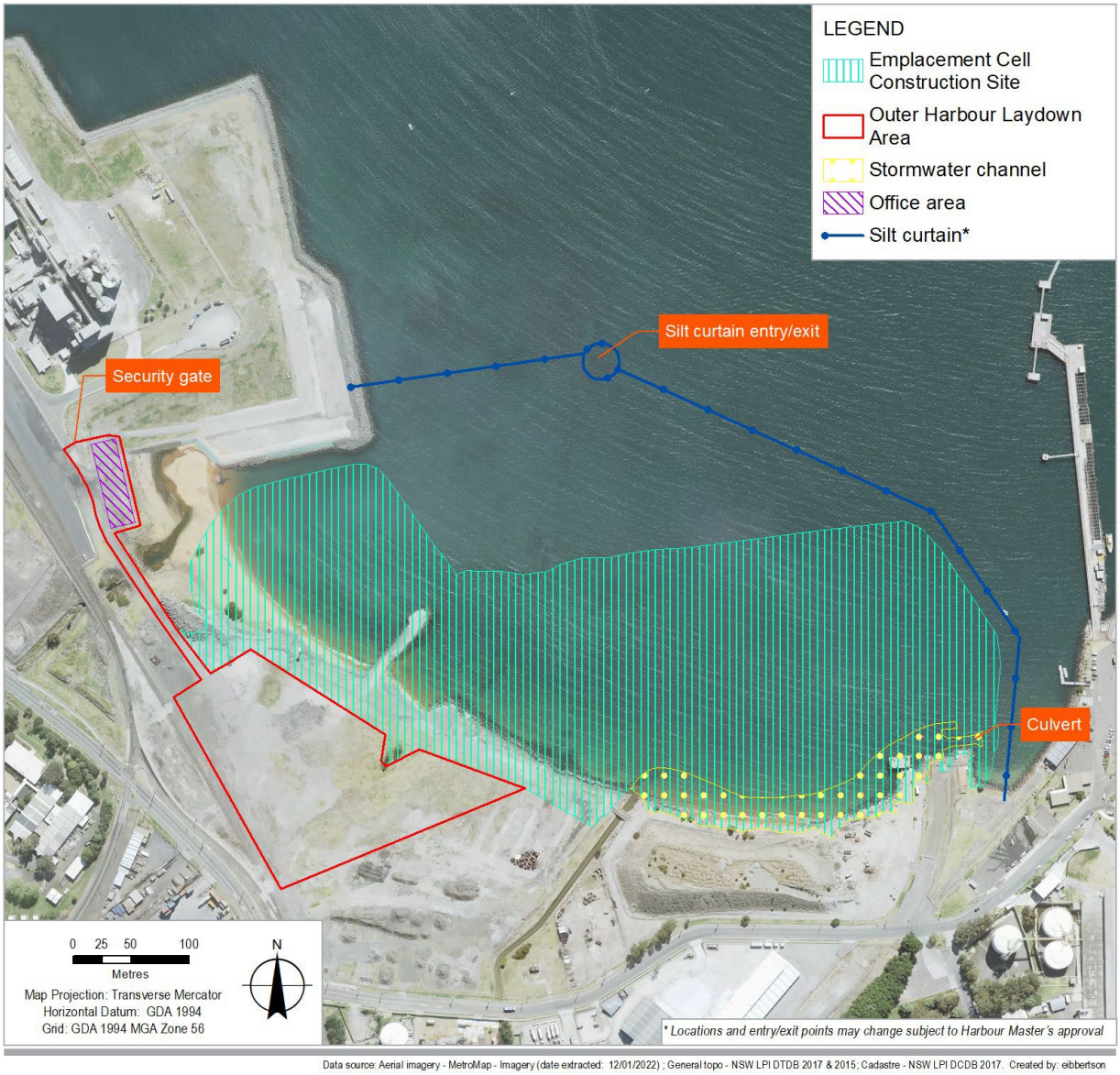

Figure 2.4 Layout of Emplacement Cell Construction Site

2.2.3 Program

The Stage 2A works commenced in January 2022. Stage 2B, which includes the continuation of land-based construction and marine-based works, are then anticipated to commence in March 2022 (refer to Table 2.1 for construction staging). As noted in Section 2.2.1, these dates are only proposed and may be subject to change.

2.3 Stage 2A: Construction of quay wall (MBD – Land Based)

A number of structures will be constructed within the MBD Site Compound to accommodate the FSRU and LNG carrier for the Project. Excavation and stockpiling activities from the Stage 1 Early Enabling Works will continue on-site during Stage 2A to lay the platform for ongoing construction activities at the MBD Site Compound.

The new structures that will commence construction during Stage 2A are summarised in Table 2.2. The location of the quay wall and layout of the marine berth and wharf facilities is shown in Figure 2.5.

Table 2.2 Marine berth and wharf structures to be constructed during Stage 2A

Component	Works required
Earthworks and stockpiles	– Completion of excavation and backfilling works from Stage 1 Early Enabling Works. – Excavated materials from the Early Enabling Works have been stockpiled within the Eastern and Western Stockyards of the MBD Site Compound and the Emplacement Cell Construction Site. – The excavated materials stockpiled at the MBD Site Compound include: • Approximately 9,700m³ of demolished concrete crushed to nominal 70mm minus. • Approximately 12,500m³ of heavily bound base course crushed to nominal -150mm minus. • Approximately 33,900m³ of mixed slag, general fill, and coal nominally < 150mm in size. • Approximately 10,700m³ of predominantly sand material. • Approximately 8,600 m³ of asbestos impacted soils. – The excavated materials stockpiled at the Emplacement Cell Construction Site include: • Approximately 44,000 m³ of sand material*. – The excavated materials will be used/reused for quay wall construction and to backfill the landside area of the quay wall or transported to the Emplacement Cell Construction Site for storage and use in construction of the Emplacement Cell.
Quay wall	– Construction of a new piled quay wall keyed into bedrock where necessary complete with sheet pile anchor wall, capping beam and tie rods to the south of the existing coal terminal. – Excavated and processed materials from the Stage 1 Early Enabling Works are stockpiled within the MBD Site Compound and will be used during construction of the quay wall and to backfill on landside area of the wall. – Installation of a marine fender system attached to the capping beam along the quay wall to protect the quay wall from berthing and mooring loads. – Installation of a cathodic protection system to the quay wall and associated elements, including assessment of the potential impacts the FSRU and pipeline cathodic protection will have on quay wall. – Backfilling and compaction on landside area of wall utilising the site stockpiled materials.
Mooring dolphins	– Installation of landside mooring dolphin structures on reinforced concrete platforms supported by steel piles. – Mooring equipment will be installed and comprise the following: • 20 load sensing quick release hooks. • Up to four land-based mooring winches on mooring dolphins may be required. • Up to four swivel fairleads may be required to enable each mooring line to land-based winches to be fed in a horizontal alignment.
Marine Loading Arm (MLA) foundations	Construction of a new reinforced concrete foundation supported on steel piles, located behind the new quay wall.
Gangway tower foundation	Construction of foundation for Gangway tower.
Fire monitor foundation	Fire monitor foundations, subject to risk studies.

*The volumes provided are approximate and may vary.

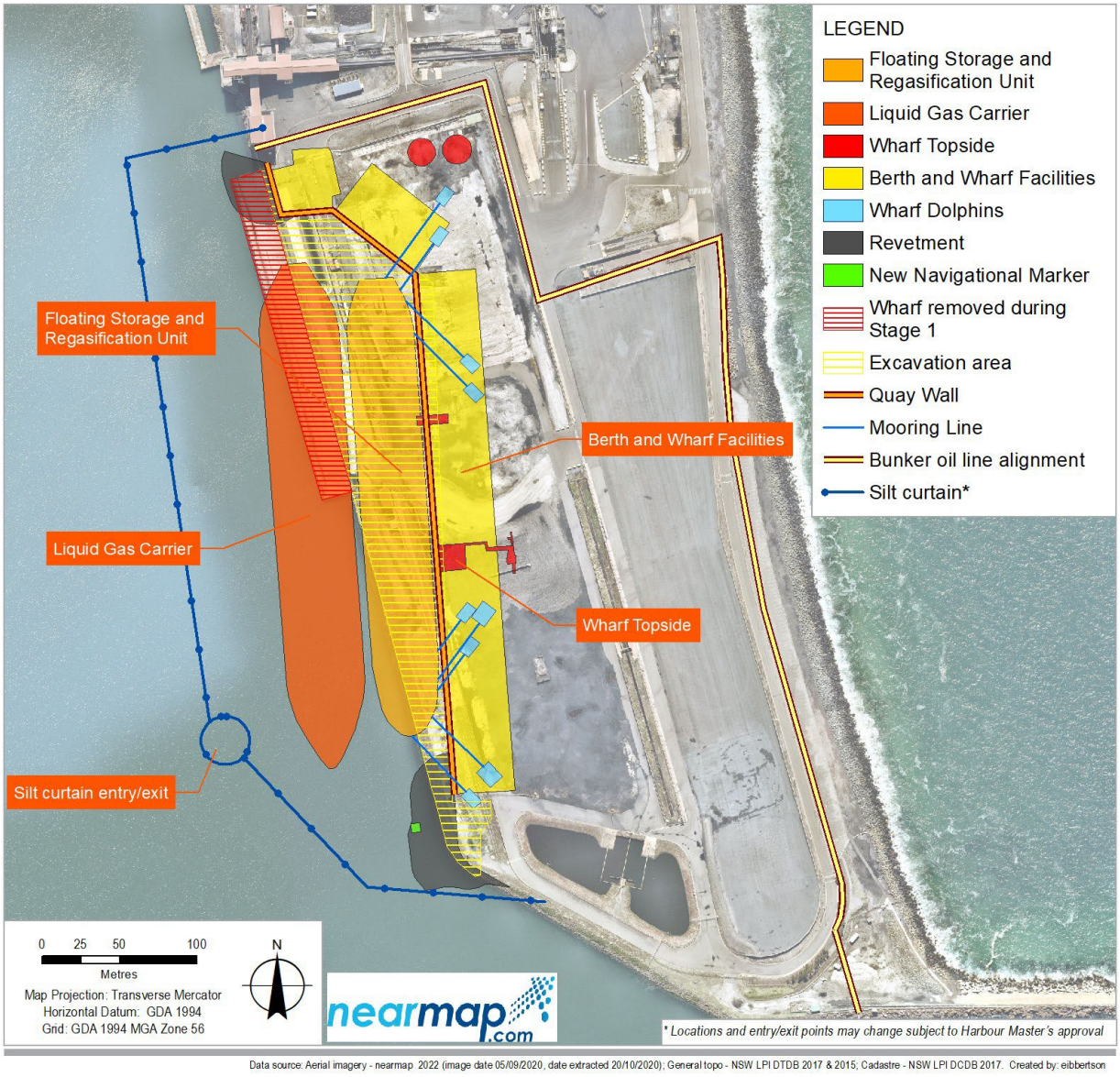

Figure 2.5 Location of quay wall and layout of MBD and ORF (Stage 2A)

2.4 Stage 2A: Power, communications, and water connections

Works required for power, communications, and water connections for Stage 2A are summarised in Table 2.3.

Table 2.3 Construction of utility connections for Stage 2A

Component	Works required
Power and communications	– Construction and installation of a new 11kV power cable in a buried conduit and substation. – Energisation of the padmount substations and 415kV temporary building supply. – Installation of communication conduit and pits.
Potable water	– Extension of existing potable water line within the MBD Site Compound.

2.5 Stage 2A: Construction of ORF

The general layout of the ORF areas is shown in Figure 2.5. Works required for the three ORF areas during Stage 2A are summarised in Table 2.4.

Table 2.4 Structures to be constructed for ORF during Stage 2A

Component	Works required
Wharf Topside Area	
MLAs	Installation of MLAs, including: – Civils and structures. – Associated works such as piping, hydraulics, electrical, instrumentation, and auxiliary systems.
Piping and valving	– All necessary piping and valving. – Odorant injection facilities. – Pig launcher, downstream of the MLAs to tie-in to the natural gas pipeline.
Gangway	– Gangway access tower to provide connection between the wharf and FSRU.
Utility connections	FSRU utilities connections for: – Communications. – Marine Diesel Oil. – Freshwater. – Sewage, bilge, and grey water.
Utility Area	
Site utilities	Site utilities including: – Potable water and sewerage. – Instrument air and bottled nitrogen. – Diesel storage. – Electrical distribution (including UPS and emergency diesel generators). – Control and instrumentation. – Telecommunications.
Common Areas	
Firefighting systems and equipment	Firefighting equipment including: – Firewater storage. – Pumps. – Firewater monitors.
Security systems and equipment	– CCTV. – Fencing and gates.

Component	Works required
	– Security access and monitoring systems.
Equipment housing	Equipment shelters and buildings to house: – Electrical, control, and operating equipment, critical spares, emergency response and site monitoring facilities. – Buildings will include appropriate building services e.g., heating, ventilation and air conditioning, potable water, amenities, sewerage etc.
Site roadways, lighting, and drainage	– Roads and car parking areas. – General lighting, earthing, lightning system. – Drainage system to tie into the existing Port Kembla drainage system.
Gas Pipeline	A section of gas pipeline will be installed within the MBD Site Compound as part of the Stage 2A works. Final safety studies will be prepared prior to the construction of the gas pipeline and prior to commencement of operation as per Schedule 3, Condition 21 of Infrastructure Approval (SSI 9471).

2.6 Stage 2B: Excavation and dredging

An Emplacement Cell Report (ECR) has been developed by SMEC Australia Pty Ltd (SMEC) titled '*Port Kembla Gas Terminal Development – Emplacement Cell Report*' in accordance with Infrastructure Approval (SSI 9471) Schedule 3, Condition 8 and 9. The ECR outlines the design and construction methodology of the Emplacement Cell.

Approximately 450,000 m^3 of materials will be excavated/dredged from the MBD Site Compound and placed within the boundaries of the Emplacement Cell. Further details, including detailed design drawings, can be found in the ECR (SMEC, 2021). A summary of the excavation and dredging works is provided in Section 2.6.1 and Section 2.6.2.

2.6.1 Silt curtains

Prior to the commencement of dredging activities, silt curtains will be installed within the Inner Harbour (MBD Site Compound) and Outer Harbour (Emplacement Cell). A fixed gate or bubble curtain gate will be installed to allow for the entrance and exit of barges whilst also controlling the dispersion of silt.

Silt curtains will be suitable for tidal and working harbour conditions.

Navigation and special markers will be installed to the satisfaction of the Harbour Master to alert marine vessels operating in the port harbours of the presence of silt curtains any other risks to navigation.

Further information regarding the use of silt curtains is provided in the Dredge and Excavation Management Plan (DEMP) for Stage 2A and Stage 2B.

2.6.2 Excavation and dredge staging

Construction activities undertaken during Stage 1 involved the excavation of fill materials at the MBD Site Compound. Excavation has continued through Stage 2A and will continue as part of Stage 2B. On completion of existing fill materials being excavated, dredging operations will commence at the MBD Site Compound as part of the Stage 2B works.

Dredging activities at the MBD Site Compound and Emplacement Cell will be staged to accommodate other construction works occurring at the MBD Site Compound.

Construction staging for excavation and dredging activities to be undertaken are summarised in the ECR (SMEC, 2021). Excavation and dredging at the MBD Site Compound is shown in Figure 2.6. An overview of the Emplacement Cell is shown in Figure 2.7.

2.6.3 Marine-based construction activities at MBD Site Compound

Marine based construction works required at the MBD Site Compound during Stage 2B are summarised in Table 2.5.

Table 2.5 Marine-based construction works during Stage 2B

Component	Works required
Navigational aids	– Construction of new navigation aid pile through the new southern revetment. – Installation of navigation platform, tower, and lights, including all access requirements such as ladders, platforms, and handrails. – Lights will be battery powered and charged via solar panels. – Existing navigation aid to be removed after the commission of the new navigation aid.
Revetment shore protection	– Revetments will be constructed at the north and south embankments of the new MBD Site Compound wharf (refer to Figure 2.6) following completion of dredging works. – Works will comprise: • Laydown of Texcel 1200R geotextile. • Placement of thick quarry run to a depth of 190mm. • Placement of underlay rock to a depth of 400mm. • Placement of armour rock to a depth of 900 mm.
Revetted Trench	– Dredging of an approximate 10x10m trench to -14.5 reduced level (RL) Port Kembla Height Datum (PKHD) for accommodating the under-keel requirements of the FSRU strainers. An approach channel may also be required. – The trench should have sufficient scour protection.
Berthing box	– Bulk dredging will be undertaken to facilitate berthing boxes to be constructed.

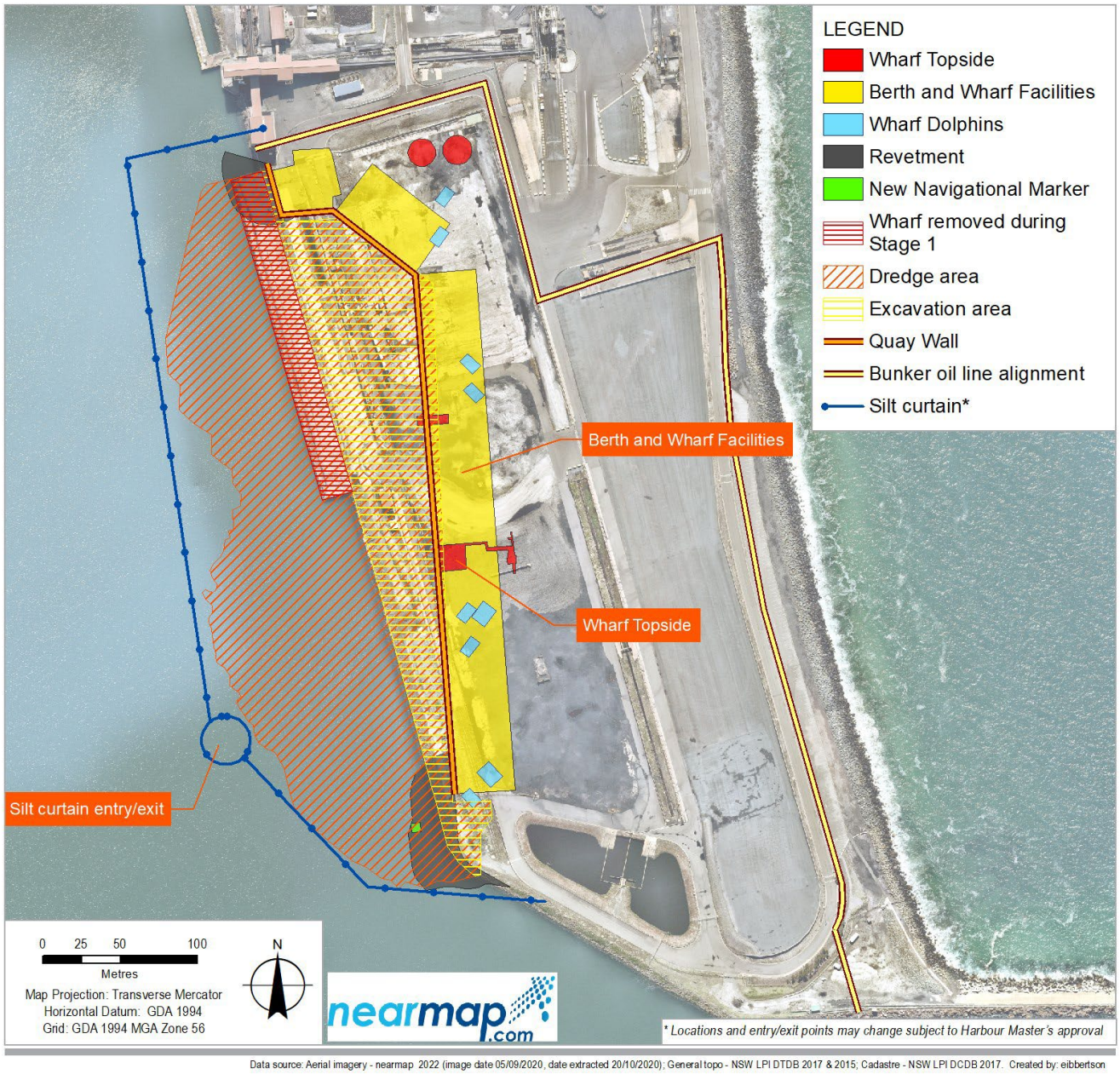

Figure 2.6 Dredging and excavation works for MBD Site Compound (Stage 2B)

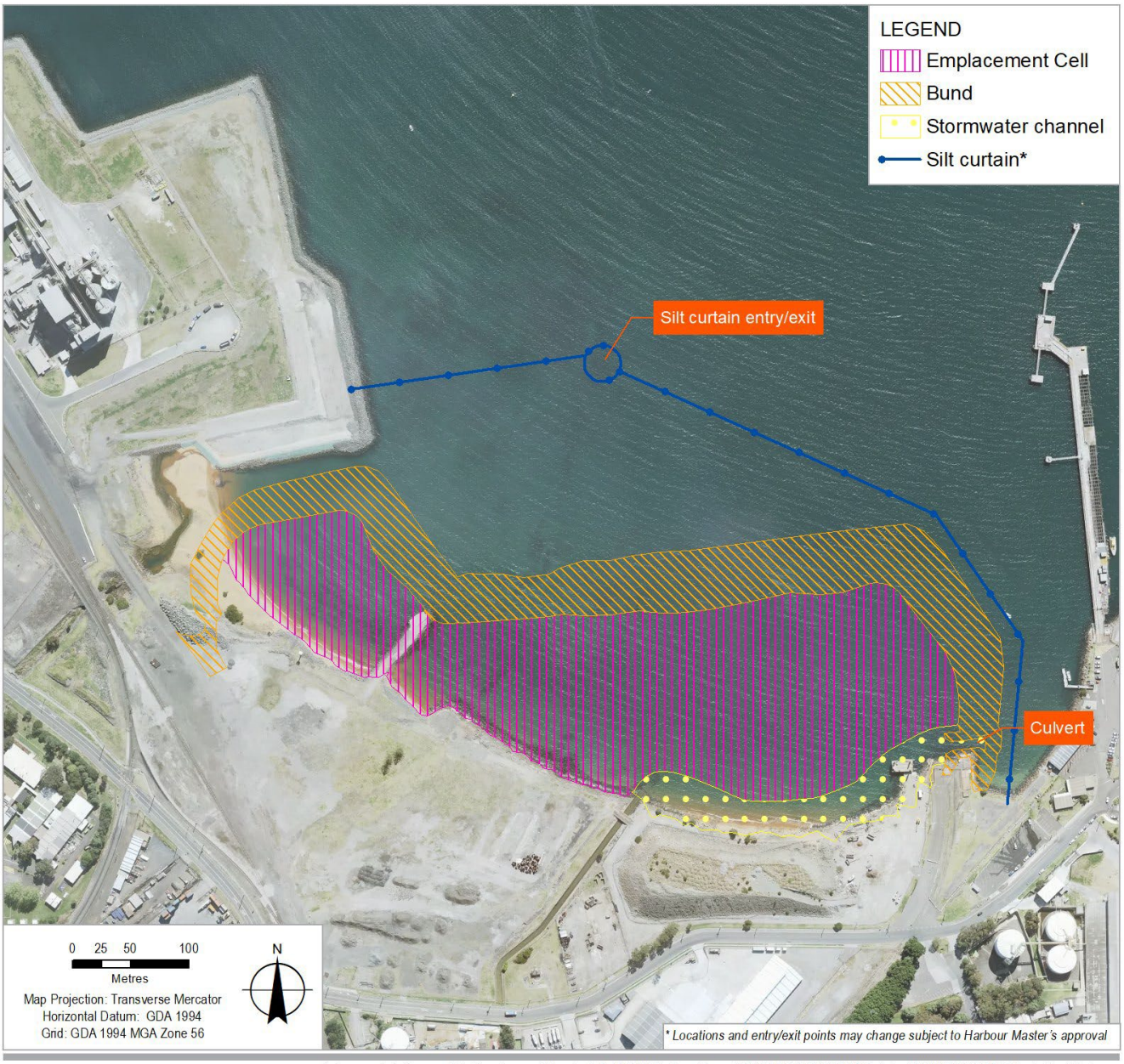

Figure 2.7 Emplacement Cell overview (Stage 2B)

2.7 Stage 2B: Construction of the Emplacement Cell

The Emplacement Cell will be located within the Outer Harbour, comprising of an approximate 800-metre perimeter bund. The Emplacement Cell has been designed and constructed to receive approximately 450,000 m³ of dredged materials from the MBD Site Compound. All contaminated materials including Harbour Muds (HM)/Harbour Silts (HS) and Potential Acid Sulfate Soils (PASS) will be placed below +0.9m PKHD within the Emplacement Cell.

The construction work components and key features of the Emplacement Cell are summarised in Table 2.6 An overview of the Emplacement Cell is shown in Figure 2.7. Further details are provided in the ECR (SMEC, 2021).

Table 2.6 Emplacement Cell key features – Stage 2B

Component	Description
Emplacement Cell	– All contaminated soils, including HM/HS and PASS, will be placed within the Emplacement Cell below maximum +0.9m PKHD. – The final Emplacement Cell levels will be graded towards the proposed stormwater channel. – Design life of 15 years. – The final Emplacement Cell design does not include the submerged emplacement north of the main bund. The design of the submerged cell was not progressed due to various factors, including its limited capacity to provide storage of dredged sediments.
Perimeter bund	– The design bund crest level was derived based on tide, storm surge, sea level rise and wave overtopping and assumed to be +3.55m PKHD. The adopted crest level also includes allowance for assessed post-construction settlement of up to 250mm. – Minimum crest width of 6m and 11m at passing bays. – Maximum permanent batter slopes of 1V:3H for seaward slopes and 1V:2H for landward/internal slopes. – The bund is to accommodate a 110t long reach excavator, fully loaded semi-trailer and temporary material stockpiles.
Rock revetment	– Rock revetment structure will extend to the toe of the main bund to provide protection to the bund structure against coastal processes.
Stormwater channel	– Stormwater channel to extend from the existing Darcy Road drain outlet to the eastern side of the Emplacement Cell. – Stormwater channel outlet is to comprise a box culvert structure on the eastern end of the Emplacement Cell, providing vehicular access onto the bund at the Jetty 3 abutment and within the NSW Ports property boundary.

3. Roles and responsibilities

All personnel working for AIE, and the Principal Contractor(s) are responsible for:

– Reporting all environmental incidents or near misses to their supervisor.
– Carrying out work duties at all times in an environmentally sensitive and responsible manner.

In addition, specific responsibilities are assigned to key personnel, as presented Table 3.1.

Table 3.1 Roles and responsibilities of Project Team

Project Role	Responsibility
AIE Project Director	– Responsible for the overall funding and direction of works associated with Stage 2A and Stage 2B. – Ensuring provision of adequate resources to achieve the environmental objectives for the project including ensuring sufficient resourcing for the Environmental Team, Engineering and Construction Teams.
AIE Construction Manager	– Proactively stewards the effective implementation of Stage 2A and Stage 2B in accordance with requirements of the Infrastructure Approval (SSI 9471), Environmental Strategy and all related Sub - plans. – Demonstrate proactive support for environmental requirements.
AIE HSE Manager	– Develop and update of all Health, Safety and Environmental (HSE) Management Strategies and Sub-plans. – Ongoing liaison and engagement with government agencies and point of escalation for any environmental incidents. – Identifying environmental issues as they arise and proposing solutions. – Coordinate and facilitate periodic environmental inspections with the key contractors. – Environmental Reporting.
Contaminated Site Auditor	– Provide consultation on the preparation of reports and environmental management plans, including: • ECR (SMEC, 2021) and, • Spoil Management Plan (SMP) (including Sub - Plans): a. Water Quality Monitoring Plan (WQMP), b. Contaminated Spoil Protocol (CSP), c. Acid Sulfate Soil Management Plan (ASSMP), d. Erosion and Sediment Control Plan (ESCP), and e. DEMP.
Emplacement Cell Auditor	– Audit the construction of the Emplacement Cell and verify that works have been completed in accordance with the design intent (Emplacement Cell), The auditor role is to satisfy Condition 10 Schedule 3 of the Infrastructure Approval and any other relevant conditions therein.
Stage 2A Principal Contractor Project Manager and Stage 2B Principal Contractor Project Manager	– On-site Project management and control. – Decision-making authority relating to environmental performance of the construction program. – Authority over Project construction and site activities in accordance with the EMS. – Ensure relevant training is provided to all Project staff prior to commencing individual activities. – Reports to AIE Construction Manager on environmental matters. – Ensures appropriate Contractor resources are allocated to implement the environmental requirements. – Responsible for planning and scheduling of construction, and to ensure operations are conducted in accordance with statutory requirements and the EMS. – Monitors performance against environmental Key Performance Indicators (KPIs). – Ensures that all environmental objectives associated with the Project are achieved.

Project Role	Responsibility
	– Day-to-day decision-making authority relating to environmental performance of construction activities and direct site activities and construction. – To provide resources to ensure environmental compliance and continuous improvement. – Ensure all personnel are aware of any changes to EMS and improved procedures. – Ensure this EMS is implemented for the duration of Stage 2A and Stage 2B.
Stage 2A Principal Contractor Construction Foreman and Stage 2B Principal Contractor Construction Foreman	– Implement requirements contained in the EMS and Sub - plans, work procedures and standard drawings. – Maintaining open and transparent communication with other Project discipline managers and other areas of the Project. – Reporting of hazards and incidents and implementing any rectification measures. – Ensures appropriate contractor resources are allocated. – Orders STOP WORK for any environmental breaches and reports incidents to the Project Manager. – Ensure this EMS is implemented for the duration of Stage 2A and Stage 2B.
Stage 2A Principal Contractor Environmental Representative and Stage 2B Principal Contractor Environmental Representative	– Delivers environmentally focussed toolbox talks and provides applicable site inductions. – Provides environmental advice, assistance, and direction to Project Manager to ensure construction activities are conducted in accordance with regulatory legislation and this EMS. – Participate and cooperate with AIE HSE Manager with regards to undertaking of joint periodic environmental site inspections. – Coordinate / undertake wet-weather inspections as per EPL No.21529 and report accordingly to the AIE HSE Manager. – Develop strong working relationships with the AIE team and Consultants. – Ensure environmental risks are appropriately identified, communicated, and effectively managed. – Ensure communication of relevant environmental information to Project personnel. – Provide specialist advice and input as required. – Ensure construction manager, superintendents and field supervisors fully understand the environmental constraints and how construction practices must ensure any such constraints are considered and mitigated against during construction. – Orders STOP WORK for any environmental breaches and immediately reports incidents to Principal Contractor Project Manager and AIE HSE Manager.
Independent Discipline Engineering Consultants	– Certify the design and that the works have been completed in accordance with the design.
AIE Environmental Representative and AIE Environmental Contractor	– Develop strong working relationships with the Principal Contractor Team and Consultants. – Ensure environmental risks are appropriately identified, communicated, and effectively managed. – Instruct and advise management team on compliance issues. – Provide specialist advice and input as required. – Co-ordinate internal audits of the EMS. – Conduct audit review as required. – Reports on the performance of the EMS and recommends changes or improvements to Project Manager. – Orders STOP WORK for any environmental breaches and immediately reports incidents to the AIE Construction Manager and AIE HSE Manager. – Conducts investigation and response to environmental complaints and inquiries, where required. – Undertake all required environmental monitoring for this phase of the Project.
Subcontractors and construction personnel	– Undertake an environmental induction prior to accessing to site. – Comply with legislative requirements. – Participate in inspections and audits. – Follow environmental procedures. – Report all environmental incidents and hazards. – Introduce environmental topics to prestart meetings. – Ensure that all relevant permits and clearances are in place prior to commencing work.

4. Legislative requirements

4.1 Legislative requirements and standards

AIE and the Principal Contractor are committed to compliance with legislative requirements and industry standards throughout all their activities for Stage 2A and Stage 2B. The construction of the Project will be in accordance with the statutory requirements listed in Table 4.1.

Table 4.1 Legislation and relevant policy applicable to this EMS

Legislation	Project Relevance	Applicability
Federal		
Environment Protection Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act is the Australian Government's central piece of environmental legislation that provides a legal framework to protect and manage environmental values considered to be of national environmental significance. The EPBC Act requires approval from the Commonwealth Minister for the Environment for actions that are likely to have a significant impact on listed Matters of National Environmental Significance (MNES). It is the responsibility of the applicant proposing to undertake an action to initially consider whether the proposal is likely to have a significant impact on any MNES. If the applicant considers there is potential for significant impacts upon any matters protected under the EPBC Act, then a referral is required to be submitted to the Minister for the Environment. Developments considered likely to result in significant impacts are defined as "controlled actions" and require assessment and approval.	Consideration of potential impacts upon listed threatened species and communities and any other MNES potentially impacted by the Project has been undertaken as part of the EIS. No impacts have been identified that are considered likely to be significant and consequently a referral to the Commonwealth Minister for the Environment was not undertaken.
State		
EP&A Act	The Project has been classified as CSSI in accordance with Section 5.13 of the EP&A Act and Schedule 5 of the SRD SEPP. A detailed EIS was prepared as part of the approval process and the applicable mitigation measures to guide construction activities are included in this EMS.	Applicable subsidiary State Environmental Planning Policy (SEPP) planning instruments considered as part of the PKGT EIS included: – SRD SEPP. – Three Ports SEPP 2013. – Infrastructure SEPP 2007. – Coastal Management SEPP 2018. – SEPP No. 33 – Hazardous and Offensive Development. – SEPP No. 55 – Remediation of Land – Wollongong Local Environmental Plan 2009.
Protection of the Environment Operations Act 1997 (POEO Act)	The objectives of the POEO Act are to protect, restore and enhance the quality of the environment, in recognition of the need to maintain ecologically sustainable development. The POEO Act provides an integrated system of licencing and contains a core list of activities requiring an EPL from the NSW Environment Protection Authority (EPA).	AIE have been issued an EPL for the Project (EPL No. 21529) which will be updated as the construction phases of the Project progress.
Biodiversity Conservation Act 2016 (BC Act)	The BC Act aims to conserve biodiversity at the bioregional and state scale and lists a number of threatened species, populations, and ecological communities to be considered when deciding if a project is likely to have a significant impact.	A detailed biodiversity assessment report was prepared as part of the PKGT EIS, and the Project would be unlikely to have a significant impact on any threatened species, populations or ecological communities listed under the BC Act.

Legislation	Project Relevance	Applicability
		Biodiversity offsets have been secured for unavoidable impacts (primarily during pipeline construction) through payment into the Biodiversity Conservation Trust. Stage 2A and Stage 2B are not expected to impact upon any biodiversity values.
Biosecurity Act 2015	Part 3 of the *Biosecurity Act 2015* provides that any person who deals with a biosecurity matter ensures the risks are prevented, eliminate or minimised.	A Flora and Fauna Management Plan (FFMP) has been produced and includes general biosecurity duties. The plan specifies protocols and management actions that are appropriate to the credible risks that can arise from the intended construction activities. Implementation of the plan will effectively manage identified biosecurity risk including traffic movement (on water and land), importation of machinery and materials to site, and proposed ground disturbance activities.
Pipelines Act 1967	Under Section 11 of the *Pipelines Act 1967*, a licence is required to: *commence, or continue, the construction of a pipeline; alter or reconstruct a pipeline; or operate a pipeline.* Pipelines with a length of 10 kilometres or less are exempt from the above requirements and are instead subject to SafeWork NSW oversight.	Not applicable - thist Project has been exempted from the requirement to obtain a pipeline licence as the proposed pipeline is approximately 6 kilometres in length.
NSW Work Health and Safety Regulations 2017	Under NSW Work Health and Safety Regulations 2017, pipeline owners must ensure that an activity, structure, equipment, or substance that is not part of the pipeline does not affect the hazardous chemicals or the pipeline in a way that increases risk	Applicable - pipeline construction will occur within the MBD Site Compound during Stage 2A.
AS2885	Pipeline national best practice standard for design and construction, welding, operation and maintenance, offshore submarine pipeline systems and field pressure testing.	Applicable - pipeline construction will occur within the MBD Site Compound during Stage 2A.
Roads Act 1993 (Roads Act)	Section 138 of the Roads Act requires applicants to obtain consent from the relevant road's authority for the erection of a structure, carrying out of work in or under a public road, digging up or disturbance to the surface of a public road.	The Stage 2A and Stage 2B works will not involve carrying out of work in or under a public road and Section 138 permits will not be required for this phase of work.
Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	The WARR Act promotes waste reduction and better use of resources. It includes provisions for waste strategies and programs, and for industry actions to reduce waste, including extended producer responsibility schemes and container deposit schemes.	A SMP has been produced to encompass the requirements of the WARR Act.
Fisheries Management Act1994 (FM Act)	The objectives of the FM Act are to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations. Part 7 of the FM Act requires a permit for a number of activities, including those involving dredging and reclamation work and those involving harm to marine vegetation.	In accordance with Section 5.23 of the EP&A Act, a permit under Section 201, 205 or 219 of the FM Act is not required for approved SSI. However, a number of marine ecology and water quality mitigation measures have been committed to in the EIS and form part of Sub - Plans for the management of dredging and reclamation works.
Water Management Act 2000 (WM Act)	The objects of the WM Act are to provide for the sustainable and integrated management of the water sources of the state for the benefit of both present and future generations. The regulator and policy maker for water resource management is the NSW Department of	The Project will involve excavation within 40 metres of the shoreline and has the potential to intercept water within an aquifer during excavation or directional drilling. However, the Project is not anticipated to require major dewatering of water from a water source and is not expected to trigger the need for a water use approval, water management works approval, or

Legislation	Project Relevance	Applicability
	Planning and Environment – Water (DP&E - Water).	controlled activity approval. These approvals under Sections 89, 90and 91 of the WM Act are not required for SSI in accordance with Section 5.23 of the EP&A Act. A WQMP has been produced to cover specific requirements of the WM Act.
Heritage Act 1997	The *Heritage Act 1997* is concerned with all aspects of heritage conservation ranging from basic protection against indiscriminate demolition of buildings and sites, to their restoration and enhancement. CSSI status of the Project means that approval under Part 4, or an excavation permit under Section 139 are not required.	No impacts to heritage are anticipated during Stage 2A and Stage 2B for the Project. Discovery protocols have been developed and will be incorporated into the site induction and implemented on site should any potential items of historic heritage be excavated or otherwise located during the intended work. A Heritage Unexpected Finds Protocol (HUFP) has been produced to outline the processes to be implemented in the event any artefacts are encountered.
National Parks and Wildlife Act 1974 (NPW Act)	The NPW Act provides for the protection of Aboriginal objects (sites, objects, and cultural material) and Aboriginal places. Under the NPW Act, an Aboriginal object is defined as any deposit, object or material evidence relating to indigenous and non-European habitation, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction and includes Aboriginal remains. An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. An Aboriginal place may or may not contain physical Aboriginal objects.	An Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act is not required for approved CSSI in accordance with Section 5.23 of the EP&A Act. The design of the Project has been amended to avoid areas of archaeological potential. Discovery protocols have been developed and will be incorporated into the site induction and implemented on site should any potential items of Aboriginal heritage be excavated or otherwise located during the intended work. A HUFP has been produced and approved to outline the processes to be implemented in the event any artefacts are encountered.
Ports and Maritime Administration Act 1995	The *Ports and Maritime Administration Act 1995* regulates the operation of ports in NSW across a range of matters including commercial operation and port charges that apply, management of port infrastructure, port safety and the functions of port corporations as well as Transport for NSW (TfNSW) in relation to port operations. Section 6 establishes the Port Authority of NSW (PANSW) as a statutory State-owned corporation. The Act provides broad powers to port operators to regulate activities that may pose a risk to the safety or security of the port including but not limited to the movement of vehicles and the loading/unloading of material.	A Port Safety Operating Licence has been issued to the PANSW under Section 12 of the Act which enables the PANSW to perform safety functions related to pilotage, navigation aids and emergency response. The PANSW manages water-based activities, including navigation and operational safety, and waterside security.
Ports and Maritime Administration Regulation 2021	The *Ports and Maritime Administration Regulation 2021* is made under the *Ports and Maritime Administration Act 1995* and deals with matters related to traffic control, mooring licences, the management of dangerous goods and other miscellaneous functions.	Section 110 states that the written approval of the Harbour Master is required for any works that will disturb the bed of a port listed under Schedule 4. As Port Kembla is listed under Schedule 4 of the Regulation, written approval from the Port Kembla Harbour Master will be required prior to the commencement of dredging works. The Harbour Master may impose conditions on any approval which must be complied with.

4.2 Permits and licences

This section identifies planning and environmental regulatory permits and licences applicable to the Project during Stage 2A and Stage 2B. AIE will secure the required permits and licences throughout the construction process prior to, during, and after completion of works, as required.

The Project has been declared and approved CSSI, and in accordance with Section 5.23 of the EP&A Act the following permits are not required for an approved CSSI:

– Permit to Dredge and Reclaim under Section 201 and 205 of the FM Act.
– AHIP under Section 90 of the NPW Act.
– Excavation permit under Section 139 of the Heritage Act.
– Controlled Activity Permit under the WM Act.
– Water Licence under the WM Act.
– Permit to block fish passage under Section 219 of the FM Act.

Other than those identified below, no additional permits or licences are required to undertake the Stage 2A and Stage 2B works.

4.2.1 Transport for NSW Road Permit

Section 138 of the Roads Act requires applicants to obtain consent from the relevant road authority, TfNSW or Council, for the erection of a structure, or the carrying out of work in, on or over a public road, or the digging up or disturbance of the surface of a road.

The Stage 2A and Stage 2B works will not involve carrying out of work in or under a public road. Dilapidation surveys may be undertaken for which the scope of works has yet to be confirmed. Roads identified as transport routes for the Stage 2A and Stage 2B works are primarily located within the NSW Ports lease boundary and are managed and owned by NSW Ports, and as such are the road authority. No Section 138 permit will be required for the Project. Notification and approval have been sought from NSW Ports confirming the use of the identified internal ports roads and laydown area.

4.2.2 Maritime Safety Licence

Vessels operated as part of the Project would be subject to the provisions of the *Marine Safety Act 1998* including requirements to obtain marine safety licences. Pilotage would also be compulsory under Part 7 of the *Marine Safety Act 1998* as Port Kembla is defined as a pilotage port.

4.2.3 PANSW Harbour Master approval

Dredging and construction of the Emplacement Cell activities undertaken for the Stage 2A and Stage 2B works will disturb the bed of the Port Kembla harbour. Written approval from the Harbour Master is required as per Section 110 of the *Ports and Maritime Administration Regulation 2021*. The PANSW Harbour Master approval process will be followed which involves discussing the proposed works with the Port Kembla Harbour Master prior to the commencement of works and forwarding a completed Harbour Master Approval Form along with required supporting information to the Harbour Master for review. Conditions may be attached to the approval which must be complied with.

4.2.4 Certificate of Local Knowledge

Barge operations will be controlled through a permit system under the control of the Harbour Master and Principal Contractor will obtain Certificates of Local Knowledge for all Masters, as required by the Harbour Master and NSW Maritime Safety Regulation 2016.

4.2.5 Major Hazard Facility Licence

Prior to operations, SafeWork NSW will be notified of a potential Major Hazard Facility (MHF) for the FSRU and the ORF. Should SafeWork NSW deem the FSRU and / or the ORF as an MHF, the facility shall develop a Safety Case Outline and meet the conditions of the outline as required throughout the constructions phase of the Project.

4.2.6 Asbestos removal

Asbestos remediation may be required for the Stage 2A and Stage 2B works. In the event asbestos removal is required, a Notification of Asbestos Removal is required to be lodged with SafeWork NSW. The Notification will be lodged by the licensed asbestos removalist and in accordance with the CSP for the Project.

As per a variation to the EPL No. 21529 an asbestos clearance certificate from a third-party asbestos assessor is required prior to the crushing of any excavated fill material from the site (excluding raw slag, concrete or basecourse).

5. Planning requirements

5.1 Conditions of approval

The Project has been declared CSSI in accordance with Section 5.13 of the EP&A Act and Schedule 5 of the SRD SEPP. The Project received Infrastructure Approval (SSI 9471) from the Minister for Planning and Public Spaces on 24 April 2019.

Schedule 4, Condition 1 of the approval requires an EMS to be developed to the satisfaction of the NSW DP&E Planning Secretary. It must encompass the key requirements as per Table 5.1.

Table 5.1 Approval conditions

EMS requirements	Reference	Evidence
Environmental Management Strategy Prior to the commencement of construction, the Proponent must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must: a. provide the strategic framework for environmental management of the development	Infrastructure Approval Schedule 4, Condition 1	This Plan
b. identify the statutory approvals that apply to the development		Section 4
c. describe the role, responsibility, authority, and accountability of all key personnel involved in the environmental management of the development		Section 3
d. describe the procedures that would be implemented to: – keep the local community and relevant agencies informed about the development being carried out		Section 7.2
– receive, handle, respond to, and record complaints – resolve any disputes that may arise during the course of the development		Section 7.3
– respond to any non-compliance		Section 8.6
– respond to emergencies; and		Section 9
e. include: – copies of any strategies, plans and programs approved under the conditions of this approval; and		Section 5.3
– a clear plan depicting all the monitoring to be carried out in relation to the development.		Section 8.2
The Proponent must implement the approved Environmental Management Strategy for the development.	Infrastructure Approval Schedule 4, Condition 2	This Plan

5.2 Environment Protection Licence

AIE were issued an EPL (EPL No. 21529) under the POEO Act on 2 June 2021. Specific EPL conditions and requirements related to environmental monitoring, such as air and water quality monitoring, are provided in their applicable Sub-plan.

To reflect current site operations and conditions as construction stages progress, EPL No. 21529 may require variations. The most recent variation was issued to AIE on 3 December 2021. Any further variation will be sought as necessary prior to and during Stage 2A and 2B works.

5.3 Project-specific approval

5.3.1 Infrastructure Approval

The PKGT was approved on 24 April 2019 by the NSW Minister for Planning and Public Spaces, under Section 5.19 of the EP&A Act. The Project has subsequently been modified three times in April 2020, September 2020 and October 2021.

The Infrastructure Approval Conditions include the development of this EMS and associated Sub - plans to guide environmental management throughout construction and operation of the Project.

The PKGT has progressed to Stage 2A and Stage 2B of the development, which has an expected duration of approximately 12 months, as described in Section 2.2. The Stage 2B works will occur concurrently with the Stage 2A works.

In accordance with Schedule 4, Condition 3 of Infrastructure Approval (SSI 9471), AIE has updated the following plans to address Stage 2A and Stage 2B of the Project:

- EMS.
- SMP including a
  - DEMP.
  - CSP.
  - WQMP.
  - ESCP.
  - ASSMP.
  - Incident Notification and Response Flow Chart.
- Emergency Spill Plan.
- HUFP.
- CTMP.
- Air Quality Management Plan (AQMP).
- Noise and Vibration Management Plan (NVMP).
- FFMP.

In parallel with Stage 2A and Stage 2B of the Project, detailed design is progressing for the subsequent stages, namely, the natural gas pipeline (Stage 3). A revised contracting strategy for subsequent construction stages is also progressing concurrently with the detailed design.

All Sub-plans required by Infrastructure Approval (SSI 9471) for construction will be updated to be reflective of the revised design and contracting strategy. The plans will be prepared and undergo consultation in accordance with the relevant conditions of the Infrastructure Approval (SSI 9471) and will be submitted to DP&E for review and approval eight weeks prior to those stages of works commencing.

5.3.2 EIS mitigation measures

In addition to the Infrastructure Approval (SSI 9471) conditions, the Principal Contractors are committed to delivering the mitigation/management measures as identified in the PKGT EIS and Response to Submissions applicable to Stage 2A and Stage 2B, as summarised in Table 5.2.

Table 5.2 Construction phase mitigation/management measures and applicability to Stage 2A and Stage 2B

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
Port navigation			
PN2	Port Navigation	The movement of barges will be coordinated by the Port Authority Vessel Traffic Information Centre (VTIC). Adherence with existing Port Kembla navigational protocols through close liaison and compliance to directions of the Harbour Master.	Applicable – refer to CTMP.
PN3	Port Navigation	Development of a Construction Marine Traffic Management Plan for submission to the Harbour Master.	Applicable – refer to CTMP.
PN4	Port Navigation	Barge operation will be controlled through a permit system under the control of the Harbour Master (through the VTIC) and Masters will be required to obtain Certificates of Local Knowledge as required by the Harbour Master and NSW Marine Safety Regulation 2016.	Applicable – refer to CTMP.
PN5	Port Navigation	Permission of the Harbour Master will be sought for split hopper barges to be used at night. Construction will be coordinated so as to not impact other vessels and port navigation, with due regard to the port instructions and port protocols PANSW, 2015.	Applicable – refer to CTMP.
PN6	Port Navigation	Monitoring of the depth of deposited dredged material from the seabed in the disposal area to ensure that the barges transferring dredged material are not at risk of grounding.	Applicable – refer to CTMP.
Contamination			
CO1	Contamination at Berth 101	One or more of the following is proposed for assessing the potential risk to human health the two Benzo(a)Pyrene (BaP) Toxic Equivalence Quotient (TEQ) hotspots identified at GHB09 and GBH26: – Development of a human health risk assessment for BaP (TEQ), to further refine the potential risk posed by these contaminants to future construction workers. Given the short duration of the works relative to the standard exposure assumptions in a commercial/industrial scenario, it is likely that derived site-specific target levels for BaP (TEQ) would be higher than adopted for this assessment. – Additional investigation to delineate the vertical and lateral extent of BaP (TEQ). The investigation would involve step out borehole locations which will target materials at depths between 4 m and 5 m, to assess if the contamination is isolated or widespread. The source of BaP (TEQ) at GHB09 and GBH26 was not identified nor was their apparent evidence of this contamination present at the time of sampling. The contamination may be a characteristic of the fill material, meaning it could be randomly distributed throughout the fill matrix. Therefore, in addition to further investigation, bioavailability testing is also recommended so that the risk to human health is better understood, and appropriate safety control measures can be adopted during construction. The laboratory is presently maintaining these samples pending further analysis.	Not applicable – addressed as part of Stage 1.
CO2	Contamination at Berth 101	Removal of any remnant Asbestos Containing Materials (ACM) fragments from the ground surface. The removal should be undertaken by a licenced removalist in accordance with relevant SafeWork NSW codes of practice.	Applicable – refer to CSP included as part of the SMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		Following removal, a licenced asbestos assessor should inspect the site and provide a clearance certificate confirming removal of asbestos.	
CO3	Contamination at Berth 101	Inclusion of a CSP for contamination in the EMS for the work associated with construction activities.	Applicable – refer to CSP included as part of the SMP.
CO4	Berth 101; Proposed pipeline alignment, dredging area and disposal area.	Preparation of an ASSMP by a consultant experienced in the identification and management of Acid Sulfate Soils (ASS). This will also include appropriate treatment and/or management of ASS. The ASSMP will be developed in line with the requirements of the Acid Sulfate Soils Management Advisory Committee Guidelines (ASSMAC, August 1998 and as updated). The ASSMP will be prepared to identify, manage, and treat the ASS encountered during excavation and dredging to minimise the production of acid leachate.	Applicable – refer to ASSMP included as part of the SMP.
CO5	Proposed pipeline alignment	Preparation and implementation of an EMS to include an CSP to effectively manage the potential contamination issues identified from both a human health and environmental perspective. This would include the assessment of materials to be disturbed across the site to inform appropriate management strategies.	Applicable – refer to CSP included as part of the SMP.
CO6	Proposed pipeline alignment	Assessment and classification of all material to be disposed of offsite as per NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* and *Part 4: Acid Sulfate Soils* prior to off-site disposal.	Applicable – refer to SMP.
CO7	Proposed pipeline alignment	If the proposed pipeline alignment is likely to intersect groundwater, assessment of groundwater quality in those sections should also be carried out to inform construction management of potential contamination issues.	Not applicable - to be included for Stage 3.
CO8	Dredging area and disposal area in the Outer Harbour	A DEMP will be prepared prior to the dredging of Berth 101, outlining the contamination management measures, including: – surface water monitoring, which will be implemented during the course of the works to minimise potential impacts to the receiving waters. – use of a turbidity curtain to restrict the generation of turbidity plumes and localise any water quality issues.	Applicable – refer to DEMP.
Water resources			
W5	Water Quality	Preparation of an EMS including specific DEMP to provide a framework for the environmental management of construction activities to minimise the environmental risks to a level that is as low as practically possible for this Project.	Applicable – refer to DEMP.
W6	Water Quality	Design and implementation of a WQMP to ensure construction works do not cause exceedance of the marine water quality criterion of background plus 50 mg/L of suspended sediment, in accordance with EPL for similar activities within Port Kembla such as the Berth 103 Stage 2 Dredging & Spoil Disposal EPL20563). Continuous turbidity monitoring would be undertaken using a series of monitoring buoys to provide impact and background data (turbidity (NTU), pH, temperature). Prior to commencement of the dredging works, buoys would be deployed for an agreed period of time to confirm background conditions in the vicinity of the monitoring points.	Applicable – Water Monitoring Program included in WQMP and included as part of the SMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		Data would be logged and transmitted to an onshore recording station where it would be processed to allow automated comparison of median turbidity levels to a series of green, amber and red trigger levels. When exceeded, an alarm would be triggered, automated email and SMS alerts sent to the Environmental Representative and agreed procedures implemented. Such procedures include hand-held monitoring to verify readings, reduction in the rate of dredging, relocation of dredging activities or cessation of turbidity generating works until turbidity readings reach acceptable levels. The WQMP would include regular reporting, evaluation and revision where required to ensure the Project objectives and approval conditions are achieved.	
		Daily visual observations would be undertaken during dredging operations to monitor the potential release of oil or grease. Collection of water samples and laboratory analysis for an agreed set of contaminants would be undertaken on a weekly basis during dredging operations.	Applicable – Water Monitoring Program included in WQMP and included as part of the SMP.
W7	Water Quality	Silt curtains would be installed prior to commencement of the works in order to minimise the spread of any sediments entrained within the water column during dredging and disposal operations. Silt curtains are available in a range of designs and would be provided by the successful Contractor. It is envisaged that the silt curtain would comprise a geocomposite material consisting of a non-woven geotextile sewn to a woven geotextile, which would provide the required filtering capacity and rigidity respectively. Vessel access would be via gated or overlapped curtains or through installation of a bubble curtain. The top of the curtain would be supported by a floating boom, whilst the lower portion of the curtain would be weighted with appropriate ballasting (e.g., bars or chains) to ensure that the full length of the curtain is maintained at all times. The curtain would be anchored or fixed to existing structures as necessary. [1]	Applicable – refer to DEMP.
W8	Water Quality	Subaqueous sediment removal would be undertaken using a backhoe dredge. The use of mechanical dredging (rather than hydraulic dredging) ensures that sediments are removed, transported and placed as close to their in-situ density as possible. Thereby minimising the suspension and mobilisation of sediments at the dredge and disposal sites. Method statements would be prepared by the contractor to ensure that loading of dredged materials into the hopper barges is undertaken in a manner that reduces spillage and avoids overfilling barges.	Applicable – refer to DEMP.
W9	Water Quality	A perimeter bund would be progressively constructed within the Outer Harbour placement area to ensure long term stability of dredged materials and to minimise sediment migration during placement.	Applicable – refer to DEMP and ECR (SMEC, 2021).).
W10	Water Quality	A site-specific ESCP will be prepared as part of the EMS to provide control of all land-based excavation and stockpiling requirements. All erosion and sediment control measures shall be designed, implemented and maintained in accordance with '*Managing Urban Stormwater: Soil and Construction Volume 1*' (Landcom 2004) ('the Blue Book).	Applicable – refer to ESCP included as part of the SMP.
W11	Water quality, chemical and fuel impacts on flora and fauna	A site-specific emergency spill plan will be developed and will include spill management measures in accordance with relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including TfNSW and EPA officers).	Applicable – refer to Emergency Spill Plan.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
W12	Water quality, chemical and fuel impacts on flora and fauna	An emergency spill kit will be kept on site at all times. All staff will be made aware of the location of the spill kit and trained in its use.	Applicable – refer to Emergency Spill Plan.
W13	Water quality, chemical and fuel impacts on flora and fauna	Machinery will be checked daily to ensure there is no oil, fuel or other liquids leaking from the machinery. All staff will be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	Applicable – refer to Emergency Spill Plan
Marine ecology			
ME1	Biofouling and benthic community disturbance	Works to remove the current quay wall and piles will commence after a visual inspection for protected mobile fauna (e.g., Syngnathids). If present, these will be relocated to adjacent habitats, outside the zone of influence by the proposed works, where feasible.	Not applicable – undertaken during Stage 1.
		Dredging will be carried out using mechanical backhoe dredge, split barges and supporting tug vessels, as opposed to suction-style dredging, to minimise the potential mobilisation of sediments within the Inner Harbour. Disposal of the dredged material will be limited to the Outer Harbour disposal area within the perimeter bund.	Applicable – refer to DEMP.
ME2	Water quality and marine ecology impacts from resuspension of sediments	The following controls should be implemented prior to dredge activities: – Physical controls such as installation of silt curtains prior to commencement of construction works would be adequate in minimising the spread of any sediments within the water column at the dredging and disposal locations. – Dredging techniques that minimise sediment resuspension during excavation and disposal (such as using mechanical methods over hydraulic methods) should be implemented throughout the Project. Barge loads will also be controlled such that overflow of barge loads is avoided. – Screening technologies will be implemented to ensure that any contaminated sediments are disposed of responsibly. Contaminated dredge material will be placed such that it will be capped by uncontaminated material in accordance with a dredge management plan. – Implementation of a water quality monitoring program to ensure construction works do not exceed the Project's agreed marine water quality criteria. – Daily visual observations of any potential toxic dinoflagellate blooms within the Inner Harbour.[1]	Applicable – refer to DEMP.
ME4	Impact of artificial noise emissions on marine fauna	During piling activities, the following standard operational procedures are to be implemented (DPTI, 2012): – Pre-start procedure – The presence of marine mammals should be visually monitored by a suitably trained crew member for at least 30 minutes before the commencement of the soft start procedure. Particular focus should be put on the shut-down zone, but the observation zone should be inspected as well, for the full extent where visibility allows. Observations should be made from the piling rig or a better vantage point if possible. – Soft start procedure – If marine mammals have not been sighted within or are not likely to enter the shut-down zone during the pre-start procedure, the soft start procedure will commence in which the piling impact energy is gradually increased over a 10-minute period. The soft start procedure should also be used after long breaks of more than 30 minutes in piling activity.	Applicable – refer to FFMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		Visual observations of marine mammals within the safety zones should be maintained by trained crew throughout soft starts. The soft start procedure will alert marine mammals to the presence of the piling rig and enable animals to move away to distances where injury is unlikely. – Normal operation procedure – If marine mammals have not been sighted within or are not likely to enter the shut down or observation zone during the soft start procedure, piling will start at full impact energy. Trained crew will continuously undertake visual observations during piling activities and shut-down periods. After long breaks in piling activity or when visual observations ceased or were hampered by poor visibility, the pre-start procedure should be used. Night-time or low visibility operations may proceed provided that no more than three shut-downs occurred during the preceding 24 hour period. – Stand-by operations procedure – If a marine mammal is sighted within the observation zone during the soft start or normal operation procedures, the operator of the piling rig should be placed on stand-by to shut-down the piling rig. An additional trained crew member should continuously monitor the marine mammal in sight. – Shut-down procedure – If a marine mammal is sighted within or about to enter the shutdown zone, the piling activity should be stopped immediately. If a shut-down procedure occurred and marine mammals have been observed to move outside the shut-down zone, or 30 minutes have lapsed since the last marine mammal sighting, then piling activities should recommence using the soft start procedure. If marine mammals are detected within the shut- down zone during poor visibility, operations should stop until visibility improves.	
ME5	Impact of artificial noise emissions on marine fauna	Vessel and heavy machinery should be maintained in accordance with the manufacturer specifications to reduce noise emissions.	Applicable – refer to FFMP.
ME6	Impact of artificial noise emissions on marine fauna	The interaction of all vessels with cetaceans and pinnipeds will be compliant with Part 8 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations). The Australian Guidelines for Whale and Dolphin Watching (DoEE, 2017) for sea-faring activities will be implemented across the entire Project. This includes the implementation of the following guidelines: – Caution zone (300 m either side of whales and 150 m either side of dolphins) –vessels must operate at no wake speed in this zone. – Caution zone - must not be entered when calf (whale or dolphin) is present. – No approach zone (100 m either side of whales and 50 m either side of dolphins) – vessels should not enter this zone and should not wait in front of the direction of travel or an animal or pod or follow directly behind. – If there is a need to stop, reduce speed gradually. Do not encourage bow riding. If animals are bow riding, do not change course or speed suddenly.	Applicable – refer to FFMP.
ME7	The impact of artificial light emissions	Light spill from the nearshore vessel operations will be minimised where possible using directional lighting.	Applicable – refer to CTMP.
ME8	The impact of artificial light emissions	Lighting on vessel decks or the berth construction area will be managed to reduce direct light spill onto marine waters or surrounding landscape, unless such actions do not comply with site safety or navigation and vessel	Applicable – refer to CTMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		safety standards (Australian Maritime Safety Authority Marine Orders Part 30: Prevention of Collisions; AMSA Marine Orders Part 21: Safety of Navigation and Emergency Procedures).	
ME9	Pest introduction and proliferation	Locally sourced vessels (within NSW waters) to complete the construction works where possible. International vessels to empty ballast water in accordance with the latest version of the Australian Ballast Water Management Requirements (DAWR, 2017). If an Incursion of Marine Pests is identified or suspected, then the contractor is obliged to immediately (within 24 hours) notify the NSW Department of Primary Industries Aquatic Biosecurity Unit hotline on (02) 4916 3877. Project activities are to adhere to the National System for the Prevention and Management of Marine Pest Incursions (National System) and NSW requirements for IMP identification and management.	Applicable – refer to FFMP.
ME10	Accidental release of solid waste	Appropriate waste containment facilities will be included on site and managed to avoid overflow or accidental release to the environment. No waste materials will be disposed of overboard of vessels, all non-biodegradable and hazardous wastes will be collected, stored, processed and disposed of in accordance with the vessel's Garbage Management Plan as required under Regulation 9 of The International Convention for the Prevention of Pollution from Ships (MARPOL) Annex V. All marine vessels will be operated and maintained in accordance with NSW regulations and best practice. Hazardous wastes will be separated, labelled, and retained in storage onboard within secondary containment (e.g., bin located in a bund). All recyclable and general wastes to be collected in labelled, covered bins (and compacted where possible) for appropriate disposal at a regulated waste facility. Solid non-biodegradable and hazardous wastes will be collected and disposed of onshore at a suitable waste facility.	Applicable – refer to SMP.
ME11	Accidental release of hydrocarbons, chemicals and other liquid waste	All liquid waste to be stored for discharge to an appropriate onshore facility. Chemicals and hydrocarbons will be packaged, marked, labelled, and stowed in accordance with MARPOL Annex I, II and III regulations. These include provisions for all chemicals environmentally hazardous) and hydrocarbons to be stored in closed, secure and appropriately bunded areas. A Materials Safety Data Sheet (SDS) will be available for chemicals and hydrocarbons in locations nearby to where the chemicals / wastes are stored. Vessel operators will have an up-to-date Shipboard Oil Pollution Emergency Plan (SOPEP) and Shipboard Marine Pollution Emergency Plan (SMPEP). All shipboard chemical and hydrocarbon spills will be managed in accordance with these plans by trained and competent crew. Any contaminated material collected will be contained for appropriate onshore disposal. Any equipment or machinery with the potential to leak oil will be enclosed in continuous bunding or will have drip trays in place where appropriate. Following rainfall events, bunded areas on open decks of the vessels or within any construction laydown areas will be cleared of rainwater.	Applicable – refer to SMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		All hoses for pumping and transfers will be maintained and checked as per the Planned Maintenance System (PMS).	
ME12	Damaged fuel tank associated with vessel or plant collision	Visual observations will be maintained by watch keepers on all vessels and plant/moving machinery. All vessels must comply with relevant marine navigation and safety standards. Marine diesel oil compliant with MARPOL Annex VI Regulation 14.2 (i.e., sulphur content of less than 3.50% m/m) is the only diesel engine fuel to be used by the vessels. Oil spill responses will be executed in accordance with the vessel's SOPEP, as required under MARPOL. Emergency spill response procedures would be developed and implemented when required.	Applicable – refer to CTMP and Emergency Spill Plan
Heritage			
H1	Unexpected finds	The construction workforce would be given a heritage induction and supporting material enabling them to identify materials of potential heritage value and explaining how to respond.	Applicable – refer to HUFP.
H2	Unexpected finds	A protocol to be followed in the event of an unexpected find would be developed and would include clear lines of communication and stop work procedures to be followed.	Applicable – refer to HUFP.
Terrestrial biodiversity			
TB1	Offset obligations	In accordance with the offset rules established by the Biodiversity Conservation Regulation 2017 there are various means by which the offset obligations can be met. The following is recommended: – Secure and retire appropriate credits from stewardship site/s that fit within the trading rules of the BOS (Biodiversity Offsets Scheme) in accordance with the 'like-for-like' report generated by the BAM (Biodiversity Assessment Method) calculator. If the required credits are unavailable, source credits in accordance with the 'variation report' generated by the BAM calculator. – Only consider a payment to the Biodiversity Conservation Fund if a suitable number and type of biodiversity credits cannot be secured from third parties.	Not applicable – completed pre-construction.
TB2	Loss of native vegetation and fauna habitat	Staff will be inducted and informed of the limits of clearing and the areas of vegetation to be retained.	Not applicable – to be included for Stage 3.
TB3	Fauna protection	A trained ecologist is to be present for construction activities that may impact frog habitat which includes dewatering / removal of detention basins and trenching immediately adjacent to Typha drainage line (west of Springhill Road). Temporary frog-proof fencing should be installed around drill sites, roadside drains and detention ponds near the project site to prevent frogs from being injured or killed by equipment. Any Green and Golden Bell Frogs or other resident frogs are to be handled in accordance with the Chytrid fungus hygiene protocols (DECC 2008c) and released into the most appropriate nearby habitat area.	Applicable - refer to FFMP.
		The trench is to be covered at night to prevent fauna from falling in. An inspection is to be conducted each morning to check the trench for frogs. Any frogs identified will only be handled by an ecologist or wildlife rescue representative.	Not applicable – to be included for Stage 3.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
TB4	Spread of weeds	Priority weed control measures will be implemented as part of the EMS to prevent their spread in the study area.	Applicable – refer to FFMP.
TB5	Spread of weeds	Declared priority weeds will be managed according to requirements of the NSW *Biosecurity Act 2015*. Soil material and stripped groundcover vegetation with the potential to contain priority weeds will not be removed from the project site. Soil disturbance will be avoided as much as possible to minimise the potential for spreading weeds.	Applicable – refer to FFMP.
TB6	Sedimentation	A site-specific ESCP will be prepared as part of the EMS. All erosion and sediment control measures shall be designed, implemented and maintained in accordance with relevant sections of 'Managing Urban Stormwater: Soil and Construction Volume 1' (Landcom 2004) ('the Blue Book) (particularly Section 2.2) and 'Managing Urban Stormwater: Soil and Construction Volume 2A – Installation of Services' (DECC 2008b). The erosion and sediment control plan will include stockpiles, stormwater runoff, trees, site boundaries, site access and storage areas.	Applicable – refer to the ESCP included within SMP.
TB7	Sedimentation	Areas disturbed during the works will be rehabilitated, including stabilising disturbed soils to resist erosion and weed invasion via establishment of a suitable turf species such as a native Couch or repaving roads and sealed surfaces. Stabilisation activities will be carried out progressively to limit the time disturbed areas are exposed to erosion processes. Activities with a risk of soil erosion such as earthworks will not be undertaken immediately before or during high rainfall or wind events.	Applicable – refer to the ESCP included within SMP.
TB8	Water quality, chemical and fuel impacts on flora and fauna	A site-specific Emergency Spill Plan will be developed and will include spill management measures in accordance relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including TfNSW and EPA officers).	Applicable – refer to Emergency Spill Plan.
TB9	Water quality, chemical and fuel impacts on flora and fauna	An emergency spill kit will be kept on site at all times. All staff will be made aware of the location of the spill kit and trained in its use.	Applicable – refer to Emergency Spill Plan.
TB10	Water quality, chemical and fuel impacts on flora and fauna	Any herbicides used for weed control will be applied to the manufacturer's specifications and as outlined in the manufacturer's Materials SDS.	Applicable – refer to FFMP.
TB11	Water quality, chemical and fuel impacts on flora and fauna	Machinery will be checked daily to ensure there is no oil, fuel or other liquids leaking from the machinery. All staff will be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	Applicable – refer to Emergency Spill Plan.
TB12	Pathogen spread and establishment	Vehicle wash down facilities will be provided should evidence of pathogens or fungus such as Phytophthora or Chytrid be found.	Applicable – refer to FFMP.
Traffic and access			

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
T1	General	A CTMP has been prepared prior to the commencement of works with site induction for construction personnel being undertaken to outline the requirements of the CTMP. The aim of the CTMP is to maintain the safety of all workers and road users within the vicinity site including but not limited to: – Site access routes. – Construction parking arrangement. – Traffic management. – Pedestrian and bicycle rider management. – Roadside hazards.	Applicable – refer to CTMP.
T2	Traffic management	A traffic control plan would be developed in accordance with the NSW TfNSW Services Traffic control at work sites and AS1742.3 – Traffic control devices for works on roads.	Applicable – refer to CTMP.
T2	Traffic volumes	Traffic management planning would seek to minimise traffic movements where possible during the morning and afternoon peak hours.	Applicable – refer to CTMP.
T3	Traffic volumes	Construction workers would be encouraged to carpool or utilise public transport where practicable[2].	Applicable – refer to CTMP.
Noise and vibration			
NV1	Management of airborne noise through site inductions	Provide site inductions to all employees, contractors, and subcontractors. The induction must at least include: – All relevant project specific and standard noise and vibration mitigation measures – Relevant licence and approval conditions – Permissible hours of work – Any limitations on noise generating activities with special audible characteristics – Location of nearest sensitive receivers – Construction employee parking areas – Designated loading/unloading areas and procedures – Site opening/closing times (including deliveries) – Environmental incident procedures	Applicable – refer to NVMP.
NV2	Airborne noise from transport	Plan traffic flow, parking, and loading/unloading areas to minimise reversing movements within the site.	Applicable – refer to CTMP.
NV3	Management of sensitive receivers from airborne noise	Notify the affected receivers detailing the construction activities, time periods over which they would occur and the duration of works. Provide contact details to the affected receivers. If noise complaints are received, they should be recorded and attended. Noise monitoring should be conducted to assess compliance with the predicted construction noise levels.	Applicable – refer to NVMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
NV4	Airborne noise and general construction methods	Quieter construction methods should be used where feasible.	Applicable - refer to NVMP.
NV5	Airborne noise from pipeline construction	Minimise pipeline construction activities near sensitive receivers during more sensitive time periods (evening, night).	Not applicable – to be included for Stage 3.
NV6	Airborne noise from equipment	Turn off equipment after use.	Applicable - refer to NVMP.
NV7	Airborne noise from behavioural practices	No swearing or unnecessary shouting or loud stereos/radios on site. No dropping of materials from height, throwing of metal items and slamming of doors. No excessive revving of plant and vehicle engines. Controlled release of compressed air.	Applicable - refer to NVMP.
NV8	Updating the EMS	The EMS must be regularly updated to account for changes in noise and vibration management issues and strategies.	Applicable to EMS.
NV9	Airborne noise from use and siting of plant	Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided. The offset distance between noisy plant and adjacent sensitive receivers is to be maximised. Plant used intermittently to be throttled down or shut down. Noise-emitting plant to be directed away from sensitive receivers.	Applicable- refer to NVMP.
NV10	Airborne noise from vehicles	Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work, including delivery vehicles.	Applicable- refer to NVMP.
NV11	Airborne noise from delivery of goods to construction sites	Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers. Select site access points and roads as far as possible away from sensitive receivers. Dedicated loading/unloading areas to be shielded if close to sensitive receivers. Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.	Applicable- refer to NVMP.
NV12	Airborne noise from mobile plant	Where possible reduce noise from mobile plant through additional fittings including residential grade mufflers.	Applicable- refer to NVMP.
NV13	Airborne noise from prefabrication of materials	Where practicable, pre-fabricate and/or prepare materials off-site to reduce noise with special audible characteristics occurring on-site. Materials can then be delivered to site for installation.	Applicable- refer to NVMP.
NV14	Airborne noise from stationary noise sources	Stationary noise sources, such as pumps, should be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained. Appendix F of AS 2436:1981 lists materials suitable for shielding	Applicable- refer to NVMP.
NV15	Noisy activity impacts on sensitive receivers	Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when situating plant.	Applicable- refer to NVMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
NV16	Impacts from underwater noise	It is recommended than a 109-metre observation zone be established around the underwater piling zone. The 109-metre observation zone would permit up to 30 minutes of continuous piling. Larger observation zones can permit longer durations of piling.	Applicable- refer to NVMP.
NV17	Impacts from underwater noise	The Underwater Piling Noise Guidelines (2012) recommends the following standard management and mitigation procedures with respect to underwater piling operations: – Avoid conducting piling activities during times when marine mammals are likely to be breeding, calving, feeding, migrating or resting in biologically important habitats located within the potential noise impact footprint. – Use low noise piling methods, instead of impact piling, where possible. – Presence of marine mammals should be visually monitored by a suitably trained crew member for at least 30 minutes before the commencement of the piling procedure. – If no marine mammals are nearby, a soft-start piling procedure should be used. This involves gradually increasing the piling impact energy over a 10-minute time period. – Visual observations of marine mammals within the safety zone should be maintained by trained crew throughout the start period. – If a marine mammal is sighted within the observation zone during the soft start of normal operation procedures, the operator of the piling rig should be placed on stand-by to shut down the piling rig. – A record of procedures employed during the operations should be maintained by the piling contractor.	Applicable- refer to FFMP.
Air quality			
AQ1	Fugitive dust emissions	Water material prior to it being loaded for on-site haulage, where appropriate.	Applicable – refer to AQMP.
AQ2	Fugitive dust emissions	Aim to minimise the size of storage piles where possible.	Applicable – refer to AQMP.
AQ3	Fugitive dust emissions	Limit cleared areas of land and clear only when necessary to reduce fugitive dust emissions.	Applicable – refer to AQMP.
AQ4	Vehicle emissions	Control on-site traffic by designating specific routes for haulage and access and limiting vehicle speeds to below 25 km/hr.	Applicable – refer to AQMP.
AQ5	Fugitive dust emissions	All trucks hauling material will be covered on the way to the site and maintain a reasonable amount of vertical space between the top of the load and top of the trailer.	Applicable – refer to AQMP.
AQ6	Fugitive dust emissions	Operations conducted in areas of low moisture content material should be suspended during high wind speed events or water sprays should be used.	Applicable – refer to AQMP.
Landscape and visual			
LV4	Visual – construction works	Temporary boardings, barriers, traffic management and signage would be removed when no longer required.	Applicable – refer to CTMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
LV5	Visual - construction works	Materials and machinery would be stored neatly during construction works.	Applicable – to be captured in the Principal Contractors Site Environmental Plan (or similar)
LV6	Visual - construction works	Roads providing access to the site and work areas would be maintained free of dust and mud as far as reasonably practicable.	Applicable – refer to AQMP.
LV7	Visual - construction works	Ensure temporary lighting required during the construction period is sited and designed to avoid light spill into the surrounding area.	Applicable – to be captured in the Principal Contractors Site Environmental Plan (or similar)
Social and economic matters			
S1	Investment and employment	A contracting and procurement strategy focusing on maximising local content will be prepared to support local employment and business opportunities during construction. During operation, the Project should seek to work with interested local parties to support new qualification/certification pathways for some of the specialised roles on the FSRU.	Applicable – to be captured in the Principal Contractor procurement strategy.
S2	Other impacts	Stakeholder engagement would be carried out prior to and during construction with key stakeholders and the community to provide information about the project activities and provide a feedback mechanism for residents.	Applicable – refer to Section 7.2.
Waste management			
W1	Construction waste	Develop and implement a waste management plan for construction that integrates all statutory requirements for waste in NSW and includes: – Systems to sort and track the actual types and quantities of waste generated. – Measures for separating waste based on classification of management options including colour coded bins. – Options for offsite reuse, reprocessing, recycling, and energy recovery of waste.	Applicable – refer to SMP.
G1	Greenhouse gas emissions	All plant and equipment used during the construction works shall be regularly maintained to comply with the relevant exhaust emission guidelines.	Applicable – refer to AQMP.
G2	Greenhouse gas emissions	Sustainable procurement practices will be adopted where feasible.	Applicable – to be captured in the Principal Contractor procurement strategy and AQMP.
G3	Greenhouse gas emissions	The following measures will be considered by contractor(s): – Construction materials sourced locally where possible. – Construction materials that have minimal embodied energy be selected.	Applicable – to be captured in the Principal Contractor procurement strategy and AQMP.

EIS ID	Issue	Mitigation / management measure	Applicability to Stage 2A and Stage 2B
		– Use of Polyvinyl Chloride (PVC) plastic minimised. – Construction materials that are low maintenance and durable. – Plant and equipment will be switched off when not in constant use and not left idling. – Plant and equipment brought onsite will be regularly serviced and energy efficient vehicles or equipment will be selected where available. – Any plant and equipment that is not working efficiently (i.e., emitting excessive smoke) will be removed from site and replaced as soon as possible. – Construction works will be planned to ensure minimal movement of plant and equipment, including barges.	

1 Harbour Master indicates silt curtain around MBD Site Compound are unsuitable for dredging works within the Inner Harbour. Final location of silt curtains subject to Harbour Master approval.

2 Subject to NSW Public Health Orders (COVID-19).

5.3.3 Contaminated site auditor

The Site Auditor nominated for the Project is Melissa Porter of Senversa Environmental. A NSW EPA accredited Site Auditor is required to consult on the preparation of the following:

– ECR (SMEC, 2021).
– SMP and Sub - plans (CSP, WQMP, ASSMP, ESCP and DEMP) – specific to the dredging and excavation of MBD spoil that will be placed in the emplacement cell, segregation, and testing of materials.

At the completion of dredging, excavation and disposal works, the Site Auditor will be required to issue a Section A 'Site Audit Statement' confirming the suitability of the site for its intended use.

5.3.4 Emplacement Cell auditor

A suitably qualified and experienced person will audit the construction of the Emplacement Cell at the completion of each stage, including:

– Dredging and relocation of existing spoil within the disposal area.
– Construction of the bunds within and around the disposal area.
– Emplacement of dredged and excavated spoil in the disposal area.
– Emplacement Cell capping.

The audit of the Emplacement Cell is not applicable to Stage 2A works but is applicable to Stage 2B works. In accordance with Schedule 3, Condition 10 of Infrastructure Approval (SSI-9471) the Emplacement Cell Auditor will audit construction stages of the Emplacement Cell as listed above.

5.3.5 Consultation requirements

The NSW EPA, PANSW, NSW Ports, and DP&E Water have reviewed the following plans for Stage 2A and Stage 2B:

– SMP.
– WQMP.
– ASSMP.
– ESCP.
– DEMP.

NSW Ports, TfNSW, and Wollongong City Council have reviewed the CTMP for Stage 2A and Stage 2B.

The NSW EPA have reviewed the AQMP for Stage 2A and Stage 2B.

The DP&E Biodiversity and Conservation Division (BCD) and Illawarra Local Aboriginal Land Council (ILALC) have reviewed the HUFP for Stage 2A and Stage 2B.

6. Environmental management framework

AIE strives for excellence through its commitment to leading practice in environmental management and performance. Implementation of this EMS assists in minimising the environmental impacts of construction-related activities by facilitating continual improvement in environmental performance.

This strategy outlines the minimum standard to ensure the AIE manages these aspects and impacts in a manner that is planned, controlled, monitored, recorded, and audited, using a management system that drives continual improvement.

6.1 Environmental Management Systems

AIE is a relatively new company established specifically for the delivery of the Port Kembla Gas Terminal. This EMS and previous versions have been prepared and implemented in general accordance with ISO 14001 *Environmental Management Systems*, ISO 18001/45001 for *Occupational Health and Safety* and ISO 9001 for *Quality Management Systems*.

AIE is in the process of developing a range of systems consistent with the requirements of ISO 14001 Environmental Management Systems, ISO 18001/45001 for Occupational Health and Safety and ISO 9001 for Quality Management Systems and will consider seeking certification in the future.

6.2 Environmental policy

AIE is committed to pursuing industry best practice in environmental performance and a process of continual improvements. This is demonstrated through the AIE's Environment Policy presented in Appendix A.

7. Communication and complaints

Effective communication between the Project Director, Project team, contractors and external stakeholders will be undertaken throughout the Project to ensure effective implementation of this EMS and associated Sub-plans.

Project communication can be categorised into internal and external communications, as well as communications specifically dealing with complaints. The specific communication methods for each category are discussed below.

7.1 Internal communications

Communication on environmental issues within the Project team will be maintained, as a minimum, through the following forums (organiser as noted):

– Weekly project construction team meetings (AIE Construction Manager or delegate).
– Periodic Environmental management team meetings with relevant contractors (AIE HSE Manager or Delegate).
– Toolbox talks and daily pre-start briefings (Principal Contractor Project Manager or delegate).
– Minutes of formal meetings will be taken and distributed to record issues raised and actions required, with action status established at subsequent meetings.
– Monthly review of the internal AIE Environmental Compliance Tracking register (AIE HSE Manager or delegate).

All internal meetings include appropriate documentation in the form of agenda and formal distribution via the Project's document system.

In addition to the above, the AIE Environment Team will also undertake informal planning sessions and resource review meetings to plan and forecast for upcoming key construction dates, critical issues and other relevant matters associated with environmental planning and approvals.

7.2 External communications

AIE is committed to keeping the local community and relevant agencies informed about the development of the Project. The principal external communication objectives are, therefore, to:

– Continue to maintain open communication with relevant stakeholders.
– Minimise environmental impacts.
– Be proactive in addressing any concerns that the community / external stakeholder may express.

AIE will build upon the stakeholder and community engagement phase undertaken during project development including multiple group or one on one briefings. A project website (www.ausindenergy.com) has been developed and provides comprehensive, clear, and accessible information that is updated on a regular basis.

As well as the local Port Kembla and broader community of the Wollongong region, extensive engagement was also undertaken with a range of other interested key stakeholders, such as local commerce organisations, the Port Authority and local and state government.

Consultation with key stakeholders and the wider community on the Project will continue throughout Stage 2A and Stage 2B and subsequent construction phases. Table 7.1 below provides details of the key methods of engagement to be provided on an on-going basis.

These measures will ensure the stakeholders, including the wider community, remain informed of the project's progress.

Table 7.1 Ongoing community consultation tools

Engagement tool	Description
Community Information Line	1800 789 177, community enquiries number established for the Project.
Company Website	Provides extensive FAQs, fact sheets, and project updates. Also provides clear information on alternative ways to seek information: email, 1800 telephone number and/or subscription service.
Website Enquiries	info@ausindenergy.com established for community enquiries.
Subscriber updates	A range of individuals / organisations have recorded their interest in receiving regular email updates on Project developments through the Subscriber feature on the AIE website. These subscribers will receive regular updates around key Project milestones.
Community newsletter	Community newsletters will be prepared, published, and distributed (hardcopy & electronic) to provide an update on key milestones for the Project.
In-person group briefings	Briefing of local business and community groups such as Illawarra Business Chamber & Regional Advisory Council, i3net, Australian Industry Group, Port Kembla Chamber of Commerce, Community Neighbourhood Forums 5 & 7.
NSW EPA	Fortnightly EPA focussed discussion which is aligned with program schedule. Frequency dependent on activity and works.
DPIE	Ad hoc.
NSW Ports	Monthly meeting which includes environmental, safety and relevant approval discussions. The meeting also includes a project update and commercial discussions.
PKCT	Ongoing consultation, as required.
CCC briefings	e.g., Port Kembla Harbour Environment Group – meetings organised by group.
1:1 meetings/telephone /discussions/email exchanges	Daily activity, as required.
Media engagement	On-going responsiveness to media enquiries, as well as proactive distribution of key Project developments to local, state and national media.

7.3 Complaints management

All complaints, where a third party has identified a construction activity as being unsatisfactory or unacceptable, will be dealt with promptly and efficiently in accordance with the complaint and dispute response flow chart shown in Figure 7.1.

AIE will operate a free 24-hour Community Information Line (1800 789 177) where members of the community can leave details about an inquiry, they may have regarding construction activities and this message will be passed on to site personnel and/or the Stakeholder Engagement Team, as appropriate. The phone number is listed on the AIE website (https://ausindenergy.com/contact-us/) and will be provided on all community newsletters. The AIE HSE Manager has notified the Port Kembla Harbour Environment Group of the Community Information Line.

Initial responses to complaints will be provided within 24 hours of the complaint being received. As part of the response, a review of the activity will be undertaken. If required and possible, immediate changes will be made to reduce any impact on the community. In some cases, the issues cannot be resolved immediately, ongoing actions might be required to resolve the issue.

All complaints will be recorded in a Complaints and Disputes Register. The following information will be recorded for each complaint:

1. The date and time of the complaint.
2. The method by which the complaint was made.

3. Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect.
4. The nature of the complaint.
5. The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant.
6. If no action was taken by the licensee, the reasons why no action was taken.

The Complaints and Disputes Register will be maintained by the Project's HSE Manager or delegate, and will detail what the issue was, initial response provided, how and when the issue was resolved, and by whom. Records will be kept for at least four years after the complaint was made and will be produced on request by any authorised officer of the EPA.

Where resolving a complaint with a third party is protracted or develops into a dispute, the AIE HSE Manager shall escalate proactively to Senior Project Leadership (e.g., AIE Project Manager and/or Project Director) to assist with resolution. AIE will work proactively with the complainant to resolve the dispute including having face to face meetings, site familiarisation sessions and agreeing on actions to resolve the dispute. All communications and agreed actions shall be documented.

For the management and reporting of corrective actions (which may be required in response to a complaint), refer to Section 8.6.

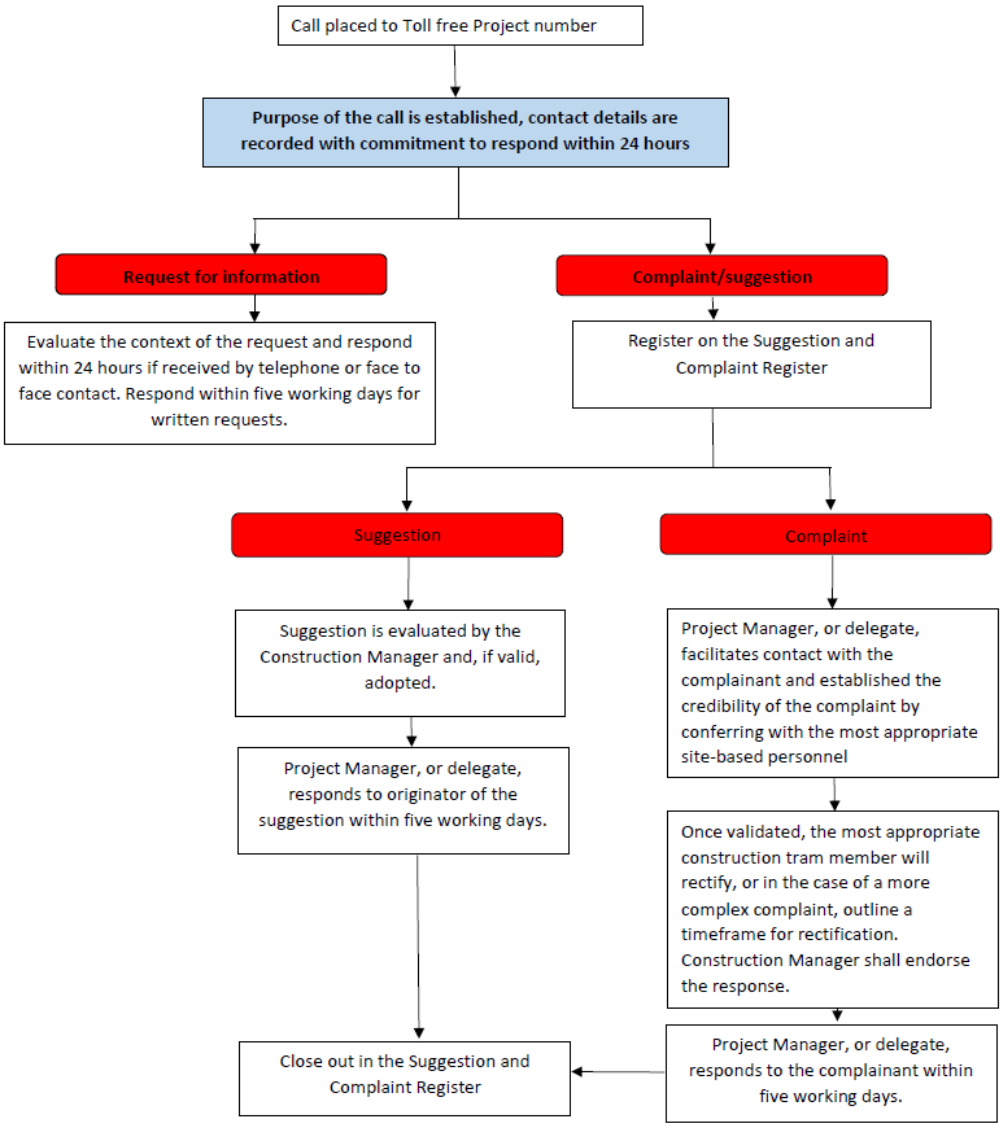

Figure 7.1 Complaint and dispute response flow chart

8. Inspections, monitoring and audits

Monitoring and auditing will be undertaken to determine the impact on the environment and identify opportunities for improvement. Monitoring to be implemented for specific actions or environmental issues (e.g., water quality monitoring, air quality monitoring) will be detailed in their relevant Sub - plan and will specifically address the monitoring requirements for those issues.

8.1 Environmental inspections

8.1.1 AIE and Principal Contractor joint environmental inspection

As a minimum, the AIE HSE Manager (or nominated delegate) will undertake periodic inspection of the work sites with the relevant Principal Contractor's environmental personnel (Environmental Representative or similar) to evaluate the effectiveness of environmental controls (inclusive of erosion and sediment control measures) and general compliance with the implementation of the EMS (and associated Sub - plans) for site-based activities.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist form. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority.

Actions raised during inspections will be documented on the *Environmental Site Checklist* and will be issued formally through the Project's document management system to the relevant Contractor for action. If they represent an actual or potential significant environmental risk, these issues shall be reviewed at the Project Planning meetings and will have non-conformances raised if not closed out in the nominated timeframe (Non-compliance Report).

8.1.2 Contractor environmental inspections

In addition to the joint periodic environmental site inspection with AIE, the Principal Contractors will be required to undertake daily site environmental inspections, targeting key environmental risks commensurate with the activity being undertaken. The daily environmental site inspection will be documented on a checklist or similar to be prepared and completed by the Principal Contractors.

Copies of the environmental site inspection records are to be provided to AIE on request.

8.1.3 EPL inspection requirements

In accordance with Condition O4.4 of the EPL No 21529, the Contractor will undertake wet-weather inspections daily during periods of rainfall and within 24 hours of cessation of a rainfall event causing runoff to occur on or from the premises (based on site observation, this equates to 10 millimetres of rainfall in a 24-hour period).

Daily inspections of water pollution controls will be undertaken in accordance with Condition M.10.1 of the EPL No 21529 and recorded. Records will include the date and time of inspection, location of dredging operations and conditions of silt curtains and other water pollution controls. Records will be produced to an EPA authorised officer on request.

The Principal Contractor(s) must record all such inspections including observations and works undertaken to repair and/or maintain erosion and sediment controls.

8.2 Monitoring

Monitoring will be undertaken to validate the impacts predicted for the work, to measure the effectiveness of management plans, environmental controls, and implementation of this EMS, and to address approval requirements. The monitoring requirements for required aspects are included in the relevant Sub - plans and are summarised in Table 8.1. Monitoring locations required under the EPL No 21529 are included in Figure 2.2.

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

Table 8.1 Summary of environmental monitoring required by Infrastructure Approval (SSI 9471) and EPL No 21529

Reference	Description	Relevant Sub - plan	Reporting requirements
Infrastructure Approval (SSI-9471) Schedule 3, Condition 11(c) EPL No 21529 Condition P1.2 Condition L3.4 Condition L3.5 Condition O4.6 – 4.9 Condition M1.1 - 1.3 Condition M2.3 – 2.6 Condition M5.1 Condition M10.1 Condition R4.1 – 4.3	a Water Quality Monitoring Plan that includes: – a description of the water quality monitoring that would be undertaken to monitor turbidity and pollutant concentrations surrounding dredging and disposal works, including real-time turbidity monitoring. – a broader program to monitor harbour-wide water quality trends and the ecological health of Port Kembla Harbour. – objectives and performance criteria, including trigger levels for investigating any potential or actual adverse impacts associated with construction activities on water quality and the ecology of Port Kembla Harbour. – a plan to respond to any exceedances of the trigger levels and/or performance criteria, and minimise any adverse water quality impacts of the development; and – reporting procedures for the results of the monitoring program.	WQMP	– Turbidity and pollutant concentrations, including real-time turbidity monitoring. – Harbour-wide water quality and ecological health. – Trigger levels and plan to respond to exceedances of trigger levels. – Reporting procedures for results of monitoring program. – Monitoring requirements as per the EPL No. 21529 – Reporting requirements as per the EPL No. 21529. – Installation of silt curtains as per the EPL No. 21529.
Infrastructure Approval SSI-9471 Schedule 3, Condition 33 EPL No 21529 Condition P1.1 Condition L4.1 Condition O3.1 Condition M1.1 - 1.3 Condition M2.11-2.2 Condition M3.1-3.2 Condition M4	**Air Quality Management Plan** Prior to commencement of construction, unless otherwise agreed by the Secretary, the Proponent must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA. (b) describe the measures that would be implemented to ensure compliance with the conditions of this approval and EPL including: – objectives and performance criteria, including trigger levels for investigating any potential or actual adverse impacts associated with air emissions. – proactive and reactive management measures for air emissions. – a plan to respond to any exceedances of the trigger levels and/or performance criteria and minimise any adverse air quality impacts of the development. (c) include an air quality monitoring program that includes:	AQMP	– Objectives and performance targets. – Emissions trigger levels. – Management measures for air emissions. – Response plan to exceedance of trigger levels. – Detailed description of the air quality monitoring, including real-time dust monitoring and point source discharge monitoring. – Reporting procedures for results of monitoring program – Reporting requirements as per the EPL No. 21529.

Reference	Description	Relevant Sub - plan	Reporting requirements
	– a detailed description of the air quality monitoring that would be undertaken. – real-time dust monitoring during construction and point source discharge monitoring from the FSRU during operations. – a gas leak detection and repair program*; and – reporting procedures for the results of the monitoring program.		
Infrastructure Approval SSI-9471 Schedule 3, Condition 35 EPL No 21529 Condition P1.3 Condition M1.1-1.3 Condition M6.1-6.2	**Meteorology** Prior to commencement of construction, the Proponent must ensure that there is a suitable meteorological station operating in the vicinity of the site. The meteorological station must be maintained so as to be capable of continuously monitoring the following parameters: air temperature, wind direction, wind speed, rainfall, relative humidity, and any requirement specified in an EPL. Unless a suitable alternative is approved by the Secretary following consultation with the EPA, the meteorological station must be capable of monitoring weather conditions in accordance with: a. AM-1 Guide to Siting of Sampling Units (AS 2922-1987) b. AM-2 Guide for Horizontal Measurement of Wind for Air Quality Applications (AS 2923-1987); and c. AM-4 On-Site Meteorological Monitoring Program Guidance for Regulatory Modelling Applications.	AQMP	Meteorological station to continuously monitor: – Air temperature. – Wind direction. – Wind speed. – Rainfall. – Relative humidity. – Monitoring requirements as per the EPL No 21529.
EIS C08 EPL No 21529 Condition O4.6 – 4.12 Condition M10.1	A dredge management plan will be prepared prior to the dredging of Berth 101, outlining the contamination management measures, including: – surface water monitoring, which will be implemented during the course of the works to minimise potential impacts to the receiving waters. – use of a turbidity curtain to restrict the generation of turbidity plumes and localise any water quality issues.	DEMP	– Surface water monitoring (refer to WQMP). – Turbidity curtains maintenance and inspections.

* Not applicable to Stage 2A and Stage 2B.

8.3 Auditing

AIE will conduct a program of internal audits for the purpose of verifying compliance with the following:

– This EMS and associated Sub-plans.

– Compliance with the requirements of relevant components to this EMS, including but not limited to, site inspection compliance, document control / management, non-compliance, and incident management etc.
– Monitoring and reporting requirements as set out under EPL No. 21529.

The undertaking of the internal audits will be in accordance with the Project's risk-based internal audit schedule, developed to assess the risk associated with various audit elements with an assigned auditing frequency based on perceived risk.

A brief audit report / table will be prepared for each internal audit, documenting the audit outcome and compliance status against each of the key elements of the audit. The purpose of the internal audits is to assist in the identification of non-compliances and environmental management gaps, with an overall objective of identifying improvement opportunities and driving a process of continual improvement. Any observed non-compliances and improvement opportunities will be managed in accordance with Section 8.6.

8.4 Environmental reporting

8.4.1 DP&E reporting

Regular reports on compliance and other matters will be provided during the construction phase of the Project. This will include reporting to the DP&E in accordance with Schedule 4, Conditions 7 and 8 of the Infrastructure Approval (SSI 9471), with specific reference to the *Compliance Reporting Post Approval Requirements* (2020). Monthly reporting will be provided with results from the air and water monitoring program as required by the Infrastructure Approval (SSI 9471). In addition, DP&E will be notified in writing of the date of commencement of each of the relevant phases of the Project in accordance with Schedule 2, Condition 8 of the Infrastructure Approval (SSI 9471).

8.4.2 EPL Annual Return

In accordance with Condition R1 of the EPL No. 21529, AIE are responsible for the preparation and submission of an Annual Return to the EPA comprising the following:

– Statement of Compliance.
– Monitoring and Complaints Summary.
– Statement of Compliance of Licence Conditions.
– Statement of Compliance regarding the requirement to prepare a Pollution Incident Response Management Plan (PIRMP) (refer to Section 9.2).
– Statement of Compliance regarding the requirement to publish pollution monitoring data; and
– Statement of Compliance regarding the implementation of the EMS and associated practices.

8.4.3 Other reporting requirements

A monthly environmental monitoring report will be developed for each calendar month which will include details of the monitoring results and frequencies and inclusion of any exceedance of EPL No. 21529 limits / criteria. A copy of the monthly environmental monitoring report will be made available on the AIE Project website.

Specific monitoring requirements outlined in Infrastructure Approval (SSI 9471) and EPL No 21529 are outlined in Section 8.2. Details of reporting results/data are included in the applicable Sub - plan, as per Table 8.1. In addition to monitoring data reported in monthly reports as per Section 8.4.1, EPL No 21529 monitoring results will also be included.

In addition, refer to Section 9.1 for reporting requirements associated with notifiable environmental incidents, and Section 8.6 with regards to the reporting requirements for non-compliance issues.

8.5 Compliance tracking register

A Compliance Tracking Register has been developed as a monitoring tool to assist with the compliance reporting requirement as set out under Condition 7, Schedule 4 of the Infrastructure Approval (SSI 9471).

The compliance tracking register includes a breakdown of the requirements from the following key approval and Project documents:

– Infrastructure Approval (SSI 9471).
– EPL No. 21529.
– EMS and Sub - plan requirements.
– *Compliance Reporting Post Approval Requirements* (DPIE, 2020), or its most recent edition.

The Compliance Tracking Register includes tabulation of reference conditions, the requirements, responsibility, status (i.e., ongoing, close-out, not triggered, etc.) and supporting evidence where required.

A routine review of the Compliance Tracking Register is undertaken by the AIE HSE Manager (or delegate) with input sought from the relevant contractors as required. The Compliance Tracking is a live document which is kept up to date for each stage of the construction works.

8.6 Non-compliance, corrective, and preventive actions

Non-compliances or potential non-compliances are situations or events that do not comply with the requirements and or safeguards / procedures stipulated in this EMS or the associated Sub - plans.

Non-compliances or potential non-compliances may be identified in any of the following situations:

– As part of site inspections, supervision or monitoring of construction activities.
– During internal audits.
– Following justified / supported verbal or written third party complaints.

All non-compliances will be managed and reported using the non-compliance function of the Project's document management system. Each non-compliance event and follow-up action will be documented and traceable, including identification of key dates and responsible personnel.

All non-compliance related correspondence will be copied to the AIE HSE Manager who will be responsible for ensuring that they are investigated and the appropriate / agreed corrective and preventive actions are taken.

Corrective and preventive actions will be identified and recorded on the non-compliance of the Project's document management system. Corrective and preventive actions provide the mechanism to:

– Undertake corrective (reactive) action to eliminate the causes of non-compliance.
– Undertake preventive (proactive) action to eliminate potential causes of non-compliance.
– Suggest improvements to the EMS.

Corrective actions recorded against public complaints are addressed in Section 7.

The AIE HSE Manager in consultation with the person responsible for the non-compliance activity shall determine:

– How the non-compliance can be successfully remedied to ensure sound environmental management and ongoing compliance with environmental management requirements.
– Whether the regulatory authority requires to be notified of the non-compliance.
– Notify the complainant of any action taken to address the complaint, where appropriate.

The AIE HSE Manager can respond to complaints if required.

At regular intervals the AIE HSE Manager (or nominated delegate) reviews outstanding non-compliance, assesses progress or reasons for lack of, and arranges further actions as required, to ensure completion in a reasonable timeframe.

8.6.1 DP&E non-compliance notification

The Department must be notified in writing via the Department's Major Projects Website within seven days after the identification of any non-compliance issue. The notification must identify the development, including the application number, set out the condition of approval that the development is non-compliant with, the way in which it does not comply, the reasons for the non-compliance (if known) and what actions have been taken, or will be taken, to address the non-compliance.

9. Incident management and emergency response

9.1 Incident management

9.1.1 Overview

Incidents are defined as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. The consequences of such incidents may result in material environmental harm, damage, or asset loss. 'Near misses' are extraordinary events that could have reasonably resulted in an incident.

All incidents including those of the Principal Contractors, its subcontractors, and visitors that occur during the undertaking of the construction works for the Project will be managed to satisfy the requirements of AIE's Incident Reporting and Investigation System Requirements. Whilst it is noted that key Contractors will be implementing their own environmental management system procedures and processes, AIE will be responsible for ensuring that these systems and processes satisfy the requirements of the AIE EMS, including the incident management components. The Contractor will be responsible for providing all necessary documentation with regards to the incident investigation and close-out actions where required. The timing of the provision of this documentation is to align with the AIE requirements.

The AIE HSE Manager must be notified immediately of any environmental incident or near miss. These may include, but are not limited to the following:

– Exceedance of monitoring criteria as required under the Project EPL (EPL No. 21529) (refer to the individual Sub-plans for specific criteria and incident reporting requirements for individual environmental aspect such as air quality, water quality, traffic management, waste and resource management and noise and vibration management).
– Spill of any dangerous goods or hazardous substance to ground or water.
– Substantiated complaints received from members of the community or regulatory authorities.
– Regulatory breaches such as fines, prosecutions, improvement notices, breaches of licence conditions.
– All incidents of third-party property damage or loss.
– Incidents involving impact or potential damage to items or places of cultural heritage significance.
– Land-based off-site sediment loss to the environment, including sediment tracking onto the roadway.

The AIE HSE Manager will be responsible for regulatory notification of all notifiable environmental incidents (refer to Section 9.1.2 for notifiable incidents). All environmental incidents will be reported immediately to DPIE in writing via the Department's Major Projects Website after AIE becomes aware of the incident, as per Schedule 4 Condition 5 of the Infrastructure Approval (SSI 9471). The notification must identify the development, including the application number, and set out the location and nature of the incident.

In the event of a notifiable non-compliance incident arising, the Principal Contractor will notify the AIE HSE Manager immediately to allow the AIE HSE Manager to notify DP&E in writing (via the Department's Major Projects Website) within seven days of AIE becoming aware of the non-compliance, as per Schedule 4 Condition 6 of the Infrastructure Approval (SSI 9471).The notification must identify the development, including the application number, set out the condition of approval that the development is non-compliant with, the way in which it does not comply, the reasons for the non-compliance (if known) and what actions have been taken, or will be taken, to address the non-compliance.

9.1.2 Notifiable incident under the POEO Act

In the event of a Notifiable Incident as defined under the POEO Act, AIE is responsible for immediately notifying the EPA, and any other relevant authority, of pollution incidents on or around the site via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the POEO Act. The circumstances where this will take place include:

– *If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.*
– *If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.*

Follow-up written notification to the EPA and any other relevant authorities will be required in accordance with the POEO Act and requirements of the EPA. This includes the provision of written details of the notification to the EPA within 7 days of the date on which the incident occurred.

All notifiable incidents will also be managed, documented, and reported in accordance with the AIE *Incident Reporting and Investigation System Requirement*.

In addition, an authorised officer of the EPA has the right to request a written report (in accordance with Condition R3 of the EPL No. 21529) if they suspect on reasonable grounds that an event has occurred at the licensed premises which has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies). The written report is to address all the requirements under Condition R3 of the EPL.

9.1.3 Notifiable incident under the Infrastructure Approval (SSI-9471)

In accordance with Condition 5 of Schedule 4, DP&E must be notified in writing via the Department's Major Projects Website immediately after AIE becomes aware of an incident on site. The Infrastructure Approval (SSI 9471) defines an incident as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non- compliance. Furthermore, material harm is defined as unauthorised harm that:

– *Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or*
– *Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).*

9.2 Emergency response

Actual or potential emergency situations will vary in type and severity. The required level of response and notification will be at the discretion of the AIE Construction Manager in consultation with the AIE HSE Manager.

Any emergency situation may require only isolated containment and control or may require the complete evacuation of the site and notification of relevant emergency services. Consideration should be made of the response requirements for different situations. If at any time there is uncertainty on how to proceed, response should be for the worst possible scenario. Ultimately, the AIE Construction Manager or representative has authority and responsibility to instigate an evacuation if he/she feels it is warranted.

In the event of an emergency, the following plans listed in Table 9.1 shall be consulted and implemented, as relevant.

Table 9.1 Emergency plans

Plan	Reference	Application
Principal Contractor Local Emergency Response Plan	-	Principal Contractor's emergency response plan implemented in the event of any incident occurring during a Project activity as per the Contractor's policies and management framework.
AIE Port Kembla Gas Terminal Emergency Spill Plan	PKGT-AIE-PRO-039	Developed as a Sub - plan to this EMS to be implemented detailing: – Response plans in the event of land or water-based spill events. – Inspections, notification, and incident management requirements in accordance with the Infrastructure Approval (SSI 9471) and EPL No 21529 in relation to spills.

Plan	Reference	Application
PIRMP	PKGT-AIE-PRO-007	Implemented immediately in the event of a pollution incident occurring during a Project activity. The PIRMP: – Outlines the actions to be taken during or immediately after a pollution incident. – Lists details of relevant authorities to be notified, as required. – Outlines community and neighbour notification details, as required.
AIE Emergency Management Procedures	PKGT-AIE-PRO-014	Implemented immediately in the event of any emergency incident occurring during the Project. Procedures include: – Types of emergencies and the detailed steps to be taken in response. – Notification details to relevant authorities and AIE Project team. – Incident response to follow up from incident and preventative actions to be implemented, if applicable.

10. Document management and review

10.1 Record management

Records and registers specified in the Sub - plans for the Project shall be maintained as per the applicable Infrastructure Approval (SSI 9471) and EPL No 21529 conditions. Records to be kept may include but will not be limited to the following:

- Environmental Inspection Checklist.
- Environment Reporting.
- Environmental Monitoring Reports / Records.
- Fauna and Weed Register.
- Internal Audit Reports.
- Incident Reports and Register.
- Toolbox Talk Records.
- Induction Presentation and Register.
- Environmental Activities Safe Work Method Statement (SWMS).
- Corrective Actions Register.
- Waste and Resource Register.
- Material Tracking Register.
- Training Register / Matrix.
- Complaints Register.

10.2 Review and revision of EMS

This EMS will be reviewed and updated, as required under Condition 3 of Schedule 4 of Infrastructure Approval (SSI 9471) to ensure the objectives of the applicable approval conditions contained within are being met throughout Stage 2A and Stage 2B.

In addition, as required under Condition 4 of Schedule 4 of Infrastructure Approval (SSI 9471), the EMS and associated Sub - plans must be reviewed, and if necessary, revised within 3 months (unless otherwise agreed with DP&E) for any of the following:

- Following the submission of an incident report as per Condition 5, Schedule 4 in Infrastructure Approval (SSI 9471) (refer to Section 9).
- Following approval of any modification to the conditions of approval outlined in Infrastructure Approval (SSI 9471).
- At the direction of the Planning Secretary as per Condition 4, Schedule 2 in Infrastructure Approval (SSI 9471).

Where a review leads to a revision of this plan, within four weeks the revised EMS will be submitted to the Planning Secretary for approval unless otherwise agreed with the Planning Secretary.

10.3 Access to information

AIE will make the following information publicly available on the PKGT website, as per Schedule 4, Condition 12 of the Infrastructure Approval (SSI 9471) and the requirements as set-out under the Project EPL (No. 21529):

- The PKGT EIS.
- Current statutory approvals for the Project.
- Approved strategies, plans or programs required under the conditions of Infrastructure Approval (SSI 9471).

– A comprehensive summary of the monitoring results of the development, reported in accordance with the specification of any conditions, or any approved plans and programs relating to Infrastructure Approval (SSI 9471).
– A summary of complaints (updated monthly).
– Any independent environmental audit, and responses to the recommendations in any audit.
– The approved premises map (EPL No. 21259, Condition A2.4).
– PIRMP (EPL No. 21529, Condition E2).
– Any other matter required by the Planning Secretary.

This information will be kept up to date by AIE when required.

References

AS/NZS ISO 14001:2004 *Environmental Management Systems*

AS 2885 *The Standard for Gas and Liquid Petroleum Pipelines.*

AS1742.3 *Manual of uniform traffic control devices, Part 3: Traffic control for works on roads.*

AS 2436:1981 *Guide to noise control on construction, maintenance and demolition sites.*

DAWR 2017, *Australian Ballast Water Management Requirements.*

DECC 2008, *Hygiene protocols for the control of diseases in Australian frogs*.

DECC 2008, Managing Urban Stormwater: Soil and Construction Volume 2A – Installation of Service.

Department of Planning, Transport and Infrastructure (SA) 2012, *Underwater Piling Noise Guidelines.*

DoEE 2017, *The Australian Guidelines for Whale and Dolphin Watching.*

DPIE 2020, *Compliance Reporting Post Approval Requirements*.

Environment Protection Licence No. 21529, dated 3 December 2021.

GHD 2018, Port Kembla Gas Terminal Environmental Impact Statement.

Infrastructure Approval SSI 9471, dated 13 October 2021.

ISO 14001:2015 *Environmental Management Systems.*

ISO 18001/45001:2009 *Occupational Health and Safety and ISO 9001 for Quality Management Systems*.

Landcom 2004, *Managing Urban Stormwater: Soil and Construction Volume 1.*

NSW EPA 2014, *Waste Classification Guidelines, Part 1: Classifying Waste and Part 4: Acid Sulphate Soils prior to off-site disposal*

SMEC October 2021, Port Kembla Gas Terminal Development – Emplacement Cell Report.

Appendices

Appendix A

AIE Environment Policy

Health, Safety and Environment Policy

Australian Industrial Energy (AIE) cares about the wellbeing of our people, the community, and our impact on the environment. We are committed to conducting our business in a way that minimises harm to the health and safety of people and has no unforeseen impact on the environments in which we operate

Our values underpin the way in which we meet this commitment.

Safety remains front of mind for AIE. If our workplace is not safe, we should not operate. We recognise that risk is present in every task we do. We will take the time to identify and understand these risks and manage them safely and responsibly. Our mantra is "Look out for your mates and yourself" Plan for their wellbeing, and for yours.

AIE **Empowers** and expects all people in the workplace, regardless of role, to "Stop and Step Back" if they see an unsafe workplace situation. We continue only when satisfied we can do so safely and responsibly.

All people working on AIE sites are valued as **Family**. They will be provided with training, equipment and support to undertake their work. All incidents will be investigated, and the people involved will be listened to and treated fairly and with respect.

We have the **Humility** to accept personal coaching and feedback about behaviours which may put us at risk of injury or illness.

AIE acts with **Integrity**. We will comply with all relevant workplace health, safety and environmental laws. We will report, investigate and learn from all workplace incidents, and from any near misses. We will take responsibility for our actions and we will work continuously to improve our processes.

AIE is **Enthusiastic** about protecting our people and the environment by demonstrating initiatives to challenge, communicate and consider the safest way to work and by integrating relevant objectives into every day and strategic business planning processes.

AIE knows that Health, Safety and Environmental performance will only improve when we **Generate Ideas**. AIE is committed to consulting and communicating with our workers. We work together effectively, welcome feedback and recognise that we can always improve. We are open and transparent about our performance and relentless in learning from our experiences.

AIE sets **Stretch Targets** in relation to health, safety, and environmental performance in the workplace. Stretch Targets challenge us to do better.

AIE will work to build a workplace culture which supports safe operations. We have the **Courage** to challenge ourselves and promote a positive workplace culture and the **Determination** to succeed.

Appendix B

Approved Staging Letter

Planning, Industry & Environment

Alexandra Lovell
HSE Manager
Australian Industrial Energy (AIE)
PO Box 1070
Wollongong New South Wales 2500

27/10/2021

Dear Mrs. Lovell

Port Kembla Gas (SSI-9471) -Revised Staging Request

I refer to your Revised Staging Request letter submitted on 21 September 2021 in accordance with Condition 3 of Schedule 4 of the Infrastructure Approval for the Port Kembla Gas Terminal (SSI-9471).

The Department has carefully reviewed the document and is satisfied that the proposed, revised construction staging of the project is consistent with previous approval documentation. Proposed stages, proposed commencement dates and associated summaries of work activities are provided in the table below.

Stage	Package	Proposed commencement	Activities
1	Early Enabling Works	May 2021	Early Enabling Works. Demolition of Berth 101, removal of structures and land-based excavation works, and Cone Penetration Testing (CPT) in the Outer Harbour to inform Emplacement Cell design and relocation of Bunker Oil Pipeline (as approved in Modification 3).
2A	Marine Berth Construction – Land Based	January 2022	Completion of excavation works undertaken during Stage 1. Transport of spoil materials for storage at the Emplacement Cell Construction Site.
			Quay wall construction.
		February 2022	Installation of communications conduit, potable water line, and 11kV power cable and Padmount (PM) Substation within MBD Site Compound.
		April 2022	Construction of the Onshore Receiving Facilities (ORF), which comprises three areas: Wharf Topside Area; Utility Area; and Common Area.
		June 2022	Pipeline construction and associated ancillary infrastructure within MBD Site Compound delivered as part of ORF scope
2B	Marine Berth Construction and Dredging – Land and Marine Based	March 2022	Continuation of Stage 2A with addition of the following activities:
			Excavation/dredging and construction of the Emplacement Cell in the Outer Harbour
			Marine based construction activities including installation of navigational aids and revetment shore protection.

Stage	Package	Proposed commencement	Activities
3	Pipeline Installation including tie-ins (NGP)	June 2022	Construction of an 18" onshore natural gas pipeline approximately 6.3km in length from the Berth 101 site boundary to Tie-in Facility at Cringila for connection to the Eastern Gas Pipeline Pipeline construction to occur concurrently with Jemena, subject to separate set of management plans.

Please note, to date the Department has currently only approved management plans for Stage 1. No construction of any other stages may commence until all relevant management plans have been revised (to reflect each stage's associated work activities), submitted and approved.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

Stephen O'Donoghue
Director Resource Assessments

As nominee of the Secretary

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