Port of Bundaberg Maintenance Dredging Environmental Management Plan

Brief description

This Environmental Management Plan has been developed to document GPC's systems and controls for minimising the risk of environmental impact associated with maintenance dredging activities in the Port of Bundaberg.

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If you require any further information, please contact the Custodian.

The current version of this Plan is available on GPC's Intranet.

Contents

1 Terms and definitions

In this Plan:

"A&I" means Aspects and Impacts.

"AFF" means Department of Agriculture, Fisheries and Forestry (cth)

"AQM" means Allocation Quarry Material.

"DAF" means Department of Agriculture and Fisheries.

"DCCEEW" means Department of Climate Change, Energy, the Environment and Water (cth)

"DESI" means Department of Environment, Science and Innovation.

"EA" means Environmental Authority.

"EMP" means Environmental Management Plan.

"EMS" means Environmental Management System.

"EP Act" means Environmental Protection Act 1994 (QLD)

"ERA" means Environmentally Relevant Activity.

"GPC" means Gladstone Ports Corporation.

"LAT" Lowest Astronomical Tide

"LMDMP" means PoB Long Term Maintenance Dredging Management Plan.

"MRA" means Material Relocation Area

"MSQ" means Maritime Safety Queensland.

"NAGD" means National Assessment Guidelines for Dredging

"NEPM" means National Environmental Protection Measures.

"PBPL" means Port of Brisbane Pty Ltd

"PoB" means Port of Bundaberg.

"POLREP" means Maritime Safety Queensland Marine Pollution Report.

"QAASTM" means Queensland Acid Sulfate Soils Technical Manual.

"QPA" means Queensland Port Association

"SAP" means Sediment and Analysis Plan.

"SDP" means Sea Dumping Permit

"Sea Dumping Act" means Environmental Protection (Sea Dumping) Act 1981 (cth)

"TACC" means Technical Advisory Consultative Committee.

"TMR" means Transport and Main Roads

"TOR" means Terms of Reference.

Terms that are capitalised and not otherwise defined in this Procedure are defined in the GPC Corporate Glossary Instruction (as listed in Appendix 1 – Related documents).

2 Introduction

2.1 Purpose

This Environmental Management Plan (**"EMP"**) forms part of GPC's Environmental Management System (**"EMS"**) and is intended to provide the framework for the environmental management of GPC's activities at the Port of Bundaberg Maintenance Dredging.

The EMP aims to:

(a) describe GPCs systems for minimising and managing identified potential environmental risks associated with maintenance dredging activities across GPC including, routine operations, closure and emergencies.

(b) address compliance requirements.

(c) describe the environmental controls and safeguards to be employed, including ensuring plant, equipment and measures are maintained and operated in a proper and effective manner.

(d) Implements the operational aspects of the Long Term Maintenance Dredging Management Plan (**"LMDMP"**)

2.2 Scope

The scope of this Environmental Management Plan (**"EMP"**) covers maintenance dredging including sea and land placement activities by the Gladstone Ports Corporation (**"GPC"**) and engaged Contractors and all associated activities that may impact the environment at the Port of Bundaberg (**"PoB"**).

This plan must be read in conjunction with and also refers to elements of the following associated documents:

- Long Term Maintenance Dredging Management Plan (LMDMP) for Sea Disposal #1541072;
- Dredge Contractors Environmental Management Plan (Trailing Hopper Suction Dredger Works);
- Dredge Contractors Environmental Management Plan (Cutter Suction Dredger Works) - as required; and
- Port of Bundaberg Maintenance Dredging Environmental Monitoring #964306.

GPC are the holders of an Environmental Authority (**"EA"**) granted by the Department of Environment and Science (**"DES"**) under the *Environmental Protection Act 1994* (Qld) (**"EP Act"**). This EA (EPPR00571913) is for Environmentally Relevant Activity (**"ERA"**) 16 - extractive and screening activities (dredging) and has three (3) parts:

1 dredge (and use in conjunction with a sea material placement approval);

2 dredge and land placement into Materials Relocation Area (**"MRA"**); and

3 sand screening.

This plan has been developed by GPC to comply with the first two (2) sections of the EA and the EP Act. For clarity, terms used in the EA and this EMP have the same meaning as in the EP Act. See Table 1 for a list of the statutory approvals for maintenance dredging and placement at the PoB.

Contractor(s) are engaged to undertake the dredging works in accordance with the above mentioned EAs. GPC requires the Contractor(s) to develop an EMP that covers the operational scope of maintenance dredging works undertaken by their dredger(s). These plans are developed by the dredging Contractor(s) to comply with their contractual requirements, and the relevant pieces of legislation and statutory approvals. GPC maintains the direction of the Contactor carrying out dredging and ultimate responsibility for adherence to the EA.

GPC typically relocates maintenance dredge material to sea at the designated site (refer to Section 3.3(b) in accordance with a commonwealth Sea Dumping Permit (SD2023-4053), issued by the Department of Climate Change, Energy, The Environment and Water (**"DCCEEW"**) under the *Environment Protection (Sea Dumping) Act 1981* (Cth) (**"Sea Dumping Act"**). As the Sea Placement site falls within both State and Federal waters, GPC also hold a state Operational Works permit (IPDC00649407) regulated by DES and a Disturbance of Marine Plants permit (2007/DB0233) regulated by Department of Agriculture and Fisheries (**"DAF"**) to dispose of the dredge material at sea.

A LMDMP for Sea placement at the offshore Material Relocation Area (**"MRA"**). has been developed, approved by DCCEEW and implemented to comply with the requirements of the Sea Dumping Permit and the Sea Dumping Act.

In instances where sea placement is not an option, GPC has an option to place dredge material on shore in the approved onshore MRA. The onshore MRA primary purpose is emergency maintenance dredging, namely flood mitigation to clear sandy material from port infrastructure. This is GPC only land based MRA in Port of Bundaberg so is key to continuity of operations at the Port of Bundaberg, and while from time to time is used by other tenants at Port of Bundaberg, approval to use the MRA is on a fit for purpose / risk basis under commercial agreements.

Material may also be placed at the toe of the Northern Training Wall as part of maintenance of a lawful structure in accordance with the wall's original design approved under Section 86 of the *Harbours Act 1955* (Qld).

When sea, land or Northern Training Wall placement is not preferred, then placement approvals need to be sought for specific placement (e.g. replacement of material in scour holes in river).

See Section 4.2 of this EMP for more information on the environmental legislation and approvals relevant to GPC's maintenance dredging works.

2.3 Objectives

This EMP forms part of GPC's Environmental Management System (**"EMS"**) and is intended to be a working management document to be used in the day to day operations of maintenance dredging to ensure environmental best practice and legislative compliance. This EMP provides a structured program for the management of the works to ensure that all reasonable and practicable measures will be implemented to prevent and/or minimise the likelihood of environmental harm being caused during the works.

The objective of this EMP is to:

- identify significant and sensitive receptors;
- identify environmental aspects and potential impacts;
- implement control measures that minimise the potential for environmental harm from the activity to ensure –
  - the prevention of long term changes in health of (and no net loss of) high ecological value (**"HEV"**) sensitive environmental receptors,
  - no long term changes in water quality,

  - appropriate marine ecological condition monitoring is undertaken to inform adaptive management actions that aim to minimise or avoid impacts to marine ecology,
  - direct impacts of maintenance dredging are confined to the dredge loading and placement site (activity footprint) and any impacts outside of this footprint are short term and reversible;

- establish contingency plans and emergency procedures;
- record organisational structures, accountability and responsibility;
- facilitate arrangements for effective communication;
- monitor all contaminant releases;
- ensure all Employees and Contractors are trained and aware of legislative requirements pertaining to the works as well as commitments made in this EMP;
- ensure appropriate records are kept; and
- ensure that reviews of environmental performance and continual improvement are undertaken periodically.

This EMP will satisfy the requirements of an Integrated Environmental Management System (**"IEMS"**) as per EA conditions.

2.4 Implementation

Prior to the commencement of works, this EMP which operationalises the LMDMP and Approvals (Refer to Table 1) will be approved by the GPC Environment Superintendent and the Specialist - Harbours & Channels. Works should not be undertaken in a way which:

- contravenes this EMP;
- is inconsistent with the conditions of the statutory approvals which permit this development (Table 1); and/or
- is inconsistent with GPC's EMS.

Where there is conflict between this EMP and documents compiled by an engaged Contractor, conditions imposed in this plan by GPC will prevail. Following the commencement of works, amendments to this EMP and associated documents must be communicated to and approved by GPC's Environment Superintendent and the Specialist - Harbours & Channels prior to the implementation of any changes. All relevant Employees and / or Contractors should be introduced to and made familiar with the provisions of this EMP and with the procedures and processes which will achieve the objectives relevant to this plan.

3 Activity Description

3.1 Overview

The PoB is situated 19.3 km downstream from the City of Bundaberg, 4.8 km from the mouth of the Burnett River, and has an entrance channel 11 km in length. The channel is 103 m in width, with a minimum 9.5 m navigable depth (below **"LAT"**) and leads into a swing basin 1,165 m in length and 320 m in width.

There are two (2) main wharves. The Sir Thomas Hiley Wharf is used for the shipment of sugar and the John T. Fisher Wharf is used for the bulk loading point for molasses. In addition PoB has a marina and a boat harbour for safe anchorage of smaller vessels.

GPC is required under the *Queensland Transport Infrastructure Act 1994* (Qld) to maintain navigable depths within the port navigation areas.

The need for maintenance dredging of navigation channels arises periodically due to sedimentation of existing channels and around intertidal infrastructure (e.g. Wharves and Marinas). Declared operational depths are determined for various channels, and these depths are routinely monitored via hydrographical surveys. When the channel depth approaches the minimum operational depth (via sedimentation), the need for maintenance dredging arises.

In the case of the PoB, sedimentation may either be a gradual and predictable process, or may be rapid and unpredictable, as is the case when flood events lead to sudden sedimentation of port berths and channels. Thus, maintenance dredging in the PoB can be separated into two categories:

- maintenance dredging; and
- flood related emergency maintenance dredging.

The Port of Brisbane Pty Ltd (**"PBPL"**) is routinely contracted by GPC to undertake the normal maintenance dredging in the PoB channels, berths and swing basin. These works are undertaken by PBPL's Trailing Suction Hopper Dredger (**"TSHD"**) the *TSHD Brisbane*. In emergency situations, alternative Contractors and dredges may be sought as the *TSHD Brisbane* may not be available or may not be suitable for the circumstances.

Other Maintenance dredging activities, such as maintenance of intertidal infrastructure (e.g. Marina and boat harbour) is undertaken on an "as needs" basis. While emergency maintenance dredging typically follows a flooding event.

3.2 Dredging Equipment

The *TSHD Brisbane* is a twin-arm TSHD commissioned by the PBPL in November 2000. The vessel is 84m long with a displacement tonnage of approximately 3,500 tonnes. During operations, it has a crew of 13, operating in two shifts, 24 hours per day, 7 days a week. A more detailed description of the *TSHD Brisbane* and its operation will be provided in the PBPL EMP submitted to GPC before each dredging campaign.

Descriptions of alternate vessels utilised by other Contractors will be provided in each Contractor's EMP which will also be submitted to GPC before each dredging campaign. Typically a cutter suction dredge would be used to maintain in and around intertidal infrastructure (e.g. Marina or boat harbour) and in the Inner Reach of the Channel and Swing Basin in certain circumstances as for example after flood events.

The following specifications are a minimum requirement for dredging equipment:

- all marine vessels used in conjunction with dredging activity shall be in survey and registered;
- the Trailing Hopper Suction Dredger will be equipped with –
  - an anti-turbidity control valve for below keel discharge of tailwaters,
  - on-board systems for determining solids to water ratio or density of dredge material,
  - electronic positioning and depth control system for defining the location and depth of dredging activities,
  - dredge heads and depth control capable of, fitted with a turtle exclusion device (to minimize the risk of direct impact on turtles while dredging) and
  - dredge head jets and ability to adjust pump speed.

- the Cutter Suction Dredger will be equipped with –
  - electronic positioning and depth control systems for defining the location and depth of dredging activities,
  - continuous delivery connection (e.g. floating or submerged pipeline) to an approved placement site,
  - a system or process to ensure that delivery systems integrity is maintained at all times,
  - systems for determining solids to water ratio or density or dredged material during operations, and
  - signage of the name of the dredger and the number of the associated Quarry Allocation Approval, at least 300 mm high and 50 mm wide.

3.3 Activity boundaries

(a) Dredging

The volume of material permitted for extraction during maintenance dredging under each of the two parts of the EA's EPPR00571913 is 100,000t to 1,000,000t per year.

SD2023-4053 is a 10 year sea dumping permit to load for the purposes of dumping, and to dump, up to 3,900,000, cubic metres in-situ of dredged material, derived from maintenance dredging at the channels, swing basins and berths at the Port of Bundaberg. Dredge material must be derived from the approved inner, middle and sea reaches of the PoB.

Dredging to land has a maximum of 400,000m^3 of dredge material for placement in the MRA allowable per year under the EA. While the Allocation of Quarry Material (AQM) for land placement indicates a lower maximum per year volume of 190,000m^3, allowed to be placed on land.

All dredging must be undertaken within the approved extraction footprint to a maximum depth of 9.5 m in the channel, 11.3 m in the Sir Thomas Hiley Wharf berth, 9.66m in the John T Fisher Wharf berth and 8m in the Swing Basin (including approved batter designs), which is mirrored in the EA and AQM. The Regional Harbour Master is to be advised prior to dredging to issue a 'Notice to Mariners'.

Any obstructions encountered during dredging must be removed to the satisfaction of the Regional Harbour Master.

Material from the inner, middle and sea reaches (as pictured below) would be placed at the approved offshore material ground as per Section 3.3(c), or to the approved land placement sites as per Section 3.3(c).

Inner Reach of the channel is that portion of the channel located within the area bounded by the Burnett River between the above coordinates. It includes the Inner Reach as defined on the chart AUS 242 and the maintained area upstream including the swing basin, adjacent to the bulk sugar terminal wharf and the entrance/departure channel.

Middle Reach of the channel is that portion of the channel located within the area bounded by the Burnett River between the above coordinates.

Sea Reach of the channel is that portion of the channel located within the area bounded by the above coordinates.

Figure 1: Inner, Middle and Sea Reach Site Map

Name	Latitude	Longitude
Inner Reach	24°45’26.662” South	152°23’13.891” East
	24°45’30.758” South	152°23’16.444” East
	24°46’25.601” South	152°22’47.536” East
	24°46’23.527” South	152°22’56.874” East
Middle Reach	24°45’14.045” South	152°24’08.539” East
	24°45’17.392” South	152°24’08.852” East
	24°45’26.662” South	152°23’13.891” East
	24°45’30.758” South	152°23’16.444” East
Sea Reach	24°45’13.756” South	152°28’06.852” East
	24°45’17.107” South	152°28’06.859” East
	24°45’14.045” South	152°24’08.539” East
	24°45’17.392” South	152°24’08.852” East

Figure 2: Inner, Middle and Sea Reach GPS Locations

(b) Sea Placement

The sea placement site as pictured in Figure 3 below is a circle of 0.5 nautical miles (926 m) radius centred on latitude 24º42'14.3" South and longitude 152º28'20.8" East (WGS 84 datum).

This site was chosen based on the following:

- the characteristics of the dredged material and the material at the material placement site;
- proximity to sensitive environmental receptors;
- minimising impacts to marine habitats and fauna, including seagrasses and benthic infauna;
- the depth and capacity for ongoing use of the material placement site;
- minimising the risk of placed material being remobilised to nearby sensitive areas;
- logistic and economic considerations, including optimisation of dredge cycle times; and
- safety considerations in the operation of dredging equipment at the material placement site.

Prior to sea placement the vessel must confirm by GPS that it is within the MRA. Each load of dredge material must be dumped in a different location in the defined placement area, so that the dumped material is distributed evenly within the MRA in a manner than prevents mounding.

Dredging with sea placement is not permitted between October to February inclusive (The nesting period for the Loggerhead Turtle – *Caretta caretta*).

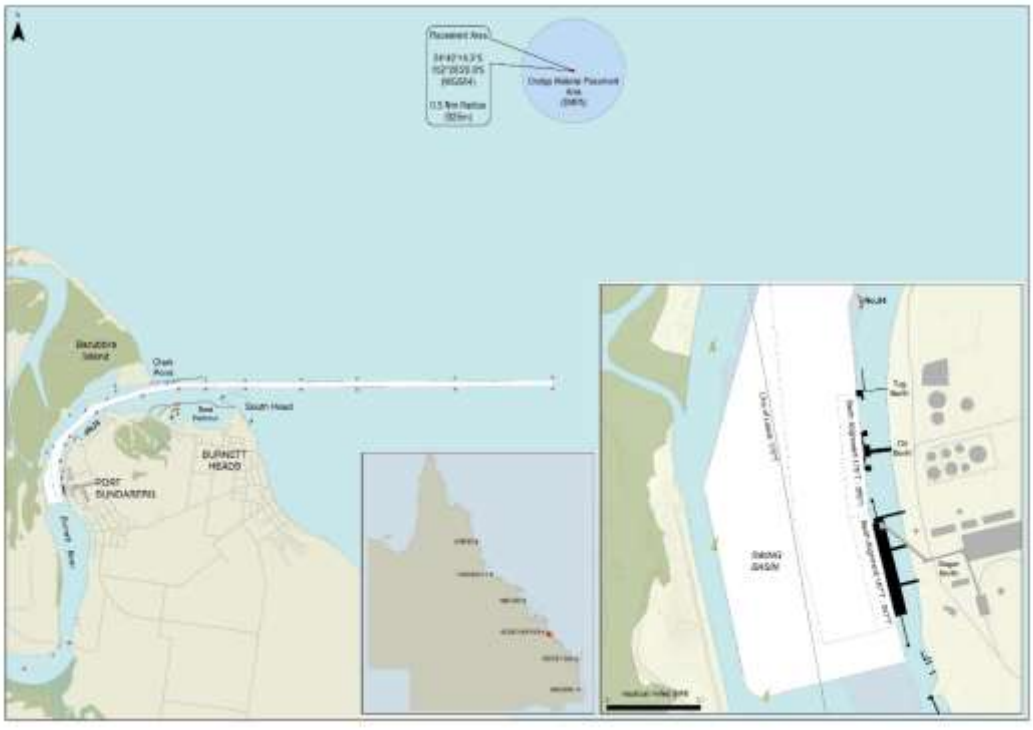

Figure 3: PoB Navigational Infrastructure

(c) Land Placement

Land placement of material is only to be used when the preferred sea placement method is not available or practicable in the circumstances.

Land placement involves pumping dredge material ashore into the MRA. Dredge material usually contains a mixture of sand and sediment content. This dirty water traverses the reclamation cell that ensures a long residence time to allow any suspended solids to settle. The clean decant water is discharged into Wallace Creek, that re-enters the Burnett River.

Due to the migration and spawning activity of commercially and recreationally important fish species within the area, the activity should be planned to avoid the two days prior, the two days of and the two days after the new and full moons of the months of June, July, August and September. If dredging with land placement is required during these periods notification is required to the Department of Agriculture and Fisheries Queensland prior to commencement of the activity and records shall be kept. Emergency dredging is exempt of this requirements (see Section 3.8).

The MRA infrastructure is an approved placement facility for dredge material, and GPC will ensure that material is lawfully reused and recycled when appropriate. An example is the sale of clean extracted sand under an AQM. Material to be used for reclamation purposes in the MRA is governed by the allowable volumes per year but exempt from royalty payments to DES.

Material placement can only occur in the approved MRA footprint. Marine plant disturbances outside the MRA are to be identified, justified, minimised and approved. Refer to Table 1 Statutory Approvals for allowable material placement footprint.

3.4 Associated Infrastructure

Dredging is undertaken to maintain the channel, berth and infrastructure depths as maintenance dredging on a routine basis and emergency dredging on an as needs basis. Preferred relocation of material is at off-shore material placement area, when this is not practicable then placing material in the MRA is accepted. After flooding events it may be

necessary to repair scour holes in the river with material placement or place material at the toe of the northern training wall to assist in maintaining its stability.

PoB merged with GPC in October 2007 and previously owned a cutter suction dredge, the John G Francis, and pumped dredge material ashore to the MRA. When dredge material is pumped ashore it is managed through a decant pond with a designated flow path to allow the tail waters to filter and sediments to settle prior to discharge to the perimeter drain and Wallace Creek.

To provide a viable dredge management strategy for the PoB, it is proposed that a restricted number of reclamation sites will be reserved for future dredge material placement to provide an alternative to at-sea placement.

3.5 Key Tenancies and stakeholders

Identified tenancies close to the works and key stakeholders may include but are not limited to:

Port Service Providers:	
Shipping Agencies	Stevedores
Providores	Ship Surveyors
Transport Companies	Bunkering

Port Operator:
Tugs

Port Customers:
Tenants – Sugar Terminals Ltd, Altus Renewables, Etex, Sunstate Sands, HTL, Bundaberg Sugar, Pacific Marine Base Bundaberg, Ocean Pacific Marina, and Okara

Government Agencies:
Department of Environment, Science and Innovation
Department of Agriculture, Water and the Environment
Department of Agriculture and Fisheries - Biosecurity
Queensland Fire and Emergency Services
Maritime Safety Queensland
Department of State Development, Manufacturing, Infrastructure and Planning

Community:
Local Residents
Locally employed workers

(a) Sediment Characterisation

The material dredged under this EMP has been analysed and assessed in accordance with approaches set out in the:

- National Assessment Guidelines for Dredging 2009 (**"NAGD"**) to ensure the material is appropriate to dredge and dispose of on land or at sea; and
- Queensland Acid Sulfate Soils Technical Manual V4 2014 (**"QAASTM"**).

The Sediment Analysis Plan (**"SAP"**) was specifically developed for the PoB and SAP Implementation Report (2020) determined that the material in the PoB is suitable for unconfined sea placement, as no results exceeded set trigger values for contaminants of concern. Potential Acid Sulfate Soils was identified in the fine sediments that overlay the sand in the port and recommended development of an Acid Sulfate Soils Management Plan when bringing sediments to land. These findings are in line with previous surveys in 1995, 1999, 2009 and 2014.

The plan and report is available on GPC's website.

Additional SAP's will be developed on a case by case basis to accommodate for non-routine maintenance dredging or flooding events.

3.6 Environmental Values

Key Local Attribute	Relevance to Port of Bundaberg
Tidal wetlands	The Burnett River estuary supports ~ 540 ha of tidal wetlands comprised of mangroves, saltpan / saltmarsh and fringing coastal she oak and paperbark communities (Duke et al. 2019b), including in the tidal areas of GPC-owned land. Tidal wetland floristic diversity in the Burnett River estuary is the lowest in the Burnett-Mary region, due to extensive modification and degradation of river water quality (Mackenzie & Duke 2011). However, tidal wetlands on GPC-owned land support a relatively high diversity of mangroves and saltmarsh species (Mackenzie & Duke 2011; FRC 2008; May 2020 site inspection). Many of the tidal wetlands in the study area are mapped as essential habitat (DES 2020h), due to the presence of threatened and migratory shorebirds.
Seagrass and macroalgae	Seagrass appears to be absent in the estuary, while ephemeral and sparse meadows of *Halophila ovalis* and *H. spinulosa* with some macroalgae have been previously recorded within the offshore dredged material placement area (Worley Parsons 2009b; AMA 2015). It is considered likely that seagrass (a sparse coverage of *Halophila* spp.) occurs within the wider Port limits when conditions are suitable. These species provide foraging habitat for listed threatened, migratory and marine species including the green turtle, dugong and seahorses; and also provide important habitat for species of fisheries significance.
Benthic fauna	Ongoing benthic monitoring demonstrates highly variable composition of benthic infauna composition within the offshore dredged material placement area, consistent with a high variability in sediment type (AMA 2015). Benthic infauna are important for a range of services including nutrient cycling, bioturbation and as a component of food webs, particularly as a food source for species of fisheries significance. Coarser sediment types supported taxa such as crabs, whereas fine sediment was dominated by polychaete worms (AMA 2015).

Key Local Attribute	Relevance to Port of Bundaberg
Reef communities	Inshore coral reef habitat occurs along the Woongarra Coast, from Burnett Heads (just within the Port limits) to the Elliot River (DES 2018d). Reef communities in the area are a mix of tropical, subtropical and temperate species of hard and soft corals, with at least 46 species of hard coral known to occur in the Great Sandy Marine Park (DES 2018a). Flooding from the Burnett and Mary rivers in 2011 and 2013 negatively impacted the surrounding coral reefs, reducing coral abundance by up to 60% on the Woongarra Coast, with an increase in the coverage of the stress tolerant coral *Turbinaria* and a decrease in *Acropora* coral communities (Butler et al 2013; Coppo et al. 2014).
Fish and fisheries	The Port and surrounding areas provide a range of fish habitat (e.g. mangroves, mudflats, anthropogenic structures, bare soft sediment and potentially sparse seagrass). Commercial and recreational fishing occurs in the area, targeting small and large bodied fish (i.e. whiting, yellow-fin bream, flathead), prawns and mud crabs, which are valuable to the fisheries in the local area (DAF 2020; Lupton & Heidenreich 1999).
Marine mammals	There are relatively few published records of marine mammals in the area. Coastal dolphin species, including the Australian snubfin dolphin and the Australian humpback dolphin have been sighted or are considered likely to occur within the Burnett River estuary and coastal environments (DES 2020b). Migratory whales, including the humpback whale, are likely to traverse further offshore through the broader Port limits during their seasonal migration (winter and spring). Dugongs are likely to occur during seasonal peaks of seagrass growth, but are more likely to be seen south of the PoB in Hervey Bay (Sobtzick et al. 2017).
Marine turtles	Several marine turtle species have been recorded in the area. The Mon Repos Conservation Park is located approximately 4 km south of Burnett Heads. It is the most significant loggerhead turtle rookery in Queensland, with small numbers of flatback and green turtles also nesting here (DES 2018). During the nesting season, marine turtles will occur in the coastal waters off Burnett Heads within the Port limits, and are known to use the dredged channel as inter-nesting habitat (DES 2020m).
Shorebirds	Barubbra Island Conservation Park, the tidal wetlands on Port-owned land associated with Wallace Creek (PoB wetland area) and the PoB Material Reclamation Area (MRA) are foraging and roosting habitat areas for resident and migratory shorebirds (Worley Parsons 2012). Several threatened migratory birds are known to frequent the area.
Terrestrial flora and fauna	Several conservation significant flora and fauna species are known or highly likely to occur within the PoB and surrounds. The key species of conservation significance that potentially occur in the Port and surrounds (apart from shorebirds, which are described above) are the grey-headed flying fox (*Pteropus poliocephalus*), listed as vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act (EPBC Act) (DEHP 2016); and the water mouse (*Xeromys myoides*), listed as vulnerable under the Commonwealth EPBC Act and Queensland Nature Conservation Act (NCA) (DCCEEW 2020). Two TECs listed under the EPBC Act occur within the study area (DCCEEW 2020). The subtropical/temperate coastal saltmarsh TEC, listed as vulnerable, occurs within the study area, including at the PoB wetlands, along the Burnett River frontage of the PoB south property and on the PoB west property. A small patch of coastal swamp oak forest TEC (endangered) is likely to occur inland of the river near Barubbra Island within the study area (but not on GPC-owned land).
Marine water quality	The water quality of the Burnett River estuary has been affected by altered hydrological flow, bank erosion and industrialisation (BMRG 2015). Coastal waters are likely to have good water quality at times, sufficient to support coral and seagrass growth (DES 2018d; AMA 2015, DERM 2010). There are high

Key Local Attribute	Relevance to Port of Bundaberg
	ecological value (HEV) waters along the Woongarra Coast, immediately south of Burnett Heads (DERM 2010). Water Quality Objectives (WQOs) under the Reef 2050 Water Quality Improvement Plan (WQIP) apply to the waters within the Port limits (State of Queensland 2018).

3.7 Sensitive Environmental Receptors

Although the approved footprint of the works is viewed as being highly disturbed, GPC understands that it is interconnected to a much greater system extending beyond these boundaries as described in Section 3.6 Environmental Values. Within the wider PoB sensitive receptors have been mapped and are included in the Port of Bundaberg Maintenance Dredging Environmental Monitoring Procedure.

Management actions documented in Section 5 of this EMP will be implemented in order to ensure that dredging and reclamation works do not negatively impact on the identified sensitive receptor. Further information in regards to the monitored sensitive receptor for maintenance dredging and sea placement are detailed in the LMDMP #724856 and the Port of Bundaberg Maintenance Dredging Environmental Monitoring Procedure #964306.

3.8 Emergency Dredging Protocols

Extreme weather event related sediment deposition in the PoB is controlled by unpredictable flooding events or storm surges associated with cyclones. As such, GPCL has no control over the extent or timing for emergency dredging.

The process of gradual sediment accumulation in the Burnett River estuary and its subsequent deposition in the port during flooding is a natural one, which may be minimally influenced by catchment management practices. Although improved catchment management may reduce the amount of fine material deposited in the river, this material is less significant from a port sedimentation perspective as it is carried further than coarser sand material which settles more readily within the inner reach and sea reach of the channel. This sand material is generated naturally from catchment erosion, and is likely to be the major contributor to sediment generation in the Burnett River delta.

The deposition of sediments to the river mouth area as a result of storm surge is similarly influenced by natural weather events. Storm surges drove sand material into the mouth of the Burnett River and sand was deposited immediately downstream of the marina area.

Flood or storm surge related sediment deposition occurs rapidly (over a period of a few days) and it is economically imperative for the port that the sedimentation be cleared rapidly. In the past, sedimentation as a result of a flood has closed the port for long periods (e.g. for two months in 1974), imposing a substantial economic burden on the port and the regional economy. Therefore, it is imperative that the disposal option for flood or storm surge related deposition be able to be implemented quickly and at short notice. For these reasons and the large volume of material involved, sea placement at an offshore MRA is the most feasible disposal option for material deposited in the port during an extreme weather event in most circumstances.

The timing for flood or storm surge related emergency dredging is uncertain, but is most likely to occur in the summer or early autumn wet season when storm activity is greatest.

This timing may coincide with loggerhead turtle inter-nesting and nesting season (October to February inclusive), when routine maintenance dredging is not permitted.

The term “Emergency Dredging” includes in this instance dredging undertaken immediately after a flood or cyclone to re-open the port to commercial shipping, as well as additional

restoration dredge works to return port depths to pre-flood or pre-cyclone depths and stabilise lawful structures. It can be clearly distinguished from normal maintenance dredging.

Initial internal protocols to be undertaken:

a. justification for emergency dredging to be conducted and impact on GPC if emergency dredging is not conducted;

b. undertake an options analysis using the GPC risk management framework in relation to emergency dredging timeframes, proposed dredging and placement methods (Sea or on shore placement) including sediment type, impacted areas and expected volumes, proposed impact to environment sensitive receptors, port operability, financial and community perception;

c. maintenance dredging and associated sea placement is not permitted or not preferred during October to February inclusive under all of the above mentioned approvals for dredging and sea placement activities at the PoB. This restriction is enforced for the inter-nesting period of Loggerhead turtles in the region;

d. a risk assessment for determining significant impact on the Matters of National Environmental Significance, in particular listed loggerhead turtles (*Caretta caretta*), shall be carried out utilising learnings from any previous emergency maintenance dredging campaigns that also occurred during the turtle restriction which occurred 2013 & 2017;

e. an assessment of the likelihood of the marine turtles in the vicinity of the dredge areas is required by an appropriately qualified person. The emergency dredging works described in this Section were referred to DES for expert advice from officers within the Aquatic Species Program of Conservation and Sustainability Services for their consideration. The Threatened Species Unit's input will be incorporated into this EMP for regulatory approval of any proposed additional mitigation measures;

Should the need to undertake emergency dredging prevail after undertaking initial internal protocols, then the following process will be followed:

1. DCCEEW and other relevant environmental agencies would be notified that a particular event has occurred that is likely to require an emergency dredge response.

2. Hydrographic survey data on the impacts of the sedimentation deposition would be collected as soon as possible after the particular event, and in consultation with the Regional Harbour Master, GPCL will determine an emergency dredging strategy including:

    a. approximate volumes to be dredged;

    b. the location of the material to be dredged;

    c. dredge type and method including placement option.

3. DCCEEW will be notified of the outcomes of the hydrographic surveying and advised of the proposed emergency dredging strategy as soon as practicable.

4. GPCL and DCCEEW will agree on an appropriate sediment sampling and analysis plan to undertake the emergency dredging, based on the following observations and guidelines:

a. Sediment sampling and analysis results from the emergency dredging undertaken in 2011 in the Port of Bundaberg indicate that there is likely to be an abundance of sand from flooding events. This is likely to be the case also for storm surge events.

b. The quality of sediments from emergency dredging testing in 2011 using the National Assessment Guidelines for Dredging 2009 (NAGD) principles was better than under testing for routine maintenance dredging in previous years. Based on these results,

the level of risk of contaminated sediments caused by flooding or storm surge is very low.

c. Beyond the 5 year NAGD period, sediment testing will be limited to metals, unless there are additional sources of contaminants identified (e.g. a significant fuel leak upstream).

d. Given the homogeneity of the sediments collected during the emergency dredging testing in 2011, the collection of sediment sampling for emergency dredging will be undertaken using a 1 metre piston corer rather than undertaking vibracoring to full depths of sediments, with sample to be taken from half the number of sites required under NAGD Table 6.

e. Any sediment testing results are to be provided in summary tables and accompanied by any recommendations for further testing, with a full report to follow as soon as practicable.

f. DCCEEW is to advise GPCL of any further sediment testing requirements or of its approval to undertake the emergency dredging as soon as practicable.

5. GPCL or its dredging contractor is to provide the Environmental Management Plan (EMP) for the emergency dredging to DCCEEW prior to the commencement of the dredging.

6. In the event that emergency dredging is required during the period of October to February (inclusive), then the Environmental Management Plan for the emergency dredging shall incorporate additional mitigation measures for the protection of marine turtles. This will include, but not be limited to, an assessment of the following mitigation measure strategies:

a. An assessment by an appropriately qualified person of the likelihood of marine turtles in the areas to be dredged. The risk of turtles being in the river following flood or storm surge events where dredging is likely to be required is low because the water quality is very poor, with marine turtles most likely to be in areas outside the dirty plume waters.

b. Only undertaking critical dredging works during the period October to February (inclusive), with the balance of dredging to return the port to full depths occurring outside of this period.

c. Undertaking dredged works using a CSD rather than a TSHD where appropriate and practicable.

If a TSHD is used during the period of October to February (inclusive), then the following further mitigation measures must be included in the EMP.

d. Before beginning sea dumping activities, undertake a check, using binoculars from a high observation platform, for cetaceans, turtles or dugongs within the monitoring zone If any marine species are sighted in the monitoring zone, dredging/dumping activities must not commence in the monitoring zone until 20 minutes after the last marine species is observed to leave the monitoring zone, or the dredge is to move to another area of the dredge/disposal site to maintain a minimum distance of 300 metres between the vessel and any marine species identified.

e. Any TSHD used in connection with dumping activities must be fitted with a turtle exclusion device to minimise the risk of direct impact on turtles during dredging.

f. The dredger's suction units can only to be operational when dredging and when the suction heads are in place on the sea bed. The suction units can not be operational during transit to and from the spoil grounds or while suction heads are not on the sea-bed.

7. Develop a proposal for regulatory approval, using all of the information collected above in alignment with the following permits/approvals:

- **State Sea Dumping Permit IPDC00649407 (#494589, 1289828)**
  - responsible agencies are Department of State Development, Manufacturing, Infrastructure and Planning who consulted with DES;
  - during Emergency Dredging, GPC will operate outside of the conditions of this permit, in particular Condition 5, under the emergency provisions of Section 166 of the *Planning Act 2016* (Qld);
- **Federal Sea Dumping Permit SD2012/2202 V1 (#1762465).**
  - responsible agency is DCCEEW;
  - during Emergency Dredging, GPC will operate in accordance with of the sea dumping permit and under the emergency provisions of this EMP.
- **State Environmental Authority for Dredging EPPR00571913 (Part 1) (#1331442)**
  - responsible agency is DES;
  - during Emergency Dredging GPC will undertake the activity in consultation with the administering authority in accordance with Condition G5.

8. Within 2 months of the completion of the emergency dredge works, GPCL and DCCEEW shall review the appropriateness of this process and amend the process as required.

9. Any emergency dredge works undertaken shall be reported to the TACC and raised as an agenda item for discussion at the TACC meeting immediately following the emergency dredge works.

The previous two emergency dredging campaigns were referred under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**"EPBC Act"**) and decided to be not a controlled action. The previous emergency dredging campaign was also referred to a relevant specialist from the former Queensland Department of Environment and Heritage Protection (now DES) for their consideration (#983100 / DES Reference SOR/119511). No turtle injury or mortality was reported during the campaign.

4 Environmental Management System

Activities carried out by GPC for maintenance dredging and placement at PoB conform to GPC's ISO14001 certified EMS.

The EMS Plan #146256 is the overarching directory of the EMS for all sites within GPC, and allows any person easy access to any/all documents contained within it. The EMS Plan is a concise overview of the framework used to manage environmental risk. The EMS Plan is a concise overview of the framework used to manage environmental risk. The aim of the plan is to be a user friendly tool in the form of a directory to quickly guide the user to the desired area of the EMS.

Figure 4: GPC's EMS Framework

The provision of services by the dredging Contractor shall be underpinned by the implementation and continual improvement of a management system consistent with the elements of:

- AS/NZS ISO 9001 Quality Management Systems;
- ISO 14001:2015 Environmental Management Systems; and
- AS/NZS 4801 Occupational Health and Safety Management Systems.

4.1 Policy

The Environmental Policy #366016 defines the overall aims and direction of GPC towards the environmental management of its activities and the continual commitment to improvement. It also describes the direction and responsibilities of GPC in relation to its environmental performance.

The Environmental Policy is available to interested parties on the GPC website (www.gpcl.com.au).

4.2 Environmental Compliance Obligations

Environmental management of port operations has numerous and varied compliance obligations which govern the way GPC conducts its business. To be aware of and understand all of our legal obligations, GPC has developed a Legal & Other Requirements Register #1007885. The register describes firstly, what the legislation is and means, and secondly, how it affects GPC activities. The register is regularly updated to ensure that it captures relevant legislative changes and incorporates new environmental approvals applicable to GPC operations.

Table 1 below outlines the environmental approvals specific to maintenance dredging and placement activities. A copy of the relevant approvals is provided in Appendix A and must be kept in a location readily accessible to the Employees carrying out the activity.

Additionally, GPC must comply with the following regulatory requirements:

- In accordance with PoB LMDMP

- in accordance with EPPR00571913 Conditions G4 and G5, if dredging is undertaken in turtle breeding season then this work requires permission / approval from DES;
- as required under the Sea Dumping approval and Quarry Allocation, emergency dredging with sea placement may only be conducted in accordance with Section 3.8 and with the approval of regulators;
- as required under the Quarry Allocation, dredging with land placement, two days prior, days of and two days after new and full moon for the months of June, July, August and September requires notification and justification to DAF, unless conducted under Emergency Dredging Protocols see Section 3.8;
- copies of these approval shall be kept on the dredge at all times; and
- evidence of approval/s must be provided to the relevant regulator upon request.
- If any additional approvals are required that these will be sought prior to the activity occurring (e.g. works in council road reserves will require council approval).

Table 1: Statutory Approvals for Maintenance Dredging, Emergency Dredging and placement

Development Approval / Permit	Property	Permitted Activities	
EPPR00571913	Bundaberg – Inner and Middle Reach of Burnett River and Navigation Channels	• ERA 16 (Extractive and Screening Activities) - Dredge to Land • ERA 16 (Extractive and Screening Activities) - Dredge • Sand screening	#1731208
AQM0122 - replaces AQM0031 (with MSQ & DAF concurrences) – currently seeking renewal	Bundaberg – entrance channel, swing basin and berths	• Allocation of quarry material below high water mark • 190,000m^3 annual, max 500,000m^3 over 4 year period. • 14.69 m AHD for the insurance trench and 12.69 m AHD for other areas. • Reporting to DAF if dredging occurs in fish migration and spawning period	#1912431

Development Approval / Permit	Property	Permitted Activities	
		as defined by conditions	
SD2023-4053 (SDP)	Port of Bundaberg – inner, middle and sea reaches of the channel, sea placement	• Allocation of quarry material below high water mark • Routine Maintenance 3,900,000 m^3 in-situ • Federal Sea Dumping Approval	#1762465
IPDC00649407 (with MSQ & DAF concurrences)2007DB0233	Sea Placement & Removal of Marine Plants	• Operational Works • 2.2 million m^3 • State Sea Dumping Approval • DAF habitat disturbance (Marine Plants) • Emergency Maintenance Dredging in accordance with Section 166 of the *Planning Act 2016*	#494589

4.3 Environmental Risks

GPC's Risk Management Framework provides the processes to ensure the EMS suitably identifies, analyses and evaluates, manages and monitors all aspects under the control or influence of GPC. The risk management process is an integral component of GPC's organisational and operational decision making and ensures all elements of potential impacts are assessed i.e. environmental, compliance, interested parties (stakeholders), project delivery etc.

Risk Assessments are conducted for all new or changed activities (including changes in dredge or monitoring equipment and when incidents occur that include a changed risk) and specifically for maintenance dredging prior to each dredging campaign ensuring risk controls are current, appropriate, communicated, implemented and monitored. Significant changes in risk shall be communicated to the TACC (refer to Section 4.14(a)). The EMP seeks to prevent environmental harm except when specifically permitted by the EA.

This process informs the development of the state-wide maintenance dredging schedule for each campaign. This process also informs the review the LMDMP.

Environmental risks for dredging and placement are assessed and recorded on the GPC SAI360 Risk Management, Risk Register in accordance with the GPC Risk Management Policy and Risk Management Standard #829152.

Risk controls are documented and communicated in the LMDMP, this EMP and Monitoring Procedure.

The implementation and effectiveness of risk controls are monitored through processes such as periodical risk reviews, audits, inspections, incident and complaint investigations and reporting (Section 5). More information is provided in the LMDMP.

4.4 GPC Environmental Strategy

The GPC Environmental Strategy #801782 establishes GPC's overall approach and priorities for environmental management. The Strategy has been developed taking into account GPC's Environmental Policy, its environmental impacts and relevant legal and other requirements. The Strategy provides an overview of the environmental issues relevant to GPC's operations and documents GPC's environmental objectives and targets. The Strategy also links to the environmental initiatives proposed to be undertaken to enable the objectives and targets to be achieved.

4.5 GPC Environmental Standards

GPC has implemented the following Standards to provide clarity of obligations, responsibilities and expectations for environmental management:

- GPC Environmental Management Standard #809151; and
- GPC Safety Environment and Security Standard for Contractors and Port Users #995910.

All activities must be conducted in accordance with the Environmental Standards.

4.6 Contractor Management

GPC has obligations to ensure that the activities undertaken by, or on its behalf, do not present unacceptable risks to the environment and are undertaken in a lawful manner. To ensure the activities of Contractors are identified, assessed and managed the following Contractor management controls are in place:

- pre-qualification evaluation;
- Procurement Policy;
- Environmental Standards;
- induction;
- regular communication between GPC and the Contractor;
- audits and inspections; and
- incident investigations.

4.7 Environmental Monitoring

GPC conducts a range of environmental monitoring programs to monitor operational activities that can have an actual or potential significant impact on the environment..

GPC is required by environmental approvals and other stakeholder commitments to carry out monitoring to achieve compliance.

The EA (EPPR00571913) requires GPC to implement a monitoring plan that complies with the latest version of the *DERM Monitoring and Sampling Manual 2009* in order to achieve the following outcomes:

(a) long-term ecological impacts associated with dredging operations are monitored;

(b) compliance with the conditions of the EA is monitored;

(c) contaminant releases are monitored; and

(d) operations are adjusted in response to monitoring results to ensure compliance with EA conditions.

The approved LMDMP, which is a requirement of GPC's Sea Dump Permit, covers the monitoring of long-term ecological impacts associated with maintenance dredging and sea placement.

GPC implements a Port of Bundaberg Environmental Monitoring Procedure (Doc no #964306) to achieve these outcomes and to address the requirements of the EA and LMDMP.

Any monitoring required by this EMP will be undertaken by an experienced and suitably qualified person(s) on samples that are representative of the discharge. All instruments, equipment and monitoring devices used for monitoring in accordance with this EMP must be calibrated and appropriately operated and maintained. All analyses and tests required to be conducted under this EMP must be carried out by a NATA-certified laboratory. Monitoring results shall be recorded, compiled and must be submitted to DES and/or GPC when required by this EMP and/or on request.

Monitoring of volumes of material to be dredged and deposited at the material ground, on shore or other approved location shall be recorded and monitored to ensure compliance with allowable dredge volumes in approvals. Bathymetric surveys shall be conducted to monitor residual capacity of the material ground and to assist with managing even distribution of material placement.

4.8 Measures, Plant & Equipment

GPC will install, maintain and operate all relevant measures, plant and equipment (including monitoring) in a proper, effective and efficient way which ensures compliance with the conditions of this EMP and relevant approvals. There will be no change, replacement, alteration or operation of any plant or equipment if the change, replacement, alteration or operation will increase or is likely to substantially increase the risk of environmental harm during works.

It is the Contractor's responsibility to ensure that they install, maintain, calibrate and operate all relevant measures, plant and equipment utilised in their scope of works in order to ensure compliance with the conditions of this EMP and relevant approvals (e.g. operate in a proper, effective and efficient manner and keep records).

All vessels and floating equipment used for the activity must be registered under the *Transport (Maritime Safety) Act 1995* (Qld).

All plant and equipment associated with dredging must be removed from the approved footprint upon the finalisation of the activity, or the expiry or cancellation of approvals associated with the activity.

4.9 Environmental Training

GPC must ensure that Employees and Contractors working at GPC facilities have received the appropriate level of environmental training and that all relevant records are retained in accordance with GPC's environmental approvals. The aim of this training is to ensure that all persons involved in the activity comply with the LMDMP and environmental approvals.

GPC Employees have training and awareness delivered in a variety of ways such as inductions, and mandatory training.

GPC shall ensure that relevant Employees are aware and are familiar with the requirements of this EMP, its associated documents, and the approvals relevant to the task.

It is the Contractor's responsibility to ensure that all dredging Employees, including subcontractors, are:

- suitably trained for any and all activities for which training is required in order to ensure legislative compliance and to prevent environmental harm during normal operation and in emergencies;
- reading, understanding and applying the requirements outlined in this EMP, its associated approvals and EP Act; and
- aware of the conditions of the AQM approval when undertaking dredging with land placement.

Untrained persons must remain under the close supervision of a suitably trained person.

Training records shall be maintained and made available to GPC on request.

4.10 Environmental audits and inspections

Internal auditing may be undertaken to confirm that activities are carried out in accordance with the defined requirements set out in this EMP and relevant approvals. Audits are initiated and completed by the GPC Environment team or by a suitably qualified auditor nominated by the GPC Environment team. Audit reports may be provided to GPC regulators as and when required.

If requested by GPC, GPC Employees will be afforded access to witness, inspect, examine or audit any part of the Contractor's operations. If requested by a regulatory agency, nominees (at least 2) of the relevant agency will be afforded access to witness, inspect, examine or audit any part of the operations, including any placement activities, monitoring activities, equipment and any records. Reasonable assistance to regulatory agencies must be afforded whilst they carry out their duties.

GPC shall carry out periodic inspections. Records of these inspections along with any corrective or improvement actions arising from inspections or audits will be entered into GPC's incident management system SAI360.

GPC conducts an annual Maintenance Dredging Environmental Performance Internal Audit, post dredging.

The audit conducts a review of:

(a) monitoring performance (Impact and Long Term) as required by the LMDMP;

(b) Records (Section 4.13)

(c) volumes (expected Vs actual);

(d) urgency (factors outside GPC's control);

(e) Incident and Complaints; and

(f) approvals and EMP specific issues / compliance.

The audit will trigger a review of specific aspects of the Environment (ENV) Risk Register, (refer to Section 4.3.

It will ensure that an annual review of the ENV Risk Register occurs same time each year in alignment with the audit.

The audit may trigger a review of the LMDMP and / or Long term monitoring plan in the LMDMP, in the following circumstances:

- if there is insufficient understanding obtained from the current monitoring; or
- there is a change in the risk that would warrant an increased monitoring focus.

The audit may initiate a continuous improvement administrative practice.

GPC will also audit in alignment with the commitments in the LMDMP which includes three (3) audits throughout the life of the plan, and includes a mid-term review of the adequacy of monitoring under the LMDMP.

4.11 Incidents and Complaints

(a) Complaints

There are several ways that GPC can become aware of environmental complaints, this includes notification from terminal customers, Employees, Contractors, community members and regulators.

The Environmental Complaints Management Procedure #1044716 details how to notify, identify and escalate, respond to and review complaints ensuring effective complaints handling.

Complaints received will be entered into GPC's incident reporting system SAI360. The records in SAI360 will include all relevant details of the incident and/or complainant, details of any immediate corrective actions, investigations and/or monitoring undertaken, conclusions formed and improvement actions identified to reduce the risk of reoccurrences.

GPC's Environment Superintendent or Specialist - Harbours & Channels must be notified by GPC Employees and/or engaged Contractor of receipt of a complaint regarding perceived or real environmental nuisance or harm as a result of an activity specific to the works covered by the scope of this EMP and any other associated works immediately as per the Environmental Complaints Procedure #1044716.

The following details must be collated for all complaints received. GPC will provide this information to DES on request:

- time, date, name and contact details of the complainant;
- reasons for the complaint;
- any investigations undertaken;
- conclusions formed; and
- any actions taken.

The process used by the Contractor to manage complaints and escalation to GPC is detailed in the Contractors EMP. Records of complaints are to be made available to the administering authority upon request.

(b) Incidents

GPC's Environment Superintendent or Specialist - Harbours & Channels is to be notified as soon as practicable after GPC and/or an engaged Contractor has become aware of any non-compliance with any environmental approval conditions specific to activities covered by the scope of this EMP and any other associated works. GPC should also be notified of any incident resulting from activities undertaken as part of the works which:

- causes or has the potential to cause environmental harm;
- is unlawful (e.g. works outside approved dredging and placement footprint);
- involves the release of a contaminant (not allowed by approvals);
- identifies a new environmental risk;
- adversely impacts an environmental value (e.g. Marine megafauna injury or death);
- involves a cultural or shipwreck heritage find;
- is a breach of a condition of an approval; or
- is not in accordance with the relevant approvals and / or permits.

This notification is to take place in accordance with the following methods and timeframes:

- verbal notification immediately after occurrence of incident; and
- written notification within 24 hours of occurrence of incident.

Photographic evidence shall be collected of any injury or death of marine species.

Retrieved turtle carcasses (and parts of) shall be immediately notified to DES's Pollution Hotline (1300 130 372) to allow prompt collection by DES for species identification and analysis.

For Oil spills into marine waters, Maritime Safety Queensland (**"MSQ"**) shall be notified by the Contractor of marine spills using a POLREP form in compliance with Appendix B – MSQ First Strike Response Plan – Port of Bundaberg & POLREP (Maritime Safety Queensland Marine Pollution Report)

In the event of a pest incursion, immediately report to the contact details shown in Table 2.

Table 2 – Biosecurity Incident Reporting

Incident Type	Responsible Regulator	Contact Details
Pest incursions or quarantine breaches – flora and fauna	AFF (Federal Gov)	1800 798 636 or 0447 735 926

Marine Pests and Declared Pests known or suspected	DAF (State Gov)	13 25 23 or 0438 646 108

For other reportable incident types, GPC (or the Dredging Contractor) must report to DES's Pollution Hotline (1300 130 372) and / or DCCEEW (1800 920 528) as soon as practicable, but no later than 24 hours (with compliance details) after becoming aware of a reportable event or prior to 72 hrs for DCCEEW for death or injury to marine species, in accordance with the conditions of the appropriate approval (Table 1). A full report shall be provided soon as practical to DES and/or AFF

If GPC and/or engaged Contractor becomes aware of material environmental harm or serious environmental harm as a result of carrying out the activities covered by the scope of this EMP or other associated works, then the said activity(s) must be ceased immediately.

If at any time during the course of dredging or placement activities, an environmental incident occurs or an environmental risk is identified, all reasonable measures must be taken immediately by GPC to mitigate the risk or impact.

Incidents are recorded in the SAI360 system, which should record all relevant details of the incident including immediate corrective actions, investigations and/or monitoring undertaken, conclusions formed and improvement actions identified to reduce the risk of reoccurrences.

Written advice will be provided by GPC (or the Dredging Contractor) within 14 days to the relevant administering authorities in accordance with the conditions of the appropriate approval (Table 1). The following details may be required:

- name of the registered operator, including development approval number;
- the name and telephone number of a designated contact person;
- the location of the release/event;
- the time of the release/event;
- the time you became aware of the release/event;
- the suspected cause of the release/event;
- the sensitive receptor(s) that may have been impacted;
- a description of the resulting effects of the release/event;
- In addition, in the event of marine species the GPS location and marine species involved;
- the results of any sampling performed in relation to the release/event;
- actions taken to mitigate any environmental harm and or environmental nuisance caused by the release/event; and
- proposed actions to prevent a recurrence of the release/event.

GPC DOCSCQPA-#1075526-Procedure_GPC_Incident_Management_and_Investigation is used to guide incident reporting, external notifications, investigations and corrective actions including record keeping requirements. The Contractor's incident reporting procedure shall be included in the Contractors EMP and must include the requirements outlined in this EMP.

GPC also records and communicates the number and type of incidents internally through weekly, monthly and annual reports.

4.12 Emergency Preparedness

PoB has an Emergency Management Plan #998211 which establishes the process to ensure a controlled and coordinated response to emergency situations for work conducted by PoB Employees and Contractors. It also details the emergency contact numbers for Emergency Services, PoB Employees and external stakeholders. The relevant parts of this will be communicated with the dredging Contractor.

Under a Deed agreement between MSQ and GPC, GPC is responsible for first-strike response to oil spills, within the boundaries of the port, in accordance with the MSQ First-strike Oil Response Plan attached in Appendix C.

All emergencies and incidents must be reported as per Section 4.11(b) of this plan. However, in the event of an oil/hazardous substance spill to water, the Harbour Master (07 4973 1200) is to be contacted immediately. Secondary contact is to then be made with the First Strike Oil Response Team Leader on 0428 594 233.

Weather prediction tools are used to inform of adverse weather events that may produce emergency conditions. A decision to stop dredging and secure infrastructure will be made jointly between GPC and dredging Contractor on a case by case basis.

The Contractor's Emergency Procedures will be detailed in their EMP.

4.13 Records

All records made by the contractor must be provided by the Contractor to GPC upon request and/or at the completion of dredging activities. Records shall be retained for verification and audit purposes for a minimum of 10 years. When requested by regulators, records must be provided in the agreed format. If any records relating to the AQM are stolen, lost, destroyed or damaged, DES must be notified. Record Keeping requirements are displayed in Table 3 and information to be provided to external parties is outlined in Table 4. GPC will record information either in:

- GPC's Incident Management System – SAI360; and/or
- GPC's Document Management System – E-Docs.

Table 3 – Record Keeping

Record Type	Responsible Party	Details
Dredging Schedule decision making	GPC	GPC must record any decision making information on dredging schedules and any additional information required by approvals and LMDMP for when works: • fall outside approved dredging months required for the protection of Turtles (October to February Inclusive); or • impact on the full or new moon phases (June, July, August and September)..
Contractor Management	GPC	Refer to Section 4.6. GPC must record:

Record Type	Responsible Party	Details
		• Contractors' roles and responsibilities; and • any communications with Contractors.
Weekly plotting sheets or extract of the ships log, certified by the vessel master	Contractor	GPC must record: • the dates and times of each placement run commenced and finalised; • the position determined by GPS of the vessel at the beginning and end of each placement run, including the path of each run; • a daily log of the area being dredged; • the volume of dredged material (in-situ cubic meters) dumped and quantity in dry tonnes for the specified operational period, including the proportion that this amount represents of the total amount permitted under permits; area(s) dredged in relation to the approved footprint of works (using GPS); • the person (including their training and relevant experience) undertaking the marine species observation required and any marine species observed within the monitoring zone for each vessel movement, including the date, time and approximate distance from the vessel, species (or nearest identification), location (GPS coordinates) and the action taken to comply; • the person(s) responsible for the operation of the vessel at any time during placement activities; • the person(s) responsible for the operation of the vessel at any time during placement activities; • ship vessel records in relation to dredging (including specific information on status of dredge head and the status of the jets) commencement and completion of each dredge load and when dredging in the Sea Reach. • When using a CSD, daily records of volumes extracted for land placement.

Record Type	Responsible Party	Details
Environmental monitoring Records	GPC	Refer to Section 3.44.7 and the Port of Bundaberg Environmental Monitoring Procedure
Measure Plant and Equipment	Contractor /GPC	The Contractor will keep operational records; GPC will keep records for monitoring equipment. Refer to Section 4.8.
Training Records	Contractor / GPC	Refer to Section 4.9. Contractor to provide GPC with 'read and understood' evidence of this EMP.
Incidents	Contractor	Notifications, Investigations, Reports. Refer to Section 4.11.
Complaints	GPC	Notifications, Investigations, Reports. Refer to Section 4.11.
Emergencies	Contractor / GPC	Relevant decision making documentation and any investigations / reports.
Waste	Contractor	Regulated Waste Tracking and Sewage Waste records. Refer to Section 5.6(b).
TACC	GPC	TACC record keeping including but limited to, Terms of Reference (TOR), TACC membership and annual meeting minutes. Refer to Section 4.14.
Internal audits and inspections	GPC	Refer to Section 4.10.
Annual Performance and LMDMP audits	GPC	Refer to Section 4.10.
Aspects and Impacts Register	GPC	Refer to Section 4.3.
PBPB *TSHD Brisbane* EMP	Contractor	Refer to Section 2.2.
Emergency Dredging records	GPC	Refer to Section 3.8.

Table 4 – Provision of information to external parties

Information Type	External Party	Details
Incident Notification and Reports on a breach of a condition	Relevant regulators – may include DES, AFF, DCCEEW, DAF, MSQ	Notifications, Investigations, Reports. Refer to Section 4.11.
Compliance Report	DES	An annual report submitted to DES outlining the results of groundwater monitoring wells adjacent to MRA, including an interpretation of the results regarding impacts from the approved activity on the values of the receiving environment.
Final bathymetric survey	DCCEEW and RAN Hydrographer	A bathymetric survey will be conducted by a suitably qualified person at the placement site prior to the commencement of dredging under the Sea Dumping Approval and within one month of completion of all placement activities. A digital copy shall be provided within two (2) months to the *RAN Hydrographer, Locked Bag 8801, Wollongong, NSW, 2500* (datacentre@hydro.gov.au) and DCCEEW including: • a chart showing the change in the sea floor bathymetry as a result of placement activities; and • a written commentary on the volumes include a reliable estimate of the volumes of dumped material that appear to have been retained in the MRA
IMO	DCCEEW	Provide annual reporting to the *International Maritime Organisation* by 31 January, including on the day of the expiry of the permit or completion of all placement activities. Form is provided as Appendix 2 of Sea Dumping Approval.
AQM's Returns and payment	DES	Commencing one month after the commencement of quarry material removal, the following must be submitted to DES: 1. A quarterly return of the volume of quarry material removed from the Allocation Area and the volume of quarry material sold for commercial purposes, even if no material has been extracted or sold during that period. The volume of quarry material removed from the Allocation

Information Type	External Party	Details
		Area and sold for a commercial purpose must be measured in cubic metres (m^3) using an approved verifiable method; and 2. Payment of the royalty per cubic meter (m^3) is due within 20 business days after the end of each quarter.
Notification of the completion of all Dredging under SDP	DCCEEW	Within five (5) working days of completion of the activity under the SDP.
LMDMP Revision	DCCEEW	Any amendments by GPC or initiated and / or directed by DCCEEW to the LMDMP must be approved by DCCEEW and implemented in place of the original LMDMP. A revision can be made of the LMDMP without DCCEEW approval only if the change would not likely to have a new or increased impact on the environment or reduce public visibility of information. In this instance DCCEEW requires notification of the change and reasons/ justification for the change to the LMDMP. Records of change reasons must be kept. Document must be submitted to DCCEEW in track changes view.
Port of Bundaberg Seagrass and Infauna Monitoring Report	DAF	Port of Bundaberg Seagrass and Infauna Monitoring Report send to Fisheries Queensland, every five (5) years
PBPL Annual Maintenance Dredging schedule	PBPL	Completed form that indicates dredging requirements for each year and is accompanied by a GBRMP risk assessment of environmental aspects.
QPA Maintenance Dredging Performance Report	QPA collate and provide to TMR	Completed form that provides an overview of performance of the activity.
DAF Notification (as required) when dredging outside fish migration and spawning	DAF	Notification to DAF (refer to Section 3.3(b)).
Emergency Dredging Request	DCCEEW, DES	As required

Information Type	External Party	Details
to State and Federal Regulators		
GPC documentation (LMDMP, EMP and Monitoring procedure), monitoring reports, TACC Terms of Reference (ToR) and TACC meeting minutes displayed on the GPC website	Public	Current GPC documentation Latest monitoring reports TACC TOR and TACC minutes.

Regulatory authorities may request additional records e.g. Regulated Waste Transportation documentation, records to support EA, SDP and AQM. GPC has an obligation to inform regulatory authorities if any records have been stolen, lost, destroyed or damaged as soon as practical.

4.14 Communication and consultation

The Specialist - Harbours & Channels is the main point of contact with the dredging Contractor and the Environment team to achieve compliance with the EMP, associated documents and permits.

Daily interactions occur between GPC and the Contractor. GPC maintenance dredging meetings will be held as required to track progress and discuss environmental issues including adaptive management with the Environment team.

GPC is the main point of contact for external parties in regards to maintenance dredging activities in the PoB. However as the dredge operator, will initiate emergency response calls, incident and complaint notification to GPC, investigation and reporting for works under their contract scope and the scope of their EMP. The dredging Contractor will initiate emergency response calls for any matters outside of their scope of works in the event that GPC's main point of contact is unavailable.

(a) Technical Advisory Consultative Committee ("TACC")

GPC established a TACC for the purpose of maintenance dredging and this group includes a wide cross section of stakeholders as per the NAGD. The role of the TACC is to provide external advice to ports on environmental, social and economic issues and are a way of ensuring that a range of stakeholder interests are represented in the decision making processes for maintenance dredging management and monitoring.

GPC facilitates annual meetings with the TACC where the outcomes of dredging and monitoring programs are reviewed, discussed and refined.

A significant amendment to this EMP or associated documents (e.g LMDMP or MP), including a significant environment change in risk will be communicated to the TACC.

More information is provided in the LMDMP, the TACC Terms of Reference (ToR) and The Engagement, Communication and Project Delivery Strategy #1431526.

(b) Access to reports and data for maintenance dredging

GPC publishes the current approved version of the LMDMP and Environmental Reports on the internet for public access. The LMDMP must be published on the GPC website within 30 days of implementation and include the date of DCCEEW approval, the date of DCCEEW LMDMP approval, the version number and be accessible.

To ensure accuracy and currency of reports and data on the web is achieved, GPC has implemented an 'Access to report and Data Process'.

In addition to providing access to reports and data on the GPC website, GPC also has a data request process established for the external dissemination of environmental monitoring data and reports.

4.15 Review

This EMP, its operation and implementation and the associated elements of GPC's EMS, will be reviewed; prior to each dredging campaign, as a result of approved amendments to the LMDMP, following the findings of internal and external audits and/or in the event that a Performance Indication (Section 5) is not met (every two years at a minimum). Revisions are to be kept as a new version in GPC's document management system and must be communicated to all relevant GPC Employees, engaged Contractors and administering authorities.

5 Environmental Risk Management

This EMP, its operation and the environmental aspects addressed in this EMP are as follows.

5.1 Land management including Acid Sulfate Soils

The Queensland Government considers that development involving Acid Sulfate Soils (**"ASS"**) in low-lying coastal areas should be planned and managed to avoid potential adverse effects on the natural and built environment (including infrastructure) and human health. For the purpose of this EMP ASS includes Actual ASS and Potential ASS.

The potential exists for contamination of land from dredging ASS (identified as black mud banks on western side of Burnett River) or uncovering land based ASS (identified beneath sand storage area). Sediment testing of materials prior to dredging activities assists in understanding if an ASS risk is present and informs management options.

PoB Land can also be impacted by high salinity, this can be a result of losses of dredge material / decant waters outside the approved MRA through leaks or infrastructure failure. High salinity affects flora and fauna, land use and can impact groundwater.

Erosion from high velocity flows across land can cause scouring and affect the integrity of the MRA, as well as mobilise sediments in the MRA.

The land management including ASS impacts associated with maintenance dredging and on placement on land activities are described below:

Objectives	• To avoid contamination of land, surface and ground waters through Acid Sulfate Soils or increased salinity. • To minimise erosion of land. • To maintain compliance with the *State Planning Policy for Planning and Managing Development Involving Acid Sulphate Soils, Queensland Acid Sulfate Soil Technical Manual*

	(QASSTM) and the National Environment Protection (Assessment of Site Contamination) Measure and to ensure compliance with approval conditions.	
Potential Impacts	• ASS may cause environmental harm to sensitive receptors and lead to contaminated land and/or waters. • High salinity can lead to contaminated land and ground water and cause environmental harm to terrestrial flora and fauna. • Erosion causes loss of sediment to watercourses, causes scouring and preferential flow paths. If left unchecked can affect the integrity of the MRA.	
Control Strategy	• ASS may cause environmental harm to sensitive receptors and lead to contaminated land and/or waters. • High salinity can lead to contaminated land and ground water and cause environmental harm to terrestrial flora and fauna. • Erosion causes loss of sediment to watercourses, causes scouring and preferential flow paths. If left unchecked can affect the integrity of the MRA.	
Actions	1	As required, identification of ASS / PASS presence in dredge material through testing prior to dredging where possible.
	2	The placement of dredge material in an approved MRA when undertaking land placement as specified in the EA. The MRA has been constructed from natural marine mud in situ and prevents saline drainage. It has designated and approved inlets, flowpaths and outlet structures (weir boxes), to prevent short circuiting and manage and treat dredge material to release compliant water at approved discharge locations.
	3	Recording the location and isolation of ASS / PASS materials where practical in the MRA to assist treatment (if required). All treatment must comply with the *Treatment and Management of Acid Sulfate Soils, 2001*.
	4	As and when required, development of an Acid Sulfate Soils Management Plan to manage and/or treat ASS / PASS materials including undertaking any specific ongoing management of any placed / disturbed acid sulfate soils and acid drainage waters. Refer to DES's *Instructions for the treatment and Management of Acid Sulfate soils, 2001*.
	5	Monitoring of discharge waters in compliance with Section 5.7 and the EA conditions. Follow Port of Bundaberg Environmental Monitoring Procedure.
	6	Assessment of any suspected or verified contamination to land or waters in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure*.

	7	Remediation of any contamination to the satisfaction of the GPC Environment Superintendent.
	8	MRA is surrounded by bund wall and is located away from identified sensitive receptor (Barubbra Island Conservation Area).
	9	Dredge material must only be deposited into the nominated location/s MRA and must be managed to minimise unnecessary impacts to marine plants within the designated area.
	10	The maximum quantity of dredge material authorised for placement into the MRA must not exceed 400,000m^3 in any 12 month period.
	11	Banks and diversion drains have been established in the MRA. These banks are made of marine mud to about 2m and exclude overland flows of stormwater entering the MRA. The banks also prevent loss of the dredge material to the adjacent terrestrial and intertidal areas, such as Wallace Creek Conservation Area.
	12	Acid drainage shall not be released from the MRA. Where pH is identified as being unacceptably low, limestone chips will be placed in flow path of MRA.
	13	Weir box controls are set to allow for approximately 1 metre of freeboard to prevent overtopping of saline waters and erosion of MRA. As required, the weir box controls can be used to ensure that areas of potential ASS can remain wet to prevent release of acid drainage.
	14	Groundwater monitoring including baseline and impact can identify if saline losses are being experienced outside the MRA by the dredging activity (Refer to Section 5.7).
	15	Routine inspections in the MRA to identify any erosion spots and identify / implement erosion and sediment controls. If the erosion cannot be controlled then dredging shall cease until corrective actions can be implemented.
	16	Routine inspections to identify any dredge material or decant losses outside the MRA and identify / implement any controls to prevent further losses. If the losses cannot be controlled then dredging shall cease until corrective actions can be implemented.
	17	Bank erosion from dredging activities to be recorded in daily logs. Only dredge in approved footprint.

		If bank erosion is suspected investigate the cause and implement corrective actions.
Performance Indicators	1	No environmental harm to sensitive receptor.
	2	No unpermitted land or water contamination.
	3	No release of non-compliant discharge waters.
	4	No identified integrity issues with the MRA.

5.2 Air Quality and Emissions

The release of airborne contaminants from operational activities and stockpiles accumulated from dredging poses a potential environmental risk to operators, nearby neighbours and the surrounding environment.

The management of air quality and emissions associated with the operation of the dredge is described in the Contractor's EMP.

Air quality and emissions management associated with PoB dredging and on-shore placement is described below:

Objectives	• To ensure that the release of toxic, noxious or offensive odours, airborne contaminants and particulate matter including dust resulting for the works does not cause an environmental nuisance at any nuisance sensitive place. • To ensure that the conservation of energy and reduction of greenhouse emissions is considered during works. • Compliance with approval conditions and management plans.	
Potential Impacts	• The release of toxic, noxious or offensive odours, airborne contaminants and particulate matter including dust resulting for the works may cause an environmental nuisance at a sensitive place. • Unmitigated energy consumption and greenhouse gas emissions.	
Control Strategy	• Regular maintenance of plant and equipment by operator. • Implementation of dust control measures if required.	
Actions	1	To reduce the creation of fumes, plant and equipment should be serviced and inspected regularly.
	2	No solid wastes will be burnt or stored on site long enough for it to decompose and cause odour nuisance.

	3	All complaints or incidents pertaining to air quality should be reported as per Section 4.10 of this EMP. Locate the source of the air quality issue and improve control mechanisms.
	4	If air quality issues persist, cease the activity and schedule maintenance and / or corrective actions.
	5	Vessel log records of unusual events including breakdowns and general observations.
Performance Indicators	1	No dust or air quality related complaints.
	2	No visible plumes seen / extending outside the work site.
	3	No noxious or offensive odours or fumes that causes environmental nuisance at a nuisance sensitive place.

5.3 Noise, Vibration & Light

Dredging activities involve the use of powered mobile equipment operating 24 hours, 7 days a week for the duration of the works.

Noise, vibration and light management associated with the operation of the dredge is detailed in the Contractor's EMP.

Noise, vibration and light management associated with maintenance dredging and placement is described below:

Objectives	• To avoid causing noise nuisance to any nuisance sensitive place. • Compliance with approval conditions and management plans.	
Potential Impacts	• Noise, vibration and light from activities may cause environmental nuisance as described in the *Environmental Protection Act 1994 (Qld)*.	
Control Strategy	• To minimise, where possible, nuisance noise, vibration and light from dredging equipment carrying out operational activities. • Plant and equipment to be regularly maintained as to reduce noise and vibration from mufflers and general movement. • Noise suppression devices fitted to plant and equipment if possible / practical.	
Actions	1	Noise, vibration and light from the works will be minimised to avoid causing an environmental nuisance at any nuisance sensitive place.

		Where nuisance noise, vibration or lighting is identified, determine the source, alter the source and / or instigate abatement measures.
	2	Appropriate Personal Protective Equipment will be issued to Employees by their employer
	3	Plant and equipment will be well maintained.
	4	Noise suppression devices fitted to plant and equipment if possible / practical. Where possible, schedule operations so that potentially noisy equipment is used separately, rather than concurrently and during daylight hours. Note dredging is exempt.
	5	Where possible lights will be positioned away from populated areas.
	6	When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of nuisance noise, and the results notified within 14 days to the administering authority. Monitoring must include: • LA 10, adj, 10min; • LA1, adj, 10 min; • LA90, adj, 10 min; • the level and frequency of occurrence of impulsive or tonal noise; • atmospheric conditions including wind speed and direction; • effects due to extraneous factors such as traffic noise; and • location, date and time of recording. The method of measurement and reporting of noise levels must comply with *DES Noise Measurement Manual*. Noise and / or vibration and / or lighting monitoring may be undertaken at GPC's discretion to investigate any complaint about nuisance noise, vibration and/or light being caused by an activity. Monitoring will be undertaken to the appropriate standard or DES manual in relation to sensitive location (from complainant) to determine the impacts (i.e. nuisance issue), the source and records kept.
Performance Indicators	1	Noise, vibration and light from the works will not cause environmental nuisance at a nuisance sensitive place.

	2	No noise, vibration and lighting complaints received associated with the dredging or reclamation works.

5.4 Cultural heritage

Discharging “cultural heritage duty of care” by ensuring that Aboriginal cultural heritage will not be harmed during extraction of material and reclamation works.

PoB has known cultural heritage locations (land and intertidal).

Cultural heritage management associated with the operation of the dredge will be detailed in the Contractor’s EMP.

Cultural heritage management associated with maintenance dredging and placement is described below:

Objectives	• Ensure Indigenous and European Heritage items / areas are not impacted and compliance with approval conditions and management plans.	
Potential Impacts	• Non-compliance with *Aboriginal Cultural Heritage Act 2003* (Qld) and *Queensland Heritage Act 1992* (Qld) may lead to cultural heritage harm. This may lead to fines and /or prosecution under these Acts.	
Control Strategy	• Works conducted within approved locations. • Avoidance of known cultural heritage places.	
Actions	1	Cultural Heritage Management Plan compliance (#509564) and protection of known cultural heritage locations.
	2	If cultural heritage items are observed / suspected during woks, the activity will cease immediately and a reasonable exclusion zone designated around the item.
	3	The identification of any potential cultural heritage item(s) must be notified as per the Incidents procedure in Section 4.10.
	4	Any potential heritage item(s) will be assessed in situ by an approved representative of the appropriate claimant group.
Performance Indicators	1	No cultural heritage harm that causes a non-compliance with *Aboriginal Cultural Heritage Act 2003* (Qld) and *Queensland Heritage Act 1992* (Qld) associated with the works.
	2	Known cultural heritage locations are not disturbed by dredging activity.

5.5 Biodiversity

(a) Fauna

Dredging has the potential to have an impact on marine fauna including megafauna. A number of these species are considered threatened and / or migratory under various legislation; as such the works need to be conducted in a way that minimises impact to marine and terrestrial fauna.

The nearby turtle rookery Mon Repos is a well-known breeding location hence being a significant environmental mega fauna site in the Bundaberg area. If dredging is required during turtle breeding season (October to February inclusive) then permission from DES is required and Referral under the EPBC Act may also be required depending on the proposed works.

Barubbra Island Conservation Area is identified as the closest sensitive receptor to the Port of Bundaberg and Wallace Creek Conservation Area is adjacent to the MRA.

The specific management actions of marina fauna interactions associated with the operation of the dredge is detailed in the Contractor's EMP.

The management of marine fauna associated with maintenance dredging and placement is described below:

Objectives	• Minimisation of impacts on marine fauna and compliance with approval conditions. • Prevent potential impacts on terrestrial fauna. • Ensure there is no introduction of marine pest as a result of the works.	
Potential Impacts	• Harm to marine fauna may affect the sustainability and diversity of both flora and fauna populations in the Burnett River. • Potential harm to terrestrial fauna through poor management of the MRA and associated infrastructure.	
Control Strategy	• Dredge Contractor to watch for marine mega fauna prior to start-up of works and during works. • Where practicable, ensure only vessels from within Australia conduct the works. • Fauna exclusion devices fitted. It is noted that such devices are normally only required for TSHD and would not normally be fitted to CSD's. • Use of dredge head jets and variable pump speed on TSHD. • Appropriate management of MRA and associated infrastructure.	
Actions	1	*TSHD Brisbane* to ensure:

		• drag head water jets are activated at times when the dredge drag head are not in contact with the seabed and when pumps are in operation; • the dredger suction units are not operational during transit to and from the material grounds; and • pumps are run at slowest speed during initial suction at the dredge head (start dredging) and final suction of the dredge head (end of dredging).
	2	**Marine Observations** • All practical efforts will be made to avoid interaction between the dredge and marine species during dredging. • Marine Species include whales, dolphins, and porpoises, turtles, dugongs, sharks, rays, seals, and crocodiles within the monitoring zone. • For TSHD's a monitoring zone of at least 500m where mega species are observed. • A Marine Species Observer is a person designated by the dredging Contractor, as suitably experienced to identify and document marine species observations. The Marine Species Observer will have no other duties while making these observations. • From the dredge the Marine Species Observer makes observations that occur 30 minutes prior to placement activities commencing, and throughout any placement activities at a frequency of at least every 30 minutes in the monitoring zone. The monitoring zone is the area directly around the dredge and undertaken from a suitable observation position using binoculars. • Marine based works will not start or recommence until the marine species moves beyond the monitoring zone or 30 minutes has passed and the animal(s) has not been observed within the monitoring zone in that time or the vessel has moved to another area in the MRA where there is no marine species in the monitoring zone. • The marine species observations shall be entered into a daily log and copies of log records are to be sent to GPC when requested and at the completion of each dredging campaign. • All other adhoc observations during the activity shall also be recorded in the daily log.
	3	**Vessels**

		• Exclusion devices – TSHD shall be fitted with turtle exclusion device to minimise the risk of direct impact on turtles during dredging activity. GPC should be notified when these devices are removed and/or not in use under Section 4.10. . • Engineering controls – CSD's have limited mobility, smaller dredging surface and variable speed. Marine fauna is usually highly mobile and can easily move away from the activity. • Dredgers undertake plume management when dredging, to reduce the visible plume and impact on marine fauna.
	4	**Marine Mega Fauna fatalities/injuries/strike** • In the event of a Fauna Strike by the dredger – the dredger to contact the GPC Environment Superintendent or Specialist - Harbours & Channels immediately within the period of 6am to 10pm. For example, if a turtle strike occurred at 2am, then the dredger must make contact at 6am immediately following the turtle strike. • Dredge Contractor to immediately contact GPC (Specialist - Harbours & Channels) and 1300 130 372 who will contact QPWS. GPC will immediately contact relevant agencies to advise of the fauna strike. • Collect and inform GPC of details including photographic evidence where possible of the megafauna incident – type, size, sex, gravid, injuries, status (alive or dead), other pertinent information, location, date / time, tide and operational info applicable to incident. • Monitor the location of the injured / dead animal and retrieve it safely where possible. • Investigate the incident with the dredging Contractor. • Implement any mutual agreed additional controls based on the investigation, including immediate, mid and long term control measures. These additional control measures could include increasing the intensity of monitoring and potentially shifting the location of the dredge operations. • Document and record the details in GPC's incident management system. • Provide a report to the relevant authorities. • In the event that any endangered species (as prescribed under the *Nature Conservation (Wildlife) Regulation 2006*) of turtle is fatally

		injured on any two out of any three consecutive days the operation must be halted i.e. if a single fatally occurs on day one and a single fatally occurs on day three of any three consecutive days of operation, the operation must be halted, and not recommence until consultation with officers from the department has been undertaken.
	5	Where practicable and safe all turtle carcases and/or parts of turtle carcases (of any species) that are observed at any time during the emergency dredging program must be retrieved and appropriately stored to prevent further deterioration for analysis in relation to cause of death. This necropsy is undertake by a qualified vet.
	6	**Other Fauna Interactions** GPC flora and Fauna Guideline provides advice on fauna interactions (e.g. Snake sightings)
	7	**Marine Pest** Should a marine pest invasion be identified, GPC is to be notified as per the incident procedure in Section 4.10. GPC's Environment team will contact the relevant authorities and undertake instruction and action as directed by the relevant authorities.
	8	**Ballast Water Management (*TSHD Brisbane*)** • As per contractors Environmental Management Plan
	9	When undertaking land placement, releases to the MRA must be managed to minimise unnecessary impacts to marine fauna and flora that exist in the designated area. Refer to Section 5.1 for additional control measures.
	10	No new habitat disturbance – marine or terrestrial.
Performance Indicators	1	No fatalities / injuries of marine megafauna associated with the works.
	2	No marine pest incursion associated with the works.
	3	No impact on terrestrial fauna from dredging activity
	4	No release of high risk ballast water during operations.

(b) Flora

Dredging has the potential to directly and indirectly impact on marine and intertidal flora and can consist of seagrass, mangroves, salt couch, existing sporadically or as a part of a coastal wetland system. Terrestrial fauna may be impacted by dredge to land activities.

The management of flora associated with the operation is not specifically addressed in the Contractor's EMP.

Dredging and placement activities undertaken by the Contractor will be restricted to approved and previously disturbed areas. Turbidity will be managed in accordance with the Contractor's EMP and the management of ballast water associated with the operation is detailed in the Contractor's EMP. These actions contribute to the mitigation of impacts on flora within the Port of Bundaberg during the operation of the dredge.

Barubbra Island Conservation Area is identified as the closest sensitive receptor to the Port of Bundaberg and Wallace Creek Conservation Area is adjacent to the MRA.

The management of marine fauna associated with maintenance dredging and placement is described below:

Objectives	• Ensure there is no material or perceived harm to the sensitive receptor – Barubbra Island Conservation Area. • Prevent potential impacts on intertidal and terrestrial flora.	
Potential Impacts	• Potential for habitat disturbance affecting existing flora and fauna within the Burnett River. • Potential harm to terrestrial flora through poor management of the MRA and associated infrastructure.	
Control Strategy	• No sensitive environmental receptor is located within the footprint of the works. • Restrict disturbance to approved footprint of dredging and placement areas, therefore minimising flora impact. • Turbidity generated from the dredging will be kept to a minimum. • Habitat Disturbance state approval for Marine plants 2007/DB0233 for sea dumping. • Appropriate management of MRA and associated infrastructure. • LMDMP implementation which seeks to inform GPC of environmental impacts.	
Actions	1	Restrict disturbance to approved footprint of dredging and placement to minimise flora impact, by recording confirmation of areas dredged and where material is disposed.

		Material ground placement must be evenly distributed and dumped at a different location in the material ground with each load. For land placement to the MRA, undertaking weekly visual observations of any seepage or leak from the MRA that may impact the surrounding area.
	2	Turbidity generated from the dredging will be kept to a minimum and visible observations of the plume made regularly to assess the effectiveness of operation and controls.
	3	Purpose built MRA when undertaking land placement, through appropriate construction, maintenance and operation can minimise impact on terrestrial and intertidal flora biodiversity.
	4	Releases to the MRA must be managed to minimise unnecessary impacts to marine fauna and flora that exist outside the MRA. Refer to Section 5.1 Land Management for additional control measures.
	5	Sensitive receptor monitoring and baseline and impact water quality monitoring, as an indicator of habitat health. Refer to Section 5.7 Water Quality.
	6	**Flora Impact** GPC Flora and Fauna Guideline provides advice if flora is suspected to be impacted.
Performance Indicators	1	No direct impacts on sensitive receptor - Barubbra Island Conservation Area as a result of dredging and placement works.
	2	No direct impacts on marine plants and terrestrial / intertidal flora outside the MRA as a result of dredging and placement works.

5.6 Waste Management

(a) Hazardous Substances Handling and Storage

Powered mobile equipment used to dredge utilise Diesel, Engine & Hydraulic Oils. These hazardous substances need to be managed to protect the environment.

The management of waste associated with the operation of the dredge is detailed in the Contractor's EMP. The management of vessel wash down associated with the operation of the dredge is detailed in the Contractor's EMP.

The management of hazardous substances associated with maintenance dredging and placement is described below:

Objectives	• Prevent contamination of land or water on or around site in accordance with EMP and approval conditions. • Fuels, oils and greases to be contained and controlled in a manner that prevents environmental harm. • Spills of fuel, oils and greases are contained and cleaned up so that no environmental harm occurs.	
Potential Impacts	• Poor practices with hazardous substance handling, storage and spill response can lead to contaminated land and/or marine pollution.	
Control Strategy	• To risk assess activities involving hazardous substances. • To train Employees undertaking activities involving hazardous substances. • To reduce the risk of spills occurring. • To clean up spills effectively.	
Actions	1	Risk assess activities involving hazardous substances. Use appropriate receptacles to encourage correct waste segregation.
	2	Emergency response procedures are implemented and Employees are suitably trained.
	3	Spill equipment is available and Employees are familiar with its use.
	4	Regular housekeeping and maintenance of work areas, storage areas, transfer equipment and spill equipment.
	5	Hazardous substances will be contained and controlled in a manner that prevents environmental harm. All bunding is to comply with Australian Standard 1940:2004 the storage of flammable and combustible liquid. All bunding will be appropriately sized for the application and capacity maintained (e.g. kept free of rain water). Spill prevention fittings / equipment shall be utilised when practicable.
	6	A register is maintained of hazardous substances stored / used on the dredge and MSDS sheets are available.

	7	All operational procedures involving hazardous substances shall be documented and Employees trained e.g. A procedure for refuelling bunkering.
	8	All contaminant spills must be cleaned up immediately.
	9	Contaminants disposed of as Regulated wastes (see Section 5.6(b)).
	10	Emergency pollution equipment will be readily available on the dredge.
	11	Pre-start checks and preventative maintenance regime for plant and equipment.
	12	Any site contamination discovered as a result of the works is to be fully remediated to the satisfaction of GPC's Environment Superintendent.
	13	Bunkering of fuel – During land transfer a licensed Contractor is used to transfer fuels and levels shall be monitored.
Performance Indicators	1	No incidents involving Fuel, Oil, Grease or other hazardous substances that cause or have the potential to cause serious or material environmental harm.
	2	Effective and efficient clean-up of all spills and removal of contamination.
	3	Correct disposal of contaminated products.

(b) Waste (including Regulated Waste)

When spill kits are employed or soil is contaminated with oil / diesel, it requires correct disposal as a hazardous waste.

The management of wastes including regulated wastes associated with the operation of the dredge is detailed in the Contractor's EMP.

The management of regulated wastes associated with maintenance dredging and disposal is described below:

Objectives	• Use the hierarchy of controls for general waste • Track and quantify regulated waste generation and removal. • Ensure regulated wastes are stored, transported and disposed of appropriately.

Potential Impacts	• Poor disposal of waste can lead to contaminated work areas and possible harm to the wider environment.	
Control Strategy	• To track regulated waste generation, transport and disposal in dredging activities. • Provide sufficient waste receptors to ensure there is no litter entering the marine environment. • Reduce, reuse, recycle, store, transport, handle and dispose of waste streams appropriately.	
Actions	1	Keep the following records when regulated waste is removed from site: • the date; • quantity and type of waste removed; • the name of the waste transporter and/or disposal operator that removed the waste; and • the intended treatment/disposal/destination of the waste.
	2	Regulated waste must be transported by licensed Contractor to be disposed at a licensed place.
	3	Sewerage holding tanks should be pumped out regularly by a licensed Contractor to an approved location.
	4	Any waste spills shall be cleaned up immediately.
	5	Regulated wastes will be contained and controlled in a manner that prevents environmental harm. All bunding is to comply with Australian Standard 1940:2004 the storage of flammable and combustible liquid. All bunding will be appropriately sized for the application and capacity maintained (e.g. kept free of rain water).
	6	Designated regulated waste areas / bins provided to encourage waste segregation.
	7	Any site contamination identified as a result of the works is to be fully remediated to the satisfaction of GPC's Environment Superintendent.
	8	Non-regulated Waste Protocols: • seek opportunities to reuse and recycle; and

		• designate general waste and recycling bins to promote waste segregation of waste streams.
	9	Waste must not be burnt.
Performance Indicators	1	No incidents of regulated waste being spilt, stored, transported and/or disposed of incorrectly.

5.7 Water Quality

GPC is aware that dredging has the potential to impact on water quality, namely through increased turbidity, suspended solids and decreased pH or change in groundwater standing water level during land placement.

Appropriate management controls will be in place to ensure that impacts at dredge head and sea placement, land placement or other approved placement area are reduced /controlled as much as possible and that discharge waters from on-shore placement are compliant with licence release limits.

Barubbra Island Conservation Area is identified as the closest sensitive receptor to the PoB and Wallace Creek Conservation Area is adjacent to the MRA.

The management of water quality associated with the operational controls of the dredge is detailed in the Contractor's EMP.

The management of water quality associated with maintenance dredging and placement is described below:

Objectives	• Ensure water quality in the PoB is managed and there is no direct environmental impact on sensitive receptor - Barubbra Island Conservation Area or local environmental values. • To meet licence release limits for discharge of tail waters. • There are no spills or wastes into the marine environment.
Potential Impacts	• Potential for water quality changes that can have an impact on marine flora and fauna in the PoB. • Poor water quality can affect the visual amenity nuisance at PoB.
Control Strategy	• Discharge waters within licensed water quality parameters. • MRA is designed, maintained and operated to effectively treat and discharge compliant waters and not cause impact. • PoB water quality base line data is collected and impacts of dredging is monitored and managed. • Adaptive management actions are implemented to ensure that turbidity plumes do not cause impact.

		• Hazardous substances, wastes and regulated wastes are handled, stored, transported and disposed as per Section 5.6 to avoid pollution of waters.
Actions	1	**Dredging at Sea or other approved marine relocation:** • Use primarily for maintenance dredging (5-6 days duration). • Dredging is limited to defined footprint and placement is limited to the defined material ground (when used in conjunction with Sea Dumping Permit) or approval of other placement location (i.e. Northern Training Wall stability under approved Section 86 of *Harbours Act 1955* (Qld)). • The operator must install, maintain and operate equipment to ensure permit compliance (e.g. dredge equipment, monitoring equipment) in compliance with Port of Bundaberg Environmental Monitoring Procedure. • Release of contaminants must not be directly or indirectly released to waters, other than those permitted by a condition of an approval, released from a specific discharge points during the loading or unloading of dredge material. • The release of contaminants (including any release caused by extraction of the material from the seabed or waters), must be within dredging permitted areas, do not have properties to cause environmental harm, do not produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease scum or litter and be carried out taking all practical measures necessary to minimise the concentration of suspended solids released during the loading and pump out of the vessel. • Monitoring and adaptive management requirements are outlined in the Port of Bundaberg Environmental Monitoring Procedure. Equipment used must be in survey and registered and meet the design conditions outlined in the approvals.
	2	**Dredging with land placement:** • Land placement is permitted only on occasions when maintenance dredging is required and sea placement of material as authorised by permit EPPR00571913 (Section 2), is not available or practicable in the circumstances. • All reasonable and practical measures must be implemented to prevent or minimise the release of contaminants to the Burnett River from the dredge head, pump out or general marine operations.

		• No unlawful release of dredge material into the Burnett River or Wallace Creek. • Contaminants released at the point of dredging must not produce any slick or other visible evidence of oil and grease, nor contain visible floating oil, grease (including grease balls), scum or litter. • Monitoring and adaptive management requirements are outlined in the Port of Bundaberg Environmental Monitoring Procedure. Material placement on Land and Decant Releases • Only discharge material in MRA. The MRA has two alternative approved inlets, with designated flow paths and corresponding outlets. • The operator must install, maintain and operate infrastructure and equipment to ensure approval compliance (e.g. MRA, dredge equipment, pipework, monitoring equipment). • Decant waters are only allowed for release at MRA approved outlet structures (weir boxes). • All reasonable and practical measures must be implemented to prevent or minimise the release of contaminants to Wallace creek, other than clean return waters resulting from the placement of dredge material to the material relocation area. • Groundwater bores have been selected / installed by a suitably qualified person to identify fluctuations in standing water levels and quality due to the placement of dredge material. • Monitoring and adaptive management requirements are outlined in the Port of Bundaberg Environmental Monitoring Procedure.
	3	**Spills** Refuelling, hazardous substance management and regulated waste management is to be conducted in accordance with Section 5.6.
	4	**MRA** MRA Integrity • Weekly MRA visual inspections when dredging with land placement as per Section 4.9 to assess integrity of MRA including surface / ground water and erosion and sediment controls which affect water quality. Acid Drainage

		• Acid Sulfate Soils must be managed in accordance with Section 5.1.
	5	**Operational Considerations** • The placement of material shall only occur in permitted areas. • As required, controls on board the dredge (e.g. GPS) to allow accurate placement of material, to reduce turbidity plume generation. As required, regular surveys to be conducted to confirm placement of material. • All plant and equipment shall be maintained and operated as per design specifications. • Daily log and record of observation by dredging Contractor on effect of dredging on the visual amenity of the Port. If observations indicate sediment plume in excess of normal operations then a review of work methods and consideration of additional controls shall be considered. • All equipment (including monitoring equipment, pipes, vessel, land based equipment) and infrastructure (e.g. MRA) shall be fit for purpose. • MRA can be operated to maximise retention time, while maintaining infrastructure integrity. • MRA is capable of holding a 1 in 10 year ARI (10% capacity affected) without adversely impacting dredging to land activity. • Marine vessels are in survey, have stability controls and are operated by trained Employees.
	6	Vessel Wash-down • Sweeping of deck in preference to washing where possible. • Washdown of the deck and or dredge head shall only occur within the designated dredging or placement areas. • Only dredge sediment to be release as a result of vessel washing activities (i.e. no release of oil or other contaminants).
Performance Indicators	1	No non-compliant discharge of dredge decant waters measured at approved monitoring points.
	2	No release of contaminants during works which have properties capable of causing environmental harm.
	3	All contaminant spills cleaned and remediated effectively.

	4	Minimise any nuisance complaints from visual amenity of receiving waters.

5.8 Social

The TACC for Maintenance Dredging activity in the PoB meets annually to discuss any issues from the previous year's dredging / placement or any emerging issues that may have been encountered at other locations outside of PoB and provide recommendations as appropriate. The TACC membership includes GPC, regulatory bodies and special interest groups / persons (e.g. Environmental and Indigenous).

(a) Public Perception and Acceptance

GPC activities and the City of Bundaberg are intertwined both geographically and historically. A harmonious relationship is desired for GPC to continue to operate effectively.

Objectives	• To gain positive public perception and acceptance and avoid creating environmental nuisance.	
Potential Impacts	• Poor public perception and acceptance could lead to a disconnect between GPC and the community, making operational activities unwanted and unpopular.	
Control Strategy	• To welcome complaints and ideas from members of the public and thoroughly investigate their merit and provide feedback. • Uphold the commitments made in this EMP in order to operate in a lawful and responsible manner. • Engage the community through appropriate communications.	
Actions	1	Undertake regular communication to the public via various media to inform and educate the public about GPC and its dredging activities within the PoB.
	2	Uphold the commitments made in this EMP to reduce the risk of legislative breach or environmental nuisance.
	3	Hold annual Bundaberg TACC meetings to provide relevant information on maintenance dredging activities within the PoB.
Performance Indicators	1	No public complaints as a result of the GPC maintenance dredging activities.

(b) Public Interactions

GPC activities occur on and beside the Burnett River that is used by others both on a commercial and recreational basis. A harmonious relationship is desired for GPC to continue to operate effectively.

Objectives	• To have minimal impact on other users of the Burnett River.	
Potential Impacts	• Poor communication and practices could lead to a disconnect between GPC and the community, making operations activities unwanted and unpopular.	
Control Strategy	• To welcome complaints and ideas from members of the public and thoroughly investigate their merit and provide feedback. • Uphold the commitments made in this EMP in order to operate in a lawful and responsible manner. • Engage the community through appropriate communications. • To communicate with MSQ and PoB stakeholders to ensure that vessel interactions and dredging activities are acceptable and that no intentional damage occurs to Navigational Aid or other safety infrastructure in PoB.	
Actions	1	Communicate prior to dredging with MSQ.
	2	Communicate with the public on the water through designated local marine radio channels.
	3	Minimise risks from interactions from positioning equipment on dredge and using appropriate vessel lighting as per MSQ requirements.
	4	Any obstructions encountered during activity will be removed to the satisfaction of the Harbour Master.
Performance Indicators	1	No public complaints as a result of the GPC maintenance dredging activities.

6 Roles and Responsibilities

GPC Employees and Contractors are responsible for the environmental performance of their activities and compliance with the approvals relevant to this development, as detailed in Table 1 above. GPC Employees and Contractors are also responsible for complying with the general environmental duty as set out in Section 319 (1) of the *Environmental Protection Act 1994* (Qld) which states:

> *"A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to minimise the harm."*

Table 5, below provides a summary of the responsibilities and accountabilities of GPC Employees associated with the implementation of this EMP.

As the dredging will be primarily undertaken by the dredging Contractor, the Contractor will also have responsibilities and accountabilities detailed in their EMP.

Table 5: Environmental Roles and Responsibilities

Position	Responsibility
Executive General Manager – Marine Operations	Overall responsibility for marine based activities and strategic direction.
Specialist - Harbours & Channels	Responsible for overall on-site management of PoB activities, including maintenance dredging activity.
PoB Maintenance Supervisor	Responsible for overseeing the Contractor's works, operational issues and compliance with GPC's EMP.
Contractor	Responsible for meeting GPC's contracted requirements.
Executive General Manager – ESG	Overall responsibility for Environmental policy, strategy and Environmental Management System framework.
Environment Superintendent	Ensure environmental management, reporting and auditing responsibilities are met.
Environment Specialist	Responsible in monitoring of EMP implementation and compliance with approval conditions.
Environment Monitoring Specialist	Responsible for the coordination of GPC environmental monitoring programs.
Employee and Contractors	Responsible to follow EMP
Environment Emergency Hotline	General and afterhours contact for the GPC environmental team

7 Appendices

7.1 Appendix 1 – Related documents

(a) Legislation and regulation

Key relevant legislation and regulation, as amended from time to time, includes but is not limited to:

Type	Legislation/regulation
Federal Acts	*Environmental Protection (Sea Dumping) Act 1981* *Environment Protection and Biodiversity Conservation Act 1999* *Biosecurity Act 2015*
State Acts	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Fisheries Act 1994* *Biosecurity Act 2014* *Transport Operations (Marine Safety) Act 1994*
Other	International Convention for the Prevention of Pollution from Ships - MARPOL Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter – London Protocol

(b) Gladstone Ports Corporation documents

The following documents relate to this Plan:

Type	Document number and title
Tier 1: Policy	#366016 Environment Policy #924357 Risk Management Policy
Tier 2: Standard/Strategy	#801782 Environment Strategy #809151 Environmental Management Standard #995910 Safety Environment and Security Standard for Contractors and Port Users #829152 Risk Management Standard #1334976 Waste Management Strategy

Type	Document number and title
Tier 3: Specification/ Procedure/Plan	#146256 EMS Plan #1032515 Environmental Standard for Tenants #314935 Environmental Monitoring Schedule #934182 Standard for Learning and Development #1092359 HSEQ Communication and Consultation Procedure #1245255 HSEQ Audits, Inspections, Interactions and Observations Procedure #142189 HSEQ SAI360 Action Management Procedure #1075526 Incident Management and Investigation Procedure #1044716 Environmental Complaints Management Procedure #1257595 Flora and Fauna Management Guideline #724856 Port of Gladstone, Long term management and monitoring plan (LMDMP 2012-2022) #964306 Bundaberg Maintenance Dredging Environmental Monitoring #1468341 Maintenance Dredging TACC Terms of Reference
Tier 4: Instruction/Form/ Template/Checklist	#1007885 Legal and Other Requirements Register #1292854 Conditions Register #764185 Risk Register #843113 Regulatory Training Matrix #101314 Incident Management and Reporting #1621179 GPC Corporate Glossary Instruction
Other	#1731208 Environmental Authority EPPR00571913 #1762465 SEA DUMPING PERMIT V1 - signed – 13 December 2021 to 30 May 2023 #494589 Operational Works - IPDC00649407 #1471116 AQM0031 - replaces ENAD00145612 (with MSQ & DAF concurrences) #1572650 PoB SAP Report 2019

7.2 Appendix 2 – Approvals

DOCSCQPA-#1731208-ENV S215 anmendment part 3 of EA EPPR005719193 (sand screening) to remove the need to undertake dust monitoring 25/08/2021

DOCSCQPA-#1898960-ENVB SD2023-4053 - Port of Bundaberg - Sea Dumping Permit - 06/09/2023

DOCSCQPA-#494589-2009-09-17 Copy of Operational Works - IPDC00649407 - Material Disposal Approval for Placement at approved material ground

DOCSCQPA-#1912431-ENV PoB Allocation of Quarry Material AQM0122 13/06/2023

7.3 Appendix 3 – First Strike Response Plan

MSQ First Strike Response Plan – Port Of Bundaberg

& POLREP (Maritime Safety Queensland Marine Pollution Report)

7.4 Appendix 4 – Revision history

Revision date	Revision description	Author	Endorsed by	Approved by
17/07/2020	HSF revision	Terese Tobin, Environment Specialist	Jason Pascoe, PoB Manager	Line' Corfixen, Acting Manager Port Operations & Performance
17/02/2021	Inclusion of Section 3.6	Terese Tobin, Environment Specialist	Jason Pascoe PoB Manager	Line' Corfixen Acting Manager Port Operations & Performance
07/03/2022	2022 review + alignment with SD2012-2022 V1	Terese Tobin, Environment Specialist	Jason Pascoe PoB Manager	Line' Corfixen Acting Manager Port Operations & Performance
12/01/2024	Annual Review	Terese Tobin, Environment Specialist	Specialist - Harbours & Channels	Executive General Manager Marine Operations