PORT OF TAURANGA LIMITED

DREDGE MANAGEMENT PLAN – RM – XXX

June 2026

Notes on the DRAFT Version

This is a draft version and as such refers to appendices or documents that are yet to be completed. The document will be updated and finalised to meet the requirements of the Dredging consent conditions upon appointment of a Contractor to undertake the Works and must then be reviewed and subsequently certified by the Bay of Plenty Regional Council (BoPRC).

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1 INTRODUCTION

1.1 Purpose

The purpose of this draft Dredge Management Plan (DMP) is to detail the planned dredging activities authorised by resource consent number [RM-xxxx], detail the measures that will be implemented to address the potential effects of dredging (particularly in relation to the risk from the effects of sediment plumes and the redistribution of invasive pest species that may be present), outline the process for monitoring and the response framework.

As the consent holder, Port of Tauranga Limited (PoTL) must be responsible for ensuring the measures outlined in this DMP are followed by any contractor that undertakes the dredging.

Any updates to this Dredge Management Plan (DMP) must be recertified in accordance with Condition X of consent RM-XXX. The Biofouling Management Plan (BFMP) appended to this DMP is a living document, and updates to the BFMP on its own do not constitute an update to the DMP requiring recertification. An up-to-date BFMP must nevertheless be provided with the notification to dredge under Condition XX of consent RM-XXX.The DMP shall be provided to the Stella Passage Development Advisory Group (SPDAG) prior to any Capital Dredging taking place under Resource Consent RM-xxxx.

1.2 Resource Consents

Resource consent RM-xxxx authorises the following:

- Capital dredging to deepen the existing sitting basins, the approach to Berth 1 and an area of the passing lane to smooth the corner in the Entrance Channel.
- Maintenance dredging of the shipping channel and sitting basins to maintain safe navigable depths.
- Deposition of material offshore and in the Coastal Marine Area (CMA)

Condition [number] of RM-xxxx requires that prior to the first capital dredging works commencing, the consent holder must prepare a Dredge Management Plan, to be certified by the BoPRC no less than twenty (20) working days prior to any dredging operations commencing.

1.3 Document Structure

This DMP is structured as follows:

Section 2	Proposed works and location
Section 3	Location of area to be dredged under consent RM-xxxx
Section 4	Dredging methodology
Section 5	Water quality monitoring
Section 6	Sediment discharge controls and contingency measures
Section 7	Controls to minimise sediment discharges
Section 8	Biosecurity
Section 9	Contingency measures

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Section 10 Waste management

Section 11 Noise Management

Section 12 Navigation

Section 13 Other management protocols

Section 14 SPDAG Feedback

Appendix 1 Marine Mammal Sightings Form

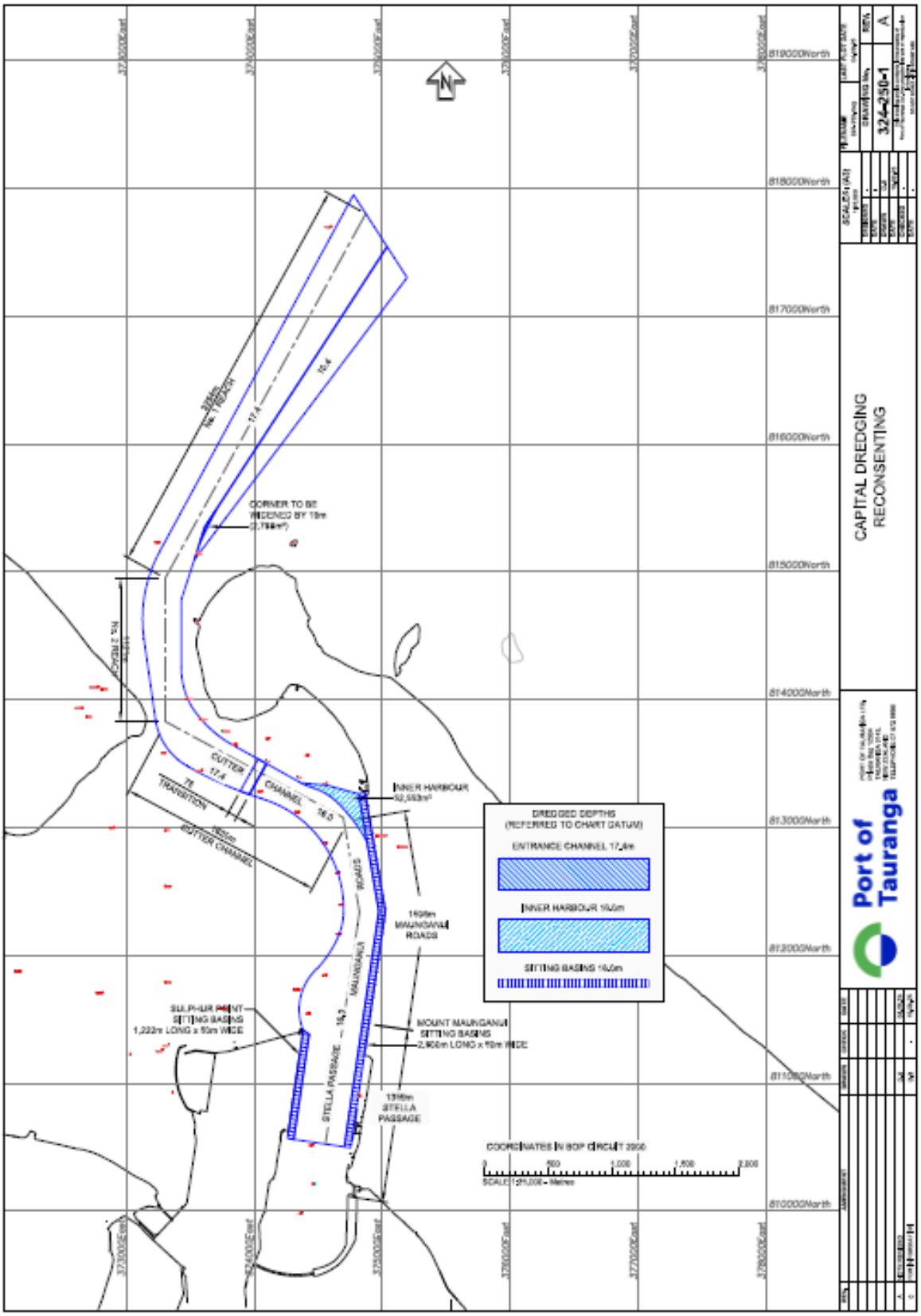
Appendix 2 Biofouling Management Plan – Vessel Specific

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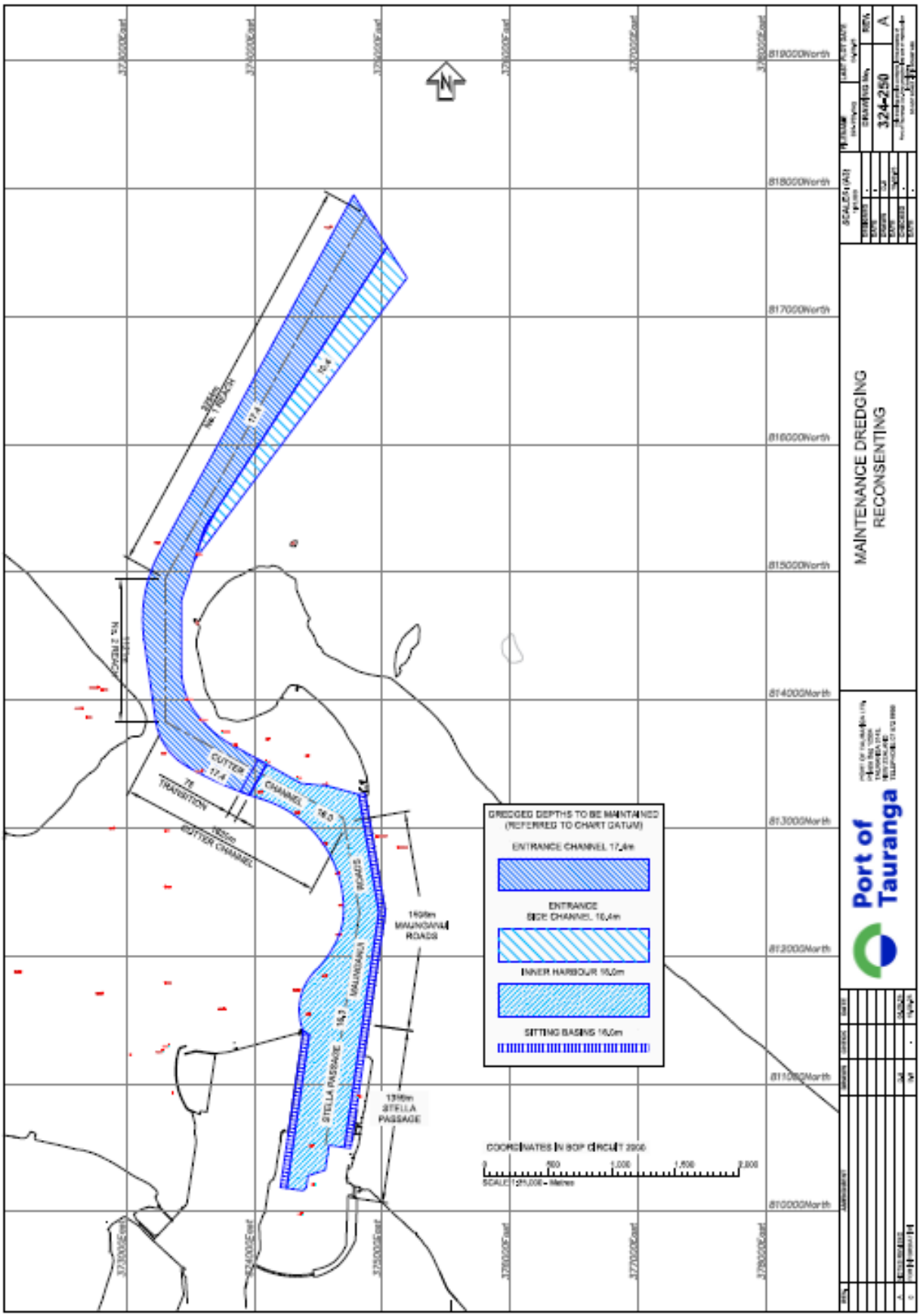
2 PROPOSED WORKS AND LOCATION

2.1 Dredging

The location of the areas to be capital dredged in accordance with consent RM-xxxx is shown in the figure below.



The location of the areas to be maintenance dredged in accordance with consent RM-xxxx is shown in the figure below.



2.2 Deposition

The material removed from the seabed by the dredging will be bought ashore to provide for beach renourishment or reclamation authorized under RM-xxxx or other Resource Consents, or otherwise deposited offshore in the locations shown in the figure below.

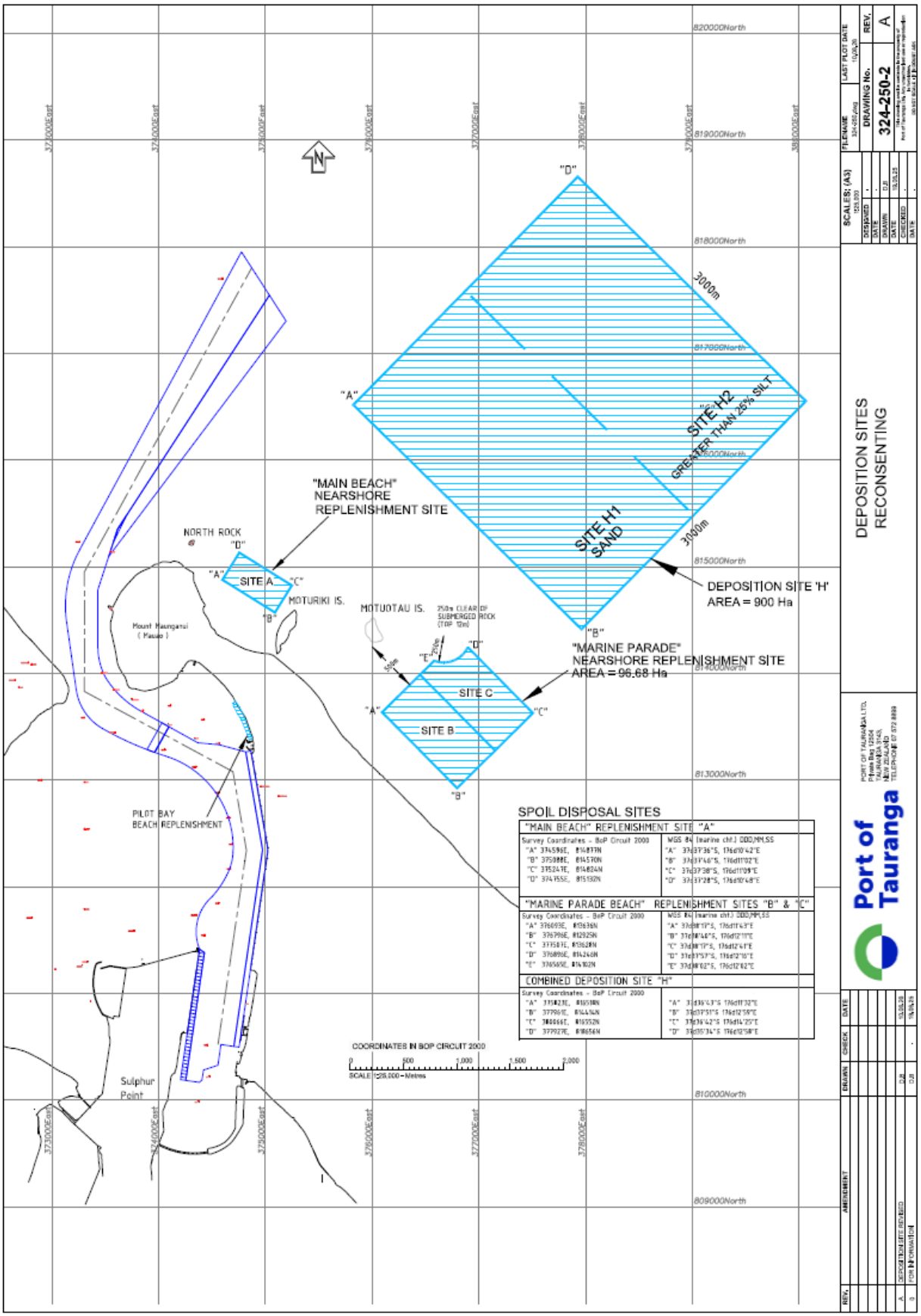
All capital dredged material shall be placed in Site H1 and H2. Material with a high (greater than 25% by weight) proportion of silt shall be deposited in the seaward side of "Site H", H2.

Clean material (containing less than 5% silt by weight) sourced from No 1 and No 2 Reach during maintenance dredging shall be deposited at Sites B or C. Shell content shall be monitored when dredging the entrance channel and if noted as higher than would be expected on the beach shall be deposited at Site H1.

When directed by the Regional Council to deposit material in Site A it shall be clean material sourced from No 1 and No 2 Reach during maintenance dredging. The material shall contain less than 5% silt and have a low shell content.

Material dredged from inside the harbour during maintenance dredging shall be placed in Site H1 and H2. Material with a high (greater than 25% by weight) proportion of silt shall be deposited in the seaward side of "Site H", H2.

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SPOIL DISPOSAL SITES

"MAIN BEACH" REPLENISHMENT SITE "A"	
Survey Coordinates - BoP Circuit 2000	WGS 84 (marine chrt.) DDD.MMSS
"A" 374596E, 814877N	"A" 37d37'36"S, 176d10'42"E
"B" 375088E, 814570N	"B" 37d37'46"S, 176d11'02"E
"C" 375247E, 814824N	"C" 37d37'38"S, 176d11'09"E
"D" 374755E, 815132N	"D" 37d37'28"S, 176d10'48"E

"MARINE PARADE BEACH" REPLENISHMENT SITES "B" & "E"	
Survey Coordinates - BoP Circuit 2000	WGS 84 (marine chrt.) DDD.MMSS
"A" 376693E, 813636N	"A" 37d38'17"S, 176d11'43"E
"B" 376796E, 812925N	"B" 37d38'46"S, 176d12'11"E
"C" 377587E, 813628N	"C" 37d38'17"S, 176d12'41"E
"D" 376895E, 814246N	"D" 37d37'57"S, 176d12'16"E
"E" 376565E, 814102N	"E" 37d38'02"S, 176d12'02"E

COMBINED DEPOSITION SITE "H"	
Survey Coordinates - BoP Circuit 2000	
"A" 375423E, 816518N	"A" 37d35'43"S 176d11'32"E
"B" 377991E, 814414N	"B" 37d37'51"S 176d12'59"E
"C" 378866E, 815152N	"C" 37d36'42"S 176d14'25"E
"D" 377927E, 816656N	"D" 37d35'34"S 176d12'58"E

COORDINATES IN BOP CIRCUIT 2000

0 500 1,000 1,500 2,000

SCALE 1:25,000 – Metres

DEPOSITION SITES RECONSENTING

Port of Tauranga

PORT OF TAURANGA LTD.
PO BOX 29 TAURANGA 3140, NEW ZEALAND
TELEPHONE 07 572 8899

SCALES: (A3) 1:25,000

designed - DATE -
DRAWN DJB DATE 16.06.09
CHECKED - DATE -

FILENAME 324-250.dwg
LAST PLOT DATE 16/06/09
DRAWING No. 324-250-2
REV. A

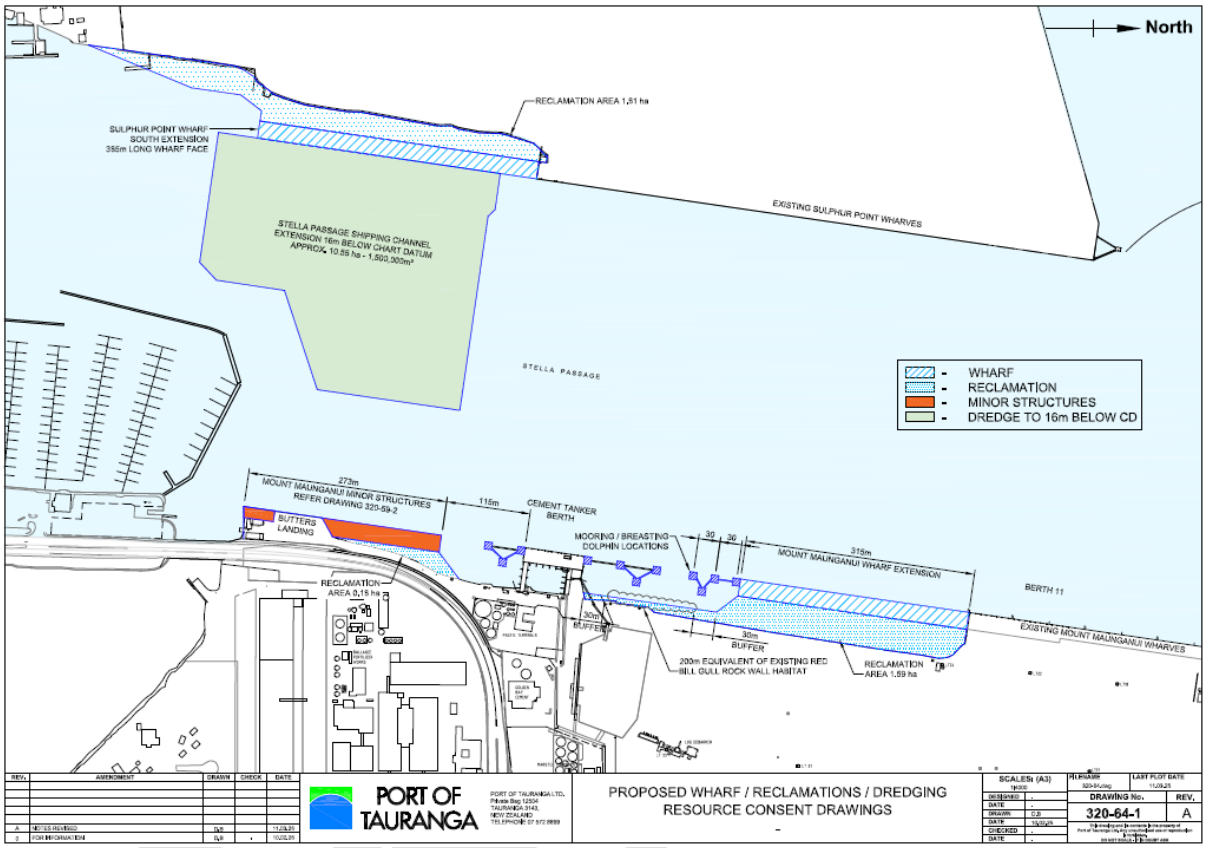
REV.	AMENDMENT	DRAWN	CHECK	DATE
A	DEPOSITION SITES REVISED	DJB		16.06.09
0	FOR INFORMATION	DJB		16.06.09

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3 Location of area to be dredged under consents RM-xxxx

3.1 Location

The area of dredging to form the extension to Stella Passage adjoins the area of consented dredging authorised by resource consents RM-xxxx. That separate proposed dredging area is shown in the figure below.



The capital dredging associated with the Stella Passage Development involves dredging an area currently 4-6m deep to a depth of approximately 16 m to allow vessels to travel further up harbour to berth at proposed southern extensions to the existing Sulphur Point wharves.

Infill occurs throughout the shipping channel and berth pockets. As such maintenance dredging is required to maintain the operational depth of 16 m to provide under-keel clearance for vessels using the channel.

3.2 Compliance

Where the dredging activities under the proposed Stella Passage resource consents and resource consent XXX are to be undertaken as one piece of work the following consent requirements shall be combined:

- Notifications.
- Channel Bathymetric Surveys.
- Deposition Site Bathymetric Surveys.
- Turbidity Monitoring.
- Cultural Monitoring.
- Reporting.

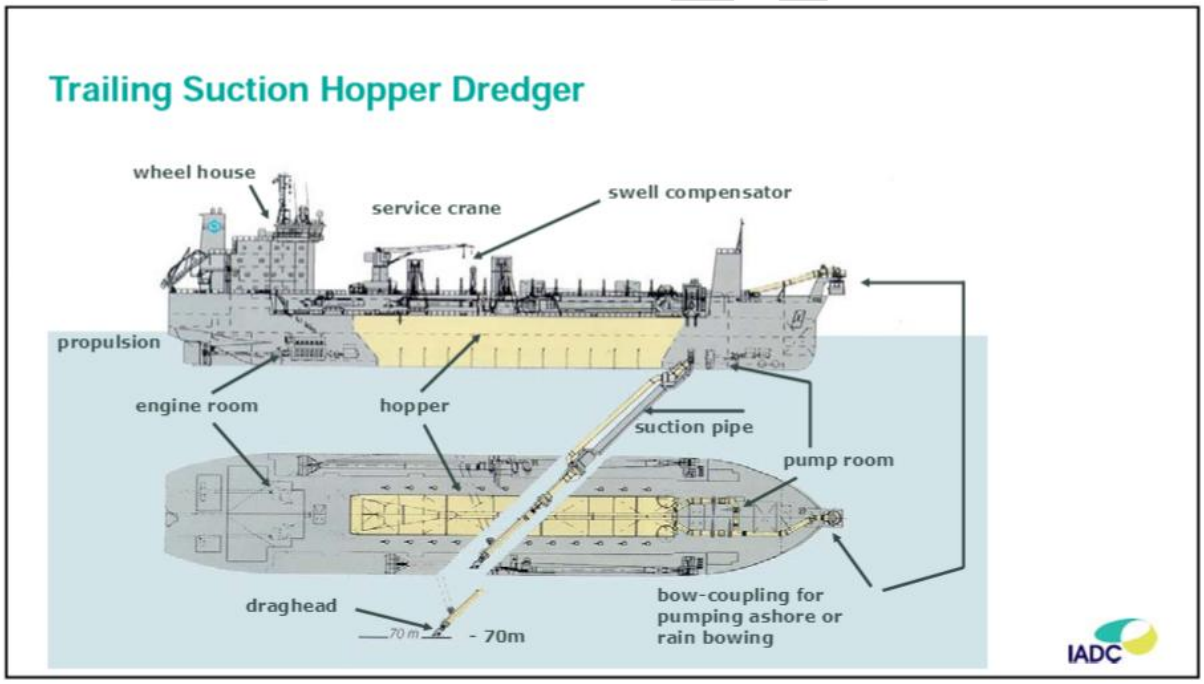
4 DREDGING METHODOLOGY

4.1 Dredging Equipment

The dredging equipment to be used is commonly found operating in ports around the world and has been used at the Port of Tauranga in the past and present.

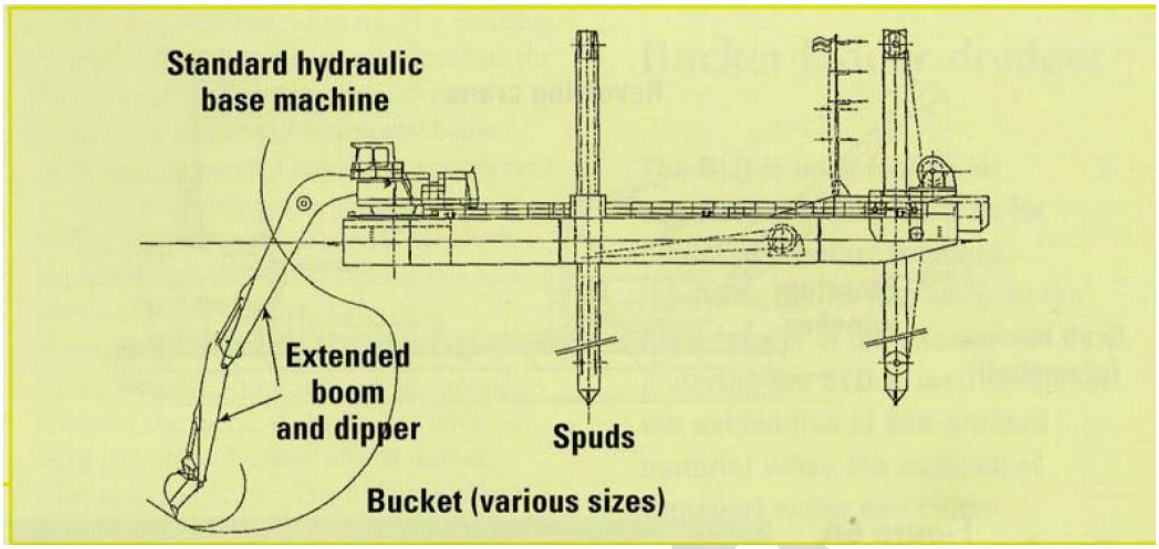
4.2 Trailing Suction Hopper Dredge (TSHD)

TSHDs are self-propelled ships that operate via a long suction pipe (trailing arm) with a draghead (or dragheads) attached that trail alongside the vessel, much like the operation of a vacuum cleaner. The hopper for storing the dredged materials is contained within the hull of the vessel. Refer to the figure below.



4.3 Back-Hoe Dredge (BHD)

The BHD consists of a hydraulic excavator with a single digging bucket at the end of a two-part articulated arm and is very similar to track-mounted machines commonly used on land, with the exception that they are barge-mounted. Refer to the figure below. The term back-hoe is referring to the action of the shovel, which digs by drawing material backwards, rather than scooping or in a forward motion.



4.4 Contractor Specific Details

For capital dredging projects the dredging contractor shall prepare a Dredge Contractor Management Plan (DCMP) with specific detail on how they intend to execute the works. The DCMP shall be submitted to PoTL and confirmed acceptable before the contractor may commence work. The Dredge Contractor shall operate all vessels and perform all dredging in accordance with this DMP and their DCMP.

The DCMP shall include but not be limited to:

- the area to be dredged
    - Sequencing of works
    - Programme of works
- methodology for undertaking the dredging activity
    - Vessel type
    - Vessel size
    - Sea state capabilities
    - Dredging Productivity rates
- controls for minimising sediment discharges
    - Green valve technology
    - Overflow restrictions
    - State of tide dredging restrictions
    - Methods to maximise settling of material in hopper
    - Bottom door seal integrity
- measures taken to prevent the spread of any invasive species within the area to be dredged
    - Biofouling Management Plan

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4.5 Deposition

For all dredging activities the material shall be deposited as evenly as possible over the deposition sites to reduce localised mounding.

For every month that deposition operation occurs a sample shall be taken from the hopper of the dredge and analysed for the proportion of silt to inform the appropriate deposition site.

4.6 Cultural Monitoring

Cultural observers appointed by the Tauranga Moana Iwi Customary Fisheries Trust shall be present during capital dredging activities.

4.7 Surveys

Bathymetric surveys shall be undertaken at any capital or maintenance dredged site prior to and after dredging to allow comparative assessments of the volume of material removed and changes to the geomorphology caused by the dredging.

Surveys of the nearshore deposition sites shall occur prior to and after any material deposition to allow comparative assessments of changes to the geomorphology caused by the deposition.

Surveys of the offshore deposition sites prior to and after any capital dredging deposition shall occur to allow comparative assessments of changes to the geomorphology caused by the deposition.

Surveys of the offshore deposition sites for every 250,000m^3 of maintenance volume deposited shall occur to allow comparative assessments of changes to the geomorphology caused by the deposition.

All Capital Dredging survey results must be published on PoTL's website.

All dredging survey results must be submitted to the BoPRC in accordance with the conditions of RM-xxxx.

The bathymetric surveys shall be conducted in accordance with International Hydrographic Organisation (IHO) standards for Special Order Surveys. All surveys shall be supervised by IHO Category A and/or Certified Professional Hydrographic Surveyor Level 1 (CPHS1) surveyors. These survey standards demand a very high degree of survey accuracy and are performed by the highest qualified professionals.

4.8 Marine Mammals

Dredging contractors must operate in compliance with the Marine Mammal Protection Regulations 1992 to reduce the likelihood of marine mammal ship strike.

Dredge equipment must be regularly maintained, including lubrication and repair of winches, generators, propulsion components and other potential noise sources to reduce underwater noise.

Records of all marine mammal sightings must be collected by the Dredging Contractor during dredging operations in accordance with the following Marine Mammal Sightings Protocol.

On each occasion that a marine mammal sighting is made/received the following actions must occur:

- For every observation a photo must be taken (where possible);
- For every observation a 'Marine Mammal Sightings Form' (refer appendix 1) must be completed. Note, if an individual marine mammal is seen numerous times in a day

then only one sighting form needs to be completed per day for that individual animal; and

- All completed 'Marine Mammal Sightings Forms' and photos must be scanned and emailed to POTL's Environmental Advisor on a monthly basis.

Any injured or dead marine mammals, any physical interaction or any near misses between the operation and marine mammals, must be reported immediately by the Dredging Contractor to PoTL, the BoPRC and Department of Conservation including details of the incident and any mitigation action taken.

PoTL must ensure that dredge masters receive training on:

- the recording and reporting requirements relating to marine mammals;
- compliance with the Marine Mammal Protection Regulations 1992; and
- waste management requirements.

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5 WATER QUALITY MONITORING

All turbidity monitoring results during dredging must be published on PoTL's website.

5.1 Manual Water Sampling

Water quality monitoring must be undertaken through manual turbidity readings taken upstream as background readings and downstream within the active plume with limits on the increased turbidity.

On every second day of dredging operations, the consent holder must undertake measurements, using a back-scatter or nephelometric methods at the following sites:

(a) To determine the natural background turbidity levels:

- 500m up current (away from the direction of the sediment plume) from the actively dredged area.

(b) To determine the turbidity within the water column during dredging operations for a Trailing Suction Hopper Dredger:

- 200m down current from the actively dredged area and/or at Aerodrome Bridge if the plume is going under Aerodrome Bridge.

(c) To determine the turbidity within the water column during dredging operations for a Backhoe Dredger:

- 600m down current from the actively dredged area and/or at Aerodrome Bridge if the plume is going under Aerodrome Bridge.

Note: The "actively dredged area" means the area identified in Section 2 of this DMP.

The results from the measurements taken must not be greater than 15 Nephelometric Turbidity Units (NTU) above the natural background turbidity levels.

If three consecutive measurements are taken and found to comply with the 15 NTU limit monitoring may be suspended for nine (9) days.

If three consecutive measurements are taken and found to exceed the 15 NTU limit specified the consent holder must:

(a) Cease the dredging operations that caused the exceedance.

(b) Notify the BoPRC and the SPDAG.

(c) Consult with the Chief Executive of the BoPRC or delegate and the SPDAG over possible explanations for the exceedance and any proposed measures to rectify the non-compliance (including an amendment to this DMP, if required).

(d) Not recommence the dredging operations that caused the exceedance until any modification to the dredging operation receives the written certification of the Chief Executive of the BoPRC or delegate.

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5.2 Offshore Deposition Site Manual Water Sampling

Water quality monitoring must be undertaken once every week material is deposited in Deposition site H1/H2 through manual turbidity readings taken 100 metres outside the updrift boundary of the deposition site and 100 metres outside the downdrift boundary.

The results from the measurements taken must not be greater than 5 Nephelometric Turbidity Units (NTU) above the updrift background turbidity levels.

If three consecutive measurements are taken and found to comply with the 5 NTU limit monitoring may be suspended for days (30) days.

If three consecutive measurements are taken and found to exceed the 5 NTU limit specified the consent holder must:

(a) Cease the dredging operations that caused the exceedance.
(b) Activate appropriate contingency plans to remedy or mitigate any unacceptable effects detected.
(c) Notify the BoPRC and the SPDAG.
(d) Consult with the Chief Executive of the BoPRC or delegate and the TMICFT over possible explanations for the exceedance and any proposed measures to rectify the non-compliance (including an amendment to this DMP, if required).
(e) Not recommence the dredging operations that caused the exceedance until any modification to the dredging operation receives the written certification of the Chief Executive of the BoPRC or delegate.

5.3 Turbidity Probe Maintenance, Cleaning and Calibration

All turbidity monitoring equipment used shall be maintained, cleaned and calibrated to ensure the accuracy and reliability of monitoring data.

Calibration

- All turbidity probes shall be calibrated prior to deployment for each dredging campaign in accordance with the manufacturer's specifications.
- Where recommended by the manufacturer, verification checks shall be undertaken during the dredging campaign to confirm instrument accuracy.
- Any turbidity probe exhibiting drift, inconsistent readings, or malfunction shall be removed from service and recalibrated or replaced prior to further use.

Cleaning and Biofouling Management

- Turbidity probes shall be regularly inspected and cleaned to prevent biofouling and sediment accumulation that may affect measurement accuracy.
- Cleaning shall be undertaken at intervals appropriate to site conditions and observed fouling rates, and may be increased during periods of elevated biological growth, high sediment loading, or following storm events.

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- Cleaning shall be undertaken using methods that do not damage the equipment or alter calibration.

Data Quality and Record Keeping

- The Consent Holder shall record the date and time of all cleaning, maintenance and calibration activities.
- Any period during which data quality may be affected by fouling, maintenance or instrument malfunction shall be identified in the monitoring record.
- Where monitoring data is considered unreliable, this shall be clearly identified and may be excluded from compliance assessment where appropriate.

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6 SEDIMENT DISCHARGE CONTROLS AND CONTINGENCY MEASURES

To control the effects of sediment beyond the dredged area continuous turbidity measurements from fixed turbidity monitors at the below sites must be carried out. A tiered response framework using turbidity triggers and environmental limits as outlined in the table below have been designed to safeguard the sensitive receiving environment receptors:

Port/location	Trigger 1 (NTU)	Trigger 2 (NTU)	Environmental limit (NTU)	Term/Notes
Pilot Bay	15	20	35	6 hr Moving Avg.
No. 10	12	17	25	2 Week Moving Avg.
No. 2	15	20	35	6 hr Moving Avg.
Butters	12	17	25	2 Week Moving Avg.
Otumoetai	15	20	35	6 hr Moving Avg.
Entrance	15	20	35	6 hr Moving Avg.
Response framework				
Trigger 1	Investigation into elevated turbidity. Assess impact of on-going operational dredge.			
Trigger 2	Modification to methodology of operational dredging. Including, but not limited to; • relocation of dredge • changing dredging equipment • operate dredge during certain tides times • modify frequency of dredging operation • a combination of methods			
Environmental limit	Upon reaching the environmental limit dredge operation should cease.			

The purpose of the continuous turbidity is to ensure water quality is monitored and maintained within acceptable parameters.

The manual method is carried out to maintain a transparent reliable level of compliance with environmental limits. The continuous monitoring is conducted to provide real time data to the dredge operators to enable informed operation decisions to limit turbidity and ensure water quality is maintained during the dredging.

The manual compliance monitoring limits use well established values and testing frequency enforced in previous dredging resource consents.

Adaptive management will be implemented through an established three-step trigger level matrix which require management responses. The system is based upon comparing the real time monitoring information collected against established trigger levels. The trigger levels are set based on the monitors locations from the various sensitive receiving environments, tolerance of species present and existing natural turbidity levels. The corresponding required responses inform an adaptive management approach targeted at ensuring environmental limits are not breached.

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7 CONTROLS TO MINIMISE SEDIMENT DISCHARGES

7.1 Green Valve

The 'green valve' system was developed for TSHDs to help reduce turbidity caused by overflow during the dredging process. Water overflow consists of not only water, sediments and fines, but also air. And air rises. So, even if the overflow is below the water surface, as the air rises from the underwater outlet to the water surface, it carries fines with it, spreading over a large area causing increased turbidity. When a 'green valve' is installed air entrainment is reduced and therefore sediments and fines sink to the seabed and reduce the turbidity.

7.2 Restricted Overflow

While a 'green valve' reduces turbidity from any overflow, the elimination of, or time restricted overflow can further reduce the turbidity created. Where areas are known to contain material with a high proportion of silt and sensitive receiving environments are nearby, dredging can be conducted with overflow restrictions to limit turbidity.

7.3 Tidal Restrictions

Where areas are known to contain material with a high proportion of silt and sensitive receiving environments are nearby, dredging can be conducted only on certain tides to ensure any turbidity generated stays within the shipping channel rather than travel towards the sensitive receiver.

7.4 Measures to be deployed

All TSHDs used will have a 'green valve' or similar technology installed.

Capital dredging of Stella Passage shall be carried out with the following overflow and tidal restrictions:

- Flood Tide - No overflow
- Ebb Tide - 15 minute overflow

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8 BIOSECURITY

8.1 Overview

Dredge vessels arriving from overseas or from outside the Bay of Plenty region constitute the largest relative biosecurity risk associated with the proposed activities. In particular, elevated risk occurs if the vessels' region of origin has marine non-indigenous species (NIS) of concern not currently present within the Bay of Plenty, and if risk mitigation measures have not been implemented for these vessels prior to their passage to the port.

All vessels entering Aotearoa New Zealand waters from overseas are required by national and international regulations to manage the risk of introducing NIS via hull fouling (through MPI's Craft Risk Management Standard for Vessel Biofouling (CRMS)) and ballast water (under the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention)). If implemented correctly by incoming vessels, the combined requirements minimise the risk of introductions of NIS from vessels.

Dredge spoil disposal can also act as a pathway for the inadvertent transfer of marine NIS from the dredge location to the spoil disposal grounds. The majority of NIS established within Tauranga Harbour are sessile filter-feeding invertebrates (e.g. sponges, hydroids, bryozoans, ascidians) and seaweed species that primarily colonise hard substrates. There is likely to be a lack of suitable habitats for these taxa at the consented disposal grounds.

The fanworm Sabella spallanzanii presents a specific risk that may warrant additional safeguards (e.g. pre-dredging surveillance). Although this species predominantly colonises hard substrates, it has been shown to establish on small pieces of shell or rock material within predominantly soft sediment habitats in other regions.

To mitigate marine biosecurity risks associated with dredge spoil disposal, it is generally recommended that the disposal ground is relatively close to the dredged area and has similar depth and sediment characteristics. This is because the propagules of most species could travel these distances by natural dispersal, and therefore the movement itself is arguably of little consequence if the species is already established in the region. The proposed dredge spoil disposal sites meet these criteria. While the main disposal site is deeper than the proposed area to be dredged, the sediment here is also predominantly sand. As such, many marine NIS capable of living in the soft sediment habitats to be dredged would be able to spread naturally to the disposal ground, with the time frame of such spread dependent on their dispersal characteristics.

Results of the most recent NIS survey conducted as a part of the Bay of Plenty Regional Council regular biosecurity monitoring within the area to be dredged will inform additional management measures required by the BoPRC and will depend on any NIS present.

8.2 Surveys

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To provide a coordinated approach to NIS surveys and to supplement the regular monitoring performed by BoPRC and help inform any change in risk profile the Port shall provide funding in accordance with Consent RM-xxxx.

8.3 Management Measures

Any vessel arriving must be compliant with the international regulations to manage the risk of introducing NIS via hull fouling (through CRMS) and ballast water (under the BWM Convention).

Each Vessel to be used in the Tauranga Harbour for dredging shall have a Biofouling Management Plan (BFMP). The BFMP shall be consistent with the Ministry for Primary Industries requirements and include measures for sediment in the hopper. Vessels also are required to meet Rule 7A of the Regional Pest Management Plan, or such other standard required. Appendix 2 includes the Biofouling Management Plan specific to the vessel undertaking the dredging.

It is recognised that the risk of Marine Pests may change over the life of the consent and that an adaptive approach is the best way of meeting any change in risk profile.

The adaptive management approach is initiated before each dredging campaign through the notification process prior to dredging where PoTL shall provide the following information:

- Vessel specific BFMP including records of last inspection, clean and antifoul treatment
- Last Port of Call

In accordance with Condition XXX of RMXXX should the BoPRC believe on reasonable grounds that the Vessel is not sufficiently cleaned and antifouled they may direct an inspection and records to be provide prior to arrival.

Should the BoPRC consider that there is risk of water borne transmission of marine pests based on the Port of last call an exchange of Ballast or any water in the hopper shall be exchanged a minimum of 12 Nautical Miles from Tauranga Harbour in accordance with Condition x of RM 16.4.

To safeguard against risks not yet known, the BoPRC have the ability to request that PoTL prepares a Risk Management Assessment from a suitably qualified expert when they assess that the risk profile has changed. The Risk Management Assessment will be submitted to BOPRC for certification, with any additional controls required being implemented.

Should the BoPRC believe on reasonable grounds that a Vessel is not complying with the requirements in this DMP the BoPRC may require the Vessel to cease working until evidence is provided to demonstrate compliance.

8.4 Incident Response

Should a high-risk pest species be identified in the dredged material, on the Vessel's hull, or at disposal sites Biosecurity NZ and the Regional Council shall be immediately notified. Any relevant operations shall be suspended until the Regional Council has confirmed that no further Risk Management Assessment is required.

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9 CONTINGENCY MEASURES

Two approaches will be employed throughout the operational phase of the project. The primary control is based on the known risks and the assessment of controls to mitigate them. Where monitoring shows the effects are not being controlled effectively contingency measures through adaptive management measures shall be taken to limit the effects of dredging.

Adaptive dredge management will occur throughout the duration of the dredging project. The results of the turbidity monitoring will be used to inform any additional controls required. The tiered response approach with respect to turbidity is provided through the use of both Response Levels and an Environmental Limit.

Environmental Limits are defined levels of maximum tolerance to an environmental condition, beyond which the potential for long-term negative impact is considered unacceptable.

Response Levels provide an early warning that conditions may be trending towards the Environmental Limit, enabling timely management action to be taken in order to avoid unacceptable adverse impacts. Two tiers of Response Levels will be used to ensure early intervention can be achieved.

Both the Environmental and Response Levels are based on either a 6 hour or 2 week moving average appropriate for the environment they are protecting.

The proposed Response Levels and Environmental Limits are those set in the report *Setting Water Quality Limits and Monitoring Turbidity for The Port of Tauranga* and listed below.

Location	Concern	Trigger 1 Response	Trigger 2 Response	Environmental Limit	Limit
Pilot Bay	Benthic invertebrates	15 NTU	20 NTU	35 NTU	6-hourly moving average
No.10	Seagrass	12 NTU	17 NTU	25 NTU	2-week moving average
Butters	Seagrass	12 NTU	17 NTU	25 NTU	2-week moving average
Otumoetai	Benthic invertebrates	15 NTU	20 NTU	35 NTU	6-hourly moving average

The Trigger 1 Response Limit requires investigation as to the reason for the elevated turbidity. This trigger requires the contractor to check equipment/data accuracy to verify exceedance and assess the impact of on-going dredging operation.

The Trigger2 Response Limit requires the contractor to change the current dredging methodology until the turbidity is reduced below this level. Undertake the actions as per Level 1 Response and undertake management of dredging process to reduce turbidity, this could include:

- Relocation of dredge.
- Reduce dredging frequency.
- Suspend dredging.

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- Operate dredge in non-overflow mode.
- Dredge particular areas on certain tides.
- Change of dredging equipment.
- A combination of the above.

The Environmental Limit is the limit beyond which no dredging shall occur. Once this limit has been exceeded the entire dredging operation shall be suspended until such time as the BoPRC gives clearance to continue.

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10 WASTE MANAGEMENT

Dredging contractors must operate in accordance with Resource Management (Marine Pollution) Regulations 1998, including the following requirements.

a) all dredge vessels must have covered waste bins and debris retrieval nets;

b) any waste or equipment that enters the water from the dredge vessel(s) must be promptly retrieved (if safe to do so) and disposed of onshore; and

c) marine debris recovered during the process of dredging must be retrieved for safe disposal onshore.

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11 NOISE MANAGEMENT

The dredging operations shall be performed to meet the requirements of NZS 6803 the New Zealand Construction Noise Standard.

Table 1: NZS 6803 recommended long term duration noise limits for construction noise received at any residential or rural dwelling, or any building where it is necessary to manage sleep disturbance

Time of week	Time period	Noise limit L_{Aeq}	Noise limit L_{AFmax}
Weekdays	0630-0730	55 dB	75 dB
	0730-1800	70 dB	85 dB
	1800-2000	65 dB	80 dB
	2000-0630	45 dB	75 dB
Saturdays	0630-0730	45 dB	75 dB
	0730-1800	70 dB	85 dB
	1800-2000	45 dB	75 dB
	2000-0630	45 dB	75 dB
Sundays	0630-0730	45 dB	75 dB
	0730-1800	55 dB	85 dB
	1800-2000	45 dB	75 dB
	2000-0630	45 dB	75 dB

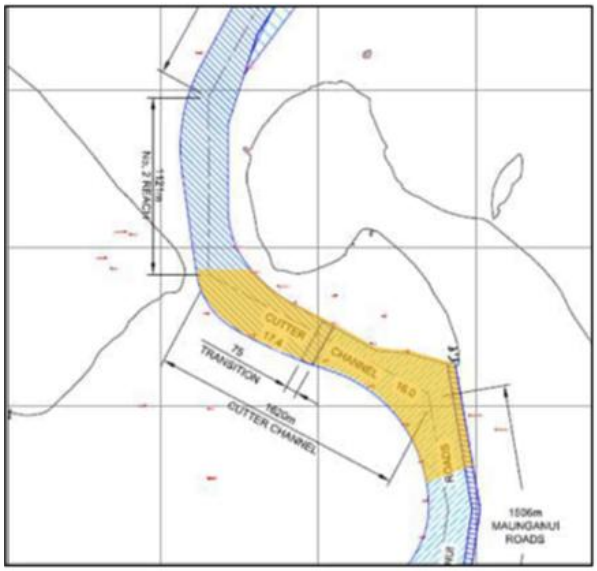
Table 2 - NZS 6803 recommended long term duration noise limits for construction noise received at occupied industrial or commercial buildings for all days of the year

Time Period	Long-term duration
	L_{Aeq}
0730-1800	70 dB
1800-0730	75 dB

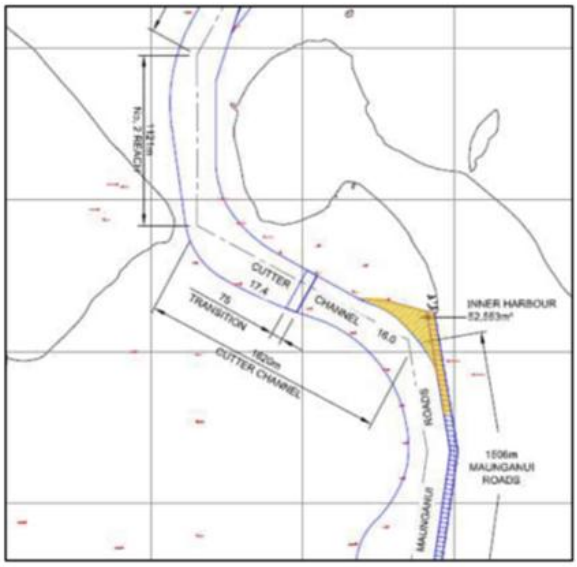
11.1 Specific Controls

Unless subject to a specific Noise Management Plan and certified by the BoPRC the below areas shall not be dredged between the following hours:

- **Weekdays 0630 – 2000**
- **Weekends 0730 - 1800**



Maintenance dredging



Capital dredging-

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12 NAVIGATION

12.1 Navigation Hazard – Items overboard

At all times, items, equipment, materials and packaging on the Vessels shall be kept secure to ensure no does not come loose, go overboard and cause a navigational or environmental hazard.

If the Vessel crew identify that any equipment, packaging or other materials have been lost overboard and could cause a navigational or environmental hazard, the consent holder shall:

(a) Immediately notify the Harbourmaster and Port Control (Customer Service Centre);

(b) Provide details (location and objects of concern); and

Make the best efforts to immediately minimise the hazard to navigation or the environment and have recovered the equipment, packaging or other materials that have been lost from the vessel.

12.2 Navigation Hazard - Secure Vessel

Any Vessels shall be properly secured when not crewed to ensure they do not come adrift and cause a navigation hazard. In addition, the Vessels should also be secured such as to prevent unauthorised persons moving the Vessels. Should a Vessel become adrift, upon becoming aware of the vessel becoming adrift, actions shall be taken to recover and secure the vessel.

The Harbourmaster shall be notified of the vessel becoming adrift and, after it is recovered and secured, of the cause of the vessel becoming adrift and the to prevent any reoccurrence.

12.3 Navigation Hazard - Lighting

Aside from the Vessels own navigation lights and those required for workplace health and safety, lighting shall only be to illuminate the works areas and shall be managed so it does not cause a distraction, dazzling, or temporary blinding to other water users, or interfere with fixed or the Vessel's own Aids to Navigation.

12.4 Navigation Hazard – Regulations

12.4.1 Maritime NZ

All vessels are subject to maritime legislation, regulations and rules. At the national level, Maritime NZ (MNZ) sets Maritime Rules, of which the following apply:

- Maritime Rules Part 22 – Collision Prevention .
- Maritime Rules Part 90 – Pilotage .
- Maritime Rules Part 91 – Navigation Safety Rules .

Under Part 22 during dredging operations "vessels restricted in their ability to manoeuvre" is defined as:

> "a vessel which from the nature of its work is restricted in its ability to manoeuvre as required by this Part and is therefore unable to keep out of the way of another vessel and includes but is not limited to –

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(a) a vessel engaged in laying, servicing or picking up a navigation mark, submarine cable or pipeline:

(b) a vessel engaged in dredging, surveying or underwater operations:

(c) a vessel engaged in replenishment or transferring persons, provisions or cargo while underway:

(d) a vessel engaged in the launching and recovery of aircraft:

(e) a vessel engaged in mine clearance operations:

(f) a vessel engaged in a towing operation that severely restricts the towing vessel and its tow in their ability to deviate from their course"

Any barges used for dredging works will, at times, be restricted in their ability to manoeuvre. Also, depending on the dredge method and equipment in use, the dredge may require a tug to tow it into position where it will anchor or otherwise hold itself. A tug may not always be on standby, so any required movement of the barge needs to be planned.

All vessels must show the day marks and lights as required by the applicable maritime rule. This rule applies to all vessels including dredging vessels underway/at anchor. Under Maritime Rule 22.27 (2) b, vessels which are restricted in their ability to manoeuvre must show three black shapes in a vertical line where they can best be seen, the highest and lowest of those shapes being balls and the middle one a diamond.

12.4.2 BOPRC Rules

At the regional level, the Bay of Plenty Regional Council (BOPRC) makes a Regional Navigation Safety Bylaw 2024 pursuant to sections 33M and 33R of the Maritime Transport Act 1994 and in line with the Maritime Rules. This bylaw sets out how the following standard definitions and requirements apply in the local context:

- Designation of a narrow channel.
- Duty of Master of a Vessel under 500 Gross Tonnage.
- Moving Prohibited Zone.
- Compulsory pilotage .

12.4.3 Port Controls

PoTL maintains a 24-hour Customer Service Centre that is responsible for implementing a range of services to assist in controlling navigation safety, namely:

- Monitoring of harbour traffic.
- Communicating with vessels.
- Planning shipping movements.
- Pilot and tug services.
- Security and surveillance.
- Berth allocation and planning .

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13 OTHER MANAGEMENT PROTOCOLS

13.1 Resource Management (Marine Pollution) Regulations 1998

The disposal of all domestic and industrial rubbish and waste must be in accordance with all applicable legislative or regulatory requirements.

The Dredge Contractor must not discharge any domestic or industrial waste of any description from any vessel into any water body of the Port. Failure by the Dredge Contractor to comply with this requirement will result in the immediate suspension of the Contract Works by PoTL. Work must not resume until any such contravention is investigated, work procedures reviewed and staff and crew re-trained in the relevant procedures all to the satisfaction of PoTL.

13.2 Historical and Archeological Finds

All items having apparent historical or archaeological interest discovered in the course of dredging activities shall be carefully preserved. The dredging contractor must leave the archaeological find undisturbed and immediately report the find to the Cultural Monitor if on board and to PoTL.

13.3 Complaints

Records shall be maintained by PoTL of any complaints received relating to the dredging activities. The records shall cover the following details:

- The location of the reports nuisance or effect;
- The date and time of the complaint;
- A description of any relevant details to the complaint, sea condition, weather;
- Any possible cause of the nuisance or effect;
- Actions taken to address the cause of the complaint; and
- Name of complainant and contact details if offered.

PoTL must follow its standard complaint response protocol to ensure any complaints received are appropriately responded to.

The records of complaints must be made available to the BoPRC upon request.

13.4 Incidents

In the event of a spill or leak of oil, fuel or other hazardous substances to water, PoTL must notify the BoPRC and the SPDAG.

13.5 Te Kuia rock

Te Kuia rock holds significant cultural importance and no dredging shall occur within 100m of the site. 37 37 42.773 S,176 09 58.902 E.

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14 SPDAG FEEDBACK

To be updated following feedback from SPDAG prior to any Capital Dredging

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Appendix 1

Marine Mammal Sightings Form

Observer's name			
Observation Location			
Date of sighting			
Time of sighting/s			
Sighting Location/s	Distance from dredge when first seen: Direction of travel: Location/s of subsequent sightings:		
Sea Condition (Beaufort scale, swell)			
Photos/video taken	Yes No		
Species ID (circle one) PTO for descriptions	Bottlenose dolphin Orca/Killer whale Fur seal Other Southern right whale Humpback whale Leopard seal		
Certainty of species ID (circle one)	Definite Probable Unsure		
Number of animals (total)		**Number of calves** (if present)	
Length of adult (m)		**Length of calves** (m)	
Description colour, dorsal fin, blow shape etc			
Behaviour **(**circle one) PTO for descriptions	Travelling Milling Feeding Socialising Resting Other		
Description of mitigation actions (changed course, dredged alternate location etc)			

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Species of Relevance to Tauranga Harbour - Identification Guide

Bottlenose dolphin <4m



Robust body. Distinctive beak. Rounded forehead. Grey upper body, paler underside

Killer whale <9m



Black upper, white belly and patch around eye. Male dorsal fin very tall and sharp. Flippers rounded

Common dolphin <2.3m



Sleek body. Prominent beak. Dark upper and dorsal fin. Tan or yellow sides, "hourglass" pattern. Cream or white belly

NZ fur seal (*Arctocephalus forsteri*)



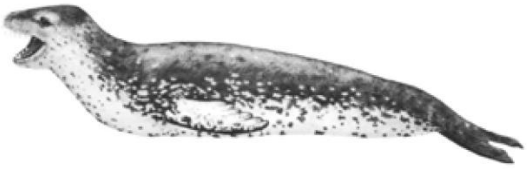
Pointed nose. Dark brown fur. Males: up to 2.5m, 150kg. Females: up to 1.5m, 30-60kg. Widely distributed

Humpback whale <16m



Blackish body. White underside, esp under tail and flippers. Knobbly head. Long flippers. Dorsal fin on hump

Leopard seal (*Hydrurga leptonyx*)



Big, snake-like head. Grey fur, black spots. Sharp, tri-lobed teeth. Males: up to 3m, 270kg. Females: up to 3.5, 300kg. Regular visitor to NZ

Southern right whale <18m



Blackish body, white patches on head & jaws. V-shaped blow. Arched jaw. Callosities on head. No dorsal fin

Adapted from DOC Marine Mammal Sighting Form, https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/marine-mammals/whale-dolphin-sighting-report.pdf

Descriptions of Common Behaviours

Resting The animals stay close to the surface, surface at regular intervals and in a coordinated fashion, either not propelling themselves at all, or very slowly.
Travelling Animals propel themselves at a sustained speed, all swimming in the same direction and making noticeable headway.
Milling Animals frequently change direction, pre-venting them from making headway in any one direction and they remain in the same area. Often different individuals will be swimming in different directions, but frequent directional changes keep them together in a group.
Feeding Animal chases or captures prey items close to the surface
Socialising Physical interactions among animals (except mothers and calves), ranging from chasing to body contact, or copulation.

Source: Neumann, D. 2001. The activity budget of free-ranging common dolphins (Delphinus delphis) in the northwestern Bay of Plenty, New Zealand. Aquatic Mammals 27(2): 121-136.

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Common Indicators of Marine Mammal Presence

- Dorsal fins visible when individual whales or dolphins' surface to breathe;
- Flippers visible when seals are active or resting on the surface;
- Splashes and aerial behaviours which are indicative of seal or dolphin presence; and
- Blows (exhalation vapours) of larger baleen whales.

Marine Mammal Sightings Summary Log

The template below provides a platform on which marine mammal sightings made during the Stella Passage Development can be collated and summarised.

[The data contained within is simply an example of how the fields would be completed]

	Total number of individuals											
Observation date	Bottlenose dolphin	Orca/Killer whale	Fur seal	Common dolphin	Southern right whale	Humpback whale	Leopard seal	Other	Calves present	Inside or Outside Harbour?	Behaviour and location	Mitigation Actions
27/9/2022		5								Inside	Off Berth 1	N/A
28/9/2022							1			Inside	Pilot Bay Beach	N/A

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APPENDIX 2 – Biofouling Management Plan – Vessel Specific

To be included prior to submission of Final DMP to BoPRC for Certification

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