

Decision on marine dumping consent application

Ports of Auckland Limited

EEZ400011

July 2019



**Environmental
Protection Authority**
Te Mana Rauhi Taiao

New Zealand Government

MARINE DUMPING CONSENT EEZ400011

Pursuant to section 62 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (the Act), the application for marine dumping consent under section 20G of the Act by Ports of Auckland Limited to undertake the restricted activity of dumping dredged material at the Cuvier Disposal Site is **GRANTED** subject to conditions set out in Schedule 1 including Appendix 1 to 3 of Schedule 1.

Marine dumping consent EEZ400011 expires on 27 June 2054.

Dated this day 27 June 2019.



Siobhan Quayle
General Manager Climate, Land & Oceans

Under delegated authority of the Chief Executive of the Environmental Protection Authority.

SCHEDULE 1: PORTS OF AUCKLAND LIMITED MARINE DUMPING CONSENT EEZ400011 CONDITIONS

Definitions

Terms used in this Schedule of Conditions shall have the following meanings:

ANZECC	means Australian and New Zealand Guidelines for Fresh and Marine Water Quality October 2018 (online accessible through http://www.waterquality.gov.au/anz-guidelines/guideline-values).
ANZECC sediment quality guidelines	means the toxicants listed in “Table 1 Revised toxicant default guideline values for sediment quality” of the ANZECC guidelines (online accessible through http://www.waterquality.gov.au/anz-guidelines/guideline-values/default/sediment-quality-toxicants).
Bottom Dump Barge	means a barge (either self-propelled or towed by a tug) with an opening barge floor in the hull for the dumping of dredged material.
Capital dredging	means material dredged for navigation purposes, to enlarge or deepen existing channel and port areas or to create new ones and for engineering purposes.
Contaminant	has the meaning given to “toxicant” under the ANZECC Glossary of terms: a substance capable of producing an adverse response (effect) in a biological system, which may seriously injure structure or function or produce death at sufficiently high concentration.
CDS	means the Cuvier Disposal Site being a circle of 4 nautical miles radius centred on position 36°28’S 176°20’E (27 nautical miles east of Cuvier Island).
Consent Holder	has the meaning given in section 4 of the EEZ Act.
Dumping Point	means the point where the dredged material is dumped within the CDS as defined by Condition 12.
DGV	means the default guideline values of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality October 2018.
GV-high	means the default guideline values high of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality October 2018.
EEZ Act	means the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012.
EPA	means the Environmental Protection Authority as defined in section 4 of the EEZ Act.
Initial dilution	means mixing of a sample that represents mixing that occurs within four hours of dumping dredged material at the CDS.
Maintenance dredging	means material dredged to ensure that channels, berths, or construction works are maintained at their designed dimensions.
MPI	means the Ministry for Primary Industries.
Rare and vulnerable ecosystems and the habitats of threatened species	has the meaning given to Sensitive Environments under Schedule 6 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Permitted Activities) Regulations 2013.

Sampling block	means an area within a Source Site in which sampling occurs for the purposes of sediment characterisation.
Sampling Plan	means a document(s) that contains the methodology for the sediment characterisation and biosecurity characterisation of a Source Site.
Sampling Results	means a document(s) that contains the outcomes of sediment characterisation and biosecurity characterisation of a Source Site undertaken in accordance with a Sampling Plan.
Source Site	means a marine site from which dredged material is intended to be sourced for dumping. In the context of this consent there are two Source Sites where material will be dredged for dumping. These source sites are defined by the Auckland Unitary Plan Operative in part 15 November 2016 as: The Waterfront Precincts comprising: The Port Precinct, The Central Wharves Precinct, The Viaduct Harbour Precinct, and The Wynyard Precinct; and The Waitemata Navigation Channel Precinct.
Suitably qualified and experienced person	means a person who: holds a degree qualification in the relevant subject matter, or holds relevant professional certification from a relevant professional body; and has at least eight years relevant experience.
Trained Marine Mammal Observer	means a crew member who has completed specific training, provided by an appropriately qualified person, in accordance with Appendix 3.
USEPA CCC	means the United States of America Environmental Protection Agency Saltwater chronic criteria.
Working Day	has the same meaning as defined in section 4 of the EEZ Act.

Conditions

1. Subject to compliance with these consent conditions, the activity authorised by this consent shall be undertaken in general accordance with the operational descriptions contained in the documents detailed below:
 - a) Report entitled "Application to the Environmental Protection Authority for a marine dumping consent to undertake a non-notified activity and impact assessment at the authorised location within a circle of 4 nautical miles radius centred on position 36°28'S 176°17'E (27 nautical miles east of Cuvier Island) prepared by Bentley & Co Resource Management Consultants November 2018" including Attachments 1 to 4 (inclusive); and
 - b) The Ports of Auckland Limited email responses to further information requested by the EPA dated 19 March 2019, and 5 April 2019, including the attachments.

Where there is any conflict between the contents of any of the above documents, and the conditions of this consent, then the conditions shall prevail.

2. The Consent Holder shall not dump:
 - a) More than 50,000 cubic metres (m³) of dredged material from maintenance dredging, nor more than 400,000 m³ of dredged material from capital dredging, at the CDS in any consecutive 12 month period;
 - b) More than a total volume of 2,000,000 m³ of dredged material from capital dredging at the CDS over the term of this consent.
3. The Consent Holder shall ensure that:
 - a) A copy of this consent is held at all times on any self-propelled barge, or any tug towing a barge, that the Consent Holder has authorised to dump dredged material in the CDS; and
 - b) Personnel directly involved in the exercise of this consent are informed of their obligations and responsibilities in exercising this consent.
4. No sampling under a Sampling Plan shall occur at a Source Site until the EPA has certified a Sampling Plan that confirms that the sediment characterisation for that Source Site will be carried out in accordance with Appendix 1 of this consent, and that MPI is satisfied with the biosecurity risk characterisation of that Source Site, provided that:
 - a) If within twenty (20) Working Days of receiving the Sampling Plan the EPA has not certified or rejected the Sampling Plan, it will be deemed to be certified.
 - b) The EPA may at any time request further information from the Consent Holder following receipt of the Sampling Plan being submitted for certification.
 - c) Where the EPA requests further information, the period starting with the date of the request will be excluded from the 20 Working Day timeframe referred to in clause a) and the Sampling Plan will not be deemed to be certified or rejected (instead the Sampling Plan will be put on hold).
 - d) On receipt of the further information by the EPA, the 20 Working Day timeframe referred to in clause a) will recommence from the date of the receipt of the information by the EPA.
5. A Sampling Plan shall include:
 - a) The description of the Source Site including proposed depth of dredging, and volume of material to be dredged, for each Source Site where maintenance dredging will occur including as provided in Appendix 1.

- b) The description of the Source Site including proposed depth of dredging, and volume of material to be dredged, for each Source Site where capital dredging will occur as provided in Appendix 1.
 - c) A detailed description of the sampling procedure and any analysis to be undertaken accordance with Appendix 1.
 - d) A list of contaminants to be sampled for in the sediment characterisation in accordance with Appendix 1.
 - e) Confirmation that the sediment characterisation of that Source Site, will be in general accordance with Appendix 1, and that the contamination levels in the sediments shall be compared to the ANZECC sediment quality guidelines.
 - f) Confirmation that the biosecurity risk characterisation of that Source Site has been carried out to the satisfaction of MPI, and any comment received from MPI shall be provided to the EPA as part of its certification process as provided in Condition 7.
6. A Sampling Plan shall be prepared:
- a) Every three years for Source Sites that have been sampled within the preceding three years for maintenance dredging within the Waterfront Precincts;
 - b) Prior to the commencement of maintenance dredging activities for Source Sites that have not been sampled within the preceding three years for maintenance dredging within the Waterfront Precincts;
 - c) Every five years for Source Sites that have been sampled within the preceding five years for maintenance dredging within the Waitemata Navigation Channel Precinct;
 - d) Prior to the commencement of maintenance dredging activities for Source Sites that have not been sampled within the preceding five years for maintenance dredging within the Waitemata Navigation Channel Precinct; and
 - e) Prior to the commencement of capital works dredging activities for any Source Site.
7. No dredged sediment from a Sampling block within a Source Site shall be dumped at the CDS unless the EPA has certified that the Sampling Results confirm the dredged sediment is suitable for dumping in accordance with Appendix 1 of this consent provided that:
- a) If within twenty (20) Working Days of receiving the Sampling Results the EPA has not certified or rejected the Sampling Results they will be deemed to be certified.
 - b) The EPA may at any time request further information from the Consent Holder following receipt of the Sampling Results being submitted for certification.
 - c) Where the EPA requests further information, the period starting with the date of the request will be excluded from the 20 Working Day timeframe referred to in clause a), and the Sampling Results will not be deemed to be certified or rejected (instead the assessment of the sediment and biosecurity risk characterisation will be put on hold).
 - d) On receipt of the further information by the EPA, the 20 Working Day timeframe referred to in clause a) will recommence from the date of the receipt of the information by the EPA.
8. The Consent Holder shall, if it becomes aware of any event which would likely change the characteristics of the sediments collected for dumping from a Source Site (such as, without limitation, a pollution event, operational activities, or arrival of a vessel compromised with an exotic organism) that could increase concentrations of contaminants, or biosecurity risk, at that Source Site:
- a) Suspend dumping operations at the CDS of material sourced at that Source Site immediately upon the Consent Holder becoming aware of such an event; and

- b) Notify the EPA of the event within 24 hours of the Consent Holder becoming aware of such an event; and
 - c) For that Source Site, undertake the process set out in Conditions 4 and 7, to determine the detailed description and characterisation of the sediment to be dredged, and the biosecurity characterisation of the Source Site; and
 - d) Not resume dumping operations at the CDS of material sourced at that Source Site, until the EPA provides written certification of the Sampling Results for that Source Site, as per Condition 7.
9. If as a consequence of the benthic survey that is required to be undertaken by Condition 25 the Consent Holder becomes aware of an unwanted organism (as defined under the Biosecurity Act 1993) at the CDS, it shall notify MPI (Biosecurity New Zealand), the Auckland Council, the EPA, and the Waikato Regional Council, within 48 hours.
10. The Consent Holder shall only dump dredged material which has been dredged by a mechanical excavator. For the avoidance of doubt, no dredged material shall be dumped within the boundaries of the CDS that has been:
- a) Removed from the Source Site by the method of suction dredging; or
 - b) Subsequently mixed with water to produce a slurry.
11. The Consent Holder shall only dump dredged material from a Bottom Dump Barge.
12. The Consent Holder shall ensure dredged material is dumped within a circle of 200 metres radius centered on position 36°28'S 176°17'E.
13. There shall be no more than two dumping events over a 24-hour period, with a minimum of one (1) hour between each dumping event, provided that no dumping event shall be more than 1,200 m³ per dumping event.
14. Upon the EPA's request, the Consent Holder shall allow the EPA (or its representative or delegate) to attend in an observer status during the Consent Holder's monitoring surveys, and dumping activity, at the CDS. The Consent Holder shall bear the reasonable costs of the EPA's attendance.
15. The Consent Holder shall:
- a) Provide the stakeholders identified in the Engagement Log Summary (Attachment 3 of the application) with up-to-date information on the activity authorised by this consent. This information shall include the results of any monitoring, and reports, required to be prepared by the conditions of this consent.
 - b) Make available the information provided to stakeholders under clause a) for the duration of this consent through a website maintained by the Consent Holder.
 - c) The website shall be operational within three (3) calendar months of the date of the grant of consent.
 - d) The Consent Holder shall advise the EPA and the stakeholders of the website address within five (5) Working Days of the website going live.
16. The Consent Holder shall, by the 15th Working Day of the following month, provide a written record to the EPA of each individual load of dredged material dumped at the CDS in the preceding month. The record shall include details of:
- a) The Source Site;
 - b) The quantity of dredged material dumped, and identification of whether the material is maintenance dredging or capital dredging;

- c) The exact location of the dumping determined by GPS (and including reference to the relevant Dumping Point in Condition 12);
 - d) The GPS evidence of the exact dumping location point;
 - e) The date, time and duration of each dumping activity.
17. If no dumping at the CDS occurs under this consent during a calendar month, the Consent Holder shall provide to the EPA a written record stating the same by the 15th Working Day of the following month.
18. If any dumping activity by the Consent Holder occurs outside the CDS the Consent Holder shall notify the EPA within 24 hours of:
- a) The Source Site of the dredged material that was dumped;
 - b) The quantity of dredged material dumped;
 - c) The exact location of the dumping activity determined by GPS;
 - d) The date, time and duration of the dumping event;
 - e) An explanation of the reasons for the dumping; and
 - f) A description of any mitigation measures adopted.
19. The lighting for all vessels, including barges, associated with the dumping of dredged material at the CDS shall be inward and downward facing, and minimised as far as practicable, while still complying with any relevant regulations and safety requirements.
20. Visual detection of marine mammals is to be undertaken by a Trained Marine Mammal Observer during transit from a Source Site and prior to any dumping activity occurring. If a marine mammal is sighted 15 minutes prior to dumping, and within 300 metres of the bottom dump barge and its towing vessel, then dumping shall not commence until all marine mammals are seen to move out of the 300 metre area, or have not been sighted for 30 minutes.
21. A written record of the period over which marine mammal detections are undertaken will be summarised in a monthly written record and include:
- a) Species and number of marine mammals detected;
 - b) Method of detection;
 - c) Any actions taken;
 - d) Personnel undertaking detection;
 - e) Confirmation that the personnel have the required training; and
 - f) General weather conditions.
22. POAL will make available to all crew members undertaking dumping activity at the CDS, a New Zealand marine mammal species identification guide to assist in the accurate identification of species.
23. The Consent Holder shall not dump any sediment at the CDS until it has completed a survey of the seabed within the predicted northern sedimentation plume outside the CDS boundary to identify if any rare or vulnerable ecosystems, or habitats of threatened species, are present.
24. The pre-dumping survey required by Condition 23 shall be undertaken:
- a) As close as reasonably practicable to the trajectory of the three (3) transects aligned with the predicted sedimentation contours to the north of the CDS boundary as shown in Appendix 2; and
 - b) Within 1000 m long subsections along each transect, and with each subsection examined beginning at 1, 3, 5, 10 and 20 km from the boundary of the CDS; and

- c) By a remotely operated vehicle, or glider, obtaining continuous video of the seabed, and high resolution images taken every 10 metres within each subsection on each transect.
25. Should the pre-dumping survey required by Condition 23 confirm the presence of any rare or vulnerable ecosystems, or habitats of threatened species, within the predicted northern sedimentation plume outside the CDS boundary, the survey shall be repeated:
- a) As close as reasonably practicable to the transects undertaken for the pre-dumping survey.
 - b) Three years from the commencement of this marine dumping consent, and the completion of the capital dredging, and then at least every ten years thereafter for the duration of this consent.
 - c) If no dumping of dredged material under this consent has occurred within the previous three or ten year period, no survey is required to be undertaken for that period.
26. A report summarising the surveying undertaken under Conditions 23, 24, and 25 shall:
- a) Be prepared by a suitably qualified and experienced person; and
 - b) Be provided to the EPA within six (6) months of each survey event; and
 - c) Posted on the website required by Condition 15 of this marine dumping consent.
27. Should dumping activities of dredged sediment occur in the CDS by a third party, the Consent Holder may cease any further survey required to be undertaken under Conditions 23, 24, and 25 of this consent.
28. The EPA may initiate a review under section 76(1)(a) of the EEZ Act by serving a notice on the Consent Holder at any time for the purposes of updating the reference to the values in the ANZECC guidelines against which the contaminants that must be listed in a Sampling Plan are compared against and/or otherwise updating Appendix 1 to this consent.

Advice Notes

1. The Consent Holder is reminded of its obligations under the Marine Mammals Protection Act 1978.
2. The Consent Holder is reminded of its obligations under the Wildlife Act 1953.
3. The Consent Holder is reminded that benthic survey activity must be authorised by a marine consent, or as a Permitted Activity as marine scientific research.

Appendix 1: Chemical Characterisation Methodology, Ports of Auckland Limited Marine Dumping Consent EEZ400011

Introduction

This methodology sets out the procedure to characterise the sediment of a Source Site in a Sampling Plan as specified in Condition 5.

Target contaminant selection

The Sampling Plan shall include a list of contaminants to be characterised at the Source Site. The list of contaminants must include:

- a) All contaminants listed in the ANZECC sediment quality guidelines that could be present at elevated levels within the Source Site; and
- b) Any other contaminants that are not included in the ANZECC sediment quality guidelines that could be present at elevated levels within the Source Site; and
- c) Rationale for the inclusion of each contaminant listed.

The dredged material from a Sampling block is only deemed suitable for dumping at the CDS if:

- a) The Level 1 investigation is completed and the existing information is sufficient to determine the dredged material is suitable for dumping at the CDS; or
- b) The Level 2 investigation determines that:
 - i. If the data are normally distributed, the mean concentrations of all contaminants listed in the Sampling Plan are statistically significantly less than ($p=0.05$) the ANZECC DGV concentration based on the 95 per cent upper confidence limit of the mean; or
 - ii. If the data are not normally distributed, the geometric mean concentrations of all contaminants listed in the Sampling Plan are statistically significantly less than ($p=0.05$) the ANZECC DGV concentration based on the 95 per cent upper confidence limit of the mean; or
- c) The Level 3 investigation determines that:
 - i. The concentrations of all the contaminants listed in the Sampling Plan in elutriate are less than the ANZECC 99% DGV concentrations, or USEPA CCC criteria (where an ANZECC 99% DGV concentration is not available), after initial dilution; or
 - ii. Acute toxicity testing of the contaminants with a concentration above the ANZECC 99% DGV concentrations, or USEPA CCC criteria (where an ANZECC 99% DGV concentration is not available) after initial dilution, determines those contaminants to be non-toxic; or
- d) The Level 4 investigation determines that the acute toxicity, chronic toxicity, and bioaccumulative properties of any contaminant that is not deemed suitable under any other Level does not present an unacceptable adverse effect.

Characterisation of each Source Site shall be undertaken in accordance with Condition 6, and shall be undertaken if an incident occurs at a Source Site that is likely to change the current sediment or biosecurity characterisation at that site in accordance with Condition 8.

Methodology

The characterisation methodology follows a four-level procedure:

1. A **level 1** investigation reviews the existing information on the material to be dredged.
2. A **level 2** investigation confirms the physical and chemical characterisation of the material.

This will establish whether the mean (or geometric mean) concentration of any of the contaminants in the list of contaminants in the Sampling Plan are below their respective ANZECC DGVs.

3. A **level 3** investigation involves:
 - a) Elutriation testing of all contaminants listed in the Sampling Plan that were identified in a Level 2 investigation at sediment concentrations between the ANZECC DGVs and the ANZECC DV-high values, or appropriate sediment quality guidelines (where an ANZECC DGV is not available); and
 - b) Acute toxicity testing of all contaminants listed in the Sampling Plan that were identified as having a concentration in elutriate above the ANZECC 99% DGV concentration or appropriate sediment quality guidelines (where an ANZECC 99% DGV is not available).
4. A **level 4** investigation evaluates acute toxicity in a more comprehensive manner, as well as chronic and bioaccumulative effects of contaminants listed in the Sampling Plan that have:
 - a) Concentrations that exceed the ANZECC GV-high values, or
 - b) Been found acutely toxic under a Level 3 investigation, or
 - c) Otherwise failed to be deemed suitable for dumping at any other Level of investigation.

Level 1 investigation

The investigation needs to determine:

- a) Which contaminants are present based on the Source Site history review, and pre-existing data on the sediments, if any; and
- b) Whether or not the mean or geometric mean concentration of each of the contaminants is below the ANZECC DGV or appropriate sediment quality guidelines (where an ANZECC DGV is not available).

The investigation will document information on:

- a) All potential contaminants in the Source Site; and
- b) The volume, location and depths of sediment to be dredged; and
- c) Particle sizes of the sediment to be dredged; and
- d) Historical uses of the Source Site and catchment with particular attention to any usage that could have resulted in contamination. It will pay particular attention to potential point sources or pollution events adjacent to the site or upstream, the location of sewage or stormwater discharges, and previous dredging, dumping, or landfilling.

If the Level 1 investigation has identified the potential for site-specific contaminants the Sampling Plan shall include those contaminants.

Level 2 investigation

A level 2 investigation requires a comprehensive physical and chemical characterisation based on samples of the material to be dredged. Sampling will be representative of the geographic extent of the area to be dredged, and the full depth of sediment to be dredged.

Core numbers

Table 1 contains the minimum number of cores to be collected in each Sampling block based on volume dredged if the results from the Level 1 investigation do not indicate that the Source Site contains contaminants that are present at concentrations above the ANZECC DGV concentrations, or appropriate sediment quality guidance values (where an ANZECC DGV is not available).

Table 2 contains the minimum number of cores to be collected in each Sampling block based on the volume dredged if:

- a) The results from the Level 1 investigation indicate the Source Site contains contaminants present at concentrations that are not below ANZECC DGV concentrations, or appropriate sediment quality guidance values (where an ANZECC DGV is not available); or
- b) The geometric mean concentration of each of the identified contaminants in the sediment are not below the ANZECC DGV concentrations.

Table 1: Minimum Number of Core Samples Required by Total Volume Dredged from Uncontaminated Source Sites

Volume to be Dredged (m ³)	Number of Cores
0-5,000	3
5,000-15,000	4
15,000-100,000	10
Each additional 100,000	3 additional or as agreed in the Sampling Plan

Table 2: Minimum Number of Core Samples Required by Total Volume Dredged from Suspected or Known Contaminated Source Sites

Volume to be Dredged (m ³)	Number of Cores
0-5,000	6
5,000-15,000	6
15,000-100,000	10
Each additional 100,000	3 additional or as agreed in the Sampling Plan

The USEPA approach of stratifying the Source site into arbitrarily sized Sampling blocks and randomly sampling in each block shall be adopted. The size of Sampling blocks can be varied but will not be greater than 10,000 m², unless otherwise agreed by the EPA.

In core sampling carried out by the Consent Holder within the Waterfront Precincts or the Waitemata Navigation Channel Precinct, cores shall be sampled as follows unless otherwise agreed by the EPA:

- a) The top 50 cm of the core (or to the depth of dredging if less than 50 cm) shall be composited as a single sample for analysis.
- b) A second sample shall be taken from the 50–100 cm interval.
- c) Below 1 m, cores will be composited in 1 m lengths for analysis.

The minimum mass of material necessary for particular analyses is set out in Table 3 below.

Table 3: Amount of Sediment Required for Various Analyses

Analytical Parameter	Amount required (g, wet weight)
Organic compounds	100 – 250
Metals	10 - 100
Miscellaneous analyses	50 – 100
Grain size	50 – 200
Total organic carbon	10 – 50
Toxicity testing	500 – 2000
Elutriate testing (metals)	200 – 1000
Elutriate testing organics	Up to 2000
Porewater analysis	200 – 1000
Moisture content	10 - 50

The Consent Holder may vary from the amounts required in Table 3 depending on the requirements of the laboratory undertaking the analysis. Reasoning for any variations from Table 2 must be specified in the Sampling Plan.

Sample handling, storage, and transport

The Sampling Plan shall describe the sample handling techniques to be undertaken. The sample handling techniques shall ensure that:

- a) Changes in the composition of the samples as a result of chemical, physical or biological action are minimised.
- b) Cross contamination of samples does not occur during sub-sampling and subsequent handling.
- c) Samples are not lost or mixed up between sampling and arrival at the analysing laboratories.
- d) Sampling will occur in a manner that avoids or minimises contamination.
- e) Decontamination procedures are followed when sub-sampling from cores, and between sites, to avoid cross-contamination of samples.

All field procedures shall be documented using the procedures routinely used in New Zealand in contaminated site investigations as follows:

- a) Written standard operating procedures (SOPs) are to be included in the Sampling Plan and variations from SOPs, and the reasons for such variations, noted.
- b) Field conditions (e.g., weather, tides, currents where appropriate), station locations, sampling methods and handling and storage methods, field numbers, date, time, identity of sampler will be noted in ink in the field log, and field descriptions of sediments recorded as collected.
- c) A sample inventory log and a sample tracking log shall be maintained.
- d) Chain-of-custody forms that list all sample numbers and locations and the analyses are to accompany each sample to the laboratory. At each stage of handling, the samples are to be checked against the chain-of-custody forms and after receipt by the laboratory, a checked form sent back to the sampling organisation.
- e) The laboratory shall be accredited by the International Accreditation of New Zealand (IANZ) and shall be experienced in the analysis of marine sediments.

Grain size testing

The Sampling Plan shall include grain size testing for all core and depth sub-samples. The basic physical characteristics to be determined are volume, basic sediment grain size (by volume and/or physical sieving where appropriate as identified in Table 4) and moisture content data. The proportion of litter and other anthropogenic items greater than 2mm in the waste will also be assessed.

Table 4: Sediment Size Classification

Grain size to be reported			Grain size Class grouping to be tested for change
Volumetric (mm)	Sieving (mm)	Class	
>3.35		Gravel	Gravel
3.35 – 2.00	>2.00	Very fine gravel	
2.00 – 1.18	2.00 – 1.00	Very Coarse Sand	Sand
1.18 – 0.600	1 – 0.5	Coarse Sand	
0.600 – 0.300	0.5 – 0.25	Medium Sand	
0.300 – 0.150	0.250 – 0.125	Fine Sand	
0.150 – 0.063	0.125 – 0.063	Very Fine Sand	
0.063 – 0.0313	<0.063	Coarse Silt	Silt
0.0313 – 0.0156		Medium Silt	
0.0156 – 0.0078		Fine Silt	
0.0078 – 0.0039		Very Fine Silt	
<0.0039		Clay	Clay

Minimum sediment analysis

In respect of the contaminants listed in a Sampling Plan the following will be applied as a minimum, unless otherwise agreed by the EPA:

- a) The top 50 cm of each core will be analysed for sediment grain size, moisture content, heavy metals (cadmium, chromium, copper, lead, mercury, nickel, zinc), metalloid (arsenic), total organic carbon, total petroleum hydrocarbons, polynuclear aromatic hydrocarbons, and tributyltin.
- b) 50 – 100 cm interval of each core, will be analysed for sediment grain size, moisture content, heavy metals (cadmium, chromium, copper, lead, mercury, nickel, zinc), metalloid (arsenic), total organic carbon, total petroleum hydrocarbons, polynuclear aromatic hydrocarbons, and tributyltin.
- c) Each further 1 m interval of each core, will be analysed for sediment grain size, moisture content, heavy metals (cadmium, chromium, copper, lead, mercury, nickel, zinc), and metalloid (arsenic).
- d) A composite sample of equal volumes from each 1m interval of the same depth, of each core will be analysed for total organic carbon, total petroleum hydrocarbons, and tributyltin.

Detection limits shall allow wherever possible, comparison with the ANZECC DGV concentrations, or other appropriate sediment quality guidelines (where an ANZECC DGV is not available).

Where the Sampling Plan deviates from this, it shall be identified in the Sampling Plan.

If the Level 2 investigation detects contaminants in one or more samples above ANZECC DGV concentrations, or other appropriate sediment quality guidelines (where an ANZECC DGV is not available), then a Level 3 investigation is required in relation to those contaminants.

Level 3 investigation

A Level 3 investigation shall be undertaken if the concentration of one or more of the contaminants in sediment identified in the Level 2 investigation is between the ANZECC DGV and the ANZECC GV-high.

The Sampling Plan shall describe the methodology to be undertaken for a Level 3 investigation.

The sample handling, storage, and transport shall be in accordance with a Level 2 investigation.

Elutriate testing

Elutriate testing determines whether contaminants present in the dredged material are mobile and will transfer to the water once dredged or dumped. The results of elutriate testing are to be compared to ANZECC 99% DGV concentration, or appropriate sediment quality guidance values (where an ANZECC 99% DGV concentration is not available), after the application of an appropriate dilution factor (based on volume of sediment to be dumped into volume of water).

If the elutriate test results exceed the ANZECC 99% DGV concentration, or appropriate sediment quality guidance values (where an ANZECC 99% DGV concentration is not available), after initial dilution (defined as that which occurs within four hours after dumping), then acute toxicity testing is required in relation to those contaminants.

Acute toxicity testing

Acute toxicity testing (e.g., whole sediment marine tests or marine water tests) shall be undertaken on all contaminants listed in the Sampling Plan that were identified to have a concentration above the ANZECC 99% DGV concentration, or appropriate sediment quality guidance values (where an ANZECC 99% DGV is not available) after initial dilution.

Where possible and appropriate, the organisms used in acute toxicity and bioaccumulation testing should be analogues of the important test species used for similar tests internationally. Testing must be carried out using appropriate protocols, i.e., to a similar standard as the USEPA or American Society for Testing and Materials protocols for sediment toxicity testing.

Acute toxicity testing shall include testing on control sediments that best match the characteristics of the contaminated sediment but are non-toxic.

A sediment sample is deemed to be non-toxic if a toxicity test on a sample of sediment shows less than 20 per cent effect in the end point (e.g. survival or growth), relative to the control.

Acute toxicity testing shall account for grain size of the sediment and ammonia and hydrogen sulphide content.

If acute toxicity testing determines the contaminants are acutely toxic then a Level 4 investigation is required in relation to those contaminants.

Level 4 investigation

A Level 4 investigation shall only be undertaken if the concentration of one or more contaminants in the list of contaminants in the Sampling Plan:

- a) Have been found to exceed the ANZECC GV-high concentrations under a Level 2 investigation, or
- b) Have been found acutely toxic under a Level 3 investigation, or
- c) Have otherwise failed to be deemed suitable for dumping at any other Level of investigation.

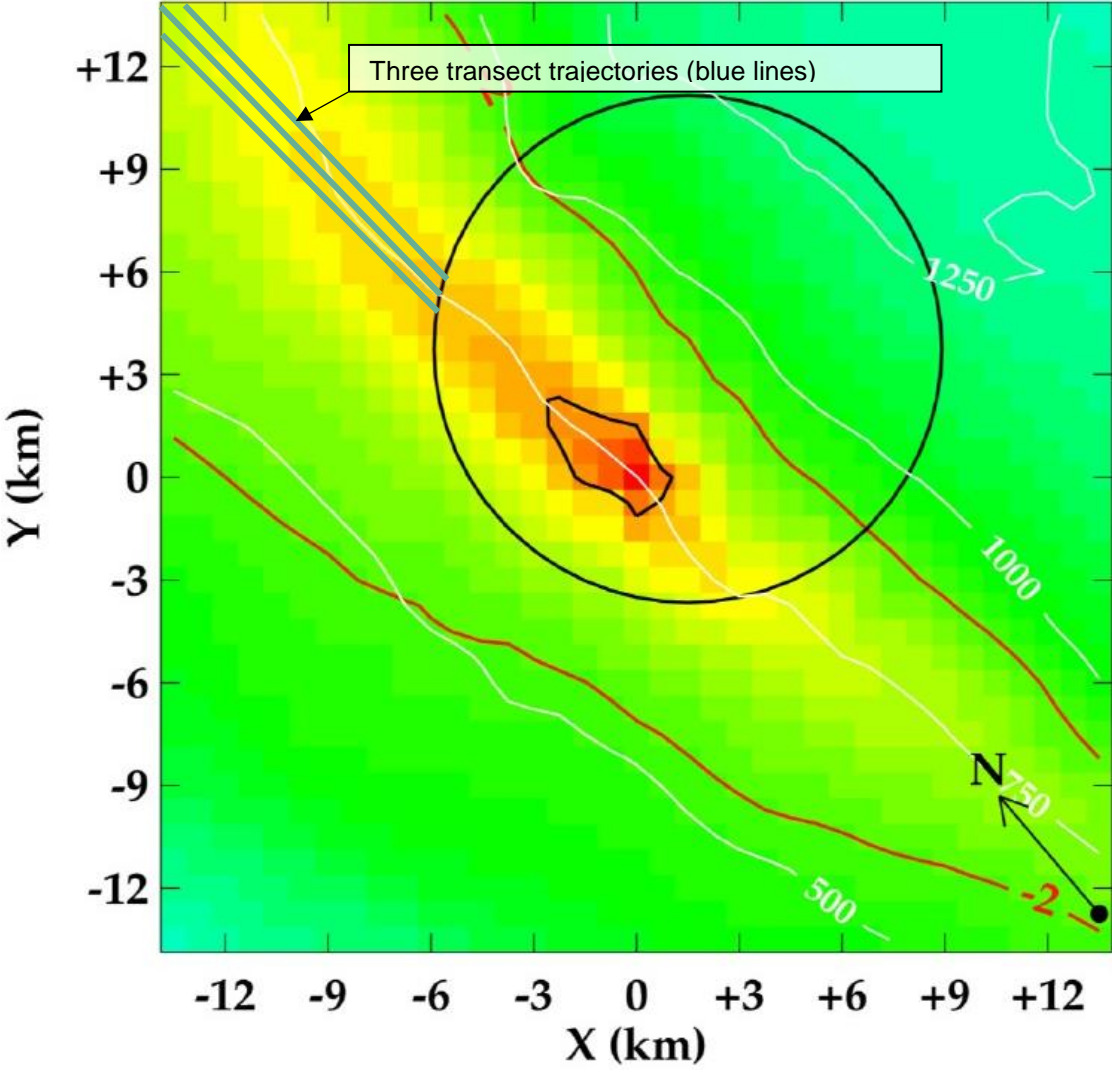
The Sampling Plan shall describe the methodology to be undertaken in accordance with a Level 4 investigation.

The applicant may elect to carry out further assays to evaluate acute toxicity in a more comprehensive manner, as well as chronic and bioaccumulative effects and prepare a comprehensive assessment of environmental effects.

Where possible and appropriate, the organisms used in chronic toxicity and bioaccumulation testing should be analogues of the important test species used for similar tests internationally. Testing must be carried out using appropriate protocols, i.e., to a similar standard as the USEPA or American Society for Testing and Materials protocols for sediment toxicity testing.

Appendix 2: Transect trajectories

Figure 1: Transect trajectories (blue lines) from the boundary of the CDS. Black circle marks the CDS boundary. Point 0 - 0 marks the co-ordinates 36°28'S 176°17'E.



Appendix 3: Marine Mammal Detection Training Outline

1. Course introduction

An outline of the purpose of the course is to be provided including a description of the consented activity.

2. The Marine Mammal Protection Act and Regulations

An outline of the Marine Mammal Protection Act and how it applies to all vessels at all times. A specific focus on requirements for maintaining lookouts, vessel speeds and vessel behaviour once marine mammals are spotted.

3. Consent conditions relevant to marine mammals

An outline of the Consent Conditions stipulated in the approved consent. Explanations will cover all issues either directly or indirectly relevant to marine mammals including responsibilities, monitoring, mitigation, shutdowns and reporting.

4. The role of observers

A description of the role of observers that builds on issues identified in 2 and 3 above. It will include their specific responsibilities, chain of command (e.g. observer notifies Master of a sighting who takes appropriate action), general description of duties and any specific Health and Safety in Employment requirements relevant to the role.

5. NZ marine mammals

General description of marine mammal biology and ecology including a list of the marine mammals that might occur in the Hauraki Gulf. This includes how to identify different species and why this is important. It will also cover how to identify and categorise marine mammal behaviour including potential disturbance. Time will also be spent on introducing the material available for observers to aid them in their role (e.g. Field identification guides & books).

6. Visual observations

A description of the methods and techniques for the estimation of distance. Appropriate methods will vary depending on conditions (e.g. day/night). Items to be covered include reticule binoculars, thermal imaging cameras and laser range finders. This will also include how to estimate the distance of a sighting from the barge when observations are taken from the tug ~100 m -200 m ahead of the barge (e.g. MMO range finder app). The course will include practical demonstration and opportunity for observers to practice with each method.

7. Marine Mammal Detection Reporting

Outline the consent requirements for reporting including working through the paperwork to be completed after each detection period (whether or not a marine mammal has been sighted) and in the event a marine mammal is detected during this period. Include responsibilities for who has to record data and where it goes when completed. Include actual completion of a sighting form.

ENDS

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EXCLUSIVE ECONOMIC ZONE AND CONTINENTAL SHELF (ENVIRONMENTAL EFFECTS) ACT 2012

Ports of Auckland Limited: EEZ400011

Dumping of dredged material in an authorised location
being the Cuvier Disposal Site

Reasons for decision on application for marine dumping
consent

Executive Summary

- i. Pursuant to sections 62(1)(a) of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act), the application for a marine dumping consent lodged by Ports of Auckland Limited (POAL) to undertake restricted activities (listed in Schedule 1 of the Consent document) is GRANTED subject to conditions (listed in Schedule 1 of the Consent document).
- ii. The reasons for granting the application are set out in this decision as required by section 69 of the EEZ Act. In making my decision on this application, I have acted as an independent decision-maker under delegated authority from the Chief Executive Officer of the Environmental Protection Authority. I have applied the decision-making criteria set out in sections 59 and 60 of the EEZ Act and I have also applied the information principles set out in section 61 of the EEZ Act.
- iii. POAL lodged an application for a marine dumping consent on 23 November 2018. This application seeks authorisation to dump dredged material within one of the five 'authorised locations' listed in the Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharge and Dumping) Regulations 2015 – the site being referred to by POAL as the "Cuvier Disposal Site" (CDS). The activity is classified in the EEZ Act as non-notified discretionary.
- iv. POAL needs to maintain certain water depths within the Port of Auckland to allow visiting vessels to berth safely and it undertakes regular maintenance dredging of the berthing basins to maintain the notified water depths. POAL also undertakes maintenance dredging within the Rangitoto Navigation Channel. Further, POAL anticipates the need to undertake (new) capital dredging within the Port area, the Navigation Channel Precinct, and just outside the Precinct. This application seeks authorisation to dump maintenance and capital dredged material within the CDS.
- v. I have found that all the potential effects of the proposal, including cumulative effects, on the marine environment may be significant within the sedimentation footprint within the CDS, but outside the CDS the adverse effects will be, at worst, minor. The evidence shows that any effects are unlikely to have an effect at a population level on benthic communities, and that any rare and vulnerable ecosystems or habitats of threatened species that may exist are not unique to the CDS and its immediate surrounds. I have found there to be a very low risk of harm to such species.
- vi. The existing interests within the area where the activities are proposed to take place are commercial fisheries and recreational activities (including recreational fishing). I find the proposed activity will have negligible effects on these existing interests.
- vii. I have taken into account the nature and effect of other marine management regimes pursuant to section 59(2)(h) of the EEZ Act. The relevant marine management regimes have different purposes to the EEZ Act and do not have safeguarding the life-supporting capacity of the environment as a key focus. Some of them do, however, impose standards and requirements that are relevant to the environmental matters that I must consider under section 59 of the EEZ Act. I have taken care not to impose conditions that conflict with measures required by other marine management regimes or the Health and Safety at Work Act 2015.
- viii. After considering all the information provided by POAL and taking into account the matters listed in sections 59 and 60, and applying the information principles in section 61 of the EEZ Act, I

consider that granting the consent will meet the purpose of the Act, as set out in section 10 of the EEZ Act.

- ix. In making my decision on this application I have been mindful of the fact that Parliament has authorised the Executive to make regulations that have categorised the dumping of dredged material within the five authorised locations of the D&D Regulations as a non-notified activity under section 29D of the EEZ Act. However I am clear that the assessment that such activities have a low probability of significant adverse effects on the environment or existing interests is only for the purposes of classifying the activity. It has not influenced me in my duty to assess the effects of this dumping activity on its own merits, and as provided within sections 59-61 of the EEZ Act.
- x. I acknowledge that the application will generate some adverse effects, but I consider that they can be appropriately avoided, remedied, or mitigated through the conditions I have decided to impose pursuant to section 63 of the EEZ Act (and the requirements of other marine management regimes).
- xi. I have found the conditions proffered by POAL were a good start point for assessing management and mitigation options. However, I have amended some of the proffered conditions, where necessary or appropriate, so there is some necessary consistency with other consents issued by the EPA for similar dumping activities, while ensuring the facts and circumstances of this application are properly addressed.
- xii. Finally, having considered the requirements of sections 59, 61, and 73 of the EEZ Act, and in light of the purpose of the EEZ Act, I have determined that the marine consent should expire on 27 June 2054.

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Glossary of Abbreviations and Terms

AEDG	Auckland Explosives Dumping Ground (same as CDS)
ANZECC	Australian and New Zealand Environment and Conservation Council
CDS	Cuvier Disposal Site
CIA	Cultural Impact Assessment
CMA	Coastal marine area
CRL	Coastal Resources Limited
D&D Regulations	Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharge and Regulations Dumping) Regulations 2015
DGV	Default Guideline Value (ANZECC 2018)
DuMP	Dumping Management Plan
EDG	Explosives Dumping Ground (same as CDS)
EDS	Explosives Dumping Site (same as CDS)
EEZ	Exclusive Economic Zone
EEZ Act	Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012
EPA	Environmental Protection Authority
ER-L	Effects Range - Low
ER-M	Effects Range - Medium
GV-High	Guideline Value – High (ANZECC 2018)
IA	Impact Assessment
ISQG-High	Interim Sediment Quality Guidelines – High (ANZECC 2000)
ISQG-Low	Interim Sediment Quality Guidelines – Low (ANZECC 2000)
MMR	Marine Management Regime
MNZ	Maritime New Zealand
NDA	Northern Disposal Area
NKTT	Ngā Kaihautū Tikanga Taiao
POAL	Ports of Auckland Limited
RIS	Regulatory Impact Statement
RMA	Resource Management Act 1991
ROMS	Regional Ocean Modelling System
ROV	Remotely Operated Vehicle
SFATE	Short-Term Fate Model
The Port	Port of Auckland
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency

Chapter 1: BACKGROUND

1. The Applicant and the Application

1.1 The Applicant

1. Ports of Auckland Limited (POAL) operates and manages the Port of Auckland (the Port). The Port was 'established' in 1851 with the construction of Wynyard Pier followed by the first Queen Street wharf in 1852. The Auckland Harbour Board was established in 1871 and POAL took over management of the Port in 1989. POAL is 100% owned by Auckland Council.

1.2 The Application

2. On 23 November 2018, POAL lodged an application with the Environmental Protection Authority (EPA) for a marine dumping consent (EEZ400011) under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (the EEZ Act). The application seeks authorisation to dump material dredged from in and around the Port within one of the five 'authorised locations'¹ specified in the Exclusive Economic Zone and Continental Shelf (Environmental Effects—Discharge and Dumping) Regulations 2015 (D&D Regulations). The authorised location is located within the exclusive economic zone (EEZ) approximately 27 nautical miles east of Cuvier Island. This authorised location is referred to in the application as the 'Cuvier Disposal Site' (CDS).
3. The POAL application bundle consists of five parts together with ten appendices. For the purposes of this decision reference is made to the following (with their corresponding meaning):
 - a) 'the application' means the front-end document entitled "Application to the Environmental Protection Authority for a Marine Dumping Consent to Undertake a Non-notified Activity and Impact Assessment" prepared by Bentley & Co Resource Management Consultants (dated November 2018);
 - b) "the IA" means the Impact Assessment (IA), being the report in Section 4 of the application bundle entitled "Ports of Auckland – Assessment of Sediment Quality and Biosecurity for Dumping of Dredged Sediment from the Port of Auckland at the Cuvier Dump Site" prepared by Golder Associates (NZ) Limited (dated November 2018); and
 - c) "Appendix X of the IA" (where X denotes an alphanumeric between A and J) means the relevant appendix attached to the IA.
4. A 35-year term for the consent has been sought.
5. Further details of the activities associated with this application are presented in Section 5 of this decision.

¹ Regulation 3 of the Exclusive Economic Zone and Continental Shelf (Environmental Effects—Discharge and Dumping) Regulations 2015 lists five 'authorised locations' with the CDS being defined as being a circle of 4 nautical miles radius centred on position 36°28'S 176°20'E (27 nautical miles east of Cuvier Island).

2. Activity Status and Processing Pathway

6. Section 20G(2) of the EEZ Act states that no person may dump waste or other matter (which includes dredged material) into the sea within the EEZ. However, section 20G(3) provides for such dumping to occur if regulations allow the dumping to be authorised by a marine consent and the dumping has been authorised by a marine consent.
7. Section 29D of the EEZ Act provides for regulations to be promulgated which may describe any discretionary activity as non-notified, or provide that an application for a marine consent for an activity to not be publicly notified.
8. Regulation 32 of the D&D Regulations states the dumping of dredged material within any one of the five authorised locations is a 'non-notified activity' under the EEZ Act. Under the EEZ Act a 'non-notified activity' includes a discretionary activity that is described in regulations as non-notified.
9. Although the proposed dumping is classified as non-notified, and the application is not to be publicly notified, section 45 of the EEZ Act requires the EPA to serve a copy of non-notified applications (and their IAs) on specified parties. There is no ability for any of the parties, or any other person, to lodge a submission regarding the application.
10. EPA staff have advised me that letters were sent to 72 parties advising them that POAL had lodged its application, and the letter provided links to the EPA website to access the application, IA, and supporting documents. The 72 parties served were made up of:
 - a) 60 Māori organisations or groups (being iwi authorities and applicant groups for customary marine title or protected customary rights);
 - b) three local authorities (two regional councils and one district council);
 - c) three government ministries, departments, and crown entities (including Maritime New Zealand); and
 - d) six other persons having existing interests that may be affected by the application.

3. The Decision-maker and Decision-making Process

3.1 Introduction

11. The EPA is the consent authority for certain activities that are restricted within New Zealand's EEZ and in or on the continental shelf. One of the EPA's functions, pursuant to section 13(1) of the EEZ Act, is to decide applications for a marine consent.
12. The Chief Executive of the EPA has delegated the exercise of powers and functions under the EEZ Act, including the decision-making for non-notified marine dumping consents to me, the General Manager Climate, Land & Oceans. This is my written record of decision pursuant to section 69 of the EEZ Act.
13. I have followed a comprehensive and robust decision-making process which involved commissioning various reports from the EPA and its external expert reviewers, Ngā Kaihautū Tikanga Taiao (NKTT), being the EPA's Māori Advisory Committee. I also sought advice from various government departments as well as legal advice from the EPA legal counsel. In addition, I requested further information from POAL. I am satisfied that I have fulfilled my duty under section 61 of the EEZ Act to ensure I have the best available information on which to base my decision.
14. The following sections provide a summary of the reports I have commissioned, the requests for further information issued to POAL, and various procedural matters which arose during the decision-making process.
15. A detailed procedural history timeline for the application is presented in Appendix 1.

3.2 Adoption and Cross-referencing of Material

16. The EEZ Act does not contain any specific directions regarding the contents of a decision on an application for marine consent except that section 69 states it must be in writing and contain the reasons for the decision. In this case I do not consider it necessary or appropriate to repeat material that is contained in the IA and the various reports prepared by EPA staff, its external experts, and NKTT in this decision. Instead, where relevant, in this decision I cross-reference and/or adopt all or parts of the IA and the other reports in front of me.
17. I take this approach to avoid unnecessary duplication. This approach aligns with decisions made on resource consents under the Resource Management Act 1991 (RMA)² and I consider this approach to be entirely appropriate for this non-notified marine dumping consent application.
18. However, taking the approach of cross-referencing and/or adopting material from the IA and reports does not mean that I have glossed over or ignored any matters.
19. I record here that I have carefully reviewed and considered all the documentation in front of me.

² Section 113(3) of the RMA states that a decision made on a resource consent application may cross-refer and/or adopt all or part of the assessment of environmental effect and/or any report prepared for the decision-maker.

3.3 Commissioned Reports

20. I commissioned two independent reviews under section 56(1)(a) of the EEZ Act. In addition, I sought advice from NKTT in accordance with section 56(1)(b) of the EEZ Act, and commissioned Stantec New Zealand (Stantec) to prepare a report on the key issues associated with the application under section 56(1)(d) of the EEZ Act. Details of the information commissioned and sought by me under section 56 of the EEZ Act are outlined in Table 1.

Table 1: Commissioned reviews and advice sought under section 56 of the EEZ Act

Report From	Topic	Date Report Received
Independent Reviews		
DHI	Sediment dispersal modelling provided for Ports of Auckland's marine dumping consent (EEZ400011) – 2nd Technical review	21 January 2019
GHD	Technical review and analysis of impacts on the marine environment by the activity proposed in Ports of Auckland Limited's application for marine dumping consent (EEZ400011)	6 February 2019
Advice from Māori Advisory Committee		
NKTT	Māori perspective of the potential impacts of the application	7 March 2019
Key Issues Report		
Stantec	Key Issues Report	27 February 2019

21. The Key Issues Report identifies the 'key' issues associated with the project as determined by the author of that Report. I have had regard to the contents and recommendations of the Key Issues Report as part of my decision-making process. The Key Issues Report outlined four main issues:
- a) The lack of information on the nature of the seabed at and around the proposed dumping site and therefore the potential effects on the environment;
 - b) The degree to which dredged material, including any contaminants, may move, and have adverse effect, beyond the CDS boundary after it is dumped;
 - c) The proposed approach to source site sediment characterisation; and
 - d) The extent of proposed environmental monitoring at the CDS.
22. There are of course other issues associated with the project, and their absence from the Key Issues Report does not mean that I have ignored them. The Key Issues Report does not provide an assessment of effects, or a conclusion about whether the application should be granted or refused. Its main purpose has been to provide me with a 'roadmap' of the key issues and guidance on where to find relevant information on these issues within the application documents. The Key Issues Report has simply been one of my starting points for consideration.
23. I record here that I have reached my own conclusions on all matters.
24. The report from NKTT expressed disappointment that, even though POAL undertook engagement with a number of hapū and iwi, it has not reflected how that advice has influenced

its application or the IA. NKTT considers that a Cultural Impact Assessment (CIA) is a valuable way of obtaining information on Māori existing interests, including impacts on cultural values, and noted that Ngāi Tai Ki Tamaki Tribal Trust indicated in its engagement with POAL that a CIA is required to enable the iwi to detail their concerns in a substantive manner. NKTT notes that no response was made to this in POAL's Engagement Summary.

25. NKTT considers that, if the limited statutory timeframe for decision-making constrains the viability of undertaking a CIA, and should consent be granted, NKTT encourages POAL to build on-going and meaningful relationships with local hapū and iwi as an important way to understand the impacts and effects of the consent on their values and mātauranga.
26. NKTT considers that POAL has fairly represented the views of those Māori groups that were in a position to respond to their approach for consultation. However, NKTT states that the assessment of effects within the application lacks the depth and breadth of whānau and/or hapū, and iwi interests given their resource constraints. NKTT see this as an opportunity missed.
27. A number of conditions are recommended by NKTT and I discuss these suggestions later in this decision.

3.4 Requests for Advice

28. The EPA requested advice from the Department of Conservation (DoC), Fisheries New Zealand³, and the Ministry for Primary Industries (MPI) under section 56(1)(c) of the EEZ Act.
29. The advice requested from DoC pertained to commercial whale and dolphin tourism operators, the presence of marine mammals, and marine ecosystems. The EPA received its response on 25 January 2019.
30. The advice sought from Fisheries New Zealand related to fishing effort (commercial and recreational). The EPA received its response on 24 January 2019.
31. The advice sought from MPI on biosecurity risks, and the EPA received its response on 4 February 2019.

3.5 Request for Information from POAL

32. I sought further information from POAL, under section 54(1) of the EEZ Act, on two occasions.
33. The information requested from POAL covered several aspects of the application and IA including:
 - a) The likelihood of rare and vulnerable ecosystems and habitats of threatened species being present and/or affected;
 - b) The difficulties of monitoring at the CDS;
 - c) The modelling used to predict potential effects on sedimentation;

³ Fisheries New Zealand is a business unit of the Ministry for Primary Industries (MPI).

- d) Historic results of benthic toxicity testing undertaken;
 - e) Proposed monitoring and validation of the model outputs;
 - f) Consideration of alternatives; and
 - g) Conditions.
34. I record here that POAL provided all the information that I requested, and that information has been most useful for me to make a decision on this application.
35. In addition to the formal requests for further information, I offered POAL the opportunity to comment on the legal opinion I sought from the EPA's legal counsel on matters around the non-notified status of the application, and also to comment on draft conditions.

3.6 Procedural Matters

36. There were a number of procedural matters which I dealt with during the consideration of POAL's application. These are discussed below.

3.6.1 Need for a Hearing

37. Section 50 of the EEZ Act enables me to conduct a hearing for a non-notified consent if I consider it necessary or desirable, even if the applicant does not request one.
38. In my view, a hearing was not necessary as I did not consider it would provide any additional value to my consideration of this application.
39. In making my decision not to hold a hearing, I was conscious of my obligation under section 61 of the EEZ Act to base my decision on the best available information and that, in the particular circumstances of this application, was available without unreasonable time, cost, or effort.

3.6.2 Extension of Time

40. On 13 March 2019 I issued Minute 1 which confirmed that an extension of the statutory time period specified in section 68(2) of the EEZ Act⁴, being the time period by which this decision must be issued, was considered necessary. An extension of the statutory time period may be made under section 159 of the EEZ Act provided I have taken into account the interests of any person who, in my opinion, may be directly affected by the extension, and the interests of the community in being able to achieve an adequate assessment of the potential effects of a proposal.
41. Minute 1 confirmed that an extension of time of up to 15 working days had been made requiring a decision to be issued by 17 April 2019, and included the reasons for the extension. I understand that the EPA advised POAL of this extension.
42. On 11 April 2019 I issued Minute 3 which confirmed that a further extension of the statutory time period specified in section 68(2) of the EEZ Act being the time period by which this decision must be issued, was considered necessary. The Minute noted that there was still outstanding

⁴ Section 68(2) of the EEZ Act states that the EPA must make its decision on an application for a marine consent for a non-notified activity as soon as is reasonably practicable and no later than 50 working days after the date on which the EPA is satisfied that the application is complete.

information to be received from POAL. There were also periods in the next month when I was not available. This was not anticipated when the first time extension was sought.

43. Minute 3 confirmed that a further extension of time of up to 29 working days had been made requiring a decision to be issued by 31 May 2019, and included the reasons for the extension. I understand that the EPA advised POAL of this extension.
44. On 29 May 2019 I issued Minute 4 which confirmed that a further extension of the statutory time period specified in section 68(2) of the EEZ Act being the time period by which this decision must be issued, was considered necessary. The Minute noted that I needed to give POAL a reasonable time to respond a second time to draft conditions, and key support staff were unavailable for much of June. This was not anticipated when the second time extension was sought.
45. Minute 4 confirmed that a further extension of time of up to 25 working days had been made requiring a decision to be issued by 8 July 2019, and included the reasons for the extension. I understand that the EPA advised POAL of this extension.

Chapter 2: EEZ ACT DECISION-MAKING

4. Duties of the Decision-Maker

46. There are several sections of the EEZ Act which outline the duties that I have as decision-maker. I do not propose to present a detailed discussion on those in the main body of this decision but have provided that information in Appendix 2 of this decision.
47. In summary, I am satisfied I have made full use of my powers to request and access information, and have the best available information to make my decision. I therefore consider I have met my responsibilities under section 61 of the EEZ Act.
48. The matters covered by sections 59 and 60 of the EEZ Act form the basis of my assessment and findings as detailed in Section 8 of this decision.

Chapter 3: PROPOSED ACTIVITIES

5. Description of the Activity

49. POAL needs to maintain certain water depths (referred to as 'notified water depths') within the Port of Auckland to allow visiting vessels to berth safely. The berthing basins are low energy environments and, as such, they act as settling basins for sediments which can accumulate over time. POAL undertakes regular maintenance dredging of the berthing basins to maintain the notified water depths. This maintenance dredging is authorised by a coastal permit issued by Auckland Council which allows up to 35,000 m³ of seabed material to be removed within the Port area. This coastal permit expires on 31 August 2027.
50. POAL also undertakes maintenance dredging within the Rangitoto Navigation Channel (shown in the Auckland Unitary Plan as the Waitemata Navigation Channel Precinct) which is authorised by a separate coastal permit issued by Auckland Council and expires on 4 November 2036⁵. This coastal permit limits maintenance dredging within the channel to 15,000 m³ per year.
51. POAL anticipates the need to undertake (new) capital dredging within the Port area, the Rangitoto Navigation Channel Precinct, and just outside the Precinct. No coastal permits have yet been applied for from Auckland Council for this work.
52. Since 2004 POAL has disposed of dredged material from the Port in the reclamation at the Ferguson terminal. This project is now nearing completion and POAL is expecting to require an alternative disposal option for its dredged material from some time in 2019.
53. The application seeks authorisation to dump at the authorised Cuvier Disposal Site up to 50,000 m³ of dredge material per year from maintenance dredging, and up to 400,000 m³ of dredge material per year from capital dredging, with a total cumulative capital dredge volume of 2,000,000 m³ over a 10-year period. The source sites for dredged material consist of the Port Precinct, the Central Wharves Precinct, the Viaduct Harbour Precinct, the Wynyard Precinct, the Waitemata Navigation Channel Precinct, and just outside the Precinct⁶.

⁵ Section 1.2 of the IA states the expiry as being 20 November 2036 and in Section 8.2.1 it states this consent expires in 2037, however the Draft Dredging Management Plan (Appendix I of the IA) includes a copy of the coastal permit and Condition 3 states it expires on 4 November 2036.

⁶ Shown in Figure 1 and Figure 2 in Section 1 of the application. The precinct descriptions are those used in the Auckland Unitary Plan.

6. Source Sediments and Dredging Methodology

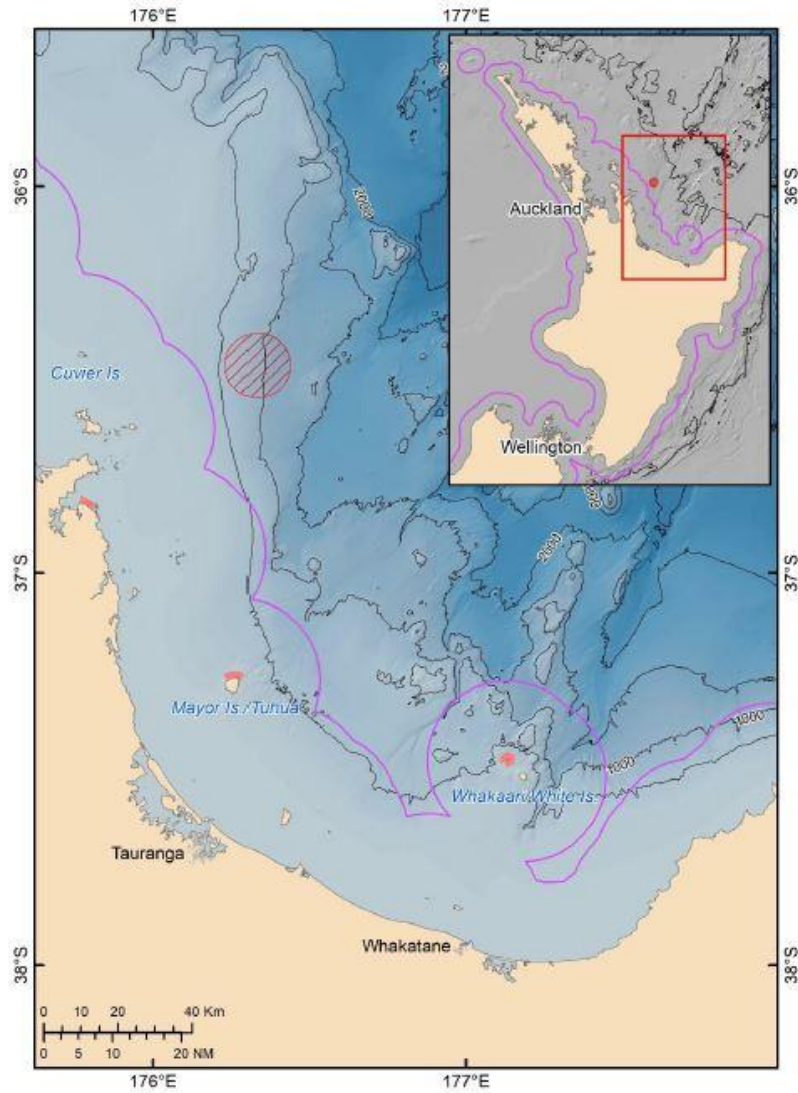
54. Only material that can be moved by mechanical means will be dredged. No material will be sourced that cannot be moved by mechanical means, nor will any material that is “pumped”, or mixed with water to produce a slurry. Section 2.2 of the IA notes that the use of mechanical dredging techniques (e.g. hydraulic excavator) is a requirement under POAL’s current coastal permits issued by the Auckland Council.
55. Prior to removing sediment from any source site, POAL proposes to characterise the material to determine if it is suitable for dumping at the CDS. The sampling and characterisation of sediments, and biosecurity risks, within each source site are intended to ensure that only material that is below certain contaminant levels or certain biosecurity risk levels, will be dumped at the CDS.
56. The proposed assessment process to determine suitability is based on the New Zealand Guidelines for Sea Disposal of Waste (Maritime Safety Authority (MSA) 1999, and described in Sections 1.27 to 1.33 of the application, with further details provided in Section 5 of the IA. The assessment process includes a tiered approach:
- a) Level 1 investigation: which consists of reviewing existing source site information;
 - b) Level 2 investigation: which involves the physical and chemical characterisation of the source site sediment; and
 - c) Levels 3 and 4 investigations: which involve various elutriation, toxicity, and bioaccumulation testing of the sediment.
57. If the data collected at any particular level are insufficient to make a decision about the suitability for dumping then the characterisation process will proceed to the next level. Section 5.3 of the IA gives further details regarding the sampling stations and sampling methodology proposed to be used at the source sites. Section 5.4 of the IA gives information regarding past and current contaminant concentrations within the proposed source sites.
58. The application and IA present a flow diagram which shows the proposed tiered assessment approach. This is reflected in the Applicant’s proffered Condition 2, which states:
- The sampling procedure shall be undertaken in general accordance with the New Zealand Guidelines for Sea Disposal of Waste, Maritime Safety Authority of New Zealand, 30 June 1999. The contamination levels in the sediments shall be compared to those contained in the New Zealand Action List (as set out in ANZECC [sic] (2018)).*
59. To ensure that potential changes in sediment characteristics at source sites are captured, POAL proposes, for most sites, to collect further samples and undertake testing to characterise the sediments prior to dumping. Proffered condition 7 sets out the proposed sampling frequency as follows:
- The frequency of the sampling shall be undertaken in general accordance with the following:*
- a) *For maintenance dredging within the Waterfront precincts, every five years in areas that have been sampled within the preceding five years.*

- b) *For maintenance dredging within the Waterfront precincts, prior to the commencement of maintenance dredging activities in areas that have not be [sic] sampled within the preceding five years.*
- c) *For maintenance dredging within the Waitemata Navigation Channel, prior to the commencement of maintenance dredging activities.*
- d) *For capital works dredging in all areas, prior to the commencement of capital works dredging activities.*

7. Dumping Location and Methodology

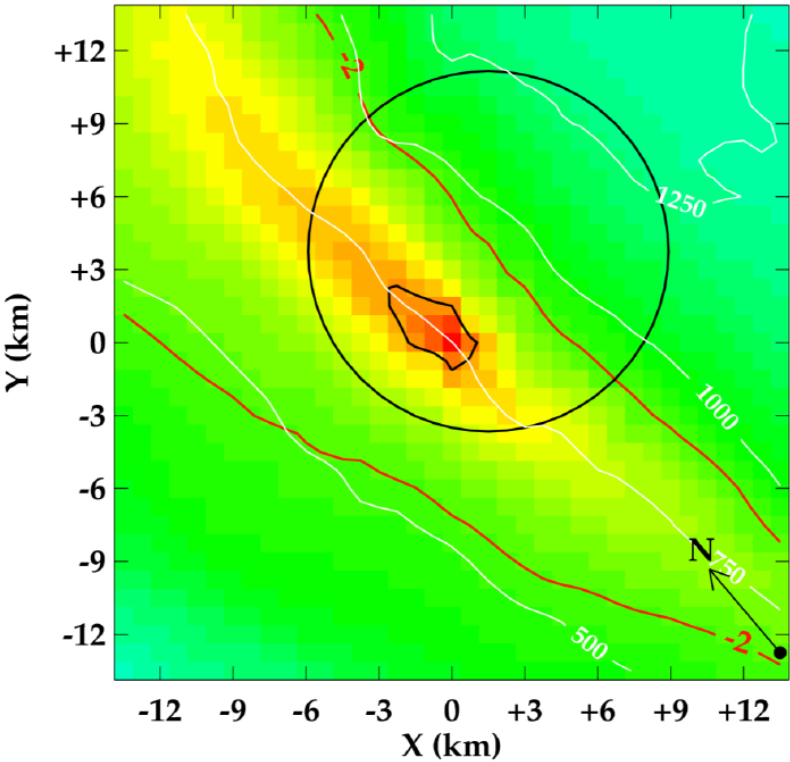
- 60. Once the material has been dredged it will be transported to the CDS via bottom-dump barges. For maintenance dredging the barge is likely to have load capacity of 700 m³, while for capital dredging a 1,200 m³ capacity barge may be used. The barges may either be self-propelled, or towed by tugs, but it is likely that non-propelled barges would be utilised. The dredged material will be dumped while the barge is in motion, typically travelling at speeds of 1 m/s, with dumping completed over a distance of less than 100 m. Once the barge hopper doors are opened, the dumping of material into the water column is typically completed in less than one minute.
- 61. The dumping is proposed to take place within the CDS, located in the EEZ approximately 27 nautical miles east of Cuvier Island (an unpopulated island located approximately 15 nautical miles to the east of the northern tip of the Coromandel Peninsula). The CDS is a circle of 4 nautical miles radius (equivalent to 172.41 km²) centred on 36°28'S 176°20'E. This location is specified under regulation 3 of the D&D Regulations as an authorised location.
- 62. The water depth of the CDS ranges from about 600 to 1,300 m. The application seeks to dump dredged material within 100 m of a point being located within the western part of the CDS around 1.5 nautical miles east of the western boundary of the CDS. The water depth at the proposed dumping location is around 700 m (Figure 1).
- 63. The seabed bathymetry is described as gradually sloping towards the east (Figure 2). The water column is expected to show seasonal stratification (Section 3.7.1 of Appendix G of the IA), and waves show a seasonal cycle with the lowest values in summer. The surface currents in the region tend to flow from the northwest to the southeast, but with considerable spatial and temporal variation in strength and direction due to topography, tidal currents, wind forcing, and Rossby waves coming from the east. Modelled currents based on the mooring data indicate currents of <0.175 m/s in the upper water columns and <0.1 m/s at the bottom (section 3.2 of Appendix H of the IA). The model outputs indicate that bottom flow is more towards the north.

Figure 1: Location of the proposed dump site - the Cuvier Disposal Site shown as the dashed red circle. Black lines depict depth contours. Sourced from Appendix F to Attachment 4 to the IA.



64. The existing biological environment of the CDS is described in Section 7.6 of the IA. Further detail is provided in Sections 3.2 to 3.6 of Appendix F of the IA. Benthic fauna, phytoplankton, zooplankton, marine mammals, seabirds, and fish are considered.
65. I adopt this information on the existing biological environment for the purposes of my decision, and do not repeat it here.

Figure 2: The Cuvier Disposal Site and predicted sediment deposition. Position 0 – 0 marks the centre of the proposed dump site within the CDS. The black circle marks the boundary of the CDS. The white lines indicate depth contours. The colour gradient represents the 50th percentile layer of sediment deposition after a 365-day capital dredging campaign. Sourced from Figure 5.5 of Appendix H to Attachment 4 of the IA.



Chapter 4: OVERALL ASSESSMENT

8. Context for Consideration and Evaluation

8.1 Introduction

66. As discussed in Section 4 of this decision, I must apply the decision-making criteria and information principles set out in the EEZ Act. Specifically, this requires me to apply section 59 which sets out a decision-making framework; section 60 which lists matters to be considered in deciding the extent of effects on existing interests; and section 61 which lists certain information principles.
67. I record here that, pursuant to section 59(5) of the EEZ Act, I have not given regard to:
- a) trade competition or the effects of trade competition;
 - b) the effects on climate change of discharging greenhouse gases into the air;
 - c) any effects on a person's existing interest if the person has given written approval to the proposed activity.
68. I consider the most efficient and effective way for me to present findings on the various matters that I am required to turn my mind to in making my decision is to assess each of the subsections of section 59 of the EEZ Act. I note and record that subsections (c), (f), (g), and (i) of section 59 do not apply to marine dumping consents. I must also consider the effects on human health of the dumping, any alternative methods of disposal of the waste, and whether there are practical opportunities to reuse, recycle, or treat the waste.
69. I present my findings on the relevant section 59 EEZ Act matters in the following sections, however I begin with discussion on the CDS as being an 'authorised location' under the EEZ Act. I consider whether that status has any special implications for my consideration of this application.

8.2 Cuvier disposal Site as an 'Authorised Location'

70. The CDS is an 'authorised location' under the D&D Regulations for the disposal of dredged material. Applications to dump dredged material at this authorised location are non-notified discretionary activities. Section 29D of the EEZ Act enables regulations to be made which describe any discretionary activity as non-notified. However, before making such regulations the Minister must be satisfied that the activity has a low probability of significant adverse effects on the environment or existing interests, and the activity must either be:
- a) routine or exploratory in nature; or
 - b) an activity of brief duration; or
 - c) a dumping activity.

71. As part of preparing the D&D Regulations the Government prepared a Regulatory Impact Statement (RIS). Table 14 of the RIS states that material dumped in authorised dumping sites is likely to have negligible effect on existing interests as these dumping sites are too deep to be used for other purposes that come into contact with the seafloor such as trawling. Table 14 of the RIS records that by classifying the dumping of dredged material differently depending on whether it is dumped in an authorised dumping ground creates an incentive for operators to dump the material in areas where they will have a lesser impact on the environment and existing interests (compared to dumping outside the authorised locations). Further, Table 14 of the RIS records that the existing dumping grounds are already modified which incentivises dumping within those areas.
72. POAL's assessment of potential effects on the environment and existing interests has focused and weighted more to those which may occur beyond the boundary of the CDS than within the CDS. Paragraph 2.18 of the application states:
- Overall, while the activity will generate adverse effects within the boundaries of the CDS, such effects need to be considered in the context of the existing modified receiving environment and are reasonably anticipated outcomes under the EEZ Act and D&D Regulations. Beyond the boundary of the CDS, the analysis undertaken by Golder (2018) confirms that the effects on the environment will be very low and that existing interests will not be adversely affected.*
73. POAL's response to my first request for further information (Request #1) reinforces the above position, as the responses and volunteered monitoring were restricted to the areas outside of the CDS, and not within it.
74. I sought advice from the EPA's legal counsel as to whether the status of the CDS as an 'authorised location' has any special significance in terms of my determination of the application. In particular, I wanted to know whether, when considering whether to grant a marine consent for a non-notified application, it is relevant for me to take into account that the Minister must have formed an opinion under section 29D of the EEZ Act that the activity has a low probability of significant adverse effects on the environment or existing interests. I asked this question because it could be "read in" to the words used in section 59 that, in relation to a non-notified application, a decision-maker can proceed on the basis, or at least adopt a starting point, that there are no significant adverse effects to the environment or existing interests because the Minister must have satisfied themselves of this before preparing regulations.
75. The advice I received from the EPA's legal counsel was that the Minister's decision on the section 29D threshold is not a relevant consideration, or starting point, for me under section 59. The supporting information created during the development of the D&D Regulations made under sections 29A and 29D state that the effects on the environment are to be managed through the EPA's ability to thoroughly assess effects on a case-by-case basis.
76. The EPA legal advice stated that section 59 of the EEZ Act requires me to take into account any effects on the environment without any qualification as to whether an activity is notified or not-notified. The only significance of the prior opinion formed by the Minister is that it has resulted in the activity having non-notified status, and my information gathering (in terms of ensuring I have the 'best available information') should not proceed on the basis of any assumptions about whether the activity is likely to have significant adverse effects on the environment or existing interests.

77. The EPA legal advice confirms that all the relevant effects need to be assessed, both within the CDS and outside of it.
78. POAL was invited to comment on the EPA legal advice (Minute #2) and it provided a response through its legal counsel which stated (among other things):
- a) It does not disagree with the EPA advice that the Minister's decision under section 29D is not a relevant consideration for a decision-maker who decides a marine consent application under section 59 of the EEZ Act;
 - b) POAL's application is not premised on reliance on the Minister's decision under section 29D;
 - c) POAL's assessment approach also directly corresponds with the scale and significance of the effects the application may have on the environment and existing interests (as required by section 39(3) EEZ Act). The assessment of the application reflects and takes in account the following matters:
 - i. The CDS is a compromised area having been historically used as a dumping site, including for unexploded ordnance.
 - ii. Due to this historic use and the resulting compromised character of the area, the CDS has been identified as an appropriate and suitable location for future dumping to occur.
 - iii. The effects of dumping within the CDS will be less significant than in other areas, due to its historic use and compromised nature of the area.
 - d) Given the above, POAL's assessment of the application has focussed in more detail on its effects on the environment and existing interests beyond the boundaries of the CDS. The assessment has also considered and assessed effects on the environment and existing interests within the CDS, but in doing so, POAL has kept in mind the factors above that have led to the CDS being identified as an appropriate location for marine dumping activities.
79. I find that the assessment by the Minister under section 29D of the EEZ Act, that dumping activities have a low probability of significant adverse effects on the environment or existing interests is only for the purposes of classifying the dumping activity as a non-notified activity. It has not influenced me in my duty to assess the effects of this dumping activity on its own merits, and as provided within sections 59-61 of the EEZ Act. Section 59 of the EEZ Act requires me to take into account any effects on the environment without any qualification as to whether an activity is notified or not-notified.

9. Section 59(2)(a) – Effects

80. Section 59(2)(a) of the EEZ Act requires me to take into account the effects of allowing the activity on the environment and existing interests. This includes cumulative effects and any effects that may extend beyond the boundaries of the EEZ.

9.1 Potential Adverse Effects on the Environment

9.1.1 Existing Environment

Seabed and Benthic Ecology

81. The proposed dumping location is within the CDS but there is a paucity of monitoring information on the nature of the seabed and the benthic ecology that is present there.
82. Section 7.6 of the IA describes the information that is available on the ecological environment. A combination of 'local ecological knowledge', data from sampling around the CDS, and predictive modelling has been used by the applicant to describe the likely benthic environment and seabed characteristics that exists within and around the CDS.
83. There was an apparent conflict of terminology of likelihoods of rare and vulnerable ecosystems being present in and around the CDS stated in Section 7.6.2 of the IA, and that stated in Appendix F (the NIWA report). Further information on this apparent conflict was sought from the Applicant in Further information Request 1, dated 28 February 2019. The Applicant's response to Further information Request 1, dated 19 March 2019, stated:
- a) *"The NIWA review identified locations where sensitive habitat indicator species (e.g. stony corals etc) have been identified.*
 - b) *The NIWA review identified that modelling has shown that several sensitive habitats have a high likelihood of being present "in the vicinity" but "vicinity" wasn't defined. The benthic sample data presented in the application has shown that sensitive habitat and associated species are present in waters inshore of the CDS.*
 - c) *In Golder (2018) page 57, it was stated that the habitat modelling work undertaken to date indicates that there is a moderate probability some of these taxa will be present across the continental shelf in this area. This statement is now considered too general and the following conclusions are considered more appropriate.*
 - i. *Modelling undertaken of the probability of the occurrence of groups of biota (e.g., stony corals) or individual species, provides data that indicates that in the absence of sample data, physical conditions provide an indication of the probability that a group or species will be present.*
 - ii. *The probabilities only provide an indication as to whether a group or individual species might be present. It does not confirm that they are present.*
 - iii. *The sensitive habitat species occupy different physical habitats. It is considered, based on the lack of any data identifying hard ground immediately to the north and south of the CDS that those habitats requiring rock substrate or gravel are unlikely to be present.*
 - iv. *None of the probability modelling output provided with the various published studies provides a high level of detail at and around the CDS. Most modelling of the EEZ has been undertaken at a scale of 1 km. An example from Tracey et al. (2011) for the common stony coral *G dumosa* is provided in Figure 1 at the end of this table. Even if the data for the grids around the CDS were evaluated for this species or others, it would not provide sufficient information to confirm whether any specific sensitive habitat species were present."*

84. The IA notes that dumping has occurred at the CDS for decades, however no published information appears to be available about the nature of the environment within the CDS or adjacent to the CDS either before or after this dumping. Despite this, POAL assert that, due to the nature and amount of historic dumping activity, the CDS is a modified environment. POAL considers the CDS to be ‘compromised’ having been historically used as a dumping site, including for unexploded ordnance. The CDS is a significant site being about seven km in radius. It is unlikely, but possible, that the whole dump site is modified by historical dumping to some degree, however the situation is best characterised as “uncertain”. The historic permits for dumping and disposal at the CDS are listed in Table 1 of Appendix A of the IA. The last recorded permit for dumping of dredged material at the CDS appears to have been in 2015 which authorised 13,000 m³ of material to be dumped.
85. The Applicant volunteered to undertake monitoring of the seabed in areas outside of the CDS prior to the first dumping of dredged material. However, my decision on the application has to be based on information available to me now. Any outputs/findings from such monitoring are simply not able to be applied to my decision so I am unsure as to the need for, or usefulness, of such monitoring. Certainly there is no mechanism for me to make use of such information in amending any consent should it be granted, as I understand that could be said to be an adaptive management response. I am statutorily barred from using adaptive management in any form to address new information or to address new assessments of effects⁷. In order to help assess whether there are any unanticipated effects I have decided to accept the proffered condition on an Augier basis only (Conditions 23 – 26). This will be information gathered by the applicant and made available through its web site as required by Condition 15.
86. DoC advised, in its section 56 advice dated 25 January 2019, that the Applicant’s identification of habitats of threatened species near the CDS is largely speculative. It noted that the IA provides no direct knowledge of the benthic topography or species occurring within the CDS, and that many of the conclusions are drawn from inferences to information which is more relevant for shelf habitats than for the upper slope habitat of the CDS. Consequently, this lack of specific and relevant data for the CDS means that much of the information is of limited use to infer what conditions exist in the CDS.
87. In its section 56 advice dated 25 January 2019, DoC also advised that other protected species that are known to occur in this area include whale shark, manta ray, leatherback turtles and spine-tailed devil ray. Further, it noted that protected deep water corals, and smalltooth sandtiger sharks, may occur in the CDS if reef habitat is present.
88. DoC’s concluding statement in its section 56 advice dated 25 January 2019 was:
- “The Department is concerned with the lack of reliable information on the location of threatened species and rare and vulnerable ecosystems in the vicinity of the proposed disposal site. As noted in the NIWA review there is a high likelihood for several habitat forming or vulnerable deep seafloor groups to occur in the vicinity of the area. Considering the sensitivity of threatened marine organisms like corals to sedimentation, there is a significant risk that the activity may smother any such organisms in the vicinity. The Department was recently involved in opposing a similar application by Coastal Resources Limited at the nearby*

⁷ The Taranaki-Whanganui Conservation Board v The Environmental Protection Authority [2018] NZHC 2217 [28 August 2018].

Northern Disposal Area. The Department gave evidence at the hearing for that application based on the impacts of sedimentation, potential presence of protected species, and the appropriateness of the activity. The Department shares similar concerns with this application, especially considering that the quantity of material to be disposed is almost double that of the Coastal Resources Limited application, and that the CDS likely has greater biodiversity values.”

89. I find the characterisation of the seabed in and around the CDS presented in the IA is based on the best available information, despite the fact that there is very little actual available information that would robustly characterise the seabed and benthic environment of the CDS. Additional information on the metocean conditions, and the nature of the seabed and existing benthic ecology outside the CDS is proposed to be obtained by the applicant, but that cannot be brought in to my decision on the application.

Marine Mammals

90. The Applicant reviewed whale and dolphin sightings within the New Zealand EEZ from a number of databases. The data review identified 15 whale and four dolphin species having been sighted within the area, five of which are either threatened or at risk.
91. DoC advised that the list of marine mammals occurring in the area in the IA is accurate and comprehensive.

Seabirds

92. The Applicant undertook a review of existing information relating to seabirds utilising the ocean in the vicinity of the CDS, and the area to the south into the Bay of Plenty. Over 70 seabird species utilise the wider Hauraki Gulf and region, and 27 species are known to breed in the region, of which, 59% are endemic to New Zealand. These include birds breeding on islands within 50 km of the CDS, along with species that breed elsewhere in New Zealand waters but use the wider New Zealand shelf environment during the non-breeding season.
93. DoC advised that the list of seabirds occurring in the area presented in the IA is accurate and comprehensive.

9.1.2 Potential Effects

94. My assessment of the application, the IA, further information from CRL, and commissioned technical reports, clearly point to the potential effects associated with the dumping of sediment being:
- a) Sedimentation effects on benthic communities
 - b) Marine mammals;
 - c) Seabirds; and
 - d) Biosecurity.

Sedimentation and effects on benthic communities

Sediment behaviour when dumped

95. The dredged material will descend down through the water column after it is dumped. A large percentage will reach the seabed beneath, and down-current of, the point of release. The area that this material will settle within, and the thickness of sedimentation, will depend on a number

of factors, including volume of material dumped, water depth, and magnitude of cross currents. Whilst most of the dumped material settles on the seabed, some gets 'stripped' from the descending plume, resulting in increased total suspended solids (TSS) concentrations of the surrounding waters. This suspended (entrained) component can get transported by currents away from the point of discharge before it eventually settles on the seabed.

96. The dredged material contains a variety of contaminants, some of which will remain adhered to the material as it settles on the seabed and some of which may be released into the water column. The contaminants present in material that settles on the seabed may affect the benthic ecology and the contaminants that are released into the water column have the potential to exert acute or chronic effects on the various marine species who live in the water column.
97. POAL modelled the behaviour of the dredged material after it is dumped. Two separate models have been used, one to predict the short-term near-field behaviour and one to predict the longer-term far-field behaviour.
98. The near-field modelling (using the Short-Term Fate (STFATE) model) predicts the effects of dumping loads of 700 m³ and 1,200 m³ to reflect the likely single load volumes dumped by the barge during maintenance and capital dredging, respectively. The modelling assessed:
 - a) the spatial extent and depth of sedimentation that would occur per dumping event, and
 - b) the percentage of the dumped material that would be 'stripped', including predicted concentrations of TSS at different depths, as the plume descends through the water column.

Various scenarios were modelled to assess the effects of increasing cross currents.

99. The far-field modelling (using the Regional Ocean Modelling System (ROMS) model) used the 'stripped' component from the STFATE model as its input. This model was used to predict the spatial effect of increased TSS concentration and sedimentation extents (spatial and depth) as the suspended solids settled on the seabed.
100. The STFATE modelling predicts that, under conditions of no cross-currents, the maximum sediment depth following a single dumping event of 700 m³ (to simulate maintenance dredging) will be 0.9 mm immediately below the dumping point, and sedimentation will extend over an area of about 12 km² which comprised 95% of the dumped material. When a cross-current of 0.1 m/s was considered, the currents transported the descent plume about 0.13 km away from the dumping location. The descent plume then undergoes dynamic spreading of the collapsed plume outwards from the point of impact. The clouds of sediment generated by the collapse spread laterally on the seabed by about 1.3 km from the dumping location. This is predicted to affect an area of 14 km² and results in a maximum deposited depth of 0.7 mm. The modelling also evaluated a cross-current of 0.25 m/s which moved the descent impact point by 0.31 km and the post collapse sediment up to 3 km from the impact point, covering an area of 20 km² to a maximum depth of 0.4 mm.
101. In summary, no cross-current results in a smaller but thicker sedimentation mound footprint, and, as cross-currents increase the mound spreads out covering a larger area but with a thinner mound.
102. The same modelling was undertaken for a single 1,200 m³ dumping event (to simulate capital dredging). Under conditions of no cross-currents the maximum sediment depth was 1.5 mm below the disposal point and sedimentation extended over an area of about 11 km². When a

cross-current of 0.1 m/s was considered, the descent plume is carried about 0.13 km away from the dumping location. The clouds of sediment generated by the collapse spread laterally on the seabed about 1.5 km from the dumping location. This is predicted to affect an area of 16 km² and result in a maximum deposited sediment depth of 1 mm. The modelling also evaluated a cross-current of 0.25 m/s which moved the descent impact point by 0.31 km and the post collapse sediment up to 3.9 km from the impact point, covered an area of 26 km² to a maximum depth of 0.7 mm.

103. The IA states that the majority of near bottom current velocities are below 0.15 m/s with 50% being below 0.1 m/s, meaning that the scenarios using the 0.1 m/s cross currents provides the most realistic picture of the impact of the plume deposition spread. For all the 0.1 m/s cross current scenarios the impact plume remains entirely within the CDS boundary.
104. The application proposes to dump each load of dredged material essentially at the same location within the CDS (within a 100 m radius of the specified location which is off centre of the authorised site as shown in Figure 2), meaning that there will be accumulations of sediment on the seabed following each dumping event. The modelling assessed the cumulative depths of sedimentation that would occur over an 86-day period to simulate a maintenance dredging campaign and a 365-day period to simulate a capital dredging campaign. This modelling predicts that an 86-day maintenance dredging campaign may result in a maximum depth of sediment of 78 mm, and a 365-day capital dredging campaign may result in a maximum depth of sediment of 586 mm. It should be noted that these maximum depths were predicted where there was no cross current at the time each load was dumped (which results in maximum accumulation immediately below the point of discharge), a scenario that is extremely unlikely to occur in reality.
105. I requested further information from POAL on the total sedimentation depths that would occur as a result of dumping material over the 35 year term being sought. In its response dated 5 April 2019, POAL advised that within the CDS the total sedimentation depths would be up to ~2,000 mm, and at the boundary of the CDS the total sedimentation depth would be 0.868 mm with lesser depths away from the CDS boundary.
106. The results of the ROMS modelling assessed the far-field effects in terms of TSS concentrations as well as sedimentation extents and depths as the suspended material falls to the seabed. Two different fall velocities were modelled. The sedimentation depths predicted by the ROMS modelling are additional to those predicted by the SFATE modelling.
107. The ROMS modelling shows that a small area of 0.1 mm sedimentation depth may be present within the CDS with a larger area of 0.01 mm of sediment depth for either an 86-day maintenance dredging campaign, or a 365-day capital dredging campaign. However, this will not add significantly to the sedimentation arising from the sediment falling directly within the CDS. Outside of the CDS, the ROMS modelling shows that sedimentation arising from an 86-day maintenance dredging campaign, or a 365-day period of capital dredging, will result in sedimentation of <0.1 mm close to the CDS and <0.01 mm with greater distance from the CDS.
108. In order for dredged material which has settled on the seabed to be remobilised and transported away from the site the current at the seabed needs to be sufficient to move the particles. Different size particles require different current velocities in order to be remobilised. The level to which material is consolidated will also influence the current required for remobilisation. In general, however, due to the depth of the site and the expected bottom current levels in the

area, POAL does not consider that sediment dispersal away from the CDS due to resuspension will be significant. Based on the data provided, this assessment appears reasonable.

109. The IA states that, based on the potential sensitivities of a wide range of benthic species to sedimentation, it is likely the dumping campaigns would have adverse effects on a component of the benthic fauna within the CDS, potentially limiting the fauna long-term to resilient species. Beyond the boundary of the CDS, the sedimentation rates over seasonal dumping campaigns are not expected to have adverse effects on benthic ecology, as the sedimentation rates are very low.
110. Further information was requested from POAL on what effects the sedimentation will have on benthic organisms. In its response to my request for further information dated 5 April 2019, POAL advised that mobile benthic organisms have demonstrated a capacity to be able to survive significant burial. POAL advise that sessile organisms show variable resilience to burial by sedimentation with the more resilient species able to withstand up to 3 mm / day of sediment deposition over the short term. POAL then state that these rates will be exceeded after:
 - a) Four days at the centre of the disposal mound, and
 - b) Thirty (30) days at the edge of the mound.
111. POAL also state that over the long term the mound height may exceed the physical height of long lived species such as corals that may be present in the CDS. POAL suggest that when the local-scale adverse effects on benthic communities from the dumping of sediment are considered in the context of their presence in the wider continental shelf, these communities, as a whole, will not be adversely affected by the proposal.
112. In terms of TSS, the ROMS modelling predicts the highest TSS concentration present in the water column was only just above 0.1 mg/L, being within the range expected to be naturally present in the area. The ROMS model shows, for a 700 m³ dumping event (simulating maintenance dredging):
 - a) At the surface, concentrations up to 0.01 mg/L are found within the CDS boundary.
 - b) At about 200 m depth, concentrations of up to 0.01 mg/L are found broadly outside the CDS boundary.
 - c) Near the seabed, concentrations of up to 0.01 mg/L are also found just outside the CDS boundary but aligned with the seabed contours.
 - d) Beyond the CDS boundary concentrations decrease further to 0.001 mg/L and lower with the additional TSS present in the water column aligned with the seabed contours.
113. For a 1,200 m³ dumping event (simulating capital dredging) the TSS concentrations predicted by the 700 m³ event are likely to increase by a factor of around 1.7, however no specific modelling has been undertaken to confirm this. When I questioned this, POAL responded advising that the scaling factor of 1.7 used in the IA was considered to provide a conservative estimate when representing the likely impacts of the dumping using the larger barge sizes.
114. The EPA's external expert on modelling (DHI) concludes that overall the results of both the near-field and far-field modelling assessments appear to be sound, and within the expected accuracy for this type of study.

Sediment Contaminants

115. The seabed material within the Port that will be dredged as part of maintenance dredging and capital dredging in that area can contain a variety of contaminants. Testing of sediments has shown that concentrations of mercury, tributyltin (TBT), and DDT exceed the ANZECC (2018) default guideline value (DGV) for sediments, and on occasions exceed the ANZECC (2018) “High” guideline value (GV-High).
116. The seabed material from the Navigation Channel is relatively uncontaminated compared to the Port. Limited sampling has been undertaken of the seabed material within the Navigation Channel, but the available results show very low concentrations of contaminants with virtually all samples below their respective DGVs.
117. Where the dredged material settles on the seabed it will change the sediment quality present there. The extent of the change will depend on the proportion of the dumped material being from within the Port versus that from the Navigation Channel. Further, there will be mixing of the dumped material and seabed sediments within the CDS. The IA states the resultant concentrations of mercury, TBT, and DDT within the CDS will exceed their respective DGVs when dumping of maintenance dredging material occurs, but during periods when capital dredging occurs the concentrations are expected to be below their respective DGVs.
118. The IA states that benthic toxicity tests were carried out in 1990. These tests showed that the degree of toxicity associated with the sediment tested was acceptable. Details of this testing are presented in Section 8.3 of Appendix D of the IA. However no information is presented on the concentrations of contaminants that were present in the sediment that was used in the benthic toxicity testing and how those concentrations compare to the anticipated concentrations in the sediments that are proposed to be dumped as part of the current application.
119. I requested further information from POAL on this matter and it advised that, while this information is available, the information is not considered necessary because sediment characterisation plans would be prepared and used for assessment of the sediment to be dredged in respect of its suitability for dumping. Appropriate toxicity testing would be undertaken where sediment quality and/ or elutriate testing indicates that it was required. That data would be provided to the EPA to verify that sediment to be dredged from specific locations was suitable for disposal at the CDS.
120. I note that the EPA’s external experts on marine ecology (GHD) consider the 1990 data to be too old to be relevant. However, it is less about relevance as I understand that the 1990 data was being used to show at that time that there were differences in the toxicity of the different sediments depending on its source. I am now satisfied that I do not have to inquire further in to the data from those 1990 toxicity tests. What is relevant for my decision is the sampling proposals, the tests and the analysis proposed for determining the suitability of any dredged sediment from all source sites for future dumping. I have spent some time understanding and assessing whether what is proposed by POAL provides a robust, science-led process to get the best information on the quality of dredged material. That sediment characterisation process is at the heart of avoiding significant adverse effects in the EEZ. That is why the process of characterisation is captured in detail in a condition of consent.

121. Outside of the CDS the predicted sedimentation rates are low compared to within the CDS. The IA considers that no change to the chemistry of the sediments outside the CDS is expected because of the small depths of sedimentation predicted, and the mixing that will occur through bioturbation (reworking of sediments by benthic organisms through burrowing etc).
122. The contaminants present in the dredged material can potentially be released into the water column. Elutriate testing is used to assess the degree to which these may be released into water. Results show that concentrations of some of the contaminants in the elutriate water have exceeded the ANZECC (2018) 99% and 95% protection water quality trigger values, as well as the USEPA chronic criteria. None of the concentrations exceeded the USEPA acute criteria. The testing suggests that a dilution of about 10 times results in concentrations being below the relevant chronic guideline concentrations.
123. Elutriate toxicity testing on three marine organisms was undertaken in 2018 using sediments collected from the Port. The results suggest that a minimum of 20 times dilution was necessary to reduce the concentrations of contaminants to the 'no observed effects concentration' (NOEC).
124. The IA presents predicted dilution rates that occur as the plume of dredged material descends. At a depth of 50 m the dilution is predicted to be in the order of 30 to 40 times. Due to the intermittent nature of release, and further dilution of the contaminants in the environment, any adverse effects will be limited in temporal and spatial scale. Potential adverse effects posed by the release of contaminants into the water column can be further minimised by robust testing of source site sediment before dumping, and by limiting the dumping of contaminated dredged material.
125. I have described the proposed characterisation of the source sites in section 6 of this report, and have imposed a detailed set of conditions managing how this characterisation process will happen.
126. I consider that the applicant has appropriately assessed the degree to which dredged material, including any contaminants, may move, and have adverse effects beyond, the CDS boundary after it is dumped.

Conclusion

127. My assessment of the potential adverse effects of sedimentation and contaminants on the benthic ecology is informed by the likelihood of the presence of, and the potential for effects on, rare and vulnerable ecosystems and the habitats of threatened species in the benthic environment.
128. I find that adverse effects on such species may be significant within the CDS to the extent they are present in the area of sediment deposition, and especially within the sedimentation footprint predicted by the modelling. Outside of the CDS I find the potential adverse effects on the benthic ecology and rare and vulnerable ecosystems and the habitats of threatened species to be, at worst, minor. I say this on the basis that, to the extent that specific species information and modelling inform my assessment, rare and vulnerable ecosystems and the habitats of threatened species are not confined just to the area of the deposition footprint. They are most probably present elsewhere in the CDS, as well as outside the CDS. The likelihood of specific adverse effects, limited as they are to a small vector within and outside the CDS, will not be of

such scale as to be catastrophic for populations given that there will, in all probability, be a general distribution of such species throughout the area surrounding the CDS.

Marine Mammals

129. The potential adverse effects on marine mammals relate primarily to the risk of vessel strike from the tugs and barges used to transport dredged material from the source sites to the CDS. The Applicant stated that, although collisions with marine mammals as a result of dredging and dumping operations is possible, a literature review revealed only one incident worldwide (the death of a southern right whale calf).
130. The literature review showed that the collision risk with a result of severe injury, or death, is greater when the vessel's speed exceeds 10 - 14 knots. The speed that the tug and barge travel to the CDS and back to the Port is <10 knots, thereby reducing this risk. POAL also considered that no indirect adverse effects are expected to marine mammals from the dumping activity, including impacts on food supply (fish and plankton) due to the brief time the sediment will be suspended in the water column.
131. POAL recognise that the Hauraki Gulf is used by a range of marine mammal species and provided a list of 11 species that have been identified near the CDS. Three of these species have a conservation status of Threatened, Nationally Critical. POAL concluded that, if no marine mammals are observed in the vicinity of the disposal point, and avoidance strategies are implemented where appropriate to avoid any impacts, then the direct effects on marine mammals will be less than minor.
132. POAL proffered some conditions in respect of marine mammal detections. I have reflected on those conditions, and also reviewed the equivalent conditions imposed in the CRL consent. That consent has a much fuller set of requirements that, to my mind, better address marine mammal detection, and better manage risk of, and response to, possible marine mammal strikes.
133. I provided POAL with the opportunity to review a draft set of conditions that included the CRL set about marine mammals, and note it has not opposed me placing a parallel set of conditions on this issue.
134. Notwithstanding I find the risks to marine mammals as a result of the proposed activity to be low, they are risks and potential effects that must be managed, I have imposed Conditions 20 - 22 to address these risks and effects. This requires, among other things, observations to be made, and dumping not commencing, until all marine mammals are seen to move out of a 300 m radius of the dumping site, or the marine mammals have not been sighted for more than 30 minutes.

Seabirds

135. There are potential adverse effects on seabirds from attraction to vessel lighting while vessels are in transit to the CDS, as well as by operational vessel lighting during the dumping activity.
136. POAL states that lighting on the tow vessel and barge will be operated in a manner that minimises bird strike. This requirement has been volunteered by POAL in its latest set of conditions.

137. Further, the vessel will keep records of bird strike, identifying the number of birds and the species, as set out in the Dumping Management Plan (DuMP). All live birds will be photographed and returned to sea, while all dead birds will be bagged and frozen (when practical) and provided to DoC.
138. I find the risks to seabirds from vessel lighting to be low, and the risks will be further reduced by the volunteered condition requiring lighting to be inward and downward facing. Risks will be minimised as far as practicable while still complying with any relevant regulations including the health and safety requirements.

Biosecurity

139. The transport of dredge material from source sites to the CDS has the potential to spread unwanted marine organisms.
140. The Port and Waitemata Harbour are one of the most active locations within New Zealand for overseas vessel arrivals, and the areas have been subject to a range of unwanted marine organism incursions. Biosecurity surveys are carried out on a regular basis (six-monthly) within the Port and Waitemata Harbour. The surveys examine all key habitats and utilise all key survey techniques to look for unwanted organisms.
141. The primary risk identified by the Applicant is associated with the transfer of species known to inhabit soft sediment. There is a lower risk of a species known to be associated with hard surface such as wharf piles and beams along with marina pontoons being incidentally captured by dredging in an adjacent area.
142. The Applicant considers the possibility of these species spreading and establishing from sediment disposed at the CDS to be low because:
- a) It is unlikely these species would survive in the water depth at the site, which is outside the typical habitat tolerance ranges of these organisms.
 - b) There are limited options for many unwanted species to survive the transportation and reach suitable habitat once disposed at the CDS.
 - c) Dumping has occurred at the CDS from marinas and the port for several decades without any incidences of introduced species becoming established.
 - d) Disposal (~200,000 m³ over 10 years) has occurred in the Northern Disposal Area (NDA) to the north from marinas in the Auckland region for about 10 years. No introduced species have been identified in benthic monitoring at the site.
143. MPI advised that the non-indigenous species (NIS) identified in the Applicant's Review of Biosecurity Risks are the relevant species likely to be associated with this marine dumping application.
144. MPI advised that it had modelled a preliminary set (n = 10) of coastal current dispersal scenarios for a surface release of neutrally-buoyant propagules at the CDS. In all scenarios (over a 21-day simulated period), no propagules achieved landfall. Dispersal was to the southeast for most of the releases (8/10), consistent with surface flow directions modelled by NIWA. MPI advised that, if landfall via surface currents typically takes > 21 days, NIS dispersing from the dumping site could be expected to have a low likelihood of spreading to coastal areas because of limits to propagule/larval lifespans and dispersal via subsurface currents.

145. MPI advised that it agreed with POAL's conclusion that it is unlikely that organisms of biosecurity concern will establish at the CDS.
146. MPI advised that, of the activities associated with the marine dumping application, the most likely pathway for the spread of NIS is via hull fouling of project craft (vessels and barges). I sought further information from POAL on how these risks will be minimized. It advised me on 5 April 2019 that under its proposed Dumping Management Plan, vessel operators will be required to maintain their dredge and tow vessels to meet the relevant "clean hull" standards for 'long-stay vessels' of Craft Risk Management Standard: Biofouling on Vessels Arriving to New Zealand.
147. I do not consider it appropriate to impose biosecurity conditions within a Dumping Management Plan to be submitted to the EPA for approval given that POAL are required to give effect to any applicable Craft Risk Management Standards under the Biosecurity Act 1993. This is the appropriate Marine Management Regime to manage biosecurity risks. I consider this requirement is appropriate to mitigate the spread of invasive species from bio-fouling from vessels.
148. I find that the potential for biosecurity risk as a result of dumping are related to the spread of unwanted larvae or propagules of invasive species to areas where they are not currently located. I consider that this can be broken down into two distinct biosecurity risk profiles being:
- a) A low biosecurity risk associated with the dumping of sediment at the CDS. The characterisation of sediments at a Source Site will help ensure that potential biosecurity issues are identified, assessed and resolved prior to dumping occurring. A consent condition has been included requiring sediment characterisation of the Source Site for biosecurity risks (Condition 5).
 - b) The main biosecurity risk for the spread of unwanted species is via the transportation of organisms on the hulls of the tugs and barges used to transport the dredged material to the CDS. POAL have statutory obligations for a regular hull cleaning regime (that meets both MPI and Auckland Council statutory measures). In combination these measures will adequately manage this risk.

9.2 Effects on Existing Interests

9.2.1 Commercial Fishing

149. Commercial fishers who hold quota and use the CDS area as part of their fishing activity have an existing interest in the application.
150. The application notes that commercial fishing occurs throughout the offshore areas of the Bay of Plenty and northward along the coast of Auckland and Northland. Bottom trawling follows the 500 m contour just inshore of the CDS with little activity across the CDS. Long-lining occurs mainly inshore of the 250 m contour with less effort by comparison out to the 1,250 m contour. Danish seining is predominantly inshore of the 250 m contour with little activity by comparison in deeper water.
151. The IA identifies hoki, ling, gemfish, and scampi as being the key species caught in a generally similar band of fishing activity aligned between the 250 m and 500 m depth contours.

152. POAL has assessed the potential adverse effects on commercial fishing effort as follows:
- a) Tug and barge movement to the CDS are not likely to interfere with fishing vessel activity. The area south of Cuvier Island to the Colville Channel is a key shipping route.
 - b) Material disposed at the CDS is principally sediment (sandy mud and in some instances shelly muddy sand along with minor sandstone). None of the material being dumped constitutes a fouling potential for fishing gear. It is assumed that the CDS is avoided due to potential fouling associated with historical dumping that has occurred.
 - c) The dumping of sediment within the CDS generates low concentrations of TSS outside of the CDS. The modelled concentrations are not expected to result in any adverse effects on pelagic and demersal fish outside the CDS.
 - d) The sediment dumped at the CDS contains levels of contaminants higher than natural background levels, but within upper bounds set by accepted guidelines. At the anticipated levels these contaminants are considered to have no more than minor effects on the seabed outside of the CDS. The sediment is expected to have no more than minor effects on concentrations of contaminants in biota outside the CDS and consequently, no effects on the quality of commercial fish for human consumption.
153. In summary, POAL conclude that no physical interference is expected with commercial fishing activity along this section of the continental shelf, and no adverse effects on commercial fishing, or the quality of fish caught are expected.
154. Fisheries New Zealand agreed with POAL's conclusions and stated that, based on the available information, the fishing effort inside the CDS has been relatively low over the past 10 years.
155. I find that the effects on commercial fishing to be negligible.

9.2.2 Recreational Activities

156. The IA notes that the CDS is beyond the Hauraki Gulf and, as such, is not an area used for the many of the types of recreational sailing that typically occurs within the Gulf. There are a variety of significant islands both north and south of the CDS but the area is not on a direct transit route between these.
157. The IA states that little information is available about the occurrence of recreational fishing in deep water on the continental shelf along this part of the North Island coast. POAL's discussions with Mercury Bay Game Fishing Club identified that fishing occurs over foul ground in the south west area of the CDS. Recreation fishing activity is also expected in a wide range of areas 'near' to the site. These areas include the western shoreline of Great Barrier Island, Coromandel Peninsula and the offshore island through this area with the Mercury Islands to the southwest being the closest.
158. The modelling of dumping within the CDS has shown that sedimentation will occur within the CDS during the dumping campaigns. Based on the location of foul ground identified within the designated CDS by the Mercury Bay Game Fishing Club, sedimentation will occur over that area.
159. The towing operation will not interfere with any specific recreational activities en-route. The site has been used historically for dumping with most vessel movements to the site using the same route the POAL tug and barge will utilise.

160. Overall, POAL states that the proposed dumping activity is not considered likely to have any adverse effects on recreational activities that might occur within this part of the EEZ.
161. Fisheries New Zealand advised that, in general, the CDS coincides with the summer distribution of tuna and billfish, and supports a game fishery based on surface trolling. The area is likely to contain habitat for hapuka, bass, and bluenose that are ground fished with jigs and baited hooks. Surveys undertaken by NIWA for Fisheries New Zealand suggests a very light incidence of recreational fishing in the area.
162. I find that the effects on recreational activities will be, at worst, minor.

9.2.3 Māori Existing Interests

163. POAL has not identified Māori as having any existing interest in the application, but has stated that it has consulted widely with iwi for the area, and the Hauraki Māori Trust Board.
164. That may be the position reached by POAL on the basis of the engagement it undertook with iwi. I note that the IA has little detailed assessment of this matter. Much of the documentation seems to record attempts to engage and agree on meetings, rather than substantive content on existing interests. While the IA provides the best available information on the matter in those circumstances, it may be more accurate to record that there is a lack of evidence about Māori existing interests particularly under clause (a) of the Section 4 definition of existing interest. I address related matters at section 18 of this decision when looking at section 59(2)(m) of the Act.
165. I set out the statutory propositions here.
166. Section 4 of the EEZ Act defines 'existing interest' as being the interest a person has in various specified matters, which for Māori include:
- (a) *any lawfully established existing activity, whether or not authorised by or under any Act or regulations, including rights of access, navigation, and fishing:*
 - (d) *the settlement of a historical claim under the Treaty of Waitangi Act 1975:*
 - (e) *the settlement of a contemporary claim under the Treaty of Waitangi as provided for in an Act, including the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992:*
 - (f) *a protected customary right or customary marine title recognised under the Marine and Coastal Area (Takutai Moana) Act 2011*
167. Clause (a) includes commercial fishing. There is no conclusive evidence either way as to whether there are other existing interests that, for the purposes of paragraph (a), might amount to lawfully established existing activity that has the potential to be affected by the proposed dumping (for example, customary fishing or navigation). Under the Māori Fisheries Act 2004, recognised iwi were allocated fisheries assets such as fishing quota. This establishes that there will be iwi with existing interests associated with the proposed activity. The effects on these interests have been considered under the commercial fishers section above (at section 9.2.1). POAL concluded in its IA that no physical interference is expected with commercial fishing activity along this section of the continental shelf, and no adverse effects on commercial fishing,

or the quality of fish caught are expected. I have found at para 155 that the effects on commercial fishing were 'negligible'.

168. In terms of clause (d) there are a number of statutory acknowledgement areas that have been established through the settlement of historic claims under the Treaty of Waitangi Act 1975. However these cover the coastal marine area (CMA) and, at this time, none extend into the EEZ. At section 9.1.2 I found that the physical effects of the proposed dumping activity will be, at worst, minor and are confined to within and near to the dumping site; they are not far-field effects. As such, it is most unlikely that there are persons with existing interests in respect of clause (d) of the EEZ Act definition of existing interest.
169. In terms of clause (e) of the EEZ Act definition of existing interest, iwi hold customary fishing rights under the Fisheries (Kaimoana Customary Fishing) Regulations 1998 which stem from the Treaty of Waitangi (Fisheries Claim) Settlement Act 1992. Further, under the Māori Fisheries Act 2004 recognised iwi were allocated fishery assets such as fishing quota and shares in Aotearoa Fisheries Limited which is managed and overseen by Te Ohu Kaimoana (the Māori Fisheries Commission). I have found at para 155 that the effects on commercial fishing were 'negligible'.
170. In terms of clause (f) iwi, hapū, or whānau groups may be granted recognition of two types of customary interest under the Marine and Coastal Area (Takutai Moana) Act 2011:
- a) customary marine title; and
 - b) protected customary rights.

While a number of applications have been lodged under the Marine and Coastal Area (Takutai Moana) Act 2011 in the vicinity of the CDS, none have been processed to a stage where decisions have been made. As such, there are currently no recognised protected customary rights or customary marine titles and therefore no existing interests in terms of this element of existing interest.

171. Arising from this analysis it seems to me I cannot conclusively rule out that there may be existing interests that could be potentially affected by the proposed activity. However, overall, I find that Maori existing interests are most likely to be related most strongly to any commercial fishing interests. I have also found that the effects of the proposed activity on commercial fishing to be negligible, and other physical effects of the proposed activity are, at worst, minor and largely confined to the CDS. I consider that any effects on Māori existing interests that have the potential to be affected would be negligible.

10. Section 59(2)(a)(i) – Cumulative Effects

172. Cumulative effects may arise as a result of the effects of past, current, and future activities undertaken in an area. Where the effects of past activities are on-going, these will be relevant to my assessment of cumulative effects. As such, if past activities in the application area (undertaken by others) have given rise to on-going effects that contribute to cumulative effects, then I must take these into account. Where past effects are no longer experienced, they are not relevant to my assessment.

173. As discussed earlier in this decision, the IA notes that dumping has occurred at the CDS for decades, and POAL asserts that, due to the nature and amount of historic dumping activity, the CDS is a modified environment. POAL's legal counsel indicated POAL considers the CDS to be 'compromised' having been historically used as a dumping site, including for unexploded ordnance. No actual monitoring has been done within the CDS to confirm that it is modified or compromised.
174. There are potential cumulative effects between the POAL dumping and CRL's consented dumping at the NDA⁸. POAL modelled the potential cumulative effects and the results suggest that some overlap in sedimentation from the NDA and CDS dumping is expected. The overlap is not considered significant based on particle distribution work undertaken at the NDA. The effects of CRL's dumping at the NDA on sedimentation rates calculated using the ROMS model for areas outside the CDS is expected to be less than minor.
175. No cumulative effects are expected from overlap of particles transported from dumping at the CDS and CRL's dumping at the NDA as a result of capital dredging.
176. I find that the cumulative effects have been adequately assessed by POAL and, to the extent that I am able to consider such effects, I find that these effects are less than minor.

11. Section 59(2)(b) – Other Activities

177. Section 59(2)(b) of the EEZ Act requires me to take into account the effects on the environment or existing interests of other activities undertaken in the area covered by the application or in its vicinity. In some respects, this might be considered analogous to the 'existing environment' or 'baseline' concepts sometimes referred to under the RMA.
178. POAL stated that there are currently no dumping consents issued within the CDS, however the area has been used in the past for dumping of dredged material, vessels, steel pontoons, and mortal remains.
179. I find that there are no other current activities in the CDS that I need to take in to account in assessing effects of the dumping on the environment or existing interests.

12. Section 59(2)(d) – Biodiversity

180. Section 59(2)(d) of the EEZ Act requires me to take into account the need to protect biological diversity and integrity. I have considered the potential for effects on the biological environment and I address those matters in Section 9.1 of this decision.
181. The evidence in front of me has identified that the proposed activities are most unlikely to compromise the biological diversity and integrity of marine species, ecosystems and processes.

⁸ This marine dumping consent was granted on 5 February 2019 but is subject to appeals.

182. I find that I do not have to impose conditions on any grant of consent to protect biological diversity and integrity within and nearby the CDS.

13. Section 59(2)(e) – Effects on Rare and Vulnerable Ecosystems

183. Section 59(2)(e) builds on the matters under 59(2)(d) by requiring me to specifically consider rare and vulnerable ecosystems, and the habitats of threatened species. These two sections are therefore relevant to my consideration of potential effects on:

- a) Any rare and vulnerable benthic ecosystems, and the habitats of threatened benthic species, that may be present within and around the CDS; and
- b) Those marine mammals and seabirds that have a threatened classification (that is they may be threatened species) and may be present in and around the CDS.

184. I address these potential effects in Section 9.1 of this decision. The information available to me suggests that while some rare or vulnerable ecosystems or habitats of threatened species may be present inside and outside the CDS, I found in Section 9.1 that the effects of the proposed dumping activities will have a less than minor effect on these species as a whole. I find there is a low probability that the sedimentation plume extending outside the CDS may have an adverse effect on any such species that may be present.

14. Section 59(2)(h) – Marine Management Regimes

185. Section 59(2)(h) of the EEZ Act requires me to take into account the nature and effect of other Marine Management Regimes (MMRs). The MMRs of most relevance to my assessment are set out in Table 2. My principal findings on these MMRs are set out in the sections that follow this table.

Table 2: Relevant Marine Management Regimes

Agency	Legislation	Agency Responsibilities
Department of Conservation	Conservation Act 1987 Wildlife Act 1953 Marine Mammals Protection Act 1978	The Department of Conservation is responsible for protected species and marine mammals. The Department of Conservation also has responsibility for non-mammal species, including seabirds.
Maritime New Zealand	Maritime Transport Act 1994 International Regulations for Preventing Collisions at Sea 1972	The Maritime Transport Act sets out the legal framework for maritime safety and the protection of the marine environment. In addition to licensing ships and crews and investigating maritime accidents, etc. it also provides for setting of 'marine protection rules' to protect the marine environment (which currently relate to matters including oil pollution prevention and response, noxious liquid substances pollution, and other harmful substances pollution).
Ministry for Primary Industries	Biosecurity Act 1993 Fisheries Act 1996 Māori Fisheries Act 2004	The Ministry for Primary Industries is responsible for managing New Zealand's fisheries within the EEZ and its territorial waters, which includes commercial, recreational and Māori customary fisheries. The Ministry for Primary Industries is also responsible for biosecurity at New Zealand's boundaries and within the EEZ. It administers biofouling and ballast water guidelines for vessels entering New Zealand waters.

186. I have taken the MMRs listed in Table 2 into account when considering this application. As explained in Section 23 of this decision, I have imposed conditions only where necessary. I am satisfied that those conditions will not conflict with measures required in relation to the dumping activity by the requirements of these other MMRs.

187. I considered how any of the MMRs regulate effects arising from the proposed activities, and whether conditions I impose might be an unnecessary duplication of requirements otherwise required by those MMRs. I also gave thought to how MMRs regulate existing interests (such as fisheries) and whether that is relevant to the management of effects and the imposition of consent conditions.

15. Section 59(2)(j) – Conditions

188. I have considered whether conditions can avoid, remedy, or mitigate the adverse effects of the dumping activities. I considered the effects outlined in the IA, and the conditions proffered by POAL to address those effects contained in Section 4 of the application, and the updated conditions it provided in response to my requests for further information. The expert advice I commissioned also helped confirm the nature and scale of possible effects of the dumping

activity, and therefore whether additional or amended conditions may be required to manage the effects of the activity.

189. In some instances, I considered that POAL's conditions should be amended or strengthened, and I have added conditions where I consider them appropriate to address specific effects or to achieve desired outcomes. I have also not adopted a number of the proffered conditions.
190. I circulated a set of draft conditions to POAL on 18 April 2019 and 5 June 2019 (hereafter referred to as the 'draft conditions') for comment. They were provided to POAL on the basis that the conditions did not imply a determination on the application, and were still subject to legal review and possible further input. POAL provided comments on those changes and I have considered those comments in setting the final conditions of consent.
191. I believe that the conditions imposed will avoid, remedy, or mitigate adverse effects to the extent required to achieve the EEZ Act's purpose. I discuss the conditions in greater detail in Section 23 of this decision.

16. Section 59(2)(k) – Regulations

192. Section 59(2)(k) of the EEZ Act requires me to take into account relevant regulations. Regulations are defined in section 4 of the EEZ Act to mean regulations made under the EEZ Act (not any other Act).
193. In this case, the only relevant regulations are the D&D Regulations, particularly regulation 32 which classifies the dumping of dredged material as a non-notified activity.
194. In making my decision on this application I have been mindful of the fact that the Executive as authorised by Parliament has categorised dumping of dredged material within the five authorised locations of the D&D Regulations as a non-notified activity under section 29D of the EEZ Act. However I am clear that the assessment that such activities have a low probability of significant adverse effects on the environment or existing interests is only for the purposes of classifying the activity. It has not influenced me in my duty to assess the effects of this dumping activity on its own merits, and as provided within sections 59-61 of the EEZ Act.

17. Section 59(2)(l) – Other Law

195. Section 59(2)(l) of the EEZ Act requires me to take account of any other applicable law. I have considered other MMRs as required by section 59(2)(h) and discussed these earlier in this decision.
196. I have considered the need to avoid duplicating measures and conditions that will be imposed by regulators under other MMRs.
197. POAL state that the Health and Safety at Work Act 2015, and the Port Companies Act 1988, are applicable 'other laws' for this application. In terms of the former, POAL state that compliance with that Act will be the responsibility of the appointed contractor. The Port Companies Act 1988

is, in my view, not directly relevant to this application as it relates more to the establishment and operation of the Port.

18. Section 59(2)(m) – Any Other Matter

198. Section 59(2)(m) of the EEZ Act is commonly referred to as the ‘catch-all’ provision. It provides the potential for me to consider anything that I consider relevant, and which is not otherwise covered by the other matters referenced in section 59 of the EEZ Act.
199. Section 59(2)(m) of the EEZ Act does not provide me with unlimited scope. I cannot expand on (or take a different approach to) a specific requirement that Parliament has chosen to confine or regulate in a particular way. I have therefore considered section 59(2)(m) of the EEZ Act in the context of the specific matters required to be taken into account by section 59(2) of the EEZ Act, and related matters which have a bearing on my decision. Importantly, I have been careful to consider whether a matter has been expressly addressed by another section of the EEZ Act, and therefore whether it could be capable of consideration under section 59(2)(m) of the EEZ Act.
200. The application states that there are no “other matters” that need to be considered under section 59(2)(m). However, POAL provided a commentary on the NKTT report (as part of its response to further information) and stated that “*POAL acknowledge that cultural values and interests are matters that are required to be taken into account in the overall context of section 59(2)(m) of the EEZ Act*”. POAL appears to now consider cultural values and interests to be a relevant (in fact mandatory) consideration under section 59(2)(m) of the EEZ Act.
201. I consider that Māori perspectives on the potential effects of the application, and how those perspectives may intersect with the decision-making matters at section 59-61, to be a relevant consideration under section 59(2)(m) of the EEZ Act. This consideration is related to my assessment of Maori existing interests at section 9.2.3 of this decision.
202. The NKTT report identifies the following concerns that Māori may be expected to have with the application to dump sediment at the CDS:
- a) The limited understanding that POAL appears to have of mātauranga and the contribution it can make;
 - b) The recognition of mātauranga and the importance of whakapapa to ensuring the interconnectedness of all living things central to Māori life is fundamental to the role of kaitiaki;
 - c) The absence of a holistic assessment of the effects of the dumping activity on the environment, from its commencement, throughout the proposed term of the activity, and after it concludes; and
 - d) It is important that cumulative effects are explored, as much as possible, with respect to mātauranga and science, and that these effects are thought about early in the process so that appropriate knowledge and information can be collected.

203. The NKTT proposes the following as a condition (should consent be granted) that may address the effects of the relationship of whānau and/or hapū, and iwi with the marine environment under the EEZ Act:

The consent holder (POAL) shall, prior to the first exercise of its consent, provide an opportunity and resource for hapū and iwi identified in the Impact Assessment as having existing interests to develop a monitoring programme based on a Te Ao Māori perspective for the proposed activities and provide opportunities and resource for hapū and/or iwi representatives to execute that programme.

204. The NKTT report stated:

Ngā Kaihautū also notes that, in the Engagement Log Summary, POAL appears to have committed to provide local iwi with updates of technical reports, when available. However, it is unclear if this is intended to be for the duration of the proposed consent, nor is this process reflected in the proposed conditions. In our view, the establishment of an Iwi Liaison Group to consider and discuss the operations and effect of the dumping activity at the Authorised Dumping Site would complement the above proposed condition. An Iwi Liaison Group would help facilitate the process of providing technical updates, disseminating information and discussing concerns or risks that may arise. We would encourage POAL to volunteer such a condition on an Augier basis.

205. POAL responded to the contents of the NKTT report and stated:

While the CRL Consent included provision for an Iwi Liaison Group, this was in recognition of the cultural associations of Ngāti Rehua – Ngatiwai ki Aotea with the coastal and off-shore waters within which the NDA is located. No such cultural associations have been identified within the NKTTTR at the CDS and the analysis of Golder (2018) confirms that the effects on the environment beyond the boundary of the CDS will be very low. POAL therefore do not consider it necessary to set up a similar Liaison Group in respect of the CDS.

206. I cannot rule out conclusively that there are no iwi/Maori cultural associations with the CDS and surrounding marine area. It is not NKTT's role to identify such associations; that is why NKTT is silent on that matter. What it has pointed to is possible effects if those associations do, in fact, exist and a mechanism for engaging with those iwi likely to hold such associations.

207. Notwithstanding all that, I do agree that no iwi liaison group is required in this case. While NKTT has suggested it, I am unsure as to its utility given that I have no evidence that supports such a proposal. I note POAL has offered to be transparent with information about its activities. Information sharing can be achieved by means other than a liaison group. That information should be shared with parties identified by POAL in general terms as having an interest in the application, and not necessarily just with those with either existing interests or specific cultural associations with the CDS. I consider that POAL should provide the stakeholders identified in the Engagement Log Summary (being Attachment 3 of the application) with up to date information on dumping activity. This information should include the results of any monitoring, and reports required to be prepared by the conditions of this consent. The most appropriate method for this information to be made available is through a website maintained by POAL. I have imposed Condition 15 to give effect to this need to share information about the dumping activity.

208. In terms of potential effects of the dumping activity on Māori perspectives I find that there is no clear and direct evidence of an effect on cultural values and perspectives from the activity. I have used my powers under section 61 to get advice on cultural values and interests by way of further information requests from POAL, and from NKTT. The advice that has come from those requests has been general in nature. None of it speaks directly for, or on behalf of, any iwi. It only highlights what is a generally well understood relationship between iwi/Maori and moana, and iwi/Maori concerns about use of moana. That is the nature of the information I have to rely on for these matters, and to the extent that I can take into account Maori perspectives, I record here that I have done so. In doing this I am mindful of the implications of the non-notified status of this application as I have discussed at para 29 Appendix 1 of this decision report.
209. I find that effects of the activity on iwi/Maori cultural values and interests are possible. However, when set beside the science of and expert opinion on, environmental effects, which assess effects in and nearby the CDS to be, at worst, minor there is some logic to the conclusion I reach that any effects on such iwi/Maori values are likely to be of a similar scale, intensity and effect. Notwithstanding that, I have imposed an information sharing condition (Condition 15) so parties with an interest in the application can form a view of effects on them.

19. Section 59(2B)(b) – Effects on Human Health

210. Section 59(2B)(b) requires me to take into account the effects of the activity on human health.
211. The effects of the proposed dumping activities on human health are addressed within section 8.14 of the IA. It stated that the potential effects potentially arising from water quality changes on human health would arise in the surface water at the CDS. Human recreational activity at the CDS is extremely unlikely to occur due to its location, and the presence of the tug and barge. As dumping occurs from the bottom of a split hopper barge, material moves downward very quickly reducing immediate surface water quality changes.
212. The IA stated:
- “However, based on the quality of elutriate extracts, no adverse changes in water quality would be expected that could affect human health through direct contact. Water quality changes and factors that might affect primary contact recreation (e.g., swimming) include aesthetics, clarity, colour, pH, temperature, oil and debris and toxicants (ANZECC 2000). None of the aesthetic factors, temperature or pH are considered to have potential effects on human health through the dumping process. A range of ‘toxicants’ are present in the sediment and released in a dissolved state. The key human health issues, in terms of direct contact, are adverse effects on skin or sensitive tissues such as eyes and nasal passage or absorption through skin. Purposeful ingestion of seawater is unlikely”.*
213. POAL also undertook a review of the uptake of persistent organic compounds on fish and shellfish within the Waitemata Harbour and Hauraki Gulf from historic disposal activities by POAL at the North Rangitoto Disposal Site, and activities undertaken at the Port of Auckland. The review concluded that the relative changes in contaminant concentrations will not change the ‘status’ of the sediment quality beyond the boundary of the CDS.
214. I find that the effects of the proposed activity on human health will be negligible.

20. Section 59(2B)(c) and (d) – Alternative Methods of Disposal and Opportunities to Reuse, Recycle, or Treat the Waste

215. Section 59(2B)(c) of the Act requires me to take into account any alternative methods that could be used for the disposal of the waste or other matter.
216. Section 59(2B)(d) requires me to take into account any other practical opportunities that are available to reuse, recycle, or treat the waste or other matter.
217. Section 62(1A) (a) requires that I must refuse an application for a marine dumping consent if I consider that the waste, other matter, or pipeline may be reused, recycled, or treated without
- a) more than minor adverse effects on human health or the environment; or
 - b) imposing costs on the applicant that are unreasonable in the circumstances.
218. The IA states that over the last 50 years POAL has disposed of maintenance and capital works dredged material from the Port of Auckland via:
- a) Marine dumping at the Browns Island disposal site, the North Rangitoto disposal site (NRDS), the Hauraki Gulf disposal site and the CDS.
 - b) Reclamation within the Port.
 - c) Disposal to approved landfill.
219. Following stakeholder engagement in 1993, the Disposal Options Advisory Group (DOAG) was formed and met from July 1993 to October 1994. The DOAG examined available options for:
- a) Harbour edge disposal
 - i. Reclamations within the Port, or in areas associated with marine infrastructure within the Waitemata Harbour or 'nearby'. Disposal could be as sediment, or in the form of mudcrete.
 - ii. Reclamation at approved coastal locations. Disposal could be as sediment or in the form of mudcrete.
 - iii. Beach nourishment.
 - iv. Ecological/Habitat restoration in the Waitemata Harbour or Auckland region.
 - b) Land disposal
 - i. Disposal to landfill.
 - ii. Disposal direct to land to provide increase in land height.
 - iii. Disposal following processing to create 'soil'.
 - c) Marine dumping.
 - i. Marine disposal is the principal means of disposal of dredged material from ports and marinas nationally.
 - ii. Dredged material has been disposed historically at three closed disposal sites (Browns Island, North Rangitoto, and Hauraki Gulf disposal sites).
 - iii. Dredged material was historically disposed at the CDS and since 2013, has been disposed at the Northern Disposal Area (NDA). Disposal at the NDA is managed through a permit granted by Maritime New Zealand (EEZ900012).

220. POAL's assessment of alternatives to marine disposal has shown that:
- a) Where harbour edge reclamation is available and permitted, this is the preferred option for disposal of maintenance dredging. The material may be suitable for reclamation (e.g. with mudcrete).
 - b) Should opportunities arise for coastal re-use of 'clean' dredged material (e.g. from the Navigation Channel) that this be explored. This is likely to take the form of land recovery rather than coastal habitat development due to the nature of the material.
 - c) Land disposal to an approved landfill will be used for all sediment that contains contaminant concentrations that make the sediment unsuitable for marine, coastal re-use or non-landfill land disposal.
 - d) POAL is exploring the potential for re-use through soil creation with suitable organic matter.
 - e) Where dredged material is of suitable quality (i.e. meets EPA requirements) to be disposed at sea, it is dumped at the approved CDS.
221. The EPA recently granted a marine dumping consent to CRL to dump up to 250,000 m³ of dredged material in any 12-month period. The decision notes (in Table 3 on page 57 of that decision) that justification for this quantity includes 388,000 m³ of dredged material from POAL maintenance dredging over the first ten years of the CRL consent.
222. I requested further information from POAL whether the recent CRL decision meant that POAL has an alternative site to dump up to 388,000 m³ of maintenance dredging material over the next ten years and, if so, how that might affect its current application to dump maintenance dredging material at the CDS.
223. POAL advised me that the recent CRL decision does not provide POAL with a suitable alternative site to dump its maintenance dredging material over the next ten years. POAL noted that the CRL decision was subject to High Court appeals and, as such, cannot be relied on by any party until those appeals are resolved.
224. Further, POAL advised me that it would be unable to dump its maintenance dredging material under the terms of the CRL consent conditions as it would not be the 'consent holder'. POAL noted there is no requirement under the conditions of the CRL consent for it to accept POAL's maintenance dredging material over the term of the consent, and POAL therefore does not have certainty that its dredging material will be able to be dumped at the NDA over the next ten years. Further, should CRL's consent be confirmed, there is no guarantee that an agreement could be reached between POAL and CRL on suitable terms that would provide for the maintenance dredging material to be disposed of at the NDA.
225. POAL advised me that, in undertaking its duties under the Port Companies Act 1988, it does not want to be placed in a position where there is uncertainty as to whether it can dispose of its dredged material. POAL consider that this certainty can only be achieved through it holding its own consent, as opposed to being reliant on a third-party consent. The CRL consent does not provide certainty to POAL that it can dispose of its dredged material at the NDA.
226. I found it useful to consider the CRL dumping consent decision, as it involves a similar activity for dumping dredged material sources from the Auckland area. I note that in the CRL decision the DMC in that case recorded that the only current realistic possibility for reuse of dredged material in reclamation activities within the Greater Auckland area was limited to the Westhaven Pile Mooring project. At that time resource consent had been granted but the decision has been

appealed (now resolved). However, in any case, the DMC noted that this project would only provide a 'one-off' reuse option for a small volume of dredged material (up to 70,000 m3) if granted.

227. On the evidence I have including POAL's assessment of alternatives, I have concluded that there is presently no feasible alternative to a marine dumping option. Equally I conclude that there is no evidence of realistic alternatives to dumping at the CDS over the proposed duration of consent.
228. I have thought at length about the implications of what follows from POAL's statements in its IA that should opportunities arise for coastal re-use of 'clean' dredged material (e.g. from the Navigation Channel) that this be explored, and that where harbour edge reclamation is available and permitted, this is the preferred option for disposal of maintenance dredging.
229. I take those statements as they stand as the intentions of the applicant, but no more than that. The consideration of alternatives to dumping in the EEZ is part of the normal approach to waste management and, in this case, not allowing dumping in the EEZ to be the "default" option. I explored with POAL what a condition about future alternatives may look like and appreciate its approach to trying to assist.
230. However, I have reached the view that I cannot take this matter further. I simply note the undertaking. It is not appropriate for me to make a future event condition as I have to determine the consent now, and on the evidence in front of me.
231. I find that POAL has appropriately considered alternative methods of disposal of the dredged material and the opportunities to reuse, recycle, or treat the waste. I find that there is no certainty that POAL can use the NDA for dumping dredged material there under the CRL consent.
232. I am satisfied that I have no grounds on which to refuse consent under section 62(1A) of the EEZ Act.

21. Section 59(3) – Submissions and Evidence

233. Section 59(3) of the EEZ Act requires me to have regard to submissions, evidence, advice, reports and information sought and received by me. In this case there were no submissions as this is a non-notified consent, but I have had regard to the evidence, reports, and information that I sought during the consideration process.
234. In meeting that requirement I have had regard to advice sought from EPA counsel, from EPA commissioned experts, and NKTT by way of section 56 of the EEZ Act, as well further information obtained from POAL under section 54 of the EEZ Act.
235. All the matters put before me, and that which I have requested, have been considered.

22. Overall Determination and Reasons for Decision

236. Pursuant to section 10(3) of the EEZ Act, I have applied section 61 of the EEZ Act, taken into account decision-making criteria in section 59 and had regard to the matters in section 60 of the Act. I have turned my mind to whether granting or refusing consent best achieves the purpose of the EEZ Act, as set out earlier in this decision and the relevant statutory provisions set out in Appendix 1.
237. Overall, I find that the assessment of the activity against section 59 matters was adequately set out in the Applicant's application and IA. In summary, I find:
- a) The potential adverse effects of the dumping activity on the biological environment including on any rare or vulnerable ecosystems, and the habitats of any threatened species that may be present, may be significant within the CDS, particularly within the predicted sedimentation footprint, but the effects will be, at worst, minor outside the CDS.
 - b) The potential adverse effects on existing interests will be negligible.
 - c) As any adverse effects will be confined to within, or in the immediate vicinity of, the dumping site, I am satisfied that the biological diversity of marine species, ecosystems and processes in and around the CDS will be protected.
 - d) POAL is required to comply with a number of other legislative regimes that relate to health and safety, and biosecurity risk minimisation. While I acknowledge that not all of these legislative requirements are relevant to this application, these additional measures and approval requirements provide further environmental protections.
 - e) That the consideration of alternatives to dumping in the EEZ have been adequately canvassed in the application documents, both for the present and for the term of the consent.
238. After considering all the information in front of me, taking into account the matters listed in section 59, having regard to the matters in section 60, and applying section 61 of the EEZ Act, I find that, subject to the conditions of consent I have imposed, granting a marine dumping consent for this activity meets the purpose of the EEZ Act.

Chapter 5: CONDITIONS AND DURATION

23. Conditions

23.1 Introduction

239. Section 62(3) of the EEZ Act states that a marine consent may be issued subject to conditions. The ability to impose conditions on a marine consent is governed primarily by sections 63 – 67 of the EEZ Act.

240. Section 63(1) of the EEZ Act states:

A marine consent authority may grant a marine consent on any condition that it considers appropriate to deal with adverse effects of the activity authorised by the consent on the environment or existing interests.

241. While the wording of section 63(1) appears to provide me with a very wide scope in terms of conditions that may be imposed on marine consents, there are two restrictions specified in sections 63(3) and 63(4).

242. I have not imposed any condition that would be inconsistent with the Act, or any regulations (section 63(3)).

243. Section 63(4) does not prevent me imposing conditions which duplicate requirements in relation to the activity by another MMR where such a condition relates to a matter (including environmental effects or effects on existing interests) that I must take into account under section 59 of the EEZ Act. However, the imposition of conditions which duplicate other MMR requirements should generally be avoided provided I have satisfied myself that the processes and approvals under those MMRs are robust and adequately deal with the relevant environmental effects or effects on existing interests. In such situations, requiring the EPA to provide an additional approval/certification is in my view unnecessary.

244. I have not imposed any condition that would conflict with a measure required in relation to the activity by another MMR, or the Health and Safety at Work Act 2015.

245. Sections 63(2)(a)(i) and (ii) allows me to impose conditions which requires the consent holder to provide a bond for the performance of any one or more conditions of the consent and to obtain and maintain public liability insurance of a specified value, respectively. Section 65 provides additional guidance on bond conditions. In this case I do not consider it necessary to impose a bond for performance of any condition, or for POAL to obtain public liability insurance.

246. Section 63(2)(a)(iii) and (v) allows me to impose conditions that require a consent holder to undertake monitoring, and to provide information to the EPA for audit, respectively. Section 66 provides additional guidance on monitoring conditions.

247. I have accepted that there are practical (depth) and safety issues with requiring monitoring within the CDS given its past dumping history. On that basis I have not imposed a condition

requiring monitoring within the CDS. I have taken up the POAL proffered conditions relating to surveys along transects matching the likely sediment plumes outside the CDS (Conditions 23 – 26). These surveys are not intended to manage any particular effect given my findings that effects outside the CDS will, at worst, be minor. The surveys may assist in assessing whether there are any unanticipated effects arising from the dumping activity. I note here that, in order for these surveys to be undertaken, POAL needs to obtain appropriate authorisation under the EEZ Act either through a marine consent for restricted section 20 activities, or under the marine scientific research provisions as a Permitted Activity.

248. Section 63(2)(a)(iv) allows me to impose conditions that require a consent holder to appoint an observer to monitor the activity and the effects on the environment. Section 67 provides additional guidance on observer conditions and requires that any such condition must specify in detail the observer's duties in relation to the activity. Any observer must be 'approved' by the EPA for that purpose and section 67 outlines the circumstances under which such approval must be given by the EPA. In this case I do not consider it necessary to impose any such condition.

23.2 POAL Proffered Conditions

249. POAL proffered conditions and included these in Section 4 of its application.
250. The EPA has recently granted a marine dumping consent to CRL for a similar dumping consent, decided under a notified process, which includes a suite of conditions (including Appendices). It is desirable to have consistent conditions for consent for similar activities, and I consider there should be good reasons why the conditions imposed on the POAL consent should be materially different.
251. On 28 February 2019, I asked POAL to review the conditions of the CRL marine dumping consent (including the Appendices) and to provide an assessment on whether they were equally applicable to POAL's proposed activity.
252. On 19 March 2019, POAL responded to my request to review the conditions of the CRL marine dumping consent and proffered Augier conditions that require surveys of the area outside the CDS along the northern contours where the sediment plume is modelled to extend. The conditions require a pre-dump survey and subsequent survey should any rare or vulnerable ecosystems or habitats of threatened species be identified.
253. POAL reviewed the CRL conditions and provided a revised set of proposed/proffered conditions.
254. I reviewed POAL's final set of proffered conditions and prepared a set of draft conditions which were provided to POAL for comment on 18 April 2019 and again on 5 June 2019.
255. POAL provided comments on both sets of the draft conditions. I considered those comments in setting the final conditions of consent.

23.3 Commentary on Conditions

256. There are some conditions that I have imposed that POAL has provided comment on, and some which it does not necessarily support. While POAL's views were constructive and greatly assisted my in finalising some conditions, I have decided that there are some conditions that will stay in their original form.
257. The conditions controlling the basis of, and relevant tests or thresholds, within sampling plans (Conditions 5 and 6) are different to those set out in the CRL decision. However I am satisfied that these conditions provide a proper and rigorous basis to establish that sediment to be dredged is suitable for dumping at the CDS. The linking to ANZECC Guidelines provides a sound industry standard for establishing the nature and characteristics of contaminants.
258. Condition 28 sets out the grounds on which a review of the consent under section 76 EEZ Act may be required by the EPA. POAL did not support the inclusion of the need to review or generally update Appendix 1 to the Conditions, arguing that the ANZECC online guidance always relates to the most up to date version. That may be true to an extent, but my intention in including Appendix 1 is to provide opportunities over the 35 year term of the consent for new techniques or methodologies to be considered. I am cautious about locking out consideration of new science and technology.

24. Duration

259. POAL has sought a 35 year duration for its marine dumping consent.

260. In considering the duration of consent I have considered the requirements under section 73 of the EEZ Act.

(1A) The duration of a marine discharge consent or a marine dumping consent is—

(a) the term specified in the consent, which must not be more than 35 years; or

(b) if no term is specified, 5 years after the date of the granting of the consent.

(2) When determining the duration of the consent, a marine consent authority must—

(a) comply with sections 59 and 61; and

(b) take into account the duration sought by the applicant; and

(c) take into account the duration of any other legislative authorisations granted or required for the activity that is the subject of the application for consent.

261. I note that POAL's two coastal permits from Auckland Council which authorise the maintenance dredging of material at the Port and the Rangitoto Channel expire on 31 August 2027 and 4 November 2036, respectively.

262. The CRL consent to dump dredge material at the NDA was granted for a period of 35 years (but is subject to appeal).

263. I consider the appropriate duration for this marine dumping consent to be 35 years because:

- a) The scale and scope of the dumping activity are well understood and, as outlined within this decision, the activity is consistent with the statutory requirements of sections 59 and 61 of the Act;
- b) The 35-year term is consistent with the maximum allowable term under the Act;
- c) The effects of the dumping activity outside the CDS will be negligible, and any adverse effects will be appropriately avoided, remedied or mitigated through the conditions; and
- d) In the event that the environmental surveying provided for in the conditions identifies adverse environmental effects outside of the NDA, or on an existing interest, that were not anticipated at the time of this decision, section 76 of the Act enables the EPA to review the duration and consent conditions.

Appendix 1: Procedural History

Timeline for application

- 7 June 2018** EPA commissioned external expert report from DHI on POAL pre-lodgement version of application
- 15 August 2018** DHI technical review of pre-lodgement version of application received
- 23 November 2018** POAL lodged application for marine dumping consent
- 3 December 2018** EPA commissioned external expert report from GHD
- 19 December 2018** EPA requests advice from Fisheries New Zealand and DoC
- 9 January 2019** EPA requests advice from MPI
- 11 January 2019** DHI technical review report on lodged version of the application received
- 15 January 2019** EPA accepted application as complete
- 24 January 2019** EPA receives advice from Fisheries New Zealand
- 25 January 2019** EPA receives advice from DoC
- 1 February 2019** EPA commissioned a report from Ngā Kaihautū Tikanga Taiao
- 4 February 2019** EPA receives advice from MPI
- 6 February 2019** GHD technical review report received EPA
- 18 February 2019** EPA sent letters to parties in accordance with section 45 of the EEZ Act advising them of POAL's application
- 28 February 2019** Further information request sent to POAL (Request #1)
- 27 February 2019** EPA's Key Issues Report prepared
- 6 March 2019** EPA received Ngā Kaihautū Tikanga Taiao Report
- 13 March 2019** Minute #1 issued (extension of time)
- 18 March 2019** EPA legal advice received
- 19 March 2019** EPA received POAL response to Request #1
- 20 March 2019** Minute #2 issued (legal advice from EPA counsel provided to POAL and comment invited)
- 27 March 2019** POAL response to EPA legal advice received
- 27 March 2019** Further information request sent to POAL (Request #2)
- 2 April 2019** Further information request sent to POAL (Request #3)
- 5 April 2019** POAL response to EPA further information (Requests #2 & #3)
- 11 April 2019** Minute #3 issued (extension of time)
- 18 April 2019** Draft conditions sent to POAL for comment
- 9 May 2019** POAL response to draft conditions
- 29 May 2019** Minute #4 issued (extension of time)
- 31 May 2019** Second draft conditions sent to POAL for comment
- 5 June 2019** POAL response to second draft conditions
- 27 June 2019** Decision issued

Appendix 2: Details of EEZ Decision-Making Matters

Section 10 of the EEZ Act – Purpose

1. Consideration of applications for marine dumping consents are made according to the requirements of the EEZ Act. The EEZ Act outlines the relevant matters that I must consider in making my decision and the information principles in respect of analysing the information provided to me. In making my decision on this application my overall duty is to determine whether granting or refusing the application best achieves the purpose of the EEZ Act. Section 10 of the EEZ Act states:

10 Purpose

(1) The purpose of this Act is —

- (a) to promote the sustainable management of the natural resources of the exclusive economic zone and the continental shelf; and*
- (b) in relation to the exclusive economic zone, the continental shelf, and the waters above the continental shelf beyond the outer limits of the exclusive economic zone, to protect the environment from pollution by regulating or prohibiting the discharge of harmful substances and the dumping or incineration of waste or other matter.*

(2) In this Act, sustainable management means managing the use, development, and protection of natural resources in a way, or at a rate, that enables people to provide for their economic well-being while—

- (a) sustaining the potential of natural resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of the environment; and*
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

(3) In order to achieve the purpose, decision-makers must—

- (a) take into account decision-making criteria specified in relation to particular decisions; and*
- (b) apply the information principles to the development of regulations and the consideration of applications for marine consent.*

Section 11 of the EEZ Act – International obligations

2. Section 11 of the EEZ Act deals with New Zealand's international obligations and confirms that New Zealand's major international obligations are given effect to by the EEZ Act. Section 11 of the EEZ Act states:

11 International Obligations

This Act continues or enables the implementation of New Zealand's obligations under various international conventions relating to the marine environment, including—

- (a) the United Nations Convention on the Law of the Sea 1982;*
- (b) the Convention on Biological Diversity 1992.*
- (c) the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL);*
- (d) the Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter, 1972 (the London Convention).*

3. I considered the extent to which international provisions⁹ are relevant to the proposal, including various treaties, declarations, and conventions. In this case the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (commonly referred to as "the London Convention") which New Zealand is a signatory to. In 1996, the "London Protocol" was agreed to and further modernised the London Convention and, eventually, replaced it. The London Protocol was updated in 2006. Under the London Protocol all dumping is prohibited, except for specified categories of waste that may be considered for dumping, which includes dredged material. Section 11 confirms that New Zealand's international obligations have been taken into account in the drafting of the Act. I note that the dumping of dredged material within the five authorised locations was deemed by the Minister, at the time the D&D Regulations were promulgated, to recognise New Zealand's obligations under the London Convention.

Section 12 of the EEZ Act – Treaty of Waitangi

4. Section 12 of the EEZ Act deals with the Treaty of Waitangi and outlines the specific actions that the EPA must undertake in order to recognise and respect the Crown's responsibility to give effect to the principles of the Treaty of Waitangi. Section 12 of the EEZ Act states:

12 Treaty of Waitangi

In order to recognise and respect the Crown's responsibility to give effect to the principles of the Treaty of Waitangi for the purposes of this Act,—

⁹ Provisions which are not 'law' in the sense envisaged by section 59(2)(l) of the EEZ Act.

- (a) *section 18 (which relates to the function of the Māori Advisory Committee) provides for the Māori Advisory Committee to advise marine consent authorities so that decisions made under this Act may be informed by a Māori perspective; and*
- (b) *section 32 requires the Minister to establish and use a process that gives iwi adequate time and opportunity to comment on the subject matter of proposed regulations; and*
- (c) *sections 33 and 59, respectively, require the Minister and a marine consent authority to take into account the effects of activities on existing interests; and*
- (d) *section 46 requires the Environmental Protection Authority to notify iwi authorities, customary marine title groups, and protected customary rights groups directly of consent applications that may affect them.*

5. In this case clause (a) is relevant and provides for NKTT to provide advice so that decisions made under this Act may be informed by a Māori perspective. Clause (c) is also relevant and requires me to take into account the effects of activities on existing interests, including Māori interests, which I have done. Clause (b) is not relevant in this case as it relates to development of proposed regulations. Clause (d) is not directly relevant in this case as it relates to serving copies of applications for publicly notified activities. I note that the EPA served notice of POAL's application on 60 Māori organisations or groups (being iwi authorities and applicant groups for customary marine title or protected customary rights) under section 45 of the EEZ Act, as discussed in Section 2 of this decision.
6. NKTT provided me with a report which I have had regard to as required by section 59(3)(c) of the EEZ Act. I discuss the advice provided to me by NKTT at Section 18 of this decision.

Section 59 of the EEZ Act – Matters to be taken into account

7. Section 59(2) of the EEZ Act sets out matters I “must take into account”, and section 59(3) of the EEZ Act sets out matters I “must have regard to”, in making my decision. However, for a marine dumping consent section 59(2B)(a) of the EEZ Act directs me to specifically exclude the matters described in section 59(2)(c),(f),(g), and (i) from my considerations, which relate to the:
 - a) effects on human health that may arise from the activities effects on the environment;
 - b) economic benefit to New Zealand of allowing the application;
 - c) efficient use and development of natural resources; and
 - d) best practice in relation to an industry or activity.
8. Instead, for marine dumping consents, section 59(2B)(b), (c), and (d) of the EEZ Act directs me to take into account:
 - a) the effects on human health of the dumping, if consent is granted;
 - b) any alternative methods of disposal of the waste; and
 - c) whether there are practical opportunities to reuse, recycle or treat the waste.
9. I must not have regard to the matters in section 59(5): trade competition or the effects of trade competition, the effects on climate change, and effects on existing interests if written approval has been given.

10. The EEZ Act establishes no hierarchy in the matters that must be taken into account and those that I must have regard to under section 59 of the EEZ Act. The importance of all of the matters listed in all of the subsections depends on the facts and circumstances of the proposed activities.
11. The matters covered by section 59 of the EEZ Act are the basis of my analysis as detailed in Section 8 of this decision.

Section 61 of the EEZ Act – Information principles

12. I am required to make full use of my powers to seek out information, base my decision on the 'best available information', and consider any uncertainty or inadequacy in the information available. Section 61 of the EEZ Act states:

61 Information principles

- (1) When considering an application for a marine consent, the Environmental Protection Authority must—*
 - (a) make full use of its powers to request information from the applicant, obtain advice, and commission a review or a report; and*
 - (b) base decisions on the best available information; and*
 - (c) take into account any uncertainty or inadequacy in the information available.*
- (2) If, in relation to making a decision under this Act, the information available is uncertain or inadequate, the EPA must favour caution and environmental protection.*
- (3) If favouring caution and environmental protection means that an activity is likely to be refused, the EPA must first consider whether taking an adaptive management approach would allow the activity to be undertaken.*
- (4) Subsection (3) does not:*
 - (a) apply to an application for—*
 - (i) a marine dumping consent; or*
 - (ii) a marine discharge consent; or*
 - (iii) a marine consent in relation to an activity referred to in section 20(2)(ba); or*
 - (b) limit section 63 or 64.*
- (5) In this section, best available information means the best information that, in the particular circumstances, is available without unreasonable cost, effort, or time.*

13. In addition to the information lodged with the application, I requested information from POAL and the EPA commissioned reports and sought advice from both NKTT and external independent experts. I discussed these requests and commissioned reports in Section 3.3 of this decision.

14. I am satisfied I have made full use of my powers to request and access information and have the best available information to make my decision. I therefore consider I have met my responsibilities under sections 61 of the EEZ Act.
15. Section 61 of the Act requires me firstly to consider whether the information put before me is uncertain or inadequate. If I consider that it is uncertain or inadequate, then I am required to favour caution and environmental protection in making my decision. The obligation to consider taking an adaptive management approach is excluded for a marine dumping consent by section 61(4).
16. I accept there was some uncertainty with respect to some aspects of the dumping activities in regard to:
 - a) Effects on benthic ecology; and
 - b) Effects on existing interests.
17. These matters were documented in the application and IA, and by advice I received through my section 56 requests for information.
18. While some of the information is limited, it is the best that is available without significant investment in time, cost and effort. I consider that sufficient information has been provided to enable me to understand the scale and scope of the dumping activity, and its effects.
19. The issues of effects on benthic ecology and existing interests are further discussed in Sections 9.1.2, 9.2 and 18 of this decision.
20. When considering ‘uncertainty and inadequacy’, I consider that uncertainty need not be eliminated where there is sufficient information available to understand the scale and scope of the activity, the likely effects of the activity, and the adequacy and effectiveness of any measures proposed to avoid, remedy or mitigate any adverse effects. I am satisfied that I have taken into account any uncertainty or inadequacy in the information available in accordance with section 61(1)(c) of the Act.
21. Based on my findings in Sections 9.1.2, 9.2 and 18 of this decision I find that the provisions of section 61(2) of the Act are satisfied insofar as whatever uncertainty remains as to the effects on the environment, those effects are either negligible or, at worst, minor. Any remaining uncertainties are addressed by the consent conditions provided for in Schedule 1 of this decision.
22. I am mindful of the non-notified status of this application, and the restriction that imposes on possible information that may be adduced through submissions. I have had to exercise judgement about balancing my search for information against the timeframes and costs in play for the making of my decision. I have a duty to undertake a robust assessment, while being mindful that such an assessment relies on best available information, but that is not the same as a search for “limitless information”, nor all possible information. While the information on this matter has uncertainties as I have set out in this decision, it is sufficient to enable me to undertake a proper consideration of environmental effects of the dumping activity, and to ensure that I am able to thoroughly assess the effects of the activity and impose appropriate conditions.

Section 62 of the EEZ Act – Decisions on applications

23. Section 62 of the EEZ Act enables me to either grant or refuse the application. However, section 62(1A) states that I must refuse an application for a marine dumping consent if:
 - (a) *The marine consent authority considers that the waste, other matter, or pipeline may be reused, recycled, or treated without-*

(i) more than minor adverse effects on human health or the environment; or

(ii) imposing costs on the applicant that are unreasonable in the circumstances; or

(b) the waste, other matter, or pipeline is identified in such a way that it is not possible to assess the potential effects of dumping or abandoning it on human health or the environment; or

(c) the marine consent authority considers that dumping the waste or other matter or abandoning the pipeline is not the best approach to its disposal in the circumstances.

24. With regard to section 62(1A)(a), for the reasons set out in Section 20 of this decision, I find that there is no circumstance which would require me to refuse the application on these grounds.
25. With regard to section 62(1A)(b), I consider that the IA and evidence presented by POAL, and the independent commissioned reports has enabled an appropriate assessment of effects to be completed.
26. With regard to section 62(1A)(c), for the reasons set out in section 20 of this decision, I find that there are no suitable alternatives for disposal of marine sediments that would warrant the application to be refused.
27. Section 62(3) allows me to refuse an application if I consider that I do not have adequate information to determine the application.
28. As outlined in paras 12 – 21 of Appendix 2 of this decision, I consider that I have had the best available information against which to make my determination on the application.
29. If I decide to grant the application then section 62(4) states that I may issue the consent subject to conditions under section 63 of the EEZ Act.

Section 63 of the EEZ Act – Conditions

30. Section 59(2)(j) of the EEZ Act requires me to take into account the extent to which imposing conditions under section 63 might avoid, remedy, or mitigate the adverse effects of the activity. Under section 63(1) I may grant a marine consent on any condition that I consider appropriate to deal with adverse effects of the activity authorised by the consent on the environment or existing interests. Section 63(2) gives examples of the types of condition which may be imposed, and sections 65 to 67 (bonds, monitoring, observers) give further detail regarding the type of conditions outlined in section 63(2).
31. Under section 64(1AA)(b) of the EEZ Act, section 64 (adaptive management approach) does not apply to a marine dumping consent. Conditions under 63(2)(b), which together amount or contribute to an adaptive management approach, can therefore not be imposed if the POAL consent is to be granted.
32. I have not imposed any condition that on its own, or in association with any other condition, amounts, to or contributes to, adaptive management.
33. Sections 63(3) and 63(4) of the EEZ Act give further detail of conditions which cannot be imposed on consents. These include:

(a) conditions which are inconsistent with the EEZ Act or any regulations, or

(b) conditions to deal with an effect, if the condition would conflict with a measure required in relation to the activity by another marine management regime (MMR) or the Health and Safety at Work Act 2015.

34. I have not imposed any condition that would be inconsistent with the Act, or any regulations (section 63(3)).
35. I have not imposed any condition that would conflict with a measure required in relation to the activity by another MMR, or the Health and Safety at Work Act 2015.
36. In addition to the conditions which I may impose, if consent is to be granted, other conditions volunteered by the applicant, including those that may be outside those that I may impose under the EEZ Act, may also be imposed and become enforceable by the EPA. Such conditions are often referred to as 'Augier' conditions. The prohibitions in section 63(3) and 63(4), however, still apply to Augier condition.
37. I have imposed a pre-dump survey condition on this basis.

ENDS

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**Environmental
Protection Authority**
Te Mana Rauhi Tāsoo