

Technical Report



TO: Todd Whittaker
FROM: Sally McKinnon/Paul Murphy
DATE: 30 April 2018
SUBJECT: EASTLAND PORT LIMITED APPLICATION TO UNDERTAKE WORKS TO REDEVELOP THE SLIPWAY AND WHARVES 6&7

Author

Sally McKinnon is a technical professional in relation to environmental science and contaminated land and is currently working for the Gisborne District Council (GDC) as a Senior Water and Coastal Resources Officer. Sally has around 30 years' experience working on scientific research and management projects in New Zealand, Australia and the United Kingdom.

Context

The Eastland Port Limited application by 4Sight Consulting shall generally be taken as read.

Some technical discussion on the key issues arising from the application and how these have been assessed is included in this memo. This should help to explain the approach to the assessment and the heavy reliance on conditions and our level of comfort with this approach.

This report therefore also provides comments on the proposed consent conditions put forward by the applicant, as well as some additional conditions used for similar works in the port. The conditions provided by the applicant are assumed to be included as part of the main body of the decision report so will generally not be repeated here, unless there are changes proposed. These will be shown using bold (**bold**) where there are to be changes or additions.

Management Plans

While it is the preference of the Water and Coastal Resources Team to have all information up front, it is acknowledged that this would be very awkward given the scale of this project. There is some degree in comfort in that similar work is currently being started on the Wharfside Logyard and there will be learnings from that process that can be translated into this application and process. As a result, the analysis of the assessment of environmental effects takes a precautionary approach and it is recommended all proposed Management Plans requiring certification by GDC are supplied to GDC a minimum of one (1) month prior to construction taking place and all Detailed Site Investigation (DSI) are supplied to GDC at least two (2) months prior to construction taking place to allow for a comprehensive review.

The Port environment is subjected to various hazardous substances and aquatic pest species through its normal operation. These substances and pests can attach to infrastructure and substrate. Therefore, the removal of structures and substrate from the port environment as part of construction requires decontamination procedures to ensure that the substances and pests are not spread to other areas or locations. In addition, the removal of any structures and substrate from the port area needs to be tracked and final disposal locations verified. This can be achieved with the additional proposed consent conditions.

The successful contractors and sub-contractors need to be made aware that the time frames specified for each of the conditions below are mandatory and any non-compliance with these may result in enforcement action being recommended.

Management Plans – proposed changes to conditions

Wharf 6 & 7

Construction Management Plan

8. Not less than **one (1) month** prior to commencement of construction works onsite, the Consent Holder shall submit to the Council's Consents Manager, for certification a Construction Management Plan (CMP) demonstrating how the wharf redevelopment is to be constructed in accordance with the relevant consent conditions, including the following matters;
- **Biosecurity methodology (prior, during and post construction).**
 - **Disposal of waste and removed piles (including decontamination procedures).**
 - **Procedures for dealing with emergencies.**

Additional Conditions under CMP section

- **Any hard surface material removed from the harbour that is to be reused must be:**
 - **Transferred to dry land to be cleaned and no fluid or materials allowed to drain back into the marine environment or into any stormwater system.**
 - **Cleaned thoroughly to remove all forms of marine material from all hard surfaces.**
 - **Cleaned and all marine material removed from hard surfaces must be contained, collected and disposed of to an approved landfill.**
- **Any hard surface material removed from the inner harbour that is not being reused must be disposed of at a secure dry land site for a minimum one month holding period. A record of the of all hard surfaces removed from the site, dates and the final disposal location will be submitted to council within one month of the completion of earthworks.**
- **Only new and clean materials to be used in the wharf upgrade.**
- **All machinery and equipment to be used in the Inner Harbour that is not already resident in the Inner Harbour, must be cleaned and sanitised prior to working in the water.**
- **Any machinery and equipment used in the Inner Harbour must be cleaned so that no fluid or materials drain into the marine environment or into any stormwater system.**
- **Within the EMP, the Consent Holder shall include a Maintenance Plan demonstrating how the wharfs are to be monitored and maintained. The plan will also include how the wharfs will be inspected for aquatic pest species and what measures will be undertaken to prevent their establishment on the wharf.**
- **Consent Holder shall discharge any stormwater that comes in contact with the soils during earthworks via the new Wharf logyard stormwater treatment system.**

Earthworks, Erosion and Sediment Control

19. Not less than **one (1) month** prior to commencement of construction works onsite, the Consent Holder shall submit to the Council's Consents Manager, for certification an Erosion & Sediment Control Plan (E&SCP). The ES&CP shall cover the following matters:
- (i) The staging of the earthworks, sheet piling and reclamation works;

- (ii) The location and extent of the temporary land based drying and storage areas;
- (iii) The temporary silt control measures to be taken to **avoid, remedy or mitigate** the discharge of silt laden runoff into the coastal marine area; and
- (iv) The protocols surrounding the use of a geotextile curtain to confine the silt laden runoff associated with the reclamation activities to the immediate works area within the coastal marine area;

Advice Note: The E&SCP **will** form part of the CMP and be submitted to Council at the same time.

- 23. All cut material from the earthworks that is not re-used on site shall be removed from the site and deposited in an appropriately permitted fill disposal location. **A record of the weight of all soil/fill removed from the site, dates and the final disposal location will be submitted to council within one month of the completion of earthworks.**

Slipway

Construction Management Plan

- 8. Not less than **one (1) month** prior to commencement of construction works onsite, the Consent Holder shall submit to the Council's Consents Manager, for certification a Construction Management Plan (CMP) demonstrating how the slipway redevelopment is to be constructed in accordance with the relevant consent conditions, including the following matters;
 - **Biosecurity methodology (prior, during and post construction).**
 - **Disposal of waste and removed hard surface material (including decontamination procedures).**
 - **Procedures for dealing with emergencies.**

Additional Conditions under CMP section

- **Any hard surface material removed from the harbour that is to be reused offsite must be:**
 - **Transferred to dry land to be cleaned and no fluid or materials allowed to drain back into the marine environment or into any stormwater system.**
 - **Cleaned thoroughly to remove all forms of marine material from all hard surfaces.**
 - **Cleaned and all marine material removed from hard surfaces must be contained, collected and disposed of to an approved landfill.**
- **Any hard surface material removed from the inner harbour that is not being reused must be disposed of at a secure dry land site for a minimum one month holding period. A record of the of all hard surfaces removed from the site, dates and the final disposal location will be submitted to council within one month of the completion of earthworks.**
- **All machinery and equipment to be used in the Inner Harbour that is not already resident in the Inner Harbour, must be cleaned and sanitised prior to working in the water.**
- **Any machinery and equipment used in the Inner Harbour must be cleaned so that no fluid or materials drain into the marine environment or into any stormwater system.**

Earthworks, Erosion and Sediment Control

- 17. Not less than **one (1) month** prior to commencement of construction works onsite, the Consent Holder shall submit to the Council's Consents Manager, for certification an Erosion & Sediment Control Plan (E&SCP). The ES&CP shall cover the following matters:

- (i) The staging of the earthworks, sheet piling and reclamation works;
- (ii) The location and extent of the temporary land based drying and storage areas;
- (iii) The temporary silt control measures to be taken to **avoid, remedy or mitigate** the discharge of silt laden runoff into the coastal marine area; and
- (iv) The protocols surrounding the use of a geotextile curtain to confine the silt laden runoff associated with the reclamation activities to the immediate works area within the coastal marine area;

Advice Note: The E&SCP **will** form part of the CMP and be submitted to Council at the same time.

- 21. All cut material from the earthworks that is not re-used on site shall be removed from the site and deposited in an appropriately permitted fill disposal location. **A record of the weight of all soil/fill removed from the site, dates and the final disposal location will be submitted to council within one month of the completion of earthworks.**
 - **Included in the CMP will be a plan detailing how soil and equipment will be safely transported to and from the slipway site to prevent any discharges to the harbour.**

3.3.4 Water Quality and Discharges

Although the port environment is a degraded system subjected to hazardous chemicals, it does support a marine ecosystem which includes juvenile crayfish and cats eye snails. Therefore, the mitigation measures regarding water quality and discharges during construction are important as the works maybe classed as temporary, but will occur over a number of month, which could be the lifespan for some aquatic species. Discharges into the marine environment during construction works could be minimised with the correct mitigation measures and planning.

Discharges to the marine environment are permitted as long as they are of a temporary nature. As discussed above, the definition of temporary is relative to the species and environment. The Slipway contains contaminated soils and structures as recorded in the Detailed Site Investigation, and these will generally remain on the site during and after construction works. The wharf area is contaminated based on historical and current activities (operational port) and the level of contamination will be assessed prior to construction. Therefore, any stormwater / water coming in contact with the soils of either site during construction works has the potential to become contaminated. Prior to construction works the potential contamination of stormwater was minimised as the soils were not disturbed and the deeper soils not exposed. Some stormwater may have percolate through the soils into the groundwater below prior to construction but generally the surfaces have been compacted or sealed, limiting the vertical movement of water. During construction earthworks the proposed measures to treat stormwater before discharge will need to be carefully assessed based on the location. The slipway discharges may need to be diffuse and the use of silt curtains to limit the exposure pathways has been proposed. The wharf site may have the advantage of the stormwater treatment device being installed as part of the wharfside logyard construction.

Stormwater Discharge Monitoring - proposed changes to conditions

- **Stormwater sampling will be undertaken as specified in the consent conditions for the Wharfside logyard stormwater monitoring programme, but will target first flush**

conditions that occur within two hours of significant rainfall after several days of dry conditions.

- **In addition to the consent conditions for the Wharfside logyard stormwater monitoring programme, a copy of the stormwater monitoring laboratory report and associated csv file and field notes will be forwarded to the Council as soon as they are released by the laboratory.**

3.3.5 Disposal of Dredged Material to OSDG

Eastland Port has detailed methodology for the dredging of the Wharf 6 area to allow for the berthing of two tugs including the larger Waimata tug. There is limited information about the capital dredging proposed for the Slipway redevelopment. Both capital dredging methodologies and environmental measures should be similar and come under the same conditions of consent for consistency.

Sediment testing as specified in the previous consent granted for capital and maintenance dredging was limited in the parameters tested. Based on water quality testing undertaken for discharge consents associated with the port and the known hazardous substances associated with operational ports, it is recommended that sediment testing also includes tributyl tin (TBT), Dehydroabietic acid (DHAA) and Polyaromatic Hydrocarbons (PAHs). DHAA has been recorded as exceeding trigger values in water samples collected from the Upper logyard stormwater discharge. PAHs and TBT are recorded contaminants associated with port operations in the hazardous activities and industry list (HAIL).

Although it is recognised that capital dredging should predominantly remove natural soils from the harbour, based on the history of industries associated with the area and the convergence of several rivers and streams draining urban, agricultural and industrial catchments there is the potential for the natural soils to have become partially contaminated. A precautionary approach is recommended, and sediment sampling as recommended for the maintenance dredging should also be extended to capital dredging, with the inclusion of the three contaminants mentioned above.

In addition to the contaminants associated with sediment, there is also the potential that aquatic pest species are being dispersed throughout Poverty Bay as part of the dredging programme.

The current maintenance dredging consents are due for renewal this year. Therefore it is recommended that the maintenance dredging is not included with this consent but attached to the renewal. This will allow maintenance dredging to be assessed under one set of consents and prevent any confusion relating to what area is covered under which consent. Due to the timing of the consents, there is no reason why maintenance dredging needs to be included in this consent.

Coastal Permit – proposed changes to conditions

Wharf 6&7

Area of Capital Dredging

51. The **capital dredging** authorised by this consent is generally limited to the Wharf 6 and 7 operating area, shown on WorleyParsons plan submitted with the applications and referenced in Condition 1.

Capital Dredging Area & Sediment Sampling Sites

54. The sediment sampling and analysis shall involve the metals, metalloid (arsenic) **and organics** identified in Table 1 below. The results shall be carried with reference to the ANZECC Guidelines for Marine Water Quality 2000 Table 3.5.1 Recommended Interim Sediment Quality Guidelines – Low Trigger Value also listed below in order to assess the suitability of the dredged sediments for offshore disposal.

Table 1: ANZECC Marine Water Quality Guidelines

<i>Parameter</i>	<i>Units</i>	<i>Recommended Interim Sediment Quality Guidelines (ISQG) Low Trigger Value</i>
Arsenic	mg/kg	20
Cadmium	mg/kg	1.5
Chromium	mg/kg	80
Copper	mg/kg	65
Lead	mg/kg	50
Mercury	mg/kg	0.15
Nickel	mg/kg	21
Silver	mg/kg	1
Zinc	mg/kg	200

tributyltin (TBT)	µg Sn/kg dry wt	5
PAHs		
Acenaphthene	µg/kg dry wt	16
Acenaphthalene	µg/kg dry wt	44
Anthracene	µg/kg dry wt	85
Fluorene	µg/kg dry wt	19
Naphthalene	µg/kg dry wt	160
Phenanthrene	µg/kg dry wt	240
Benzo(a)anthracene	µg/kg dry wt	261
Benzo(a)pyrene	µg/kg dry wt	430
Dibenzo(a,h)anthracene	µg/kg dry wt	63
Chrysene	µg/kg dry wt	384
Fluoranthene	µg/kg dry wt	600
Pyrene	µg/kg dry wt	665
Total PAHs	µg/kg dry wt	4000
Dehydroabiatic acid (DHAA)	µg/kg dry wt	

- A copy of the sediment sampling laboratory report and associated csv file and field notes will be forwarded to the Council as soon as they are released from the laboratory.

60. The consent holder may as part of the any sediment or water quality monitoring report submitted to the Council request a **review of the consent conditions** for the testing, analysis and reporting to the Council where the concentrations of metalloids/metals/organics have over a significant period of time been consistently below the ANZECC guideline trigger values.

Slipway

The condition of consent for the capital dredging of the Slipway area should be the same as the Wharf 6&7 conditons for capital dredging.

3.6 SITE CONTAMINATION

The Eastland Port application includes a Detailed Site Investigation of the Slipway site. The DSI involved soil sampling at ten (10) locations, to a depth of approximately 2m below ground surface across the site, and testing soil samples for a combination of heavy metals, Total Petroleum Hydrocarbons (TPH), PAH, TBT and asbestos. Analytical results indicated a concentration of lead, located near surface by the Turanganui River, which exceeded the National Environmental Standards (NES) recreational trigger value for lead. Asbestos was identified in the same sample as the elevated lead concentration and also in a sample collected down river of the location. Analytical results indicated that all soil samples exceeded the Class B landfill screening criteria for most heavy metals and TBT was above the laboratory limit of reporting (LOR) in eleven of the twenty samples tested. There is no soil guideline value for TBT. The hotspot of Pb was not delineated and the results of the DSI also do not preclude there being other areas of the site with concentrations of analytes that exceed the NES trigger values or more asbestos. Therefore, the soils in the Slipway cannot be described as 'clean'.

As the soils associated with the Slipway cannot be described as 'clean' it is recommended that all soil / material that are to be disposed offsite are to be disposed at a landfill licensed to accept the soil/material. All movement of soil/materials on and off site should be recorded and any soils brought to site validated and included in a Post Remediation Works Validation Report (PRWVR).

The Slipway is currently sealed in one form or another and it is recommended that, unless required, the sealed surfaces remain untouched thus eliminating a contaminant pathway for workers and the environment. This especially important with the recorded presence of asbestos fibres in the soils under the site.

Based on the Slipway DSI and associated Remediation Action Plan (RAP) most soils will be reused on site and the whole site capped with a 300mm layer of cleanfill. While this is supported it is felt that based on the contaminants remaining on site and coastal erosion which is magnified by ship movements, a more robust engineered cap is required.

It is proposed to undertake a DSI of the area covered in the Wharf 6&7 application prior to construction works. Based on the DSI completed for the adjacent wharfside Logyard consent and the current operational status of the port, it is highly probable that there will be some soil contamination on the site. Although the proposed conditions of consent will cover construction management on a contaminated site, there could be issues that require additional works. Therefore, it is recommended that that the DSI and any associated

assessments are undertaken as soon as possible to allow for a comprehensive review by Council prior to certification of the CMP.

Conditions

The conditions provided by the applicant are assumed to be included as part of the main body of the decision report so will generally not be repeated here, unless there are changes proposed. These will be shown using bold (**bold**) where there are to be changes or additions.

Wharf 6&7

Contaminated Site Management

47. The Consent Holder shall submit a Detailed Site Management Plan (DSI) on possible contamination of some of the soils on the site to the Council for approval, at least **two (2) months** before any earthworks are undertaken. The DSI shall be prepared in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines No.5. Site Investigation and Analysis of Soils 2011.
48. Should the DSI identify contaminants above typical background levels then the Consent Holder shall submit a Site Management Plan (SMP) and a Remediation Action Plan (RAP) to the Council for approval, at least **one (1) month** before any earthworks and associated remediation works are undertaken. The SMP and RAP shall be prepared in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines No.5. Site Investigation and Analysis of Soils 2011.
49. The earthworks on the site shall be undertaken in accordance with the DSI, including any recommended site remediation works.
50. If any site remediation works are required then a Post Remediation Works Validation Report (PRWVR) to the Council within **two (2) months** of the earthworks and associated remediation works being completed. The PRWVR shall be prepared in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guidelines No.5. Site Investigation and Analysis of Soils 2011.

Slipway

Contaminated Site Management

- **The Consent Holder shall finish the slipway with a robust engineered cap. The maintenance of the cap shall be included in the PRWVR.**

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Date 30/04/2018

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