Nō te rere moana Aotearoa
MARITIME NEW ZEALAND

TEL +64 4 473 0111 FAX +64 4 494 1263
Level 11,1 Grey Street, PO Box 25620, Wellington 6146
New Zealand

28 September 2018

[redacted]

Our ref: F26400
By email

Dear [redacted]

Official Information Act request – *RMS Niagara*

I refer to your email, dated 17 August 2018, to the Ministry of Transport requesting, in part, the following information:

> *"Under the OIA, I would like to request all advice and reports from Maritime NZ about the Niagara received by Transport ministers or their associates since 2014."*

On 22 August 2018, the Ministry of Transport transferred this part of your request to Maritime NZ to answer.

We have considered your request under the Official Information Act (the Act).

Background information

The ***Niagara*** sank in the Hauraki Gulf in 1940 after hitting a mine. The wreck lies close to the boundary between Northland and Auckland Regions' Coastal Marine Waters.

Contingency plans have been developed that could be put into action if a significant discharge from the ***Niagara*** occurred. The relevant contingency plans are: the National Marine Oil Spill Contingency Plan, the Northland, Auckland, and Waikato Region Marine Oil Spill Contingency Plans, and the Hauraki Gulf Marine Oil Spill Contingency Plan. All of these plans apply in that they collectively cover the risks, threats, and response options for any oil spill from any source in the Hauraki Gulf, including the wreck of the ***Niagara***. Further information about the National Oil Spill Contingency Plan can be found here:

https://www.maritimenz.govt.nz/public/environment/responding-to-spills/documents/national-oil-spill-plan-2017.pdf

The Marine Pollution Response Service (MPRS) leads oil spill response in New Zealand. The New Zealand Marine Oil Spill Response Strategy sets the overarching framework for how Maritime NZ and our partners, including regional councils, will respond to a marine oil spill incident.

Information about MPRS and the New Zealand Marine Oil Spill Response Strategy can be found on our website here:

http://www.maritimenz.govt.nz/about/what-we-do/safety-and-response/MPRS/

http://www.maritimenz.govt.nz/public/environment/responding-to-spills/

http://www.maritimenz.govt.nz/public/environment/responding-to-spills/response-strategy.asp

The National Oil Spill Contingency Plan is used in conjunction with the Regional Marine Oil Spill Contingency Plans, which are maintained by New Zealand's 16 regional councils and territorial authorities. These plans identify sensitive sites and preferred response options for the most likely spill scenarios in each specific region, as well as what resources are held locally.

Spills from ship wrecks are treated in the same manner as spills from any other source when it comes to a response. This is because the source of the spill does not normally make any difference to the response. However, when a fixed source of a potential spill is identified, trajectory modelling may be undertaken in advance if it is considered useful for planning purposes.

When the regional contingency plans are updated every three years, consideration is given to any significant risks, such as oil transfer sites. If a risk is significant, the plan may be amended accordingly. If a wreck was considered to present a significant risk, that risk would also be given due consideration. Whenever regional plans are reviewed or amended for any reason, they are subject to Maritime NZ review prior to approval.

The national and regional contingency plans may be supplemented by special plans, where particular risks and threats to resources warrant more detailed planning. Examples of this are the Fiordland Plan and the Hauraki Gulf Plan, the latter of which includes consideration of the risks posed by the ***Niagara*** wreck.

Decision on your request

Please find **enclosed** a number of documents covered by your request. Maritime NZ has redacted some information from these documents for the following reasons:

- a small amount of information is outside the scope of your request (in other words, the information does not relate to the ***RMS Niagara***);
- to protect the privacy of natural persons (section 9(2)(a) of the Act);
- to protect information which is subject to an obligation of confidence, where the making available of the information would be likely to damage the public interest (section 9(2)(ba)(ii) of the Act);
- to maintain the constitutional conventions for the time being which protect the confidentiality of advice tendered by Ministers of the Crown and officials (section 9(2)(f)(iv) of the Act); and
- to maintain the effective conduct of public affairs through the free and frank expression of opinions by or between or to Ministers of the Crown or members of an organisation or officers and employees of any department or organisation in the course of their duty (section 9(2)(g)(i) of the Act).

Maritime NZ does not consider that the public interest considerations favouring disclosure of this information outweigh the public interest considerations favouring withholding the information (section 9(1) of the Act).

In addition to the briefings enclosed with this letter, Maritime NZ is currently preparing additional advice for Ministers regarding the risks associated with the wreck. The advice will cover a range of issues, including:

- the feasibility of any commercial underwater survey of the wreck, including survey requirements; options for how the wreck should be surveyed; estimated costs for the survey; and what information is required to support the risk assessment; and
- the likely economic impact of a spill based on a variety of scenarios using oil spill modelling.

It is anticipated that this advice will be completed by the end of this month.

Information outside the scope of your request

Maritime NZ staff have also provided advice to staff in the Offices of the Minister of Transport and Associate Minister of Transport in respect of media queries, official information requests and other correspondence relating to the ***RMS Niagara***. As these documents do not comprise formal advice or reports to the Minister of Transport or Associate Ministers of Transport, we consider these documents are outside the scope of your request.

If you are dissatisfied with the decision on your request, you can complain to the Ombudsman under section 28(3) of the Official Information Act. The Ombudsman's contact details can be found at: http://www.ombudsman.parliament.nz/.

Yours sincerely

Emma Debreceny

Emma Debreceny
Senior Advisor, Ministerial Services

Enc: Information covered by your request

Memorandum

MARITIME NEW ZEALAND

Level 11,1 Grey Street
PO Box 25620
Wellington 6146
New Zealand

Tel +64 4 473 0111
Fax +64 4 494 1263
www.maritimenz.govt.nz

TO	Private Secretary Minister of Transport Private Secretary Associate Minister of Transport
FROM	Mike Hill Acting General Manager Safety & Response RCCNZ & Safety Services Safety and Response
DATE	4 October 2016
OUR REF	Briefing to Ministers - FY 2016-2017 – Greenpeace (on behalf of the Ministry of Environment Hon Dr Nick Smith) – Information on Niagara
SUBJECT	**Recent interest in the wreck Niagara and the risk of oil discharge**

In accordance with the "no surprises approach", we would like to draw your attention to a recent media article about oil discharge from the wreck of the ***Niagara***, off the coast of Northland. This memorandum provides relevant information.

Information received by Maritime NZ

On 27 September 2016, the Ministry of Environment advised Maritime NZ that Russel Norman, Executive Director, Greenpeace New Zealand, has written to the Environment Minister, Hon Dr Nick Smith, to raise concerns about the risk of oil discharge from the wreck of the ***Niagara*** and the likely environmental consequences of a significant discharge of oil. Dr Norman also provided Minister Smith with a letter from Mike Lee, Councillor, Auckland City Council, to Mayor Len Brown regarding the wreck. Mr Lee called for Mr Brown to raise the issue with the Prime Minister, and appropriate government ministers, with the *"objective of having government agencies led by Maritime NZ and the Northland Regional Council collaborate to carry out a thorough investigation to assess the condition of the wreck and to ascertain the amount of oil still in it"*.

A recent media article regarding the letter was published in the Northern Advocate.

http://www.nzherald.co.nz/northern-advocate/news/article.cfm?c_id=1503450&objectid=11701483

Dr Norman has asked Minister Smith to confirm what steps will be taken to investigate the issue.

This memorandum provides advice about recent activity around the ***Niagara*** and Maritime NZ's risk assessment of the likelihood of significant oil discharge from the wreck.

In response to the Ministerial from Greenpeace, Maritime NZ has provided information to the Ministry for the Environment (attached as Appendix 1). We will provide further information if requested.

Background

The wreck of the vessel ***Niagara***, is located off the coast of Northland in the Hauraki Gulf. The ***Niagara*** sank in 1940 after hitting a World War II mine laid by an undetected German auxiliary cruiser. The wreck is approximately 20 miles *(17.5 nautical miles)* offshore and 7 miles *(6 nautical miles)* east of the Hen and Chicken Islands in 120 metres of water.

The wreck lies close to the boundary between Northland and Auckland Regions' Coastal Marine Waters and both Regional Councils and Maritime NZ are aware of the ***Niagara*** and the potential for further leaks of oil. Maritime NZ and the Northland Regional Council conducted a joint assessment of the risk posed by the wreck in 2000. That assessment guides much of our understanding of the wreck and the risk it poses.

The 2000 study noted anecdotal evidence suggesting that significant discharges of oil occurred at the time of sinking and also during subsequent cargo salvage operations when explosives were used to breach parts of the hull. The assessment and an analysis of an oil sample in 2008 concluded that the oil on board was a heavy marine fuel oil that appeared to have a high pour point, which refers to the temperature at which the oil ceases to flow like a liquid. Maritime NZ considers it likely that due to the low water temperature at the wreck site, the depth of the wreck and the high pour point, the remaining oil in the wreck will be in a semisolid state from time to time, depending on seasonal variations in water temperature[1]

It is impossible to determine, with any degree of accuracy, how much oil remains on board the wreck. The 2000 assessment acknowledged that if a major structural change occurring to the wreck, some of the oil could easily come to the surface 'en masse'. However, the ***Niagara*** had eleven designated fuel tanks and three ballast tanks that could be used for fuel storage, so it is reasonable to assume that the remaining oil on the wreck is distributed among a number of different spaces.

Maritime NZ considers it unlikely that all of the remaining oil would be released at the same time. The more likely scenario is that which we are continuing to see – occasional reports of small amounts of oil apparently coming from the ***Niagara*** wreck as it slowly degrades. To date, monitoring these releases has shown that the oil naturally disperses/breaks up and has not caused any significant environmental impact.

The most recent report on the oil leak from the wreck was received by Maritime NZ in February 2016, from Keith Gordon, who operates SeaROV Technologies Ltd and who uses remote operated vehicles (ROVs) to conduct underwater services including shipwreck search and survey, and salvage and marine insurance investigation. Mr Gordon is the author of Deep Water Gold, originally published in 2005, which is the story of ***Niagara*** – see http://www.deepquest.co.nz

Readiness to respond

All oil spills and discharges in the region are monitored by Northland or Auckland Regional Councils and/or Maritime NZ. That monitoring has found that the minor amounts of oil that have leaked, have dispersed / broken up naturally with no observed environmental impact. Northland Regional Council, like all regional councils, has a store of oil pollution equipment and staff training to respond to pollution incidents. Each regional council responds immediately to a spill in its area. If Northland Regional Council needed support to respond to an oil spill, whether from the ***Niagara*** or other source, Maritime NZ would coordinate additional staff and resources. If necessary, the response could be escalated to Tier 3 (national) level.

Currently, New Zealand has $15 million of specialist oil spill response equipment based around the country at 20 caches. The equipment includes booms, skimmers, dispersants, sorbents, and oil recovery vessels that can all be moved by sea, land or air. Further, New Zealand has 400 trained response personnel that can be called on to assist in minimising the damage from any spill.

Protected Areas – Submarine Cable and Pipeline Protection Act 1996 (SCAPPA)

The Submarine Cables and Pipeline Protection Act 1992 provides for better protection of submarine cables and pipelines and the implementation of obligations under various international conventions relating to protection of submarine cables and pipelines. The ***Niagara*** is in an area covered by SCAPPA.

In January 2016, Mr Gordon requested a declaration, under the Submarine Cables and Pipeline Protection Act and the Maritime Transport Act, to enable a ROV to carry out an underwater survey of the ***Niagrara*** The notice is published in the New Zealand Gazette at https://gazette.govt.nz/notice/id/2016-au817 Mr Gordon's ROV conducted a survey of the remains of the vessel in February 2016. In return, Mr Gordon agreed to report any oil pollution or state of the wreck to Maritime NZ. After that survey,

[1] ***Note:*** *Recent underwater photographs were taken in February 2016 by Keith Gordon's SeaROV while conducting a survey of the remains of the vessel. The photographs provided by Mr Gordon of the small amount of oil discharge, were taken when the water and oil temperatures would be higher than in winter and the oil at its most fluid.*

Mr Gordon provided photos of the oil leak (see appendix 1). The black squiggles in the photo show small amounts of leaking oil.

Maritime NZ continues to hold the view that the depth of this wreck means that the remaining oil is likely to be in a near solid form for much of the time and, as the oil is likely distributed over a number of spaces and compartments on the wreck, a major leak is unlikely. Regardless, contingency plans have been developed that could be put into action if a significant discharge occurred. The relevant contingency plans are: the National Oil Spill Contingency Plan, the Northland, Auckland, and Waikato Region Marine Oil Spill Contingency Plans, and the Hauraki Gulf Marine Oil Spill Contingency Plan. All of these plans apply in that they collectively cover the risks, threats, and response options for any oil spill from any source in the Hauraki Gulf, including the wreck of the ***Niagara***. Reviews of the regional and national contingency plans, and the production of the Hauraki Gulf Contingency Plan, have significantly progressed the risk and threat assessments done in 2000. The contingency plans also now include much more comprehensive site plans for the priority threatened sites in the Hauraki Gulf.

Risks

It is possible that Greenpeace's interest in the wreck could result in further media interest and/or parliamentary questions on:

- the risk posed by the wreck and the likelihood of a gradual or, worst case scenario, a large rupture and oil breaching on the shoreline.
- the need to ascertain the current risks posed by the wreck; and
- the ability of Maritime NZ and the regional councils to respond to any significant discharge.

Maritime NZ will respond to any enquiries that arise with the explanations provided above.

Mike Hill
Acting General Manager Safety & Response
RCCNZ & Safety Services

Telephone [redacted] Information withheld under section 9(2)(a) Official Information Act

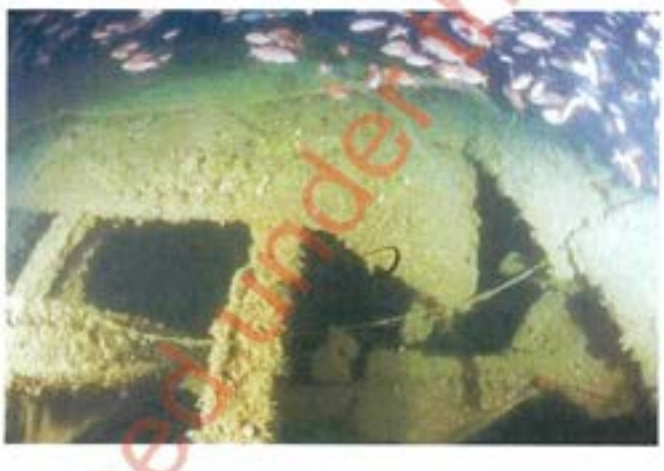
Appendix 1: Information provided to Ministry for the Environment

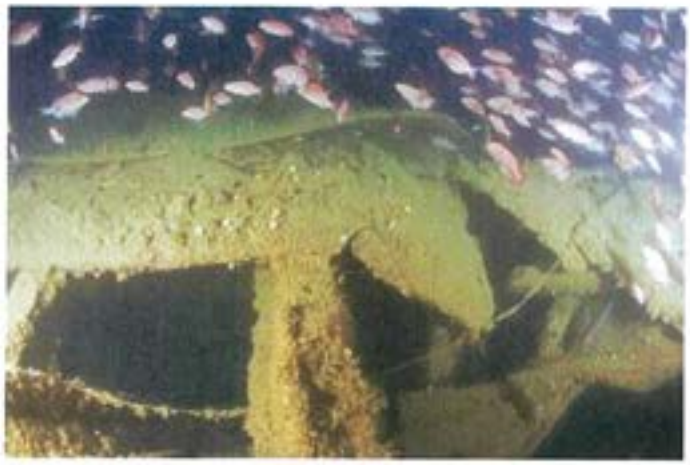
Risk of oil spill from the wreck Niagara

Back ground

Protected Areas – Submarine Cable and Pipeline Protection Act 1996 (SCAPPA)
The Submarine Cables and Pipeline Protection Act 1992 is an Act to provide better protection of submarine cables and pipelines and to continue or enable the implementation of obligations in New Zealand under various international conventions relating to protection of submarine cables and pipelines. The wreck Niagara is in an area covered by SCAPPA.

In January 2016, Keith Gordon requested a declaration to enable Sea Remote Operated Vehicle (ROV) to carry out an underwater survey, using SeaROV and sonar systems, of the wreck vessel, RMS Niagrara located in Hauraki Gulf. The notice is published in the New Zealand Gazette (which is available online). Here's the link to the published notice: https://gazette.govt.nz/notice/id/2016-au817 Mr Gordon's SeaROV conducted a survey of the remains of the vessel. After that survey, Mr Gordon provided photos of the oil leak (below – the black squiggles) which are of small amount.





2000 Maritime NZ and Northland Regional Council risk assessment of the wreck

The ***Niagara*** sank in the Hauraki Gulf in 1940 after hitting a mine. The wreck lies close to the boundary between Northland and Auckland Regions' Coastal Marine Waters. Both Regional Councils and Maritime NZ are aware of the Niagara wreck and the potential for further leaks of oil. Maritime NZ and the Northland Regional Council conducted a joint assessment of the risk posed by the wreck in 2000. That assessment guides much of our understanding of the wreck and the risk it poses.

The 2000 study noted anecdotal evidence suggesting that significant discharges of oil occurred at the time of sinking and also during subsequent cargo salvage operations when explosives were used to breach parts of the hull. The assessment and an analysis of an oil sample in 2008 concluded that the oil on board was a heavy marine fuel oil that appeared to have a high pour point. It is believed likely that due to the low water temperature at the wreck site and the high pour point, the remaining oil in the wreck may be in a semisolid state from time to time, depending on seasonal variations in water temperature *(note that the accompanying photographs were taken in February 2016, when the water and oil temperatures would be higher than in winter)*. It is impossible to determine with any degree of accuracy how much oil remains on board the wreck.

Since 2000

Occasional reports of small amounts of oil apparently coming from the Niagara wreck have been received by Maritime NZ. One such recording was received on 11 February 2008, the most recent has been in February 2016, by Keith Gordon. The spills are monitored by Northland Regional Council and/or Maritime NZ. That monitoring has found that the minor amounts of oil that have leaked have naturally dispersed/broken up with no observed environmental impact.

Current view

Maritime NZ continues to hold the view that the depth of this wreck means that the remaining oil is likely to be in a near solid form, making a major leak unlikely. Regardless, contingency plans have been developed that could be put into action if a significant discharge occurred. The relevant contingency plans are: the National Oil Spill Contingency Plan, the Northland, Auckland, and Waikato Region Marine Oil Spill Contingency Plans, and the Hauraki Gulf Marine Oil Spill Contingency Plan. All of these plans apply in that they collectively cover the risks, threats, and response options for any oil spill from any source in the Hauraki Gulf, including the wreck of the Niagara. Reviews of the regional and national contingency plans, and the production of the Hauraki Gulf Contingency Plan, have significantly progressed the risk and threat assessments done in 2000. Those plans also now include much more comprehensive response options for the priority threatened sites in the Hauraki Gulf.

Report

IN-CONFIDENCE

MARITIME NEW ZEALAND

Information withheld under sections 9(2)(ba)(ii), 9(2)(f)(iv) and 9(2)(g)(i) of the Official Information Act 1982

AGENDA ITEM NO.	TBD
DATE OF REPORT	2 March 2018
SUBJECT	**Management of the Wreck of the Niagara**

Purpose

1. To provide an update to the Associate Minister of Transport and the Minister of Conservation on matters related to the management of the wreck of the ***Niagara***.

Executive Summary

2. The wreck of the ***Niagara*** located in the Hauraki Gulf has been the source of a number of minor marine oil spills in the years since it sank. There is public concern over the environmental risk posed by the wreck.

3. Internationally, the management of historical wrecks due to the environmental risks they pose is a significant and growing challenge. Technology permits oil recovery operations to be carried out on wrecks and at depths that were previously not considered feasible although at significant cost and with operational risks.

4. The UK authorities operate a comprehensive wreck management regime that uses desk-top risk assessment, survey and inspection of wrecks and, on rare occasions, oil recovery operations.

5. In the case of the ***Niagara*** considerations include uncertainty over the amount of oil in the wreck, the environmentally sensitive nature of the area around the wreck, the potential costs of any activity, funding for the activity, cost recovery considerations, third party interests and the operational risks of any intrusive activity.

6. [redacted]

7. [redacted]

8. Three basic options exist:

   a) The status quo of monitoring via reports received and maintaining a contingency plan for use in the event of a release;

   b) Undertaking an underwater survey and an independent risk assessment to consider the likelihood and consequences of a release, and (if then considered appropriate);

   c) An oil recovery operation to remove oil remaining in the wreck.

9. [redacted]

10. [redacted]

11. [redacted]

Background

12. The Royal Mail Ship ***Niagara*** (***Niagara***) was built in 1913 in Scotland. The vessel was 524 feet long with a gross tonnage of 13,415, a passenger and crew capacity of 904 and a fuel capacity of 4,324 tons. In 1940 the vessel was owned and operated by the Canadian Australasian Line Ltd and was sailing out of the port of Auckland when it hit a sea mine laid by an undetected German auxiliary cruiser.

13. Amongst the cargo was a secret consignment of UK Government owned gold bullion (590 ingots) being taken to the USA as payment for war munitions. The vessel sank rapidly although all crew and passengers were saved. There was a considerable but un-quantified release of oil from the damage caused by the mine. The sinking occurred approximately 20 miles offshore and 7 miles east of the Hen and Chicken Islands and the wreck lies in 120 metres of water. The position is close to the boundary between Northland and Auckland Regions' Coastal Marine Waters. See map at Appendix 1.

14. In 1941 a salvage operation was conducted to recover the gold bullion. Using a viewing/diving chamber, radio, and a grab lowered from the surface the operation blasted a hole in the hull and successfully recovered 555 gold bars. The remaining boxes were inaccessible to the grab. There was a further substantial but un-quantified release of oil as a result of the blasting activity. In 1953 a further 30 gold ingots were recovered, leaving five bars still unrecovered in the wreck as of today.

15. Over the years since the vessel sank a number of minor oil releases have been observed and reported to authorities. In addition there have been a number of underwater surveys by dive enthusiasts and also using Remote Operated Vehicles (ROVs). In 2000 Maritime NZ and the Northland Regional Council conducted a joint assessment of the pollution risk posed by the wreck. In 2008 an oil sample was recovered after another minor release and sent for sampling at a specialist laboratory. The laboratory reported that the oil was "sticky and semi-solid" and was consistent with being a marine fuel oil.

16. The most recent report of an oil leak from the wreck was received by Maritime NZ in February 2016, from Mr Keith Gordon[1], who operates SeaROV Technologies Ltd and who uses ROVs to conduct underwater services including shipwreck search and survey, and salvage and marine insurance investigation. The leak was seen in photographs provided to Maritime NZ from the wreck site showing very small 'wisps' of oil drifting from the wreck.

Current Situation

17. In recent months interest has been growing in the condition of the wreck and in the potential risk for damage to the environment from a release of oil. Interested parties have written on more than one occasion to the Minister of Transport, the Minister for the Environment, the Minister of Conservation, the Parliamentary Commissioner for the Environment and the Auckland Council. Media reports have been raising the matter for some time.

18. To date, responses have confirmed that agencies are aware of the matter and noted that Maritime NZ has a lead role in the management of any releases of oil from the wreck. Based on previous work dating back many years it is considered unlikely that all remaining oil would be released at one time and that the more likely scenario is that which we are continuing to see – occasional reports of small amounts of oil apparently coming from the ***Niagara*** wreck as it slowly degrades. Monitoring these very small releases has shown that the oil naturally disperses and breaks up and

[1] Mr Gordon is the author also of "Deep Water Gold", originally published in 2005, which is the story of ***Niagara*** – see http://www.deepquest.co.nz

has not caused any significant environmental impact. In 2016 Maritime NZ prepared a Niagara Contingency Plan to address any oil that emerged from the vessel. That Plan remains in place.

19. Key parties involved in raising the profile of the wreck include the Auckland Conservation Board, Councillor Mike Lee from the Auckland Council, Mr Keith Gordon and Mr Clive Sharp (a salvage expert and owner of the salvage company Subsee Limited). In February 2018 there was an exhibition on the history of the ***Niagara*** and the threat posed by the wreck at the Mangawhai Artists Gallery including a public meeting.

Wreck Management Practice

20. Internationally there are many thousands of wrecks that pose some degree of risk to the environment. The historical practice was to resolve any hazards to navigation posed by wrecks but not necessarily to deal with any pollution risks. This practice has evolved and changed over time due to the growing awareness of the environmental pollution risks coupled with the availability of technology that did not exist previously to address those pollution risks.

21. If a vessel sinks today then the immediate priority will be the safety of life of those involved but the next priority is the risk to the environment. Complex, and expensive, pollution prevention or mitigation operations are now common when a vessel sinks.

22. However, historical wrecks are posing significant environmental challenges to jurisdictions across the globe; in particular wrecks dating from after approximately 1870 when engine driven (and hence hydro-carbon fuelled) vessels came into widespread use. Jurisdictions are grappling with how to assess the risks from historical wrecks and how to determine what, if any, preventative action could or should be undertaken. Technology will now allow hydro-carbon recovery operations to be undertaken at almost any depth, albeit with the risk of unintended releases and at significant cost.

23. Maritime NZ has been engaged with authorities in the United Kingdom (UK) to understand the current best practice on the management of historical wrecks. The UK Ministry of Defence (MoD) in partnership with the Centre for Environment, Fisheries and Aquaculture Science (Cefas – the UK national operational marine science agency) operate a comprehensive Wreck Management Programme to oversee the more than 5,000 historical wrecks that are the responsibility of the MoD.

24. The UK Programme is based on a three stage approach – stages one and two involve a desk-based environmental risk assessment and a site-based wreck integrity and environmental survey. The desk-based survey uses a formal risk assessment process to consider the likelihood of the release of oil combined with the impacts on the affected environment to produce an overall risk assessment.

25. The site survey using high-resolution multi-beam sonar and ROV or diver sourced imagery supports a detailed analysis of the condition of the wreck. It may be undertaken after the desk-based risk assessment or before; in which case the results inform the risk assessment. Based on the scientific and technical assessment of the results from stages one and two a view can be reached on the overall level of risk (the combination of the likelihood of release given the state of the wreck, and the consequences of an oil release should one occur given the nature of the surrounding environment, the amount of oil etc.). If this overall risk level is judged to be unacceptable then stage three – an oil recovery operation – can be initiated.

26. Maritime NZ is of the view that the UK approach represents best practice for managing the pollution risk from wrecks.

Considerations Specific to the *Niagara*

The oil remaining in the wreck

27. It is impossible to determine at present the volume of oil remaining in the wreck. What is known is that the vessel had a capacity of 4,324 tons contained in eleven designated fuel tanks and three ballast tanks and that there were significant but un-quantified releases of oil at the time of the sinking and during the first salvage operation. In addition the vessel has undoubtedly been leaking oil at low or very low rates in the subsequent years – this also may be a substantial amount in total given the elapsed time.

28. Interested parties have speculated that approximately 1,600 tons remains in the wreck. This figure cannot be confirmed at present. Modern technology (e.g. neutron back-scatter) may allow for a non-intrusive assessment of how much oil remains in the wreck during an underwater survey operation but techniques are complex and expensive and results cannot be guaranteed.

29. Speculation has suggested that a rise in sea temperature in the vicinity of the wreck would allow any oil present to flow more easily and so increase the risk of oil escaping from the vessel. In general, heavy fuel oil (of the type understood to have been on-board the ***Niagara***) is a thick, heavy oil. At low temperatures such oils are typically in a semi-solid state – as such it is common for these fuels to be heated to enable easier flowing prior to them being burned in a ship's engines.

30. Maritime NZ sought advice from NIWA as to the possible rise in sea temperature at the wreck site (approximately 120m deep) given the warm weather this summer and higher than usual surface temperatures. The advice indicated that temperature profile over depth in the sea is a complex matter where local conditions – currents, topography etc. can have a significant impact. Nevertheless the deeper the water the more stable the temperature is likely to be. Below 100m variations in surface temperature will have only a limited effect. Maritime NZ considers it most likely that the oil is in a semi-solid or thick liquid form generally and resistant to easy flowing and that surface temperature variation will have little effect on the water temperature at the depth of the wreck.

31. An additional factor to consider is the age of the oil in the wreck. It is now more than 70 years old and will have weathered and aged to some degree depending on how it is contained and how much it is exposed to seawater. As oil ages the more volatile, lighter components degrade quite quickly – giving the hydrocarbon smell typically associated with spilled oil – and the remaining oil 'thickens' and begins to break down. If oil leaks out from containment its behaviour will vary widely depending on its condition in terms of how much it moves within the water column[2]; it may spread across the sea-floor, be dispersed within the water column, rise to the surface or a combination of all three.

32. In a similar way to having no certainty as to the volume remaining, it is not possible to be certain of the current condition of the fuel oil from the ***Niagara*** or exactly how it might behave should it be released from the wreck. The most likely scenario is that it will be buoyant to some degree, consist mainly of the heavy components and that its behaviour will vary depending on the extent of any weathering. The extant contingency plan to respond to a release of oil is based on this scenario. As a heavy fuel oil the oil will be challenging to clean up, resistant to dispersant and slow to break down.

Environmental Risk

33. The area in the vicinity of the wreck includes the Hauraki Gulf Marine Park, a number of marine reserves and significant coastlines with important ecology. The Hauraki Gulf Marine Spatial Plan (SeaChange) recommends an assessment of the risk posed by the wreck. A large scale release of oil would spread widely in the area and potentially severely impact marine wildlife including important sea bird species. The coastlines likely to be impacted include estuaries, rocky shorelines and islands. It is very challenging to protect these shorelines; the effectiveness of

[2] From the seabed to the surface.

booms may be very limited in some areas due to wind, tides and the size of the areas. In addition some of the shorelines would be challenging to clear up without causing significant damage in the process.

34. There are potential impacts on benthic assemblages – research indicates that contamination of flocculated marine sediments can transport significant amounts of released oil to the seafloor with significant adverse effects on pelagic organisms and infauna. The extent of the impact of spill from the ***Niagara*** on benthic and pelagic ecosystems in the Gulf would depend upon local hydrographic conditions, time of the year (influences the amount of suspended particulate material in the water column) and what proportions and components of the oil entered the water column and what stayed on the seafloor

35. Maritime NZ and the Regional Councils have a good understanding of the sensitive areas, sites and species in the area; this is a standard part of developing the general regional oil spill response plans. In addition Maritime NZ has expert advice and support available through its partnerships with Massey University (recognised worldwide for their work around oiled wildlife) and the Department of Conservation (DOC).

36. A formal assessment specifically focused on the potential environmental impacts of any significant oil spill from the wreck forms a key part of the Wreck Management best practice risk assessment.

[redacted]

Ownership of the Wreck

37. The legal frameworks around the ownership of wrecks are complex; over time international systems have evolved and changed and New Zealand has changed domestic arrangements. Maritime NZ has received a comprehensive legal opinion on this matter due to its importance to the issue of identifying a responsible party or owner who might be held accountable for the costs of any assessment and oil recovery operations.

38. Given the passage of time and the demise of the company that was operating the vessel in 1940 we have concluded that it is almost certain that a private or commercial owner for the wreck itself no longer exists. Maritime NZ is of the view that ownership is most likely to have vested, in effect, in the Crown.

Other Party Interests

39. Maritime NZ has undertaken research in the UK to determine what, if any, interests exist in the wreck. Vessel ownership can be complex due to considerations around the hull and machinery components as well as multiple cargo interests. In the case of the Niagara what has been established is that the UK Treasury retains ownership of (and hence an interest in) the remaining gold bullion. As such they would need to be advised of any intrusive activity in regards to the wreck.

40. The wreck lies in Protected Area 2 as defined under the Submarine Cables and Pipelines Protection Order 2009. This area exists to protect the Southern Cross cable and the Pakam East Cable. The Southern Cross cable network is of major structural significance for New Zealand and Australia. As such any activity in the area of the wreck that poses a potential hazard to the cables needs to be coordinated with relevant commercial and Government parties.

41. There are also multiple other parties with an interest in the wreck and/or in the likelihood and consequences of any potential oil release and so with an interest in any potential risk assessment and subsequent oil recovery operations. Government parties would likely include Environment and Conservation plus others, and regional and local authorities. External parties might include Iwi and the local Conservation Boards and the Hauraki Gulf Forum. To date consultation has only occurred with the Ministry of Transport and the Department of Conservation.

Operational Risks

42. Non-intrusive survey activity poses very little risk of disturbing the wreck. Any intrusive activity that might be recommended as part of the survey would need to be very carefully considered due to the risks of causing a release of oil. Examples might include taking metal samples of plates and panels or attempting to physically investigate the tanks to measure their contents.

43. If the risk assessment led in due course to an oil recovery operation it must be recognised that there is a risk of causing a release of oil while attempting to recover the oil. The vessel is now 105 years old and has been underwater for over 77 years; the metal will be significantly corroded. In such cases experience shows that oil 'migrates' around the vessel if it escapes from the tanks; as such it may be encountered in unexpected places.

44. Should an oil recovery operation result at some time there is a very real risk of an uncontained oil release. Precautionary response measures would need to be mobilised to mitigate this risk.

Operational Support

45. [redacted]

46. [redacted]

Options

47. Broadly speaking there are three options:

    d) Status Quo. Continue monitoring of the situation based on reports received, supported by the contingency plan that is in place;

    e) Survey and Risk Assessment. Undertake an underwater survey and use the information to conduct a revised risk assessment, and (if then considered appropriate);

    f) Undertake an Oil Recovery Operation. A decision to do this would follow a survey and risk assessment (it would be unwise to move straight to an oil recovery operation)..

48. Status Quo [redacted]

49. Survey and Risk Assessment [redacted]

50. Oil Recovery Operation [redacted]

[redacted]

[redacted]

51. [redacted]

52. [redacted]

[redacted]

53. [redacted]

54. [redacted]

55. [redacted]

56. [redacted]

57. [redacted]

58. [redacted]

[redacted]

[redacted]

59. [redacted]

60. [redacted]

61. [redacted]

Recommendations

62. It is recommended that you:

g) **Note** the information provided on the management of the wreck of the ***Niagara***

h) [redacted]

i)

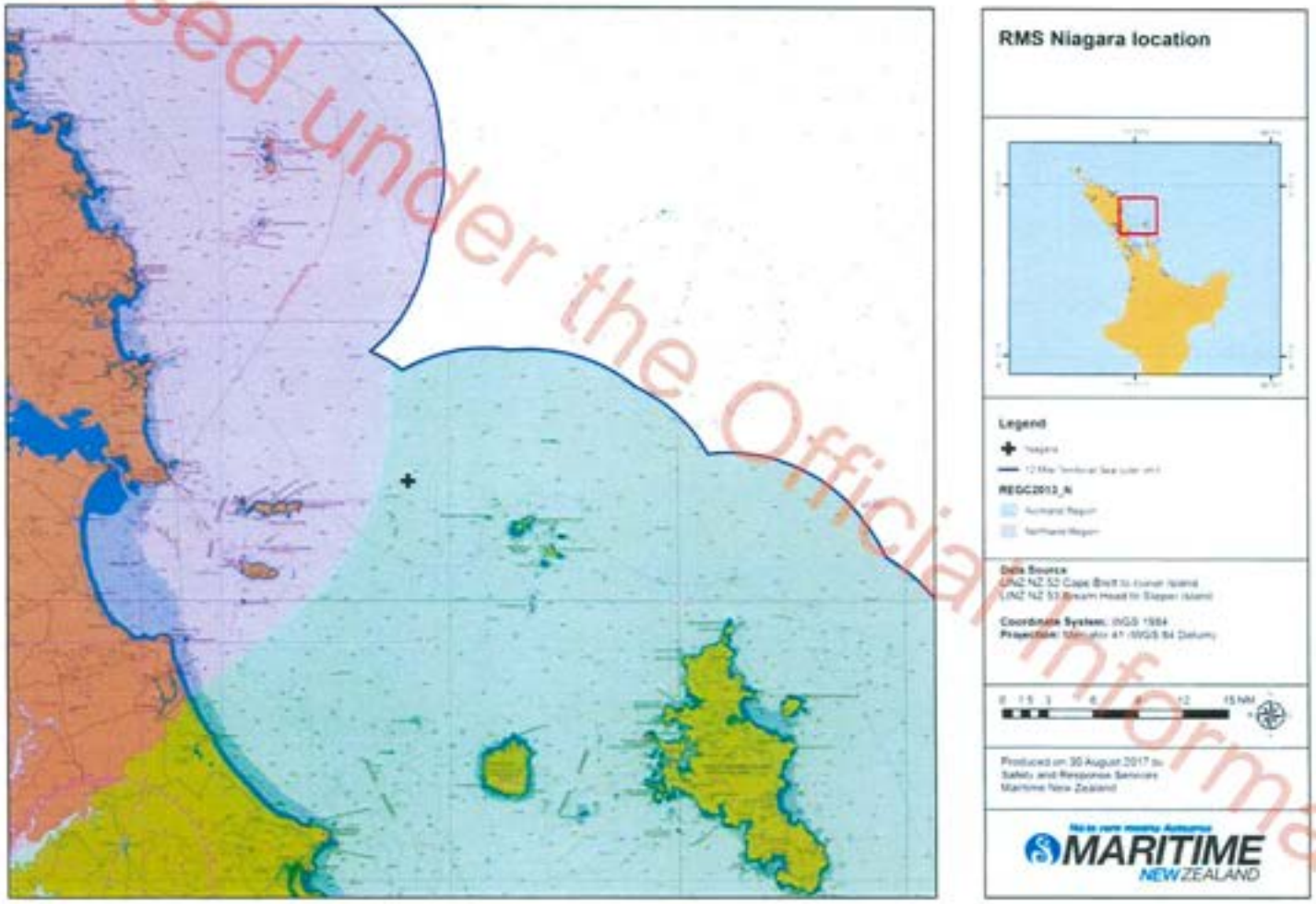
j)

k) **Advise** whether you wish to meet with officials for further discussion

N Clifford

Nigel Clifford
General Manager Safety and Response

Appendix 1: Map showing location of the *Niagara* and relevant boundaries



Ministry of Transport
TE MANATŪ WAKA

Weekly Report to the Minister of Transport

For week beginning 5 March 2018

Contents

5. Transport Crown Entity and SOE Updates

MARITIME NEW ZEALAND

Outside the scope of your request

[redacted]

REPORT ON MANAGEMENT OF THE WRECK OF THE NIAGARA - On Friday 2 March we provided a report to the Associate Minister of Transport on matters related to the management of the wreck of the vessel ***Niagara***. The vessel was sunk by a mine in 1940 and now lies in 120m of water in the Hauraki Gulf. Over the years there have been occasional small leaks of heavy fuel oil from the wreck. Periodically, interested parties raise questions over the environmental threat posed potentially by any oil remaining in the vessel. Recent months have seen queries raised with the previous administration and now with the current Government as well as media interest and reports. As a result the Associate Minister requested a report on the matter. We understand that the report will also be provided to Minister Sage at Department of Conversation.

Outside the scope of your request

[redacted]

Memorandum

IN-CONFIDENCE

Information withheld under section 9(2)(a) Official Information Act

Level 11,1 Grey Street
PO Box 25620
Wellington 6146
New Zealand

Tel +64 4 473 0111
Fax +64 4 494 1263
www.maritimenz.govt.nz

TO	[redacted] Private Secretary Associate Minister of Transport
FROM	Nigel Clifford GM Safety and Response
DATE	17 June 2018
OUR REF	MEP
SUBJECT	**Background Information for Associate Minister of Transport re RMS Niagara**

[redacted]

1. You asked for some additional information for the upcoming meeting between Minster Genter and John Michael Swannix (e mail 15 June at 3:25 pm). In particular you asked about high level comment on the options being explored for the way forward.

2. I note that we have provided copies of all the OIA responses sent to Mr Swannix to you and that these responses include a copy of the briefing provided to the Minister in early March (Management of the Wreck of the Niagara dated 2 March 2018).

3. The March briefing was released with a number of redactions under the Act; these redactions include the sections on the options under consideration.

4. Noting the above it may be that the Minister is asked about the current situation and what has occurred since March. I offer the following possible comments:

   a) ***'What has happened since March when you received the report on management of the wreck of the Niagara?'*** We take the possibility that the wreck of the *Niagara* may pose a significant environmental risk seriously so officials have been tasked to look at the options that might be considered, and also the risks that any of these options might pose. As you know the wreck is old and we need to balance the potential for an oil spill as the wreck degrades against any risks from undertaking some sort of intervention operation. It is a complex situation so developing robust options takes time; this work is on-going.

   b) ***'What options are being considered?'*** I don't want to get into specific detail but there are a range of options from the status quo where we respond to reported leaks to undertaking some form of survey investigation to undertaking some form of oil recovery operation. As you saw in the briefing it is considered best practice to undertake careful risk assessments based on detailed survey work before deciding exactly what options might be best.

   c) ***'Why is it taking so long to decide what to do when it is obvious that the wreck is falling apart and that there is a real risk of a major environmental disaster?'*** This is a complex situation that quite understandably raises significant concerns. If we look at the facts there has never been a significant spill from the wreck apart from the initial sinking and then the early salvage operation. We know there are small occasional leaks but these seem to have minimal impact. It is important for us to look at all the aspects of the matter and take care to develop a robust way forward; this inevitably takes time. ***If pressed*** – .The Minister might note that a report back from officials is due in the next few weeks.

d) ***'Who will be paying for dealing with the Niagara and the mess it is going to make?'*** The work we are doing on options will include considering how best to fund those options. In terms of marine oil spills there is a clear requirement in general that the spiller pays for the costs of the spill. As you can imagine the original owners of the *Niagara* are long gone so we need to look at other options.

e) ***'How much oil do you think is on the wreck of the Niagara?'*** – As you saw in the briefing this is very difficult to answer; we know the vessel had a fuel capacity of more than 4,000 tonnes but we don't know how much oil she had on board when she sailed. We do know that what were called 'significant amounts' were released when she sank and when she was blown open for the gold salvage, and we know that there have been small leaks since. Overall it is impossible to say with any accuracy how much oil is still on board but we must assume that it is potentially quite a large amount.

5. As discussed we are working currently on the survey and risk assessment aspects and would expect to be able to provide an update at the next Maritime NZ meeting with the Minister in early July. The work will not be complete at that time so the full report back will be some weeks after that. Please let me know if you need anything more.

Regards,

N Clifford

Nigel Clifford
GM Safety and Response