



Biosecurity New Zealand

Ministry for Primary Industries
Manatū Ahu Matua

In the matter of
and
in the matter of

Resource Management Act 1991

Application for resource consent under sections 88 and 124 of the Act, in relation to the proposed re consenting of the discharge of contaminants into air from fumigation at the Port of Tauranga (RM19-0663).

By Biosecurity New Zealand, Ministry for Primary Industries

Submitter

**STATEMENT OF EVIDENCE OF
KENNETH GLASSEY
ON BEHALF OF THE SUBMITTER**

28 May 2023



1 Introduction

1. My full name is Kenneth Glassey.

1.1 Qualifications and Experience

2. I am a senior adviser specialising in public policy and regulation of biosecurity treatments including nonchemical and chemical treatments including methyl bromide (MB) application for Biosecurity New Zealand at the Ministry for Primary Industries - Manatū Ahu Matua (Biosecurity New Zealand). I have worked with the biosecurity treatment programme for the last 20 years, in the field of biosecurity for the last 33 years and at Biosecurity New Zealand (and the previously named agencies) for the last 47 years.
3. I have represented Biosecurity New Zealand and New Zealand on the United Nations Environment Programme, Methyl Bromide Technical Options Committee for the last 16 years. This committee reports to the parties to the Montreal Protocol on the progress in reducing the ozone-depleting fumigant MB and assessing critical nominations for use on non-quarantine uses. I was also a member of the 2009 Technology and Economic Assessment Panel Quarantine Preshipment Task Force.
4. I was a technical expert on the International Plant Protection Convention technical committees for writing both the *Recommendation to Replacement or Reduction of the Use of Methyl Bromide as a Phytosanitary Measure* and the fumigation guidance for IPPC wood packaging standard (ISPM 15).

1.2 Scope of submission

5. Biosecurity New Zealand's evidence assesses the practicality and impact of the proposed Bay of Plenty Regional Council (BOPRC) conditions attached to granting resource consent to fumigate exports and imports at the Port of Tauranga for biosecurity purposes, and the potential impact on Bay of Plenty and New Zealand's primary industries.
6. Biosecurity New Zealand's role is to manage pre-border biosecurity risk using appropriate biosecurity protection such as fumigation, facilitate exports, and enable safe trade and travel to enhance our way of life and deliver value for New Zealanders.

1.3 General comments

7. Biosecurity New Zealand has reviewed the BOPRC Report (Section 42A) prepared by David Greaves, the BOPRC Technical Report, the initial technical review and the detailed technical review by Tonkin + Taylor and the Joint Witness Statement (JWS) prepared by the planning experts (David Greaves, Marlene Bosch and Keith Frentz).
8. The original Section 42A Report and the BOPRC Technical Report appended to it left Biosecurity New Zealand with significant concerns. The originally proposed conditions presented a situation where Genera would not have been able to conduct timely biosecurity treatments on imported risk goods contaminated by harmful exotic pests. This would have resulted in importers needing to either reship their goods or destroy them. Reshipping is difficult to do in a timely manner, and contaminated



goods waiting at the port for the next ship can increase the risk of pests of concern establishing populations in the Bay of Plenty and spreading across the country.

9. However, following the peer review process and subsequent JWS, the proposed requirements are now significantly improved. There are still a few proposed conditions that Biosecurity New Zealand does not agree with. We are concerned that some conditions could result in significant and unnecessary increases to cost and time that would then compound throughout the supply chain. More importantly, the inability to fumigate imported cargo readily or cost effectively still contains a risk for biosecurity pest incursions that may impact the environment and economy. I will address these conditions with explanations of our concerns below.
10. Biosecurity New Zealand is responsible for managing and maintaining the biosecurity system for imported goods and meeting pre-export export market requirements, both of which require fumigation on a wide range of goods. Changes to fumigation regulations can have wide-ranging unanticipated impacts on trade. For example, New Zealand recently abandoned the practice of treating ship holds with methyl bromide and now requires more methyl bromide recapture. This has significantly reduced methyl bromide risk to both workers and bystanders. At the same time, it is a significant restriction on fumigation activities for biosecurity and pre-shipment purposes. As a result, New Zealand no longer exports ship loads of logs to India. This will also undoubtedly impact the importation of animal feed and grain for human consumption when live regulated pests are intercepted.
11. Ports are hazardous areas due to the nature of 24-hour cargo management activities and the operation of heavy machinery. Among port hazards, fumigation activities are an intermittent rather than a constant risk. The port safety induction process for staff and visitors acknowledges this. However, evidence collected by Dr Ruth Hinz and others (Centre for Public Health Research, Massey University) in 2020 found that levels and detection frequencies of most chemicals varied little between occupational groups, although exposure to methyl bromide was highest in the fumigators (median 43 parts per billion - ppb) without closely approaching the threshold limit value of 1,000 ppb. A total of 193 personal 8-hour air measurements were collected by Dr Hinz in this study.
12. Biosecurity New Zealand is unsure as to why there is a need for variance from current EPA and WorkSafe controls, particularly regarding methyl bromide management given the recent and very comprehensive reassessment undertaken by the EPA. The reassessment was primarily based on air modelling for the Port of Tauranga with very conservative controls imposed. Biosecurity New Zealand considers that more acceptance of the EPA and WorkSafe controls for fumigant management is appropriate.
13. The Biosecurity New Zealand position in general is that consent conditions must align with EPA controls and, where applicable, they should align to WorkSafe controls, unless there is a technically justified reason not to align them. The EPA and



WorkSafe have national responsibilities to keep people and the environment safe, and both agencies also have a corresponding level of expertise.

1.4 Economic considerations

14. Biosecurity New Zealand's 2020 submission and Kieran Murray's statement of evidence covers the economic importance of the need to fumigate on the Port of Tauranga. Fumigation is seen as an essential component of the export and import biosecurity system. It allows us to trade goods with other countries, while keeping our country protected from pests that can harm our environment and economy.
15. The Port of Tauranga is New Zealand's busiest port for both import and export commodities. In 2022, the value of exported and imported goods through the port exceeded \$1.2 billion. The Port of Tauranga (and the wider region) is reliant on fumigants being available for both import and export use as there are no other relevant treatment options. Ideally, the use of heat treatment for rapid, effective biosecurity purposes would be an option (for durable products), but heat is unavailable there.
16. Forestry is of significant importance to the Bay of Plenty region (and also for the East Coast and Waikato). Disruption to biosecurity management of imported goods and the export trade of goods resulting in reduced or no fumigation activities in the region could have a seriously detrimental impact on the regions' economy and wellbeing. Log and timber exports account for approximately 50% of volume of goods shipped from Port of Tauranga in 2022 and approximately 80% of log and timber exports (valued at approximately \$880 million) such as logs sent to China required fumigation. The export of kiwifruit and other containerised goods like dairy products through the port also adds further significant value to the export picture.
17. Imported commodities moving through the port include imported aircraft, animal/stock feed, building supplies, general stored products, scrap metal, used equipment, vehicles and wood, some of which are subject to treatment on arrival.
18. An example where Biosecurity New Zealand needed to react rapidly to a new biosecurity threat was in 2014 when brown marmorated stink bugs (BMSB) were detected in large numbers in new vehicles. Biosecurity New Zealand had to fumigate the vehicles urgently, and we began immediate work on an offshore BMSB treatment programme, but this took several years to implement. The offshore programme has resulted in fumigation in New Zealand being reduced but we had to react quickly and fumigate vehicles until the programme was running reliably. Occasionally, an offshore treatment provider is suspended for non-compliance and treatment of imported risk goods is required on arrival for those in transit to New Zealand.
19. Our trading partners are constantly reassessing the risk from New Zealand products regarding their own policies and can impose updated export requirements quickly. In 2002, China decided to require all New Zealand logs to be treated before export, and earlier this year, Japan also required New Zealand logs to be certified as being pest free. Previously, Japan did not require certification. Instead, Japan treated logs on arrival if they were found to be infested.



20. Biosecurity New Zealand considers that if Genera were compelled to cease operating due to stricter conditions being imposed and resulting in operations becoming very difficult or economically unviable, the outcome would have an impact on the port of Tauranga's overall viability to operate and may have national and regional ramifications. Commercial viability for a biosecurity treatment operation is very important as it is operationally unsustainable to run at a loss. For example, the heat treatment facility at the Port of Auckland port is no longer operating as it became economically unviable. The most significant negative flow-on effect would likely be to the export log trade where a major export reduction would affect regional employment in forestry, for port workers and for businesses that are associated with the Port of Tauranga. could result in more road and rail movements of logs for export and imported goods if on arrival treatment is needed.
21. Te Uru Rakau | New Zealand Forest Service with the forest industry and Māori, have developed the *Te Ara Whakahou – Ahumahi Ngahere / Forestry and Wood Processing Industry Transformation Plan*. The plan has several targets, including increasing wood processing capacity by 25% by 2030, and has secured funding to increase investment in the production of long-lived wood products. The log export trade needs to continue to support the planned capacity increase.
22. Alternatives to methyl bromide need to be commercially viable to ensure ongoing availability across New Zealand. We are concerned that the Resource Management Act process impedes flexible and early adoption of alternatives to methyl bromide.
23. Biosecurity New Zealand is currently in negotiations with New Zealand's trading partners to approve alternatives to methyl bromide, ethanedinitrile (EDN) and phosphine, as a pre-export log and timber fumigant, and unsure as to when they will conclude.
24. Other submitters have proposed debarking as a solution. The volume of exported debarked logs has doubled in the last three years, but it remains at only 16% due to a lack of capacity, which is often related to resource consent issues and price. However, our trading partners are reporting more insect interceptions on our logs. Biosecurity New Zealand is investigating whether this is related to bark remnants on debarked logs. Exporters need a range of phytosanitary options for different markets as not all markets accept the same measure e.g., India does not accept debarking or phosphine.
25. We support the applicant gaining consent to use fumigants appropriately on the port of Tauranga with workable technical and economically realistic conditions.

2 Biosecurity New Zealand's role with treatment providers

26. Like any other Biosecurity New Zealand-approved treatment supplier, Genera must conduct their fumigation (and other treatment work) compliantly and meet the requirement of the Biosecurity New Zealand Treatment Supplier Standard. This standard sets contractual arrangements and requirements around the provision of effective and safe biosecurity treatments.
27. Biosecurity New Zealand approves the procedures of all treatment providers undertaking biosecurity treatments on imported and export goods. The list of



approved providers is here: <https://www.mpi.govt.nz/dmsdocument/1381-MPI-approved-treatment-suppliers>

28. We recently comprehensively revised our Treatment Provider Requirements standard and Treatment Provider contract to include more rigorous safety checks, specifications and reporting requirements.
29. The Biosecurity New Zealand approved treatments are listed in the Approved Biosecurity Treatments standard, while predominantly for imports they are frequently used for exports where the country has not specified a treatment: <https://www.mpi.govt.nz/dmsdocument/1555-Approved-Biosecurity-Treatments-for-Risk-Goods-MPI-ABTRT>
30. All treatment providers are regularly audited by a Biosecurity New Zealand-approved independent audit and verification agency. This agency is also ISO-accredited and last year at Port of Tauranga, they audited Genera 60 times (an average of five audits per month) and no critical noncompliance's were found.

3 Comments on the Joint Witness Statement in relation to planning

Condition No.	BOPRC draft condition	Biosecurity New Zealand comments
3.2	No more than one fumigation event is ventilated at a time so as to avoid potential cumulative effects.	Biosecurity New Zealand agrees with the JWS that the intention was most likely aimed at different fumigants being vented at the same time. Given that each fumigant has been assessed for its potential harm with a 30-times reduction factor to arrive at the values required to be achieved at venting, we believe there is very little potential for cumulative effects of fumigant discharges. The requirement to recapture methyl bromide has already significantly reduced the risk from before recapture was required. This is particularly true for containers, due to the small size of the enclosure being fumigated. While there is potential for both EDN and MB to be used on log stacks at the same time on the port, there are still many unknowns, such as costs and when trading partners will approve EDN for their markets (if at all). Among New Zealand's trading partners only Malaysia accepts EDN as a treatment, and although New Zealand exports a small quantity of containerised sawn timber to Malaysia, it is currently fumigated with MB as EDN is not commercially available as yet.



3.5 to 3.7	Weather monitoring	<p>Given the location of the port on the harbour edge, it is normally subject to air movement, but this does fluctuate. Biosecurity New Zealand suggests that the 3-minute intervals are sufficient and that the 2 m/s should be an average rather than at any particular point in time, due to natural fluctuations in breeze that will still allow the fumigant residues to disperse.</p>
3.10	Pressure testing of containers	<p>We recommend changing this requirement to:</p> <p>The consent holder must check for holes before fumigating and must test all fumigation enclosures for leaks once gas has been released into the enclosure. Any leaks found must be sealed. Leak testing and sealing must be done in accordance with industry best practices.</p> <p>We disagree with the proposed condition requiring pressure testing for all enclosures and with the Tonkin + Taylor recommendation to require pressure testing for containers. We note that this is also an area of disagreement between the planners in the JWS. The following points outline our concerns. The proposed condition is based on the belief that it is practical to pressure test containers (Tonkin + Taylor).</p> <p>This belief is incorrect. Pressure testing containers is highly impractical and far more complicated than pressure testing a dedicated fumigation chamber. Inserting the manifold and instrument to conduct the pressure test creates leaks in the containers that are used. The tester must then seal these leaks with tape or sealant. In contrast, a dedicated fumigation chamber has fittings designed for this purpose.</p> <p>In 2009, Biosecurity New Zealand pressure-tested 32 containers with different cargo. Only one passed the standard pressure test. Eleven containers achieved the required initial pressure, but only one of those passed the required decay-time test.</p> <p>However, all the fumigated containers retained appropriate fumigant levels and achieved above the minimum end-point concentration reading for methyl bromide without needing a top-up dose. Gas is dispensed in regimented doses. If gas escapes the container at levels high enough to damage human health, there will not be enough gas to fumigate the goods successfully, and the fumigation treatment will fail or require a top-up dose. The fact that containers could be fumigated successfully without a top-up dose showed us</p>



	<p>that this is both an effective method of fumigation for containerised goods as well as safe for human health despite failing pressure tests.</p> <p>The International Cargo Cooperative Biosecurity Arrangement (ICCB) publishes the guide <i>Methyl Bromide Fumigation Methodology</i> (2018). This methodology states that a pressure test is <i>only</i> necessary for chambers that are permanent structures designed specifically for fumigation, used repeatedly over a long period, with permanent fittings to supply fumigant and monitoring and have an inbuilt extraction system to vent the fumigant from the chamber. ICCBA has 22 member countries who follow this methodology, including New Zealand and Australia.</p> <p>No fumigators in New Zealand currently include pressure testing in their approved procedures, and pressure testing for container fumigation is not required by either Biosecurity New Zealand or DAFF in Australia. However, we do require fumigators to check and manage leaks, and checking this requirement is a key part of the routine external audits Biosecurity New Zealand's independent audit and verification body conducts on our behalf.</p> <p>Fumigators in New Zealand only pressure-test dedicated fumigation chambers, which are often inside or connected to other buildings. The pressure test provides confidence that fumigants will not readily travel into connected spaces, which could present a risk to other workers and the fumigation's efficacy.</p> <p>When containers are fumigated, the fumigator checks the containers for holes and leak-tests them using the same fumigant detection device used for low-level fumigant monitoring.</p> <p>Fumigators are also required to set up a coned-off area with warning signs around the container for the entire duration of the fumigation. No one is allowed into the area without the necessary PPE, and the technician ensures fumigant levels remain below the workplace exposure standard (WES) at this boundary.</p> <p>With shipping container fumigations or fumigations that are not connected to other buildings, the fumigator can access all sides of the container to check for and manage any leaks.</p>
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		<p>The coned-off area prevents nearby workers being exposed, and the boundary can easily be enlarged if necessary.</p> <p>Requiring pressure testing for containers has been tried unsuccessfully in other countries. In 2018, Australia removed this requirement on the basis of its impracticality and the 2018 ICCBA guidelines, which do not recommend it.</p> <p>Before 2018, if containers failed the pressure test, they had to be fumigated under a tarpaulin. Since most containers fail pressure tests, fumigators ended up skipping the pressure test altogether and going straight to fumigating under a tarpaulin. Fumigating under a tarpaulin uses far more gas than is necessary for a container fumigation, which is bad for the environment, and the buffer zone needs to be increased beyond a level that is practical at a port. It is also weather-dependent. For these reasons, Australia removed the requirement to pressure test containers. Fumigation under a tarpaulin is now reserved for goods where it is truly necessary. methyl bromide MB without needing a top up dose. This showed us that container fumigation is still safe despite failing a pressure test.</p> <p>An alternative to fumigating under a tarpaulin is to move the goods to a dedicated fumigation chamber. Again, this is not practical in New Zealand. Fumigation chambers in New Zealand are generally smaller than a full container load. It also creates unnecessary biosecurity risks. Transporting imported goods to another site for fumigation increases the risk of unwanted pests escaping into the New Zealand environment. Likewise, transporting goods for export increases the chance of the goods being reinfested, which in turn, compromises New Zealand's ability to provide adequate biosecurity assurances to our trading partners.</p> <p>Silos, ship holds and covered goods are not dedicated fumigation chambers. This means it is highly unlikely they would pass a pressure test and logistically very hard to pressure test a 10,000m hold. Biosecurity New Zealand does not require a pressure test for silos, ship holds and covered goods. We think pressure testing would be unable to be conducted in this regard. The current leak checking process for fumigations (as described above) is effective and efficient and maintains fumigation efficacy and the safety of people near the fumigation site.</p>
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		<p>If BOP Regional Council will require containers to be pressure tested, the cost and disruption to the import and export supply chain in New Zealand will be significant. For example, approximately 1,540 containers were fumigated at the Port of Tauranga for biosecurity and other pre-shipment reasons. If fumigators are required to pressure-test containers and then cover them (given that containers usually fail pressure tests), this requirement will add ~90 minutes to each container fumigation.</p> <p>With the additional administrative requirements, equipment, labour needs and time, Genera estimates this would add an additional total cost of \$537,600 to importers and exporters using the Port of Tauranga. The cost and time will have a flow-on effect on the supply chain, further reducing efficiency and increasing costs. In the worst case, this could be viewed by our trading partners as a protectionist measure and could damage New Zealand's reputation for international trade.</p> <p>Biosecurity New Zealand agrees with Tonkin + Taylor that it is not practical to pressure test silos, ship holds and goods under sheets. Ship holds are often 10,000 m², and it is not logistically possible to test a volume of this size. Biosecurity New Zealand does not require a pressure test for silos, ship holds or covered goods. The current leak-checking process for fumigations (as described above) is effective and efficient and maintains fumigation efficacy and the safety of people near the fumigation site.</p>
3.11	Live video feed for all fumigation activities and events	<p>Biosecurity New Zealand is surprised to see this condition in a consent. This is likely to be resource-intensive for both parties and will add unnecessary time and cost to fumigation operations that will impact the import and export industry. A regular audit schedule, including surveillance audits, is sufficient to verify compliance. As with all increases to time and costs, we are concerned about the longer-reaching implications for trade.</p>
5.1	Buffer zone over water and monitoring of fumigant levels at the buffer zone boundary immediately down wind of	<p>Under the Bay of Plenty Regional Navigation Safety Bylaw 2017, vessels are not allowed to moor within 50 metres of any commercial berth or berthed vessel operated by the Port of Tauranga Limited, and people may not swim or undertake other related activities from or within 50 metres of any structure in the port zone as defined in the <i>Operative Bay of Plenty Regional Coastal Environment Plan</i>. The requirement that the buffer zone cannot extend over the</p>



	the fumigation activity and at two additional sites at 45 degrees	<p>water is unnecessary, as members of the general public would only be within 50 metres of the wharves for short periods of time (and this could largely be avoided through the controls outlined above).</p> <p>Given the current recapture requirement for methyl bromide, the low residue ppm value for EDN and very low levels of phosphine after a 10-day fumigation, Biosecurity New Zealand thinks the requirement to have three monitoring points is excessive. We think one monitoring point is sufficient if it is directly downwind from the fumigation site, which is likely to have the highest fumigant level.</p>
8.11	Recapture: No later than 1 January 2031, at least 99 % for all fumigation events	<p>This requirement is four years earlier than is required by the EPA for sheeted/tarpaulined fumigation events. We question the need for this at a local level given the massive risk reduction that 95% already achieves. We have investigated current monitoring equipment (report is available here on the Biosecurity New Zealand treatments webpage), and we believe that the environmental benefits of reaching 99% four years earlier do not justify the inordinate effort and the corresponding high cost required to achieve this.</p>
9.1	PH3 buffer zones	<p>Biosecurity New Zealand supports reducing the phosphine buffer zones, as there are very low levels of residual phosphine after a 10- to 12-day fumigation due to the natural adsorption into the grains or seeds.</p>
9.8	No ventilation to atmosphere shall occur during hours of darkness defined as being the hours between sunset and sunrise	<p>Biosecurity New Zealand supports removing this condition. Normally, there are less workers at the port during the hours of darkness. Restricting venting time to daylight hours would seriously affect the flow of cargo through the port and potentially increase the risk to workers by concentrating these activities to hours when the port is at its busiest.</p>
10	Ethanedinitrile	<p>For ongoing use of EDN at the port of Tauranga, Biosecurity New Zealand recommends that the BOPRC follow the comprehensive work previously conducted by the EPA and WorkSafe. Given the recent assessment and registration of EDN by the EPA and WorkSafe, it is important that the conditions set are used and not repeated to insure consistency and ease of risk management.</p>



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