

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

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

GENERA LIMITED
Applicant

**STATEMENT OF EVIDENCE OF NICHOLAS BROWNE
ON BEHALF OF THE APPLICANT**

17 April 2023

Occupational Hygiene

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INTRODUCTION

1. My full name is **Nicholas Browne**.
2. I am an Occupational Hygienist employed by Air Matters Ltd. I am a Full member of the New Zealand Occupational Hygiene Society ("**NZOHS**").
3. My evidence is given on behalf of Genera Limited ("**Genera**") on its application under sections 88 and 124 of the Resource Management Act 1991 ("**RMA**") in relation to the proposed consenting of the discharge of contaminants to air from fumigation at the Port of Tauranga ("**PoT**").
4. My evidence relates to the Health and Safety at Work Act 2015 ("**HSWA**") and regulations that apply at the PoT's secure area and to ships' crew. This evidence focuses on workers' health (as opposed to public health) and is derived from my experience as an Occupational Hygienist.

Qualifications and experience

5. I have the following qualifications:
6. I have 8 years' professional experience in Occupational Hygiene and environmental Air Quality while at Air Matters Ltd and prior to that 4 years' experience with Auckland Council in environmental air quality.
7. I have provided evidence to Council Hearings as a processing officer for Auckland Council and more recently to the Environment Court in my professional capacity as an Occupational Hygienist.

Code of conduct

8. I have read the Expert Witness Code of Conduct set out in Section 9 of the Environment Court's Practice Note 2023 and I agree to comply with it. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where I state I am relying on the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from my expressed opinion.

Background and role

9. I provide this brief of evidence within my area of expertise as an Occupational Hygienist.
10. Occupational Hygiene is based on the scientific and engineering principles of Anticipation, Recognition, Evaluation, Communication and Control of workplace hazards that may cause injury, illness or impaired wellbeing among workers. An Occupational Hygienist is deemed competent in health

risk assessments and helps employers and employees to understand and control their risks.

Scope of evidence

11. My evidence covers the following areas:
 - a) An explanation of the applicability of the WorkSafe New Zealand (“**WorkSafe**”) regulations to workers within the secure area and ships’ crew at the PoT.
 - b) Comment on the Section 42A Report (“**s42A Report**”) as it relates to the applicability of the WorkSafe regulations to workers within the secure area and ships’ crew.
 - c) Comment on the Tonkin and Taylor review attached to the Planners’ Joint Witness Statement.
 - d) My conclusions.

WORKSAFE REGULATIONS APPLICABILITY

12. HSWA sets out the legal framework for workplace health and safety matters in New Zealand. Section 36 of HSWA details the primary duty of care for persons conducting a business or undertaking (“**PCBUs**”). Sections 36(1), 36(2) and 36(3)(g) are all relevant in the context of the health risk assessments and duties under the Act. These sections state:

36 Primary duty of care

- (1) *A PCBU must ensure, so far as is reasonably practicable, the health and safety of-*
 - a) *workers who work for the PCBU, while the workers are at work in the business or undertaking; and*
 - b) *workers whose activities in carrying out work are influenced or directed by the PCBU, while the workers are carrying out the work.*
- (2) *A PCBU must ensure, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.*
- (3) *Without limiting subsection (1) or (2), a PCBU must ensure, so far as is reasonably practicable, -...*

(g) *that the health of workers and the conditions at the workplace are monitored for the purpose of preventing injury or illness of workers arising from the conduct of the business or undertaking.”*

13. Section 37 also details responsibilities of those PCBUs that manage or control a workplace. Specifically, subsection (1), which states:

A PCBU who manages or controls a workplace must ensure, so far as is reasonably practicable, that the workplace, the means of entering and exiting the workplace, and anything arising from the workplace are without risks to the health and safety of any person.

14. These sections are relevant as they define who and where the duty of care applies under the legislation. Subsections 36(1) and 36(2) encompasses not just the workers for the PCBU but other persons who may be affected by the works undertaken. In this case, from Genera's perspective, workers include:

- Genera staff and;
- Other people who work at the PoT.

15. The section 36(3)(g) monitoring duty relates to how health risk assessments are applicable in the context of workplace health and safety. This relates to the use of workplace exposure standards (“**WES**”) as a tool in determining health risk.

16. Section 37(1) relates to the PoT and their responsibility over the workplace. There are many PCBUs who use the PoT and they have an obligation to consult with each other about risks they introduce to the workplace as they all have the same duty of care. This is stated in section 34 of HSWA.

17. Within the HSWA there is also a definition of what the workplace is. This is important in the context of the RMA and where and how it applies to a workplace. The HSWA definition of a workplace is found in section 20 and states:

Meaning of workplace

(1) *In this Act, unless the context otherwise requires, a **workplace**—*

(a) means a place where work is being carried out, or is customarily carried out, for a business or undertaking; and

(b) includes any place where a worker goes, or is likely to be, while at work.

(2) *In this section, **place** includes—*

- (a) a vehicle, vessel, aircraft, ship, or other mobile structure; and
- (b) any waters and any installation on land, on the bed of any waters, or floating on any waters.

18. Genera carries out fumigation operations at the PoT, which is defined by a secure area around its perimeter with access restricted to only those people who have a genuine reason to enter the port:

The Port is not a public area and anyone entering must have a bona fide (genuine) reason to enter. Only those workplaces it is, or who have been authorised to visit, may do so.

Source: (Port of Tauranga, 2023)

19. The boundary of the PoT is generally identified in Figure 1 below.

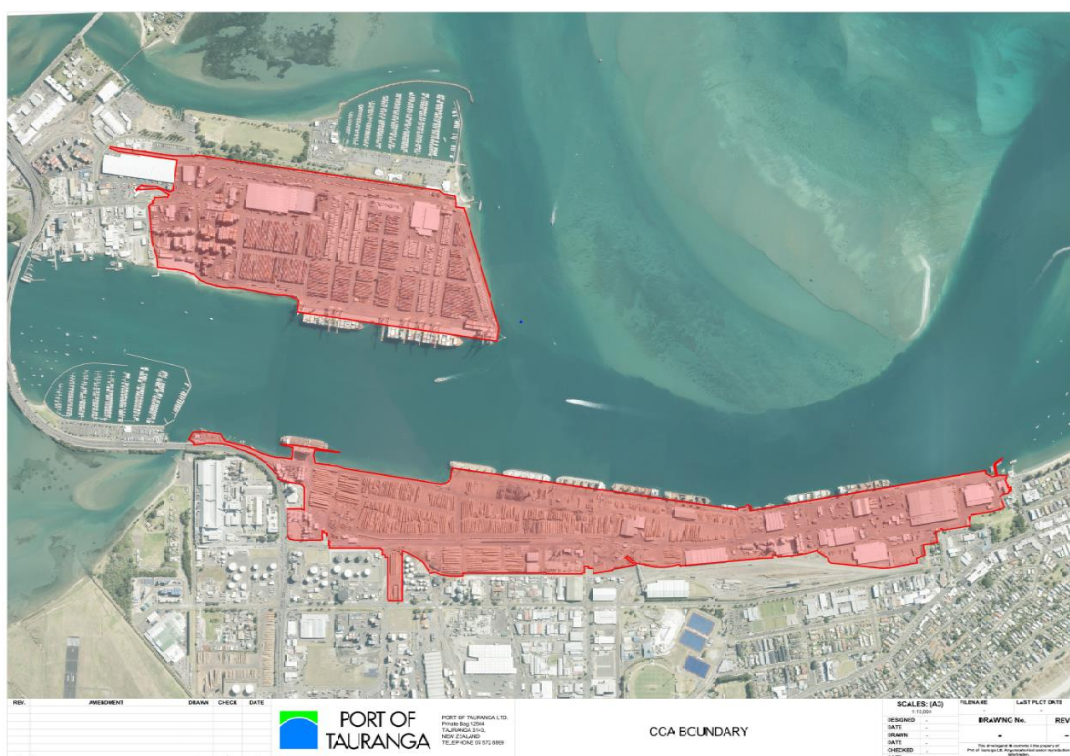


Figure 1: PoT Customs Control Area Boundary

20. In my view as an Occupational Hygienist completing workplace health risk assessments, the Port of Tauranga is a workplace in which there are many PCBUs. The HSWA details information on what is required in the scenarios where multiple PCBUs have shared duties. An example provided in a good practise guidance around exposure monitoring by WorkSafe New Zealand (“**WorkSafe**”) is that in a shared workplace (for example, a building site or a port) where more than one business has control and influence over the work on site, health and safety duties required under HSWA will overlap (WorkSafe New Zealand, 2022).

21. A PCBU must work with other PCBUs where shared duties exist (such as at the PoT) but there is no obligation for Genera to conduct monitoring for others. An agreement can be reached to assist each other but each PCBU is still responsible (WorkSafe New Zealand, 2022).
22. A WES is a tool used in assessing occupational health risks, they are not Prescribed Exposure Standards (“**PES**”) that require exposure monitoring to take place when exposure to that substance is unknown. The only PES at present is for ethanedenitrile (“**EDN**”) with this also being of relevance to Genera’s fumigation activities.
23. The 13th edition of the Workplace Exposure Standards and Biological Indices provides some detail as to the use of the WES and the limitations associated with it:

The Workplace Exposure Standards (WES) are intended to be used as guidelines for health risk management.

WES are an important tool for monitoring the workplace environment. Where hazardous or toxic substances exist in the same environment as workers, and the PCBU is unable to successfully eliminate these substances from working environments, they are required to minimise and monitor worker exposure. The PCBU must also, so far as is reasonably practicable, ensure that the health of workers and the conditions at the workplace are monitored for the purpose of preventing injury or illness of workers arising from the conduct of the business or undertaking.

Defining an exposure level that will achieve freedom from adverse health effects is the major consideration for assigning these WES. However, compliance with the designated WES level does not guarantee that all workers are protected from discomfort or ill-health. The range of individual susceptibility to hazardous and toxic substances is wide, and it is possible that some workers will experience discomfort or develop occupational illness from exposure to substances at levels below the WES.

When interpreting the risk posed by individual substances, the documentation that supports the WES should be consulted...

A prescribed exposure standard is a workplace exposure standard or a biological exposure index that has the purpose of protecting persons in a workplace from harm to health and that is prescribed in:

a. Regulations

b. A safe work instrument.

Regulation 8 of the GRWM Regulations requires the PCBU to review and, as necessary, revise control measures if the results of exposure monitoring carried out under regulation 30 determine that the concentration of a substance hazardous to health at the workplace exceeds a relevant prescribed exposure standard.

(WorkSafe New Zealand, 2022)

24. The WES values are going through a period of updates to bring them more into line with international epidemiological and toxicological studies. WorkSafe is undertaking these reviews and are typically suggesting the introduction of the most conservative guidance (Regulator Adjusted Health Based Guidelines). The WES values are based on a relatively healthy working age adult and exclude those who are particularly vulnerable such as the young or old and those with underlying health conditions. This is also known as the 'healthy worker effect'.
25. In my view the WES is the appropriate guideline to use when assessing health risk for all persons (workers and other persons) at the PoT, regardless of whether they are from Genera or other companies. In comparison, a Tolerable Exposure Limit ("TEL") is a value used to protect the public outside the buffer zone (in this case the PoT Security Fence) and is detailed as such in 'Methyl bromide fumigations, post-reassessment guidance for fumigators' (Environmental Protection Authority, 2011).
26. The primary duty of care (under HSWA) still ultimately sits with Genera and they must work with other PCBUs at the PoT to ensure worker health is protected. There are visitor inductions that introduce the hazards around fumigation and there are also specific areas where there are additional induction requirements. These are listed on the PoT Induction webpage (<https://www.port-tauranga.co.nz/health-and-safety/port-inductions/>). Only authorised personnel or visitors who have completed the appropriate induction are allowed within the PoT security area as it is a Customs Controlled Area.
27. Fumigants are the main focus as they are the hazards that Genera bring to the PoT. HSWA ensures that the health of workers is protected for all substances and materials used on the PoT by all PCBUs. The PoT handles a variety of different substances and materials with some (or many) having an associated health risk. The use of fumigants is being assessed in detail

because there is a rule in the regional plan that requires resource consent under the RMA but other activities at the PoT may also create a health hazard for workers.

28. In relation to ships' crew, *Maritime New Zealand administers the HSWA and associated regulations for work on board ships and where ships are places of work* (Maritime New Zealand, 2023). Ships' crew are not considered "workers" but rather other persons and, as mentioned above, they are still covered under the HSWA and their health and safety is the responsibility of the PCBUs in the vicinity.

SECTION 42A REPORT

29. In my view the s42A Report blurs the line between what should fall under the HSWA and the RMA. There are, at times, areas where the BOPRC should be aware of what is happening in more detail than just at the PoT boundary. I do not agree on some points where the BOPRC is encroaching on worker health matters, however, the RMA does not specifically exclude consideration of the health of, what HSWA would describe, as 'other persons'.
30. I do note that in general the concerns raised by BOPRC around other persons' health (being those workers from other companies on PoT that are not Genera workers) are valid but the resource consent is not the correct process to manage workplace health risks. This is the jurisdiction of WorkSafe (and Maritime New Zealand) as they administer the regulation and enforcement of HSWA. It is important to note that WorkSafe have appropriately trained Occupational Hygienists to support inspectors in regulating matters relating to workplace health risks.
31. The main point to be clarified from the s42A Report is to be clear where the RMA sets BOPRC's jurisdiction for effects. BOPRC may disagree with Genera on this point, but at present this delineation does not clearly exist in the s42A Report.
32. In Section 1.2, Page 8 of the Technical Review included in the s42A Report, the following statement is made:
- There are other legislative requirements imposed by the EPA and WorkSafe, however, the monitoring and enforcement of these regulations do not fully represent the complete management of the effects of the fumigants. The resource consenting process provides the opportunity to do that within the scope of the RMA.*

33. This appears to assert that BOPRC will take up perceived gaps in monitoring and enforcement requirements of WorkSafe under legislation they administer via a resource consent. However, Worksafe and Maritime New Zealand regulate and enforce HSWA and have responsibility for monitoring and enforcement without delegating authority to the BOPRC. This is important in relation to other comments I make on the Technical Review later in my evidence.
34. In Table 2 of the s42A Report there is a comment that the WES and WES-STEL apply unless appropriate PPE is worn. As mentioned in the previous section of my evidence, the WES values are a guideline for health risk assessments. The use of PPE does not make them inapplicable. In fact, the WES values are critical in determining the correct PPE (including respiratory protection).
35. There are multiple places in the s42A Report where WES is defined as “Worker Exposure Standard” rather than the correct “workplace exposure standard”. This is a minor difference in wording but may show a lack of understanding on the author’s behalf which may have, in turn, influenced findings and recommendations.
36. In Section 3.3.4 of the s42A Report the authors detail the values that should be applied to public and workers. These appear to be suggested as limits. Using the WES values for resource consenting is not unheard of but typically a factor of reduction is applied to make them suitable for the public. Resource consent conditions under the RMA manage effects on people outside of the workplace (because HSWA manages effects in the workplace) and assume that these people could be either healthy or have their health compromised in some way. The Technical Review blurs this line between the two statutory regimes.
37. As mentioned previously the obligation to protect the health of all people in the workplace, being the PoT in this instance, comes down to all PCBUs working together as they have overlapping duties under HSWA. HSWA is regulated by WorkSafe, a Central Government entity, not BoPRC (or any other local government entity).
38. The application of the WES values as a limit to protect worker health also has its limitations. It is very clearly stated that the WES values do not determine a level with freedom from adverse effects. Keeping exposures as low as reasonably practicable, through control, is important when ensuring

that a PCBU is meeting their primary duty of care to the health of a worker. When residual risk remains then PPE is needed.

39. In Section 3.4.4 of the s42A Report there is mention of the difficulty with controlling health risk to port workers from having a large buffer zone. I do not disagree with this, but this falls under HSWA and is up to Genera to consult with other PCBUs, understand the health risk (this includes monitoring) and put in place appropriate controls.
40. In the same section of the s42A Report there is also mention that port workers can be legally exposed to fumigants as this is something mentioned in the PoT induction. This is incorrect and I would recommend to PoT that the induction wording needs to be improved. What this does raise, though, is that there is a difference between a TEL and WES value.
41. In Section 5.5.3 of the s42A Report it states:

“It also seems an anomaly that Port workers, even those with roles unrelated (sic) fumigation, may legally be exposed to much greater concentrations of EDN than the general public.”
42. WES values (or PES in the case of EDN) are based on acceptable exposure to a healthy worker over a normal work week (8 hours per day, 40 hour per week). This is not the same as the public population which requires much greater protection due to a wider range of population health. In general people at a workplace should not be exposed up to an exposure standard on a day-to-day basis with levels kept as low as possible to best manage health risk. If a worker is considered to have underlying health issues, they need to be treated accordingly otherwise the PCBU will not be carrying out its primary duty of care appropriately.

TONKIN & TAYLOR REVIEW

43. Tonkin & Taylor carried out a detailed technical review of the Bay of Plenty Regional Council Technical Review of the Genera Limited resource consent application (RM19-0663) (Tonkin & Taylor, 2023) (“**Peer Review**”).
44. The following comments are applicable to the content of the Peer Review that are relevant to my expertise as an Occupational Hygienist.
 - Section 3 (top of Page 3) -

- Workplace Exposure Standards are not Prescribed Exposure Standards. There is a distinct difference. There is only one Prescribed Exposure Standard and that happens to be for EDN.
- Agree that HSWA not only applies to workers but also other persons (in other words any person lawfully on site). This is important when in relation to the PoT as only certain people are allowed on the Port. Ships' crew are also considered other persons and need to be protected all the same.
- Section 4.1 (bottom of Page 4) - agree with the distinction between the different zones and that they match my understanding of them. I do note that the WES and PES seem to be used interchangeably here. I refer to detail earlier in my expert evidence that WES are used as risk management tools in New Zealand and not compliance.
- Section 4.2 - Workplace Exposure Standards
 - WES are intended for personal risk to health. Static samples cannot be directly compared to WES values.
 - Assessing risk using static monitoring is and can be done but a direct comparison cannot be done (i.e., a static sample cannot be used to show compliance with a WES).
- Section 4.3 - Consideration of crew on ships
 - Generally, agree with statements.
 - The regulator for Ships at berth and sailing are the responsibility of Maritime New Zealand, not WorkSafe.
 - Ships' crew would fall under 'other persons' - Section 36(2) of the HSWA.
 - Genera should be involved with risk assessments for ship crew especially when fumigations occur in holds. They are also responsible for communicating with the ship on the risks posed by other fumigations on the PoT. This is very similar to obligations to other land-based PCBUs at the PoT.
- Section 4.6 - Additional monitoring criteria recommend in the Technical Review
 - Agree with all points made in this section.

CONCLUSIONS

45. The legislation that WorkSafe and Maritime New Zealand regulate places clear requirements on the PCBU. These requirements are placed on Genera in relation to fumigation and on other PCBUs working at the PoT.
46. The PoT is a workplace with numerous PCBUs all interacting with a shared duty of care for worker health.
47. The WES values are for guidance only and are a tool in ensuring that workers are free from ill health in the workplace.
48. The TEL values apply outside the buffer zone which in this case has been defined as the boundary of the workplace being the PoT secure area (or boundary fence) where there is tight control on who can enter. This excludes the public and hence the applicability of the TEL at the port boundary is an appropriate application.
49. The Technical Review carried out by BOPRC confuses how the RMA and HSWA should be applied to manage risk at the PoT. Although it is reasonable to be concerned with the health of all people at PoT, in my opinion, the health of people in a workplace is a regulatory function of WorkSafe and Maritime New Zealand and their subject matter experts.
50. I would be available to assist in ongoing discussions on a final set of recommended conditions as the hearing process progresses if required.

Nicholas Browne

17/04/2023