IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER **8B – GMO Hearing Waikato District Plan.**

HEARING OF SUBMISSIONS BY COMMISSIONERS OF THE WAIKATO DISTRICT COUNCIL

SUPPLEMENTARY EVIDENCE OF GE FREE NEW ZEALAND

Dated 19 December 2019

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INTRODUCTION

1. My name is Claire Bleakley. I am the President of GE Free NZ.
2. GE Free NZ in Food and Environment is an Incorporated Society. It is a non-Governmental Organisation with a Board and large membership. It represents its members when making submissions and helps with gathering and disseminating information concerning genetically modified organisms ("GMO") to its members and the public through regular newsletters and its website (www.gefree.org.nz).
3. Our members in the Waikato Region have asked GE Free NZ to be involved in this process on their behalf. They are very concerned about the lack of policies, rules and objectives around the use of GMO's in the proposed Waikato district Plan.
4. GE Free NZ would like to support the Whaingaroa Environmental Defence Incorporated Society (WED) and the Waikato-Tainui Environmental Plan (Tai Tumu Tai Pari Tai Ao) and the Maniapoto Environment Plan to the proposed Waikato District Plan.
5. We would like to contest certain comments reiterated by many of the further submitters who opposed the call for GMO precautionary rules to be written into the proposed Waikato District Plan (pWDP). It is of concern that the staff assessing the submissions accepted the opposing comments without any evidence, but chose to reject those who called for precautionary and prohibitive rules in the proposed Waikato District Plan.

6. The Resource Management Act (RMA) governs the carrying out of Council responsibilities in consultation with the community it is elected by. We represent a wide community of farmers and consumers who would like to have the region stay GE Free. There is a strong imperative to address environmental pollution and the extremes of climate that are going to impact many regions. Climate change is a crisis topic and the move to regenerative, low fossil fuel, non-pesticide regenerative organic solutions is an important part of carrying out the purpose and principles of the RMA.

   Under RMA section 5 **Purpose**

   The purpose of this Act is to promote the sustainable management of natural and physical resources;
   In this act, **sustainable management** means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while -
   i. sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
   ii. safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
   iii. avoiding, remedying, or mitigating any adverse effects of activities on the environment.

FURTHER SUBMISSION POINTS AS IN APPENDIX 1

7. Beef and Lamb – stated that *"AgResearch's Ruakura research facility, in particular, would fall within the proposed plan and its GMO provisions, making it more difficult and costly to undertake its research into GMOs."* This is misleading as GE Free NZ submission recognised GMO activity is going on in the campus and we expressly stated the the Ruakura Campus and Facility be zoned for GMO's. We would like to point out that the decision by the Environment Court to up hold a precautionary approach in the Bay of Plenty (Policy IR1B) Regional Policy Statement[1] has not affected Scion's (Forest Research Institute) ability to conduct contained GM research.

8. Forest Owners Association – *"There have already been five GMO releases into the environment approved since the passing of the Hazardous Substances and New Organisms Act (Animal vaccines and human therapeutics)."* There has only been one conditional release of a GMO, GMR07001 Equine Flu[2], and it has never been used in NZ, as it is to be used on animals for export or in emergency situations decreed by MPI. For the absence of doubt, our submission does not apply to products that are non-viable, veterinary vaccines or pharmaceutical medicines.

9. Federated Farmers and other opposing submitters – *"The issues raised in the submission are already considered (using a precautionary approach) by the Environmental Protection. After that, any residual issues can be managed using provisions in the Biosecurity Act (Pest Management Strategies) or the RMA by the WDC when they are known."* Judge NewHook found in the Fed Farmers vs. RC case at para: [50] "…that the provisions of the RMA go significantly beyond the provisions of the HSNO." This can be found in the Bleakley v Environmental Risk Management Authority, paragraph 243.

> *[243] Given that the authority found that there was no such danger of escape, there was no obligation in law - and it certainly was not appropriate - for the Authority to venture into more orthodox pollution issues. It is true that the Act has an environmental protection purpose, as does the Resource Management Act, however that prima facie wide purpose is to be read in the context of its subject matter and specifics. It is to protect the environment against hazardous substances and organisms, and not on a wider scale. The wider scale* ***is the role of others under general legislation in the RMA****. Thus, if spraying milk on pastures were to raise a concern that heritable material might escape, that would be a concern for the Authority. If after Authority action, there was a risk of escape of heritable material, but there remained a risk of another environmental character - eg destruction of aquatic life in streams - that would be a concern to be dealt with under the* ***Resource Management Act****. It would not be an Authority matter, despite the breadth of the opening sections of the Act. It is a not unfamiliar judicial problem to reconcile legislation relating to specific activities, and a general legislation in the resource management field.*

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[1] Decision [2013] NZENVC 298 https://www.boprc.govt.nz/media/321876/environment-court-decision-18-dec-2013-env-2012-339-000041-part-one-section-17.pdf

[2] GMR07001 - **Control 6**: The vaccines can only be used on equine animals for export to a country that requires vaccination for Equine influenza, or in an Equine Influenza outbreak in New Zealand as defined by MPI. https://www.epa.govt.nz/assets/FileAPI/hsno-ar/GMR07001/add7b3afde/GMR07001-GMR07001-Decision-S67A-May-2017.pdf

10. Further submitters said - *"New Zealand is not GMO free".* In respect to its farming environment New Zealand has not had an approval to release a GMO into the open environment. All foods grown in New Zealand are not produced from genetic engineering techniques. There have been many breaches of GMO controls whilst in containment under trial conditions. The appropriate Authorities (EPA or MPI) assessed the breaches and the requisite actions enforced or sites closed down.

11. We have noted that GMO determinations are often erroneously confused with chemical mutagenesis, selective or cross breeding but these breeding techniques are not considered genetic engineering/modification in the terms defined in Law.

12. Further submitters said -*"Out of scope."* As Neil Taylor in his section 42A report commented -

> *" If the Hearing Commissioners determine to treat the PDP as a full district plan review, it is our view that the GMO Submissions are "on" the PDP." (s:42A report para.24. p7)*[3]

We presume as the commissioners have organised a hearing (8B-GMO), they consider there is merit and a GMO hearing is within scope. As the Environment Court,[4] the High Court,[5] the Royal Commission[6] on GE all agreed or recommended that the RMA has jurisdiction to impose precautionary controls on GMO through land use rules. At the Whangarei and Far North District Council (2016) hearing at the Commissioners directions Mr. Mathias was asked a number of questions around scope and RMA vs. HSNO. Here are some of the relevant questions and answers that informed the Commissioners recommendation report[7].

> ***Commissioners*** - *What is the distinction between a genetically modified organism (GMO) Substances and New Organisms Act 1996 ("HSNO") and the Resource Management Act 1991 ("RMA") be clarified with particular relationship to the plan changes and in that regard is the existing definition of a GMO in the plan changes appropriate?*
>
> **Mr. Mathais** - While it is clear that both the RMA and HSNO have provisions in common and both record that amongst their purpose and principles is the protection of the environment and the health and safety of people and communities the focus of HSNO is clearly more limited than that of the RMA. It only applies to hazardous substances and new organisms. It has a specific focus on considering their risks and benefits before approving their

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[3] https://wdcsitefinity.blob.core.windows.net/sitefinity-storage/docs/default-source/your-council/plans-policies-and-bylaws/plans/district-plan-review/hearings/hearing-b/section-42a-reports/hearing-8b-genetically-modified-organisms-s42a-report.pdf?sfvrsn=3be687c9_2

[4] Decision No [2015] NZ Env C 89

[5] CIV-2015-488-0064 [2016] NZHC 2036

[6] RCGM-Recommendation 13.1 (2) Allow for specific categories of genetically modified crops to be excluded from districts where their presence would be a significant threat to an established non-genetically modified crop use.

[7] Commissioners Recommendations Report: Recommendations To The Far North District Council And The Whangarei District Councils On The Proposed Plan Changes (2016) http://www.wdc.govt.nz/PlansPoliciesandBylaws/Plans/DistrictPlan/DistrictPlanChanges/Documents/PC-131-GMO/6-Decision/Recommendations-of-the-Hearing-Panel.pdf

introduction into New Zealand for research in containment, field trialling or release to the environment. Its focus is on the decision whether to allow importation into New Zealand rather than the on-going integrated management of the resource (GMOs) itself.

Commissioners - *What is the Councils position on the proposition of duplication between the HSNO and RMA regimes in relation to GMOs?*

Mr. Mathais - Similarly the reference to risk in S.32(4)(b) of the RMA in the context of uncertain or insufficient information, requires local authorities to consider a precautionary management approach which would entitle them to take anticipatory measures and to consider alternatives in light of potential significant or irreversible harm that could result from proceeding on the basis of uncertain and/or inadequate information.

Commissioners - *How would the containment of trials once an EPA approval had been granted work in a practical sense?*

Mr. Mathais - The regulatory function/jurisdiction under HSNO is limited to the importation for release and/or release from containment of new organisms. When exercising that function to achieve the purpose of HSNO the focus is on the risks and benefits of importing GMOs into New Zealand at a national level. Assessment at a regional, (and therefore at a district level), follows upon a HSNO determination. There is a different functional approach involved

Commissioners - *What is the difference in public participation opportunities under the different regimes provided by HSNO and the RMA? In particular making submissions on applications to EPA as against public engagement in planning processes under RMA.*

Mr. Mathais - HSNO is also an act which has a national rather than a community/district base as the area of its consideration. The RMA, on the other hand has a local and regional focus. This was addressed in my opening submissions so will not be traversed.

13. The commissioners on making their decision stated –

> *"Following from Mr Mathias's advice, and as we have noted elsewhere in this recommendation report, we consider that the Councils have met the appropriate statutory tests and overall, based on the Environment Court Decision and the submissions and evidence presented to us, we are of the unanimous opinion that the Councils have jurisdiction to manage and control GMOs within their respective District Plans." (p. 27)*

14. Forest Owners Association and further submitters *"The Environmental Protection Agency currently regulates the use of GMOs under the Hazardous Substances and New Organisms Act."* This is correct whilst GMOs are undergoing indoor or field trials. Once released HSNO has no jurisdiction(HSNO 2A (2)(b)). Though the organism is still a GMO, there are no central government controls on the effects of GMOs, they become a community RMA responsibility to protect the community from any effects, as **Mr. Mathais** has defined and the Commissioners upheld

> *"As the Environment Court stated at paragraph 50 of its decision, the High Court in Beakley v Environmental Risk Management Authority recognised that RMA provisions go significantly beyond the narrower provisions of HSNO. Adverse effects on the environment resulting from applications which have been granted approval under HSNO will continue to be dealt with under the RMA."* (Recommendations of Hearing Panel, 2016, p.26)

15. Further submitters said - *"It is not possible to tell a gene edited organism from a non GM organism produced through traditional breeding or mutagenesis making identification in breeding programmes or the market difficult."* The HSNO Act requires that applicants submit their GE developments to the EPA for consideration. It will be illegal to release a GE organism, as defined by the HSNO Act, without undergoing EPA consideration. So this is not a point to be considered by the Council. We are asking that GMO's have precautionary rules placed around them regardless of whether they are able to be differentiated from other breeding programmes.
16. Further submitters said - *"Undermined the Waikato's leadership in agricultural science and innovation."* The only field trial area that is dedicated to GM biotech innovation is the Ruakura Campus. The rest of the region is non-GM conventional, agroecological or organic. The Campus makes up less than 0.5% of agricultural innovation and has as yet not brought any product using GM to market. The GM Animal experiments have been an expensive tragedy due to chronic illness deformities and product failure. This is documented from the annual reports submitted to the EPA over the last 19 years[8].
17. Further submitters said - *"Genetic modification has been used in other parts of the world with no scientifically credible incident of harm to human health or the environment attributable to genetic modification."* This comment cannot be justified there are no human safety studies conducted on GMO's in controlled environments to rule out harm to human health. Studies over the long term have shown adverse effects of GMO's on the animal's health. Contamination of seed supply, pollution of the seed stocks, harm to insects and pollinators linked to GMO growing. Weed and insect resistance affecting the growth of GMO's. Chronic health and deformities in the health of GM animals.

GM FIELD TRIAL RESULTS IN NEW ZEALAND

18. We acknowledge all the valuable scientific work that is done throughout New Zealand. It is important to acknowledge, however, that much of this work has been achieved through non-genetic engineering ("**GE**") methods.
19. There have been at least five field trials of GMO's in New Zealand since 1998. It has been signaled that AgResearch GE ryegrass is in trials that would possibly lead to commercial release in New Zealand within the next decade.
20. We are particularly concerned that there has been no mention of the breaches and failures of the GM field trials that have occurred during the field trials.
21. We have been notified through the Ministry of Agriculture and Forestry ("**MAF**") now Ministry for Primary Industries ("**MPI"**) and Environmental Risk Management Authority ("**ERMA**") now Environmental Protection Authority ("**EPA**") that there have been there have been biosecurity breaches of laboratory and field trial controls in GM trials throughout New Zealand.
22. We were involved in the ERMA hearing where the Scion was given approval to conduct two field trials on herbicide resistant and reproductive altering *Pinus radiata*

[8] https://www.gefree.org.nz/assets/pdf/GE-Animals-in-New-Zealand.pdf

and *Picea abies* (GMF99001 & 99005). These field trails were to be carried out at the Scion facility in Rotorua.

23. The Scion trial started in 2003 and the first breach occurred in January 2007, the second occurred on April 2012. In both incidences the perimeter fence was breached and GM trees were cut down. MAF Biosecurity, who was called in to look into any threat that the breach might have posed, considered both of these incidents a biosecurity risk. (The MAF Biosecurity Incident report is Appendix 1)
24. A further biosecurity breach occurred in December 2008 at a secret Crop and Food site in Lincoln where a GM brassica field test was being undertaken. A GM brassica plant was found flowering and had produced a seed pod in the site.
25. MAF Biosecurity and ERMA issued a Critical Situation Report on the Brassica breach, where they found that there was a further incidence of a biosecurity risk that occurred earlier in the trial and the site was closed down. I understand that this was due to the environmental risks that these incidents posed and serious errors of judgment that the report identified. (The ERMA NZ Inquiry Report INQ08001 Appendix 2).
26. We were involved in the hearing where AgResearch sought permission to field test at the Ruakura campus genetically engineer/modify cows, later goats and sheep for production of pharmaceutical or bioceuticals in their milk.
27. I was involved in the court case that introduced further controls that required annual reporting on animal health, blood tests and pregnancy outcomes, it also required that a Maori body set up to consult and monitor the programme.
28. Over the years there have been at least seven different transgenic and gene edited traits introduced into the animals.
29. This important research has documented serious, painful chronic problems with the health, abortions, deformities, sterility and sudden unexplained death to these animals.
30. The milks have not been viable and there has been a failure to bring the product to market. The animals are now being maintained and not experimented on further. The report collated from the annual reports and OIA's GM animals in New Zealand; the first 15 years. **Mr. Frank H. Rowson** will give further evidence on this.
31. Seed specialist nurseries and farms surrounding the GM Brassica site could have been adversely affected if the GM pollen had escaped into their fields.
32. Our Waikato Members have told us that the Waikato region is a food bowl, and farmers and horticulturalists within the region rely on the ability to produce GMO Free dairy and horticultural produce for national and international markets. **Jesiah Alexander** will speak further on this.
33. Any release to the environment of viable GMO crops or plants would jeopardise the economic livlihoods of many businesses and farmers reliant on being GM/GE Free. **Gavin Fisher** of **The Organic Dairy HUB Cooperative NZ Ltd** will give evidence on this.

FURTHER GMO/GE UNFORSEEN EFFECTS IN 2018 - 19.

34. Our original submission outlined many research of concerns scientists found. In the last year there have been further peer reviewed articles published on scientifically credible incidents showing unexpected possible harmful outcomes from transgenic and gene edited organisms resulting in serious problems with "off target" effects. Evans (2019) reported on the transfer of genes from transgenic mosquitoes to the natural population. The abstract states –

"In an attempt to control the mosquito-borne diseases yellow fever, dengue, chikungunya, and Zika fevers, a strain of transgenically modified Aedes aegypti mosquitoes containing a dominant lethal gene have been developed by a commercial company, Oxitec Ltd. if lethality is complete, releasing this strain should only reduce population size and not affect the genetics of the target populations. Approximately 450 thousand males of this strain were released each week for 27 months in Jacobina, Bahia, Brazil. We genotyped the release strain and the target Jacobina population before releases began for >21,000 single nucleotide polymorphisms (SNPs). Genetic sampling from the target population six, 12, and 27–30 months after releases commenced provides clear evidence that portions of the transgenic strain genome have been incorporated into the target population. Evidently, rare viable hybrid off spring between the release strain and the Jacobina population are sufficiently robust to be able to reproduce in nature. The release strain was developed using a strain originally from Cuba, then outcrossed to a Mexican population. Thus, Jacobina Ae. aegypti are now a mix of three populations. It is unclear how this may affect disease transmission or affect other efforts to control these dangerous vectors. These results highlight the importance of having in place a genetic monitoring program during such releases to detect un-anticipated outcomes.[9]

35. Recombinetics applied to the FDA to release GE Hornless cattle however, though Recombinetics said there were no problems it turned out that they overlooked the unintended insertion of whole copies of DNA coding for antibiotic resistance. A report by Testbiotech (2019)[10] stated –

"According to research undertaken by experts at the US Food and Drug Administration (FDA), gene-editing errors in the genome of the animals are, in many cases, often being overlooked. This was the finding from the FDA genome analyses of cattle genetically engineered not to grow horns. The animals were genetically engineered by Recombinetics; the company also filed a patent on the genetically engineered cattle. The cattle have for some years been held up and presented as a positive example for the application of new genetic engineering techniques. However, it appears to have so far gone unnoticed that the gene-editing has resulted in major unintended effects.

The gene scissors (nucleases) used in this case are known as TALENs; a method frequently described as highly precise. However, as the FDA research shows, apart from the desired gene sequences being inserted into the genome, DNA originating from genetically engineered bacteria used in the process was also inserted. The researchers found, amongst others, complete DNA sequences that confer antibiotic resistance in the genome of the cattle. No research has been carried out on the possible consequences for animal health, or whether these additional genes are biologically active." (Testbiotech 2019).

36. Dr Caius Rommens developed GE potatoes with Simplot, which were commercialised in 2017 and later in release discovered serious problems with them. In an 2018 interview with Sustainable Pulse[11] he said –

[9] https://www.nature.com/articles/s41598-019-49660-6.pdf
[10] https://www.testbiotech.org/en/news/genetically-engineered-hornless-cattle-flaws-genome-overlooked
[11] https://sustainablepulse.com/2018/10/09/the-creator-of-gmo-potatoes-reveals-the-dangerous-truth-exclusive-interview/#.XfshBi2B1ZI

> *"The GM potatoes bruise just as easily as normal potatoes, but the bruises are concealed. They don't develop the dark color that helps processors identify and trim them. I didn't understand that my potatoes were incapable of depositing melanin, a protective compound, when damaged or infected. More importantly, I didn't understand that the concealed bruises accumulate certain toxins that may compromise the nutritional quality of potato foods.*

When asked the question - **Is it possible for GM potatoes to cause gene-silencing in other potatoes or pollinating insects such as bees?**

> *The problem with certain insects, including bees, is that they cannot degrade the small double-stranded RNAs that cause gene silencing. These double-stranded RNAs were intended to silence several potato genes in tubers, but they are likely to be expressed in pollen as well. So, when the pollen is consumed by bees, the double stranded RNAs in this pollen may silence bee genes that share inadvertent homology.*

37. As stated in the RMA purpose it is charged to promote the

> *"**sustainable management** means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety. (RMA 5 (2))*

38. We would like to introduce our expert witnesses who will outline how GMO's released into the environment of the Waikato will impact their provision for social, economic and cultural wellbeing and also health and safety of their communities and animal welfare.

SUMMARY.

1 The Waikato community livelihoods rely on its GE Free status.
2 The economic, cultural and environmental values of many ratepayers are threatened.
3 The RMA is responsible in dealing with adverse effects on the environment resulting from GM/GE release applications.
4 There is potential for significant or irreversible harm that could result from proceeding on the basis of uncertain and/or inadequate information.
5 Many Farmers livlihoods directly impacted if GE contamination occurs.
6 Control GMO contamination once released into the environment is impossible.
7 GE animals suffer from welfare issues, abortions, deformities and chronic health.
8 Evidence shows soil, ecosystems and water will be contamnated.
9 Evidence has shown that GMO's are not containable.
10 There has been documented scientific post release harm from GM/GE organisms on insects, animals and crops.

DECISION SOUGHT

We would suggest that GMO's are given their own category. For consistency with the neighbouring council plans the Waikato district Council insert into the Proposed Waikato District Plan GMO provisions that replicate the Auckland Unitary Plan as below:

Issue: Genetically Modified Organisms.

- The environment, including human health and well-being, is safe from the

adverse effects of GMO's from land use activities.

- Resource Consent Categories -
  - Field Trials - Discretionary Activity
  - Food-related GMO Releases - Prohibited Activity
  - Non-food-related GMO Releases - Prohibited Activity.

Policies:

- Adopt a precautionary approach by prohibiting the general release of a GMO
- Require outdoor field trialling of GMOs to be a discretionary activity to avoid the risk effects to the environment from the use, storage, cultivation, harvesting, processing or transportation.
- Adopt an adaptive approach through periodic reviews of these plan provisions, particularly if new information on the benefits and/or adverse effects of a GMO activity becomes available.
- Require the holder of a resource consent granted for the outdoor field trialling of a GMO is financially accountable for any adverse effects associated with the activity,
- Enable the use of GMOs approved releases for medical and veterinary applications, except for the outdoor cultivation of pharmaceutical producing organisms.
- Require where appropriate, more stringent measures than those required under the provisions of the HSNO Act to manage potential risks.
- Require all monitoring costs to be met by the consent holder.

Reasons and Explanations:

- The objectives, policies and methods seek to achieve the following:
- Manage risk and avoid adverse effects on people, communities, tangata whenua, the economy and the environment associated with the outdoor use of GMOs.
- Provide the framework for a unified approach to the management of the outdoor use of GMOs to address cross-boundary effects.
- Ensure accountability by GMO operators for the full costs related to the monitoring of GMO activities, and any migration of GMOs beyond specified areas, including unintentional GM contamination.
- Ensure accountability by GMO operators for compensation via performance bonds in the event that the activity under their operation results in adverse effects to third parties or the environment.
- The manufacture, trialling or use of viable and/or non viable genetically modified organisms for medical purposes recognized as medicines under the Medicines Act 1981 and approved as safe to use by the Ministry of Health, including the EPA approved releases except for the outdoor cultivation of pharmaceutical producing organisms

Thank you for your consideration,

Claire Bleakley
President GE Free New Zealand in Food and Environment
19 December 2019
Attachments
Appendix 1: MAF Biosecurity Incident report
Appendix 2: ERMA NZ Inquiry Report INQ08001