

Before the Independent Hearing Commissioners
Appointed by the Taranaki Regional Council

Under the Resource Management Act 1991

In the matter of a resource consent for air discharge relating to the poultry
farm operation at 58 Airport Drive, New Plymouth (5262-3.0)

Evidence of Deborah Anne Ryan

28 January 2022

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Qualifications and experience

- 1 My full name is Deborah Anne Ryan.
- 2 I have a bachelor's degree in Biotechnology and Bioprocess Engineering from Massey University, Palmerston North (1991) and a PG Dip Business with sustainability (2021). I am a member of the Clean Air Society of Australia and New Zealand (CASANZ) and a Certified Air Quality Professional (CAQP) with CASANZ. I am also certified under the Ministry for the Environment's Making Good Decisions programme to sit as an independent commissioner on hearing panels under the Resource Management Act.
- 3 I am a Technical Director – Air Quality at Pattle Delamore Partners Limited (PDP) and have held that position since May 2019.
- 4 I have 30 years of experience in the air quality and resource management fields. I spent eight years as an Air Quality Specialist and Resource Consents Advisor with the Manawatu-Whanganui Regional Council and the Waikato Regional Council. I have been employed as an Air Quality Consultant in various roles since 2000, principally with Jacobs New Zealand Limited (formerly SKM), and currently with PDP. I have extensive experience in air pollution impact studies, in particular, preparing and reviewing a wide range of air quality effects assessments and in managing and reporting on air quality monitoring programmes. As an air quality specialist, I have been responsible for reporting and presenting specialist air quality advice to council resource consent hearings on multiple projects across all sectors.
- 5 My experience with effects of odour discharges includes involvement in effects assessment for consents, compliance monitoring and complaint investigation throughout my career. In particular, I have practical experience as an officer investigating odour complaints and have advised councils on enforcement proceeding and compliance issues related to effects of odour. This includes for the Manawatu-Whanganui Regional Council proceedings relating to the Levin Landfill and for the Northland Regional Council relating to a palm kernel facility. I have experience with reverse sensitivity assessments for odour effects, including commissioning a field odour scout survey to establish baseline odour levels for a proposed development and ongoing monitoring post development.
- 6 My experience with effects of odour discharges includes involvement in effects assessment for consents and/or monitoring including for: meat works, rendering, pet food manufacture, wastewater treatment plants (WWTP), fellmongeries, poultry farms and landfill sites. My experience includes working on the following sites: Affco at Imlay, Horotiu, Taumaranui and Wairoa, Lakeview Farms (Levin), Dannevirke Meat Processors, Richmond at Oringi, Waikato By-Products at Tuakau, Richmond Shannon, Tasman Tanning, Taylor Preston Wellington, Ziwi Pet Food Mount Maunganui; AB Lime Southern Regional Landfill, Buttler's Landfill

(West Coast), Burwood Landfill (Christchurch), Awapuni Landfill (Palmerston North), Tirohia and Hampton Downs Landfills (Waikato), Omarunui Landfill (Hawkes Bay) and Bonny Glen Landfill; Q Chicks (Waikato), Southern Chicks Limited & Marsden Grange (Canterbury), Henergy (Wairarapa), EcoCentral & Living Earth (Bromley); WWTPs at Hamilton, Wanaka, Levin, Pahiatua, Kaikōura Mangere, Porirua and Shannon, activated sludge disposal to land (Tarras), fish meal facilities at Nelson and Dunedin.

- 7 In addition, I have evaluated the reverse sensitivity effects from a residential housing development in the vicinity of the Silverstream Landfill in Upper Hutt, a prison development adjacent to Hampton Downs Landfill in North Waikato, prison developments adjacent to oil storage facilities at Wiri, and a residential subdivision adjacent to Meadow Mushrooms in Havelock North.
- 8 I have been contracted to provide specialist advice on air discharge consent matters to regional councils and District Health Boards (DHB) including the Manawatu-Wanganui Regional Council, the Waikato Regional Council, the Otago Regional Council, Waikato DHB and Health Southland. I was the principal author of the Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour in New Zealand (2003) and I was contracted as the peer reviewer for the Ministry for the Environment's Good Practice Guide to Assessing Discharges to Air from Industry (2008).

Introduction

- 9 I was engaged by Airport Farm Trust (Airport Farm, AFTL) in October 2021 as a peer reviewer for the air quality assessment work undertaken by Tonkin and Taylor (T+T) (the T+T Assessment). The T+T Assessment was prepared in support of the resource consent application for the poultry farm operation at 58 Airport Drive, New Plymouth (Application and Application Site). The scope of the air discharge consent was for odour and contaminants. I provided input into T+T's approach to provide additional information and assessment relating to odour in the lead up to the hearing.
- 10 In preparing this statement of evidence I have considered the following documents:
 - (a) The T+T Odour Assessment Report, Airport Farm Trust (June 2021);
 - (b) submissions as relevant to my area of expertise;
 - (c) the statements of evidence for the Applicant prepared by Mr Whiting, Mr Pene and Mr McDean; and
 - (d) the section 42A report.

- 11 I visited the site on the 18th and 19th of November 2021, and I attended the prehearing meeting held in New Plymouth on the 18th of November 2021 in an observational capacity.

Code of conduct

- 12 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions I express. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of evidence

- 13 My statement of evidence provides a review of the matters covered by Mr Pene in the T+T report and his evidence. I have independently considered the information relating to Airport Farm's operation, the receiving environment and the likely impacts of odour discharges based on my experience. I have considered the following matters:

- (a) existing activity and nature of discharges to air;
- (b) receiving environment;
- (c) observations from my site visits including information from Mr Whiting;
- (d) matters raised by submitters;
- (e) matters raised in s42A Report;
- (f) conditions of consent; and
- (g) conclusion.

Executive Summary

- 14 In my review, I have considered the approach and conclusions reached in the T+T Assessment based on my experience of undertaking air quality effects assessments for activities discharging odour over many years and the relevant good practice guidance, particularly, the Ministry for the Environment's **(MfE) Good Practice Guide for Assessing and Managing Odour (2016) (Odour GPG)**.

15 I conclude that:

- (a) When considering the complaints and compliance record, the T+T Assessment (June 2021), reasonably concluded that odour effects were not a significant issue at the site. I consider, however, that T+T's Assessment did have limitations in the information used to conclude that the effects were less than minor. In my view, insufficient weight was given to low wind speeds and the frequency of winds that could carry to nearby dwellings, particularly given the discharge configuration from the wall-mounted fans along the north-eastern boundary.
- (b) Having visited, and observed the odour at the site, and taking into consideration the local wind patterns and site layout, I assessed that the overall levels of odour were weak and not unpleasant, and the odour was only intermittently observable when standing directly in the path of a fan or downwind of a row of fans. The very occasional distinct odour that I did observe, was in my view, unpleasant in hedonic tone. It was on this basis, when considering the FIDOL factors (frequency, intensity, duration, offensiveness and location) that I concluded that there was potential for chronic odour effects to be experienced off-site from the discharge via current wall fan configuration, particularly under low wind speeds blowing from the south-to-south-east, which are relatively frequent.
- (c) The Airport Farm upgrades to date and those proposed all contribute to lower potential for objectionable or offensive odour to have unacceptable effects beyond the boundary. A significant change now proposed is to the ventilation system, including 7 metre high roof stacks, which will significantly reduce the likelihood (frequency) of detectable offsite odours, as has been assessed in Mr Pene's evidence. In my view, the additional mitigation will reduce the potential for chronic odour effects, and residual odour beyond the boundary will be at an acceptable level for the receiving environment.

Existing activity and nature of discharges to air

16 I understand that the poultry operation is long established at the current stocking rates, and that Mr Whiting took ownership and has operated the sheds since 2013. Since 2013, as described in Mr Whiting's evidence, he has implemented multiple upgrades and improved shed management. These measures, in my opinion, would have lowered the odour levels associated with the historical running of the sheds including: providing insulation to better control shed temperatures and optimise ventilation; and improving weather tightness of the buildings and improvements to drinking systems to lower moisture in the litter. I understand that Mr Whiting is proposing further upgrades and changes to the operation, and I am in agreement with Mr Pene that these changes will further contribute to reducing the potential for

objectionable or offensive odour to have unacceptable impacts beyond the site boundary.

Assessment Methodology

Overview

- 17 For reference, the MfE Odour GPG's recommended odour assessment methods are as set out in **Attachment A**. I discuss the relevant assessment methods below.
- 18 The T+T Assessment considered the compliance history and odour complaint records for the site. Given the established nature of the activity, in my view, T+T's odour assessment approach aligns with good practice. That is, for established activities, complaints and compliance are reasonable indicators for considering the potential that there are odour discharges and assessing the likelihood that there are adverse effects on the surrounding community. In assessing this likelihood, T+T considered the FIDOL factors. I agree that the FIDOL factors are a useful assessment method, but in my view, T+T's consideration of the factors was at too high a level and did not account for on-site conditions. Therefore, when considering the risk of impacts occurring at off-site locations, my view is that the impacts were likely to have been underestimated, as I will discuss later.
- 19 The T+T Assessment was also supported by good practice management procedures for shed operations. I agree that management and operating procedures are important considerations in an odour assessment because they influence the potential nature and scale of odour discharges and therefore the potential for effects.
- 20 Since the T+T Assessment, and following notification and submissions, Mr Whiting has developed proposals to change the current shed operations. These changes include tall (7 metre high) stacks for shed ventilation and reduced bird numbers with a shift to free range operation. I agree with Mr Pene that these measures will reduce the potential for unacceptable adverse effects from odour. To provide more certainty to submitters and the Taranaki Regional Council (TRC), however, I discussed with Mr Pene using comparative assessment methods that I recommended be undertaken to provide additional information on the likelihood that the changes will lower the odour impacts and therefore the potential for odour to have unacceptable effects beyond the boundary.
- 21 I recommended a comparative odour dispersion modelling study be undertaken to quantify the scale of the reduction in odour concentrations due to discharge via tall roof stacks compared with the side wall-fan ventilation operation. I also considered that experience elsewhere i.e. other cases where tall stacks had been demonstrated to improve odour impacts could be relevant. In particular, Mr Whiting advised that a nearby grower site had experienced historical odour complaints until

tall stacks were installed. I understand, information to support the experience at this site was requested from TRC, but at the time of writing had not been received.

Complaints and compliance record

- 22 T+T reviewed TRC's complaint records and noted two odour complaints since Airport Farm took ownership in 2013, and no complaints recorded since 2015 up to notification of the application. In the period prior to Airport Farm's ownership, fourteen complaints were recorded with TRC. In evidence, Mr Pene also covered his findings relating to complaints received since notification of the application and I agree with his assessment.
- 23 TRC had not flagged any non-compliances for discharges to air on the property and has latterly undertaken a series of compliance visits that are described by Mr Pene in evidence and in the S42A report. In addition, Mr Whiting advised that he himself had not received any complaints that could be related to his operations up to the time that the consent renewal process was made public.
- 24 I note that the Odour GPG states that complaint data can be a good indicator of the perceived effect of an odour discharge, particularly where there is a relatively dense population. MfE also notes there are limitations with complaint data for various reasons including reticence or vested interests. In my experience, however, if there were significant, ongoing and widespread odour effects I would expect there to have been at least some recent recorded complaints relating to the normal operations at Airport Farm. This view is supported by the fact that complaints were received by TRC in the period leading up to Mr Whiting taking over the Farm. Therefore, I consider, T+T's approach and initial conclusion based on that information was not unreasonable.

Community engagement

- 25 Mr Pene states in evidence the reasons why T+T did not recommend community engagement such as a letter drop, public meeting, or door-to-door odour survey, which may have been used to confirm (or otherwise) the initial findings based on complaints. I agree with the reasons stated for not considering community engagement, although in hindsight community engagement would have been a useful addition to the assessment method. That is because the matters raised in submissions are inconsistent with the T+T findings based on the consent and compliance history. The notification process itself is, however, a de facto form of consultation and the consenting process is now able to address the concerns from the community, so in my view there is no fatal flaw to the T+T approach.

FIDOL Assessment

- 26 The T+T Assessment describes the FIDOL factors as a semi- quantitative method for assessing the potential for odours to have unacceptable adverse effects. In my view, T+T has correctly considered the location or nature of the receiving environment relating to the potential impacts of odour from Airport Farm. While rurally zoned, T+T has identified dwellings within a 300 metre radius as potentially affected, which I consider is appropriate. I agree with T+T that people living within a rural zone should expect rural odours like dairy effluent, silage and manure spreading as part of the baseline amenity environment.
- 27 Given the number of dwellings within 300 metres of the site, however, T+T has assessed that the receiving environment as sensitive compared to other rural environments. I agree with T+T that there is heightened sensitivity to odour due to the dwellings in the rural area, but I also note that sensitivity depends on the character of the odour. In my view, the ordinary reasonable person may tolerate mild low-intensity odours or infrequent but short duration higher intensity odours from the poultry farm as part of the environment in this location, although individual sensitivities will vary.
- 28 One matter that is sometimes considered in relation to location for odourous activities is that of recommended separation distances, which T+T discusses in its Assessment. I am advised that the New Plymouth District Plan provides for a separation distance of 400 m as a buffer for avoiding reverse sensitivity effects on established rural uses, such as Airport Farm. Also, the Regional Air Quality Plan for Taranaki recommends a 300 metre separation for a poultry operation of the scale of Airport Farm. I consider, however, that the application of separation distances is moot because the activity is already established in the appropriate zone, and other information about the actual and projected performance of the Farm is available i.e. a site specific assessment has been undertaken.
- 29 In order to consider the frequency, intensity, and duration factors, T+T has appropriately considered process factors including normal and abnormal operations, and the influence of wind speed and direction. T+T has assessed that the nearest dwelling downwind of the prevailing winds i.e. the south-easterly as being 130 metres away. T+T indicates that the McDonald dwelling at a distance of 55 metres is downwind under a southerly, which is relatively infrequent. In my view, the orientation of Sheds 3 and 4 create a potential wind tunnel that could channel odour from the wall mounted fan discharges towards the McDonald dwelling on a relatively frequent basis, and I consider that this correlates with an increased risk of adverse effect at the McDonald's dwelling for the existing operation.
- 30 I note that later in the Assessment T+T has identified the McDonalds as being most frequently downwind, which appears inconsistent with the earlier statement. In

addition, based on New Plymouth Airport wind data, T+T notes that calm conditions, when there is increased potential for odour due to a lack of dispersion, are very infrequent. I note that the Airport Farm site itself is more sheltered than the Airport with considerable shelter planting. Mr Pene has noted this impact at paragraph 27 of his evidence. In my view, T+T's comments on wind speeds may have underestimated the potential effects of odour in the immediate vicinity of the site and particularly at the McDonald property.

- 31 Overall, in my view, the original T+T Assessment likely underestimated the effects of odour as being less than minor. The extent to which this oversight may have been an issue has, however, been superseded by Mr Whiting's additional upgrade proposals and by Mr Pene's evidence outlining further assessments undertaken to assess the additional upgrades. I agree with the conclusions now reached by Mr Pene on the potential effects of odour from the proposal including the additional mitigation proposals.

Independent odour observations

- 32 T+T made independent odour observations, as did I when on site. While independent odour observations are useful, many observations over an extended period are needed to be statistically significant given the variations in process and meteorological conditions that impact the potential for odour to be experienced offsite.
- 33 In my view, T+T's approach to undertaking odour observations was reasonable in the circumstances, and the observations of odour intensity and character or offensiveness onsite are useful to inform the potential for effects beyond the boundary. I am in general agreement with how T+T characterised the intensity & offensiveness of the odour sources from Airport Farm. I discuss my observations further starting at paragraph 40 below.

Process management, control, contingency and risk

- 34 In my experience, process management and control systems are key to avoid or minimise the potential for an odour producing activity to result in odours that have unacceptable adverse effects beyond the site boundary. I agree that T+T has considered the critical management controls associated with minimising odour from Airport Farm's operations.
- 35 In addition, I am advised that process design and controls are being upgraded and these have been described in evidence by Mr Whiting and Mr Pene. I note key elements of the proposals as follows:
- (a) Reduced bird densities;

- (b) The DACS AS ventilation system, shifting from cross-flow negative pressure to neutral/balanced pressure sheds;
- (c) Primarily stack ventilated sheds, to ventilation via 7 metre high stacks to be located 100 metres or more from the nearest dwelling at 62 Airport Drive;
- (d) Smart technology to monitor ammonia levels and CO₂ to optimise ventilation.

36 I understand that Mr Whiting has offered as a further management measure, to undertake litter removal under favourable wind conditions where possible. I consider that due to the nature and intensity of the odours from litter, particularly if there are anaerobic conditions within it, then this is a high risk activity, which is difficult to mitigate. If timing with favourable winds is practical, this measure will limit the potential for odour from outdoor litter storage and handling to have acute offsite impacts. Even where unfavourable wind directions are not able to be avoided, it may be possible to schedule cleaning for later in the day when conditions tend to be more breezy with enhanced dispersion compared with early morning.

Comparative assessment

- 37 Mr Pene has described in evidence comparative assessments of the odour impacts for the existing versus the future operating scenarios. I agree that Mr Pene's assessment using odour dispersion modelling appropriately characterises the impacts of the existing authorised activity when compared with the proposed operating scenario. I agree that the reductions in odour predicted by the dispersion modelling are conservative in that they do not incorporate all of the factors that will contribute to reduced odour impacts. This is principally because, based on the descriptions of the heating and ventilation systems, in my opinion, odour emission rates will be lower and have the potential to be considerably lower than the standard emission rate factors used for modelling odour from the chicken sheds.
- 38 In my view, the odour dispersion modelling results can also be calibrated using the knowledge of complaints, compliance, and onsite odour observations, which indicate a generally low level of impact currently, and this will only improve with the further modifications.
- 39 As the Airport Farm site is already established, information from the site forms the baseline for the odour assessment. Experience elsewhere is, however, also relevant to understanding the impact of proposed changes on the site, which include the discharge via tall stacks and free range areas. As noted, Mr Pene has addressed these matters by considering his experience from other sites. I agree with Mr Pene's conclusions that the changes will be beneficial for reducing the potential for odour to result in unacceptable adverse effects beyond the boundary.

Site visit

- 40 I undertook a site visit to 58 Airport Drive on the 18th and 19th of November 2021. Due to the boundary constraints it was difficult to get very far downwind of the fans, so my observations were all on-site and within a reasonably close distance of the fans. At the time I visited, I was advised by Mr Whiting that the sheds were operating at or around the maximum level for odour generation, with a stocking rate of approximately 34 kg per m² and the first catch to take place overnight. I understand that Airport Farm intends to maintain lower bird stocking rates than this going forward.
- 41 In general, I observed little odour around the site unless standing directly in the wake of a fan when it was operational. My observations were of a mild odour in the vicinity of the wall fans. The odour was not strong or unpleasant and would have rapidly dispersed further down wind under the breezy conditions. When odour was noticeable, it was predominantly weak and neutral in character. Very occasionally, the odour became distinct to strong, when I was directly in the wake of a fan. At this level, I consider the odour was mildly unpleasant.
- 42 I returned to the Airport Road site at 8.00 am on the 19th of November to undertake further odour observations. The weather was fine and clear. Conditions were mostly calm although the reported wind speed was 2.1 m/s from the southwest (Windy.com) it is likely wind speeds on site were lower due to the shelter provided. The misting system was switched on and I observed the mist rising vertically with no horizontal plume movement, also evidence that there was little wind.
- 43 I undertook a series of observations along the north-eastern boundary and then along the north-western boundary. I also walked around the site and between the sheds where I observed very little odour on the site within the site, with only the occasional intermittent barely detectable odour. My observations at the north-eastern boundary was that odour was detectable and weak to distinct when standing directly in the wake of one of the fans. On one occasion the fan switched off and the odour stopped.
- 44 From my observations along the north-western boundary, at a distance of approximately 30 metres in the downwind direction of Sheds 2 & 1, there was no odour detected. I moved closer to the sheds and directly across from one of the fans at approximately a 10 metre distance and I could then detect an intermittent weak odour, which was not discernible at 20 metres.
- 45 On the whole, my observations were that the chicken farm is relatively small scale and has low levels of odour. My observations align with Mr Pene's, that odour was only detectable when standing directly in the wake of a fan, or directly downwind of the series of fans as per my observations at the south-eastern boundary/corner.

- 46 Due to the limited internal separation to the boundaries, in my opinion, odour would be detected offsite intermittently, particularly along the north-western boundary during the peak of the growing cycle when directly in line with the fans.
- 47 I also consider that there could be a “wind-tunnel” effect from discharge from the fans along the north-eastern boundary when the wind is blowing from the southeast. I consider this could result in cumulative odour from fans along that boundary being detectable at the property at 62 Airport Drive, and under lighter wind speeds at times people may find the odour objectionable in nature.
- 48 Overall, the odour I observed onsite was characteristically rural and not particularly offensive or objectionable in nature, but I concluded that if undispersed the odour does have the potential to have a chronic odour effect from frequent exposure to low levels, particularly if at a dwelling. For clarity, based on on-site observations, the TRC monitoring, and the complaint record I consider that acute effects of odour unlikely from the normal operations, provided that shed clean outs are optimally managed.
- 49 I consider it is unlikely, based on the evidence and my observations, that there is a widespread impact from odour from the site. As discussed elsewhere, the proposed changes to ventilation, predominantly via roof stacks and reduced stocking rates will reduce the potential for odour impacts compared to the present system.

Matters raised by submitters

- 50 I have read the submissions received on the application. I agree with Mr Pene and Mr McDean’s summary of the issues raised by submitters. To better visualise the potential effects based on frequency of winds at the submitters’ properties, I have overlaid on image of the site with the T+T wind rose for New Plymouth Airport shown as **Attachment B**. I describe the locations of submitters, below and then discuss the issues raised.
- 51 Elliot & Williams are at 76 Airport Drive and consider they are affected under prevailing south-westerly. The submitters’ dwelling is around 150 metres northeast of the sheds. N & L Hibell at 47 Airport Drive are around 150 metres to the west-southwest of the sheds. K & R Brown are at 40 Airport Drive approximately 180 metres from the sheds to the southwest.
- 52 Poppa’s Peppers is at 35 Airport Drive and around 250 metres to the southwest of the sheds. The submitter maintains that they are in the “stink zone”.
- 53 K & G McDonald live at 62 Airport Drive their dwelling is around 55 metres from the nearest shed. Their property is also adjacent to the boundary with Sheds 3 & 4, where there is a small amount of separation. The McDonald’s dwelling is

generally downwind of sheds in a south-south-westerly through to a south-south-easterly. The McDonald's submission indicates that the birds excreting outside is a source of odour that has not been considered by T+T's Assessment, particularly under wet conditions. I consider that the quantities excreted outdoors will be minor compared to in-shed excretion and I agree with Mr Pene that the manure will not become anaerobic given the timeframes that birds are outdoors within the growing cycle and quantities involved.

- 54 The McDonalds note that having the shed air discharges at ground level and pointing towards their boundary potentially contributes to effects on air quality that they are experiencing. I agree with the McDonalds that the configuration and small separation distances to the boundary, especially for Sheds 3 & 4, would have the potential to cause odour impacts under south-to-south easterly winds at their dwelling and that odour would be discernible to the east on their rural land under a westerly. As shown in **Attachment B**, the roof vent configuration has tall stacks that will be at least 100 metres from the McDonald's dwelling and wall fans are to be retained only for emergencies relating to bird welfare. This alteration will significantly reduce the potential for unacceptable effects of offensive or objectionable odour at the McDonald property.
- 55 Submitters are concerned regarding the change in effects due to free-range compared to sheds. In my view, the addition of pop holes to allow for free-range will not materially change the air quality impacts. The key material differences in the potential for odour, as described by Mr Pene, are the changes to ventilation and the reduced stocking rates.

Matters raised in s42A Report

- 56 I agree with the content and conclusions of the odour assessment matters as considered in the s42A Report. I consider the report is helpful in characterising the baseline performance for the existing site and is a useful benchmark for concluding that the effects from the proposed operation, with reduced potential for odour emissions and improved dispersion, will have acceptable effects.

Conditions of consent

- 57 I agree that the TRC's proposed conditions of consent are appropriate to manage the potential effects of odour from the activity.

Conclusion

- 58 The T+T Assessment concludes that based on the complaint records, the high level of odour control and management such that the adverse effects were assessed by T+T as being no more than minor. I consider that the existing arrangement discharging via wall fans could be additive under the prevailing winds, particularly

for sheds 3 & 4, and that under lower wind speeds there is a risk that odour present will at times travel offsite with little dilution. I consider that odour would be noticeable around the McDonalds' property and at their residence to the extent that there is a likelihood of a chronic odour effect at the McDonalds for the existing side wall mounted fans.

- 59 I agree with T+T that the lower bird stocking rates and the change to free range operation will reduce the odour emissions rates compared to historical operations. In combination the Airport Farm's proposal to change the ventilation and discharge via tall stacks these measures will have considerable effect at reducing odours to levels where I consider that the risk of chronic effects from frequent low levels of odour is greatly reduced. Mr Pene has presented dispersion modelling and comparative information that support these conclusions. I consider that with the continuation of good practice management and control that intermittent and low intensity odours from the upgraded operation will be at an acceptable level for the given environment.

Dated this 28th day of January 2022

Deborah Anne Ryan

Attachment A: MfE Odour Guide Extract (2016)

Table 5 Assessment tools for types of activities

Activity	Assessment tools
Existing facilities	
Complaint investigation Resource consent applications Monitoring compliance with consent conditions	Review of meteorological and production data Community consultation Odour complaint history, experience with the discharge and past compliance Review of odour management plan, contingency procedures, process controls and design, including details of emission controls and engineering risk assessment for system failures Analysis of site-specific meteorology and topographical features Odour diaries, community surveys, and other surveying tools such as field investigations
New or modified facilities	
Resource consent applications	Community consultation Experience and knowledge from other sites of a similar nature, scale and location, including consideration of appropriate separation distances Site management and contingency plans, and whether the best practicable option is being applied Process controls and design, including details of emission controls and engineering risk assessment for system failures Analysis of site-specific meteorology and topographical features Dynamic dilution olfactometry measurements and odour dispersion modelling

Attachment B Site locality overlain with Airport windrose

