Updated section 42A Officer Report issued on 25 January 2022 to correct minor errors

The following minor edits have been made to this version of the report originally issued on 24 January 2022:

1. Page 14, paragraph 71:

   […] Odour in the accessway in between sheds 1 and 2 (downwind of shed 2), and adjacent to an exhaust fan, and inside one of the sheds, was in each location strong but not unpleasantly so, and I considered the observed intensity to be less than ~~that he has~~ what I have experienced in other sheds in Taranaki.

2. Page 16, paragraph 79:

   The applicant has confirmed and Council staff have observed that bird capture and litter removal is via the end doors furthest from the road and the ~~nearest~~ majority of offsite dwelling houses for sheds 1 and 2, and via the doors and pad between sheds 3 and 4, to ensure these operations are conducted at the greatest practical distance from neighbours on each side.

3. Page 18, paragraph 90:

   In terms of dispersion of emissions that might be odorous offsite, these are more likely when winds ~~at the site~~ are ~~more likely to disperse odour emissions~~ towards the north-west. […]

These updates **are not** shown as tracked changes in the body of the report.

Officer Report for resource consent 5262-3.0
(Pursuant to section 42A of the Resource Management Act)

To	The Hearing Committee
From	Jocelyne Allen - Consents Manager Gary Bedford – Science Advisor
Consent	5262-3.0
Document	2954153
Date	24 January 2022 (amended 25 January 2022)

To discharge emissions into the air from a free range poultry farming operation

Activity type	Discharge Permit
Activity subtype	Air - Agricultural
Activity status	Restricted Discretionary
Applicant	Airport Farm Trustee Limited
Site location	58 Airport Drive, Bell Block
Grid reference(s)	1701563E-5679966N
Catchment	Waiongana
Tributary	Mangaoraka
Recommendation	Grant with conditions Expiry: 1 June 2038

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1. Introduction

1. Airport Farm Trustee Ltd ('the applicant'/ 'AFT') has lodged an application to discharge emissions into the air from a free range poultry farming operation housing a little over 60,000 birds. The application is for an 'early renewal' of an existing consent. The current consent was issued in 2011 and expires in 2026. It authorises emissions from more than 90,000 birds housed permanently within sheds, i.e. not free-range. A consent was first issued for the site in January 1998. It was renewed on 26 September 2011. The property and consents were transferred to new owners in February 2012, and then to the current owners in October 2013.

2. The applicant currently holds the two resource consents for activities relating to the farm's operations, for which renewal is being sought. The consents are:
   - consent 4692-2 to discharge washdown water from the cleaning of broiler chicken sheds onto and into land; and
   - consent 5262-2: to discharge emissions into the air from a poultry farming operation and associated activities including waste management activities.

3. The renewal of the consent to allow discharge of washdown water to land is for a controlled activity, and is being considered separately to the application to discharge to air. It is not addressed further in this report.

4. AFT's application for a renewal of the air permit falls under Rule 52 of the Regional Air Quality Plan for Taranaki (RAQP), which applies to:

   Discharges of contaminants to air from intensive poultry farming when more than 30,000 poultry are kept at any one time, and where the poultry farm is an existing operation and a new consent is being applied for to replace or renew an existing consent.

5. The rule prescribes the activity as **restricted discretionary**, and has one entry standard, which is:

   - the nature and scale of the effects of the activity are unchanged from that of the existing consent that is to be replaced or renewed.

6. The application meets that standard. The assessment by Taranaki Regional Council (the Council) officers is that the proposed reduction in bird numbers and allowing birds access to areas outside the broiler sheds will not increase the nature and scale of the effects of the current activity.

7. The present consent is for the farming of broilers generally, and is not specified as or restricted to birds confined in sheds. Some examples of language within the consent that indicate the consented activity is not restricted to within sheds include the purpose statement of the existing permit *('emissions into the air from a poultry farming operation'*); multiple references in the consent to 'the farm', 'the property', and 'the site'; a complete absence of references to 'sheds', 'housing', 'enclosed rearing', or suchlike; and further, the boundary of 'the site' is defined as the legal property boundary, not as the footprint of the sheds.

8. The definition of 'intensive poultry farming' in the RAQP is:-

Intensive poultry farming *means the keeping, rearing or breeding of 12 or more poultry, whether in relation to the production of poultry for human consumption or in relation to egg production, where the predominant productive processes are carried out primarily within buildings* ***and includes free-range poultry farming activities*** [emphasis added]*, but* ***excludes low density free-range poultry.***

Low density free range poultry *means the keeping, rearing or breeding of poultry (whether for the purpose of raising poultry for human consumption or for egg production) where:*

- *birds have permanent access to open air runs;*
- *permanent vegetation cover exists on the land where birds are permitted to range;*
- *the stocking rate of the runs to which the birds have access does not exceed 1.5 birds including chickens per square metre or 0.8 hens per 10 square metres; and*
- *the stocking rate of any permanent weatherproof shelter to which birds have access does not exceed 5 birds per square metre of deep litter floor space or 10 birds per square metre of slatted floor space or 13 birds per square metre on framed perches.*

9. Due to the stocking rate of 15 birds/m² proposed in the application to renew the consents, the future poultry farming operation is not 'low-density free range farming', and therefore remains 'intensive poultry farming', and as it involves continuation of an existing operation as presently described, is appropriately considered under Rule 52. As such, no change in the status of the activity is proposed for the purposes of applying the provisions of the RAQP.

10. An updated application for this air discharge application was received on 3 June 2021. It included:

- a description of the environment;
- a description of the activity;
- a reference to the complaints history of the site as described in the assessment of the environmental effects; and
- current and proposed mitigation measures.

11. There was no indication that consultation with neighbours had been undertaken.

12. The application attached an assessment of the environmental effects (AEE), completed by Tonkin and Taylor Ltd in June 2021. This assessed odour sources, characteristics, and controls (the Tonkin and Taylor report, June 2021).

13. Since lodging the application, the applicant has continued to invest in significant new technology, and continues to do so. These changes have set a new standard for what represents best practice for broiler farms in the region. Council officers are clear that the improvements have reduced further the potential for adverse environmental impacts, and that neighbours and submitters have not been disadvantaged in any way by the ongoing and proposed changes.

2. Previous consenting history

1998

14. An air discharge consent was first granted to K C & S A Green for a poultry farm on 12 January 1998. The officers' report recommending the approval of the application noted, amongst other matters, that the broiler sheds were very close to neighbouring residences, much closer than the distances recommended as buffer distances within the Council's RAQP for a farm of the size under consideration (400 metres to the nearest off-site dwelling, 50 metres to the nearest boundary, and 100 metres to the nearest road), but all potentially affected neighbours had given their approval for the application to proceed and therefore the Council was obliged to set aside any concerns over this proximity.

15. The distance from the sheds to the nearest offsite dwelling is approximately 45 metres, while the nearest road is 50 metres away and the distance between the sheds and the nearest property boundary is 10 metres. These distances did not satisfy the Council's preferred minimum buffer distances as set out in Appendix III of the RAQP as it read at the time.

16. The officers' report recorded '*The Plan stipulates that, for the TRC to deem the activity as 'controlled' rather than 'discretionary', all neighbours dwelling within the distances given above must give their approval…. Further information was required of the applicant, under section 92 of the RMA, concerning non-notification of the application, by obtaining the written approval of potentially affected neighbours offsite. The application was put on hold while the information was supplied*.'

17. The owner obtained the permission of neighbours for the activity to proceed, as part of the process of obtaining written approval for non-notification. The officers' report noted:

According to section 94 (2), a resource consent application need not be notified if:

> *'the application relates to a discretionary activity or a non-complying activity and*
>
> *(a) The consent authority is satisfied that the adverse effect on the environment of the activity for which consent is sought will be minor; and*
>
> *(b) Written approval has been obtained from every person whom the consent authority is satisfied may be adversely affected by the granting of the resource consent unless the authority considers it is unreasonable in the circumstances to require the obtaining of every such approval'.*

While the applicant has not been able to satisfy Rule 34 and has thus made application under Rule 35, the applicant has been able to obtain approval from parties that the Council considers could potentially be affected. This application has, therefore, been processed on a non-notified basis.

The applicant obtained all the necessary approvals from affected parties in the affected zone as indicated by the RAQP.

18. Condition 5 of the original consent specifically addressed the question of how 'offensive and objectionable' odours and dust were to be determined. It was included to ensure that ammoniacal or typical 'chicken farm' odours did not become offensive beyond the site boundary. It also provided for an exception period during each rearing cycle when the condition would not apply.

19. This exception was when a 'cut' of chickens was to occur, depending on factory and market demand. At this point, the sheds are opened up and stock and/or litter is removed. The sheds may thereafter be cleaned out and washed down. These activities may generate higher levels of dust and/or odour than is otherwise normal during other phases of poultry farming operations. They are considered normal and essential farm activities so an exemption from the odour condition was considered warranted and necessary for the operation of the farm.

20. A typical preparation/production/growing/clean-out run lasts for eight weeks (about 56 days), so seven days were allocated to allow for heightened emissions during the cutting of stock and shed clean-out. Most cuts and clean outs take a maximum of four days, so this was seen as being adequate to cover such operations on most farms. It also takes into account that an early 'cut' is often taken, of younger birds, and then another 'cut' is taken later for the older, bigger birds. The seven-day period is not required to be consecutive, so allows for two or more 'cuts'.

21. Section 104(6) of the Resource Management Act (the RMA) dictates that the Council shall not have regard to effects, such as dust and odour, on those affected parties who have given their written approval to the application. The applicant was successful in obtaining the written approval of all potentially affected people in the buffer zone (as assessed under Appendix III of the prevailing RAQP). It was therefore noted that these people had given their approval to all activities that fall within the scope of the application. This may include any increase in odour and dust due to cleaning out of sheds and removal of stock.

22. The consent's expiry date was 1 June 2014 and the consent was numbered 5262-1.

2011

23. The farm operator applied in 2011 for a renewal of the consent. The applicant intended to sell the poultry farm in the near future and decided to apply for the early renewal of the operation's consents, to provide for the long term certainty of the business continuity for the potential purchaser. The application was accompanied by a description of the surrounding neighbourhood that identified all potentially affected parties within 400 metres.

24. The application listed twenty owners and/or occupiers of properties located within 400 metres of the poultry sheds. Three of these properties did not have a dwelling on them and therefore the owners of these properties were not considered to be adversely affected by the prospective continuing discharge. Four of the properties had dwellings built on site after 12 January 1998 [i.e. the date consent 5262-1 was granted].

25. Thirteen of the properties within 400 metres of the sheds had dwellings established on site prior to 12 January 1998. The applicant obtained the written approval from six of these land owners and/or occupiers and therefore these could no longer be considered adversely affected by the proposed discharge. However, the applicant had been unable to obtain the written approvals from seven landowners and/or occupiers who had dwellings established within the 400 metre buffer established prior to 12 January 1998. Therefore, according to the applicable rule in the RAQP, the application was required to be limited notified to those parties.

26. The parties notified were R & K Brown* (40 Airport Drive), N Graham (1205 Devon Road), K & J McDonald* (62 Airport Drive), GA & JD Feaver (65 Airport Drive), NT & LF Hibell* (47 Airport Drive), KM & CR Jensen* (35 Airport Drive), and GN & MJ Struthers (29 Airport Drive). [* = submitter to 2021 application].

27. Four submissions were received. Two pre-hearing meetings were held between the Council, the applicant, and the submitters, in August-September 2011. As a result of an agreement on conditions reached during these meetings, the submitters withdrew their request to be heard.

28. The consent renewal was subsequently granted on 26 September 2011, with an expiry date of 1 June 2026. It was numbered consent 5262-2.

29. Prior to the application for renewal, the New Plymouth District Council (NPDC) had already been investigating options for re-zoning an area on the eastern side of Airport Drive in the vicinity of the poultry farm as part of a proposal by Transit and NPDC to re-align Airport Drive with De Havilland Drive to the south. This area at the south-eastern end of Airport Drive was referred to as Area 'R'. Consultation was to be undertaken in the immediate future with residents in Area 'R' regarding the potential for re-zoning coincident with the Airport Drive re-alignment project. A decision was to be subsequently be made as to whether concept plans would be drawn up for Area 'R'.

30. Therefore, it is apparent that at the time of renewal in 2011, to which the neighbours gave their approval, there was no clarity, let alone certainty, surrounding future land use zoning for the eastern side of Airport Drive.

2013

31. On 25 October 2013 the consent was transferred to the current owners, Ed and Melissa Whiting.

2014

32. On 20 February 2014 the Council implemented a universal change to air discharge consents for broiler farms, replacing reference to maximum bird numbers with references to maximum floor space (to the same effect). Changes to rearing practice meant that a specified maximum number of birds was no longer meaningful with regard to the potential for offsite effects.

2020

33. On 26 August 2020 the current owner applied to the Council for an early renewal of consent 5262-2. On 15 September, the Council advised the applicant that following a first review of the information supplied to the Council, it was requesting further information, under s.92 RMA, as follows:-

    1. a detailed description of the air discharge process including upgrades undertaken on the existing sheds since the consent was last renewed, including any ventilation and heating systems that help with mitigating odour at the site;
    2. full assessment of the effects of odour from the sheds prepared by an expert consultant;
    3. a policy assessment of the relevant policies of the Air Quality Plan and Part 2 of the Resource Management Act; and
    4. a map detailing dwelling houses within 400 metres of sheds.

34. In response, the applicant procured an odour assessment prepared by an air quality consultancy, Tonkin and Taylor (December 2020). The applicant subsequently modified the proposal in terms of the nature of the continued broiler operation, from continuing a conventional housed broiler rearing operation with a maximum of 95,000 birds, to implementing a free-range operation involving up to 61,000 birds. An amended application for renewal was lodged with the Council on 3 June 2021.

3. Application - introduction

35. The applicant is proposing to operate a four shed free-range broiler poultry farm at 58 Airport Drive, New Plymouth. The operation includes the continuing use of 4 existing poultry sheds, together with associated yard areas and structures. The property is 1.82 ha in area. The predominant uses of the property are the four sheds with supporting utilities, and a residential dwelling with adjacent domestic facilities. The value of the operation is assessed at lying between $1-5 million.

36. The applicant intends to reduce the specific nature and size of the operation from its current capacity of 95,000 birds fully housed in the sheds, to a free range operation of 61,000 birds allowed to have access to outside fenced areas. This is a reduction of some 36% in the maximum number of birds. There is no increase in the size of the property, and no change to the size of the sheds.

37. The farm is located in the catchment of the Mangaoraka Stream, north-east of Bell Block.

38. As noted above, the operation has undergone further changes since the application was received, and some of the information originally supplied no longer applies. In terms of the application as received in June 2021, the key proposed changes in operation involve:-

    - reduction in stocking density to 15 birds/m^2 of shed floor area, which will reduce the overall housing capacity of the operation to 61,020 birds and substantially reduce the number of birds per square metre of litter flooring from the industry standard intensity of 23 birds per square metre. This represents a 36% reduction from the current capacity allowed under resource consent 5262-2.1 of 95,000 birds;

- provision of outdoor range areas alongside each shed corresponding to the shed area (at a minimum size of 1000 sq metres per shed);

- installation of pop holes (flaps) along the side of the sheds to allow birds to access the range areas in the following circumstances:
  - once the birds are old enough to self-regulate body temperature at 21 days; and
  - during daylight hours thereafter (except during inclement weather); and

- planting of trees within the ranging areas and hanging of shade cloth from the sheds to provide shade for the birds using the free range areas outside the buildings.

39. The application noted that good shed management is the main factor in minimising the risk of shed odours. Since the consents were last renewed, AFT have undertaken significant improvements and have invested $500,000 in recent equipment installations (as described further in the Tonkin and Taylor report).

40. The report noted that the site's controls, improvements, and environmental performance records have consisted of:-

- constantly monitoring the nipple-and-cup drinking system and ensuring that the drinkers are maintained, to avoid spillage or over-filling;
- water leaks are dealt with swiftly. Water leaks cause damp litter which can cause a change in odour type and strength;
- the farm is almost totally surrounded by hedges. These hedges serve to contain the dust, and help disperse odour;
- further, the windbreak netting being erected to contain the birds during their free range activity will also intercept any dust emitted from side fans and the access doors, until the proposed ridgeline vertical fans replace the older fans; and will intercept dust and assist in dispersing odour whenever the pop flaps are open;
- there is no record of dust being a problem on the farm;
- no complaints have been received by the applicant in relation to offensive and objectionable odour beyond the boundary of the site (TRC had recorded two odour complaints in 2015, after the applicant took ownership of the site; but see paragraph 42);
- frequency of offensive odour depends on atmospheric conditions, feed ingredients, wind strength and direction, and management;
- strength of odour is largely related to meal ingredients and shed management; and
- the prevailing westerly wind takes odours away from the biggest concentration of houses.

41. The application stated that records and experience have not shown dust emissions moving beyond the site boundary. The time during which this has the greatest potential to occur is noted by the applicant as during post-run cleaning when the following events occur simultaneously:-

(a) Osflo are cleaning out the sheds; and
(b) a strong wind is blowing; and
(c) the litter scoop loader is operating.

Osflo do not operate in strong windy conditions. Additionally, the farm is surrounded by hedges, providing a second level of defence. These factors minimise the potential for dust beyond the boundary and mean dust moving beyond the boundary is not anticipated to occur.

42. The application noted that the emissions have the potential to result in an odour that neighbours may find offensive, and that odour is a subjective matter. Any complaints made in the past to the Regional Council have been investigated, and in every case it was determined that the farm was operating within the conditions of its resource consent. We note that the applicable conditions included the prohibition of offensive and objectionable odours.

4. Activity detail

Description in application

43. The applicant has provided an assessment of the odour potential to accompany the most recent application[1]. The information set out below in paragraphs 44-68 includes information taken from the assessment as provided, together with more recent observations made by myself together with other Council staff.

44. The farm site itself contains four large poultry sheds with a combined maximum holding capacity of 95,000 birds. Sheds 1 & 2 [Figure 1] are orientated east-west and sheds 3 & 4 are orientated on a north-south axis. There were originally six to seven extractor fans in each shed: five or six spaced at equidistant intervals along one side, and one at the end of each shed. The applicant is installing three roof fans, to replace the use of the side wall fans, on the centre roofline of each shed, and will place them to maximise separation from neighbouring dwelling houses consistent with shed management requirements. One has already, as of September 2021 been installed on top of each shed.

45. Air flow through each shed is currently lateral (across the shed) rather than longitudinal. A 4 metres high vegetated shelter belt with dense foliage surrounds the site, other than along the south-eastern boundary. Additional shelter belts line the site access track, and the south-western side of the sheds closest to the road. During my site visit on 21 September 2021, I noted that a high windbreak was being installed across the gap on the south-eastern boundary, to complete the enclosure of the site. Installation had been completed by the time of subsequent inspections.

46. In addition to the sheds, the farm has a utility block featuring staff amenities, facilities for storing and conveying feed to the sheds, two water storage tanks and a 110 kVA diesel-fired standby electrical generator. An access road runs between the sheds, and along the eastern boundary of the site to allow access during shed clean out. Each shed has a large concrete apron in front of the access doors.

[1] *Airport Drive Free Range Poultry Farm odour assessment*, June 2021, Tonkin and Taylor

47. Chickens are raised onsite over a 42-day period for supply to Tegel Foods Limited (Tegel) on contract. Day old hatchlings are brought onto the site and housed for 42 days before the birds are caught and removed (catching of part of the batch may occur at intervals in the latter stages in the cycle). It takes about one hour to catch approximately 20% of the birds, and the duration of each catch event and the total number of the catch operations will depend on how many birds are required by Tegel at the time and the weight distribution of the batch.

48. The change to free range rearing involves the addition of flaps or hinged panels along the base of one side of each shed. As the birds enter the second half of their rearing cycle and develop feathers to self-regulate their body heat, they will be released as weather conditions allow into open fenced areas: north of shed 1, south of shed 2, and east of sheds 3 and 4. We note that this will likely result in a reduction of odorous emissions during the rearing cycle, as there will be less voided wastes accumulating on the shed litter, less build-up of excess heat within the sheds to be expelled out via the fans, and a more diffuse release of shed air along the length of the sheds (and therefore lower concentrations of odorous compounds). Other anticipated benefits are noted by the applicant (paragraphs 57, 60, 63, and 65 below).

Figure 1 Aerial photograph of Airport Farm Trustee broiler farm

49. At the end of the cycle, litter is cleared from the sheds by specialist contractors. Litter is cleared by Bobcat mini-excavator onto the concrete pad at the end of each shed and loaded onto trucks with enclosed trays for disposal off-site (litter is not stored or composted on-site). The removal and cleanout process typically takes approximately two-three hours for each shed at this site, and removal is undertaken over one or two days depending on the crew's initial arrival time. The sheds are then sanitised between each batch of birds. Each shed is operated on an approximate 8-week cycle. In a typical year, a total of six growing cycles are carried out on the farm.

50. The chickens are housed in the sheds on litter which consists of wood shavings. The sheds are equipped with feeding, drinking, heating, and ventilation equipment to support the growth process. Birds are fed and watered solely inside the sheds. Dry pellet feed is conveyed from enclosed storage silos to feed pans within the sheds. The supply of feed is monitored to avoid over-filling of pans and subsequent decomposition of pellets within the litter. Hydration of birds is via nipple drinkers to reduce water spillage (which would promote anaerobic [and hence odorous] degradation of litter).

51. The food is delivered to the site by trucks and sorted onsite in silos. Any deceased chickens are removed daily and stored in a freezer prior to being taken from site.

52. As at the time of the application, in each shed there were seven or eight fans operated to maintain negative pressure inside the shed, with either five or six fans located on a side wall of each shed, one recently installed fan on the roof, and the remaining one next to the end door. For 3 of the sheds, the fans are on the side wall facing the nearest boundary rather than into the property. In most circumstances, cross flow ventilation is occurring with operation of the side wall fans to expel air, and intake of fresh air through the VentiFlap vents located along the base of the opposite wall. The side wall fans have been replaced since the last consent renewal. Further cooling is provided on hot days with evaporative misting sprays.

53. Heating is currently provided by 3 direct-fired natural gas fuelled heaters in each shed. Heating is typically required during the first half of the rearing cycle, with increased ventilation for cooling required during the second half.

54. The system provides fresh air to assist in the control of temperature, moisture, airborne particles and litter quality. The ventilation system is important for mitigating effects by maximising the mixing and dispersing of emissions from the sheds.

55. The supporting documentation notes that chicken farm odour is primarily generated if and when there is anaerobic (oxygen-depleted) degradation of manure and excreta from the housed chickens. The anaerobic decomposition process results in the generation of a variety of volatile odorous nitrogen, sulphur and carbon-based compounds, including mercaptans and volatile fatty acids (VFAs). Due to the excretion of uric acid from chickens (in a more concentrated form than occurs from larger animals), the products of decomposition include ammonia and its derivatives. Anaerobic decomposition requires a number of environmental factors to occur, including:

- an organic matter substrate material (manure and excreta in this instance);
- anaerobic bacteria (present in the manure);
- a lack of oxygen (aerobic decomposition, which does not produce odorous compounds, will occur preferentially in the presence of oxygen until available oxygen is depleted);
- relatively elevated water/moisture;
- temperature - decomposition will be inhibited as temperatures reduce, or increase under warmer conditions; and/or
- sufficient time for decomposition to establish -which will be dependent on the other factors.

56. Manipulation or control of one or more of the factors above can reduce odour generation. In a litter-based free range broiler farm operation, the manure/excreta is present for a limited duration within which anaerobic decomposition could commence. The potential for odour from litter will increase with increasing amounts of bird wastes as the chickens grow. Thus, the likelihood of anaerobic decomposition occurring will increase nearer the end of the cycle (normally from 3 weeks onwards). However, manipulation or control of one or more of the factors listed above can reduce odour generation and its concentrations in the shed atmosphere.

57. Odour emissions from the proposed free-range operation are likely to be substantially reduced below current episodes by the conversion to free range configuration for the following reasons:

- The shed stocking density will be reduced to 15 birds/m^2 from the effective stocking density allowed by the current consent of over 23 birds/m^2 (representing a 36% reduction).
- Free range operations allow the housed birds to roam over adjacent ranging areas, which will result in deposition of manure over range areas (though the bulk of deposition is likely to occur indoors where feeders are located).
- These factors will result in a reduction in the amount and density of manure deposited within the sheds.

58. In addition to the on-going odour generated from the breeding sheds, the potential for odour discharges will increase temporarily when possibly anaerobic by-products are disturbed as litter is cleaned out and removed from site at the end of each batch.

59. Other free range poultry broiler farm odour sources include:-

- manure handling and storage - in this case manure/litter from shed is to be transferred offsite upon removal, and manure/litter is not proposed to be stored or spread on-site.
- decomposition of bird carcasses - in this case dead birds are collected daily and disposed of off-site.
- storage/treatment/disposal of other waste.
- decomposition of uneaten food- the design of the food pans and control of replenishment rates and distribution, together with feed being supplied only inside the sheds minimises food wastage and spoilage.
- the birds themselves.
- occasional diesel combustion (standby generator).

60. A major focus of farm management is to minimise odour. A major factor in reducing odour is to limit the moisture level of the litter. The following standard practices will help to control moisture:-

- automatic drinkers to minimise water spillage onto litter;
- heating using gas-fired direct heat and circulating fans rather than convection (hot air circulation and induced swirling uncontrolled eddies), which reduces air flow through the sheds; and a change in the near future to hot water radiator heating to replace the gas-fired heaters in due course (advised by Ed Whiting to me); and
- adequate ventilation to reduce condensation inside sheds, currently provided through banks of fans on side walls.

61. The supporting AEE summarises the primary odour sources and characteristics as follows:-

Odour type	Sources	Character/ offensiveness/Intensity
Manure, excreta, litter	Sheds. Litter removal trucks.	Generally, strongly negative hedonic tone and potentially of strong intensity at source within the sheds, particularly when disturbed during removal.
Birds	Sheds	Moderately negative hedonic tone. Likely to be of lower intensity than manure odour emitted from the sheds.
Spoiled feed	Feed storage silos, feeding areas within sheds	Low potential for occurrence if feed is well managed.
Diesel exhaust	Standby generator	Moderately negative hedonic tone. Low Intensity at source and likely to be operated only infrequently.

62. The AEE notes that the applicant has implemented a range of new odour control measures, since the current consent was granted.

63. The AEE notes the applicant utilises an array of measures to manage odour emissions and mitigate the potential for off-site nuisance impacts. These measures are principally directed at minimising odour generation through control of moisture content and temperature of manure, to reduce the potential for anaerobic degradation. Specific measures employed at the site include:-

- Computerised climate control based on continuous monitoring and maintenance of temperature and humidity levels within the shed. Prior to 2013, automated control of shed climate appears to have been limited, with no direct control of humidity levels. Older poultry sheds used to feature natural ventilation with little control over humidity levels.
- In relation to heating of the sheds, AFT has installed additional insulation to more effectively maintain internal temperatures, with fewer emissions from the sheds. A direct-fired shed heating system is still employed involving direction of heated exhaust gases from externally mounted heaters into each shed. I note that this type of heating is more likely to increase shed humidity than indirect heating methods, which provide dry heat, and that the applicant proposes to replace it.
- Avoidance of direct introduction of water onto litter, both on an on-going basis through use of nipple drinkers to avoid drip losses, and the continuous monitoring of water usage and auditing of sheds five times a day to detect unintentional leakage.
- Feed quality can influence odour generated from manure. The dry pellet feed used at the site is supplied by Tegel and is consistent across poultry operations across Taranaki and other regions of New Zealand.
- Mortalities are removed from the sheds on a daily basis and stored frozen before disposal offsite.
- The potential for odour emissions will increase during shed clean-out at the end of a batch, and in order to clear the sheds efficiently, the sheds are cleared sequentially, thereby minimising the potential for simultaneous (and therefore cumulative) emissions. Manure is removed from the site by specialist contractors as it is cleared from the sheds and is not proposed to be stored, composted, or spread on-site.

- Mature screen vegetation along the boundaries of the site will reduce wind velocities through the site and consequent disturbance of litter (leading to generation of dust and odour emissions) during clean out. The planting and windbreak netting also provides visual screening of the site from neighbouring properties.

64. The odour management regime at the site features a number of modifications implemented by AFT since it took ownership of the site in 2013. Set out below is a list of improvements at the site by ATF since the existing consent was granted. Almost all of these will reduce adverse air quality impacts.

65. The improvements implemented are:-

- new doors on every shed to provide sealed air environments;
- insulation added and all gable ends re-clad to improve energy efficiency;
- new heating system in each shed consisting of 3 x Hired Hand externally mounted gas fired heaters per shed;
- new feeding and drinking system in each shed;
- LED lighting - Hato LED lighting added to each shed to create natural daylight spectrum and dawn to dusk lighting patterns;
- Agrologic Controllers per shed which control all ventilation, heating, feeding, drinking lighting, humidity and alarm systems;
- fans - additional fans added to each shed to increase ventilation capacity and provide greater flexibility with air control.
- replaced all side vents with like for like to make the sheds more airtight.
- generator - replaced old generator with new 100 kVA alarmed generator, to increase reliability.
- alarm system - installed new alarm system and back up for each shed and farm as a whole. This works in conjunction with the new Agrologic Controllers.
- concrete floors - major concrete floor repairs in each shed, some areas replaced, some patched.
- roading - new track installed around back of Shed 3 and 4 so that trucks are able to perform a loop of the farm. This reduces trucking movements, vibration, and noise.
- misting system installed on each shed to aid with cooling of air in sheds on very hot days.
- electrical boards - all boards upgraded in each shed to remove old fuses and switches, improving reliability.
- in shed camera network - cameras installed in each shed to allow real time monitoring of birds and also visits from catchers, shed cleaners and staff.
- nib walls on each shed sealed with concrete waterproof sealant to make the sheds less likely to bring moisture into shed through concrete.

66. The majority of modifications will have mitigated the potential for nuisance impacts on neighbouring properties. With those measures in place, a high standard of odour management is employed at the site.

67. A further modification to the operation is the proposed conversion from conventional to free range broiler operation. This has the effect of lowering both the stocking density and the total capacity of the operation, and allows for the chickens to range for at least part of the time. I note that in addition to these benefits, allowing birds to range outside the sheds during the second half of their rearing cycle will significantly reduce the need for forced ventilation of the sheds for cooling purposes at this time, thus reducing the volume and duration of the potentially odorous exhaust plume and the concentration of odour downwind.

68. Each of these factors thereby reduces the amount and loading of manure deposited in the sheds, which in turn should in turn result in a substantial reduction in the intensity of odour emitted from the sheds.

Site inspections

69. I visited the subject site on 16, 19, and 21 September, 5 October, 26 November, and 1 and 2 December 2021, as well as another free range broiler farm operated by the applicant in mid-September. There were also a number of inspections by other Council officers during this period, whose reports I have referenced.

70. The applicant operates a second, much larger (consented for up to 480,000 birds) free range broiler rearing operation located at Midhirst, Taranaki, since 2017. The consent for that site was granted on 9 March 2017. I have inspected that operation as well as the operation under assessment, accompanied by the applicant. The visit was very informative as regards likely environmental effects that could be anticipated in future at the Airport Drive farm, should the consent be renewed and the new technologies and operational controls be implemented as outlined in the AEE and in subsequent discussions.

71. On 16 September, the birds were three days away from the first cull. Several exhaust fans were operating on each shed. Winds were fresh to gusty from the south to south-east. Odour in the accessway in between sheds 1 and 2 (downwind of shed 2), and adjacent to an exhaust fan, and inside one of the sheds, was in each location strong but not unpleasantly so, and I considered the observed intensity to be less than what I have experienced in other sheds in Taranaki. Boundary odour was negligible.

72. On 19 September, weather conditions were calm to a slight drift of air from the north, with overcast clouds. The typical chicken odour was initially noticeable when walking between sheds 1 and 2, but detection quickly faded to unnoticeable during the remainder of the time spent walking around the outside of all the sheds.

73. On 21 September, it was confirmed that the sheds were at their maximum stocking intensity. A first cull of birds had already taken place. Winds around the sheds were generally from the NE, although it was observed that clouds were moving from the west. Typical chicken shed odours were distinct between and downwind of the sheds.

74. A number of new measures were already being implemented at the site, and the applicant confirmed further changes were planned. Ambient temperature fresh air drawn in from ground level (to gain maximum cooling benefit) is to be blended with recirculating air via the installation and use of more efficient internal fans than is currently the case. This circulating down-draught will ensure complete mixing of air within the sheds, avoids any localised accumulation of waste gases, encourages a more even distribution of birds across the full shed floor and avoids local accumulations of bird wastes, and keeps the litter in a dry state.

75. The applicant has further advised the Council, after the application was lodged, that in future heating will be provided by a separate hot air system, whereby either fresh air or recirculated shed air or any combination of both is blown through a hot water radiator system instead of via the current gas-fired heaters (that introduce extra moisture into the shed atmosphere, to the disadvantage of air quality). Air quality is to be maintained by automatic sensors monitoring relative humidity, carbon dioxide and ammonia concentrations, to optimise bird health through providing dry fresh air. This new system will offer the advantages of minimising the volume of air expelled from the shed and the amount of moisture that would otherwise be generated or retained in the shed atmosphere and in expelled air flows.

76. The 7 side wall expulsion fans are to be completely replaced with 3 centreline roof mounted vertical fans for each shed, with extra structural height provided to the point of release via the increased-length roof stacks. These roof fans will be located towards the southern end of sheds 3 and 4 to increase the separation distance from the nearest offsite dwelling house. This height and horizontal separation will substantially reduce offsite odour intensity by generating extra dilution prior to ground-level impingement. It is noted that wind speeds, and hence dilution of discharges, are substantially greater several metres above ground level than near the ground surface. The current side wall exhaust fans discharge below a height of two metres and horizontally- a worst case scenario for offsite impacts on nearby residents. It is planned that the new centreline roof fans will discharge at a height of seven metres.

77. The sidewall fans currently in place are spaced at equal intervals along each wall. The applicant has advised the Council that the roofridge fans, in addition to being elevated to a height that eliminates downdrafts and enhances initial mixing, will be located towards the ends of sheds that are more distant from neighbours than the nearest wall fans.

78. As a starting point I note that dilution and dispersion downwind from a steady-state point source tends to follow an inverse square ratio[2]. The plume disperses laterally and vertically along the axis of travel. As a first approximation, doubling the distance between source and receptor reduces the received concentration down to one-quarter of its original strength; trebling the distance reduces the plume strength at point of impact to 1/9th, and so on. The applicant has confirmed the final placement of each new roof fan on Shed 3 will be at a minimum distance of 100 metres from the dwelling house at 62 Airport Drive. I have estimated that this measure should reduce the odour strength at the nearest offsite dwelling house down to roughly 1/3rd of

[2] Eg *Good Practice Guide for Atmospheric Dispersion Modelling,* prepared by NIWA for Ministry for the Environment, June 2004, figures 2.2 and 2.3 in section 2

current levels, based on the increased separation compared with the current distance from the nearest sidewall fan, as well as reducing the total duration of odour perception episodes.

79. The applicant has confirmed and Council staff have observed that bird capture and litter removal is via the end doors furthest from the road and the majority of offsite dwelling houses for sheds 1 and 2, and via the doors and pad between sheds 3 and 4, to ensure these operations are conducted at the greatest practical distance from neighbours on each side.

80. The applicant has advised that Osflo have offered flexibility in the timing of litter removal, and the Council has been provided with confirmation of this arrangement in writing. This is the most critical operation in terms of the intensity of odour release, for any stage of the rearing cycle. The new arrangement creates the potential for aligning the timing of litter removal with the weather conditions least likely to impact nearby residents. Such flexibility has not been provided for any other broiler operation in the region, and sets a new level of environmental control.

81. The applicant advised Council officers of his intention to place misting devices on all exhaust fans and above the end shed doors through which birds and litter are removed. This technique is again novel in Taranaki. Works to this effect were observed to be already underway on 21 September 2021, and were substantially complete except for fine-tuning by 1 December. We anticipate that use of this technology will noticeably reduce concentrations and mass discharges of ammonia or ammoniacal-type odours and dust emissions beyond the sheds.

82. There is the option of adding proprietary deodorants, odour neutralisers, or disguising agents into the misting water. The experience of these elsewhere by Council staff is that the latter may be of limited or little benefit. However, deodorants (chemicals that can react with the odour-carrying substances within a discharge, reducing their concentration and the overall strength of odour in the emissions) have more credibility, and good practices around their safe usage and recommendations for point of application, applied concentration, and methods of injection, are recognised within the air quality management sector.

5. Sensitivity of the receiving environment

83. The supporting documentation notes that due to infrequent occupation and potential for agricultural background odours, pastoral and cropping activities in the neighbourhood are relatively insensitive to odour. However, sensitivity to odour will be elevated at the rural residences in the area, where consistent human occupation is likely, and expectations of amenity will be higher, to the extent consistent with residences in a rural setting.

6. Description of existing environment

84. Surface winds in the area are strongly influenced by the orientation of and proximity to the coast and terrain (particularly the location relative to Mt Taranaki). The prevailing wind directions in the area (as monitored at the airport) are shown in Figure 2 below. It should be noted that the wind rose shows the direction from which the wind is coming.

85. The applicant's AEE included a wind rose for the broiler farm derived from meteorological data collected at the airport, which is only 1.7 km away to the north-north east of the site. Given the proximity of the station to the site, we agree with the applicant's consultants that wind speeds and directions measured at the airport are likely to provide a good representation of wind conditions experienced at the site. The wind rose below has been collated by Council officers, and covers a different time period to that supplied by the applicant. However, the outputs are very similar (as to be expected after allowing for long-term climatic cycles that drive fluctuations in New Zealand's weather patterns). The applicant's AEE also shows a finer resolution of wind directions than the Council's data.

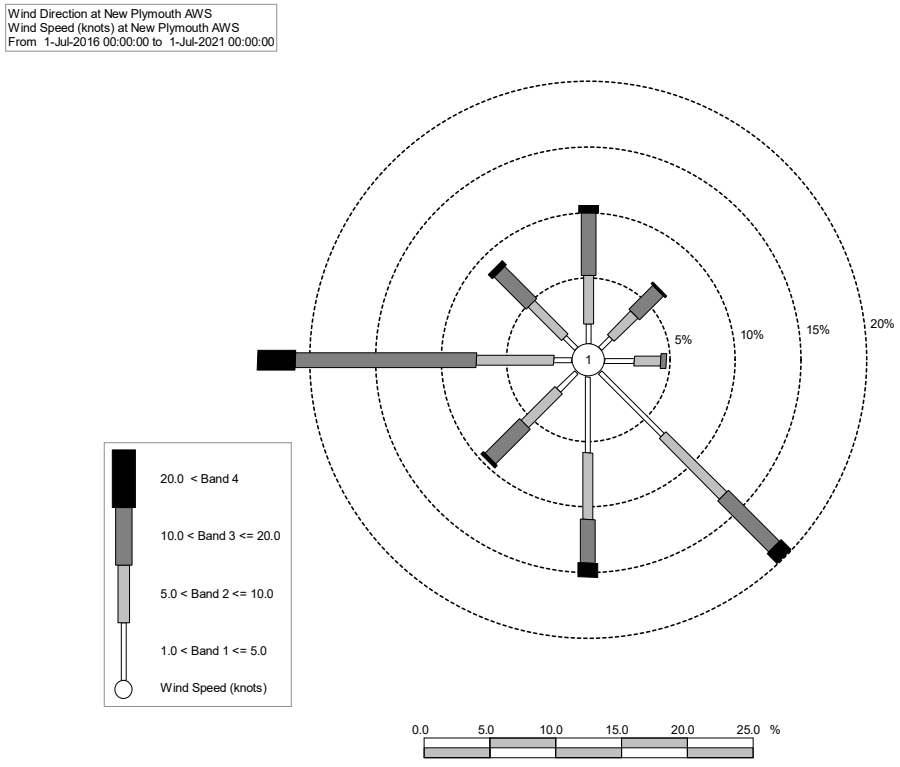

Figure 2 Wind rose for New Plymouth Airport

86. Temperature inversion conditions may occur overnight in clear, calm weather and produce calm, stable atmospheric conditions in which odour dispersion will be poor and the potential for accumulation of odour high. In these conditions, katabatic drainage flows will likely gently push air and accumulated odour from the sheds down gradient, in this case towards the east of the site and down the Mangaoraka Stream (i.e. away from the nearest houses). The frequency of inversion conditions in this coastal area is likely to be low compared with inland areas.

87. The low frequency of calm conditions (about 1%) and relatively high average wind speed (above 10 knots, or 5.3 ms^{-1}) indicate the airport site is reasonably breezy, and similar conditions are likely to exist at the site given the topography along the coastal strip and its proximity to the airport.

88. The most common wind direction is from the west, which would carry emission from the site's operation across land free from dwellings. However, there is also a strong prevalence of wind from the south to southeast directions particularly in relation to calm to light winds of less than 5 knots or 3 ms^{-1}, in which odour dispersion is poorest. This reflects the deflection by Mt Taranaki of winds from the southerly quarter to the south-easterly quarter, south-easterly drainage of cold air from the slopes of Mt Taranaki, and night-time land breezes.

89. While there is a prevalence for westerly winds at this location, the significant majority of wind from this direction is of reasonably high speeds (greater than 10 knots or 5 ms^{-1}), and therefore quite dispersive and diluting.

90. In terms of dispersion of emissions that might be odorous offsite, these are more likely when winds are towards the north-west. The nearest dwelling is to the north (62 Airport Drive; 55 m from the nearest corner of the poultry sheds). While winds from the south are not as common as those from the south-east and west, they are typically weak (and therefore poor at dispersal). Across the south to south-east octants, calm to light winds prevail for an average of around 13% of the time, or around 25 hours per week (which averages out to 3 hours per day). Light wind speeds in other directions are rare (equivalent to around 1 hour per week).

91. The poultry farm is located amongst lifestyle blocks and small land holdings to the east of Bell Block (Figure 3). The poultry farm has existed on the site for some 40 years. It was first issued with an air discharge permit in January 1998 and since that time there has been a steady increase in the density of housing in its vicinity. There are 16 houses within 300 m of the poultry sheds, several of which pre-dated the sheds. Dwellings within 300 m are shown in Figure 4.

92. The site lies in the Future Urban Development zone under the Operative New Plymouth District Plan (ONPDP) and Special Purpose - Future Urban Zone under the Proposed New Plymouth District Plan (PNPDP). Adjoining properties on the east side of Airport Drive feature the same zoning. This highlights the future intent of the NPDC for eventual urban development of the area, though it is noted that no structure plan has been released to confirm this intent for properties east of Airport Drive, and decisions on any zoning change lie in the future and cannot be assumed.

93. The area to the west of Airport Drive (Area Q) was rezoned as Residential A Environment Area in 2014 through a statutory change to the New Plymouth District Plan. As a result, the 'Area Q Structure Plan', a staging plan (Figure 5), and provisions enabling the development of Area Q for residential activities, were included in the Operative District Plan.

94. Residential development near Airport Drive has been influenced by the presence of AFT's poultry farm and specific air quality provisions of the Regional Policy Statement (RPS). The RPS includes the following policy:-

AQU POLICY 3

Land use and subdivision should be managed to avoid, remedy or mitigate adverse effects on people and the environment from reverse sensitivity effects arising from the inappropriate location of sensitive activities in proximity to legitimate activities discharging contaminants to air.

Figure 3 Location Map

Appendix A: Dwellings located within 300 m of the sheds

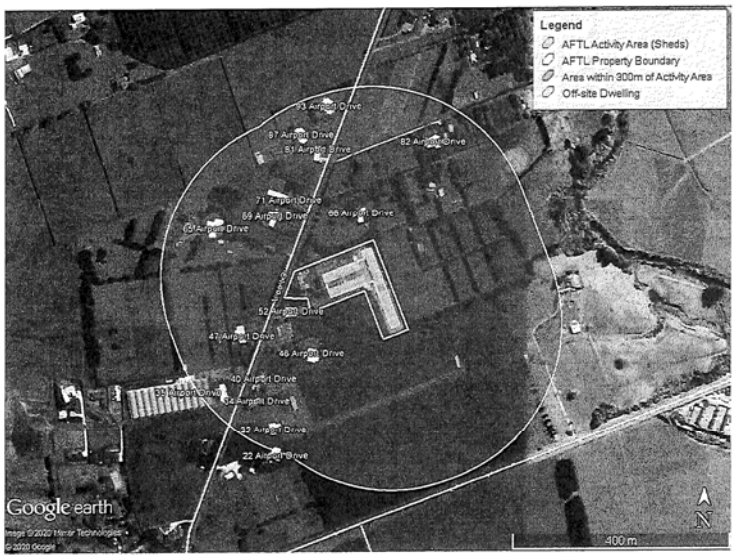

Figure 4 Residential dwellings within 300 metres of the sheds (from T&T 2021)

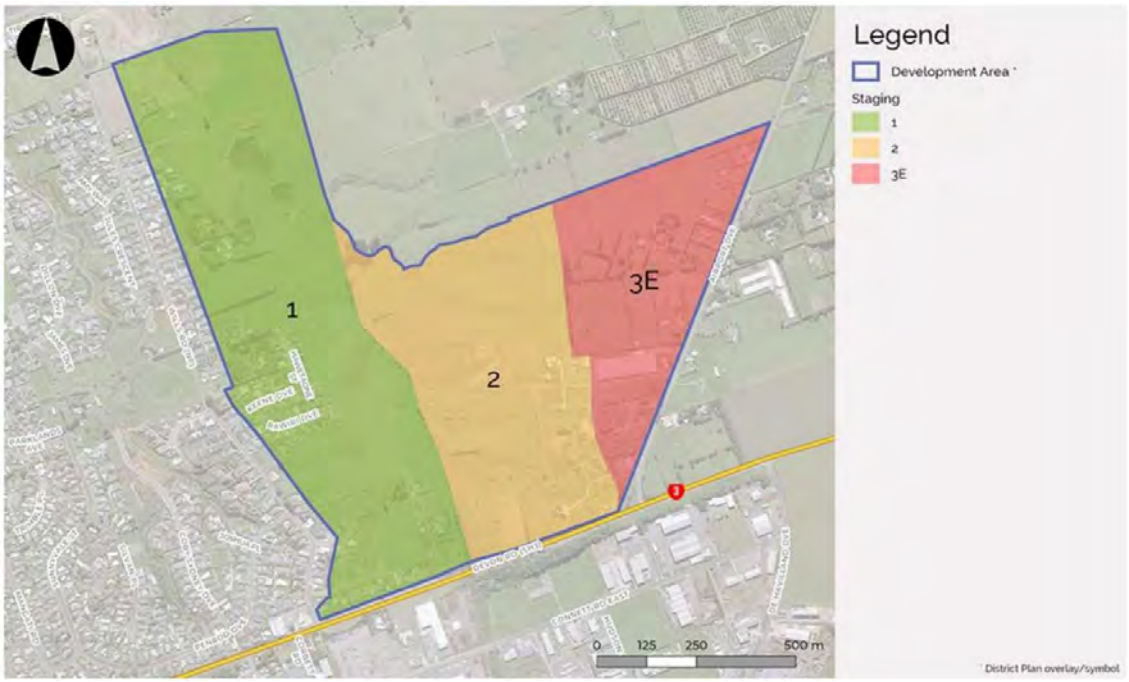

Figure 5 NPDC Area Q Staging Plan (from PDP)

95. Area R, on the eastern side of Airport Drive and including AFT's property, is currently identified in NPDC's Housing and Business Capacity Assessment (HBA) 2019 as being available for urban development in the long term (after 2028). Under the NPDC proposed district plan (PDP) Area R is zoned as 'future urban zone'. A future urban zone has been identified as being suitable for eventual urbanisation (eg residential or commercial). When and if the land is ready to be developed for urban purposes, it will need to be rezoned to enable that to occur and a structure plan will be required before it can be developed. Until such time, land within this zone may be used for a range of agricultural, pastoral and horticultural activities.

96. Structure plans will be required to ensure areas within the Future Urban Zone transition successfully and efficiently into urban areas and that all the effects of development are assessed and addressed in advance of development occurring. The staging plan developed through the change to the Operative District Plan restricts residential development within Stage 3E (the area that abuts the AFT property) as a prohibited activity until Area R (the eastern side of Airport Drive) is presumably rezoned after a future statutory plan change process and its resolution, and Airport Drive realigned. A large proportion of Stage 3E is less than 300 m from AFT's poultry sheds and the current prohibition is, in part, to address and avoid the reverse sensitivity concerns, given the potential for sensitive activities to otherwise establish in proximity to the poultry farm.

97. A subsequent plan change was made in 2017 to enable a limited amount of residential development in Stage 2 of Area Q in a timely manner. This plan change allowed for 30 habitable buildings to be developed where access is obtained from Airport Drive. NPDC's HBA was developed in accordance with the National Policy Statement on Urban Development Capacity (2016) (see Appendix 2 for further discussion of the NPS-UDC).

98. Area Q represents 17% of the District's short and medium term land supply needs. This assessment identifies Stage 3E of Area Q being available for residential development, once sufficient infrastructure is in place to support the development. The required infrastructure relates to the realignment of Airport Drive, which is planned to take place by 2024. Objective FUZ-02 of the PDP says that until rezoning for urban growth purposes occurs and the area to be rezoned is comprehensively planned by a structure plan:

- urban growth is avoided within the future urban zone areas; and
- the zone is predominantly used for agricultural, pastoral and horticultural activities and low density rural living activities.

99. As explained above, the application site has been earmarked for future residential activity, however this requires a zone change and is some time away. The NPDC proposed plan (which has a lifespan of some 10 years) does not seek to rezone the site to residential. AFT need to continue to have business certainty and freedom to operate its existing farm which has had significant financial and infrastructure investment in it.

100. The National Policy Statement on Urban Development Capacity (2020) has also been considered (refer Appendix 2 attached).

101. Some details of the nearest dwellings to the sheds are shown in Table 1 below.

Table 1 Distance from neighbouring dwellings to closest shed

Properties downwind under prevailing winds that have poor dispersion are shaded

Name of property owners within 300 metres	Address	Distance from nearest shed (m)	Dwelling pre-existed poultry operation	Property owner new since consent last issued	Serve notice under Rule 52	Direction from sheds
K & J McDonald	62 Airport Drive	55*	✓		✓	N
NPDC	52 Airport Drive	65	✓	✓		WSW
Williams/McKay	46 Airport Drive	100	✓	✓		SW
C & J McDonald	69 Airport Drive	130	Dwelling built after 12 January 1998	✓		NW
Hotter/Waite	71 Airport Drive	143		✓		NW
GJ Elliot	76 Airport Drive	146	✓		✓	NE
NT & LF Hibell	47 Airport Drive	170	✓		✓	WSW
Crow	65 Airport Drive	185	✓	✓		NW
R & K Brown	40 Airport Drive	190	✓		✓	SW
G & M Struthers	82 Airport Drive	215				NE
EJ & WAB Mowat	87 Airport Drive	230				N
NPDC	34 Airport Drive	230	✓	✓		SW
P3 Development Trust	32 Airport Drive	240		✓		SW
Jensen/Poppas Peppers (i)	35 Airport Drive	255	✓		✓	SW
ID & GJ Hobday	93 Airport Drive	260				N
Estate SE Erb &JA Erb	22 Airport Drive	302	✓			SW

Notes:
* distance from poultry shed to house- 40m distance to shed on 62 Airport Dr
i. The property at 35 Airport Drive was owned by K&C Jensen when the existing consent was issued. It was then sold to Poppas Peppers. Mr Jensen still lives nearby and is a major shareholder of Poppas Peppers

7. Iwi advice and consultation

102. The Council's practice is to send a copy of every application for resource consent to the relevant Iwi authority. Puketapu hapū of Te Atiawa commented about this application and the associated discharge to land for shed washings. They aligned the applications with their Environmental Management Plan. The specific comments about the air discharge were that Te Atiawa requires:

- consent holders to manage discharges to air and atmosphere on-site; and
- site-specific native planting programmes to off-set the effects.

103. The effects of this discharge are managed on-site to the extent that it is practical to do so using modern technology and management practices. The site is well planted and although the plantings are not native, they do mitigate effects as far as practicable. It is not practicable to replace the existing planting with natives. The Mangaoraka Stream, which is a statutory acknowledgement, and a pa site are located about 400 m to the east of the sheds.

104. The discharge is not within or adjacent to the Mangaoraka Stream and at a distance of 400 m does not directly affect it. Similarly, it does not affect the pa site.

105. Te Atiawa indicated a wish to be treated as an affected party. However, after having regard for the statutory acknowledgement, and assessing the effects of the discharge and the specific comments about effects that they provided, the Consents Manager when making the notification decision was satisfied that any effect on Te Atiawa would be less than minor.

8. Notification

106. The Council's Consents Manager determined that the application be 'limited notified'. The notification provision of rule 52 identified the owner/occupiers of five dwellings that were to be served notice of the application. They were:

- K & G McDonald, 62 Airport Drive;
- R & K Brown, 40 Airport Drive;
- GJ Elliot, 76 Airport Drive;
- NT & LF Hibell, 47 Airport Drive; and
- Poppas Peppers/K & C Jenson, 35 Airport Drive.

107. These persons were served notice of the application and given the opportunity to make a submission.

108. Submissions were lodged by all five parties. In some instances, submissions were supplemented by commentary from other parties. All material provided to the Council has been considered in the preparation of this report and its recommendations.

109. Following legal proceedings arising from the limited notification process, the Council and applicant confirmed that they would have no objection to other landowners in the vicinity of the poultry farm providing evidence at the hearing in support of one or more of the submitters noted above.

9. Submissions

110. All submissions followed the same general wording in making the same points, with very minor variations within individual submissions. The relevant points of each submission are summarised below.

9.1 Kevin and Glenis McDonald (62 Airport Drive)

111. Kevin and Glenis McDonald share the northern and eastern boundary of the site with their 16 acre life-style block. They have lived at this address since September 1994. They operate a business from the property. The McDonalds oppose the application and want the Council to refuse the consent. The key points of the submission are:

- AFT has a poor compliance record as experienced by themselves and other neighbours;

- odour and dust from the operation affect their mental and physical health and wellbeing;
- a lack of acknowledgement in the application of the occasions when they have raised dust and odour issue with the site operator;
- there is a strong and reasonable expectation that the consent wasn't going to be renewed beyond 2026. A number of parties, including themselves, have relied on this in their future planning, such as having bought land with the expectation to subdivide;
- they believe that the consent should have been publicly notified;
- the consent also proposes to change the operation but the environmental effects of the changes haven't been assessed. Residents excluded on the basis of having already provided consent in earlier applications cannot automatically be assumed to provide a blanket approval for changes of operation; and
- the proposal is inconsistent with the provisions of the relevant RMA planning documents. In particular, the applications should be notified and processed under Rule 53 of the RAQP as a new activity, not under Rule 52 as a renewal of an existing activity.

112. The submitters note that they have consent to speak on behalf of the following other parties who were not notified: Brent Dodunski (32 Airport Drive); Nigel Williams (46 Airport Drive); Don Crow (65 Airport Drive), and Gavin & Marion Struthers (82 Airport Drive).

113. With regard to the current consent, the submitters further requested that:-

- the site operator not be allowed to extend the free range to outside of the shed until an AEE is made, and control measures associated with the new risk have been identified and implemented;
- the Council review the effectiveness of AFT's existing control measures to ensure improved compliance with current consent conditions, which allegedly are being breached on a regular basis;
- the Council monitoring program be improved to better and more regularly capture the ongoing concerns of residents of Airport Drive;
- AFT be required to keep all written records of complaints for longer than six months and present these to the Council at the appropriate review dates;
- AFT to provide complainants with a copy of a record of their complaint each time a complaint is made; and
- they should be included in the information loop and kept informed on these actions and their progress.

114. It is noted that because the matters listed in paragraph 113 relate to the existing consent and the Council's practices in respect of monitoring and reporting, they lie outside the scope of any further consideration of the consent renewal application and are not addressed further in this report.

115. The submitters wish to be heard in support of their submission.

9.2 Poppas Peppers (35 Airport Drive)

116. The wording of this submission, presented by Sue Jensen-Gorrie, followed that of the McDonalds (see above).

117. More specifically, the submission also noted:-

- the odour effects are causing loss of amenity value of air in the surrounding environment in which we live; and
- the odour/dust effects and emissions are offensive and objectionable beyond the applicant's site boundary and are having (and will continue to have) more than minor adverse effects on us and in the receiving environment in which we live.

118. It was accompanied by a letter from Dennis Wade and Stacey Jensen-Wade of 29 Airport Drive. The letter alleged multiple non-compliance events with the existing consent, and adverse effects on the health of their children (asthma).

119. The submitters wish to be heard in support of their submission.

9.3 Karen and Rod Brown (40 Airport Drive)

120. The wording of this submission followed that of the McDonalds (see above).

121. The submitters further noted:

- our personal experience is that emissions from the AFT site occur regularly, the offensive and objectionable odour and dust affect our ability to enjoy outdoor living and activities, especially in a northerly wind. During such episodes of odour, we cannot hang out our washing, if it's already out we need to get it in. The fowl odour clings to our clothing and needs rewashing;
- during a northerly wind when the stench is at its worst, we have to turn off our HRV and shut the windows to isolate ourselves from the offensive and objectionable environment. Even then it takes a while to dissipate; and
- the evening shed clean outs are particularly objectionable, we do a lot of work/hobbies in my shed in the evenings but it is unbearable on these extremely offensive days. The odour lingers inside if the door is open and is annoying, we have to shut the door even when its warm and we want fresh air.

122. The submitters wish to be heard in support of their submission.

9.4 Graham Elliott, Carla Williams, and Tenisha Elliott (76 Airport Drive)

123. The submitters live to the north-east of the site, approximately 250 metres from the chicken sheds boundary. The wording of the submission followed that of the McDonalds (see above).

124. More specifically, the submission also noted:-

- the odour has tainted washing, which has resulted in many a rewash over the years;
- outside occasions have had to be cancelled because of the foul smell. Planning these events is a legitimate nightmare; and
- the prevailing wind in New Plymouth is South West, which brings the odour directly to our residence

125. The submitters wish to be heard in support of their submission.

9.5 Neil and Lloma Hibell (47 Airport Drive)

126. The wording of the submission followed that of the McDonalds (see above).

127. More specifically, the submission also noted:-

- when entertaining family and friends we hope that the events won't be spoiled by odour;
- NPDC is in the process of changing the zoning of our land to Residential from Rural. If the chicken sheds are to remain this severely impacts the future development of our property into residential sections for housing, as people will not want to reside near the sheds with the odour that we currently experience; and
- healthy homes standards suggest ventilating our homes by opening our windows which we do, however we often return to find the chicken shed odour is evident in our house.

128. The submitters wish to be heard in support of their submission.

10. Assessment of environmental effects

10.1 Existing environment and permitted baseline

129. The effects of an application must be assessed against the existing environment. The existing environment, which is described above, includes both consented activities and other activities (not being fanciful) that are allowed without consent.

130. Activities allowed without consent are those specified as 'permitted activities' by planning documents (e.g. regional and district plans) along with activities that are either allowed or unregulated by the Resource Management Act 1991 (RMA). The effects of these activities are termed the 'permitted baseline'.

131. The RAQP permits a number of rural discharge activities if the discharge does not result in offensive or objectionable odour or dust at or beyond the boundary of the property. Some of the activities allowed by rules in the RAQP are: storage of waste, limited use of agrichemical sprays, storage and spreading of fertiliser and soil conditioner including chicken litter, composting on a residential scale, effluent ponds, effluent irrigation, feed pads, sewage treatment, pig farms with less than 25 pigs, and poultry farms with less than 30,000 birds. Other activities on production land that may cause odour, such as storing and feeding out silage, are unregulated.

132. Odours from the activities described above are allowed and can be expected in the vicinity of this discharge. These odours, both existing and those not unreasonable to expect in future, are included in the existing environment and therefore provide a context within which the effects of this application must be assessed.

10.2 Effects assessment

10.2.1 Emissions from broiler farming

133. Broiler chickens in commercial scale activities are raised on litter beds, typically comprised of wood shavings. The bedding absorbs moisture from urine and droppings, maintaining a dry and odour-reduced environment. During the rearing cycle, odour release is relatively low. Birds are kept in semi-darkness, in order to minimise movement and stress. This has the added benefit of reducing disturbance of the bedding litter. Air flows and discharge points are readily controlled during housed chicken rearing. Ammonia generation increases progressively during the rearing cycle. However, litter disturbance and the period of greatest release beyond the sheds is unavoidable at two key stages of broiler rearing: during bird capture, and when the sheds are being emptied of soiled litter ready for sanitisation and litter replenishment.

134. The experience of Council officers over the last thirty years is that the only offsite environmental effect of significance resulting from broiler rearing is that caused by the release of offensive odour. Odour is a significant potential effect of poultry farms; the effects of offensive odour must be avoided or mitigated. The observations and experience of Council officers is that odour discharge points may potentially be from the shed doors when they are open during clean out or from shed vents.

135. The primary chemical substances emitted from and the characteristic odour of poultry farms are typically associated with the sharp, pungent smell of ammonia, derived from faecal matter. Globally most attention on broiler farming emissions is focused on the generation, detection, measurement, and reduction of ammonia itself. It is caused by the bacterial decomposition of urine, protein, and faeces. However, many other compounds are also present in the emissions, generally nitrogen or sulphur-based (eg skatole, phenols, amines, indoles, cresol, and fatty acids[3]). Further, ammonia rapidly dissolves into moisture, and so ambient humidity will have a bearing on pathways to and degree of effect upon recipients.

136. Therefore, assessments of effects that are based solely on whether concentrations of ammonia offsite satisfy threshold criteria based on toxicity, or even on odour thresholds derived for pure ammonia gas, do not necessarily present the full picture.

137. It should be noted that it is in the interests of the operator to minimise ammonia within the atmosphere of the sheds, as well as to avoid offsite effects, as elevated ammonia reduces feed intake and impedes bird growth rates, damages the respiratory systems of birds, and increases susceptibility to viruses and infections[4].

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[3] *Reducing air pollution from broiler farms*, C Hidayatr et al, Earth and Environmental Science 788, at iopscience.iop.org/article/10.1088/1755-1315/788/1/012150/pdf

[4] *Emission of harmful gases from poultry farms and possibilities of their reduction* Jan Broucek and Bohuslav Cermak, in Ekoloia (Bratislava) 2015

138. Council measurements in broiler sheds elsewhere typically find 15-20 ppm ammonia levels. Recognised concentrations[5] of ammonia that give rise to various effects are as follows:-[6]

5 ppm: odour detection (although there are records of individuals being able to smell ammonia at much lower concentrations, such as 1 ppm or even lower than 0.1 ppm, or alternatively surveys of community odour detection thresholds found detection to be much higher[7]).

30-100 ppm (exposure periods 10 minutes - 8 hours): mild irritation of tissues in upper respiratory tract; odour annoyance.

110 ppm (exposure period 8 hours) - 220 ppm (exposure period 10 minutes): moderate to intense irritation to eyes, nose and throat; urge to cough.

390 ppm (exposure period 8 hours) - 2,700 ppm (exposure period 10 minutes): unbearable irritation, and chronic, irreversible, and/or potentially lethal effects.

10.2.2 Record of assessments by Council officers of emissions and emission controls

139. Council officers have undertaken assessments of ammonia and of odour at the Airport Drive broiler farm on a number of occasions, involving several different staff. Ammonia measurements were made using both a hand-held device capable of instantaneous analyses, and a continuous monitor located on the farm boundary downwind of the sheds under critical meteorological conditions, throughout a complete broiler raising cycle.

140. All Council officers undertaking these site visits and assessments have had their sensitivity to odour independently assessed ('nose calibrations').

141. On 12 August 2021, the litter in the sheds was being cleaned out. The wind was blowing from the west. An inspecting Council officer detected no odour around the site apart from when standing directly next to a litter pile.

142. On 20 September, another Council officer attended the site to make measurements of ammonia and to observe air quality during a bird capture. The wind was blowing from the west. Bird capture operations were continuing throughout the officer's inspection and sampling. The only noticeable odour detected by the officer was when standing directly outside (within 5 metres) an exhaust fan. No odour was detected generally about the site near any site boundary. Ammonia measurements were taken.

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[5] Acute Exposure Guideline Levels, National Centre for Biotechnology Information, United States National Institutes of Health, at https://www.ncbi.nlm.nih.gov/books/NBK207883/, and Observed effects of ammonia, Table A1.4, *Odour guidance 2010*, SEPA, at https://www.sepa.org.uk/media/59919/sepa_odour_guidance.pdf

[6] Acute Exposure Guideline Levels, National Centre for Biotechnology Information, United States National Institutes of Health, at https://www.ncbi.nlm.nih.gov/books/NBK207883/, and Observed effects of ammonia, Table A1.4, *Odour guidance 2010*, SEPA, at https://www.sepa.org.uk/media/59919/sepa_odour_guidance.pdf

[7] eg https://www.ccac.ca/Documents/Standards/Ammonia.pdf , and https://www.osha.gov/sites/default/files/2019-03/fs5-howsmelly.pdf

The results were:-

- Site 1 (north-east property corner, between Kevin McDonald's property and the sheds): 0ppm.
- Site 2 (within 0.5 m of operating extraction fan): 10ppm.
- Site 3 (within 1 m of the opened entrance to shed, immediately post catch): 0ppm.

143. On 24 September, a third Council officer detected only minimal odour generally around the suite. It did not have a distinctive character. Odour was more noticeable directly in front of an exhaust fan that was operating at the time. The wind was blowing from the west. Ammonia measurement were taken. The results were:-

- Site 1 (north-east property corner, between Kevin McDonald's property and the sheds): 0ppm.
- Site 2 (next to an operating extraction fan): 7ppm.
- Site 3 (entrance to bird catch shed): 0ppm.

144. On 29 September, a Council officer undertook odour assessments and ammonia measurements during a bird capture operation. The wind was blowing from the west to south-west. While there was a weak poultry odour for approximately 5 m downwind of the open shed doors, this was not offensive or objectionable, and no odour was discharging beyond the boundary. The results of the ammonia analyses were:-

- Site 1 (north-east property corner, between Kevin McDonald's property and the sheds): 0ppm.
- Site 2 (within 0.5 m of active extraction fan): 1ppm.
- Site 3 (entrance to shed within 1 m post catch): 0ppm.

145. On 1 October, the wind was blowing from the west. A Council officer undertook ammonia sampling during an active catch and found the following:-

- Site 1 (north-east property corner, between Kevin McDonald's property and the sheds): 0ppm ammonia. No odour was detected.
- Site 2 (within 0.5 m of active extraction fan in a shed that contained litter but no chickens – this shed was closed and only 2 fans active): 4ppm noticeable (Council category 3) ammoniacal-type odour.
- Site 3 (within 0.5 m of active extraction fan in a shed being caught): 0.5ppm – 1ppm weak ammoniacal-type odour (Council category 1-detectable).
- Site 4 (7 metres from shed entrance during forklift movement as imaged below): 0ppm ammonia. A weak ammoniacal-type odour (category 1) was detected.

There was no odour detected discharging beyond the boundary.

Photo 1 Bird capture on 1 October 2021

146. On 5 October 2021 I attended the site during a litter removal operation. The inspection also gave the opportunity to observe use of the new misting devices in action. The system had been partially installed, with 9 misting nozzles placed above the exit doors that were being used for the transfer of used litter from inside shed 3 onto the forecourt in preparation for loading onto a truck.

147. The weather at the time was calm and very overcast, with occasional light spitting. There was no predominant wind movement, with the mist from the nozzles drifting in highly variable directions during the period of observation (1.5 hour), including for some time towards the north. As well as the access doors being open, one horizontal-flow extraction fan located midway along the side of the shed was being used to maintain the air quality inside the shed during litter removal, which was by bobcat-style excavator (see photographs 3 and 4)

148. Odour assessments were conducted along the eastern boundary and north-east corner of the site.

149. Odour was strongest opposite the extraction fan. At an observation point about 8 metres in line with the fan and several metres inside the windbreak boundary fence, odour was strong to intrusive, and persistent. Along the boundary and inside the fenceline, odour was noticeable, reducing to faint and intermittent at the north-east corner of the site. The plume of emissions seemed to be retained within and moving along inside the windbreak mesh.

150. Adjacent to the litter pile, odour was considerably less than beside the extraction fan even while the excavator was dumping each bucket-load onto the heap (photograph 4). At its strongest (noting that the air currents were variable), odour in the vicinity of the heap was characterised as noticeable but not intrusive or unpleasant. There were no visible dust emissions from either the litter heap or the extraction fan.

Photo 2 Misting nozzle

Photo 3 Misting cloud across end of shed, access door, and litter pile

Photo 4 Emptying the shed (5 October 2021)

Photo 5 Misting action (end doors)

151. On 5 October a second Council officer undertook ammonia sampling during the active litter removal operations, and found the following:
   - Site 1 (North-east property corner, between Kevin McDonalds and the sheds): ammonia concentration was 0ppm. No odour was detected.
   - Site 2 (3 m down-wind of the active cleanout machinery/shed door): ammonia concentration was 0ppm. No odour was detected.
   - Site 3 (within 1.5 m of active extraction fan in a shed being cleaned): ammonia concentration was 4ppm. Noticeable odour was detected.
   - Site 4 (ammonia sampling 2cm from the surface of a pile of litter that had just been removed from shed): ammonia concentration was 10ppm. Weak (1) odour at a distance of 1 m from the heap.

   No odour was found to be discharging beyond the boundary. The officer observed a trial of the misting technology operating along the sides of the rearing sheds, and was impressed with its performance in terms of covering the area of discharge plume.

152. On Wednesday 6 October, the Council received 3 separate complaints, lodged almost simultaneously around 3.30pm. The wind direction was from the north-east. Each alleged that the sheds were causing an offensive odour. A Council Investigating Officer attended the site within 45 minutes. One complainant advised that the smell had been continuous for 7.5 hours before they phoned the Council, but the odour had then dissipated. The officer inspected all sheds and confirmed all birds and litter had

been removed. He confirmed that there was no odour emanating from the site. Builders were undertaking renovations. Further investigation by the officer the following day confirmed that a contractor had spread chicken manure (supplied from the Osflo depot at Inglewood) between 0800-1200hrs on the day in question on a 20-acre section of farmland located on Mahoetahi Road, Bell Block, to the north-east of Airport Drive and upwind on the day in question. The contractor explained the product had been harrowed into the earth (buried) as it was applied. The officer advised complainants and AFT of the investigation outcome.

153. A second officer was called at the same time to an odour complaint concerning the odour coming from the paddocks neighbouring the poultry farm He identified that a chicken-type odour was coming from the paddocks, which was arising from used chicken litter being spread as a soil conditioner/fertiliser. The complainant agreed that the odour had dissipated at the time of on-site investigation, having been unbearable earlier.

154. It is noted that there is no connection between the activities covered by the air discharge permit held by AFL and the spreading activities of Osflo or contractors using Osflo product.

155. A further odour complaint was received on Tuesday 13 October, one week after the sheds had been emptied of birds and litter. In the morning, the light and variable wind was from the west, before backing around to come from the south. The inspection record for the investigation is as follows:-

> *Inspection undertaken after a complaint was received regarding chicken odour from a poultry shed on Airport Drive. Temperature was 14 degrees, with light south to south-westerly breezes with very intermittent northerly breezes. Odour survey undertaken at complainant's homes found a strong odour with the tones of sour, sweet and earthy. This was consistent with the odour of chicken manure based fertilizer and was not the odour associated with chicken sheds. This odour was found to be objectionable. Inspection of the poultry sheds found they were absent of birds or litter and was not causing any odour, however, the odour identified at the complainants was present here. Odour survey conducted at the Southern boundary of the sheds, found that the odour was likely emitting from activities undertaken by Osflo Fertilizers at the Southern boundary on the neighbouring farm. Odour survey found an objectionable strong manure, sour and earthy tone discharging on southerly/south westerly breezes. When intermittent northerly coastal breezes occurred, the odour was not present. Upwind odour survey taken from main state highway found no odour present on southerly breezes. Overall, at this time, Airport Drive Poultry are not responsible for the odour, and Osflo are in breach of rule 45 of the Regional Air Quality Plan for Taranaki.*

156. It is noted that the paddocks that were identified as the source of the offensive odour are owned by parties involved in the current proceedings and opposing the renewal of the AFL consent. One of the inspecting officers for the complaints on 6 and 13 October was the fifth Council officer to be involved with assessing air emissions from the Airport Drive poultry farm within the past few months.

157. On the morning of 19 November a Council officer undertook an inspection, ammonia measurements, and odour survey, at the conclusion of the first removal of birds. The winds were initially from the south (morning), before backing around to the west to north-west later that day. The officer found the following:-

- Site 1 (Between Kevin McDonalds and the sheds): ammonia concentration was 0ppm. No odour was detected.
- Site 2 (within 1.5m of active extraction fan in a full shed with misters running): ammonia concentration was 1ppm. Odour was noticeable.
- Site 3 (doorway of shed cleaned out this morning): ammonia concentration was 0ppm. No odour was detected.

The officer summarised the findings as follows: '*Noticeable odour was present on site around active fans on full sheds, however, no odour was discharging beyond the boundary of the property'.*

158. On 22 November a Council officer undertook an inspection, ammonia measurements, and odour survey, just 10 minutes after the completion of the second removal of birds. The weather was warm with light variable winds from the west, following overnight showers. The officer found the following:-

- Site 1 (Between Kevin McDonalds and the sheds): ammonia concentration was 0ppm. No odour was detected.
- Site 2 (at open shed doors of shed 2 that had been cut but still contained birds): ammonia concentration was 0ppm. A weak odour was detected.
- Site 3 (at open shed doors of shed 4 that had been cut but still contained birds): ammonia concentration was 0ppm. A weak odour was detected.

The officer summarised the findings as follows: '*Noticeable odour was present in central site in the general catch area, however, no odour was discharging beyond the boundary of the property.'*

159. Two days later, the Council received an odour complaint by email from Kevin and Glennis McDonald. They alleged that on the previous afternoon (i.e. the day following the Council officer's inspection and sampling described above), they were subject to '*odour emissions from AFT broiler farm operation*' that were '*extremely high, offensive and objectionable to our family gathering*', and that they had been subject to the odorous conditions '*over the past two days*'. The wind direction on the day in question was from the south.

160. Council staff noted that there had been no change in the status of the facility's activities since the Council officer's inspection undertaken on the day before the alleged odours. It was also noted that while, upon receiving this complaint, a Council officer was despatched to undertake a site odour survey, the complaint was unfortunately not lodged until around 16-20 hours after the event.

161. When arriving on site, the officer observed that the wind was blowing constantly from the west caused by the afternoon sea breeze. Odour de-misters were in operation. The odour was blowing towards the back (i.e. the eastern side) of the site, where there is an orchard on the adjoining property.

162. He then visited the neighbouring property and entered the orchard to assess the odour down wind. At the rear (eastern side) of the orchard, approximately 225m away from the boundary with the poultry farm, there was no detectable poultry type odour. The wind was swirling due to the shelter belts within the orchard. At approximately 110m from the boundary with a clear view of the boundary (i.e. only open paddock) he could detect poultry type odours (ammonia for example). An odour assessment was completed at this point and it was found that although the odour was intermittent, with periods of a minute or more with no odour, it was noticeable odour only. The odour intensity varied from very weak to distinct. There were no strong intensities. The assessment was carried out at 3.41pm.

163. Later that day at approximately 5.30-6.30pm the same investigating officer also attended a smoke incident on Airport Drive. At this time in the afternoon the sea breeze had ceased and the wind was back to flowing from the south east/east. There was no noticeable poultry odour at the time.

164. On 26 November a Council officer undertook an inspection, ammonia measurements, and odour survey, during the next removal of birds, which was from Shed 2 on this occasion. The weather was warm with light variable winds from the west to north-west. The officer found the following:-

- Site 1 (Between Kevin McDonalds and the sheds): ammonia concentration was 0ppm. No odour was detected.

- Site 2 (downwind of catch shed, approximately 2m from open door and at time less than 1m from active forklift): ammonia concentration was 0ppm. A weak odour was detected. There was a slight discharge of feather dander during movement of forklift but these landed within 3 metres of the shed and did not discharge beyond boundary.

- Site 3 (less than 0.5m from active fan on catch shed, Shed 2): ammonia concentration was 2ppm. Odour was noticeable but quickly faded. At one stage the forklift inside knocked some litter in to the fan and created dust for approximately 7 seconds but this was caught by shelter belt.

The officer summarised the findings as follows: *'The misters were not active at time of inspection. Odour overall was low in level given the nature of activity and no discharges beyond the boundary were observed.'*

165. The officer later returned at 11.00am to monitor the second half of the day's scheduled catch activity, from Shed 4.

166. The weather was warm, with light to moderate winds shifting between the west and north. The officer found the following:-

- Site 1 (Between Kevin McDonalds house and the sheds): ammonia concentration was 0ppm. No odour was detected.

- Site 2 (the wind was N-W, so on this occasion this site was selected to be at the opposing end of the shed to Mr McDonalds, to be downwind of 10 active fans exhausting from a shed housing 21,000 birds): ammonia concentration was 0ppm. No odour was detected.

- Site 3 (Downwind of catch shed, approximately 5 metres from open door): ammonia concentration was 0ppm. No odour was detected.

The officer summarised the findings as follows: *'Overall, the only point of odour was noticeable between sheds 1 and 2 and was sheltered from wind so just resting. No discharges beyond the boundary.'*

167. Another Council officer was co-incidentally at 33E Airport Drive between 0800 and 0845 on 26 November. Catching was underway during this period. The wind was in his direction from the sheds, but he detected no odour.

168. I visited the sheds myself at 12.00pm on 26 November. Catching was underway from within Shed 4. Shed 3 was full of birds. On the downwind side of Shed 3, odour was noticeable when standing in the exhaust plume at a distance of about 5 metres from the shed. Misting of the exhaust from the side fans was demonstrated, and I was able to confirm the installation of the misters along the sides of Sheds 2, 3, and 4, including ring misters within the exhaust circumference of each fan (see photograph). I was also able to confirm the installation of the first vertical roof ridgeline fan on Shed 2, including misters (see photograph).

169. The odour when I was standing within the plume of fan emissions at 5 metres more or less from Shed 4 was detectably stronger than for Shed 3. It was not offensively strong or unpleasant, although my view was that if I was exposed to that particular strength of odour continuously for a full day I would determine it to be offensive. I note that the boundary was some further 10 metres more or less away.

Photo 6 New ridgeline fan on Shed 2; roof fan and endwall misters in operation

Photo 7 Sidewall fan mister configuration

Photo 8 Sidewall misters and fan misters in operation

Photo 9 Dust emissions and controls (21 September 2021)

Photo 10 Proposed locations of ridgeline roof fans

170. I carried out a further inspection on Wednesday 1 December. One shed (Shed 3) had already been emptied of birds on that day; as I arrived, vehicles and staff to capture all remaining birds in Shed 3 were just arriving, and Shed 4 was due to be emptied of birds that afternoon. The wind was light and variable in speed, between calm and noticeable. The wind direction was from the south. The air temperature was above 21˚C, and the atmosphere was quite humid after overnight rain.

171. Ventilation on Shed 3 (the nearest to McDonalds) was at its maximum in order to create the best working atmosphere for the catchers. I noted that the side fan nearest the McDonald property was covered off with a tarpaulin. All other side fans were operating. Shed 4 had its northern doors open to allow access by the catchers. At the north-east corner of Shed 3, the odour from the sheds varied between barely discernible and distinctive, depending on the wind speed moment by moment (stronger if the strength of the southerly breeze increased). I would not have considered the odour offensive over a longer period. Further south, beside the apron between Sheds 3 (northern) and 4 (southern), the strength of the odour varied between mild and distinctive.

172. I visited the site again on 2 December, arriving at the conclusion of the clean-out of shed litter. The weather was warm and highly humid, with misty drizzle and no discernible wind movement, although by observation of drizzle fall patterns there was a slight air movement from the north-west.

173. No odour was observed along the northern and eastern boundaries, other than when standing in the exhaust plume from the single side wall fan operating for each of Sheds 3 and 4. Odour here was distinct, at a distance of 5 m from each fan. There was spilled litter on the forecourts of Sheds 1 and 2, which correlated with distinct odour in these areas. The vacuum vehicle used for litter recovery had broken down, and was under repair at the time of my visit. The vertical fans on sheds 1 and 2 were operating, and odour could be detected downwind. This correlates with the misty drizzle, which would have caused the plume from these units to impinge at ground level in close proximity. No odour was considered to be potentially offensive at the boundary.

174. The technologies in use and proposed by the applicant to control shed temperatures and minimise odour generation and odour release represent innovative advances over current best practice, and are significantly advanced over other (existing) broiler sheds and the former practices which formed the basis of the rules and recommended notification and buffer distances within the RAQP.

175. While there will be odour at other times, the potential for odour and dust effects beyond the boundary is primarily during bird removal, and restocking and clean out of the litter from the sheds, because at these times the shed doors are open for up to about 3 to 4 hours and litter is being disturbed to the highest degree.

176. There may be some seasonal variability in the frequency and intensity of the odours discharged from the sheds during the rearing cycle. In general, during the hot summer months and towards the end of each rearing cycle, the shed ventilation fans may operate for longer periods in order to regulate the shed temperatures and air flow to the appropriate levels, whereas, in winter there may be less use of the exhaust fans and negative pressure ventilation system. Consequently, the frequency and intensity of the discharge from the sheds is likely to be greater during the summer months. Unfortunately, this coincides with the season when residents are more likely to want to be outside enjoying the amenity value of the area.

10.2.3 Criteria used to determine if odour is offensive and objectionable

177. It is generally recognised that there are different perceptions and sensitivities to odour emissions and that an odour that an individual considers to be offensive is personal in nature and therefore invokes differing responses and reactions. A person willingly or frequently exposed to an odour often becomes desensitised to that smell and reacts less to it. Alternatively, someone unwillingly exposed can become highly sensitised, with a stronger emotional reaction against an odour that they dislike and that they consider intrusive or invasive.

178. The accepted standard for odour is that there be no offensive or objectionable odour beyond the boundary of the site. Compliance with this standard can be determined by an odour survey undertaken in accordance with the Ministry for the Environment publication *Good Practice Guide for Assessing and Managing Odour in New Zealand* or by independent assessments by suitably experienced personnel. In determining the effects of odour on a particular receptor the following matters are assessed (termed the 'FIDOL factors' in that reference):-

- *Frequency* how often an individual is exposed to odour
- *Intensity* the strength of the odour
- *Duration* the length of a particular odour event
- *Offensiveness/character* the character relates to the 'hedonic tone' of the odour which may be pleasant, neutral or unpleasant
- *Location* the type of land use and nature of human activities in the vicinity of an odour source
- *Timing* The timing of the odour may now also be included in the factors ('FIDOLT'), in recognition that there may be certain times of the day, week, or year, or if coinciding with special occasions, when an odour is less tolerable than at other times.

179. Odour is avoided and mitigated by preventing it from being generated in the first place, and then by ensuring that emissions are adequately dispersed before reaching any sensitive receptor. In the simplest terms odour prevention on poultry farms occurs through good litter management, and dispersion is achieved through proper ventilation air flows and site selection and separation from sensitive receptors (including having regard to topography and prevailing winds).

180. Prevention of odour generation through litter management is based on having adequate litter depth, and controlling its moisture content. If it is too dry it can produce dust; if it is too wet, it will promote anaerobic bacteria. The optimal moisture content of 20%-25% will promote aerobic bacterial activity which is important for avoiding odour. Moisture content is managed by temperature control, ventilation and by the food formulation, which regulates the moisture and nitrogen content of the chicken manure. Chicken health is also important- the prevention of diarrhoea or scouring reduces the risk of moist and bad-smelling wastes. A lower stocking density serves to reduce this likelihood and severity.

181. We note that the applicant seeks to control shed atmosphere to maintain a dry litter and thus minimise odour generation. This does mean that dust is emitted from the side fans when they are in use to control shed temperatures. It is noted that as exhausts are changed to the ridgeline fans, there will be less entrapment of dust in the exiting air flow. It is also noted that in the meantime, judicious selection of exhaust fans, the downwards air flow from the sidewall fans, and the erection of windbreak netting along and around the perimeter of the free range zones, serves to trap dust (see photograph 9).

182. Dispersion of any odour that is released by bird movement is achieved through the ventilation fans and turbulence in the interior air but mostly it is based on mixing with the ambient air over an appropriate distance between source and receptors.

183. Council officers refer to national practice and to overseas authorities to ascertain current best regulatory practice.

184. The Council's default reference buffer distance for notification of a consent application for a broiler farm of 30,000-59,999 birds is that the distance between the sheds and the nearest offsite dwelling house should be 200 m, or 300 m for 60,000-79,999 birds (RAQP 2011[8]). The distance between each shed and the property boundary should preferably be 50 m or more for a broiler farm of any number of birds.

185. The Council also partially based Appendix V of its RAQP on the broiler farming guidelines issued by the Victorian Department of Primary Industries.[9]

186. A Victorian Government working party published the *Victorian Code for Broiler Farms* in 2009 (amended 2018), while the Victorian Dept. of Environment, Land, Water and Planning has published (Sept 2018) Planning Practice Note 63: '*Applying for a planning permit to farm broiler chickens*'.

187. The Code sets out a formula for initial assessment of buffer distances, for fully housed broiler farms of less than 400,000 broiler birds. The proposed poultry farm has a carrying capacity of 61,000 birds. The Victorian formula determines a notional buffer distance of 250 m to the nearest dwelling, for any intensive broiler farm of less than 150,000 birds.

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[8] *Appendix V: Good management practices for intensive poultry farming*

[9] *Appendix V: Good management practices for intensive poultry farming,* page 167.

188. It is important to note the Code makes it clear that '*separation distances provide sufficient space to minimise the risk of offensive odour and dust emissions under both routine and abnormal (or upset) conditions adversely impacting the amenity of existing sensitive uses.*' That is, the buffer distance prescribed in the code is highly precautionary. Additionally, the Code explicitly does not preclude any broiler farm development from occurring if the separation distance cannot be satisfied, and further, the Code makes it plain that a reduction in the separation distance is warranted if odour reduction technology is adopted. This approach mirrors that which has been adopted by the Council since 2011.

189. Importantly, the separation distances formula was developed in respect of fully housed broiler sheds, and was not intended for application to broiler farms where the chickens have access to both outdoor range and indoor shelter, because it is recognised that there is a lower risk of odour offence in the latter case. Planning Practice Note 63 states that *'The addition of an outdoor range area to existing sheds of a broiler farm is likely to result in a reduced risk of odour impact as:*

- *these farms generally operate at a lower placement density;*
- *chickens have access to an extra 100 to 150 per cent space resulting in a reduced manure load on the litter in the sheds; and*
- *the litter in the sheds has greater exposure to natural ventilation, aerobic breakdown and drying and there is increased air circulation in the sheds as they are open during daylight hours.'*

190. In the case of this application the chickens have access to an extra 100% space.

191. Further, the Victorian Code notes '*A permit is not required for the addition of an outdoor range area in association with an existing broiler farm provided the following requirements are met:*

- *the maximum number of birds on the land is not increased*
- *there are no more than 150,000 birds permitted on the land at any time.*

192. Once a broiler farm has an outdoor range, the farm can operate as either a conventional broiler farm (with birds permanently in the shed) or a free-range farm (with birds having access to the range) without being considered a 'change in use'.

193. While the Victorian Code does not have legal status in New Zealand, the experience and research it is based upon provide a robust scientific and technical basis for the assessment of the current application. As noted above, the Council has a precedent of explicitly referencing and having regard to the published guidelines of Victoria in its guidance to the assessment of potential effects from broiler farming activities.

11. Statutory assessment

11.1 Sustainable Management (Part 2 of the RMA)

194. When determining the application, the Council must promote the sustainable management of natural and physical resources. Sustainable management means managing the use, development and protection of these resources in a manner which enables people and communities to provide for their social, cultural and economic wellbeing while:

(a) sustaining the potential of natural resources to meet the reasonably foreseeable need of future generations;

(b) safeguarding the life supporting capacity of water and ecosystems; and

(c) avoiding, remedying and mitigating adverse effects of the application on the environment.

195. In promoting sustainable management the Council must:

- recognise and provide for 'matters of national importance' (listed in section 6 of the RMA);
- have particular regard for 'other matters' (listed in section 7 of the RMA); and
- take account of the principles of the Treaty of Waitangi (section 8 of the RMA).

196. However when determining a resource consent application a specific assessment of Part 2 RMA does not need to occur if the consent authority considers the relevant statutory planning documents have been prepared in a manner that appropriately reflects the provisions of Part 2[10]. If so, in many cases, referring to Part 2 does not add anything to the evaluative exercise. In this case the Council's policy documents have been prepared having regard to Part 2 and have a coherent set of policies designed to achieve clear environmental outcomes. Therefore, a specific Part 2 assessment is not necessary for this application.

197. Nevertheless, in terms of the matters that have been raised in the application, and in submissions, and during my assessment of the application, I note that in respect of S.5 of the Act, the application provides for sustainable use of the air resource for present and future generations, safeguards the life-supporting capacity of air, and minimises adverse effects upon air quality in the locality.

198. There are no matters of national importance (S.6) to be recognised and provided for.

199. In respect of other matters (S.7), particular regard has been given to :-
(aa) the ethic of stewardship:
(b) the efficient use and development of natural and physical resources:
(c) the maintenance and enhancement of amenity values: and
(f) maintenance and enhancement of the quality of the environment.

10 RJ Davidson Family Trust v Marlborough District Council [2018] NZCA 316

200. The Treaty of Waitangi has no particular relevance to this application (S.8 RMA).

11.2 Consideration of the Regional Policy Statement

201. Section 3.1 of the RPS states that '*The Resource Management Act promotes integrated management of resources and the environment. Integrated management is an active process of managing the use, development and protection of natural and physical resources as a whole and involves a consideration of:*

(a) *the effects of the use of one natural resource on other natural and physical resources or on other parts of the environment recognising that such effects may occur across space and time*
(b) *the need for cooperation and coordination in relation to the statutory roles and responsibilities of other agencies in respect of the management of natural and physical resources or other management responsibilities that could affect those resources*
(c) *the effect of other statutory documents prepared by the Taranaki Regional Council and others with functions and responsibilities under the Act that address issues relating to the management of natural and physical resources*
(d) *the social and economic objectives and interests of the community, recognising that natural and physical resources cannot be managed without having regard to social, economic and cultural factors.*

202. The Taranaki Regional Council intends to promote an integrated approach to the use, development and protection of the natural and physical resources of the Taranaki region through the methods contained in its Regional Policy Statement.

203. As is already apparent from what has been set out above, this particular application requires close consideration of how the statutory functions and instruments of the Taranaki Regional Council are to be integrated or coordinated with those of the NPDC; and similarly, how the rights, responsibilities, and expectations of the current consent holder are to be balanced with the objectives and interests of the local community.

11.3 Consideration of application (section 104(1))

204. Subject to Part 2 of the RMA, when considering a resource consent application, the Council must have regard to:

(a) the actual and potential effects the activity has on the environment; and
(b) the relevant provisions of the:
    (i) Regional Policy Statement for Taranaki (RPS);
    (ii) National Environmental Standard for Air Quality (NESAQ); and
    (iii) Regional Air Quality Plan for Taranaki (RAQP).

205. The actual and potential effects of the activity are assessed above (sections 4-6 and 10) in this report, and consideration against the statutory instruments is set out below.

11.4 Consideration of matters raised by submitters

Rule 52 or Rule 53: New or existing activity?

206. Submitters asserted that the change of activity from housed to free-range birds was a change from the current activity to one that was not covered by the existing consent, and so it could not be regarded as a renewal (Rule 52) but must be processed as a process being established by scratch (which is provided for by Rule 53).

207. The Council disagrees with this assertion. The definition of intensive poultry within the RAQP explicitly includes the free-range rearing of birds. The current consent does not constrain activities on the site to only housed bird rearing.

Social and economic effects: effects upon ability to subdivide or to sell in the future

208. The purpose of the RMA is 'to promote the sustainable management 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*…' The first objective of the RAQP is '[t]*o maintain the existing high standard of ambient air quality in the Taranaki region and to improve air quality... where air quality is adversely affected, whilst allowing for communities to* ***provide for their economic and social well-being***' [**emphasis** added].

209. From the statements made by submitters, it is apparent that one of the reasons they oppose the renewal of the consent is that they anticipate an opportunity to benefit financially through capital gain once (and if) the area east of Airport Drive is re-zoned, and thus to provide for their economic well-being while also providing for the social and cultural well-being of the future local community as a whole. They see the process of re-zoning as possibly impeded if the poultry farm remains in its location, because it is a land use that is incompatible with intensive or even lifestyle residential development; and they see impaired ability to market or to gain maximum value from sale of their land if emissions from the poultry farm render the neighbourhood less desirable.

210. Conversely, it must be accepted that the expiry date on an existing consent cannot be taken as a default position that the consented activity should or would cease to exist on that date. There is no such condition in the existing consent or presumption in the RAQP or RMA.

211. If the consent is not granted, then the applicant's economic well-being is potentially adversely affected, because the farm business will have to shut down and its infrastructure is not readily transferrable. The Council has not made an assessment of the value of the broiler farm as an operational business. The 2019 valuation of the property puts its capital value at just under $3 million, with a land value of $0.5 million. Any comparison with gain in value for the land on the property through conversion to residential development and usage is entirely speculative and is not taken further in this report.

212. Reconciliation of these views is more difficult because of the uncertainties it involves.

213. It is also important to discern between economic impacts that would be due to perceptions caused by the mere presence of the broiler farm, versus the degree of economic impact specifically and solely due to the consequences of offensive and objectionable odours actually being released to air. This aspect of consideration must determine whether offensive and objectionable odours will actually and inevitably occur; and then secondly, whether it can be genuinely postulated that that effect will have economic consequences within the context of other positive and negative factors about the locality, including air quality as affected by the permitted baseline.

214. It is also noted that there has been a poultry farm on the site for many years already. Any economic loss identified by submitters is by way of a possible reduced economic opportunity for future profitable gain, rather than a loss in the current value of their present investment.

215. On balance, we recognise the district and national instruments requiring district planning for expansion of residential development in this particular instance suggest that the future of the poultry farm is not necessarily guaranteed past 2028. However, it is noted that any potential financial gain by adjacent landowners through land use zoning change lies in the hands of the district council, and in the hands of the neighbours themselves if they choose to pursue a private district plan change. The uncertain consequences of possible future land-use zoning changes need to be weighed against the investment made and interests existing in the farm's continued operation, which are identifiable and certain.

Previous acceptance/approvals by neighbours

216. In previous consent applications for this site, neighbours have either accepted or given approval for the consents to be granted. I have not given these prior acceptances and approvals weight in assessing possible effects of the operation on the neighbourhood.

217. It is further noted that the policies of the RAQP require the Council *to maintain **and to enhance*** [**emphasis added**] air quality in the region, especially where there is existing degradation; and this implies that what was 'good enough' in times past should not be taken as the *de facto* standard applicable for all time. Community expectations around environmental performance change.

218. It is acknowledged that the applicant has invested and continues to invest significantly and diligently in upgrading the operations of the site, in ways that do lift environmental performance and reduce the potential for emissions to give rise to offence.

219. The RAQP also is explicit that any concerns of those who 'come to the nuisance' should not be given the same weight as the established parties within a neighbourhood (whether longstanding residents or the consent holder).

The question of non-compliance and the absence of complaints

220. Initial documentation in respect of this application stated that there had been variously no complaints about odour recorded by the Council in the vicinity of the AFT poultry farm during the 10 years that the current consent has been operating; or

2 complaints, both in 2015 and neither of which were upheld upon investigation. A subsequent review of the Council's records confirms that two complaints were received in 2015. There has subsequently been one more very recently (August 2021), and then a cluster of complaints in October and one in November as described in paragraphs 152-156 and 159-163; all have been investigated by Council officers and in each case compliance with the AFT consent was established.

221. On the other hand, submitters state that the operation has a poor compliance record, and that they have raised their concerns with the farm operator. Personal communications with Council officers indicated that the tone of these communications was in the manner of neighbours expressing concerns rather than claiming breaches of the consent, and further, that the neighbours had been patient on the assumption that there was a definite upcoming end to the site's activities.

222. Submitters suggest that the Council should have done more to ascertain the full extent of compliance or otherwise. The Council's ongoing monitoring programme for the site is consistent with that applied to all other broiler farms, and given the silence from the neighbours it could not have reasonably been expected to proceed otherwise. Council staff are frequently in the vicinity, either for purposes of air travel or to conduct inspections at the airport itself for various reasons, and have not reported any untoward instance of impacts on air quality.

223. As noted earlier, during September-December 2021 several different Council officers have especially visited the site on multiple occasions, covering various phases of the rearing cycle and under varying weather conditions and particularly targeting periods when activities had the greatest potential for giving rise to offence. At no time did officers determine that odours at or beyond the boundary could be considered offensive or objectionable.

224. We are placed under some difficulty in advising the Hearing Committee, by the lack of complaints over the last decade or longer. Because of this absence of complaints, Council officers have been unable to 'calibrate' the offensive odours alleged by submitters, simply because such events have never been reported for investigation (other than the handful of complaints received by the Council, which have not been found to be upheld). Nevertheless, the consistent and multiple expressions of adverse impact from the poultry farming site expressed by submitters within their submissions are acknowledged. For the removal of doubt, it is noted by the Council officers that the absence of recorded complaints is not being taken as proof of no offsite effect.

225. On the other hand, the Committee must now determine the relevance of the statements made by submitters concerning historical offensive odours, given that the applicant is already substantially amending site facilities and operations for the better (in terms of environmental performance). Further, Council officers have specifically made submitters aware of the value to the Council of being advised of odour events, so they could be recorded and investigated[11]. They were advised '*It is important neighbours make complaints to the Council, if odour or dust from the operation are considered offensive or objectionable, so these can be properly investigated and appropriate action taken.*'

[11] Email from Fred McLay, Director-Resource Management, on 16 September 2021.

226. Since that Council email was sent to submitters, the farm completed the next bird capture and litter removal cycle, and yet to the completion of the cycle no complaints at all had been lodged. On the other hand, odour complaints targeting the poultry farm that were made in October after the cleaning out of the sheds was completed have been found to have arisen from other activities elsewhere in the vicinity, and the farm has been exonerated as an alleged source on these occasions.

227. Set out in Figure 6 below is the wind rose for the period 14 September - 6 October 2021. The start of this period was concurrent with the advice from the Council encouraging submitters to lodge any complaints, and it covers the full period of operations and activities on the site considered most critical for potential odour release- bird capture, litter removal, and shed cleaning.

228. The wind rose shows that during the 23-day period in question, the wind was towards the north-east for 9.5% (52 hours); towards the north for 16% (88 hours); towards the north-west for 17% (94 hours); towards the west for 4.5% (25 hours), and towards the south-west for 9% (50 hours) of the time, for a total of 309 hours during which the wind was towards submitters. No complaints were lodged with the Council throughout this time.

229. Set out in Figure 7 below is the wind rose for a second period, of 14 October - 6 December 2021. As with Figure 6, this second wind rose covers a full period of the operations and activities on the site that are considered most critical for potential odour release- bird capture, litter removal, and shed cleaning.

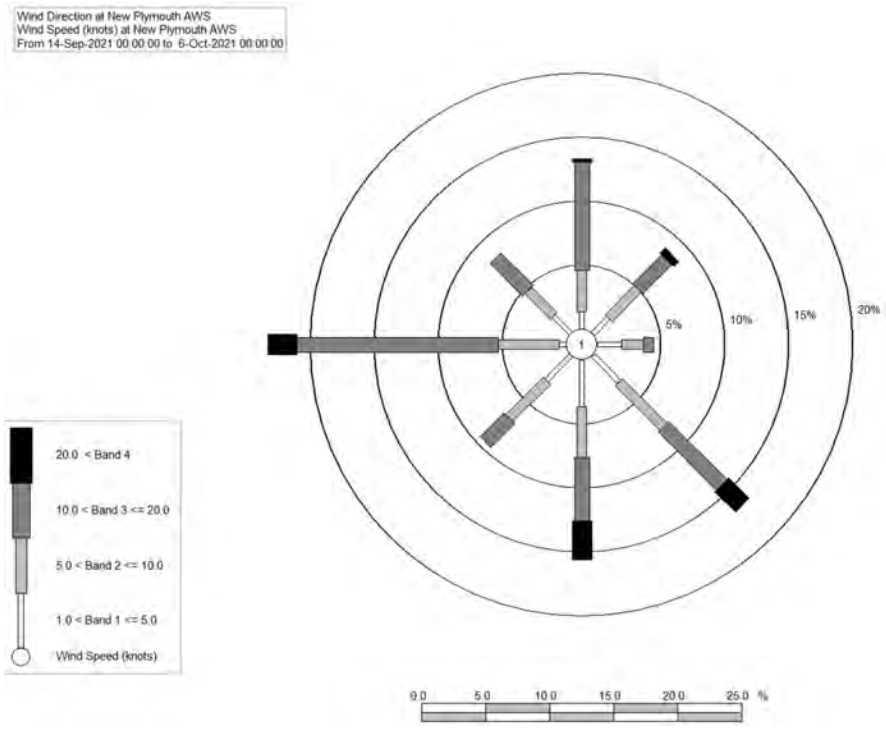


Figure 6 Wind rose for the period 14 September- 6 October inclusive, New Plymouth airport. Wind speed is in knots (10 knots = 5.3 ms^{-1})

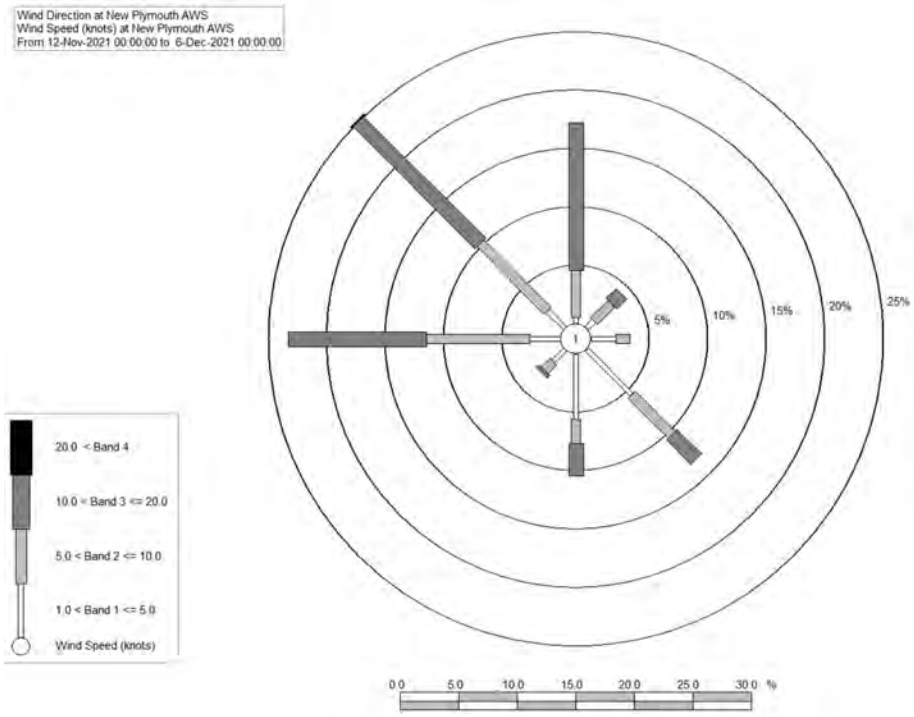


Figure 7 Wind rose for the period 12 November- 6 December inclusive, New Plymouth airport. Wind speed is in knots (10 knots = 5.3 ms^{-1})

230. The wind rose shows that during the 24-day period in question, the wind was towards the north-east for 3% (18 hours); towards the north for 11% (66 hours); towards the north-west for 13% (78 hours); towards the west for 3% (18 hours), and towards the south-west for 4% 24 hours) of the time, for a total of 204 hours during which the wind was towards submitters. One complaint was lodged with the Council during this time. Council officers monitoring the site the day before and the day following the date of the alleged odour found no evidence to corroborate the complaint.

Matters related to the current consent, not any future one

231. Submissions raise a number of matters concerning the Council's monitoring and enforcement, and possible obligations to be placed upon the applicant's record-keeping. These demands include a review of the effectiveness and performance of existing control measures against the existing consent conditions; more frequent Council monitoring; the applicant to keep records of all complaints for at least 6 months and to provide those records to the complainants; and neighbours to be kept informed of these actions.

232. These matters relate to the existing consent, and are therefore outside the scope of this assessment. The existing consent is not up for review, and no new obligations can be imposed upon the operator via that mechanism. However, if the consent is renewed, then the underlying propositions could be reflected in the new consent.

233. It is noted that the Council already publishes annually a report on the performance of the operator, including performance of existing control measures and details of any complaints received by or non-compliances detected by the Council. Submitters and other interested parties can avail themselves of these reports to be kept informed as they wish.

Did the AEE address odour from the land to be used for free range grazing?

234. Submitters stated that the AEE accompanying the application addressed only emissions from the sheds, rather than also including emission from the land to be used for free-range access, and was therefore incomplete and the application accordingly should be rejected.

235. We disagree with this interpretation. A careful reading of the AEE shows it considered gross emissions from the site as a whole, and not just from the sheds. It properly focused on the sheds, as the primary source of odour, an approach to assessing more significant effects which we support. The statement in the introduction is noted: *This report, prepared by Tonkin & Taylor Ltd (T+T) on behalf of AFTL, describes an assessment of the potential environmental effects of odour emissions* ***from the proposed free range operation*** *to be authorised by the consent* [emphasis added]. The report has been amended from that supplied earlier when the proposal was for continuation of the fully housed broiler farming.

236. We also note in passing that the State of Victoria imposes minimum distances in respect of separation between sheds and neighbouring dwelling houses, rather than in respect of separation of boundaries of free range movement and neighbouring houses; further, it does not impose additional emission controls in the eventuality of inclusion of free range yards.

237. As discussed above, the shift to free range can be expected to reduce odour impacts by comparison with fully housed broiler farming.

Reductions in emissions and in offensive odours-past and future

238. The applicant proposes to make two significant changes to the nature of the overall operation, as well as a considerable number of more incremental changes to particular elements of shed management and design. Bird numbers are to be reduced from 95,000 to approximately 60,000 birds; and the rearing is to be switched from fully enclosed to free range. A simplistic assumption would be that the reduction of 37% in bird numbers will mean an equivalent reduction in odour strength, due to a proportionate reduction in the amount of droppings and urine in the litter. However, the human response to odour intensity is logarithmic rather than linear (the Weber-Fechner formula[12]). In simple terms, this means that the human nose is very sensitive to changes of odour at very low concentrations; at high concentrations, a large change in concentration is needed before the human nose will detect any change in perceived odour. On a simplistic assessment, a 37% reduction in bird numbers and wastes deposited on litter would on its own give about a 20% reduction in odour strength.

[12] For example, see *Odour Methodology Guideline*, Department of Environmental Protection, Western Australia March 2002, sections 3.3. and 4.2

This would be of some benefit to perceptions by observers within the receiving environment, but not as much as might first be presumed.

239. Exploring this change a little further, if the quantity of litter is kept the same, then during its removal the duration and the frequency of odour events will not change, but the intensity of the odour released will be diminished; conversely, during bird capture and removal, during which the top layer of litter is disturbed, the duration might be shorter (fewer birds) but the intensity and character might be similar.

240. The assessment by the Victorian Dept. of Environment, Land, Water and Planning set out above in paragraphs 185-193 should also be noted, that a free-range operation can be expected by its nature to be less odorous than an equivalent fully housed rearing operation.

241. Further, the operator has put in place a number of substantial controls and actions that could generally be described as best practice and as surpassing those that might have been in place when guidelines on recommended buffer distances were developed. It has been noted previously that the Victorian separation distances are precautionary in nature- that is, any lesser distance does not necessarily mean odours will become or remain offensive.

242. On the other hand, the changes that are proposed do not change the reality of the layout of the neighbourhood, that an offsite dwelling house downwind under worst-case wind directions and conditions is only 55 metres from the nearest shed (but relatively further away from the nearest future roof exhaust fan), with two other houses less than 150 metres away, against a recommended separation of 200 or 300 metres. Other neighbours who are relatively close would also potentially be subject to recognisable odours, but more intermittently and of less severity than the three parties mentioned above.

243. A close review of other broiler farms in Taranaki (of which there are approximately 40) shows that out of this number, there are a couple of other instances where the Council has approved consents where neighbouring dwelling houses have been less than 150 metres away. In each such case the Council has taken into account the specific technology and mode of operation, meteorology, topography, number of receptors, degree of community acceptance, and whether the neighbours have 'come to the nuisance'. For the record, it may be noted that these situations are being regarded as exceptions rather than precedents for the application in hand.

244. The observations of Council officers during the latter stages of a rearing cycle indicate that the character of the shed emissions appears less unpleasant than those experienced at other poultry farms around Taranaki. This may be related to the drier atmosphere within the sheds noted by officers in the Airport Drive facilities.

11.5 Regional Air Quality Plan for Taranaki

245. Section 3 of the RAQP sets out four objectives that have been identified for air quality in the Taranaki region:

Obj 1 *To maintain the existing high standard of ambient air quality in the Taranaki region and to improve air quality in those instances or areas where air quality is adversely affected, whilst allowing for communities to provide for their economic and social wellbeing.*

Obj 2 To safeguard the life-supporting capacity of air throughout the Taranaki region.
Obj 3 To provide for activities discharging to air.
Obj 4 To avoid, remedy or mitigate the adverse effects of activities discharging contaminants to air in the Taranaki region, including adverse effects on the amenity and aesthetic qualities of air.

246. These four objectives are given effect through the policies of the RAQP. The relevant policies are discussed in the following paragraphs.

Table 2 Assessment of application against the policies of the RAQP

Relevant objectives and policies	Assessment of application
Category 1 – contaminants and effects	
Policy 1.2: Odour Ensure that, (to the fullest extent practicable), any discharges to air of odorous contaminants do not cause odours that are offensive or objectionable.	With regard to Policies 1.2 and 1.3, the applicant has applied a range of best practice mitigation measures to minimise the potential for odour generation and odour release, and emphasizes his intention to manage the farm in a way that ensures, to the fullest extent practicable, that discharges to air are not offensive or objectionable. These measures surpass those on other farms. Our assessment is that dust is not an issue offsite under normal operations. The proximity of dwelling houses offsite, especially to the north and north-west, and the prevailing winds blowing in that direction gave rise to serious examination of whether Policy 1.2 can be given effect to. Based on recent on-site assessments by several Council staff, and the evaluation of the effectiveness of new technologies and control philosophies being implemented by the applicant, the determination is that the applicant is ensuring that, (to the fullest extent practicable), any discharges to air of odorous or dusty contaminants do not cause impacts that are offensive or objectionable.
Policy 1.3: Smoke, dust and other particulate matter Ensure that any discharge to air of dust, smoke and other particulate matter beyond the boundary of the property does not occur at a volume, concentration, or rate or in a manner that causes or is likely to cause a hazardous, noxious, dangerous, offensive or objectionable effect, including the significant restriction of visibility or the soiling of property.	

Category 2 – the management of air quality	
Policy 2.1 General policy The Taranaki Regional Council will exercise its functions and powers to control the adverse effects of the discharge of contaminants to air through regional rules which: a. …..; b. define acceptable environmental standards, terms and assessment criteria and provide a streamlined resource consent procedure for discharges requiring a discharge permit c. prohibit discharges with unacceptable adverse effects on the environment; and d. …..	This assessment has had to weigh very carefully whether the offsite effects of odour have been and would continue to be unacceptable, even given the best endeavours of the applicant. The matters over which discretion has been reserved in Rule 52 and the effectiveness of conditions applied to consents for broiler farms elsewhere have defined what the community and Council consider to be acceptable.
Policy 2.3: Management areas Air quality management in Taranaki will be carried out in a way that recognises that some areas of the region have within them, uses or values that are more sensitive to the discharge of contaminants to air than other areas. In particular, recognition will be given to any adverse effects from the discharge of contaminants to air on:	The assessment of potential and actual effects of this activity has taken account of the area's current rural and rural residential nature, and also of the stated intention of the NPDC that at some stage in the future, understood to be post 2028, district planning for provision of residential development may seek a change of land use zoning. We recognise that the lack of certainty of timing and outcome of this NPDC planning has not been helpful to any party in the current application.

Category 2 – the management of air quality	
a. people and property in urban areas, residences and places of public assembly and on the safe and efficient operation of roads, airports and other infrastructure; b. …..; c. sensitive commercial or industrial systems and activities; d. …..; e. the scenic, aesthetic and recreational values associated with Taranaki's parks, reserves, rural landscapes, seascape, coastal areas and other amenity areas; f. …..; and g. places, areas or features of significance to tangata whenua for spiritual, cultural or historical reasons.	
Policy 2.7: Best practicable option The Taranaki Regional Council may, where appropriate, require the adoption of the best practicable option to prevent or minimise adverse effects on the environment from the discharge of contaminants to air. When considering what is the 'best practicable option', the Taranaki Regional Council will give consideration to the following factors in addition to those contained in the definition in the Act, of best practicable option: a. the implementation of Policies 1.1, 1.2 and 1.3, when having regard to the nature of the discharge; b. any sensitive receiving environments as described in Policy 2.3; c. the capital, operating and maintenance costs of relative technical options, the effectiveness and reliability of each option in reducing the discharge, and the relative benefits to the receiving environment offered by each option; d. the weighing of costs in proportion to any benefits to the receiving environment to be gained by adopting the method or methods; and e. maintaining and enhancing existing air quality in the neighbourhood as far as practicable	The applicant has adopted best current practice for minimising emissions arising from broiler raising, including the selection and operation of equipment and processes and process controls, a proposed reduction of 37% in bird numbers, and the move to free range from fully housed broiler rearing, and the increased separation between points of discharge and receptors. It is acknowledged that this will substantially reduce the intensity of the characteristic broiler farm odours, and to a lesser extent reduce duration of odour emission episodes. However, in terms of the 'FIDOLT" factors (as discussed in paragraph 178), the frequency of source emissions will be unchanged. The perception of officers is that the hedonic 'tone' (inherent unpleasantness) of the emissions is modified by the shed aeration and heating controls. The applicant has explored the possibility of adaptive timing via flexibility in the timing of bird capture and litter removal activities, with success re litter removal timing that adapts to prevailing weather conditions and hence risk of offsite impact. We note that the applicant's management is maintaining and enhancing air quality in the neighbourhood. We note that odour treatment options for exhaust air flows beyond those already being installed would be prohibitively expensive, but that misting and the option for including chemical-based neutralisation holds promise for further reduction of offsite effects.

Category 7 – Discharge of contaminants to air from aquaculture or intensive farming processes	
Policy 7.1: Avoidance, remediation or mitigation – general policy The discharge of contaminants to air from …. intensive farming processes, including the rate and concentrations of the discharge, will be managed to avoid, remedy or mitigate any significant off site adverse effects on the environment arising from the discharge.	We consider that despite the best management endeavours of the applicant, and evidence that adoption of free range broiler farming will reduce offsite adverse effects over current impacts, the discharge from the property will be reduced rather than fully avoided. There are no realistic options for remediation (effects made good after the event), or mitigation (effects compensated for).
Policy 7.2: Actual or potential effects that require particular consideration In considering the effects of any discharge of contaminants to air from aquaculture or intensive farming processes, particular regard will be had to the following effects: a) any actual or potential effects on the health and functioning of ecosystems, plants and animals including indigenous ecosystems and plants and animals of commercial significance;	We have had regard to these matters as set out in this report, particularly (but not exclusively), actual or potential effects upon amenity values arising from odour or dust, effects upon human health and wellbeing, and the economic and social consequences of both granting or declining the application for a consent renewal. The buffer separation recommended in the RAQP for a housed broiler farm of the size proposed lies on the threshold between 200 and 300 metres, although it is

Category 7 – Discharge of contaminants to air from aquaculture or intensive farming processes	
b) any actual or potential effects on amenity values, including any effects of odour or particulate matter arising from the discharge, and any nuisance effects; c) any actual or potential adverse effects on areas, places, sites or features identified in Policy 2.3; d) any actual or potential adverse effects on other receiving environments; e) any actual or potential adverse effects on human health, safety well-being; f) any cumulative adverse effects identified in Policy 2.6; g) any adverse effects of low probability but high potential impact; and h) any positive effects of the discharge, including social and economic benefits of activities using air resources	stressed that this was developed with conventional shed layout and fit-out in mind. The Victorian environmental authority suggests a buffer of 250 metres, while deeming this to be conservative. Victorian authorities further note that free range farming will have a lesser effect, and further, that the use of odour-reducing technologies can facilitate much reduced separation distances. The Council agrees with this assessment. The RAQP notes that the Council will '*have regard to'*, rather than '*give effect to'* these recommended buffer distances, and the RAQP explicitly notes that '*If these buffer distances cannot be met, it does not mean that resource consents will automatically be declined*'. Conversely, this does not mean that the value of using buffer distances as a tool to avoid offsite offensive and objectionable odour episodes can or should be discarded. Upholding buffer separation has allowed poultry farming (and other activities) to establish and co-exist alongside other land uses across the Taranaki region.
Policy 7.3: Assessment of effects In considering the effects of any discharge of contaminants to air from aquaculture or intensive farming processes, matters that will be taken into account include: a) the nature, volume, composition and concentration of the contaminant and the frequency, rate, location and manner of the discharge; b) the design, construction and operation of industrial and trade processes or facilities and their capacity for avoiding, remedying or mitigating adverse environmental effects; c) surrounding environmental conditions that may affect the frequency, duration, intensity and degree of environmental effects including topography, wind speed and direction, and other climatic or weather conditions; and d) the best practicable option to prevent or minimise any adverse effects on the environment in accordance with Policy 2.7.	As set out in this report, we have considered the matters set out in a)-d) of Policy 7.3. The capacity of the application for reducing emissions and the adoption of a new level of 'best practicable option' in equipment and mode of operation is acknowledged and endorsed. On the other hand, the topography, wind speed and direction, and other climatic factors have rendered it more difficult for us to recommend approval of the application before a careful weighing up of all factors.

11.6 National Environmental Standards for Air Quality

247. National Environmental Standards for Air Quality (AQNES) are regulations issued under Section 43 and 44 of the RMA. These regulations became operative in October 2004. AQNES standards prescribe technical standards, methods or requirements for environmental matters.

248. The AQNES for air quality includes five ambient air quality standards for carbon monoxide (CO), fine particles of less than 10 micrometres in diameter (PM10), nitrogen dioxide (NO2), sulphur dioxide (SO2) and ozone (O3). These standards are summarised in Table 3 below.

Table 3 List of the ambient air quality standards in the AQNES

Chemicals	Standards
Carbon monoxide (CO)	An ambient air quality concentration of 10 mg/m³ (eight-hour average). One exceedance allowed in a 12-month period.
Fine particulate matter less than 10 micrometres in diameter (PM10)	An ambient air quality concentration limit of 50 μg/m³ as a 24-hour average. One exceedance allowed in a 12-month period.
Ozone (O3)	An ambient air quality limit of 150 μg/m³ (one-hour average) for O3. This must be met for 100% of the time with no allowable exceedances.
Nitrogen dioxide (NO2)	An ambient air quality concentration limit of 200 μg/m³ (one hour average). Nine exceedances allowed in a 12 month period.
Sulphur dioxide (SO2)	An ambient air quality concentration of 350 μg/m³ (one-hour average). Nine exceedances allowed in a 12 month period. A maximum ambient air quality concentration limit of 570 μg/m³ (one hour average). This must be met for 100% of the time with no allowable exceedances.

11.7 Other considerations

249. The Council must have regard to the sensitivity of the receiving environment and any alternatives to the discharges proposed[13]. The Council has had regard to these matters. The sensitivity of the environment has been recognised by the applicant and Council, and is discussed in sections 5, 6, and 10 of this report, and the Council is satisfied that there are no more practicable alternative methods of discharges or receiving environments.

250. We have also had regard to the consent holder's investment that is reliant upon the ability to exercise the consent.

12. Summary and conclusions

251. The poultry farm application to discharge emissions to the air from an existing 4 shed broiler farm, including conversion to free-range rearing, is recommended for approval.

252. A significant factor in our consideration was its distance from neighbouring dwellings. The nearest point on the nearest shed is some 55 metres, more or less, from the closest house, which is much closer than the RAQP recommended buffer distances used as a starting point for Council assessments for notification. Specific considerations have been taken into account in the light of this proximity.

253. The application was limited notified to five neighbours. All five lodged submissions out of concern about the effects of odour and, to a lesser extent, dust. Several submissions referenced the concerns of other neighbours. A much wider grouping of neighbours and NPDC was subsequently confirmed as able to speak at the hearing as witnesses for the submitters. All concerns raised by any party have been taken into account in preparing this report.

[13] RMA Section 105(1)

254. The applicant seeks to avoid and mitigate the adverse effects of odour by ensuring that emissions are less malodorous and that they are minimised and effectively dispersed. This approach is to be implemented by providing good quality feed, good litter management, and dispersion of shed emissions through proper ventilation, notwithstanding the lack of adequate buffer distances.

255. The factors that we have found to be determinative include (alongside the concerns and statements provided by submitters and their associated parties):-
- a substantial reduction in the number and stocking intensity of birds;
- the switch to free-range rearing from fully housed rearing;
- changing the heating system from gas-fired to hot water radiator;
- changing exhaust fans from wall-mounted (including some fans near to neighbouring dwelling houses) to elevated roof ridgeline fans, located at greater distances from neighbours;
- adaptive litter removal timing;
- windbreak screening of birds and exhaust air flows;
- misting of exhausted shed air flows at critical times; and
- the recent observations of odour, ambient ammonia, and dust by several Council officers during the stages of rearing that are most critical for potential odour and dust.

256. Residents in the general vicinity of the activity cannot expect to live in an environment that is completely free of odours. The existing environment includes odours that occur from general rural activities allowed by the RAQP and the RMA, and indeed such odours from other sources have been observed during the assessment of this application. Residents can however expect that odours are not offensive or objectionable, and a condition to that effect is recommended.

257. The Tonkin and Taylor report concludes :-

Intensive poultry farming operations have the potential to emit odour, which is generated mainly from anaerobic degradation of manure/excreta from the housed birds. The odour emissions from this operation should be substantially reduced by the proposed free-range conversion and associated reduction in stocking density and capacity…

ATFL has implemented a number of measures to improve management of odour at the site to reflect the sensitivity of the surrounding environment…. Odour emissions and potential for nuisance effects should also be substantially mitigated by the proposed free-range conversion…

Having regard to the FIDOL factors for assessing nuisance effects, the proposed conversion to free range operation should substantially reduce the intensity of odour observed beyond the site (and to a lesser degree the frequency and duration), which will reduce the potential for odour nuisance effects. Provided the current odour management regime is implemented effectively, odour emissions from the proposed operation are unlikely to cause odour that is offensive or objectionable beyond the site boundary. The proposed (reduced) emissions to air are unlikely to have more than minor air quality effects in the receiving environment (including at local rural residential dwellings).

258. On the other hand, submitters and their supporters are adamant that they have on unspecified occasions been subject to levels of odour that they deem to be offensive and objectionable. The separation distance between the sheds and nearby dwellings is much closer than recommended within the Council's RAQP. There is no recognition from the submissions that the proposed on-site changes might render the situation tolerable to them.

259. However, our recommendation, which is based on both the close review of the technological, bird stocking intensity, and operational changes that the applicant is moving to implement, and perhaps more decisively on multiple on-site inspections and analyses undertaken during critical phases of the broiler operations during September-December 2021, is that significant odour release and impact will be much reduced, especially at the crucial stages. It is evident to officers that concentrations of ammonia and ammoniacal-type odours within the sheds on the applicant's property are lower than those observed elsewhere, and which were used to inform the Council's preferred buffer distances as set out in the 2011 RAQP. Taking into account the various FIDOLT factors for assessing offensive and objectionable odours, it is reasonable to expect that neighbours would not be exposed to offensive and objectionable odours as a matter of course from the farm in question.

260. In summary, on a carefully considered balance, we consider that granting this application would be consistent with the relevant policy documents and promotes sustainable management of natural and physical resources.

13. Consent duration and review dates

261. The Council has a well-established and accepted practice of ensuring common expiry, and consent review dates within a catchment. The benefits of this practice include more efficient and integrated resource management. The next standard expiry date for this catchment is 1 June 2026, and then every 6 years thereafter- 2032, 2038, or 2044.

262. The applicant has in recent months made a commitment to considerable expenditure on what must be acknowledged as the latest technology to reduce the levels of odour and dust from the site. The experiences of Council officers who have monitored the environmental and operational performance of the facility are very positive, and confirm expectations. Assessment of the new technology and mode of operation provide assurance that the facility can be operated in a manner that satisfies the policies of the Council. The recommendation is therefore that this consent be renewed for an appropriate period.

263. The Council has approximately 40 active resource consents for discharges to air from broiler farms in the region. A review of their terms shows that over half have been granted durations of 17-19 years. The Airport Drive facility has systems in place that surpass most other farms in the region. Another farm operated by the same applicant with many of the same systems in place, has been granted a term of 17 years.

264. The current consent is due to expire in 2026. An 18-year term for the new consent that takes the remainder of the current consent into account would mean an expiry in 2044, while a much more restrictive 12-year term granted on the same basis would suggest an expiry of 2038. A 16-year term starting from the time of the scheduled hearing for the renewal would likewise suggest an expiry on 1 June 2038 is appropriate. This expiry date would recognise the investment of the applicant alongside a somewhat conservative anticipation of its performance, and is therefore recommended.

265. In recommending this duration, we recognise that the desire of some submitters, if not all, is for a shorter duration, in part because of an anticipation of a land use zoning change. We reiterate that this is a matter that is in the hands of the New Plymouth District Council and the neighbours themselves to advance.

14. Monitoring

266. Monitoring of consents is required to ensure that the activity undertaken complies with what is authorised, and that environmental effects are consistent with the assessment presented in this report.

267. As part of a compliance monitoring programme for intensive poultry farming in the Taranaki region, the Council carries out at least one annual inspection of poultry farms to ensure the activities undertaken comply with what is authorised by the consents.

268. In addition to this, the Council operates and maintains a register of all complaints or reported and discovered incidents, including non-compliance with consents.

269. Incidents may be lodged with the Council by members of the public, through self-notification by the offender, or as a consequence of discovery by Council Officers. In accordance with the Council procedures, a Council Compliance Officer is required to respond as soon as possible after an incident is reported. During normal working hours, any of the Investigating Officers may respond to the incident. Outside working hours, the incident is reported to the on-duty Compliance Officer by the Council's after-hour's answering service.

270. For odour-related complaints, the responding Council Officer is required to undertake an odour survey at several sites in the vicinity of the reported incident and at the incident site to determine the scale and nature of the reported odour.

271. After undertaking an odour survey and assessing the FIDOLT factors, a Compliance Officer may determine there to be:

- no detectable odour;
- noticeable odour; or
- offensive or objectionable odour.

272. Depending on the severity of the odour event, one single occurrence may in some circumstances be sufficient to consider that the odour is offensive and objectionable. In other situations, however, the event may be short enough, and the impact on neighbours sufficiently minor at the time, that the events would need to be happening more frequently to be deemed offensive and objectionable to the standard required by the courts.

273. To provide a level of consistency in assessing odour effects, Council officers have been trained in this assessment process and have been tested to determine their sensitivity to odour. On completion of investigations, the investigating Compliance Officer is required to report their findings to the complainant and to the owner/operator of the source of odour if this can be determined.

15. Consent conditions

274. In the opinion of the reporting officer, the consent conditions recommended below are reasonably necessary to avoid, remedy or mitigate adverse environmental effects and to ensure that the nature and scale of the activity is consistent with the application and the assessment of environmental effects presented.

275. Specific reasons for each special condition are included in the Condition Analysis Table attached.

16. Recommendation

276. The recommendation is that consent 5262-3.0, to discharge emissions into the air from a free range poultry farming operation, be approved for a period ending on 1 June 2038, subject to the following conditions:

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act, 1991.

Special conditions

1. This consent authorises emissions to air from up to four poultry sheds and associated free-range areas located and configured generally as shown in the application for this consent.

2. The total area of the four sheds used for intensively housing poultry shall not exceed 4,068 square metres, and each shed shall have an associated free-range area that is no less than equal to the shed area.

3. The stocking intensity of poultry in any shed shall not exceed 15 birds per square metre at any time.

4. That at all times the consent holder shall adopt the best practicable option (as defined in section 2 of the Resource Management Act 1991) to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants into the air from the site.

5. That prior to undertaking any alterations to the poultry unit's processes, operations, equipment or layout, as specified in the application for this consent and subsequent information provided to the Taranaki Regional Council and taken into account in assessing the application, or any subsequent application to change consent conditions, which may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and its amendments.

6. The consent holder shall minimise the emissions and impacts of contaminants discharged into air from the site by installation and implementation of:

   i) process equipment;
   ii) process control equipment and emission control equipment;
   iii) supervision and operation management;
   iv) management of timing of litter removal, to those meteorological conditions least likely to cause odour to neighbours;
   v) the proper and effective operation, supervision, maintenance and control of all equipment and processes; and
   vi) the proper care of all poultry on the site in terms of litter management, bird care, and diet;

   as described in the application or by subsequent improvement.

7. In particular, the applicant shall install-

   i) 3 roof ridgeline exhaust fans on each shed by 1 March 2022;
   ii) misting devices on each exhaust fan by 1 December 2021 for existing fans and on the new ridgeline fans on each shed by 1 March 2022;
   iii) hot water heaters in and shall remove gas-fired heaters from each shed by 1 March 2022;
   iv) devices to monitor the atmospheric conditions inside each shed, and shall retain monitoring records for a period of three months beyond the end of each broiler rearing cycle, by 1 March 2022.

8. The exit ports for the roof ridgeline fans shall be located at a minimum height of 7 metres above ground level, and the roofline fans on shed 3 shall be located at a minimum distance of 100 metres from the dwelling house at 62 Airport Drive.

9. The discharge authorised by this consent shall not give rise to an odour that is offensive or objectionable at any location beyond the boundary of the property, at any time. The boundaries of the property are as shown in the application report 'Airport Drive Free Range Poultry Farm Odour Assessment, June 2021', Tonkin and Taylor.

10. The discharges authorised by this consent shall not give rise to suspended or deposited dust at or beyond the boundary of the site that, in the opinion of at least one Compliance Officer of the Taranaki Regional Council, is offensive or objectionable. For the purpose of this condition, discharges in excess of the following limits, beyond the property boundaries, are deemed to be offensive or objectionable:

    i. dust deposition rate 0.13 $g/m^2/day$; and/or
    ii. suspended dust level 5 mg/m^3.

11. The consent holder shall maintain a shelterbelt on the property's boundaries. The shelterbelt shall be in the form of a dense row of trees, which reach a height of at least four metres; or a windbreak to a height of 3.0 metres on the northern and southern boundaries in the absence of trees.

12. The consent holder shall provide to the Taranaki Regional Council notification of a provisional schedule of bird capture and litter removal, at least 24 hours prior to the first bird capture at the end of each rearing cycle. Notification shall include the consent number, a brief description of the work, and the intended commencement date. Unless the Chief Executive advises that an alternative method is required this notice shall be served by completing and submitting the 'Notification of work' form on the Council's website (http://bit.ly/TRCWorkNotificationForm).

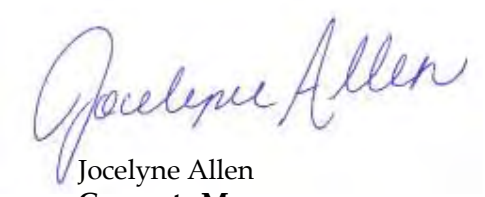
13. The consent holder shall document any allegations of offensive odour or dust brought to him by neighbours at any time after the issue of this consent, and shall retain the documentation for the duration of the consent, and shall make the record available upon request to (i) the informant, and (ii) the Taranaki Regional Council. In order to be documented, any allegation made must provide the name of the complainant together with the date and the location, at which the alleged event occurred.

14. The consent holder shall attend a neighbourhood liaison group (to be convened and chaired by the Taranaki Regional Council), with meetings to be scheduled every six months until 1 December 2024.[14]

[14] The Council will invite submitters and those identified within submissions or during proceedings as having an interest in the consent application.

15. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2023 and/or June 2026 and/or June 2029 and/or June 2032 and/or June 2035 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Recommending Officers



Jocelyne Allen
Consents Manager

Gary Bedford
Science Advisor

Appendix 1: Condition Analysis Table

No.	Description	Reasons for condition	Determination of compliance	Reason for limit
1, 2	Shed details	Limits the scale and effects of the activity to that considered in the application	General observation and checking of records	N/A
3	Limit on mass density	Limits the scale and effects of the activity to that considered in the application	General observation and checking of records	N/A
4	Adoption of best practicable option (BPO)	This condition requires that a higher standard than that required by the other conditions be met if it can reasonably be achieved. It also requires the consent holder to continually review methods and practices and make reasonable improvements even though the conditions are being met. The condition is reasonably necessary to avoid adverse environmental effects	General observation and checking of records. Condition 6	N/A
5	Changes to the operation	To ensure that any changes are within the scope of the consent or that any necessary consents are obtained	Monitoring of activity by Council officers	N/A
6, 7, 8	Measures to minimise emissions	Avoid adverse environmental effects. Check compliance with condition 4	Monitoring of activity by Council officers	N/A
9	No offensive or objectionable odour offsite	Objectionable and offensive odour is a significant adverse effect that must be avoided	Monitoring of activity by Council officers. Assessment in accordance with the Good Practice Guide for Assessing and Managing Odour in New Zealand, Air Quality Report 36, Ministry for the Environment, 2003.	Recognised and accepted standard. Supported by RAQP.
10	Limits on dust	Offensive/objectionable levels of dust is a potentially significant effect that needs to be avoided	Monitoring by Council	Deposition greater than 0.13 g/m^2/day causes nuisance. Suspended dust greater than 5 mg/m^3 causes an observable dust cloud. These criteria are appropriate for a rural residential area.
11	Shelter belt	To help reduce odour from the activity, by creating turbulence which will help disperse odour.	Monitoring of activity by Council officers	N/A
12	Notification to Council of significant on-site activities	To facilitate monitoring by the Council during key stages	Recording of notification by Council	Timely notification to allow Council deployment.
13	Recording of adverse environmental; effects upon neighbours	Concern and expectation raised by submitters. This detail will assist the consent holder and Council to identify any valid impacts	Monitoring of activity by Council officers, together with annual compliance report	N/A
14	Regular neighbourhood liaison meetings of those known to have a particular interest in the application	Submitters expressed the desire to be kept informed on activities on the site, and the applicant expressed the desire for opportunities to explain on-site developments and processes	Attendance at Council-convened meetings	N/A
15	Review	In general, conditions of consent can only be reviewed if provision to do so is included in the consent. The Council's preference is to make provision to review the conditions of all consents to ensure that the conditions are effective.	N/A	Dates in accordance with catchment based policy and having regard to the applicant's investment and demonstrated performance.

Appendix II: Application of the National Policy Statement on Urban Development (NPS-UD)

The National Policy Statement on Urban Development (NPS-UD) ensures New Zealand's towns and cities are well functioning urban environments that meet the changing needs of communities. The NPS-UD took effect in August 2020.

Most of the reporting requirements from the NPS-UD are focused on tier 1 and 2 local authorities. TRC as well as NPDC are considered Tier 2 local authorities, and are required to *consider* the policies stated within the NPS-UD in consenting decisions. However, it is NPDC rather than the Regional Council that is required to assess and prepare for development capacity.

The relevant Objective, Policy and clauses which pertain to this assessment are as follows:-

- Objective 2: *Planning decisions improve housing affordability by supporting competitive land and development markets*

- Policy 2: *Tier 1, 2 and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term, medium term, and long term.*

Clause 3.10(1) states:

Every local authority must assess the demand for housing and for business land in urban environments, and the development capacity that is sufficient (as described in clauses 3.2 and 3.3) to meet that demand in its region or district in the short, medium, and long term.

Clause 3.11(b) requires local authorities to create and use Housing and Business Capacity Assessments (HBA), it states

> *(1) When making plans, or when changing plans in ways that affect the development of urban environments, local authorities must:*
>
> *(a) clearly identify the resource management issues being managed; and*
>
> *(b) use evidence, particularly any relevant HBAs, about land and development markets, and the results of the monitoring required by this National Policy Statement, to assess the impact of different regulatory and non-regulatory options for urban development and their contribution to:*
>
> *(i) achieving well-functioning urban environments; and*
>
> *(ii) meeting the requirements to provide at least sufficient development capacity.*
>
> *(2) Local authorities must include the matters referred to in subclause (1)(a) and (b) in relevant evaluation reports and further evaluation reports prepared under sections 32 and 32AA of the Act.*

Clause 3.2 states:

Sufficient development capacity for housing

> *(1) Every tier 1, 2, and 3 local authority must provide at least sufficient development capacity in its region or district to meet expected demand for housing:*

(a) in existing and new urban areas; and

(b) for both standalone dwellings and attached dwellings; and

(c) in the short, medium, and long term.

(2) In order to be sufficient to meet expected demand for housing, the development capacity must be:

(a) plan-enabled (see clause 3.4(1)); and

(b) infrastructure-ready (see clause 3.4(3)); and

(c) feasible and reasonably expected to be realised (see clause 3.26); and

(d) for tier 1 and 2 local authorities only, meet the expected demand plus the appropriate competitiveness margin (see clause 3.22).

NPDC developed an HBA in 2019 in accordance with Clause 3.11(b) NPS-UD. According to the HBA, Area R is currently identified as being available for urban development in the long term (meaning after 2028). Any development of Area R will require rezoning determined through a statutory plan change process. The future use of Area R is envisaged as a blend of residential and employment-related, possibly solely the latter.