Submission on the Revised Development Application

Proposed Broiler Farm
136 Top Forestry Road, Ridgewood QLD 4563

Application:
MCU12.0184 & ERA 12/0087

Date: 17 July 2015

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1.0 Introduction

1.1 Background

The development application to build an intensive poultry farm at 136 Top Forestry Road in Ridgewood (7km from Cooroy) was first submitted to the Sunshine Coast Regional Council in November 2012. The No Broiler Farm Cooroy (NBFC) group was formed in June 2013 when the Cooroy/Ridgewood community became aware of the proposal.

Over time, the development application has changed often, with regards to bird numbers, shed litter disposal, odour impact assessment modelling, traffic impact and volumes, shed synchronisation, and upgrades to Top Forestry Road for heavy vehicle use.

Well over 100 objectors raised numerous concerns during the various submission periods. NBFC submissions include:

• Comments on deficiencies and omissions in DA for MCU12/0184 (30 Sept 2013)

• Comments on the revised DA for MCU12/0184 & ERA 12/0087 (22 Aug 2014)

• Critique of the Chicken Meat Industry Science: Dust and Odour (4 Mar 2015)

• Critique of Guideline: Odour Impact Assessment from Developments (4 Mar 2015)

1.2 Purpose of this submission

On 25 September 2014 the Noosa Council (at an Ordinary Meeting) resolved to defer the matter of the development application MCU 12/0184 to allow the applicant time to address various matters relating to an alternative haul route, unacceptable odour impacts on adjoining properties, alternative pickup times, and Top Forestry Road safety, amenity and maintenance issues.

The purpose of this submission is to comment on the applicant's latest responses regarding the haul route through Cooroy, the early morning pickup times, and inadequacies in the proposal to upgrade Top Forestry Road. We also identify inadequacies and errors in the odour, dust and noise impact assessment modelling, and explain why we believe the results are unreliable.

We will also restate important aspects that the applicant has not resolved, such as non-compliance with the Noosa Plan's Mary River Catchment codes, insufficient separation distances, road maintenance and amenity issues along the haul route, and visual amenity issues.

2.0 Odour and Dust Impact Assessment

2.1 Odour assessment methodology

The application fails to adequately assess the potential impacts of fine particulate dust and odour emissions from the proposed development. Too much reliance has been placed on unvalidated computer modelling and a misuse of the *Odour Impact Assessment from Developments* guideline (our submission dated 4 March 2015 refers).

The relevant standard of the *Environmental Protection Act 1994* that applies to the proposal is 'environmental nuisance'. There is substantial (and real-life) evidence that poultry sheds in South East Queensland, including new best practice operations, frequently cause environmental nuisance and once established have limited capability to mitigate the deleterious effects of fine particulate dust and odours on neighbouring communities. The application does not provide reliable evidence to demonstrate that this common outcome is unlikely for the proposed development at Ridgewood.

2.2 Odour modelling deficiencies

- The detailed odour modelling fails to include five sensitive receptors that lie within the 2.5 OU contour. One of these (the dwelling at 185 Top Forestry Road) is located within, or very close to, the contour.

- Applicant has not indicated the 20, 10 and 5OU contours in the odour modelling results. These are generally shown on odour modelling maps for chicken meat farms as they provide an indication of the extreme odour levels.

- The dwelling on 146 Top Forestry Road is also a missed sensitive receptor. This residence is well within the 2.5 odour contour, and likely within the 5.0 odour contour.

- Odour modelling has omitted the following emission sources: transfer of litter and chickens from sheds to trucks, the transfer of carcasses from shed to cold storage, carcass bin for collection at site boundary, diesel-fuelled truck and machinery fumes during deliveries and pick-ups, odours from holding ponds for shed run-off from shed cleanouts, and vehicle wash downs.

2.3 Underestimation of operational emissions

The application's emission modelling underestimates on-site sources, concentration levels, and dispersion patterns and ranges. These modelled average emissions values are an unreliable indicator of actual concentrations that can be reasonably expected, and likely dispersion patterns and ranges because:

- The Queensland Department Environment and Heritage Protection threshold detection criteria (guidelines only) are based on non-routine, unexpected circumstances rather than continuous emissions of large volumes of untreated air from poultry sheds, and do not consider all emission characteristics, especially extremely offensive odours (such as poultry shed odours), which are those that give rise to nuisance complaints.

- The modelled average values do not reflect maximum output levels associated with batch cycle and atmospheric variations, e.g. catchouts, shed cleaning, fogging, inversions, summer heat and humidity.

  The development site is located in a valley, where inversions occur throughout the year. Since inversions are known to concentrate emissions, change dispersion patterns, and suppress and delay dispersion (*The Best Practice Guidance for the Queensland Poultry Industry* 2011 (page 20), the dwellings along Top Forestry Road, King Parrot Lane and Cooroy-Belli Creek Road would be affected by more concentrated and excessively high emissions. Inversion photo of development site and table of recent inversion events are shown in **Attachment 1**.

- The modelling did not use site-specific weather and topographic data. According to the DAFF *Queensland Chicken Meat Guidelines* 2010 (pages 50-51) *... it is not feasible to define a set of weighting factors covering highly detailed terrain types since the relationship between regional wind patterns and local terrain is highly variable and not able to be classified beyond a fairly basic level.*

  Wind speeds recorded at the BoM stations at Tewantin and Nambour were used by MWA for the meteorological modelling, as site-specific data was not available for the odour and dust assessments. However, Ridgewood wind speeds are significantly less than those recorded for Tewantin and Nambour. Comparisons of local wind speeds are shown in **Attachment 2**.

  The *Katestone Review – Odour Assessment of the Proposed Poultry Farm* (Feb 2015) states: *There is no known observed meteorological data to enable validation of the modelled meteorology. Given the complexity of the terrain, it is recommended that a meteorological station be installed on-site to allow an evaluation of the modelled meteorology.*

- The application does not propose any emissions mitigation measures as it assumes a 'best-practice' K factor of 2.2, although the development's location and shed siting and orientation do not demonstrate industry 'best practice'.

  Note: The use of a K factor of 2.2 indicates that the modellers do not fully understand what they are doing. The K factor is not a ratio scale measurement (that is, a K factor of 4 cannot be said to be mathematically twice as much as a K factor of 2) and therefore averaging K factors is nonsensical. K factors are at best an interval scale of measurement and more likely to be just at an ordinal scale, given that there is no documented scientific basis for the K factor. Although there is no published information regarding this matter, it would seem that the manner of use of the K factor in the emissions equation is mathematically invalid. (From Ian Eskdale, Environmental Scientist, pers. comm. 16 July 2014)

- The proposed development, even if operating at industry 'best practice', is likely to emit unacceptable amounts of odour and dust that would cause adverse environmental harm and health impacts.

- An independent report prepared for the Laidley Shire Council by Pacific Air & Environment (PAE) states that *"experience has shown that the K value may vary by a factor of 2 or more, and as this farm is yet to be constructed verification of the*

emission data is impossible. Given the close fit of the modelled acceptable odour levels with respect to nearby sensitive receptors, any odour output that exceeds minimum levels for 'best practice' farms would result in odour levels exceeding the prescribed limit at nearby sensitive receptors". (From Laidley Shire Council minutes, 25 July 2007, **Attachment 3**)

- The results are derived from a model based on vertical stack emission dispersion rather than poultry shed horizontal dispersion (*Best Practice Guidance for the Queenland Poultry Industry* (DEEDI) 2011, page 4).

2.4 Dust impacts on health

The harmful nature of poultry shed dust is well documented in the scientific literature - refer to NBFC's 4 March 2015 submission, Attachment 9, *HSE Statement of evidence: Respiratory hazards of poultry dust.*

Residents in the Ridgewood area hold serious concerns for their health, particularly given their dependence on tank water collected from roofs. No one knows with any certainty what particulate emissions are likely to be generated, so these fears are reasonable in the circumstances.

The council cannot neglect concerns backed by scientific evidence about the safety of drinking water. Residents are also concerned about unknown risks from particulate emissions that might be ingested by breathing. A proper regard for resident's health and amenity requires a cautious approach.

3.0 Proposed Haul Route

The proposed haul route roads, from the development site through Cooroy to the Bruce Highway, are unsuitable for the development's traffic volumes, vehicle types and schedules.

Existing land uses adjacent to these rural and urban roads include residential, rural uses, a retirement village, small businesses and two primary schools. The use of these roads as a heavy vehicle transport route would increase road safety risks and adversely affect the amenity of residents living adjacent to the route.

Maintenance of these local roads, which would be subjected to an unprecedented increase in heavy vehicle traffic, would impose an unacceptable cost burden on ratepayers.

Although Council could condition specific roads for the haul route, it would be unable to monitor compliance without public assistance.

3.1 Road upgrades and maintenance

The application does not address the upgrade and maintenance of roads between Top Forestry Road and the Bruce Highway that would be required for the development's operational transport needs. Nor does it consider the associated costs.

Pavement resurfacing, and shoulder and lane widening would be necessary at some curves and intersections to accommodate AV sweep paths. For example:

- Widening and resurfacing of Old Ceylon Road at the Cooroy-Belli Creek Road intersection;
- Lane widening at curves on the Cooroy-Belli Creek Road, at the Wust Road and Musavale Road intersections; and
- Redesign of the Maple Street/Crystal Street roundabout.

3.2 Road safety

The development's heavy vehicle traffic would increase safety risks on the haul route roads given their present forms and condition, and their existing use by motorists, pedestrians, cyclists and school buses. Articulated vehicle road use also creates a safety risk for residents exiting their driveways.

3.3 Residents' amenity

Traffic generated by the development's day and night operations would have adverse amenity impacts on residents. Heavy truck and organic load nuisances would include odour, noise, dust, ground vibration, light and sleep disturbance since there is no change to the early morning catchout times.

4.0 Top Forestry Road Upgrade

The alignment, form and width of Top Forestry Rd are limited by the topography and geology of the narrow ridge along which it runs. It is a no-thru road and the only access to 31 properties. Its only regular, weekly, large vehicle use is the council rubbish collection.

The upgrade proposal as at 10.06.2015 would not meet NSC design and construction standards (as per PSP 5) with regards to:

- pavement form, width and design life
- shoulder and road edge form
- cut and fill batter stability
- road reserve boundaries.

4.1 Upgrade design

The proposed design to build up the existing running surface and re-profile cut batters is based on:

- an assumed subgrade CBR15, and
- a 1:1333 cut batter profile.

Neither of these values was substantiated by the geotechnical investigation findings, which recommended use of:

- a subgrade CBR11, and
- a 1:2 profile for the upper 1metre of cut batters (Red Earth Engineering, 23 April 2015, pages 5-6).

The design would not reduce significantly the risk of slippage. Ridgewood's clay soils and seams are prone to saturation and slumping in wet weather. This is evidenced by the recent subsidence in the section of Cooroy-Belli Creek Rd east of the Old Ceylon Rd intersection.

The proposed re-profiling and vegetation removal from cut batters would disturb remnant topsoil, expose underlying low to medium strength rock to increased weathering, and remove soil stabilising vegetation structures.

Achieving stable batters along the entire 1.4km section, without re-aligning parts of the road, may put the top of cut batters and the toe of fill batters <3 metres from or outside of existing road reserve boundaries.

Council has specified a 6-m sealed pavement width from Old Ceylon Rd to the site access, while the design (Lambert & Rehbein, 25.05.2015) specifies widening for 7 discontinuous sections.

The design indicates minor works at Sections 1-5 and 7, but does not specify road edge and fill batter treatments to support the increased pavement width. Lambert & Rehbein has since indicated that widening of Sections 2, 3 and 4 should not be required even though part of Section 2 is only 5m wide (GANTT, email to council planners, 4 June 2015, page 3).

The design also does not consider the implications of altering natural drainage lines and existing run-off patterns.

4.1.2 Road safety

The proposed upgrade would not provide a safe driving environment for existing road users and heavy truck traffic sharing a road with a 6-m pavement width and an 80kph speed limit.

Lambert & Rehbein have indicated that a uniform 6-m pavement width is an unreasonable requirement. However, even a 6-m wide pavement is insufficient for shared use by oncoming vehicles, given that the combined width of two AVs is 5.8m and that 18 to19-m long AVs would be unable to keep left of the road centre on several curves. As well, the disintegration of road edges caused by large vehicles being forced to use this part of the road adds additional road repair costs.

It is unlikely that the use of Top Forestry Rd by one AV at a time and an AV restricted speed limit could be conditioned or enforced.

4.1.3 Design impacts on amenity

The proposed design would not mitigate amenity nuisances associated with the operation's day and night heavy truck and organic load traffic. These nuisances would include odour, noise, dust, ground vibration, light and sleep disturbance.

Roadside vegetation has a nuisance buffering effect and its removal would exacerbate the amenity impacts.

The design also raises the issue of soil erosion on properties below the road level, as the existing run-off patterns would be altered.

5.0 Impacts on Mary Valley Locality Visual Amenity

The proposal would bring an enormous change to the existing character and amenity of the Ridgewood area, which is characterised by areas of forest and pasture, gravel roads and scattered farmhouses, evidence of traditional rural activities, and non-visual attributes such as low levels of noise and traffic and the absence of night-time lighting. No kind of intensive animal husbandry has ever existed in this area, so the proposal threatens the unique character of this part of the Noosa hinterland.

An eight-shed broiler farm sited along ridge tops is incongruous within Noosa's rural hinterland landscape. It does not comply with the Shire's long-held criteria for planning approvals, and contradicts perceptions of a shire that is well known for its low-key developments, pristine waterways, natural and regenerated bushland areas, traditional rural pursuits, and pollution-free environment.

It will be impossible for the broiler sheds to be blended into the local landscape because any surrounding plantings will, necessarily, be on the steep slopes that remain once the ridge lines are levelled for the sheds and the associated roads and drainage infrastructure. The plantings, therefore, will be unlikely to grow to a height that will screen the sheds.

For the many residents that live on the ridges around the proposed development site, the constant glare from the shed roofs will be another jarring feature of this proposal. Because of the natural topography of the ridges, the sheds will be visible from nearby residences, other houses in the valley and from along sections of Cooroy-Belli Creek Road and Top Forestry Road. There are clear sightlines to the development from at least 20 local residences.

6.0 Conclusions

1. The proposed intensive poultry development does not comply with the Overall Outcomes of The Noosa Plan's Mary River Catchment Locality Code since the applicant has failed to demonstrate that the proposal would maintain and enhance the rural amenity, character and environmental values of the area.

2. The proposed Top Forestry Road upgrade does not comply with Council specifications and would lead to dangerous traffic conditions. The upkeep of this road over the lifetime of the chicken proposal would become a financial burden to Noosa ratepayers.

3. The proposed haul route through Cooroy is not satisfactory as it traverses inadequate roads, disturbs the amenity of hundreds of residents and would become an additional financial burden to ratepayers for its upkeep.

4. The meteorological modelling shows that there is a significant probability that the level of amenity impacts, from sources such as odour and dust emissions will exceed reasonable limits for sensitive receptors.

5. The proposal falls far short of providing sufficient separation distances for five sensitive receptors. These sensitive receptors have not been included in the detailed odour modelling.

6. The application has failed to show that the odour impacts are acceptable or are unlikely to cause 'environmental nuisance' which is the relevant standard to be addressed under the *Environmental Protection Act 1994*. Too much reliance has been placed on a misuse of the Odour Impact Assessment from Developments guideline, particularly the use of the 2.5 OU criterion for poultry odours and in a 'pass/fail' context (our submission dated 4 March 2015 refers).

7. The odour, dust and noise modelling should have been undertaken using site-specific meteorological and topographic data to appropriately assess the impacts of these emissions on the surrounding area.

8. The proposed development, even if operating at 'industry best practice' is likely to emit large amounts of odour and fine particulate dust (including bioaerosols) that are likely to cause environmental nuisance and related health impacts.

9. The proposal has little prospect of effective emission control measures (an industry-wide problem) to operate successfully. No allowance was made for any falling short from achievement of "best practice".

10. According to the *Environmental Protection (Air) Policy 2008*, the reality is that the proposed development will be managed in the least preferred way.

11. The experience in SEQ is that, where operational poultry farms have problems with their shed emissions and neighbours, the problems remain unresolved for years.

References

1. Comments on Deficiencies and Omissions in Development Application for MCU12/0184 (30 Sept 2013)
2. Comments on the revised DA for MCU12/0184 & ERA 12/0087 (22 August 2014)
3. Critique of the Chicken Meat Industry Science: Dust and Odour (4 March 2015)
4. Critique of Guideline: Odour Impact Assessment from Developments (4 March 2015)
5. *Environmental Protection Act 1994*
6. *Environmental Protection (Air) Policy 2008*
7. GANTT, Email from Cliff Wirz to Council Planners, 4 June 2015, page 3
8. *Katestone Review – Odour Assessment of the Proposed Poultry Farm* (Feb 2015)
9. Laidley Shire Council, minutes of Ordinary Meeting, 25 July 2007
10. Lambert & Rehbein, *Road Pavement Upgrades and Widening* (25 April 2015)
11. *Queensland Chicken Meat Guidelines* 2010 (DAFF)
12. Queensland Eco Access *Guideline: Odour Impact Assessment from Developments*
13. Red Earth Engineering, *Geotechnical Investigation Report*, 23 April 2015
14. *The Best Practice Guidance for the Queensland Poultry Industry* 2011 (DEEDI)

Attachment 1

This photo was taken on 31 December 2014 from Cooroy-Belli Creek Road, overlooking the development site. The location of the proposed chicken sheds is beneath the fog. The power lines run alongside the southwestern boundary of the property.

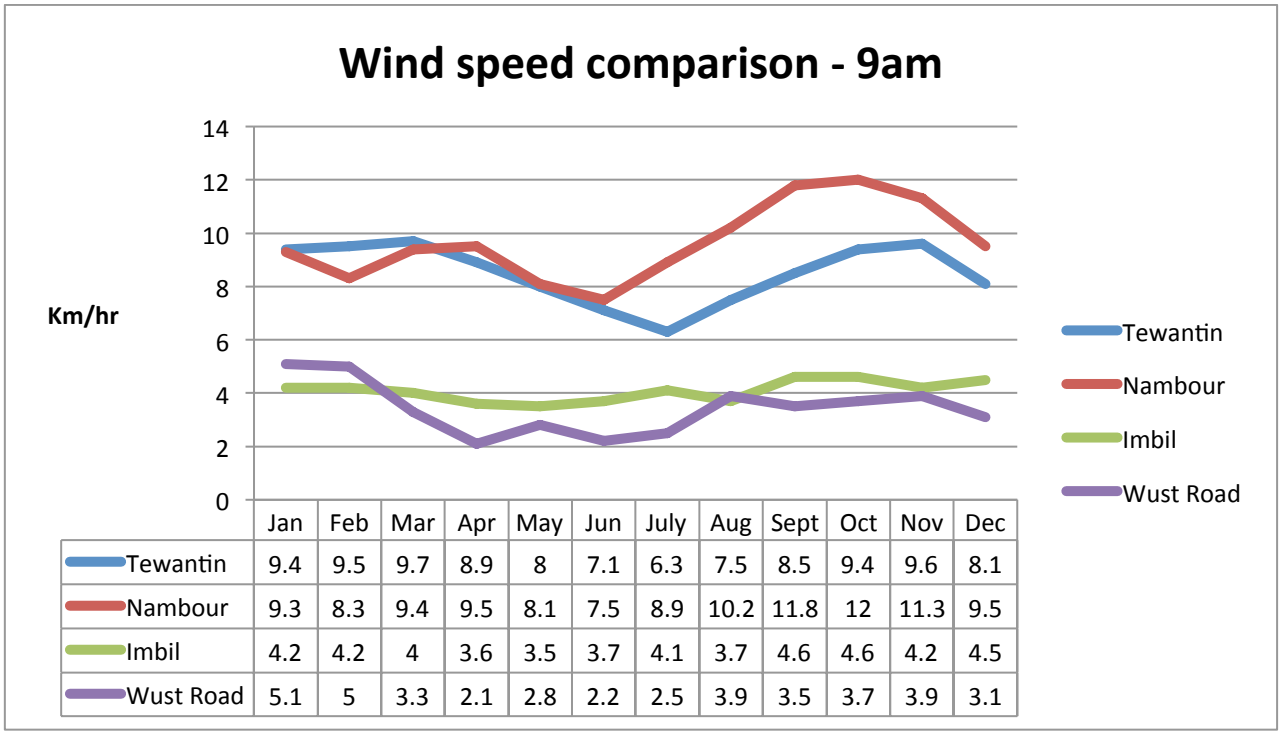
Dates of inversions observed in the Ridgewood development site March-June 2015

March	1	4	8	9	10	24							
April	4	17	18	19									
May	2	3	4	13	19	20	21	26	27	28	29	30	31
June	2	3	4	16	17	18	23	24	25	28	29	30	

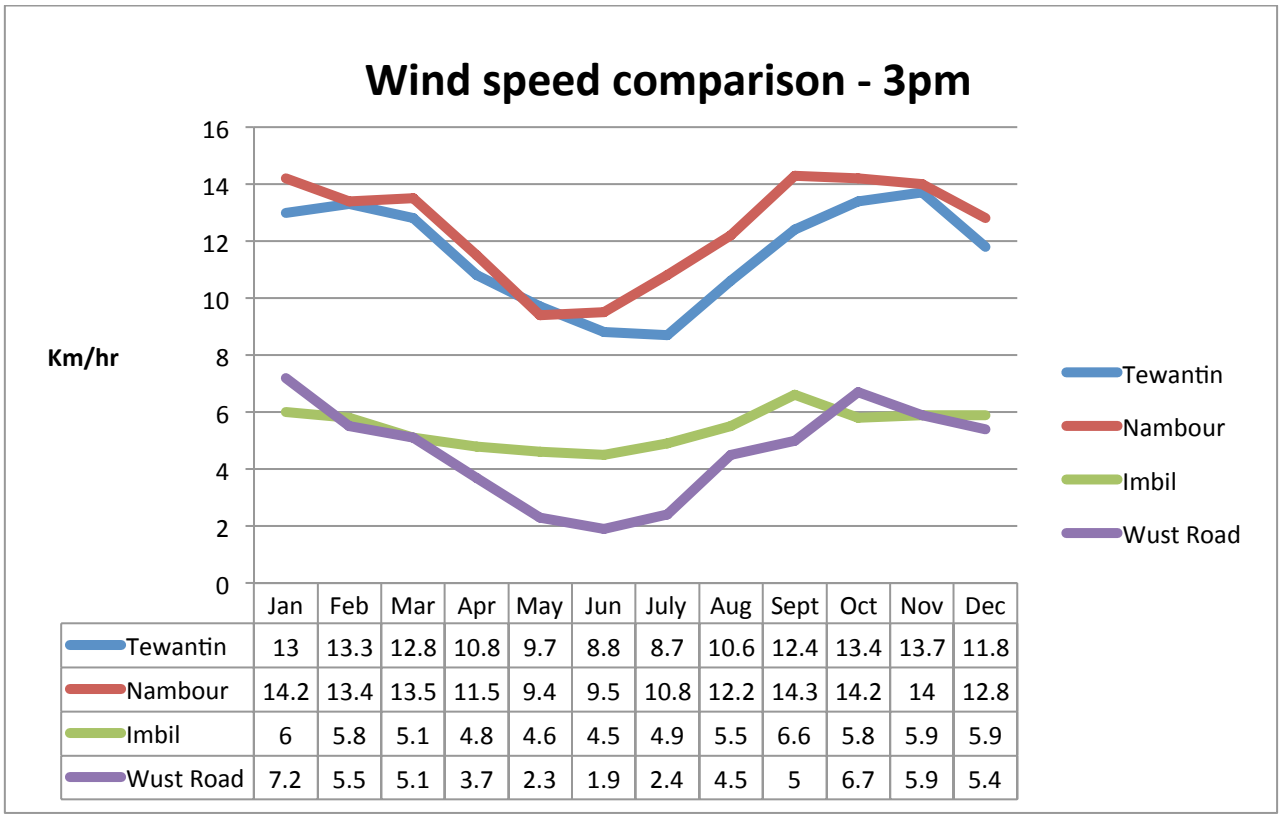
***Queensland Guidelines Meat Chicken Farms* 2012 (DAFF)**

Temperature inversion – A temperature inversion is said to occur when the air temperature increases with height above ground level. A surface inversion is commonly experienced in hollows and valleys, especially in winter on calm, clear nights when radiation has caused considerable cooling and air has sunk to form a pool of cold air, while the air is warmer on the mountain slopes above. It is also usual in fairly level areas in temperate latitudes for a temperature inversion to develop above the surface at night, when there has been clear sky and light wind for some time. In winter the inversion may reach a considerable height and may persist for several days, resulting in fog formation and often trapping pollution.

Attachment 2



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Tewantin	9.4	9.5	9.7	8.9	8	7.1	6.3	7.5	8.5	9.4	9.6	8.1
Nambour	9.3	8.3	9.4	9.5	8.1	7.5	8.9	10.2	11.8	12	11.3	9.5
Imbil	4.2	4.2	4	3.6	3.5	3.7	4.1	3.7	4.6	4.6	4.2	4.5
Wust Road	5.1	5	3.3	2.1	2.8	2.2	2.5	3.9	3.5	3.7	3.9	3.1



	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
Tewantin	13	13.3	12.8	10.8	9.7	8.8	8.7	10.6	12.4	13.4	13.7	11.8
Nambour	14.2	13.4	13.5	11.5	9.4	9.5	10.8	12.2	14.3	14.2	14	12.8
Imbil	6	5.8	5.1	4.8	4.6	4.5	4.9	5.5	6.6	5.8	5.9	5.9
Wust Road	7.2	5.5	5.1	3.7	2.3	1.9	2.4	4.5	5	6.7	5.9	5.4

Monthly wind speed averages for 1981-2010 were used for the BoM stations at Tewantin, Nambour and Imbil. Monthly wind speed averages for Wust Road (5km from the development site) are for 2014, taken from a private weather station located near the intersection of Wust Road and Cooroy-Belli Creek Road, Cooroy.

Abbreviations used in this report:-

The town planning proposal report prepared by TJ Kelly is referred to as the "Kelly report".

The environmental assessment report submitted with the application prepared by Mirrabooka Consulting is referred to as the "Mirrabooka report".

The review of the odour emissions aspects prepared by Pacific Air and Environment is referred to as the "PAE review report".

Environment protection Authority – "EPA"

Determining what constitutes a "sensitive receptor".

The EPA guidelines definition of a sensitive receptor includes a dwelling, mobile home or caravan park, residential marina or other residential premises and the curtilage of any such place and any place known or likely to become a sensitive place in the future.

Under the Laidley Shire Council planning scheme the erection of a dwelling on allotments in the surrounding area classified as Rural Landscape is self assessable. The siting of any dwelling would need to comply with the Queensland Development Code - Part 12. Part 12 of the QDC allows dwellings to be constructed up to 1.5 m from the side and rear boundaries and the garage /carport component to be sited up to the side boundary. It also allows for pergolas and other outdoor living areas to be erected up to side and rear boundaries.

In relation to existing dwellings, habitable areas can be constructed separate to the main dwelling in accordance with the siting constraints listed above.

Accordingly, dwellings and associated residential activities can occur up to the boundaries of the site.

It is therefore necessary to consider that owners of land in the surrounding area have self assessable use rights for a dwelling or part of a dwelling almost anywhere on the site.

Sensitive receptor

For the purpose of this report a sensitive receptor has been considered to be the boundary of any adjoining allotment or the nearest boundary of any allotment that does not adjoin the site.

Odour Emission Levels

The PAE review report in Part 2.1 on page 5 suggested that further information should be supplied to support the use of methodology used in the Mirrabooka report to describe the buoyancy of the plumes. This report also indicates that the divisor of 2 provided the most

beneficial temperature regimes with regards to buoyancy for all scenarios examined. It would appear that if this assumption is incorrect then the odour plume would not be as well dispersed and odour levels higher than predicted could occur.

The PAE review report essentially agrees that the odour plumes generated in the Mirrabooka report are reasonably representative of what will occur. It was noted that certain receptors would experience the odour unit level limit of 2.5 odour units if there was an upward variation of 20%. In the Mirrabooka report the receptors were taken to be the location of the dwellings adjacent to the site, not the curtilage or nearest boundary of the sited containing dwellings. The report also fails to recognise that the boundaries of Lot 8 RP 205135 and Lot 7 RP 2193992 on the opposite side of Balaam Hill Road are sensitive receptors.

The PAE review report advised that the PAE test modelling is based on a "best practice" poultry farm that has a K value of 2 in relation to odour generation.

In Section 2.4 page 22 of the PAE review report it is stated that experience has shown that the K value may vary by a factor of 2 or more and as this farm is yet to be constructed verification of the emission data is impossible.

It has been Councils staff recent experience for a "new" poultry farm in this area that, at application stage was purported to be best practice, the actual K factor is in the order of 4 – 6.

It is also understood that the odour generation can be varied by factors outside the control of the poultry farm operators such as the 'feed mix" from suppliers and the poultry farm operators have no real control over this feed mix as the nature of the various grains used in the mix depend upon availability and price.

Also in the applicants response to a request for additional information received by Council on 3 October 2006, it was stated that, "It is a policy of Inghams that foggers be fitted to the sheds".

The Mirrabooka report has not accounted for variation in emissions from those predicted, particularly when foggers are to be fitted to the sheds. Foggers would be used when high internal shed temperatures occur and air movement rates from fans would be at their maximum capacity. The use of foggers in sheds can increase the moisture content of litter thereby causing a significant increase in odour generation. This increase in odour generation would be co-incidental with maximum ventilation rates and high odour emission rates from the birds due to elevated temperatures.

The Mirrabooka report submitted by the applicant assumes the sensitive receptor to be the location of the existing dwellings on nearby sites. This is effectively reducing the use rights of nearby sites to the detriment of the owners of these sites and assuming that environmental impacts affecting other parts of neighbouring land is acceptable.