

Mr Ceri Davies  
Carmarthenshire County Council  
Civic Offices  
Crescent Road  
Llandeilo  
Carmarthenshire  
SA19 6HW

Ein cyf / Our ref: CAS-29726-R1Z6  
Eich cyf / Your ref: E/34266

1<sup>st</sup> June 2017

Dear Mr Davies

**PROPOSAL: 32,000 BIRD FREE RANGE CHICKEN UNIT, LANDSCAPING AND ASSOCIATED IMPROVEMENTS TO HIGHWAYS SECTION**  
**SITE LOCATION: LAND NORTH OF GLANMYDDYFI, PENTREFELIN, LLANDEILO, SA19 6SD**

As you will be aware Cyfoeth Naturiol Cymru / Natural Resources Wales met with the applicant (Mr Terry Davies) and his agent (Mr Jason Evans) on 26 April 2017, in relation to the above proposal. As a result of this meeting we wish to update your Authority on our position and the new information / proposals, which were put forward by the applicant.

We would also like to take this opportunity to provide your Authority with our comments in relation to the revised Ecological Appraisal and the letter entitled; '*Ammonia Report Critique*.'

### **1. Dinefwr Estate SSSI**

As we have highlighted in our previous responses the proposed poultry unit is located approximately 1.5 km from the Dinefwr Estate SSSI, which was notified in 1999. The SSSI has a number of special features including semi-natural woodland, standing water, parkland/veteran trees and a lichen assemblage.

The lichen assemblage at Dinefwr Estate SSSI supports the richest assemblage of National Rare and Scarce lichens of any parkland in Wales and a richer assemblage than all but one of England's Parklands (*T. Wilkins Natural England in litt.*)

The critical level for the protection of lower plants, such as lichens and bryophytes, is 1µg/m<sup>3</sup> and is based on experimental data. Impacts on sensitive lower plants have been observed at ammonia concentrations at this level.

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The APIS - Air Pollution Information System ([www.apis.ac.uk](http://www.apis.ac.uk)) uses modelling to give a figure of Ammonia deposition at Dinefwr Park. The 2013 - 2015 data give a concentration of  $1.34 \mu\text{g m}^{-3}$  for the Dinefwr area, which indicates it is already above  $1\mu\text{g/m}^3$ , a level that is damaging to lichens and bryophytes.

As a result of concerns a survey was recently undertaken by ourselves in order to provide further information on the current situation regarding lichens in the area.

The assessment involved a survey of the twig and trunk lichens of groups of Oaks at four sites in the Dinefwr area. This began at the site of the proposal, then looked at fields at Gelli Aur, the Dinefwr Deer Park, and also a non-SSSI section of the National Trust land at the north-west of Dinefwr.

The lichens which are found on twigs and trunks are informative in relation to air quality, because they indicate the nature of the bark on which they grow. Twig lichens are particularly useful as indicators, because twigs are new growth and provide a substrate which reflects current/recent Ammonia levels whereas old trunks hold on to pH levels for longer and sometimes reflect conditions in the past. Both these aspects were examined as part of the survey.

The technique is described on the APIS website and was developed by some of the country's leading lichenologists. As a result it is considered to be a very robust and widely used way of determining Ammonia levels.

A small number of Ammonia-sensitive and Ammonia-tolerant species are recorded on a group of twigs or a group of trunks, and a Lichen Indicator Score (LIS) is worked out depending on whether the Ammonia-sensitive or Ammonia-tolerant species are more abundant. This Lichen Indicator Score is transformed into a Nitrogen Air Quality Index using a graph, with one line for twig LIS and one line for trunk LIS.

Based on the findings of this survey, Ammonia is already adversely influencing the edges of the SSSI, but not its heart. Therefore, it is NRW's opinion that any proposal which has the potential to add any more ammonia to the system may expand these external pollution influences.

## **2. Process Ammonia Contribution / Air Quality**

Given the sensitivity of the SSSI lichen features, we have taken opportunity to re-assess the Ammonia Report by Mr Steve Smith (AS Modelling & Data Ltd), dated 2 March 2015.

The assumption used in the applicant's Air Quality report is based on Environment Agency (EA) guidance that approximately 20% of the droppings are deposited on the ranging area.

The report then assumed that the laying hens produce 0.8kgN/yr in their droppings and that 20% of the ammoniacal nitrogen in the droppings is emitted as ammonia, due to leaching and mineralisation due to contact with the ground.

You have also provided us with a third party letter which offers a critique of the applicants report. This letter asserts that the model input value used for the ammonia emissions from the range (Table 2: page 7 of the Air Quality Report) is not an agreed emission factor. Given the specific sensitivity of the Dinefwr Estate SSSI, we would confirm that the DEFRA figures mentioned in the letter, could have been used as a further precautionary measure when considering the potential impact upon the SSSI. The 20% emission value is reported in the applicant's submissions as the consultants own value. The DEFRA value is higher at 35%.

As previously highlighted our concerns have been that the farm Process Contribution (PC) was significant because it was above 4% of the  $1\mu\text{g}/\text{m}^3$  ammonia critical level.

We have calculated the emission rates based on the assertions within the '*Critique Letter.*' This would see an increase in the farm Process Contribution (PC) of up to 60%, resulting in more receptors being above 4% considered to be significant.

The report also relies on a two times a week removal of manure. This is a critical dependency - if the manure is not removed at this frequency then ammonia loads could increase. In the event that planning consent is granted this would be a matter requiring close attention and regulation.

Notwithstanding which figure is used, given the sensitivity of lichen assemblages and the latest site specific information, we continue to have significant concerns about additional ammonia process contributions from the proposal.

Site specific information will always be the most important factor in our determination. It is our opinion that the addition of further source of ammonia arising from this development poses an unacceptable risk to the features of the SSSI.

### **3. Manure Management / Landspreading**

The location of a new source of manure production in the area remains of concern to us. Poultry manure is a source of ammonia and spreading activities can offer an additional source of pollution to sensitive lichens.

This has been discussed at length and we recognise that the applicant is keen to address this issue and has volunteered to avoid land-spreading in the vicinity of the development.

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#### **4. Mitigation Measures**

We are of the view that given the existing background and the current status of the SSSI, that the process emissions from the unit would provide an unacceptable additional risk to the SSSI. Furthermore that any land spreading of manure in proximity to the site would only worsen this situation.

Whether any form of mitigation could reduce these risks would need to focus on whether headroom can be created in the background air quality to adequately accommodate new process contributions and also additional ammonia contributions are not created from new land-spreading activities.

**At this time there is not enough evidence provided to demonstrate mitigation measures can be designed, implemented and secured for the lifetime of development.**

During our meeting of the 26 April 2017 with the applicant, new proposals for the management of manure were put forward by the applicant. The first involved entering into an agreement (either by condition or Section 106 agreement), which would ensure that no manure from the proposed development would be sold to any holding with land within 1.5 km of the Dinefwr Estate SSSI boundary. We also consider that it should be stipulated that no manure would be given away / transferred to any holding with land within this radius.

In addition, the offer was also made to not spread any manure on the 42 acre block of land which is under the ownership/control of the applicant. It is our understanding that manure is currently spread on this land. However, the Manure Management Plan, suggests (within Section 8.6 – that; *'in some years cattle manure will be spread*). We advise that for the sake of simplifying calculations, then a commitment be given to not spreading any manure on the 42 acres. We also note the previous commitment not to store any manure on the application site, or on the 42 acres.

Whilst we welcome the above proposals, there is currently a lack of detail in relation to the reduction of ammonia (& nitrogen) which such measures would achieve, their enforceability and the duration of any condition or legal agreement. As a result, NRW continue to have significant concerns with regard to the above proposal and are unable to advise you that mitigation is adequate to protect the SSSI.

Should you wish, then your Authority could ask the applicant to provide further details and a calculations of the reduction in ammonia (& nitrogen) levels, which the non-spreading of 42 acres would provide along with a map of the 42 acres (*as currently planning details refer to the red-line planning application boundary*).

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We would advise that the main calculations need to demonstrate how much reduction is possible by not spreading any manure on the 42 acres of land. We would consider it reasonable to assume that the current spreading rate is 250kg/ha/yr. Each of the fields (which comprise the 42 acres), would then need to be assessed for its ammonia and nitrogen emissions based on 250kgN/ha/yr and how much would reach the SSSI – that is the reduction. These calculations could be undertaken by utilising the SCAIL Model system, but it would need to be done separately on each individual field.

The purpose of the additional calculations would be to demonstrate the potential ammonia (& nitrogen) reductions. The results could then be used to assess current practice and possible future practices. Should the applicant wish to pursue this option then we would be happy to provide further advice, if required.

However, we wish to make it clear that there is also the possibility that further reductions may not contribute the necessary 'headroom' in order to alter our advice regarding the proposal and so any additional work, would be at the applicant's risk.

We would also look to your Authority for confirmation and reassurance that the proposed measures outlined above and the Manure Management Plan could be secured and enforced. We would ask to be consulted on any such legal agreement prior to the determination of the application.

## **5. Ecological Appraisal**

We note the submission of the revised document entitled; '*Land to the North of Glanmyddyffi, Pentrefelin, Carmarthenshire: Ecological Appraisal*', dated 23 January 2017, by Baker Consultants Ltd.

While we note that the Dinefwr Estate SSSI has now been referenced within the document and Section 5.2.3 states that; '*The development proposals do not include any element of direct impacts with the SSSIs, and as a result there will be no conflict with the potentially damaging operations lists.*' However, as outlined in this letter, we have significant concerns in relation to the potential effects of such a development.

Furthermore, under Section 28 of the Wildlife & Countryside Act, Carmarthenshire County Council (CCC) would be considered a S28G Authority and therefore has obligations under the Act, in relation to applications for consents that would lead to operations likely to damage features of the special interest and as NRW currently understand this would also include planning applications.

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It is also our understanding that planning applications are considered under Section 28H of the Act and that sub-section (1) would apply even if the operations would not take place on land included in the SSSI and those that may have direct impact to the sites special feature (*i.e. the lichen assemblage at Dinefwr Estate SSSI*).

**To conclude the Dinefwr Estate SSSI is recognised as the second most important site in England and Wales for its parkland lichen assemblage, we are of a view that the risk posed by even a ‘one off’ incident involving poultry manure derived Ammonia pollution could have a major impact on the notified features. We note the offer made by the applicant of a 1.5 km ‘buffer / no-sale / no spreading zone’ around the SSSI and the ‘no-spreading of manure’ on the 42 acres under his control, which is proposed could be dealt with by means of a condition or legal agreement. However based on the application as submitted and the evidence before us at this time, we OBJECT to this application. This position would be maintained unless the effectiveness of this mitigation in providing protection to the SSSI features can be demonstrated.**

**In the event that the applicant seeks to further develop the mitigation options we would be happy to review any additional information provided by you.**

We would refer you to our previous responses for NRW’s advice in relation to: flood risk, foul water disposal, the protection of watercourses and provision of appropriate pollution prevention measures.

I hope these comments are of assistance in clarifying NRW’s advice in relation to this application.

Yours sincerely

**Jonathan Scott  
Arweinydd Tim Cynllinio Datblygu - Team Leader Development Planning  
Cyfoeth Naturiol Cymru / Natural Resources Wales**