Environmental Statement

Planning application for a free range egg production unit and associated works Land to the North of Glanmyddyfi Pentrefelin Llandeilo Carmarthenshire

Prepared for Mr Terry Davies



land & property professionals

Roger Parry & Partners LLP www.rogerparry.net gail@rogerparry.net **Tel: 01691 655 334**

Client's Address

Mr Terry Davies

TE and EE Davies Llys y Nant Llanfynydd Carmarthen SA32 7TG

Erection of a free range egg production unit and associated works

Environmental Statement

Publication title	Environmental Statement	
Version	1.0	
Date	July 2020	

Prepared by:

Gail Jenkins BSc (Hons) MRICS, FAAV, NSch

Directed, reviewed and approved by:

Richard J Corbett BSc (Hons) MRICS FAAV –Roger Parry & Partners LLP

Roger Parry & Partners LLP

The Estates Office 20 Salop Road Oswestry SY11 2NU Tel: 01691 655 334 Fax: 01691 657 798 gail@rogerparry.net www.rogerparry.net

Ref: Glamyddyfi v 1 07/20

CONTENTS

Chapter 1 - INTRODUCTION	6
Chapter 2 – SCOPING AND KEY ISSUES	
Chapter 3 – ADDRESSING CONSULTEE AND WELSH GOVERNMENT COMMENT	64
	. Error! Bookmark not defined.
Chapter 4 – ALTERNATIVES	
Chapter 5 – DESCRIPTION	68
Chapter 6 – POLICY & LEGISLATION	80
Chapter 7 – AIR QUALITY, HEALTH & CLIMATE	
Chapter 8 – LANDSCAPE & VISUAL IMPACT ASSESSMENT	
Chapter 9 – TRAFFIC	
Chapter 10 – AMENITY	
Chapter 11 – ECOLOGY	
Chapter 12 – NOISE & VIBRATION	
Chapter 13 – WATER RESOURCES	
Chapter 14 – SOILS	
Chapter 15 – SUMMARY & CONCLUSIONS	
BIBLIOGRAPHY	

APPENDICES

Glanmyddyfi Appendix 1 Site Plan Glanmyddyfi Appendix 2 Site Plan with Extract Glanmyddyfi Appendix 3 Site Plan with Photo Montage Glanmyddyfi Appendix 4 Location Plan Glanmyddyfi Appendix 5 Elevations Glanmyddyfi Appendix 6 Landscape Plan Glanmyddyfi Appendix 7 Pre Consultation Report (only on full application) Glanmyddyfi Appendix 8 Design and Access Statement Glanmyddyfi Appendix 9 Management Plan Glanmyddyfi Appendix 10 Manure Management Plan Glanmyddyfi Appendix 11 Pollution Prevention Plan Glanmyddyfi Appendix 12 Preliminary Ecological Appraisal Glanmyddyfi Appendix 13 Drainage Report Glanmyddyfi Appendix 14 Flood Consequence Report Glanmyddyfi Appendix 15 Flood Response Plan Glanmyddyfi Appendix 16 Noise Impact Assessment Glanmyddyfi Appendix 17 Outline Soft Landscape Specification Glanmyddyfi Appendix 18 Transport Statement Glanmyddyfi Appendix 19 Ammonia Modelling Glanmyddyfi Appendix 20 Extraction Systems Glanmyddyfi Appendix 21 LVIA Glanmyddyfi Appendix 22 Pest Management Plan Glanmyddyfi Appendix 23 Arboriculture Method Statement Glanmyddyfi Appendix 24 Dust and Bioaerosol Management Plan Glanmyddyfi Appendix 25 Odour Management Plan Glanmyddyfi Appendix 26 2km Study Area Glanmyddyfi Appendix 27 Site Sensitive Receptors Glanmyddyfi Appendix 28 Aerial Photo Glanmyddyfi Appendix 29 5km Radius Glanmyddyfi Appendix 30 10km Radius Glanmyddyfi Appendix 31 Management Plan Glanmyddyfi Appendix 32 Range Plan Glanmyddyfi Appendix 33 Otter Survey Glanmyddyfi Appendix 34 Ecological Appraisal

Foreword

This Environmental Statement (ES) has been prepared for Mr Terry Davies by Roger Parry & Partners LLP. It accompanies a planning application for a proposed free range egg production unit upon land at Glanmyddyfi, Pentrefelin, Llandeilo, Carmarthenshire

The proposals assessed for the Environmental Impact Assessment (EIA) are for a free range egg production unit with the capacity for 16,000 birds on site.

The footprint of the poultry unit is expected to cover $1,441.75^2$. The proposed building shall be 73m by 19.75 m with a roof pitch of 15°, internal eaves height of 3.4 metres and a ridge height of 6.3 metres. The building shall house 16,000 free range birds.

Hours of operation will be 24 hour seven days a week due to the fact that it is a livestock enterprise requiring continual husbandry. A site layout plan for the egg production unit is shown in Appendix 1, 2 and 3.

The proposal is to enable Mr Terry Davies to create a sustainable business for his family through diversion of the traditional beef and sheep farm, and the building is designed to ensure that livestock on the farm have sufficient housing space to carry out their five freedoms.

The ES is the principal written output of the EIA process, and provides the required information on the predicted environmental impacts of the proposal. It has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011. The ES is intended to enable the recipients (such as the Local Planning Authority) to understand the nature of the proposed unit and to evaluate the likely environmental impacts in the light of proposed mitigation measures. The ES therefore represents an essential component of the decision-making process and presents information in a readily accessible form.

CHAPTER 1 - INTRODUCTION

This chapter summarises the nature of the proposed unit and its location, introduces the basis for the planning application, explains the general basis and methods used for the Environmental Impact Assessment (EIA), sets out the structures of the Environmental Statement (ES) and introduces the authors of the ES.

1.1 Introduction to the Environmental Statement

As part of the process of making an application for the free range egg production unit, Mr Terry Davies have employed Roger Parry & Partners to co-ordinate with the compilation of the associated planning application, including provision of an Environmental Impact Assessment (EIA) to be reported in an Environmental Statement (ES).

This chapter summarises the nature of the proposed development and sets out the purpose of the ES.

1.2 Summary of the Proposals

1.2.1 The Proposed Intensive Poultry Unit

The proposal assessed for the EIA is for the erection of a free range egg production unit for 16,000 birds on site.

The poultry unit will be integrated into the applicant's agricultural enterprises on farm, which include beef and sheep enterprises and a free range poultry unit.

The proposed building shall be $73m \times 19.75m$ with a roof pitch of 15° , internal eaves height of 3.4 metres. The building shall house 16,000 free range birds. The total footprint of the building is 1,441.75 square metres.

Hours of operation will be 24 hour seven days a week due to the fact that it is a livestock enterprise requiring continual husbandry. A site layout plan for the poultry unit is shown in Appendix 1, 2 and 3.

It is expected that, on the receipt of planning permission, the construction would commence in 2021 with operation commencing after a three month construction period.

The proposed unit is to be located upon land to the North of Glanmyddyfi, Pentrefelin, Llandeilo, Carmarthen.

1.2.2 The need for the Proposal

Mr Terry Davies is proposing to erect a modern free egg production unit to ensure that livestock on the farm have sufficient housing space to carry out their five freedoms and also the space stipulated by the welfare standards of the RSPCA Freedom Food Standards. The proposal is proposed in order to support the existing livestock enterprises run on farm and ensure the sustainability of the existing farming business for the current and future generations.

The proposal is a sustainable economic development that will contribute positively to the UK poultry sector. In addition to the wider national benefit, the unit will create full time employment position as well as indirectly contributing to the local economy through feed contracts, building contracts, veterinary employment etc.

1.3 Site Location

The proposal is for the creation of a free range poultry unit upon land to the north of Glanmyddyfi, Pentrefelin, Llandeilo, Carmarthenshire to provide accommodation for 16,000 free range birds.

Please see below aerial image of the site;



The land to the north of the property known as Glanmyddyfi is shown on the aerial images above.

The farm lies to the north east of the market town of Llandovery. The site in question is currently laid to an agricultural enclosure laid to grass. The site in question is largely level, with the topography rising upwards, in relation to its north eastern potion.

The boundaries of the field parcels are defined by extensive, native hedgerows which are mature in their position. The field parcels are approached via a field gate in the southern corner directly off the council highway. Additional ground is proposed to be developed for the purposes of additional landscaping.

The site is currently used by Mr Davies as part of his agricultural business, being a mixed livestock farm with both beef and sheep. The field parcels proposed to be utilised as part of this development have been grazed by livestock for many years, with harvest crops also taken. Organic and inorganic manures have been applied to the land as part of the farm grass management programme. The application presented also provides improvements to the junction where the minor county highway adjoins the A40. The ornamental hedge at this junction point is to be relocated as part of the proposal as detailed in the transport statement.

The immediate surrounding area is predominately laid to agricultural enclosures and isolated dwellings. The landscape within which the application site is set is typical of the rolling Upper Tywi Valley area with mature hedgerows and woodland planting. Wider views are dominated by agricultural enclosures, isolated farms and large agricultural buildings and dwellings. Within the landscape there are traditional farm buildings, however the more modern style of steel portal framed buildings are common features in the landscape, with steel cladding to the roof and walls.

Glanmyddiyfi is in an isolated rural area, approximately 2.5 km to the west-north-west of the town of Llandeilo in Carmarthenshire. The surrounding land is used primarily for livestock farming, although there are isolated arable fields and areas of semi-natural woodlands and grassland. The site is at an altitude of around 50 m with the land rising towards hills to the north and falling towards the Afon Myddyfi Valley to the south.

It is proposed that a new egg laying chicken house, with a capacity of 16,000 birds, be constructed at Glanmyddiyfi. The new poultry house would be ventilated by uncapped high speed roof mounted fans, each with a short chimney. Pop holes on the side of the house would provide access to an outside ranging area. The house would be fitted with a manure belt system to collect droppings, usually twice weekly, and then removed from the site. Manure from the free range egg laying unit would not be stored at the site, nor spread on any of the land at Glanmyddyfi.

To improve fertility, the current improved grassland pasture at Glanmyddyfi is spread with approximately 126 tonnes of poultry manure per annum. Under the proposal, manure spreading at Glanmyddyfi would cease. The reduction in ammonia emissions from the manure spreading is expected to some extent compensate for the ammonia emissions from the proposed poultry housing and ranging area. Additionally, the grassland outside of the proposed ranging area is expected to gradually return to an unimproved state.

There are seven Sites of Special Scientific Interest (SSSIs) within 5 km of Glanmyddyfi and parts of the Afon Tywi Special Area of Conservation (SAC) is also within 5 km. Of these eight sites, only four are designated for their flora (which may be susceptible to damage from excess ammonia and nitrogen and acid deposition), they are: the Dinefwr Estate SSSI; the Caeau Bryn Ifor SSSI, Coedydd Tregyb SSSI and the Allt y wern SSSI.

There are no public footpaths directly affecting the site.

1.4 The Applicant

The application is in respect of land to the north of Glanmyddyfi, Pentrefelin, Llandeilo, Carmarthenshire.

The business of Mr Terry Davies is more than confident that the free range unit can be a success and supplement the current farm profits, and eliminate the seasonality of beef and sheep enterprises. The business has realised that Brexit will reduce farm incomes and is proposing the Poultry Unit to secure a sustainable future for the business and succession for the family. Mr Davies and Mrs Davies have children to consider and wish to provide them with entry points into the agricultural industry.

Business Evolution

The farm business of Mr Terry Davies has been established and operating within the locality for a number of years.

The family consider that the continued diversification into egg production would enhance their existing business, allow them to gain economies of scale, maintain farm profits giving impetus to the farm business which would allow an additional full time employment position to be created in addition to providing additional employment for the family partnership.

Requirement for an EIA: Legislative Background 1.5

The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 require that for certain types of development an EIA must be undertaken. The Regulations prescribe the types of development for which EIA is mandatory (Schedule 1 Extension) and others which may require an assessment if they have the potential to give rise to significant environmental impacts (Schedule 2 Extension). Carmarthenshire County Council have requested an EIA is submitted in support of this application as detailed in the attached letter with supporting comments from Statutory Consultees.



Heol Cilgant, Llandeilo, SA19 6HW

Road, Llandeilo, SA19 6HW

Gofynner am / Please ask for:

Paul Roberts

io

Eich cyf / Your ref:

Llinell Unionavrchol /Direct Line:

01267 228956

E-bost Uniongyrchol / Direct Email:

cproberts@carmarthenshire.gov.uk

SC/17086 Fy nghyf / My ref:

30 April 2020

Jason Evans Evans Banks Ltd 2 Llandeilo Road Cross Hands Carmarthenshire SA14 6NA

Dear Sir

TOWN AND COUNTRY PLANNING ACT 1990 THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (WALES) REGULATIONS 2017

PROPOSED FREE RANGE CHICKEN SHED AT LAND NORTH OF GLANMYDDYFI, **PENTREFELIN, LLANDEILO**

I refer to your request for a screening and scoping opinion in respect of the above development which was received on 14 January 2020.

The development proposed relates to the erection of a 16,000 bird free range chicken unit, landscaping and associated improvements to the highway junction. It falls within the description of development contained under paragraph 1(c) of Schedule 2 of the 2017 Regulations whereby it exceeds the 500 square metre floor space referred to therein. The proposal therefore constitutes a 'Schedule 2 development' within the meaning of the 2017 Regulations.

The views of our Ecologist as well as those of Natural Resources Wales (NRW) and a number of other consultees have been sought in respect of the development and these have informed this screening and scoping opinion. These are enclosed for your information. The response provided by the Ecologist includes an explanatory note, EIA screening matrix and scoping response which are all enclosed.

Screening Opinion

Schedule 3 of the Regulations sets out the selection criteria for screening Schedule 2 developments with these relating to the characteristics and location of the development and the types and characteristics of the potential impact. Paragraph (1) of Schedule 3 (characteristics of development) requires that regard be given to, amongst others, the size and design of the development, the production of waste and pollution impacts. Paragraph (2) (location of development) requires that consideration be given to the environmental sensitivity of areas likely to be affected by the development with particular regard to the relative abundance, availability and quality of natural resources (including soil, land, water and biodiversity) in the area and the absorption capacity of the natural environment, paying particular attention to certain areas which include riparian and woodland areas and European and other sites classified or protected under national legislation.

Furthermore, paragraph (3) of Schedule 3 states that the likely significant effects of the development on the environment must be considered in relation to the criteria set out in paragraphs (1) and (2) taking into

account, amongst others, the magnitude and spatial extent of the impact, the nature, intensity and complexity of the impact and the possibility of effectively reducing the impact.

The proposal is located within 2km of 'sensitive areas' as defined under the 2017 Regulations being approximately 1.5 km from the Dinefwr Estate Site of Special Scientific Interest (SSSI) and approximately 1.7 km from the Afon Tywi SSSI. The later is located downstream of the proposal forming part of the Afon Tywi Special Area of Conservation (SAC) and is hydrologically linked to the Afon Myddyfi whose route passes close to the site's boundary.

Dinefwr Estate SSSI

The SSSI is designated on the basis of lichen and invertebrate assemblage that is reliant on the parkland and woodland trees. NRW have advised that the lichen assemblage at the 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. Moreover, over 160 species of lichen have been identified to date, a number of which are sensitive to atmospheric pollution. NRW confirm that recent surveys of the SSSI undertaken in both 2014 and 2017 have found that several species of lichen previously present on the site have been lost while the most outstanding element of the lichen assemblage at the site are those associated with acid bark and acid lignum and which are particularly sensitive to ammonia pollution.

Previous surveys and modelling work suggest that background levels of ammonia pollution from adjacent farmland is above the critical level for impact on lichens of 1.0 µg NH3 m-3 which NRW advise that, based upon specialist advice, will have a detrimental impact upon the remaining lichen species whereby it is likely that all ammonia sensitive species will be lost. They confirm that further surveys that they undertook in 2017 and 2019 showed that the extent and severity of Nitrogen pollution within the SSSI has substantially increased since 2017 and that current levels are causing changes throughout the SSSI. On this basis, they opine that current levels of ammonia in the landscape surrounding the SSSI are already too high and the creation of new intensive agriculture operations has the potential to increase this problem.

Having analysed the report prepared by AS Modelling and Data Ltd on the modelling of the dispersion and deposition of ammonia from both the existing field spreading and the proposal, NRW note that the report and associated modelling files are the same as those submitted in support of the previous planning application, E/37351, relating to the proposal. In doing so, they refer to their previous comments contained in their letter dated 1 February 2019 regarding the modelling wherein they highlight a number of issues to be addressed. These relate to the assumption of the percentage of droppings on the ranging area, the met data used and differences in the ammonia emission factor in the modelling. Whilst this previous response from NRW indicated that they had undertaken their own check modelling based upon the submitted information that indicated that the 1% critical levels and loads at the selected receptors within the SSSI were unlikely to be exceeded, nonetheless their subsequent response to your screening and scoping request advocates a precautionary approach in relation to developments that could impact upon the protected site. They highlight the need to provide the abovementioned information in addition to clarification as to the deposition velocity used in the modelling report to fully assess the proposal as well as the need to demonstrate that the mitigation measures proposed are certain to work. In terms of the latter, in their previous response of 1 February 2019 NRW sought the submission of further information to inform their consideration of the proposal which included, amongst others, the need to provide an updated Manure Management Plan, a Nutrient Management Plan and the provision of an evidence based planting scheme to provide protection to the lichen features of the SSSI. This information has not been provided to date and on the basis of the information provided, NRW consider that the proposal has the potential to have significant environmental effects.

The Ecologist concurs with NRW's advice in advising that, from the information available, it is considered that the proposed development has the potential to have an adverse effect upon the SSSI by way of ammonia and nitrogen emissions. It is recommended that the proposal be accompanied by an air quality modelling assessment and mitigation strategy that addresses NRW's previous requests in order to provide confidence that the proposal will not worsen the impacts that current ammonia levels are having on the protected site.

Afon Tywi Special Area of Conservation (SAC)

The SAC is approximately 1.7 km downstream of the Afon Myddyfi which itself lies approximately 10 metres downhill of the proposed development site. The Afon Myddyfi provides a direct hydrological link to the SAC. The primary reason for the designation of the SAC is the presence of Annex II species, namely twaite shad

Alosa fallax and European Otter Lutra lutra. It also contains a number of Annex II qualifying species. The Afon Tywi SSSI also forms part of the SAC.

Given the proximity of the development to the Afon Mvddyfi and its hydrological connection with the SAC there is a risk of pollution entering the Afon Mvddvfi during both the construction and operation phases of the development. In terms of the former, these include fuel and chemical spill, silt and dust, flooding incidents and washdown activities. The same risks are also associated with the operation of the development in addition to surface water runoff from the livestock ranging area.

Your submission has been accompanied by a drainage strategy and pollution prevention plan which set out measures to prevent and mitigate these pollution impacts. The latter confirms that without mitigation there is a likelihood of severe, if not catastrophic damage, on sensitive receptors including the nearby Afon Myddyfi which connects with the SAC.

Having considered the measures proposed, the Ecologist has raised concerns regarding the lack of clarity as to the precise extent of the ranging areas of the free range chickens and, allied to this, whether the infiltration trench has been sited in a suitable location topographically to ensure that surface water run off from the concrete slab and the wider ranging area is intercepted. Whilst the drainage strategy indicates that the drainage infrastructure is designed to accommodate the 1 in 100 year + 30% storm event, the Ecologist also questions whether it is of sufficient capacity for the volumes of water from the concrete slab and ranging area.

In addition, whilst the scheme includes an interceptor ditch that extends down to the south western corner of the site, NRW question whether this is a 'blind ditch' or will alternatively connect to an existing watercourse and, moreover, how will it be managed should it become full or overflow.

The Ecologist has advised that the details of the mitigation should provide a level of certainty and contingency to confirm that the development would not result in an adverse effect on the quality of features of the Afon Tywi SAC. However, from the information submitted, it is considered that the development has the potential to have a significant effect on the Afon Tywi by way of pollution from surface water runoff.

Ancient Woodlands

The surrounding area wherein the development is located contains ancient woodlands with those within 2km of the proposal being shown in Appendix A of the pollution prevention plan accompanying your submission. The nearest of these is located to the west of the site and follows the south easterly route of the Afon Myddyfi. The Ecologist advises that these are likely to contain woodlands listed under Section 7 of the Environment (Wales) Act 2016 that are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. Furthermore, ancient woodlands are sensitive receptors to air quality impacts and these habitats will therefore require assessment for ammonia and nitrogen emissions/deposition within 2km of the proposal.

Whilst the ammonia modelling assessment prepared by AS Modelling and Data Ltd references ancient woodlands, no assessment has been made with regard to the ammonia levels or nitrogen on these habitats. From the information submitted, the operational phase of the development therefore has the potential to have a significant effect on the ancient woodlands in the surrounding area

For the above reasons, the proposed developed development has the potential to have a significant impact upon the Dinefwr Estate SSSI, the Afon Tywi SAC/SSSI and the ancient woodlands in the surrounding area. The proposal is therefore considered to be EIA development.

Scoping Opinion

The Ecologist has provided detailed advice on the scope and level of ecological information to be presented in the Environmental Statement (ES) in order to assess the impacts of the development. It highlights the need to ensure that suitable and up to date baseline information is provided to inform the EIA and recommends that these should include the following baseline reports and supporting information :

1. A Preliminary Ecological Appraisal including an up to date desk study and extended Phase I Habitat Survey, bat roost assessment of trees and invasive species survey. The current Phase 1 Habitat Survey and badger survey were undertaken in 2016 whereby they are no longer considered to be indate and need to be updated. Similarly, the Ecologist's scoping advice highlights the need to update the otter survey which was also undertaken in 2016.

- A combined Nutrient Management Plan which should incorporate the Manure Management Plan, a Range Area Plan, Contingency Plan (for storage of manure and slurry), and a Risk Map highlighting and confirming the total area of land at Glanmyddyfi which is to be the subject to 'no spread zones'. It should also make reference to both the Pollution Prevention Plan and Drainage Strategy to identify the sources of nutrients and how they will be effectively managed. Further mitigation measures to be incorporated should include tree buffers for livestock.
- 2. Detailed air quality modelling assessment that addresses the issues raised by NRW in their response to your submission as well as assessing the ammonia and nitrogen emission impact of the proposal upon ancient woodlands within 2km of the site. This should include a mitigation strategy that makes reference to the Nutrient Management Plan and includes, amongst others, a robust planting scheme that is evidence based in order to provide a buffer and protection to the lichen features of the Dinefwr Estate SSSI.
- 3. Updated Pollution Prevention Plan and Drainage Strategy that addresses the abovementioned issues raised by the Ecologist and provides clarification on the robustness of the mitigation measures proposed. This information is also needed to inform the Authority's consideration of the significance of the impact of the proposal upon the designated SAC in accordance with the requirements of Regulation 63 of the Conservation and Habitats and Species Regulations 2017.

The Ecologist's scoping advice recommends the need to assess the impacts of the proposal during the construction, operation and decommissioning phases of the development and sets out a series of criteria that must be met in the ES. These include the need for its technical content to be sound and up to date to enable an accurate assessment of the potential impacts of the development on the ecological features, their significance and if and how they can be mitigated. The ES should clearly set out the mitigation strategy and demonstrate how they will deliver their stated outcomes with regard to their likely effectiveness and certainty over delivery.

NRW advise on the scope and content of the ES whereby they set out their requirements with regard to the modelling assessment of the ammonia impacts of the development upon the Dinefwr Estate SSSI. Moreover, they highlight the need to demonstrate that the mitigation measures proposed are certain to work. In this regard, they recommend the need to provide details of the design, structure and planting of the tree buffers proposed as part of the development in the ES whereby these must be evidence based to ensure that they deliver the protective function to the SSSI that they seek to achieve.

Further advice is provided by NRW on the need to update the baseline ecological surveys to ensure that no significant changes have taken place since they were previously undertaken back in 2016. They also reiterate their advice provided in respect of the previous planning application in that the Manure Management Plan should be supported by a Nutrient Management Plan and a 'Risk Map' confirming the 'no-spread zones' to inform the EIA. Advice is also provided in respect of the pollution prevention measures and risks of flooding to the development.

Finally, please find enclosed further consultation responses from the Dyfed Archaeological Trust, the Welsh Government's Transport Division and the Authority's Public Protection and Sustainable Drainage Teams wherein they provide advice with regard to your prospective application.

Yours faithfully

Paul Roberts

Development Management Officer

GT Noakes

Senior Development Management Officer

Enc.

Natural Resources Wales screening/scoping response dated 18 March 2020 Ecologist response dated 30 March 2020 incorporating covering email, explanatory note, EIA screening matrix and scoping response. Public Protection responses dated 21 & 28 January 2020. Sustainable Drainage Approval Body response dated 29 January 2020 Welsh Government Transport Division response dated 20 February 2020 Dyfed Archaeological Trust response dated 23 January 2020 From: Richard. Jones7@gov.wales [mailto:Richard. Jones7@gov.wales] Sent: 20 February 2020 11:06 To: Paul Roberts < CPRoberts@carmarthenshire.gov.uk> Cc: P.Morgan@southwales-tra.gov.uk; LGC_Development_Control-South@gov.wales; Rhodri.Thomas@wsp.com Subject: RE: Glanmyddfi SC/17086 Morning Paul, Please see below our final comments for this below which are as previous. The agreed improvement in the Acstro Transport Statement should be delivered prior to the use of the new facility. This will require a S.278 agreement. Kind regards Richard **Richard Jones** Peiriannydd Ffyrdd / Route Engineer Is-adran Rheoli'r Rhwydwaith - Network Management Division Trafnidiaeth / Transport Llywodraeth Cymru / Welsh Government Parc Cathays / Cathays Park Caerdydd / Cardiff Ffôn / Tel: 03000 256573

⊟りひ↑↓▼	SAB Response - Screening and Scoping Opinion Request SC/17086 - Land north of Glanmyddfi, Pentrefelin, Llandeilo, SA19 6SD - Message (HTML) (Read-C
File Message Help	Q Tell me what you want to do
🔟 Delete 👻 🗖 Archive	$\textcircled{1} Move \sim \qquad Reply \qquad \textcircled{2} Reply All \rightarrow Forward \qquad \textcircled{1} YNYS FORGAN \sim \qquad Mark Unread \qquad \textcircled{1} \sim \qquad \textcircled{1} \sim \qquad \textcircled{2} \sim \qquad \overbrace{I_{S}} \qquad Find \qquad \textcircled{2} Zoom$

SAB Response - Screening and Scoping Opinion Request SC/17086 - Land north of Glanmyddfi, Pentrefelin, Llandeilo, SA19 6SD



Robert Northcott <RNorthcott@carmarthenshire.gov.uk> To REG Planning Consultations

Hello,

Consultation Comments - Sustainable Drainage Approval Body (SAB) at Carmarthenshire County Council.

Please note that according to current flood risk mapping layers published by the NRW, that the development is partially located in a defined flood zone 3 area.

Additionally:-

New legislation relating to surface water management of new developments now requires approval from Sustainable Drainage Approval Bodies (SAB) throughout Wales.

SABs now evaluate and approve drainage applications for new developments where for example; construction work have drainage implications and cover a construction area greater 100m².

As the development construction area proposed is likely to be greater than 100m², the developer will need to apply for SAB approval.

Please note that SAB applications are separate from planning applications and construction works must not commence before SAB approval is obtained.

Further information on "how to apply" can be found on Councils' website at www.carmarthenshire.gov.wales/sab

Thank you.

Rob Northcott BEng (Hons) MIEAust, CPEng, NER

Engineer - Sustainable Drainage Approval Body (SAB).

Peiriannydd Corff Cymeradwyo Draenio Cynaliadwy (SAB).

Adran yr Amgylchedd | Environment Department EBost | Email – <u>RNorthcott@carmarthenshire.gov.uk</u>



Hi Paul,

I have received the below screening/scoping request.

I note that there is a noise report included with the supporting documentation, which would be required by Environmental Health for a development of this nature.

Attached is the Pollution Team's Planning Application Guidance Document with regard to noise, and I would suggest that it is provided to the developer to ensure that the noise report is compliant with what we would require for any forthcoming planning application.

Regards,

Mr Steven C Williams Environmental Health Practitioner - Pollution and Well-Being Neuadd y Dref Rhydaman / Ammanford Town Hall Heol Iscennen / Iscennen Road. Rhvdaman / Ammanford SA18 3BE **2** 01269 598 310 Ext: 5710 SCWilliams@carmarthenshire.gov.uk

Rydym yn croesawu gohebiaeth yn Gymraeg a Saesneg. / We welcome correspondence in English and Welsh.



Planning and Noise

1. What is the aim of the guidance?

The purpose of this document is to provide advice for developers and consultants who are involved with developments where planning permission is required and noise is a consideration. This document is for information purposes only and will hopefully provide helpful and concise advice for developers with regards to noise at the planning stage. This guidance does not consider every type of development and noise source.

2. When is a noise survey and report required?

A noise survey and report may be required for a pre planning application or full planning application. A noise survey and report is likely to be required if:

- the proposed development will be sensitive to noise and is likely to be affected by existing noise sources. For example, a housing development near to a busy road, railway or commercial activity.
- the proposed development will create noise which may affect nearby noise sensitive properties. For example, a new commercial activity near existing residential properties.

3. What is the advantage of considering noise at the planning stage?

- the source of noise is fully understood and quantified
- all nearby noise sensitive receptors have been identified
- the impact on any receptors has been determined with reference to noise standards
- control measures are detailed when necessary to reduce noise to acceptable levels. For example, the installation of different glazing so that internal noise standards are met.

Whilst we appreciate that giving such consideration to noise as part of the planning application process can be costly and timely to the developer, it is proven that the costs of remedying any noise problems after a development has been completed are likely to be much higher.

5. Who can undertake a noise assessment and provide a report?

A noise survey must be carried out by a suitably qualified acoustic consultant. A list of consultants can be obtained from:

www.association-of-noise-consultants.co.uk, Tel: 01727 896092
www.ioa.org.uk, Tel: 01727 848195

6. Example of the information that should be included in the noise survey report include:

- The reason for and scope of the report
- Description of the proposed development
- Outline of the Proposed operation hours of proposed development and site activities including delivery times (if applicable)
- Location plan of proposed development and likely receptors, specifying distances between the both
- Qualification/experiences of the person doing the noise assessment.

- Equipment used and calibration details/certificates
- Noise Monitoring Methodology used including location of noise monitoring, equipment used, weather conditions, method used to monitor weather conditions, standards followed e.g BS4142:2014 "Methods for rating and assessing industrial and commercial sound"
- Reasons for deviations from standard methods
- Predicted noise levels from proposed development including full prediction methodology
- Proposed noise impact from proposed development on existing noise sensitive properties, or proposed impact of existing noise sources on proposed noise sensitive properties
- Full table of results
- Comparison of survey results with noise standards
- Recommendations for noise control measures if needed N.B. This is important part of a Noise Assessment
- Full calculations demonstrating the likely noise reduction from control measures that will be implemented

8. Does the Council have any noise standards for developments?

It is the responsibility of Carmarthenshire County Council to ensure that any new developments within Carmarthenshire do not negatively impact on the amenity of existing or proposed residential properties.

Please note that the aim of considering noise at the planning stage is not to prevent a Statutory Nuisance but to protect the **amenity** of the existing or new residential properties. Therefore in order to achieve this, the following standards are ones that we would generally recommend to the Planning Authority. The comments Environmental Health provide to the planning department are recommendations only. It is up to the Local Planning Authority whether or not they include these recommendation in the planning permission/refusal.

Construction/demolition works

Construction or demolition works should only be undertaken between the following times, unless prior written consent is received from the Local Authority:

Monday to Friday – 7:30 – 18:00

Saturday - 08:00 - 14:00

No noise generating works shall be carried out on Sunday, bank or public holidays.

Some applications will be subject to undertaking a noise assessment to determine the likely impact of construction/demolition noise on noise sensitive properties. This assessment should be undertaken in accordance with BS5228:2009 "Code of Practice for noise and vibration control on construction and open sites." The assessment should also include mitigation measures that will be employed to ensure that the noise is kept to as low as practicable.

For further guidance regarding what information should be included in a noise assessment relating to construction work please follow this link:

http://www.carmarthenshire.gov.wales/media/718368/Noise_complaint_section_61_information.pdf

Residential Developments

New or converted residential developments should meet the following internal noise limits:

Bedrooms (23:00 – 07:00): 30dB LAeq and 45LAmax

Living rooms (07:00 – 23:00): 35dB LAeq

Gardens and outdoor amenity areas (07:00 – 23:00): 50dB LAeq

These limits have been derived from the World Health Organisation guidelines for community noise and "BS8233:2014 Guidance on sound insulation and noise reduction for buildings."

Entertainment Venues

Developments associated with premises used for public entertainment, including clubs, pubs, bars, restaurants and other recreational uses such as wedding venues, may also require a Premises License

(Licensing Act 2003) and the applicant should approach the Licensing Authority as early as possible to ensure that the proposed final use of the premises complies with their Licensing Policy.

Additionally these developments can pose particular difficulties, not least because associated activities are often at their peak in the evening and late at night. Therefore developers need to bear in mind that noise is generated within the premises and also the attendant problems of noise that may be made by customers in the vicinity. Disturbance that can be caused by traffic and associated car parking should not be underestimated.

Please contact the Environmental Health Section for further advice

http://www.carmarthenshire.gov.wales/home/business/licensing-permits/alcoholentertainment.aspx#.WhbrxOa7LIU

Industrial/commercial/fixed plant

Some industrial, commercial and fixed plant/machinery are likely to give rise to noise disturbance to nearby residents. The assessment that should be used to determine the likely impact on noise sensitive properties is BS4142 Methods for rating and assessing industrial and commercial sound. This assessment determines the likely noise impact by comparing the rating noise level from the proposed development with the background noise levels of the locality.

Typically we would recommend that the rating noise level of developments should not exceed the existing background noise level, however should the assessment conclude:

- that the rating level is between o 5dB above background noise level, the noise assessment should demonstrate that all reasonable practical mitigation measures have been applied and the assessment's conclusion includes context in accordance with BS4142 Methods for rating and assessing industrial and commercial sound.
- that the rating level is 5dB above background noise level, it is likely that we would object to the planning application.

Extraction Systems

Often take away, restaurants, cafés require an extraction system. Environmental Health and Licensing may require a noise assessment to be submitted with such developments, depending on the scale of the proposed extraction system and proximity of proposed system to residential properties. The assessment required will need to be undertaken in accordance with BS4142 Methods for rating and assessing industrial and commercial sound.

Environmental Health and Licensing will also require manufacturer details providing the sound power level and sound pressure level at a given distance from the manufacturer of the proposed extraction system with every application submitted. We will also require the proposed location of such system.

Dog breeding/boarding kennels

Noise from these establishments can have a negative impact on the amenity of nearby residential properties. Therefore, applications for such establishments will need to be accompanied with a noise impact assessment and mitigation plan. It is recognised that there is no specific assessment that relates to such developments, therefore it is recommended that the principles of BS4142 Methods for rating and assessing industrial and commercial sound are employed. Due to the nature of barking dog noise the L_{Amax} indicator should also be included within the assessment. A noise management plan should be included to detail ways in which the kennels will be managed to ensure that the level of noise is kept to a minimum, such as limiting feeding times, limiting visiting times, limiting time the dogs are permitted outdoors.

Solar Farms

Noise impact associated with solar farms may arise from the electrical equipment, inverters and transformers, typically housed in enclosures or containers around the site. Usually, for developments of this nature, a BS4142 type condition limiting the noise rating level not to exceed background would be applied.

Wind Turbines

The Authority has published detailed guidance outlining what needs to be considered when submitting planning applications for wind turbines. The guidance document can be found following this link https://www.carmarthenshire.gov.wales/media/4826/wind_turbine_guidance.pdf

Model Conditions

This document sets out suggested planning conditions, which are not a "one size fits all" for every development but offer a guide for the use of planning conditions in the determination of planning applications. The list is not exhaustive and there may not be a condition that fits a particular circumstance or topic. A bespoke condition may be required or a condition amended to make it more appropriate to the development proposed.

- 1. The rating level of the noise emitted from the proposed development shall not exceed the existing background noise level. The noise levels shall be determined at the nearest noise sensitive premises or at another location that is deemed suitable by the authority. Measurements and assessments shall be made in accordance with BS 4142: 2014 Methods for rating and assessing industrial and commercial sound. Where the background noise levels shall be expressed as LAgo 1hr and the ambient noise levels shall be expressed at Laeq 1hr.
- 2. At the written request of the Local Planning Authority, the operator within a period of 1 month shall undertake and submit to the authority a noise assessment conforming to BS 4142: 2014 Methods for rating and assessing industrial and commercial sound to determine whether noise arising from development exceeds the level specified in condition 1 above. The assessment shall be undertaken under the supervision of the Local Authority. In the event that Condition 1 is exceeded then the submitted survey shall also include mitigation measures to ensure compliance with the noise level specified in condition 1. The development shall then be undertaken in accordance with the approved details.
- 3. No deliveries shall be taken at or dispatched from the site between the hours of 23:00 through to 07:00 and not at any time on Sundays, Bank or Public Holidays to protect the hours of sleep.
- 4. The use hereby permitted shall not operate other than between the hours of hh:mm and hh:mm Monday to Friday, hh:mm and hh:mm on Saturdays and hh:mm and hh:mm on Sundays and not at any time on public or bank holidays.
- 5. A Noise Impact Assessment (NIA) should be undertaken in order to predict the effect of the development as a whole on the surrounding area. The NIA should rank the noisiest items of services/plant/equipment and associated activities, their location on a plan and the duration of the specific noise and the predicted noise level at the various noise sensitive properties.
- 6. A Noise Management Plan should be submitted to the Authority prior to commencing the development. The Management Plan should address the construction phase of the proposed development and will include the noisiest phases arranged in terms of loudness, the duration of the phases and details of mitigation measures to be employed to minimise the noise during construction on the nearby residential site. The plan shall comply with the guidance found in the BS5228 Noise Vibration and Control on Construction and Open Sites.
- During the demolition and construction phases, no works or demolition or construction shall take place other than within the hours of XX – XX Monday – Friday, Saturday XX – XX and not at all on Sundays, Bank or Public Holidays.
- 8. As the proposed developments are situated in a primarily residential area, it is recommended to minimise noise disturbance that the construction work be undertaken in compliance with BS 5228 Noise Vibration and Control on Construction and Open Sites.

From: Chris Flattery Sent: 28 January 2020 11:47 To: REG Planning Consultations; Paul Roberts Subject: FW: Screening and Scoping Opinion Request SC/17086 - Land north of Glanmyddfi, Pentrefelin, Llandeilo, sA19 6SD Please see below comment from the Environmental Protection Section (Public Health Services). Homes and Safer Communities with regard to the above request. Should an Environmental Statement be submitted it needs to consider potential odour, dust, rodent, light and insect issues. **Kind Regards** Mr Christopher Flattery Swyddog lechyd yr Amgylchedd / Environmental Health Officer Adran Cymunedau/ Department for Communities Cyngor Sir Gaerfyrddin / Carmarthenshire County Council • 01269 598264 Ext 5664

cflattery@sirgar.gov.uk / <u>cflattery@carmarthenshire.gov.uk</u>







Carmarthenshire County Council Planning Services 8 Spilman Street Carmarthen SA311LY

23rd January 2020

Dear Mr Roberts

re: Request for screening opinion: SC/17086 Proposed Free Range Chicken Shed at land north of Myddyli, Pentrofelin, Llandeilo, NGR SN59841 24038.

Thank you for your request for a screening opinion on a poultry unit at land north of **Gydyli**, **Deptrefalio**, Uandeilo. On behalf of your Authority I have checked this consultation against the Regional Historic Environment Record, a database that currently holds over 60,000 core and event records of archaeological and historic significance. The portion of these records relating to Carmarthenshire has been adopted by resolution of your Authority for the purposes of the Town and Country Planning (General Permitted Development) Order 1995.

The proposed development does not lie within a Registered Historic Landscape, as defined by Cady. (1998) and there are no recorded heritage assets within the proposed development boundary or in the immediate vicinity. However, there are several heritage assets, both designated and nondesignated, within the wider landscape including two Iron Age enclosures (PRNs 4743 and 836) within a 2km radius to the north and northeast and the Dinefwr Park Roman Forts (Scheduled Monument CM367) approximately 2.6km to the southeast.

We recommend that an EIA is not required in order to protect the historic environment, believing this can be achieved through national legislation and guidance; Planning Policy Wales (Ed. 10, 2018, particularly sections 6.1.23 and 6.1.26) and Technical Advice Note 24 (2017), and Carmarthenshire CC. SPG to Archaeology and Development. However, should an EIA be prepared, we advise that it should include a section devoted to assessing the historic environment. In any case such a deskbased assessment should accompany a planning application. This report must consider the visual impact of the development on the setting of heritage assets, whether scheduled or not.

Our records indicate that we responded to a similar consultation in 2015 (SC/13599),

I trust that this screening opinion recommendation assists you; if you require further information or clarification please do not hesitate to contact me.

Yours faithfully

Mike Ings Archaeological Planning Manager Dyfed Archaeological Trust m.ings@dyfedarchaeology.org.uk



For the Renders

1MCCRUECCLARTH

ERVIC

ARCHAEOLEGOL DIFED CIT

Neundd y Sir 8 Siryd Caerfyrddin Llandeilo Sir Gaerfyrddin SA19 6AF 01558 823121

Theori infoglelyficheuhanslags.org.sk Ownfitz www.orchanolog/hyfol.org.sk

Durmali ayfyngodig († 160606) ynglyd og olinen gollenrolly (5066 i 6) yw Wraddidedorh

DARED ARICHAEOLOGICAL TRUST LTD

The Shire Hall E Casmarthen Street Llandeilo Carmathenshire SA19 6AF

01558 823121

Ernall iafiglidyfidarutaanlogy arg alc Web www.dyfidarutaanlogy.org.ch

The Trust is both a Limited Company (11.80990) and a Registered Classity (556614)



Ein cyf/Our ref: CAS-107440-F1W3 Eich cyf/Your ref: SC/17086

Maes Newydd Llandarcy Neath Port Talbot SA10 6JQ

Ebost/Email: swplanning@cvfoethnaturiolcvmru.gov.uk

Mr. Paul Roberts Carmarthenshire County Council Civic Offices Crescent Road Llandeilo Carmarthenshire SA19 6HW

Dyddiad / Date: 18 March 2020

Annwyl / Dear Mr. Roberts,

TOWN AND COUNTRY PLANNING ACT 1990

THE DEVELOPMENTS OF NATIONAL SIGNIFICANCE (PROCEDURE) (WALES) ORDER 2016 (AS AMENDED)

TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (WALES) REGULATIONS 2017 (AS AMENDED) ('THE REGULATIONS')

BWRIAD / PROPOSAL:	PROPOSED 16,000 FREE RANGE CHICKEN UNIT WITH ASSOCIATED LANDSCAPING AND JUNCTION IMPROVEMENTS.
LLEOLIAD / LOCATION:	LAND NORTH OF GLAN MYDDYFI, PENTREFELIN, LLANDEILO, CARMARTHENSHIRE

Thank you for your letter dated 17 January 2020 requesting Natural Resources Wales's (NRW) views on whether the above proposed development is likely to have a significant environmental effect.

In taking a precautionary approach and without the provision of further detail and clarification, we consider that the proposed development may have the potential to have significant environmental effects.

Dinefwr Estate SSSI

The proposed poultry unit is located approximately 1.5 km from the Dinefwr Estate Site of Special Scientific Interest (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.).

At the time of notification over 160 lichen species had been recorded, including Nationally Scarce species such as; Gyalidiopsis muscicola, Phyllopsora rosei and Lecidea doliformis and the Red Data Book species Collema fragrans. Also present were Lobaria pulmonaria and Stricta limbata, species which are very sensitive to atmospheric pollution.

Croesewir goheblaeth yn y Gymraeg a'r Saesneg Correspondence welcomed in Welsh and English The diversity and conservation significance of the site's lichen assemblage well exceeded the SSSI selection threshold at notification.

A revised lichen survey of the site by national expert Neil Sanderson was commissioned by the National Trust and Plantlife in 2014. It concluded that the Red Data Book species Collema fragrans is likely to have been lost from the site, along with the Lobarion lichens Sticta limbata and Pannaria conoplea.

The 2014 survey only found four out of the seven Near Threatened species that were present prior to notification and the Near Threatened Lecanora sublivescens is also considered to have been lost from the site despite being recorded for the first time as recently as 2010; two other Near Threatened lichens were added to the site list in 2014. All these Near Threatened species are restricted to bark and dead wood

Lichens of acid bark and acid lignum (exposed wood) were shown by Sanderson's 2014 report to be the most outstanding element of the lichen assemblage at Dinefwr. The Red List (Vulnerable) and Environment (Wales) Act 2016; Section 7 species Buellia hyperbolica has its largest known British population here.

The Environment (Wales) Act 2016 confers a duty on public authorities to maintain and enhance biodiversity, having regard to the Section 7 list.

In addition, there are numerous rare, scarce and threatened lignicolous species such as Calicium lenticulare, Chaenothecopsis nigra, Chaenothecopsis pusilla and Microcalicium ahlneri. Acid bark lichens including the Nationally Rare/Scarce Lecanora alboflavida, Melaspilea amota, Opegrapha fumosa and Ropalospora viridis occur on ancient oak trees.

Ammonia pollution is of particular concern for the lichens of acid bark and acid lignum. Sanderson's 2014 report explicitly states (p. 23) that; 'Exposed Acid Bark Community species are lost rapidly with any significant ammonia deposition.' The 2014 report also suggests that background levels of ammonia pollution from adjacent farmland is above the critical level for impact on lichens of 1.0 µg m³.

The critical level for the protection of lower plants, such as lichens and bryophytes, is 1 µg/m³ and is based on experimental data. Impacts on sensitive lower plants have been observed at ammonia concentrations at this level.

The APIS - Air Pollution Information System (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 µg/m³ for the Dinefwr area, which indicates it is already above 1 µg/m³, a level that is damaging to many lichens and bryophytes, including almost all those that make Dinefwr Estate SSSI special. If ammonia levels exceed the critical level it will have serious impact to many of the remaining lichen species and it is likely that all ammonia sensitive species will be lost.

This is the expert view of one of the country's leading specialists on epiphytic lichens, Neil Sanderson, based on considerable experience with these lichens and prolonged discussion with other specialists in the British Lichen Society. Indeed, the report indicates that rare and sensitive lichens are already being compromised in the northern woodlands of the SSSI.

As a result, additional survey work was undertaken by NRW in 2017 and 2019, to provide further information on the current situation regarding lichens in the area.

www.naturalresourceswales.gov.uk

The most recent 2019 survey showed that the extent and severity of Nitrogen (N) pollution within the SSSI has increased substantially since 2017, and it is considered that <u>current</u> N levels, are causing changes <u>throughout the SSSI</u>, not just on the edges as was initially thought.

This strengthens our opinion, that there currently levels of ammonia in the landscape around Dinefwr are already too high and that adding any new intensive agriculture operations has the potential increase this problem.

In light of this, we consider that any new intensive agricultural operations must be able to demonstrate that the proposed mitigation measures which they proposal, are certain to work and will not contribute to, or expatiate the current situation.

Air Quality

We note the submission of the document entitled; 'A Report on the Modelling of the Dispersion and Deposition of Ammonia from the Existing Manure Field Spreading and the Proposed Free Range Egg Laying Unit at Glanmyddyffi, Pentrefelin, near Llandeilo', dated 21 November 2017, by AS Modelling & Data Ltd.

As outlined above, the national importance and sensitivity of the features at the Dinefwr Estate SSSI, means that NRW adopts a precautionary approach in relation to developments which could impact upon the site.

We have previously indicated the need to undertake a detailed audit of the report and electronic modelling files used. As it has been confirmed by the agent that the report and modelling files are the same as those previous submitted, our comments remain as follows:

Detailed analysis identified a number of issues with the report including:

- i. The report did not correctly follow the Misselbrook et al.'s report about the 20% droppings at the range areas, neither did it provide a valid reference or evidence for using 12%. The overall ammonia emission from the proposed unit (housing plus range) is about 18.78% higher than that modelled by the applicant.
- ii. The revised modelling still used GFS NWP met data (25 km resolution). For a detailed modelling, GFS met data may not be robust especially at a hilly area, we recommend that Met Office NWP met data (1.5 km resolution) be used if no representative observed met data are available. In this case, modelling with GFS met data predicted a higher impact than Met Office met data, with a ratio ranging from 1.1 to 2.1 at receptors 1-9, 12 & 13.
- iii. The difference in manure spreading emission factor between submitted modelling file and that derived from Tables 3b was identified. Ammonia emission factor about 9 times higher was found in the submitted modelling file.

In addition, we would request that confirmation / clarification is provided in relation to deposition velocity in the modelling report, because there are no woodlands between the proposed unit and Dinefwr Estate SSSI.

Therefore, should your Authority conclude that the proposal constitutes an EIA development, any future Environmental Statement (ES) would need to address, the matters highlighted above.

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 3 of 8

Ecological Appraisal

We note the submission of the revised document entitled; Land to the north of Glanymyddyfi, Pentrefelin, Carmarthenshire. Ecological Appraisal Revised 2018, dated; 4 May 2018, by Baker Consultants Ltd.

Section 3.5.1 of the document states that a Phase 1 Habitat Survey visit was carried out on the 25 April 2016. This is longer than the standard period of 2-years, which survey results are considered to be valid. Therefore, as recommended in Section 6.7.1, we advise that updated surveys are carried out in order to ensure that no significant changes have taken place and that the findings of the report remains valid.

We note the proposals listed in Section 5.3.3, to allow hedges to grow and for new tree planting. However, any new tree planting will take a considerable number of years before they grow to a size capable of acting as 'Ammonia Buffers'.

The design, structure and planting of the buffer would need to be evidence based, to ensure that it delivers the protective function that this seeks to achieve, as currently it is highly unlikely that planting a row of saplings, would provide any additional protection to the Dinefwr site.

We also we note the submission of the documents entitled; 'Landscape Planting Schedule and Outline Specifications', along with; 'Planting Plan [Plan 11].' We advise that the planting depth, density, design, tree species, understorey, longevity and so on, will need to be evidence based and considers the above matters.

In addition, should the proposal be considered an EIA development then we recommend that the ES should include work on tree buffers for livestock units that CEH / Forest Research have produced for SEPA, to support any future application.

We would also wish to provide comments in relation to some of the other statements and proposals made in the report but consider that it would be appropriate to address these, once updated surveys have been provided.

European Protected Species

In providing the following advice, we have considered the following document:

 Otter Survey Report entitled; 'Otter Survey. Land to the north Glanmyddyfi, Pentrefelin, Carmarthenshire', dated 28 October 2016, by Lleccology and

Ecological and species surveys are considered to be valid for a period of two years, therefore given that the survey is now over 3-years old, then an updated survey should be provided to ensure that the current findings remain accurate.

Environmental Impact Assessment Screening Opinion Request Report

We note the submission of the above report, dated January 2018, by JCR Planning.

Whilst we note the commitment laid down in Section 3.13 of the document to stop all manure spreading on the 42 acres surrounding the development, we question the enforceability of the commitment to not sell any of the manure to landowners within 1.5km of the Dinefwr Estate SSSI, and the enforceability and ability to monitor the proposals laid down within this section.

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 4 of 8

As a result, we would seek confirmation that a legally binding and enforceable mechanism to deliver the measures laid down in Section 3.13 and the Manure Management Plan (MMP) is possible.

Manure Management Plan

We note the provision of the document entitled; 'Manure Management Plan: Assessment of both existing Manure Management Policy and future Policy including the (additional) proposed 16,000 bird Free Range Egg Laving Poultry unit at Glanmyddfi, dated 20 December 2017, by Stuart Perry (Agri PlanCymru).

Given the sensitive of the site we would recommend that should your Authority consider the proposal to be an EIA development, then the submission of a 'Nutrient Management Plan (NMP)' to support the Manure Management Plan, should be considered.

The provision of a 'Risk Map' highlighting and confirming the total area of land at Glanmyddyffi, which shall be subject to 'no-spread zones', should also be considered.

Pollution Prevention

We note the submission of the document entitled; 'Pollution Prevention Plan: Glan Myddyfi, Pentrefelin', dated October 2019 by Cambria Consulting Limited.

We advise that confirmation is provided as to whether the interceptor ditch is a 'blind ditch', or does it connect to a watercourse and how water in the ditch will be managed, should it become full and/or overflow

In addition, we advise that your Authority seeks confirmation from your Authority's Drainage Engineers as to whether there is any history, or likelihood of surface water flooding or site run-off which could overwhelm the interceptor ditch and lead to pollution of the Arfon Myddyfi.

The applicant will also need to ensure and demonstrate that any proposed fuel oil or chemical stores on the site are compliant with current Regulations (i.e. Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016) and best practice guidelines.

Surface Water Drainage

We note the submission of the document entitled; 'Drainage Strategy Report: Glan Myddyfi, Pentrefelin', dated October 2019 by Cambria Consulting Limited. We note that the document states that run-off from the concrete slab, will be drained into an infiltration trench located around the perimeter of the concrete slab.

It is also proposed that the larger yard areas (and presumably any run-off from the wider site which appear to slope in an east-west direction), will be collected by linear drains which pass through manhole chambers, prior to connecting to the infiltration trenches. Furthermore, we note the intension to locate a '1-metre wide interceptor ditch' at the western boundary of the site.

As your Authority are aware, the design of the drainage system is ultimately a matter for Local Authority Drainage Engineers. Your Authority must be satisfied that the proposals for managing surface water are sufficiently robust to prevent pollution of the Afon Myddyfi, and in turn the Afon Tywi SAC and that the proposals can address any potential surface water/overland flow concerns.

You may wish to discuss this aspect with your Authority's Drainage Engineers and Planning Ecologist as part of any Habitat Regulation Assessment (HRA).

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 5 of 8

Foul Water Drainage

We note from the Environmental Impact Assessment Screening Opinion Request Report (Ref: 0161a), dated January 2020, by JCR Planning Ltd and the Drainage Strategy Report: Glan Myddyfi, Pentrefelin', dated October 2019 by Cambria Consulting Limited, that a septic tank is proposed to be installed near the entrance, but not in the area of potential flooding.

The drawings within the document refer a septic tank for foul water disposal, which will be tankered off-site. Septic tanks usually treat effluent before soaking away to ground. However, the system proposed here, sounds like a cess pool/pit (a sealed unit that is used for the storage of untreated sewage for off-site removal). Therefore, clarification of this matter should be provided.

Nevertheless, on such instances a permit or registration as exempt from the requirement for a permit under the Environmental Permitting (England and Wales) Regulation 2010, is required from Natural Further guidance on this matter is available from our website at: Resources Wales. http://naturalresourceswales.gov.uk/apply-buy-report/apply-buy-grid/water/discharge/?lang=en.

However, it should be noted that the application for a permit or exemption from the requirement for a permit is separate to the planning process. The granting of planning permission does not mean that an environmental permit will be granted.

Ground Water

We also wish to take this opportunity to highlight that should the proposal involve water abstraction, and if, in excess of 20 cubic meters/day is being abstracted from the ground, or a watercourse, then an abstraction license will be needed from NRW. We raise this point, as our mapping does not show any mains supply to the proposed development site.

Habitat Regulation Assessment (HRA)

Given the potential hydrological connection between the Afon Myddyfi and the Afon Tywi SAC, we advise that your Authority carry out a Habitat Regulation Assessment (HRA), to ensure all potential impacts on the protected site have been ruled out.

Our monitoring data for the Afon Myddyfi, also indicates that it is being used by Atlantic Salmon and Sea Trout and is likely to be used by the Annex II Afon Tywi SAC features; River & Brook Lamprey and Bullhead. Therefore, it is important that your Authority has sufficient information to enable you to carry out a HRA and to be able to conclude that the proposal will not have an adverse effect on the features of Afon Tywi SAC.

There is a requirement for the Local Authority to assess any potential impacts under the Conservation of Habitats and Species Regulations 2017. Regulation 63 of the Regulations. The competent authority must undertake a test of the likely significant effects of the proposal on the SAC.

If it cannot be demonstrated that there will not be a significant effect, either alone or in combination with other plans and projects, the Local Authority are required to undertake an appropriate assessment of the implications of the proposed scheme for the SAC in view of its conservation objectives, before granting planning permission.

We also advise that you consult your Authority's Planning Ecologist to ascertain, whether they consider that they have sufficient information to undertake the above assessment.

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 6 of 8

Flood Risk

We note the submission of the document entitled; 'Proposed Free Range Poultry Unit, Pentrefelin, Llandeilo: Flood Consequences Assessment (Revision C)', dated January 2018, by Francis Sant Limited. Along with the inclusion of the document entitled; 'Free Range Poultry Unit, Pentrefelin, Llandeilo: Flood Response Plan (Revision A)', dated February 2018, by Francis Sant Limited.

The application site lies partially within Zone C2, as defined by the Development Advice Map (DAM) referred to under TAN 15 Development and Flood Risk (July 2004). As a result, it would be for the Local Authority to determine if the development can be justified in accordance with the sequential tests in Section 6 of TAN15.

As there have not been any changes to the flood map in the area, our comments remain the same as those provided as part of our response to the previous application at this site. A summary of which is provided as follows:

Section 5 of the report states that the 0.1% APF flood level in the Afon Myddyfi adjacent to the site is at 46.35m AOD. As part of the modelling, an assessment of increased Manning's roughness and bridge blockage (to the bridge 170m downstream of site) was carried out and this has not increased flood levels to the site.

The report also states that the slab level for the development will be at 47.5m AOD. Therefore, from comparison with the flood levels, the building will be flood free from the Afon Myddyfi.

However, it is noted that the road to the site will be at risk, as this is at a lower level than the development site. The report states there is a flood risk to the access road currently used, with flood depths up to 1 metre during a 0.1% APF event with the corresponding maximum velocity of around 1m/s. Matters in relation to access and egress are the responsibility of the Local Authority and will be for you to consider.

Having also compared the submitted site levels with the flood level, it appears that a small section of the south easterly corner (across the site entrance), is below the predicted flood level of 46.35m AOD, and therefore may be at risk in the 0.1% APF scenario. Based on the site levels provided, the majority of the site is above the flood level mentioned above.

Nevertheless, given the proximity of the Afon Myddyfi and its hydrological connection to the Afon Tywi SAC, we advise that your Authority need to consider this aspect along with the potential interaction of surface water as part of any Habitat Regulation Assessment (HRA).

Landscape

We note the submission of the document entitled; 'Landscape and Visual Assessment: Proposed 16,000 bird free range unit – Land north of Glanmyddyfi, Pentrefelin, Llandeilo, Carmarthenshire', dated December 2017 by Mackley Davies Associates Ltd.

The proposal lies approximately 0.65 km from the Tywi Valley Landscape of Outstanding Historic Interest. The Tywi Valley is included on the Register of Landscapes of Historic Interest in Wales.

Although, we no longer advise on this matter, we recommend that you should discuss this aspect of the proposal with the Dyfed Archaeological Trust to advise whether proposals are acceptable and whether the 'Planting Plan 11' and 'Landscape Planting Schedule and Outline Specification V2', (dated December 2017), are appropriate, in relation to any landscape effects.

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 7 of 8

Your Authority may also wish to discuss the choice of materials and finishes for the building, as we note that the LVIA recommends dark recessive colours to minimise landscape and visual impacts.

Other Matters

Our comments above only relate specifically to matters included on our checklist, Development Planning Advisory Service: Consultation Topics (September 2018), which is published on our website. We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests, including environmental interests of local importance.

We advise the applicant that, in addition to planning permission, it is their responsibility to ensure they secure all other permits/consents/licences relevant to their development. Please refer to our website for further details.

If you have any queries on the above, please do not hesitate to contact us.

Yn gywir / Yours faithfully

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

www.naturalresourceswales.gov.uk www.cyfoethnaturiolcymru.gov.uk

Page 8 of 8



MEMO

то	Paul Roberts	FROM	Marianne Curtis		
DATE	27 March 2020	CONFIDENTIALITY	Confidential		
SUBJECT	Planning Application SC17086 - Glanmyddyfi				

WSP have undertaken a review of the ecological information provided to Carmarthenshire County Council (CCC). Information has been provided to support and inform an Environmental Impact Assessment (EIA) screening / scoping request (14th January 2020) for the proposed poultry farm, located at Glanmyddyfi, which is to house 16,000 chickens for free range egg production in Pentrefelin, Carmarthenshire. In this memo, we set out our reasoning for the subsequent completion of the EIA screening and scoping deliverables. We also set out items of assessment work that we consider would be needed as part of any planning application, regardless of whether or not it is deemed to be EIA development.

The review and subsequent EIA screening / scoping, are based on the following supporting documents:

- Agriplan Cymru (2015); Manure Management Plan
- AS Modelling & Data Ltd (2017); A Report on the Modelling of the Dispersion and Deposition of Ammonia from the Existing Manure Field Spreading and the Proposed Free Range Egg Laying Unit at Glanmyddyfi, Pentrefelin near Llandeilo in Carmarthenshire
- Baker Consultants (Revised 2018); Ecological Appraisal of Land to the north of Glanmyddyfi, Pentrefelin, Carmarthenshire
- Cambria (2019) Pollution Prevention Plan, Glanmyddyfi, Pentrefelin
- Cambria (2019); Drainage Strategy Report, Glanmyddyfi, Pentrefelin
- JCR Planning (2018) Environmental Impact Assessment Screening Opinion Request Report

In addition, the following supporting document was reviewed for background information only (no comment is made on the efficacy of survey or assessment approaches):

- Site location plans
- Proposed layout plans and elevations
- Flood response plan

Reference has been made to the EIA screening documents associated with this application and the previous planning application E/37351, SC/13599:

- Carmarthenshire County Council (Unknown) Screening opinion [SC/13599/HCD]
- Natural Resource Wales (2016) Pre-application consultation [SC/13599]
- Welsh Government (2018): EIA Screening Assessment [gA1361085]
- Natural Resources Wales (2020) Response on Significant Environmental Effect

REVIEW OF THE ASSESSMENT OF IMPACTS ON EUROPEAN STATUTORY DESIGNATED SITES

Afon Tywi Special Area of Conservation (SAC)

Afon Tywi Special Area of Conservation (SAC) is approximately 1.7km downstream of the Afon Myddyfi which lies approximately 10m downhill of the proposed development site. Annex II species that are a primary reason for selection for the Afon Tywi SAC are twaite shad Alosa fallax and otter Lutra lutra. Annex II species that are not primary reasons for selection for this site but are qualifying species are sea lamprey Petromyzon marinus, brook lamprey Lampetra planeri, river lamprey Lampetra fluviatilis, allis shad Alosa alosa, and bullhead Cottus gobio.

www.wsp.com

vsp

The Afon Myddyfi provides a direct hydrological link between the application site and the Afon Tywi SAC.

Potential for pollution impacts: during construction

Based on the details of the development (as understood from the documents specified above) there is a risk during construction of pollution entering the Afon Myddyfi from the following sources: fuel and chemical spills, silt and dust, construction traffic, flooding incidents and washdown activities.

Potential for pollution impacts: during operation

Based on the details of the development (as understood from the documents specified above) there is a risk during operation of pollution entering the Afon Myddyfi from the following sources: fuel and chemical spills, silt, construction traffic, flooding incidents and washdown activities, foul drainage and livestock ranging area surface water runoff. It is stated in Appendix C of the Pollution Prevention Plan (Water Pollution Risk Assessment), that without specific mitigation to avoid / reduce the likely pollution impacts associated with the proposed development (specifically due to surface water runoff), there is a possibility of "*Catastrophic damage*" on the sensitive receptors, including the adjacent water course Afon Myddyi which runs into the Afon Tywi SAC.

Proposed approach to address potential for pollution (construction and operational phase)

The Pollution Prevention Plan and Drainage Strategy sets out the pollution prevention measures to avoid and mitigate any possible impacts to surface water and groundwater pollution. The implementation of the pollution prevention measures, during construction are generic and include standard best practices and working measures. The mitigation measures incorporated into the proposed development to avoid and/or minimise the risk of pollution into the adjacent water course include:

- provision of a cellular infiltration tank
- provision of a septic tank
- provision of a soakaway system
- · provision of an infiltration trench

It is unclear within the reports what the ranging areas of the free range chickens will be to enable evaluation of the likely efficacy of the proposed measures. It is also unclear whether the infiltration trench has been sited in a suitable location topographically to ensure that surface runoff is intercepted. It is also unclear the infiltration trench is of sufficient capacity for the likely volumes of run-off from the concrete slab and ranging area. Further clarification with regard to the mitigation measures currently incorporated into the proposed development is considered necessary for any planning application, to confirm that the measures are robust and proportional to the possible impact associated with surface water runoff. These should take into consideration the Manure Management Plan.

Potential for indirect impacts and disturbance impacts: during construction and operation

The 2016 otter report did not highlight any evidence that otters were present along the Afon Myddyi. Given the extensive home ranges of otter, it is likely that there is a direct link to the qualifying features of the SAC. In addition, the Afon Myddyi provides suitable habitat for other qualifying features (fish species). Given both of the above, the Afon Myddyi may be considered to be functionally linked habitat in the context of the Habitats Regulations. Potential for indirect impacts through damage and disturbance impacts to otters are likely to be limited to the construction phase, pollution impacts that might occur during the operational phase are addressed above.

Proposed approach to address potential disturbance impacts: during construction and operation

An otter report has been provided by the applicant, no evidence of otter was recorded during the survey, however, the survey was undertaken in 2016 and is no longer considered to be valid. The otter report did not include any measures to avoid / reduce disturbance impacts on otters.

Confidential

Page 2

\\sp

WSP consider it suitable to undertake an update otter survey to determine presence / likely absence of otters of holts within the stretch of the Afon Myddyi adjacent to the Site and where the A40 crosses the Afon Myddyi. Following which, methods to avoid, reduce or mitigate potential impacts on otters be incorporated into the construction mitigation measures. This should be required for any planning application, regardless of whether it is deemed to be EIA or non-EIA development.

No information is provided on the fish species within the Afon Myddyi, however, it is not considered appropriate to require specific surveys for these species as construction activities are unlikely to result in any disturbance impacts due to the distance of the proposed building. Any planning application would need to demonstrate that the Pollution Prevention Measures proposed would, beyond any reasonable scientific doubt, prevent adverse effects to the Afon Twyi SAC fish populations.

Summary

From the information that is currently available, it is considered that the proposed development has the potential to result in a significant effect on the Afon Tywi SAC associated with surface water runoff and disturbance impacts. Due to the proximity of the proposed development to the SAC, and the potential existence of impact pathways into the SAC, it requires consideration in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) 'the Habitats Regulations' to assess whether a significant effect is likely.

It is the opinion of WSP that targeted mitigation would be required to avoid impacts (e.g. pollution associated with surface water runoff entering the watercourse; potentially measures to avoid/minimise disturbance of otters). It is considered on this basis that an Appropriate Assessment is required to assess impacts and likely mitigation requirements.

This would align with case law People Over Wind and Sweetman v Coillte Teoranta (Case C-323/17). Whereby, measures designed to avoid or mitigate adverse effects, which might include modification of site selection or boundaries to avoid the 'zone of influence' where effects on the European site cannot be discounted, design of the scheme, allocation of buffer zones, limiting of operation periods, and others, can no longer be considered in HRA screening. It is therefore WSPs opinion that an Appropriate Assessment is required to assess impacts and likely mitigation requirements associated with likely significant effects on the Tywi SAC.

REVIEW ON THE ASSESSMENT OF IMPACTS AND EFFECTS ON OTHER PROTECTED SITES

Afon Tywi Site of Special Scientific Interest (SSSI)

The Afon Tywi SSSI is located approximately 1.7km downstream of the proposed development. Several fish species, otter, bird species (including Wildlife and Countryside Act (WCA) Schedule 1 species little ringed plover and kingfisher), submerged aquatic vegetation, and invertebrates are features of interest with regards this SSSI. The SSSI forms part of the Afon Tywi SAC, as such, the proposed development may impact upon this SSSI due to hydrological linkages as detailed above. No further comments have been made at this point.

Dinefwr Estate SSSI

The Dinefwr Estate SSSI is located 1.5km south-west of the Site. The SSSI is designated due to the lichen and invertebrate assemblage that is reliant on the parkland and woodland trees. Over 160 species of lichen have been identified to date, some of which have been highlighted as being sensitive to atmospheric pollution. Agriculture is the main source of ammonia emissions in the UK, with the majority coming from animal manure and fertilisers.

The Welsh Government (2018) EIA screening opinion states that the revised lichen survey of the Site undertaken in 2014 concluded that the most outstanding element of the lichen assemblage is associated with acid bark and acid

Confidential

Page 3

wsp

lignum (exposed wood), which is particularly sensitive to ammonia pollution. It was stated that 'Exposed Acid Bark Community species are lost rapidly with any significant ammonia deposition.'

The air quality modelling report states that the critical level of ammonia for lower plants has already been reached and exceeded in certain parts of the Dinefwr Estate (1.1 µg NH3 m-3). This would therefore already be having an impact on the sensitive mosses and lichen communities. Under elevated levels of ammonia, lower plant communities become dominated by nitrophiles ('nitrogen-loving') species, at the expense and virtual loss of acidophytes ('acid-loving species') as bark pH becomes less acidic (APIS, 2020). It has been reported that ammonia levels are already adversely negatively influencing lower plant communities on the edges of the SSSI (NRW, 2017). The NRW Screening response (2020) provides further information on N levels within the SSSI, stating that "current N levels, are causing changes throughout the SSSI, not just on the edges as was initially thought."

The AS Modelling & Data air quality assessment sets out how ammonia and nitrogen emissions will remain below critical levels at Dinefwr Estate SSSI when the effects of ceasing the current manure spreading are taken into account. It is unclear how this conclusion was made when the critical levels at the Dinefwr Estate SSSI have already been exceeded in certain locations. The 2017 NRW response requested further modelling information and the need to undertake a detailed audit of the report and electronic modelling files used. As these requests have not been submitted with the current application NRWs 2020 comments remain as follows to the current modelling report:

- The report did not correctly follow the Misselbrook et al.'s report about the 20% droppings at the range areas, neither did it provide a valid reference or evidence for using 12%. The overall ammonia emission from the proposed unit (housing plus range) is about 18.78% higher than that modelled by the applicant.
- The revised modelling still used GFS NWP met data (25 km resolution). For a detailed modelling, GFS met data may not be robust especially at a hilly area, we recommend that Met Office NWP met data (1.5 km resolution) be used if no representative observed met data are available. In this case, modelling with GFS met data predicted a higher impact than Met Office met data, with a ratio ranging from 1.1 to 2.1 at receptors 1-9, 12 & 13.
- The difference in manure spreading emission factor between submitted modelling file and that derived from Tables 3b was identified. Ammonia emission factor about 9 times higher was found in the submitted modelling file.

In addition, it is recommended that clarification is provided in relation to deposition velocity in the modelling report, as there are no woodlands between the proposed unit and Dinefwr Estate SSSI.

From the information that is currently available, it is considered that the proposed development has the potential to have an adverse effect on the Dinefwr SSSI associated with ammonia and nitrogen emissions. WSPs opinion is in line with both Welsh Government and NRW whereby the proposed development would need to provide a detailed air quality modelling and mitigation strategy that addresses the above comments, in order to provide confidence that the proposed development will not worsen the impacts that current NH₂ levels are having on the SSSI. It is recommended that the modelling makes reference to a consolidated Nutrient Management Plan which would incorporate the Manure Management Plan, Contingency Plan (for storage of manure and slurry), Ranging Area Plan, and a Risk Map highlighting and confirming the total area of land at Glanmyddyffi, which shall be subject to 'no-spread zones'. This should be required for any planning application, regardless of whether it is deemed to be EIA or non-EIA development.

Ancient Woodlands

Appendix A of the Pollution Prevention Plan identified ancient woodland within 2km of the proposal (likely to include woodlands listed under the Section 7 habitat (national) under the Environment Act Wales 2016). Ancient woodland is considered to be a sensitive receptor to air quality impacts and will require assessment for ammonia and nitrogen

Confidential

Page 4
wsp

emissions/deposition within 2km of the proposal. Although the AS Modelling & Data air quality assessment references Ancient Woodland, no assessment has been made with regards to ammonia levels or nitrogen on these habitats. It is WSPs opinion that the proposed intensive agricultural proposal would need to provide sufficient air quality modelling and potentially a mitigation strategy to provide confidence that the proposed development will not result in significant effects on the ancient woodlands within the surrounding area.

REVIEW ON THE ASSESSMENT OF IMPACTS AND EFFECTS ON NOTABLE AND PROTECTED SPECIES

Impacts to bats

Bats are European Protected Species (EPS). The surrounding habitat (woodland and hedgerows) are considered suitable to provide foraging and commuting habitat for these species. The Ecological Appraisal did not identify any structures or trees that were considered suitable to support roosting bats that could be impacted by the proposed development.

The proposed development does not require the felling of any mature trees and disturbance impacts will be limited as no lighting is currently planned as detailed within the Ecological Appraisal. It should be noted that the Ecology Appraisal site visit was undertaken in 2016 and is no longer considered in-date. As such, an assessment of trees for their potential for bat use should be carried out. Should any trees be found to be suitable for roosting bats and they may be impacted by the proposals, sufficient survey should be completed to assess any impacts and mitigation provided as appropriate. This should be required for any planning application, regardless of whether it is deemed to be EIA or non-EIA development.

Impacts on otter

Otters are an EPS, with the Afon Myddyi being considered suitable to support this species. The potential impact on otter has been identified, however, the 2016 baseline surveys are now considered out of date. It is advised that CCC seek further information from the Applicant regarding otter, specifically requesting further surveys to ascertain the presence of confirmed or potential resting places / natal holts etc for otters within an appropriate distance of the site (comprising the impact zone of influence). This information is necessary in order for CCC to fulfil their duties under the Habitats Regulations and Technical Advice Notes 5: Nature Conservation and Planning (TAN5). This should be required for any planning application, regardless of whether it is deemed to be EIA or non-EIA development.

Impacts on dormouse

Dormouse are an EPS, the Ecological Appraisal identified that the hedgerow along the A40 is considered suitable to support dormouse. The proposed development would require the removal of approximately 40m of this hedgerow. The Ecological Appraisal recommends that vegetation should be removed in a two-stage approach to avoid impacts on dormouse, however, no presence / likely absence surveys have been undertaken. It is advised that CCC seek further information from the Applicant regarding the presence / likely absence of dormouse. Should dormouse be present a NRW EPS licence would be required to facilitate the works. This information is necessary in order for CCC to fulfil their duties under the Habitats Regulations and Technical Advice Notes 5: Nature Conservation and Planning (TAN5).

Impacts on badger

The Ecological Appraisal highlighted evidence of badger activity during the site visit and it is clear that the Site contains suitable habitat and is used for foraging and commuting by this species. It is advised the CCC seek further information from the applicant regarding badger, specifically an update survey to determine the presence or continued absence of setts. The baseline report should be included within the EcIA and will inform the requirement for a badger sett closure licence issued by NRW.

Confidential

Page 5

wsp

Impacts on breeding birds

As stated within the Ecological Appraisal works to vegetation (specifically associated with the A40) should be undertaken outside of the nesting bird season (considered to be March – August inclusive). The recommendations stated within the Ecological Appraisal are considered suitable to avoid impacts on breeding birds and risk of breach of legislation.

Environmental Impact Assessment Screening and Scoping

The legal basis for the use of EIA comes from a European Union (EU) Directive the which was first adopted in 1985, and has been subsequently amended in 1997, 2003 and 2009. In the UK a number of pieces of legislation have been used to implement the EU Directive, but for the majority of projects in Wales it is The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (referred to hereafter as the EIA Regulations). The development proposed, namely the 'erection of a 18,000 bird, free range chicken unit, landscaping and associated improvements to a highways junction', falls within the description of development of paragraph 1 (c) of Schedule 2 to the 2017 Regulations. The development exceeds the threshold of column 2 (a development with a new floor space of 500 square metres or greater and close to a sensitive receptor (as defined in Schedule 3 of the Regulations).

WSP are of the opinion that the proposed development has the potential to result in significant effects on the environment, mainly due to the possible effects of the predicted ammonia and nitrogen emissions on the Dinefwr Estate SSSI and the potential for pollution effects on the Afon Tywi SAC (as stipulated in the attached screening matrix). It is acknowledged that the applicant has provided further pollution prevention plans and a drainage strategy, however, the volume and detail of the supporting documents over the various years indicates that there is a possibility of the proposed project resulting in a significant effect on the environment. It is recommended that the various plans are updated and consolidated (as per recommendations within this response and the attached scoping opinion) as part of an ES, to provide a consolidated assessment as part of any planning application.

Further to the above, the majority of the ecological baseline surveys and assessments were undertaken in 2016 and are thus considered no longer to be valid and would therefore need to be updated and included as part of the scope of any planning application submitted by the Applicant.

In summary, it is WSPs opinion that for the reasons highlighted above and within the attached screening matrix that the proposed development is an 'EIA development' within the meaning of the 2017 Regulations.

It is advised that further information is provided by the applicant to ensure that suitable baseline information is provided within any EIA submitted (or in the event that this is deemed not to be EIA development by CCC, in a nonformal Ecological Impact Assessment). These surveys, reports and assessments should follow current best practice and accompany the application. The following baseline reports and supporting documents are recommended to inform the EcIA:

- Preliminary Ecological Appraisal including an up to date desk study and an up to date extended phase I
 habitat survey, bat roost assessment of trees and buildings, and invasive species survey;
- Badger survey;
- Dormouse survey (should habitat considered suitable to support dormouse be cleared as part of the proposed development);
- Otter survey;

Confidential

Page 6

۱SD

- A combined Nutrient Management Plan, this should incorporate the Manure Management plan, a Range Area ٠ Plan, Contingency Plan (for storage of manure and slurry), and a Risk Map highlighting and confirming the total area of land at Glanmyddyffi, which shall be subject to 'no-spread zones' and make reference to both the Pollution Prevention Plan and the Drainage Plan to identify sources of nutrients and effectively manage them. Further mitigation measures to be incorporated should include tree buffers for livestock (to be highlighted in the ranging plan);
- · A detailed air quality modelling and, as needed, mitigation strategy that addresses the NRW comments and makes reference to the above Nutrient Management Plan;
- · Updated Pollution Prevention Plan and Drainage Strategy, to provide clarification on the robustness of the mitigation.

All surveys should follow current best practice and be undertaken at suitable times of the year (where seasonal constraints are apparent).

Marianne Curtis Principal Ecologist

Confidential

Page 7

Cyngor Ynghylch Ecolegol Ecological Advice		Rhif y Cais / Application Number:	SC/17086
Marianne Curtis Planning Ecologist		Math o Gais / Application Type:	EIA SCOPING OPINION.
<i>I'r Swyddog/</i> Paul Roberts To Officer		Dyddiad / Date:	20 March 2020
cc.	Rosie Carmichael (CCC); Stuart Ireland (WSP);		
Datblygiad Arfaethedig / Proposed Development:	16,000 free range chicken shed at land north of Glanmyddyfi, Pentrefelin, Lllandeilo		
Lleoliad / Location	Glanmyddyfi, Pentrefelin, Llandeilo		

Thank you for your consultation email dated the 14 January 2020. WSP has carried out an assessment exercise, considering the scope of the EIA following a positive outcome of the EIA screening exercise.

LDP Policy Framework background:

SP14 Protection and Enhancement of the Natural Environment

Development should reflect the need to protect, and wherever possible enhance the County's natural environment. All development proposals should be considered in accordance with national guidance/legislation and the policies and proposals of this Plan, with due consideration given to areas of nature conservation value, the countryside, landscapes and coastal areas, including those outlined below:

- a) Statutory designated sites including Ramsar sites, SPAs, SACs, SSSIs and National Nature Reserves:
- a) Biodiversity and Nature Conservation Value, including protected species and habitats of acknowledged importance as well as key connectivity corridors and pathways; (Policy EQ4 and EQ5);
- b) Regional and Locally important sites (and their features) including Local Nature Reserves, RIGS (see Policy EQ3);
- c) Features which contribute to local distinctiveness, nature conservation value or the landscape; (see Policy EQ5); and,
- d) Natural assets: including air, soil (including high carbon soils) controlled waters and water resources (See Policies EP1 and EP2).

Policy EQ4 Biodiversity

Proposals for development which have an adverse impact on priority species, habitats and features of recognised principal importance to the conservation of biodiversity and nature conservation, (namely those protected by Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 and UK and Local BAP habitats and species and other than

sites and species protected under European or UK legislation) will not be permitted, except where it can be demonstrated that:

- a) The impacts can be satisfactorily mitigated, acceptably minimised or appropriately managed to include net enhancements; and,
- b) There are exceptional circumstances where the reasons for the development or land use change clearly outweighs the need to safeguard the biodiversity and nature conservation interests of the site and where alternative habitat provision can be made in order to maintain and enhance local biodiversity.

Policy EP1 Water and Environmental Capacity

Proposals for development will be permitted where they do not lead to a deterioration of either the water environment and/or the quality of controlled waters. Proposals will where appropriate, be expected to secure improvements to water quality.

Watercourses will be safequarded through biodiversity/ecological buffer zones/corridors to protect aspects such as riparian habitats and species;

Proposals will be permitted where they do not have an adverse impact on the nature conservation.

Policy EP2 Pollution

Proposals for development should wherever possible seek to minimise the impacts of pollution.

- a) Do not conflict with National Air Quality Strategy objectives, or adversely affect to a significant extent, designated Air Quality Management Areas (permitted developments may be conditioned to abide by best practice);
- b) Do not cause a deterioration in water quality;
- c) Ensure that light and noise pollution are where appropriate minimised;
- d) Ensure that risks arising from contaminated land are addressed through an appropriate land investigation and assessment of risk and land remediation to ensure its suitability for the proposed use

ES Scoping Advice.

ECOLOGICAL INFORMATION TO BE PRESENTED IN THE ES.

- It is advised developers refer to the CCCs Nature Conservation and Biodiversity Supplementry Planning Guidance: https://www.carmarthenshire.gov.wales/media/3723/natenv-and-biodiversity-draft-spg.pdf
- All ES content must be prepared in accordance with the CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

- The ES must include the results of all required surveys and an assessment of the effect of the development on the species/habitats/sites and recommendations for mitigation and enhancement.
- Ecological Impact Assessment (EcIA) is an iterative process, scoping is an ongoing process - the initially proposed scope of the EcIA may be modified following further ecological survey/research and during impact assessment.
- Surveys, assessments and the ES are also required to be carried out in line with the British Standards for Biodiversity: Code of Practice for Planning and Development (BS42020:2013) and other relevant species and survey best practice guidelines. All surveys will be required to be carried out by a suitably qualified ecologist within the appropriate season and to appropriate survey standards and methodology.
- The EcIA must:
 - cover the construction, operation maintenance, closure and decommissioning stages of any project.
 - determine the importance of ecological features affected, through survey and/or research.
 - o assess impacts potentially affecting important features.
 - characterise the impacts by describing their extent, magnitude, duration, reversibility, timing and frequency.
 - identify cumulative impacts; and identify significant effects of impacts in the absence of any mitigation.
 - consider alternative location(s) or layouts for the proposed development.
 - o identify mitigation measures and explain their likely success.
 - identify opportunities for enhancement.
 - design and agree a monitoring strategy and monitoring of mitigation performance.
 - provide sufficient information for mitigation measures to be implemented effectively.
 - produce a clear summary of the residual impacts and the significance of their effects following incorporation of avoidance and mitigation measures.
 - consider the implications of significant effects on the features of interest in accordance with planning policies and legislation.

Environmental (Impact) Statement) must clearly set out all the ecological information necessary for a robust decision to be made. Key aspects include a description of the following:

- · ecological baseline and trends if the project were not to go ahead;
- criteria used to evaluate ecological features;
- · criteria used to assess the significance of impacts of the project;
- justification of methods used;
- the identification of likely impacts (positive and negative) on ecological features together with an explanation of the significance of their effects;
- · mitigation, compensation and enhancement measures;
- legal and policy consequences;
- · a note of any key data that were unavailable or missing; and,

· a presentation of any analytical techniques used and the analysis itself.

Scoping is the process of determining the ecological issues to be addressed in the EcIA. It sets out the methods to be used and establishes the spatial and temporal limits for surveys and assessments.

DESIGNATED SITES.

This will include any Special Areas of Conservation, Special Protection Areas, Ramsar sites, Sites of Scientific Interest and Areas of Outstanding Natural Beauty.

The assessment will also need to include any impact on Local Nature Reserves, non-statutory nature conservation sites, BAP habitats and species. With respect to air emissions an assessment of the impact of aerial ammonia emissions on any SSSIs or European Sites within 5km and any non-statutory designated sites within 2km is considered necessary.

ECOLOGICAL IMPACT - ECOSYSTEM, HABITATS AND SPECIES.

The site appears to consist of semi improved grassland and hedgerow/tree line habitats. Woodlands and ancient woodland areas are located within the surrounding habitat.

The Ecological Appraisal Report (2018) for the application does not reference that Ancient Woodlands located within the site / in proximity to the site may be impacted by the scheme.

In addition to the above issue is considered that the development could result in ecological impacts including habitat loss, habitat fragmentation and/or modification and disturbance/displacement of species from the following activities:

Preliminary activities prior to the main construction contract

vegetation clearance

Construction phase

- · access and travel on/off-site, including temporary access routes for vehicles
- areas for plant maintenance and for storage of oils, fuels and chemicals
- · movement of materials to/from or within the site
- acoustic disturbance and vibration from construction activities
- earthworks and site drainage including soil stripping and increased sedimentation of the adjacent water courses
- environmental incidents and accidents e.g. spillages, noise and . emissions
- liahtina
- storage areas for construction / excavated materials
- vegetation/habitat clearance including tree felling (should any be required)

Occupation/operational phase

- access to site (both route and means)
- drainage
- air quality (specifically ammonia emissions)
- nutrient management (including ranging areas)
- · implementation of landscape design and habitat management
- presence of people, vehicles and their activities
- site operation and possibly pollution from surface water run-off, including sedimentation

Decommissioning phase

- removal or demolition of disused structures that may damage habitat or have been colonised e.g.roosting bats
- removal or neglect of structures which might cause pollution, such as temporary manure storage structures

Potential non-standard operations

one-off incidents and accidents (including fuel leaks and spills, vandalism, erosion and sediment runoff)

The site will require detailed ecological assessment to determine if it is suitable for the proposed development and the ES must address impacts to ecological features from the activities described above.

Therefore, having regard to the above the following baseline information must be collated in the ES and impacts addressed.

BASELINE INFORMATION

Desk Study

Any ES must document that a thorough ecological desk study has been undertaken to fully inform the application, this should include data from the Local Records Centre and open access sources.

Ecological Impact – Habitats and Species

The ES must provide sufficient information to identify any nature conservation features (habitats/species) that are likely to be affected by the proposals and identify potential options for mitigation and enhancement. The impacts on any species protected under legislation (see below) must be considered and any species or habitat listed under the Carmarthenshire LBAP, UK BAP, or identified on the Section 7 list of the Environment Act (Wales) 2016 must also be considered. Surveys must be carried out by a qualified ecological surveyor. The ES must identify the potential of the habitats on site and within the areas of the A40 that may be impacted as part of the project to be used by protected species.

The ES must include an Extended phase I habitat survey, to identify the quality and extent of the habitats present. Detailed habitat assessment should be carried out between the months of April to September only. The habitat survey should be extended to identify the presence of any invasive species and Important Hedgerows. Should invasive species be identified a suitable management plan to prevent the spread of invasive species should be completed.

Badgers and their setts are protected under The Protection of Badgers Act 1992. Activity within 30 metres of a sett may require a licence. If a site may contain badger setts, it is recommended that any site / working area and where possible surrounding land within 30m be surveyed for badgers and the results presented in the ES.

An assessment of the hedgerows to be impacted by the proposed project for their potential to support dormouse must be undertaken and reported in the ES. Dormouse are protected under European and UK legislation. If habitats are found suitable, the protection and enhancement of the hedges/scrub for this species must be included as part of any scheme and if their habitat is to be affected then a full survey will be required. Their presence is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat.

An assessment of any watercourse and associated vegetation for their potential to support otter should be undertaken. Otter are protected under European and UK legislation. If found suitable, the protection and enhancement of the water body and suitable vegetation for this species must be included as part of any scheme and if their habitat is to be affected then a survey will be required. Their presence is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat.

All British bats are protected under European and UK legislation. Their presence is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat. An assessment of any trees for their potential for bat use should be carried out. A full bat survey of any trees assessed to have bat potential should be conducted if these will be impacted upon, with results reported in the ES. Impacts of any lighting on commuting/foraging bats must also be considered, although the documents reviewed during production of this scoing response suggest no external lighting is proposed.

Any ES should also provide appropriate ecological enhancement in line with LDP policies.

An air quality assessment should be undertaken to confirm the impact upon statutory designated sites. The update assessment should include the following as per the NRW 2020 consultation responses:

- The assessment should follow Misslebrok et al (2016) Inventory of Ammonia Emissions from UK Agriculture with regards to the use of 20% droppings at the range areas, or provide a valid reference or evidence for using 12%. The overall ammonia emission from the proposed unit (housing plus range) is about 18.78% higher than that modelled by the applicant;
- The revised modelling still used GFS NWP met data (25 km resolution). For a detailed modelling, GFS met data may not be robust especially at a hilly area, we recommend that Met Office NWP met data (1.5 km resolution) be used if no representative observed met data are available;
- Clarification with regards to the difference in the manure spreading emission factor between submitted modelling file and that derived from Tables 3b; and,
- Clarification with regards to the deposition velocity in the modelling report.

In addition a Nutrient Management Plan should be submitted to consolidate the following documents:

- Manure Management Plan;
- Range Area Plan;
- Contingency Plan (for storage of manure and slurry); and,

 A Risk Map highlighting and confirming the total area of land at Glan mvddyffi, which shall be subject to 'no-spread zones'.

The above reports should be submitted as supporting documents for the EcIA.

ZONES OF INFLUENCE.

- Activities associated with the construction, operation (best and worst-case operating) conditions), decommissioning and restoration phases must be separately identified in any ES
- All ecological features occurring within the area to be worked that will be affected by changes in land cover caused by topsoil stripping and excavation must be addressed in the ES
- Noise, dust, and air quality may also affect species in particular the statutory designated sites in adjacent habitats, these impacts must be addressed in the ES.
- Pollution events may affect the surrounding or connected habitat, particularly the consideration of pollution into adjacent watercourses and any hydrologically connected statutory designated sites.
- If the site requires new infrastructure (e.g. roads, power supply or waste water disposal) there could be significant consequences for ecological features beyond the boundaries of the site in addition to those identified.
- It is considered necessary to consider the implications of the project in relation to the SSSIs within the 5km, and 10km in relation to SACs/SPAs/Ramsar zone of influence. and to take account of any existing environmental issues, particularly of the Dinfwr Estate SSSI and Afon Tywi SAC/SSSI.
- The zone of influence should be regularly reviewed and amended as the project evolves. If inadequate information is available to properly define the zone of influence, this should be acknowledged and a precautionary approach adopted.
- Determining the significance of effects is explained in Chapter 5 of the CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester. Any ES preparation and assessment must adopt these guidelines.

LEGAL REQUIREMENTS.

The LPA as competent authority determines whether the mitigated project:

- complies with legal requirements e.g. for designated sites and protected species.
- meets national and local policy goals and objectives.
- requires conditions and legal obligations to be attached to the consent concerning detailed design, implementation and monitoring of the project.

Failure to take account of the legal and policy context, and to provide sufficient information to comply with this, may lead to delay and can result in an application being refused or a decision being challenged.

The findings of an EcIA are a material consideration in the planning process and other consent regimes. The competent authority must be provided with all the information needed to assess and evaluate the likely significant environmental effects of a project. The competent authority has the duty to consider the environmental information before it reaches a decision regarding the granting of consent. There are key aspects of the EcIA report that the competent authority must take into account of when determining an application and therefore it is essential the submitted ES ensures the following criteria are met:

- The technical content of the ES is sound including
 - adequate and up-to-date data.
 - detailed ecological methods in accordance with good practice.
 - departures from good practice are made clear.
- The ES states whether ecological features are likely to be affected and all potential impacts are described adequately.
- The ES states whether effects are significant and, if so, are capable of being mitigated.
- The ES states the mitigation hierarchy has been applied.
- The ES adequately demonstrates that the proposal will deliver stated outcomes, with regard to likely effectiveness and certainty over deliverability.
- The ES states all measures are capable of being secured through appropriate planning conditions and/or obligations, and/or are likely to be permitted through other consent regimes e.g. licences for European Protected Species.
- The ES states that the proposals are compliant with statutory obligations and policy.
- The ES provides a clear indication of likely significant losses and gains for biodiversity.
- The ES states whether any material considerations have been identified that might require changes to the application.

Where the competent authority considers that the information is insufficient it can request further information or evidence to verify the information already provided.

Key national policy documents that must be considered during EcIA can be found on government websites and local policy documents.

If you have any further questions or seek clarification of any points outlined above, please contact me.

Marianne Curtis Prinicipal Ecologist

1.6 Objectives and Purpose of EIA

The objectives of EIA are as follows:

To identify the potential environmental impacts of a proposed poultry unit, taking into account the characteristics of the development and the local environment, and environment;

- To interpret the nature of potential impacts;
- To identify measures to mitigate adverse impacts; and
- To report the results of the assessment in an ES for submission to the planning authority.

The purpose of an ES is to present the findings of the assessment into the likely significant environmental impacts of the proposed poultry unit. This document describes the assessment process, the results of the assessment of the impacts of the proposed poultry unit, assesses the significance of the impacts and describes mitigation measures proposed to reduce impacts to acceptable levels.

The ES is intended to enable stakeholders to understand the nature of the proposed poultry unit and to evaluate the likely significant environmental impacts. In the case of the local planning authority, they may use that knowledge in deciding whether to grant planning permission and, if so, what conditions might be appropriate. The ES therefore serves to aid the decision-making process and to present relevant information in a readily accessible form.

1.7 Method Statement and Assessment Criteria

The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011, require (as set out in Part II of Schedule 4) that an ES should include, as a minimum, the following information:

"A description of the extension comprising information on the site, design and size of the extension;

• A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;

• The data required to identify and assess the main effects which the extension is likely to have on the environment;

• An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for its choice, taking into account the environmental effects;

• A non-technical summary of the information provided under paragraphs 1 to 4".

Part I of Schedule 4 expands in detail on the contents of an ES that would comply fully with the spirit of the Regulations.

Good practice advises that EIA should be treated as an iterative process rather than as a one-off, postdesign environmental appraisal, and that interested parties be consulted at an early stage to identify key impacts and design appropriate mitigation. In this way, the findings from the EIA have been fed into the design process, leading to a project which achieves a 'best fit' within the environment. This approach has been used throughout the EIA of the proposed livestock development. Where likely significant adverse impacts have been predicted, or sensitive environments were identified, the results of the EIA have been used to influence the construction, location and design of the poultry unit. Where it has not been possible to reduce or eliminate likely significant impacts through sensitive design alone, the preliminary results of the EIA have been used to develop appropriate mitigation measures.

This EIA has been conducted in accordance with the latest Government regulations and advice on good practice comprising:

The Town and Country Planning (Environmental Impact Assessment) (England) Amendment Regulations 2011;

- Circular 02/99 Environmental Impact Assessment, Department of the Environment Transport and the Regions (DETR - 1999)
- 📕 🛛 Amended Circular on Environmental Impact Assessment A Consultation Paper (Department of Communities and Local Government - DCLG – June 2006):
- Preparation of Environmental Statements for Planning Projects that require Environmental Assessment, A Good Practice Guide (Department of the Environment, 1995);
- Environmental Impact Assessment: A Guide to Procedures (2000) (amended reprint 2001); and
- Environmental Impact Assessment: A Guide to Good Practice and Procedures a Consultation Paper (DCLG June 2006).

In addition, the EIA has been carried out taking due consideration of other guidance such as that contained within the Institute of Environmental Management and Assessment's (IEMA) 'Guidelines for Environmental Impact Assessment' (2004), where appropriate, along with various guidance documents relating to the assessment of individual issues (see individual assessment chapters).

In order to evaluate environmental impacts, it is important that assessment criteria are identified. Any impact is assessed by a combination of the degree of alteration from the baseline state (both positive and negative) which can be predicted (i.e. the magnitude of the effect) and the sensitivity of the receptor(s) (e.g. the rarity of a species/habitat, the guality of a view, the type of land use, the presence of people etc.). The scoping and consultation phases have identified the likely impacts and the nature of the receiving environment.

Within this ES, thresholds of magnitude and sensitivity are used to make explicit the conclusion of the assessment process in terms of the significance of the impact. Significance is generally based on the structured evaluation of a number of primary criteria:

- 😹 🛛 the value of the resource (international, national, regional and local level importance);
- the magnitude of the impact;
- the duration of the impact (whether long-term or short-term, temporary or permanent);
- the reversibility of the impact;
- the number and sensitivity of receptors;
- the nature of the impact; and
- Whether the impact is direct or indirect.

For the purposes of undertaking an EIA, the significance of any impact (positive or negative) is generally considered in terms of:

- **No Significance / Negligible** beneath the levels of perception, within normal bounds of variation or within the margin of forecasting error: a non-detectable change to a location, environment or species;
- Minor Significance: a detectable but non-material and non-noteworthy change to a location, environment or species at a local level, relevant guality standards not approached;

- *Moderate Significance*: a material and noteworthy but non-fundamental change to a location, environment or species of local or district importance, relevant quality standards may be approached;
- Major Significance: a fundamental change to a location, environment or species of district to regional importance, relevant guality standards exceeded;
- *Extreme Significance*: a fundamental change (e.g. loss) to a location, environment or species of national / international importance, relevant quality standards exceeded by a substantial margin on a regular basis.

This ES generally follows this theoretical approach. Full magnitude and significance criteria are provided in the individual topic assessment chapters as appropriate.

Impacts assessed to be moderate/major or above are considered to be significant. The assessment process considers residual impacts following the introduction of measures to reduce, remedy or avoid any significant adverse environmental impacts. Mitigation can be applied through the consideration of alternatives, physical design, provision of specific control equipment, project management or operation and other means. Mitigation generally incorporated into the design as standard and additional mitigation identified by the assessment process is set out within each technical impact assessment chapter of this ES.

1.8 Structure of the Environmental Statement

The key issues together with a clear description of the project and relevant planning policy form the main content of this ES.

This document is supplemented by a non-technical summary (NTS) of the findings of the EIA. The objective of the NTS is to provide an accurate and balanced statement of the key information presented in the ES.

The main body of the ES is set out as follows:

Introduction (Chapter 1) – setting out the background to, and location of, the development proposed and the EIA process;

Scoping and Key Issues (Chapter 2) – summarising how the topics to be assessed and methods to be used were chosen via the initial application process; and

Alternatives (Chapter 3) – describing the alternatives considered including the 'Do-Nothing Scenario' and alternative locations, in terms of their physical, operational, economic and environmental feasibility.

Description (Chapter 4) - describing the construction, use and physical nature of the proposed plant and its use, including delivery and access issues; and

Policy and Legislative Context (Chapter 5) – summarising the planning and legislative context of the proposals.

The Environmental Assessment Chapters - covering impacts associated with:

- Air Quality (Chapter 6);
- Landscape and Visual Impacts (Chapter 7);
- Traffic (Chapter 8)

- Amenity Issues (Chapter 9);
- Ecology (Chapter 10);
- Noise and Vibration (Chapter 11);
- Water Resources (Chapter 12);
- Soils (Chapter 13);

Each chapter sets out the types of impacts possible, summarises relevant legislation and policy (where appropriate), describes the existing background/baseline environment, the methodologies used to predict impacts and associated guidance (along with any limitations of the methodology or available data), magnitude and significance criteria, incorporated mitigation and the provision of additional mitigation, and the residual impact assessment. Where appropriate the assessment of individual subtopics / sensitive receptors are assessed in discrete sections within each technical chapter. Also, combined impacts (e.g. one effect resulting in another effect, such as atmospheric emissions affecting habitats, is assessed in one chapter whilst cross referencing other relevant chapters as appropriate); and

Finally, Summary and Conclusions (Chapter 14) – provides an overview of the assessment.

Note that drawings are included within the chapters and technical appendices are provided as separate individual appendices.

A Design and Access Statement and other forms and certificates have been submitted separately.

Authors of the Environmental Statement 1.9

A number of organisations and specialist consultants have assisted with the preparation of this ES and provided input into the content of a number of individual technical chapters to a standard format (where possible) provided by Roger Parry & Partners LLP (who also collated the ES). The specific contributions with respect to the key chapters are listed in Table 1 below.

Topic Area	Author		
Introduction	Roger Parry & Partners		
Scoping and Key Issues	Roger Parry & Partners		
Alternatives	Roger Parry & Partners/Mr Terry Davies		
Poultry Unit Description	Roger Parry & Partners/Mr Terry Davies		
Planning Policy Context	Roger Parry & Partners		
Air Quality	Roger Parry & Partners/ A and S Modelling Data		
Landscape	Roger Parry & Partners/Mackley Davies		
	Associates Ltd		
Traffic	Roger Parry & Partners / Acstro		
Amenity	Roger Parry & Partners		
Ecology	Roger Parry & Partners/ Arbor Vitae/Baker		
	Consultants		
Noise & Vibration Roger Parry & Partners/Acoustic Cons			
	Ltd		
Water Resources	Roger Parry & Partners/Francis Sant		
Soils	Roger Parry & Partners/Agri Plan Cymru		
Summary & Conclusions	Roger Parry & Partners		

Table 1 - Contribution to the ES

CHAPTER 2 – SCOPING AND KEY ISSUES

2. Scoping and Key Issues

This chapter sets out the requirement for and process of scoping the Environmental Statement (ES), summarises the receiving environment in the vicinity, covers the scoping consultation process and indicates the results of the consultations, and provides the final scope for the ES.

2.1 The Scoping Process

Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 specifies the general information that should be included within an Environmental Statement (ES) as best practice. An ES should identify, describe and assess the likely significant impacts of the development on the environment with reference to:

- Population;
- 📷 Climate;
- 🖬 Flora;
- 🖬 Fauna;
- Landscape;
- 📷 Soil;
- 🖌 Air;
- 🖌 Water;
- 📓 🛛 Material assets (including architectural and archaeological heritage); and
- 🖌 🛛 Any inter-relationships between the above

The EIA Regulations also require that EIA should cover:

"Direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the poultry unit, resulting from:

- a) the existence of the poultry unit;
- b) the use of natural resources;
- c) the emission of pollutants, the creation of nuisances and the elimination of waste."

Scoping (i.e. determining the amount of information on each of these principal subjects and effect types to be presented in an ES) is regarded as an important first step in the overall EIA process, although it is not necessarily a mandatory requirement of the EIA Regulations. The primary aim of EIA scoping is to facilitate the planning of a focused EIA that concentrates on the resolution of substantive potential importance and, where appropriate, excluding any non–issues from further consideration. It also allows primary concerns to be identified at an early stage and informs developers of aspects of concern that they may not have been aware of. Surveys and assessment methodologies can also be agreed between all interested parties such that it is less likely that additional information is required after submission of the application.

Regulation 10 of the EIA Regulations allows potential applicants to ask the planning authority to state, in writing, the information that should be set out in an ES.

2.2 Summary of the Receiving Environment

2.2.1 General

Glanmyddiyfi is in an isolated rural area, approximately 2.5 km to the west-north-west of the town of Llandeilo in Carmarthenshire. The surrounding land is used primarily for livestock farming, although there are isolated arable fields and areas of semi-natural woodlands and grassland. The site is at an altitude of around 50 m with the land rising towards hills to the north and falling towards the Afon Myddyfi Valley to the south.

It is proposed that a new egg laying chicken house, with a capacity of 16,000 birds, be constructed at Glanmyddiyfi. The new poultry house would be ventilated by uncapped high speed roof mounted fans, each with a short chimney. Pop holes on the side of the house would provide access to an outside ranging area. The house would be fitted with a manure belt system to collect droppings, usually twice weekly, and then removed from the site. Manure from the free range egg laying unit would not be stored at the site, nor spread on any of the land at Glanmyddyfi.

To improve fertility, the current improved grassland pasture at Glanmyddyfi is spread with approximately 126 tonnes of poultry manure per annum. Under the proposal, manure spreading at Glanmyddyfi would cease. The reduction in ammonia emissions from the manure spreading is expected to some extent compensate for the ammonia emissions from the proposed poultry housing and ranging area. Additionally, the grassland outside of the proposed ranging area is expected to gradually return to an unimproved state.

2.2.2 Air Quality

There are no locally designated Air Quality Management Areas close to the site.

Local air quality is dominated by traffic sources.

2.2.3 Landscape

In proposing this planning application much consideration has been given to the siting of the proposed Poultry Unit, in line with the requirements of Planning Policy Wales.

The Poultry Unit has been positioned to make maximum use of the topography of the land making sure that the building is not visually intrusive. The general location was also proposed with consideration given to the land requirement for the proposed number of birds in order to meet the industry regulatory standards and the accessibility of the land in the ownership of the applicant for the purposes of managing the poultry unit having regard to matters such as the access to the road network, proximity to existing properties and the wider landscape.

The applicants have submitted Landscape Plan and Schedule in support of the application;

Glanmyddyfi Appendix 6 Landscape Plan Glanmyddyfi Appendix 17 Outline Soft Landscape Specification

As detailed in the above reports, the poultry unit will be constructed of a steel portal frame, with steel sheeting to the roof and walls in a juniper green colour, outside the poultry unit will be laid to concrete to provide parking and turning areas to prevent poaching o the land and safe and clean access for staff and visitors to the poultry unit. The landscape plan details the existing hedgerows surrounding the development and explains how the hedgerows will be managed carefully post development, the plan also details additional landscaping within the application site, through the introduction of a new woodland strip and the planting of a replacement hedge to facilitate the junction improvements onto the A40.

Through respecting the surrounding environment, topography and existing landscape features the siting of the proposal has ensured the potential impact is minimised or in some instances removed altogether.

2.2.4 Highways

The access to the site will be located at the existing field access, which has been in situ for many years. The existing cattle compound will be removed, and a hardstanding and vehicle manoeuvring area created as part of the proposal. The positioning of the access ensures that the length of single track lane that must be travelled to reach the site is minimised. The proposal offers improvements to the highway network, of benefit to all road users not just the applicant. The junction off the council highway to the A40 will be improved through the provision of additional visibility and the access plans for junction improvements have previously been approved by the Welsh Government.

Parking is available on side for staff and visitors in the creation of the new hardstanding to the south west of the proposed building.

• Please see the submitted Transport Statement – Appendix 18

2.2.5 Population / Socio-Economics

The site lies within the open countryside with limited isolated residential properties close by and small villages in the surrounding landscape. The site lies within the Unitary Authority of Carmarthenshire.

2.2.6 Noise

The noise environment in the area is dominated by road traffic sources from the surrounding highways. The surrounding community comprises of a mixture of scattered agricultural holdings with some residential dwellings within small settlements. Noise levels across the site are considered to be typical of a rural area.

2.2.7 Geology, Soils, Ground Stability and Contamination

on of Named Rock Units » Result Details

The BGS Lexicon of Named Rock Units - Result Details

Nantmel Mudstones Formation

NTM	Preferred Map Code:	Ntm		
Full				
Ashgill Series (OA) — Ashgill Series (OA)				
Silty mudstones with dark burrow mottles. Several thick units of laminated hemipelagite. Scattered packets with thin sandstones. Thick unit of interbedded conglomerates, sandstones, pebbly mudstones and mudstones known as Doldowlodd Conglomerate (Member) locally present.				
Gradational incoming of sequence, dominated by burrow mottled mudstones, above the black laminated mudstones of the St Cynllo's Church Formation.				
Sharp incoming of coarse silty mudstones with silt laminae or slumped mudstones, above burrowed mottled mudstones of the Doldowlod Conglomerate (Member).				
Not defined.				
Central Wales.				
Not Applicable (-)				
Camlo Hill Group (-4815)				
none recorded or not applicable				
Stratotypes:				
Road section on A44 west of Nantmel Village.				
Reference(s):				
none recorded or not applicable				
1:50K maps on which the lithostratigraphical unit is found, and map code used:				
	NTM Full Full Ashgill Series (OA) — Ashgill Series (OA) Silty mudstones with dark burrow mottles. Sever sandstones. Thick unit of interbedded congtomer Doldowlodd Congtomerate (Member) locally press Gradational incoming of sequence, dominated by St Cynllo's Church Formation. Sharp incoming of coarse silty mudstones with si the Doldowlod Congtomerate (Member). Not defined. Central Wales. Not Applicable (-) Camlo Hill Group (-4815) none recorded or not applicable Stratout Road section on A44 west of Nantmel Village. Reference Cable 1:50K maps on which the lithostratigraph	NTM Preferred Map Code: Full Full Ashgill Series (OA) — Ashgill Series (OA) Silty mudstones with dark burrow mottles. Several thick units of laminated I sandstones. Thick unit of interbedded conglomerates, sandstones, pebbly r Doldowlod Conglomerate (Member) locally present. Gradational incoming of sequence, dominated by burrow mottled mudstone St Cynllo's Church Formation. Sharp incoming of coarse silty mudstones with silt laminae or slumped mudstone St Cynllo's Church Formation. Not defined. Central Wales. Not Applicable (-) Camlo Hill Group (-4815) none recorded or not applicable Stratotypes: Road section on A44 west of Nantmel Village. Reference(s) cable 1.50K maps on which the lithostratignaphical unit is found, and map		

2.2.8 Ecology

The poultry unit will occupy an area of improved grassland, a habitat of low ecological interest, and the ecological impact is regarded as minimal. Field 2 includes one section of semi-improved grassland with a moderately rich flora, including soft rush.

The site and ranging area are divided by species-rich hedgerows (a Habitat of Principal Importance) with a rich ground flora including ancient woodland indicator species. All hedgerows will be retained and allowed to extend in height to improve screening.

There will be no impact on adjacent habitats of ecological value. These include a small semi-natural woodland and the Afon Myddyfi which flows near to the western boundary of the site.

Access improvements will result in the loss of approximately 30 metres of ornamental, non-native species garden hedgerow.

There is very little evidence of badgers using the site and there are no local records. Several mature oaks in Field 2 may provide roost sites for bats and the hedgerows are likely to be used for commuting and foraging.

The hedgerows provide good nesting habitat for breeding birds and potential habitat for dormice, although there are no local records for this species.

No evidence of otters was found along the banks of the nearby river although it is highly likely that this watercourse is used by otters and they have been recorded within 1km of the site.

No specific habitat mitigation is required. However, habitat enhancement will be achieved through proposed reduced hedgerow management, allowing taller hedgerows to develop. Further enhancement will be achieved through the planting of new native woodland for screening purposes. The reduction of intense cattle grazing and avoidance of inorganic fertiliser use in Field 1 will allow an increase in floristic diversity to occur. Mitigation for protected species will involve avoidance of external illumination or design of a wildlife-friendly lighting scheme.

Please see Appendix 12, 33 and 34.

2.2.9 Water Resources

The field drainage of the proposed site drains into an existing soakaway and into an existing watercourse on farm. Dirty water will be channelled to a dirty water storage tank built in compliance with the SSAFO Standards.

Please see attached appendices 11, 14 and 15.

2.2.10 Cultural Heritage

The site itself has no archaeological potential.

Summary of the Scoping Exercise 2.3

The aspects of the Proposed Development Considered to Have the Potential to Give 2.3.1 **Rise to Significant Environmental Impacts**

Following consideration of the existing environment the potential sources of environmental impacts have been preliminary identified in Table 2 below for construction, operation and decommissioning of the poultry unit respectively.

Table 2: Summary of key potential impacts

Potential receptors	s of impact	Construction Phase	Activities & potential Impacts Operation phase	Decommissioning Phase
WATER	Surface water hydrology and channel morphology	Use of vehicles and machinery - Increase in surface runoff from soil compaction Works near watercourses - Change in flow velocities - Increased flood risk Earthworks - Increased sedimentation of watercourses Buildings and ancillary structures - Changes to runoff characteristics and infiltration rates	Use of vehicles and machinery - Increase in surface runoff from soil compaction	
	Surface water quality	Earthworks - Pollution from suspended material Materials management - Pollution from spills or leaks of fuel, oil and construction materials	 Water and manure management Decrease in water quality from sudden releases (e.g. from tank failure or yard washing) or gradual seepage of contaminated water into nearby watercourses Materials management Pollution from agricultural chemicals, spills or leaks of fuel and oil Eutrophication of watercourses Leechate from manure heaps entering watercourses Runoff after manure spread on land affecting watercourses 	
	Groundwater hydrology	Earthworks and site drainage - Reduction in water table	Use of borehole for water supply - Lowering water table	Termination of abstraction - Rebound of water table

			Activities & potential Impacts		
Potential receptor	s of impact	Construction Phase	Operation phase	Decommissioning Phase	
		 Changes to groundwater distribution and flow 			
	Groundwater quality	Materials management - Pollution from spills or leaks of fuel, oil and building materials	 Land-spreading of waste Contamination from infiltration arising from over-application Materials management Contamination from agricultural chemicals, spills or leaks of fuel and oil 		
LAND	Landscape	Excavation and earthworks-Creation of a new landform-Change in character of landscapeCreation of housing-Change in character of landscape	Presence of poultry housing - Change in character of landscape Presence of feed bins - Change in character of landscape Presence of manure - Change in character of landscape		
	Soils	Use of vehicles and machinery - Compaction Earthworks - Further erosion of exposed soil	 Spreading of animal manure Changes in soil nutrient levels and heavy metals Use of vehicles and machinery Soil compaction Soil erosion 		
AIR	Local Air quality	Use of vehicles and machinery - Dust generation	Storage/spreading manure - Release of gases to the atmosphere - Ammonia emissions Animal housing - Ammonia emissions Use of vehicles and machinery - Exhaust emissions		

			Activities & potential Impacts	
Potential rece	ptors of impact	Construction Phase	Operation phase	Decommissioning Phase
	Regional / global air quality	Change in vegetation - Changes in uptake of CO2	 Storage / spreading of manure Release of gases to the atmosphere Ammonia emissions Animal housing ammonia emissions Animal housing increase in domestic production leading to reduction in greenhouse gas emissions through transportation of overseas produce 	
FLORA AI FAUNA	ND Aquatic ecology	 Drainage works and use of vehicles negative impact on flora and fauna from increased sediment loading of streams Materials management harm to aquatic flora and fauna from oil, fuel or other substances entering watercourses 	 Surface runoff pollution of watercourses by contaminated runoff sedimentation of watercourses Site drainage indirect effect on aquatic flora and fauna from ongoing changes to stream hydrology and morphology Materials management direct and indirect effects from agro-chemicals, oil, fuel or other substances entering the aquatic environment 	Post-closure land-use - changes in habitat type - opportunity for increase in uncultivated areas
	Terrestrial ecology	 Earthworks and excavations habitat removal, fragmentation or severance disturbance to, or loss of species 	Storage / spreading of manure - deposition of ammonia onto vegetation Animal housing - deposition of ammonia onto vegetation Physical presence of building and ancillary structures	Post-closure land-use - changes in habitat type opportunity for increase in uncultivated areas

			Activities & potential Impacts	
Potential receptor	rs of impact	Construction Phase	Operation phase - alteration or loss of terrestrial habitats - creation of new habitats Manure spreading - disturbance to, or loss of species	Decommissioning Phase
HUMAN ENVIRONMENT	Socio-economic		Farming operation - continued flux of people away from or towards the farm	Closure of farm - movement of people away from the farm
	Health & Safety	Negative publicity - adverse reaction to perceived health issues	 Waste disposal operations risk of nuisance or harm from manure storage (e.g. consumption of contaminated groundwater) risk of harm from land-spreading manure 	
	Amenity		 Presence of building, ancillary structures and field boundaries possible alteration of rights of way or reduction in access Vehicle movements increase in number and frequency of vehicles noise and vibration from vehicle movements Storage / spreading of manure / feed increase in flies and vermin 	

Consultations 2.4

No consultation took place with Statutory or Non Statutory Consultees in order to inform the scope of the EIA, however as the application was previously submitted to the Local Planning Authority the pre consultation responses have been used to prepare the statement.

The main points of the Scope of the Environmental Impact Assessment are set out below:

- Introduction and Project Description The ES should include a description of the site and its ____ surroundings and details of its planning history. It should also include descriptions of the extent and duration of the construction works and longer term day to day activities
- Planning Policy and Legislative Framework The ES should contain a section that considers the planning and legislative framework against which the proposals would be considered and assess whether the proposals accord with such policies and legislation.
- Air Quality and Climate The impact of airborne emissions likely to affect designated nature conservation sites should be considered.
- ____ Noise and Vibration – The assessment should cover the issues identified in the scoping exercise and include predicted noise levels from site operations and background noise monitoring at the nearest sensitive receptors including operation, construction plant and traffic noise and set out any proposed mitigation.
- Highways and Traffic A Traffic Assessment is required which should assess the effects on the local road network of the development and include details of daily movements, operational hours and routing. Details of highway improvements should be included. Details of surface water attenuation should be provided in relation to increased surface water run-off affecting the local road network.
- Ecology and Conservation The ES should include a data search from the Ecological Records and consider direct and indirect impacts on both statutory and non-statutory sites of biodiversity importance, determine the presence of protected species (bats and great crested newts) and include mitigation as necessary.
- Flood Risk, Surface and Groundwater Protection (Hydrology) The ES will need to include a section dedicated to flood risk and include a sequential test and Flood Risk Assessment (FRA). The FRA must address drainage issues to ensure that there is no increase in runoff and should take a + 20% increase in precipitation to account for climate change.
- Landscape and Visual Assessment The ES should consider the site and its surroundings and should assess the proposals in the context of the local landscape character. Plans of current site conditions and impacts on the quality of views as well as mitigation should be provided.
- Historic Environment / Archaeology The ES should focus on indirect impacts on the settings of nearby listed buildings and include any mitigation proposals.
- Soils- The ES should include an assessment on the potential impacts on soils and risks associated the application of manure to agricultural land.
- Amenity, Material Assets, and Socio-Economics The ES should cover issues relating to odour flies and other potential nuisance issues caused by poultry developments.

Items not to be assessed 2.5

Issues scoped out from the assessment were as follows:

- Public Safety during the Construction, Operational and Decommissioning as the site will be secure
- Utilities / Services during the construction and decommissioning phase ____
- Landscape features during the construction, operational and decommissioning stage ~
- Night-time lighting during the construction and decommissioning stages 2012
- Archaeological during the construction, operational and decommissioning phases
- <u>____</u> Architectural interest during construction phase
- Blight during decommissioning **....**
- Fugitive emissions during decommissioning **....**
- 🐱 🛛 Water use during decommissioning
- Archaeology during decommissioning ~

CHAPTER 3 – ADDRESSING CONSULTEE COMMENT

Addressing Consultee and Welsh Government Comment 3.

The purpose of this chapter is to address the comments of all Statutory Consultees with the particular reference being satisfying the requirements of NRW. 3.1

CHAPTER 4 – ALTERNATIVES

4. Alternatives

This chapter sets out the requirement to assess alternatives in the Environmental Impact Assessment (EIA) process and describes the principal alternative sites considered for the erection of a free range egg production unit. It also describes how the final location at Glanmyddyfi for the proposal was ultimately reached.

4.1 Assessment of Alternatives

Where alternative approaches to development have been considered, paragraph 4 of Part II of Schedule 4 to the Town and Country Planning (Environmental Assessment) Regulations 2011 requires the developer to include in an ES an outline of the main alternatives, and the main reasons for the choice. Although the Directive and the Regulations do not expressly require the developer to study alternatives, the nature of certain developments and their location may make the consideration of alternative sites a material consideration. In such cases, the ES must record this consideration of alternative sites. More generally, consideration of alternatives is widely regarded as good practice, resulting in a more robust application for planning permission.

Schedule 4 of the Town and Country Planning (Environmental Assessment) Regulations 2011 requires that the applicant provides "an outline of the main alternatives studied by the applicant... and an indication of the main reasons for his choice, taking into account the environmental effects". The wording of this clause suggests that only those "alternatives studied by the applicant" should be addressed such that it is not mandatory to consider all possible permutations of a proposal. It is also necessary only to deal with alternatives in "outline" such that detailed environmental assessment of all alternatives, or combinations of alternatives, is not required. In addition, factors other than the environment may be taken into account such as: costs; engineering constraints; safety issues; practicability; operational requirements etc.

This application is presented to the Local Planning Authority having previously been submitted as a formal application. The applicant considered other locations upon the land to the north of Glanmyddyfi originally however immediately ruled them out for the selected sites. Other sites upon the 42 acres of land were considered however they were ruled out as were closer to unrelated residential dwellings, did not benefit from extensive landscaping and did not have existing highways access.

CHAPTER 5-DESCRIPTION

5. Description

This Chapter provides a description of the proposed free range egg production unit upon land to the north of Glanmyddyfi for which planning permission is sought. The description covers the site and its surroundings as well as the proposed building and structures that will constitute the proposed poultry unit. The chapter also describes the production cycle that will occur, providing information on the inputs and outputs from this process. There is also a summary of the construction and decommissioning phases of the development. This description sets the basis against which the Environmental Impact Assessment has been carried out.

5.1 Site Location

5.1.1 Description of Site

The chosen site lies to the north of the property known as Glanmyddyfi upon an area of pasture. Appendix 4 shows the site location in relation to the area.



The land to the north of Glanmyddyfi is shown on the aerial photograph above.

The site in question is currently laid to an agricultural enclosure laid to grass. The site in question is largely level, with the topography rising upwards, in relation to its north eastern potion.

The boundaries of the field parcels are defined by extensive, native hedgerows which are mature in their position. The field parcels are approached via a field gate in the southern corner directly off the council highway. Additional ground is proposed to be developed for the purposes of additional landscaping.

The site is currently used by Mr Davies as part of his agricultural business, being a mixed livestock farm with both beef and sheep. The field parcels proposed to be utilised as part of this development have been grazed by livestock for many years, with harvest crops also taken. Organic and inorganic manures have been applied to the land as part of the farm grass management programme. The application presented also provides improvements to the junction where the minor county highway adjoins the A40. The ornamental hedge at this junction point is to be relocated as part of the proposal as detailed in the transport statement.

The immediate surrounding area is predominately laid to agricultural enclosures and isolated dwellings. The landscape within which the application site is set is typical of the rolling Upper Tywi Valley area with mature hedgerows and woodland planting. Wider views are dominated by agricultural enclosures, isolated farms and large agricultural buildings and dwellings. Within the landscape there are traditional farm buildings, however the more modern style of steel portal framed buildings are common features in the landscape, with steel cladding to the roof and walls.

The site is approached directly off the A40 and then a county road. The settlement of Llandeilo is found some 3.5km to the east of the application site.

Proposed Development 5.2

5.2.1 Overview

Mr Terry Davies is proposing to erect a free range egg production unit for 16,000 birds on site.

The site is to be laid out as per the site layout plan on Appendix 1,2 and 3 and will include the following elements:

One poultry unit ____

The following sections include a description of the production cycle followed by a description of the main buildings and ancillary works, operational arrangements and environmental controls.

Management Cycle and Stocking Rates 5.3

The proposal is for the creation of a Poultry Unit to provide accommodation for 16,000 free range birds in a system with manure removal. The location of the proposal is shown at Appendix 4 to this Environmental Statement.

The proposed building shall be 73 metres long by 19.70 metres wide with a roof pitch of 15°, eaves height of 3.4 metres. The planning application shall allow the business to accommodate a further 16,000 free range birds. The total footprint of the building is 1,441.75 metres.

The size of the proposed building is in line with the land availability surrounding the development, at a ratio of 2000 birds for every hectare of land. The maximum ranging distance associate with the building is 350 metres from building to the external perimeter of associated land.

The poultry unit requires bespoke ventilation to ensure the welfare of the birds and the details of the ventilation are provided on the submitted elevation plans in support of the planning application.

The building proposed operates a system with manure removal systems within the unit removing manure twice per week. Manure will immediately be removed off farm within sheeted trailers.

The birds are Free Range and have an opportunity each day to exit the building and enter onto the designated ranging ground. The birds will exit the building using pop holes which are included in the design of the building and are displayed below on an example photograph.

Feed for the 16,000 birds is proposed to be stored in two external feed bins. The feed bins shall be a juniper green colour. The feed will be automatically conveyed to the unit. The steel bins shall be located adjacent to the proposed building as per the submitted layout plans for the poultry unit, appendices 1 to 4.

The building shall be constructed using steel box profile sheeting in a juniper green colour to assist with the integration of the building into the landscape. Should the Local Authority wish the Applicants to use a specific colour they would be willing to do so.

Free Range Birds are brought into the enterprise as young laying stock and remain in the unit for a fourteen month period. Following the end of the cycle for the laying stock all birds are removed and the building is thoroughly cleaned internally, and the next flock introduced to restart the cycle.

The access to the site will be located at the existing field access, which has been in situ for many years. The existing cattle compound will be removed, and a hardstanding and vehicle manoeuvring area created as part of the proposal. The positioning of the access ensures that the length of single track lane that must be travelled to reach the site is minimised. The proposal offers improvements to the highway network, of benefit to all road users not just the applicant. The junction off the council highway to the A40 will be improved through the provision of additional visibility and the access plans for junction improvements have previously been approved by the Welsh Government.

Parking is available on side for staff and visitors in the creation of the new hardstanding to the south west of the proposed building.

Please see the submitted Transport Statement – Appendix 18

Site Layout 5.4

Main Buildings Design 5.4.1

The site in question is currently laid to an agricultural enclosure laid to grass. The site in question is largely level, with the topography rising upwards, in relation to its north eastern potion.

The boundaries of the field parcels are defined by extensive, native hedgerows which are mature in their position. The field parcels are approached via a field gate in the southern corner directly off the council highway. Additional ground is proposed to be developed for the purposes of additional landscaping.

The site is currently used by Mr Davies as part of his agricultural business, being a mixed livestock farm with both beef and sheep. The field parcels proposed to be utilised as part of this development have been grazed by livestock for many years, with harvest crops also taken. Organic and inorganic manures have been applied to the land as part of the farm grass management programme. The application presented also provides improvements to the junction where the minor county highway adjoins the A40. The ornamental hedge at this junction point is to be relocated as part of the proposal as detailed in the transport statement.

The immediate surrounding area is predominately laid to agricultural enclosures and isolated dwellings. The landscape within which the application site is set is typical of the rolling Upper Tywi Valley area with mature hedgerows and woodland planting. Wider views are dominated by agricultural enclosures, isolated farms and large agricultural buildings and dwellings. Within the landscape there are traditional farm buildings, however the more modern style of steel portal framed buildings are common features in the landscape, with steel cladding to the roof and walls.

The site is approached directly off the A40 and then a county road. The settlement of Llandeilo is found some 3.5km to the east of the application site.

The design of the new building will be typical of modern free range poultry sheds. The proposed building shall be 73.0 metres long by 19.750 metres wide with a roof pitch of 15°, eaves height of 3.4 metres.

The size of the proposed building is in line with the land availability surrounding the development, at a ratio of 2000 birds for every hectare of land. The maximum ranging distance associate with the building is 350 metres from building to the external perimeter of associated land.

The poultry unit requires bespoke ventilation to ensure the welfare of the birds and the details of the ventilation are provided on the submitted elevation plans in support of the planning application.

Roofs

Box profile metal sheeting at 15 degree pitch. Eaves height: 3.4 metres.

Walls

Box profile metal sheeting.

Insulation

Roof and walls are composite steel insulated panels of 50mm polyurethane clad both sides in profile steel.

Flooring

The unit is erected with a smooth easily washable concrete floor on a damp proof membrane. The walls will rest on a poured concrete foundation. The specification is as follows:-

100 mm concrete floor thickened to 200 mm thick below perimeter walls, 1,000ga DPM minimum 125 mm consolidated blinded hardcore.

Ventilation

The building design incorporates the use of mechanical ventilator extractor fans, the mechanical extractor fans will thermostatically control the building. Therefore, they tend to operate more frequently during hot weather. Efficient design of ventilation fans has minimised the number needed for this building. Fans will be maintained and inspected in accordance with the manufacturers or suppliers' instructions. This will minimise mechanical noise from the unit and also dust escape. Automated feeding by internal conveyor with augers direct from the sealed external feed hoppers will minimise dust creation. The insulated construction of the walls and roof also reduce sound transmission.

Shed Colour

The sheds will be coloured to Local Planning Authority specification. Juniper Green is the applicant's preferred choice, in line with the originally submitted planning application.

Ancillary Structures & Description 5.4.2

Hard standing / Loading Area

Outside the poultry unit will be laid to concrete to provide parking and turning areas to prevent poaching o the land and safe and clean access for staff and visitors to the poultry unit.

Access 5.5

Site access 5.5.1

The access to the site will be located at the existing field access, which has been in situ for many years. The existing cattle compound will be removed, and a hardstanding and vehicle manoeuvring area created as part of the proposal. The positioning of the access ensures that the length of single track lane that must be travelled to reach the site is minimised. The proposal offers improvements to the highway network, of benefit to all road users not just the applicant. The junction off the council highway to the A40 will be improved through the provision of additional visibility and the access plans for junction improvements have previously been approved by the Welsh Government.

Parking is available on side for staff and visitors in the creation of the new hardstanding to the south west of the proposed building.
Please see the submitted Transport Statement – Appendix 18

Routing 5.5.2

The access to the site will be located at the existing field access, which has been in situ for many years. The existing cattle compound will be removed, and a hardstanding and vehicle manoeuvring area created as part of the proposal. The positioning of the access ensures that the length of single track lane that must be travelled to reach the site is minimised. The proposal offers improvements to the highway network, of benefit to all road users not just the applicant. The junction off the council highway to the A40 will be improved through the provision of additional visibility and the access plans for junction improvements have previously been approved by the Welsh Government.

Parking is available on side for staff and visitors in the creation of the new hardstanding to the south west of the proposed building.

Please see the submitted Transport Statement – Appendix 18

5.6 Equipment and Management

Feed

The feed will be supplied by a Local Feed Merchant. It will be composed of high-guality raw materials and will be designed to suit the nutritional needs of free range chickens. The feed will be blown from bulk feed HGVs into the bulk feed bins.

A Feed Conversion Rate (FCR) for the flock of 1.7 kg per kg produced (Aviagen, 2007) has been used for the purpose of this report. The number of tonnes of feed consumed by the flock is therefore calculated as 353.

Water

Water will be supplied to the birds via nipple drinkers; there will be a minimum of 1 nipple drinker per 10 birds as per ACP management requirements.

Nipple drinkers are used due to (a) ease of management, (b) good bird performance (c) maximum hygiene and (d) odour control; they keep the moisture content of the manure low as spillages are rare - dry manure is a less odorous and it is necessary to ensure that the risks of odours are minimised.

Electrical Power

Connection to the electricity grid will be made via the existing supply that is connected to the farm adjoining the site.

Mortalities

Mortalities are collected on a regular basis, stored in sealed containers and removed by a licensed operator -carcasses will be stored in a frozen store on site to reduce unnecessary vehicle movements until full and then are bagged into secure store for fallen stock collection. This report uses a figure of 3.5% of flock for mortalities per crop, this is the industry norm.

Litter

Wood shavings will be used to a depth of 2 cm; this allows the floor to breath and release moisture enhancing environmental conditions inside the poultry house. This proposed depth of litter complies with the Assured Chicken Production (ACP) Scheme (Assured Chicken Production Ltd, 2009).

The spent litter based on wood shavings will be cleared out by a bobcat which will load the trailers directly inside the doors. The litter removal is carried out by staff at the free range unit and in practice there is very little spillage of litter. Manure will immediately be carried off site in sheeted trailers. No manure will remain on farm.

Dirty Water

After the litter is cleared, the building and roofs inside and the walls are then blown down with compressed air. Washing water then passes via a pipe directly into a collection tank. When the cleaning out is in progress the dirty washing water and any contaminated rain water falling on the yard will be directed via drains to manholes and in to the tanks.

With the polished floors following a brushing down there will be very little solid matter to be carried away with the washing water. The sheds will take approximately 6 hours to be fully washed down. With the drains in the lowest corner of the sheds leading directly into the collection tanks and no water passing out on to the outside yard there can be no mistake over the position of the isolating valve when washing down is taking place. The outside area can then be cleaned up when the litter has been taken away.

Importantly the wash water from the washing down is diluted wash water with a low nitrogen content and therefore can be spread on land at all times of the year and are therefore not included within calculation of nutrient loading for the purpose of field application.

Labour and Hours of Operation

Farm businesses need to grow in response to market forces and changing legislation if they are to survive. Mr Terry Davies runs an existing farm business which is viable and successful. The business needs to continue to expand and diversify to maintain its position in the market and provide for all those partners in the business and the next generation.

The poultry site will operate 24 hours a day, seven days a week as it is a livestock enterprise that requires continual management and husbandry. Personnel operating the site will be required to be within a safe distance of the site at all times to repair equipment failure to avoid bird fatalities.

5.7 Landscaping Planting and Management

5.7.1 General

In proposing this planning application much consideration has been given to the siting of the proposed Poultry Unit, in line with the requirements of Planning Policy Wales.

The Poultry Unit has been positioned to make maximum use of the topography of the land making sure that the building is not visually intrusive. The general location was also proposed with consideration given to the land requirement for the proposed number of birds in order to meet the industry regulatory standards and the accessibility of the land in the ownership of the applicant for the purposes of managing the poultry unit having regard to matters such as the access to the road network, proximity to existing properties and the wider landscape.

The applicants have submitted Landscape Plan and Schedule in support of the application;

Glanmyddyfi Appendix 6 Landscape Plan Glanmyddyfi Appendix 17 Outline Soft Landscape Specification

As detailed in the above reports, the poultry unit will be constructed of a steel portal frame, with steel sheeting to the roof and walls in a juniper green colour, outside the poultry unit will be laid to concrete to provide parking and turning areas to prevent poaching o the land and safe and clean access for staff and visitors to the poultry unit. The landscape plan details the existing hedgerows surrounding the development and explains how the hedgerows will be managed carefully post development, the plan also details additional landscaping within the application site, through the introduction of a new woodland strip and the planting of a replacement hedge to facilitate the junction improvements onto the A40.

Through respecting the surrounding environment, topography and existing landscape features the siting of the proposal has ensured the potential impact is minimised or in some instances removed altogether.

Landscape Plan 5.7.2

Hedgerows

As part of the landscaping scheme the applicant proposes to maintain the existing mature hedgerows and to grow an effective screen of the development through hedgerow management.

Habitat enhancement will be achieved through proposed reduced hedgerow management, allowing taller hedgerows to develop. Further enhancement will be achieved through the planting of new native woodland for screening purposes. The reduction of intense cattle grazing and avoidance of inorganic fertiliser use in Field 1 will allow an increase in floristic diversity to occur.

Landscape Management 5.7.3

The applicant will establish a site management plan to ensure the maintenance of the landscaping scheme. This is likely to include thinning the tree cover, where necessary, occasional scrub clearance and mowing to maintain the grassland areas.

Please see appendices 6, 17, 21 and 23.

Lighting 5.8

The nature of the proposed poultry installation means that some light sources will be required to allow safe and effective activities within the site to take place. The assessment has identified that the site is located within a relatively dark, rural context with limited existing sources of light. However, the site is located in an intensively farmed area and as such field operations and other activities take place during hours of darkness and use intense lighting for visibility (rather than security purposes).

The main building gable ends will be lit externally with a single low-wattage fitting of low intensity lighting during normal working hours in winter months. Lighting of the site would only be required during working hours in winter months and during bird catching where lighting would be kept as low as practically possible. Appropriate cowls/shielding of lights would be instigated, the light spread would be minimised through use of directional lighting and hours of lighting would be kept to a minimum to reduce disturbance.

There will be no round the clock external lighting of the site and no use of high intensity security lighting. All external lighting will be downward facing and protected with a cowl to reduce light spill to outside the unit.

During hours of darkness the poultry shed will be illuminated internally to 5-10 lux. The building will be clad with high density metal profile sheeting and therefore no light will escape to outside. Regular tests will be conducted to check the effectiveness of the light proofing. The windows will be shuttered to avoid light escaping to the outside.

During the clear out the site will be lit by low wattage lighting while birds are being removing from the building, this operation will be carried out in low light conditions to minimise stress to the birds.

It is anticipated that the potential impact associated with this aspect of the proposed development will be minimal as there will not be round the clock security lighting and the area of lighting (the front gable ends of the buildings) is directed away from the main residential areas, this will respect the rural context of the site. Added to this the lighting will be directed downwards to reduce light escaping from the site plus the light will be protected with a cowl to avoid the lights lighting any areas outside of the

site. The lighting has been sited and angled to provide the minimum illumination required by the applicant so as not to adversely affect road users, neighbours, the natural environment or wildlife.

5.9 Surface Water Drainage Please read in conjunction with Appendix 23.

The site drainage scheme has been designed using Sustainable Drainage Systems (SuDS) principles that aim to mimic natural systems on Greenfield sites.

Surface Water from the proposed building will be captured within soakaways. Soakaways shall be designed to comply with B.R.E Digest 365. All dirty water will be routed and collected in a dirty water tank. The dirty water tank will be located in excess of five metres from any watercourse and this has been considered at the development stage.

Please see appendices 14 and 15.

5.10 Environmental Controls

5.10.1 Introduction

Environmental Permit Determination

The proposed operation is not required to apply for a licence to operate under the Environmental Permitting (England and Wales) Regulations 2010 as regulated by Natural Resources Wales as the proposed site shall house under 40,000 birds.

The purpose of the Environmental Permitting is to achieve integrated prevention and control of pollution arising from activities listed in Annex 1 of the European Council Directive 96/61/EC, leading to a high level of protection of the environment as a whole. More specifically, it provides a system requiring operators and regulators to take an integrated, overall look at the polluting and consuming potential of the poultry unit. Central to this approach is the general principle that operators should take all appropriate preventative measures against pollution, in particular through the application of best available technique enabling them to improve environmental performance.

Best Available Technique

The term "best available technique" is defined in Article 2(11) of the European Directive as "the most effective and advanced stage in the extension of activities and their methods of operation which indicate the practical suitability of particular techniques for providing the basis for emission limit values designed to prevent and, where that is not practicable, generally reduce emissions and the impact on the environment as a whole."

The best available techniques to be applied to the free range unit upon land to the north of Glanmyddyfi are those set out in the European Commission's *Reference Document on Best Available Techniques for Intensive Rearing of Poultry and Pigs* known as the BREF document. The following systems within the BREF Document are applicable to the proposed free range egg unit at Glanmyddyfi.

- 🐱 🛛 Good agricultural practice for environmental management
- Best Available Techniques for nutritional management
- Best Available Techniques for efficient use of water
- Best Available Techniques for efficient use of energy
- Best Available Techniques for the reduction of emissions from poultry housing
- Best Available Techniques for the reduction of odour

- Best Available Techniques for the reduction of emissions from storage
- Best Available Techniques for the reduction of emissions from application of manure to land
- Best Available Techniques to reduce noise emissions
- Best Available Techniques for the treatment and disposal of residues other than manure and carcases

The following sections provide more detail on incorporated environmental controls designed to avoid adverse effects on the living conditions of the local population.

5.10.2 Odour & Dust Suppression

Please see appendix 24 and 25 in support of this Environmental Statement.

Decomposing waste products such as manure, dust and bedding causes odours in free range egg units. Ventilation rate and temperature significantly influence the concentration of odorous compounds; inadequate air movement in the houses, leading to high humidity and wet litter causes poor dispersal of odours. The ventilation system is designed to efficiently move moisture from the house and to remove heat. The drinking system is also designed to eliminate spillage. The shed is also insulated to eliminate condensation. Other management controls include dietary manipulation; crude protein levels will be kept at a practical minimum keeping crude protein low. The feed will contain enzymes that enhance the digestion of the cereal components of the feed as a result of the improved digestion, the amount of water drunk by the birds is reduced, and this in turn leads to a lower moisture content of the litter. Consequently, the risks of odour are reduced by this drier litter. The baffle area beyond the ventilation fans will enhance dispersion of odorants by directing odorous air upwards into the wind that is building wake effected leading to enhanced mixing conditions. This dilutes the odorous air reducing odour nuisance at sensitive receptors. Studies undertaken in 2000 showed that baffle areas can recue odour concentration at sensitive receptors by between 30 and 90 percent (Bottcher, 2000).

The period during the egg production cycle at which odour and dust concentrations have the potential to cause nuisance is during the clearing of manure and spent floor litter from the sheds. The Odour Management Plan is attached at Appendix 25, Glanmyddyfi EIA Odour Management Plan. is to be adopted and implemented prior to the operational phase of the proposed unit.

Appendix 24 is the Dust and Bioaerosol management plan.

5.10.3 Noise Suppression

In order to ensure that noise disturbance is minimised the applicants have detailed noise management measures in the design and access statement submitted in support of the application and these are to be adopted and implemented prior to the construction phase of the development though to beneficial use and thereafter. Appendix 16 is the Noise Assessment for the development.

5.10.4 Manure

The manure will be removed from the free range unit twice per week and will be removed off site to address the concerns of NRW.

All manure applied to the land will be done so in accordance with regulations for Good Agricultural and Environmental Conditions regarding soil and water. The manure shall be applied in accordance with the Silage, Slurry and Agricultural Fuel Regulations in line with the businesses' manure management plan. A detailed Manure Management Plan has been submitted in support of the planning application, together with an Ammonia Report. Both of the aforementioned reports set of the process and capacity for dealing with manure generated by the proposal. It is proposed that the following measures in relation to manure management also be adopted and the applicant is happy for each point to be included as a condition of any forthcoming consent. Discussions have been held with a Planning Solicitor who has confirmed that manure management proposals are enforceable as conditions of consent with the relevant documents referenced as a requirement to be adhered to ie the Manure Management Plan.

- No manure of any kind will be applied to the 42 acre block of land which the application site forms part 1) of
- No manure shall be sold to any individual or business owning or renting land within 1.5km of the 2) boundary of the Dinefwr SSSI.
- 3) A register of purchasers of any manure generated by the application proposal shall be maintained and made available to the LPA upon any request made.
- 4) All recommendations of the Manure Management Plan shall be adhered to at all times.
- Manure moved off site every four days in sheeted trailers. 5)

Construction 5.11

The exact methods employed to build the proposed free range will be decided by the preferred shed contractor. The final construction methods and activities will be agreed with the relevant authorities prior to commencement.

Construction operations will take place between the hours of 0700 and 1900 Monday to Friday and 0700 to 1300 on Saturdays. Construction activities are unlikely to take place on Sundays and Bank Holidays and, if required, any significant work outside of these hours would be with the prior consent of the planning authority.

There will be no public access to the construction site and suitable fencing will be used to secure the site boundary.

Decommissioning 5.12

5.12.1 Introduction

The proposed free range unit will be operated and maintained to ensure there is no deterioration in the site conditions during the life of its environmental permit. Materials that will have potential to cause contamination or pollution will be managed so as to minimise that potential. Environmental monitoring will be conducted throughout the operating life to review all emissions from the site.

Prior to the end of operations at the site a Site Closure and Restoration Plan will be prepared. It is anticipated that much of the proposed structure will be recyclable depending on market conditions at the time. In particular the concrete (for aggregate) and metal (for scrap) are likely to be readily recycled. It may also be possible for the buildings to be re-used for another purpose at the time of decommissioning.

5.12.2 Decommissioning Considerations for the Design

The design of the free range unit will be in accordance with all relevant legislation and standards, and industry good practice. The proposed free range unit will be designed to ensure it can be constructed, operated, maintained and decommissioned safely, in accordance with the Construction (Design and Management) Regulations.

Decommissioning issues to be considered during the design process include:

- Safety of construction materials;
- Robustness and durability of construction materials;
- Consumables and materials used in operation;
- Ease of access and procedure for dismantling;
- Size, weight and location of equipment;
- Appropriate storage of materials;
- Prevention of accumulations of contaminated or hazardous wastes;
- Ease of maintenance and cleaning;
- Electrical systems;
- Conveyance and control of liquids.

5.12.3 Decommissioning Considerations during Operation

Operational procedures will be adopted that will give due consideration to the ease and safety of decommissioning the free range unit. Staff will be trained to ensure these measures are understood and implemented.

5.12.4 Site Closure

When the site operation is due to cease, a Site Closure and Restoration Plan will be prepared in consultation with NRW. All techniques previously described for minimising or mitigating potential for contamination will be adopted, together with specific measures for Site Closure activities. The Plan will include the following information:

- Site survey and ground investigation data, including soils testing and any proposed protection, decontamination and monitoring measures;
- Details of the removal or flushing out of pipelines and tanks;
- Plans of all underground pipes, tanks, services and foundations;
- Details of the treatment and or removal of all potentially harmful materials;
- Outline proposals for decommissioning, including method statements and risk assessment to be developed in detail prior to commencement of decommissioning of the plant.

All as building drawings and associated documents, Health and Safety files prepared under the Construction (Design and Management) Regulations and operating manuals will be collected together. Risk assessments and detailed method statements will be prepared to identify the hazards; required control measures specific procedures to be adopted during the decommissioning of the free range unit.

Consultation will continue as appropriate with the EA, Health and Safety Executive (HSE), Local Authority and Planning Authority to ensure requirements are met. The relevant Notice of Demolition will be required from the Local Authority, and other notifications required under Health and Safety at Work Act 1974 (or equivalent at the time) will be made.

CHAPTER 6 – POLICY & LEGISLATION

6. Planning Policy and other Legislation

This chapter briefly summarises the principal planning policies and legislation relating to the operation of free range egg production unit at National, Regional and Local levels. It concludes that the proposal for the free range unit at Glanmyddyfi is consistent with these policies and objectives.

6.1 Introduction

The purpose of this Chapter of the Environmental Statement is to provide an overview of how the proposed free range unit 'fits' with the European, National, Regional and Local agricultural policy and legislative framework.

The chapter is structured around the hierarchical policy framework of:

- European agricultural legislation and policy;
- National agricultural strategy and planning policy guidance;
- Regional agricultural strategy and regional spatial strategy; and
- Local extension plans.

The aims and objectives of these policies and plans broadly centre on the principles and practice of 'sustainable extension'. The extent to which policies at the regional and local levels are being achieved is important to the delivery of the Government's sustainable extension objectives (Planning Support Statement 1 (PPS

1)).

The section concludes with an overview of the proposed poultry unit in the context of the key policy messages.

6.2 European

6.2.1 Introduction

Management of poultry sites for meat production in the UK is largely governed, directly or indirectly, by European law. In this context, much legislation and policy is derived from European Directives; the Directives of particular relevance to the proposed poultry unit are:

The Environmental Permitting (England and Wales) Regulations 2011.

The following directive is due to come into force in 2010 and governs the management of free range egg production. There is no specific domestic legislation governing the management of free range egg production unit only general animal welfare law:

6.3 Environmental Permitting (England & Wales) Regulations 2011

The proposal upon land to the north of Glanmyddyfi is for 16,000 birds, this is under the threshold of 40,000 birds and an Environmental Permit from Natural Resources Wales will not be required.

The Environmental Permit is effectively a licence to operate and will only be granted if an acceptable level of Pollution Control management systems are adhered to. Under the Environmental Permitting regime Natural Resources Wales include the following key areas of potential harm when making an assessment for the Permit:

Management – including general management, accident management, energy efficiency, efficient use of raw materials, waste recovery and security.

- Operations including permitted activities, operating techniques, closure and decommissioning.
- 📕 🛛 Emissions to water, air and land including to groundwater and diffuse emissions, transfers off site, odour, noise and vibration and monitoring.
- Information records, reporting and notifications.
- Poultry Production including the use of poultry feed, housing design and operation, slurry and manure storage and spreading.

All of the above would be assessed within the requirements of Best Available Techniques (BAT).

6.4 National Planning Policy

National Planning Policy Framework 6.4.1

Planning Policy Wales (Edition 10, December 2018) -

6.4.2 1.2 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation. A well functioning planning system is fundamental for sustainable development and achieving sustainable places.

PPW promotes action at all levels of the planning process which is conducive to maximising 6.4.3 its contribution to the well-being of Wales and its communities. It encourages a wider, sustainable and problem solving outlook which focuses on integrating and addressing multiple issues rather than on an approach which is fragmented, un-coordinated and deals with issues in isolation. It provides an opportunity to remove any actual or perceived problems in current approaches and stimulate and support innovative and creative ideas as well as high standards of evidence and assessment to underpin the preparation of development plans and strategies and individual proposals. Monitoring and learning from development outcomes so as to drive sustainable improvements in planning practice is also important.

Planning authorities should ensure that social, economic, environmental and cultural 6.4.4 benefits are considered in the decision-making process and assessed in accordance with the five ways of working to ensure a balanced assessment is carried out to implement the Well-being of Future Generations Act and the Sustainable Development Principle. There may be occasions when one benefit of a development proposal or site allocation outweighs others, and in such cases robust evidence should be presented to support these decisions, whilst seeking to maximise contributions against all the well-being goals.

6.4.5 Key factors in the assessment process include:

Social Considerations

who are the interested and affected people and communities; how does the proposal change a persons way of life, which can include: how people live, for example how they get around and access services; how people work, for example access to adequate employment; how people socialise, for example access to recreation activities; and how people interact with one another on a daily basis

who will benefit and suffer any impacts from the proposal; what are the short and long-term consequences of the proposal on a community, including its composition, cohesion, character, how it functions and its sense of place; and

how does the proposal support development of more equal and more cohesive communities.

Economic Considerations

the numbers and types of long term jobs expected to be created or retained;

whether, and how far, the development will help redress economic disadvantage or support regeneration priorities, for example by enhancing local employment opportunities or upgrading the environment;

the contribution the development would make to achieving wider strategies, for example the growth or regeneration of certain areas;

the contribution this economic activity will have to wider policy goals; and

how the proposal would support the achievement of a more prosperous, low carbon, innovative and resource efficient Wales.

Cultural Considerations

how far the proposal supports the conditions that allow for the use of the Welsh language;

whether or not the development protects areas and assets of cultural and historic significance;

have cultural considerations and their relationships with the tourism industry been appropriately maximised;

if the proposal protects areas known for their cultural value in terms of music, literature, sport and the arts; and

vibrant cultural experiences.

Environmental Considerations

will important features of the natural and built environment be protected and enhanced;

are the environmental impacts of development on health and amenity limited to acceptable levels and the resilience of ecosystems improved;

is environmental protection for people and natural resources, property and infrastructure maximised and environmental risks prevented or appropriately managed;

will high standards of restoration, remediation, decommissioning and beneficial after uses be achieved;

will the depletion of non-renewable resources be minimised, waste prevented and the efficient and most appropriate use of materials made and re-use and recycling promoted;

will the causes and impacts of climate change be fully taken into account through location, design, build, operation, decommissioning and restoration; and

does it support decarbonisation and the transition to a low carbon economy.

When considering planning applications, planning authorities should seek the views of all relevant local authority departments and external specialist public bodies, particularly those with responsibility for Economic Development, Housing, Transport, Regeneration, Culture, Heritage and Environment/ Biodiversity, as this can assist in the identification of multiple benefits and an integrated approach to balancing priorities against policy on an individual basis. This will also enable the full range of costs and benefits over the lifetime of development to be taken into account, including those which cannot be easily valued in monetary terms, and considerations relating to timing, risks and uncertainties addressed.

6.4.6 The construction of new buildings in a Green Belt or green wedge is inappropriate development unless it is for the following purposes:

justified rural enterprise needs;

essential facilities for outdoor sport and outdoor recreation, cemeteries, and other uses of land which maintain the openness of the Green Belt or green wedge and which do not conflict with the purpose of including land within it;

limited extension, alteration or replacement of existing dwellings; or

small scale diversification within farm complexes where this is run as part of the farm business.

6.4.7 Planning authorities should adopt a constructive approach towards agricultural development proposals, especially those which are designed to meet the needs of changing farming practices or are

necessary to achieve compliance with new environmental, hygiene or welfare legislation. They should also adopt a positive approach to the conversion of rural buildings for business re-use. Planning authorities should adopt a positive approach to diversification projects in rural areas. Additional small business activities can often be sustainably located on farms and provide additional income streams. Diversification can strengthen the rural economy and bring additional employment and prosperity to communities. Diversification activities come in many forms and include both agricultural and nonagricultural activities. Activities could include, for example, livestock and crop processing, non traditional livestock and crop farming, tourism projects, farm shops, and making and selling non agricultural products. Diversification can also include renewable energy proposals such as anaerobic digestion facilities or solar and wind installations, which will help to increase the viability of rural enterprises by reducing their operating costs. These schemes should be supported where there is no detrimental impact on the environment and local amenity.

6.4.8 Technical Advice Note (TAN) 6 – Planning for Sustainable Rural Communities (July 2010) supports and encourages the need for economic development. TAN 6 in its entirety recognises the importance of development.

6.4.9 TAN 6 confirms that "the planning system has a key role to play in supporting the delivery of sustainable rural communities."

6.4.10 'Strong rural economies are essential to support sustainable and vibrant rural communities. A strong rural economy can also help to promote social inclusion and provide the financial resources necessary to support local services and maintain attractive and diverse natural environments and landscapes"

6.4.11 TAN 6 states that "when considering planning applications for farm diversification projects, planning authorities should consider the nature and scale of activity taking a proportionate approach to the availability of public transport and the need for improvements to the local highway network."

6.4.12 Section 6 of TAN 6 discusses Sustainable Agriculture. "The Welsh Governments objective is a sustainable and profitable future for farming families and businesses through the production and processing of farm products while safeguarding the environment, animal health and welfare, adapting to climate change and mitigating its impacts, while contributing to the vitality and prosperity of our rural communities. The planning system can play an important part in supporting sustainability of agriculture."

6.4.13 TAN 6 recognises that "farms vary considerably in size, type and farm business and layout. The loss of part of a holding can have important implications from the remainder. The effect of severance and fragmentation upon the farm and its structure may be relevant."

6.4.14 Technical Advice Note (TAN) 23 – Economic Development (February 2014) stipulates that "Sustainable development is essential to building strong rural economies and vibrant communities." "When businesses expand or modernise, they may need to do so in situ; it may be highly inefficient or impracticable for them to relocate to a subsequently preferable site.

6.4.15 Development Plans and the economy should:

• include policies encouraging farm diversification and new rural development opportunities;

6.5 Local Planning Policy

6.5.1

Carmarthenshire County Council set out their policies for planning within the Carmarthenshire Local Development Plan which was adopted on the 10th December 2014 and shall cover the period up to 2020.

The plan confirms the vision of Carmarthenshire County Council as below;

"CARMARTHENSHIRE 2021

Carmarthenshire will be a prosperous and sustainable County of contrasts. It will have distinctive rural, urban and coastal communities, a unique culture, a high quality environment and a vibrant and diverse economy. The County will offer a high quality of life within safe, accessible and inclusive communities. Everyone will have access to good quality employment, a suitable mix of housing and to community and recreational facilities – all within a clean and green environment.

IN SPATIAL TERMS THE COUNTY WILL BE CHARACTERISED BY:

• Llanelli fulfilling its potential as a modern and vibrant service centre developing upon its waterfront location.

• Carmarthen continuing to thrive as a prosperous and strategically located service and administration centre retaining its distinctive county town character.

• The ongoing emergence of Ammanford/Cross Hands as a distinctive and diverse Western Valleys based growth area.

• Sustainable socially inclusive communities and efficient local economies centred upon the County's market towns and larger villages.

• Vibrant rural communities as living, working environments.

• A countryside that is valued and enjoyed by residents and visitors alike."

The plan details policies with regard to innovation being key to the vision of the Council; "INVESTMENT AND INNOVATION:

Regeneration – building resources, creating opportunities and offering support.

SO10: To contribute to the delivery of an integrated and sustainable transport system that is accessible to all.

SO11: To encourage investment & innovation (both rural and urban) by:

(a) making an adequate provision of land to meet identified need; and,

(b) making provision for the business and employment developmental needs of indigenous /new employers, particularly in terms of hard & soft infrastructural requirements (including telecommunications/ICT); and,

(c) making provision for the infrastructural requirements associated with the delivery of new homes particularly in terms of hard & soft infrastructural requirements (including foul and surface water); and, (d) adhering to the principles of sustainable development and social inclusion in terms of the location of new development."

In detailing Sustainability the plan states;

The vision for a Sustainable Wales is one where Wales:

- lives within its environmental limits, using only its fair share of the Earth's resources so that our ecological footprint is reduced to the global average availability of resources, and we are resilient to the impacts of climate change;
- has healthy, biologically diverse and productive ecosystems that are managed sustainably;
- has a resilient and sustainable economy that is able to develop whilst stabilising, then reducing, its use
 of natural resources and reducing its contribution to climate change;

- has communities which are safe, sustainable, and attractive places for people to live and work, where
 people have access to services, and enjoy good health; and,
- is a fair, just and bilingual nation, in which citizens of all ages and backgrounds are empowered to determine their own lives, shape their communities and achieve their full potential (Ref: One Wales: One Planet).

"Agriculture in Carmarthenshire dominates the rural landscape with the agricultural industry and in particular dairy and sheep farming establishing the County as one of the most important agricultural areas in Wales. Some 203,700 ha of land within Carmarthenshire is classified as agricultural land with the majority classified as grade 3a and 4 with a small tranche of grade 2 land in the south-east of the County."

The principles of the LDP are;

The LDP will promote the principles of sustainability by:

- Protecting and enhancing biodiversity, townscapes and landscapes;
- Minimising energy demand and consumption by facilitating the delivery of carbon neutral buildings and homes, including the promotion of BREEAM and the Code for Sustainable Homes as well as promoting the efficient use of resources by directing development to previously developed land wherever possible;
- Distributing and locating development in accordance with the settlement framework with a view to
 reducing the km required to be driven by private motor car in order to access places of work, retail,
 leisure and community services. The Strategy also promotes accessibility to alternative means of
 travel;
- The promotion of sustainable waste management by virtue of the waste hierarchy (Reference should be had to Strategic Policy SP12 Waste Management);
- The promotion of sustainable water management (including ensuring a sustainable supply of water resources and water quality, promoting sustainable drainage modes and addressing flooding issues). This includes reducing the vulnerability of communities by ensuring that development is not located in flood risk areas;
- The promotion of wellbeing by supporting healthy, accessible and cohesive communities and delivering a wide range and mix of homes to meet an identified need; and,
- Supporting the development of a resilient economy and facilitating future growth within high value and green sectors such as tourism, education, health and social care, Research and Development, and renewable energy production.

Section 5.5.7 of the LDP states that "In employment terms, the LDP recognises the current distribution of employment land with such sites safeguarded to ensure that they are available to contribute to employment needs existing and future. This embraces an emphasis on safeguarding employment sites in accessible locations which are well served by public transport and recognises the contribution of existing sites in satisfying employment requirements across the County particularly in providing range and choice. The Plan also allocates a portfolio of proposed employment sites which, whilst focusing on the sustainability attributes of the Growth Areas, also provides for other settlements within the hierarchy. The distribution of provision reinforces the Strategy, creates opportunity for business startups and growth and allows for a degree of flexibility in the amount of land available across the hierarchy. The Plan also makes provision for employment needs within rural areas in a way which is

responsive to the characteristics of rural areas and potential business requirements and helps support the rural economy."

Key components of the strategy are summarised below:

- Contributes to the delivery of physical and social regeneration opportunities and provides for a diverse and cohesive range of settlements and communities;
- Promotes a settlement framework which supports cohesion between settlements and communities;
- Promotes a balanced distribution of growth in accordance with the settlement framework reflecting the sustainability attributes of settlements, the services and facilities available and their ability to accommodate growth;
- Focuses development on existing settlements across the hierarchy recognising the needs of rural communities whilst minimising the impact on the open countryside;
- Reflects the diversity across the County and within its settlements and communities;
- Distributes employment provision based on the settlement hierarchy with the focus for growth based upon the Growth Areas;
- Provides for employment both through allocated sites and through policy provisions across the County
 recognising the need to sustain rural economies;
- Focuses retail change in established centres whilst providing opportunities for provision throughout the hierarchy in a way which will assist in improving accessibility to services and facilities and help in achieving viable, self-supporting settlements and sustainable communities;
- Recognises the contribution of 'previously developed land' and utilises it as appropriate whilst recognising the County's largely rural context;
- Protects and enhances the natural, historic and built conservation qualities of
- Carmarthenshire and its high value landscapes; and,
- Contributes to an integrated transport network both within the County and region.
- Seeks to make efficient use of the existing road and rail network by reflecting that the public transport network can afford the opportunity for consolidation and improvement of service thus maintaining and improving accessibility.
- Promote opportunities to use and access alternative means of transport including walking and cycling.

The following policies are applicable to the proposal to apply for full planning for the erection of an free range poultry unit to the north of Glanmyddyfi;

Policy GP1 Sustainability and High Quality Design

Development proposals will be permitted where they accord with the following:

a) It conforms with and enhances the character and appearance of the site, building or area in terms of siting, appearance, scale, height, massing, elevation treatment, and detailing;

b) It incorporates existing landscape or other features, takes account of site contours and changes in levels and prominent skylines or ridges;

c) Utilises materials appropriate to the area within which it is located;

d) It would not have a significant impact on the amenity of adjacent land uses, properties, residents or the community;

e) Includes an integrated mixture of uses appropriate to the scale of the development;

f) It retains, and where appropriate incorporates important local features (including buildings, amenity areas, spaces, trees, woodlands and hedgerows) and ensures the use of good quality hard and soft landscaping and embraces opportunities to enhance biodiversity and ecological connectivity;

g) It achieves and creates attractive, safe places and public spaces, which ensures security through the 'designing-out-crime' principles of Secured by Design (including providing natural surveillance, visibility, well lit environments and areas of public movement);

h) An appropriate access exists or can be provided which does not give rise to any parking or highway safety concerns on the site or within the locality;

i) It protects and enhances the landscape, townscape, historic and cultural heritage of the County and there are no adverse effects on the setting or integrity of the historic environment;

j) It ensures or provides for, the satisfactory generation, treatment and disposal of both surface and foul water;

k) It has regard to the generation, treatment and disposal of waste.

I) It has regard for the safe, effective and efficient use of the transportation network;

m) It provides an integrated network which promotes the interests of pedestrians, cyclists and public transport which ensures ease of access for all;

n) It includes, where applicable, provision for the appropriate management and eradication of invasive species

Policy EMP₄ Farm Diversification

Proposals for farm diversification projects will be permitted where:

a) It is subordinate to, compatible with and supports the continued operation of the agricultural activity of the existing working farm;

b) It is of a scale and nature appropriate to the existing farm operation;

c) The scale and nature of the activity is compatible with its accessibility to public transport and the need for local highway improvements;

d) The scale and scope of any retail use (where planning permission is required) would not have an adverse impact on the vitality and viability of retail facilities in nearby settlements, or would undermine the retail hierarchy (see policy RT1);

e) It would not have an adverse impact on the character, setting and appearance of the area and the surrounding landscape and where appropriate, townscape.

Proposals should give priority to the conversion of suitable existing buildings on the working farm. Where justified new building should be integrated with the existing working farm complex and not detrimental to the respective character and appearance of the area and surrounding landscape.

Policy TR3 Highways in Developments - Design Considerations

The design and layout of all development proposals will, where appropriate, be required to include:

a) An integrated network of convenient and safe pedestrian and cycle routes (within and from the site) which promotes the interests of pedestrians, cyclists and public transport;

b) Suitable provision for access by public transport;

c) Appropriate parking and where applicable, servicing space in accordance with required standards;

d) Infrastructure and spaces allowing safe and easy access for those with mobility difficulties;

e) Required access standards reflective of the relevant Class of road and speed restrictions including visibility splays and design features and calming measures necessary to ensure highway safety and the ease of movement is maintained, and where required enhanced;

f) Provision for Sustainable Urban Drainage Systems to allow for the disposal of surface water run off from the highway.

Proposals which do not generate unacceptable levels of traffic on the surrounding road network and would not be detrimental to highway safety or cause significant harm to the amenity of residents will be permitted. Proposals which will not result in offsite congestion in terms of parking or service provision or where the capacity of the network is sufficient to serve the development will be permitted. Developers may be required to facilitate appropriate works as part of the granting of any permission.

Policy EQ3 Regional and Local Designations

Proposals for development that are likely to cause unacceptable harm to a Local Nature Reserve (LNR), or Regionally Important Geological/Geomorphological Sites (RIGS) will only be permitted where the need to safeguard the substantive nature conservation value of the site or feature is clearly outweighed by the reasons for the development or land use change.

The designation of such sites will, where appropriate, be supported.

Policy EQ4 Biodiversity

Proposals for development which have an adverse impact on priority species, habitats and features of recognised principal importance to the conservation of biodiversity and nature conservation, (namely those protected by Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 and UK and

Local BAP habitats and species and other than sites and species protected under European or UK legislation) will not be permitted, except where it can be demonstrated that:

a) The impacts can be satisfactorily mitigated, acceptably minimised or appropriately managed to include net enhancements;

b) There are exceptional circumstances where the reasons for the development or land use change clearly outweighs the need to safeguard the biodiversity and nature conservation interests of the site and where alternative habitat provision can be made in order to maintain and enhance local biodiversity.

Policy EQ6 Special Landscape Areas

Special Landscape Areas are designated in the following locations and as identified on the Proposals Map:

Tywi Valley Carmarthenshire Limestone Ridge Teifi Valley **Drefach Velindre** Bran Valley (North of Llandovery) Mynydd Mallaen Llanllwni Mountain North Eastern Uplands Mynydd y Betws Gwendraeth Levels Pembrey Mountain Swiss Valley Talley Lwchwr Valley Lower Taf Valley Cwm Cathan Cothi Valley Carmarthen Bay and Estuaries Proposals for development which enhance or improve the Special Landscape Areas through their design, appearance and landscape schemes will be permitted (subject to the policies and proposals of this Plan).

Policy EP1 Water Quality and Resources

Proposals for development will be permitted where they do not lead to a deterioration of either the water environment and/or the quality of controlled waters. Proposals will, where appropriate, be expected to contribute towards improvements to water quality.

Watercourses will be safeguarded through biodiversity/ecological buffer zones/corridors to protect aspects such as riparian habitats and species; water quality and provide for flood plain capacity. Proposals will be permitted where they do not have an adverse impact on the nature conservation, fisheries, public access or water related recreation use of the rivers in the County. Proposals will wherever possible be required to make efficient use of water resources.

Policy EP3 Sustainable Drainage

Proposals for development will be required to demonstrate that the impact of surface water drainage, including the effectiveness of incorporating Sustainable Drainage Systems (SUDS), has been fully investigated. The details and options resulting from the investigation must show that there are justifiable reasons for not incorporating SUDS into the scheme in accordance with section 8 of TAN 15.

The buildings will benefit from natural ventilation through the pop holes in the building which shall be open throughout the day plus side vents. The only time mechanical ventilation will be used will be during periods of extreme hot weather, this is for the welfare of the birds.

Materials shall be sourced locally to develop the building, and stone from the farm shall be used to create the hardcore foundations for the concrete pad of the building.

The above points will ensure that the building is 'sustainable' in terms of the design and the supply and use of energy in accordance with the Council's recommendations. A sympathetic selection of materials is included in the proposed development to complement the surrounding landscape; reflective materials and bright colours have been avoided wherever possible.

The development site proposed shall take less than a hectare of land within the holding, which is all owner occupied land, therefore shall not be a detrimental loss to the holding.

The potential impacts of the proposed unit on both designated and undesignated habitats and protected species have been assessed in an Ammonia Modelling Report attached to the said Planning Application. The original report submitted as part of an earlier planning application has been updated by A and S Modelling to address all the concerns of NRW. Habitats on-site are generally of low value given the intensive use of the site for agriculture. The value of the site as habitat for protected species was assessed and found to be limited.

The proposed development would not cause any unacceptable adverse effects on the Carmarthenshire landscape as the unit has been carefully sited and designed to minimise the impact on the landscape and has been grouped with existing buildings. The building has been designed to be Juniper Green to assist with the integration of the development into the landscape.

The access to the site will be located at the existing field access, which has been in situ for many years. The existing cattle compound will be removed, and a hardstanding and vehicle manoeuvring area created as part of the proposal. The positioning of the access ensures that the length of single track lane that must be travelled to reach the site is minimised. The proposal offers improvements to the highway network, of benefit to all road users not just the applicant. The junction off the council highway to the A40 will be improved through the provision of additional visibility and the access plans for junction improvements have previously been approved by the Welsh Government.

Parking is available on side for staff and visitors in the creation of the new hardstanding to the south west of the proposed building.

Please see the submitted Transport Statement – Appendix 18

The Poultry Unit will not fall under the Integrated Pollution and Prevention Control Regulations (IPPC). This is a free range poultry unit and not an intensive livestock unit.

ACCESS TO ALL USERS 6.3

The Disability Discrimination Act 1995 (DDA) seeks to avoid discrimination against people with impairments and disabilities and for instance ensures that work premises do not disadvantage someone with a disability."

All users will have equal and convenient access to the poultry unit using the mostly concrete access serving the unit. There will be no discrimination within the farming unit.

6.4 **COMMUNITY SAFETY**

Security is critical throughout day and night to prevent the theft of equipment and livestock. There is no farmhouse on the site, however security cameras will be installed and staff will be on site throughout the day. Staff are always on hand 24 hours per day to ensure the welfare of the livestock.

ENVIRONMENTAL DESIGN STATEMENT 6.5

It would be normal practice because the Poultry Unit is over 1000m² for the development to have to meet the BREEAM 'Very Good' standard and achieve the mandatory credits for 'Excellent' under Ene 1 – reduction of CO₂ Emissions. The proposed use is a purpose built poultry unit which is specifically designed for the welfare of the birds. As a result of this together with the natural ventilation provided through the building in the form of pop holes and side vents this standard is not required.

The pop holes will be open during the day to provide natural ventilation to the building rather than using mechanical ventilation. There will also be side vents that will be used operating 24 hours per day. Mechanical ventilation will only be used to assist natural ventilation during periods of hot weather.

Manure from the poultry unit will not be applied to the farm land surrounding the proposed site, with manure being removed in sheeted trailers once in every four days.

Stone which is available on farm will be used to provide the hardcore for the concrete slab of the building.

No protected species would be affected as a result of the proposals as there are no ponds within the vicinity of the building.

The above points ensure that the Unit is sustainable as required by Carmarthenshire County Council.

6.6 SOCIAL CONTEXT OF THE DEVELOPMENT

The scale and type of the proposed poultry unit will be in keeping with the other agricultural buildings within Camarthenshire, and smaller than other Poultry Units proposed within the County, as can be seen by the plans submitted.

The poultry unit has gable end fans, internal fans, side vents (natural venting). This keeps the building "low profile", quieter and reduces far afield ammonia at the SSSI's when compared to ridge vents.

The size and position of the proposed unit is to be agreed with Carmarthenshire County Council, but following analysis of policy together with other material planning considerations against the available sites within the parcel of land owned by Mr Davies, it is believed that the site presented is in line with the request of the Councillors of Carmarthenshire, in line with Planning Policy Wales and the policies of Carmarthenshire County Council in terms of landscape and visual amenity, proximity to existing buildings, landscaping, and ecology and protected sites highway access to name a few reasons.

6.7 **Policy Framework Overview**

Examination of the current policy and legislative framework demonstrates that there is an acceptance that agricultural diversification has a continuing role in the rural area. The proposals are consistent with policies and objectives.

CHAPTER 7 – AIR QUALITY, HEALTH & CLIMATE

Air quality, Health and climate 7.

The potential effects of atmospheric emissions from the proposed free range egg unit were assessed by A and S Modelling Data. This took account of air guality standards and guidelines, potential health effects and effects on internationally and nationally designated conservation sites. The potential effects of the proposed free range egg unit were assessed using screening tools where appropriate. In view of the emission integral to the design and operation of the free range poultry unit, it was forecast that all relevant air guality standards and guidelines will be achieved. It is concluded that emissions to air will have no significant adverse effects on air quality, the natural environment, or the health of local people.

Please read in line with appendices 10, 11, 19, 24 and 25.

Introduction 7.1

This chapter provides an assessment of the potential air quality issues associated with the proposed free range unit at upon land to the north of Glanmyddyfi and is to be read in conjunction with the supporting appendix 19, produced by A and S Modelling Data.

The following assessments are presented in this chapter:

Screening of potential effects of emissions on nearby Natura 2000 habitat sites and national and local habitat sites.

The following areas are screened out of the EIA:

- Assessment of the effect of additional road traffic on amenity as increases of traffic are insignificant.
- Assessment of particulate matter (PM) as the Defra Technical Guidance LAQM.TG(09) on local air quality management requires detailed assessment of PM emissions from poultry units that house more than 40,000 birds if mechanically ventilated where there is relevant domestic exposure within 100m of the buildings. This proposal does not meet the threshold and hence air quality impact for PM would not require further assessment.

The following describes the site location and the potential air quality effects. The methods used to assess and manage these potential effects are described in the sections below, these set out the study results, with an assessment of impacts provided. The study conclusions are given at Section 6.6.

7.1.1 Site Location

Glanmyddiyfi is in an isolated rural area, approximately 2.5 km to the west-north-west of the town of Llandeilo in Carmarthenshire. The surrounding land is used primarily for livestock farming, although there are isolated arable fields and areas of semi-natural woodlands and grassland. The site is at an altitude of around 50 m with the land rising towards hills to the north and falling towards the Afon Myddyfi Valley to the south.

It is proposed that a new egg laying chicken house, with a capacity of 16,000 birds, be constructed at Glanmyddiyfi. The new poultry house would be ventilated by uncapped high speed roof mounted fans, each with a short chimney. Pop holes on the side of the house would provide access to an outside ranging area. The house would be fitted with a manure belt system to collect droppings, usually twice weekly, and then removed from the site. Manure from the free range egg laying unit would not be stored at the site, nor spread on any of the land at Glanmyddyfi.

To improve fertility, the current improved grassland pasture at Glanmyddyfi is spread with approximately 126 tonnes of poultry manure per annum. Under the proposal, manure spreading at Glanmyddyfi would cease. The reduction in ammonia emissions from the manure spreading is expected to some extent compensate for the ammonia emissions from the proposed poultry housing and ranging area. Additionally, the grassland outside of the proposed ranging area is expected to gradually return to an unimproved state.

There are seven Sites of Special Scientific Interest (SSSIs) within 5 km of Glanmyddyfi and parts of the Afon Tywi Special Area of Conservation (SAC) is also within 5 km. Of these eight sites, only four are designated for their flora (which may be susceptible to damage from excess ammonia and nitrogen and acid deposition), they are: the Dinefwr Estate SSSI; the Caeau Bryn Ifor SSSI, Coedydd Tregyb SSSI and the Allt y wern SSSI.

7.1.2 Potential Air Quality Effects of the Proposed Process

The proposed unit comprises the following elements relevant to the air quality and health assessment:

Ventilation fans from bird areas of 16,000.

The proposed process has the potential to affect air quality and hence human health or the natural environment in the following ways:

- Dust generated during the construction process could potentially cause a nuisance to local residents, unless properly controlled. This is addressed in Chapter 9 (Amenity) and supporting appendix 24.
- Emissions of airborne pollutants from the extraction fans from the bird areas could potentially have an effect on designated ecological sites and human health. The substance of concern is ammonia.
- The proposed free range unit, while resulting in emissions of Carbon Dioxide which derives from fossil fuel sources of carbon, would amount to an overall reduction as the eggs produced on site would be offset against imported eggs i.e. the environmental cost of producing eggs abroad for domestic consumption is higher than producing eggs in the UK for UK consumption.

These potential effects were assessed using the techniques and approaches set out in Section 6.2

7.1.3 Incorporated Mitigation

In view of the potential for adverse environmental effects a raft of environmental controls on emissions to air will be implemented under the requirements for Best Available Technique (BAT) as detailed in the reference document on *Best Available Techniques for Intensive Rearing of Poultry and Pigs* published in July 2003. The controls will be an integral part of the design and management of the free range unit.

These controls are set out in Chapter 4 –Description, and include the following:

- 🐱 🛛 Providing adequate ventilation
- Controlling shed temperature and humidity
- Dietary manipulation
- Providing a Baffle area adjacent to the ventilation fans
- Good Practice management of manure disposal and storage

7.2 Legislation and Planning Policy

7.2.1 Legislation

Environmental Permitting Regulations 2010

The proposed operation does not need to gain a licence to operate under the Environmental Permitting (England and Wales) Regulations 2010 as regulated by Natural Resources Wales as they have under 40,000 birds.

Habitats Directive

The Conservation of Habitats and Species Regulations 2010 transposes the Habitats Directive (92/43/EEC) into national law. The Regulations provide for the designation and protection of "European sites," and the protection of "European protected species." As part of the determination of the Environmental Permit, Natural Resources Wales is required to carry out an <u>appropriate assessment</u> to establish whether the proposed development would adversely affect the integrity of any such European sites.

The Appropriate Assessment must be undertaken by the competent authority, as defined in Regulation 7(1) of the Habitat Regulations, which includes any Minister, Government Department, public or statutory undertaker, public body of any description or person holding a public office (Natural England Guidance HRGN 1).

In situations where a plan or project requires the consent, permission or other authorisation of more than one competent authority then the Local Planning Authority are not required to assess any implications of a plan or project which would be more appropriately assessed by another competent authority as per Section 52 of the Habitat Regulations. In this instance, as emissions will be assessed during the processing of the environmental permit Natural Resources Wales are the relevant competent authority for the purpose of the regulations. This is especially relevant as the Environmental Permit and Planning applications are being "twin-tracked."

Other Conservation Considerations

Part II of The Wildlife and Countryside Act 1981, as amended, provides protection to Sites of Special Scientific Interest (SSSIs) in England and Wales. This includes provisions which apply to owners and occupiers who wish to undertake notified operations likely to damage the special interest of the site, but more important in this context are the requirements that apply to public bodies such as local authorities and Natural Resources Wales. Section 28G places a duty on such bodies to take reasonable steps, consistent with the proper exercise of the authorities' functions, to further the conservation and enhancement of special interest features of SSSIs. The Act also requires that they consult statutory nature conservation bodies before permitting (Section 28I) any operation likely to damage a SSSI.

The environmental permitting regulator has a duty to have regard to the purpose of conserving biodiversity in the exercise of its functions. This duty is provided by Section 40 of the Natural Environment and Rural Communities Act (1 October 2006) which extends the pre-existing duty on Ministers of the Crown, government departments and the National Assembly for Wales to all public authorities (this replaces Section 74(1) of the Countryside and Rights of Way Act 2000).

7.2.2 Local Planning Policy

There are no specific local policies that refer to Air Quality,

7.3 Air Quality Assessment Methodology and Baseline Conditions

7.3.1 Ammonia Emissions – Screening Tool

Please see appendix 19 prepared by A and S Modelling Data.

7.3.2 Baseline Air Quality

In order to carry out the assessments it was necessary to compile background information regarding the background air quality and the existing situation.

Local factors potentially affecting air quality are:

- the applicant's application and storage of manure.
- other agricultural businesses in the area storing and applying poultry manure to the surrounding grassland.
- 😹 🛛 Ranging areas

7.3.3 Sensitive Receptors

The sensitive receptors around the site were identified. The following habitats are located in the vicinity of the proposed poultry unit.

Locations Where People May be Present

A 400 metre zone around intensive livestock developments is the generally excepted threshold for nuisance complaints relating to airborne emissions, the Health Protection Agency position statement relating to Intensive Farming states that intensive livestock farming subject to regulation under Pollution Prevention Control Regulation (now amended by the Environmental Permitting Regulations) may need to produce an odour management plan if there are local communities within 400 metres of the site boundary. This suggests that any beyond this zone nuisance from odour is not an issue.

The impact of the proposed development potentially could have an impact on local residential properties. The land to the north of Glanmyddyfi lies within a rural area where livestock farming and operations on the land are undertaken on a daily basis. Operations undertaken by the existing farm business would be the housing and feeding of livestock, application of manure to the land, the aforementioned activities could result in the potential for odour. The table below outlines sensitive receptors within the vicinity of the site.

The nearest local residential property is some 102.82 metres from the proposed unit, which is the home of the applicants, in between the properties the topography of the land changes very slightly and within the separating distance there are a number of hedgerows and trees which will act as a buffer to the sound.

Sensitive Receptor	Distance	Comment	
- Name	(Metres)		
Harlech Barn	102.862	Independent	
Glanmyddyfi	258.437	Owned and occupied by parents of	
		Mr Terry Davies	
Rhiw'r Dorth	292.683	Independent	
Llawr y Neuadd	313.324	Independent	
Lletty Cottage	354.912	Independent	
Cottage Inn	378.454	Independent	
Pantybas	398.78	Independent	
Brynhawddgar	686.062	Independent	
Cherry Cross	718.35	Independent	

Table 8: Sensitive Locations – Human

7.3.4 Air Quality Standards and Guidelines

In the UK both statutory and non-statutory air quality objectives and guidelines exist. These are referred to in EA guidance as Environmental Assessment Levels (EALs). Air quality in compliance with these air quality objectives, guidelines and EALs is likely to have no significant adverse effects on health. Air quality above these objectives and guidelines could potentially have an adverse effect, although a considerable "margin of safety" is built into many of the guidelines (Environment Agency, 2003).

UK Air Quality Objectives

Table 10: EALs Relevant to this Study

Pollutant	Concentration (µg/mȝ)	Measured as
Ammonia	180 ¹	Annual mean
	2500	Maximum 1 hour mean

In order to assess the impacts of ammonia gas on protected sites, the predicted contribution of ammonia from the poultry unit was assessed against the appropriate environmental benchmark – a Critical Level (CLe). Critical levels for habitat sites in the UK have been set by Natural Resources Wales. The critical level is generally defined as "the atmospheric concentrations of pollutants in the atmosphere above which adverse effects on receptors, such as human beings, plants ecosystems or materials, may occur according to present knowledge" (UNECE, 1996). Where pollutant concentrations exceed the critical level (referred to as critical level 'exceedance'), there is a risk of harm to the ecosystem. Critical levels are agreed by the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution (CLRTAP) and proposed by teams comprising international experts on air pollution impacts on ecosystems. New critical levels for ammonia were agreed by the CLTRAP ICP Modelling and Mapping Task Force in April 2007. Table 11 below provides details of the Critical Levels relevant to this study for the protection of vegetation and ecosystems. Post April 2017 new critical levels have been adopted by Natural Resources Wales.

Pollotant	(µg/mȝ)	Medsureu as
Ammonia	12	Annual mean for sensitive lichen communities & bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity.
	3²	Annual mean For all higher plants (all other ecosystems)

Table 11: Critical Levels for the protection of vegetation and ecosystems

The critical levels for the European designated habitat sites surrounding the site are have been provided by Natural Resources Wales and are detailed in the submitted Ammonia Modelling Report at Appendix 19. The report has been prepared in line with GNo20 prepared by Natural Resources Wales.

The Environment Agency H1 Environmental Risk Assessment – annex b states that an emission is significant where Process Contribution (PC) is <4% of Critical Levels for SACs, SPAs and Ramsars, <20% for SSSIs, and <50% for local and national nature reserves, ancient woodland and local wildlife sites.

¹ Derived from Health & Safety Executive, EH40/2001, Occupational Exposure Limits 2001, 8 hour reference period converted to annual mean.

² UN Economic & Social Council, Executive Body for the Convention on Long-Range Transboundary Air Pollution, ECE/EB.AIR/WG. 5/2007/3.

Cumulative Effects 7.3.5

It is understood that the main potential source of cumulative effects would be any cumulative issues associated with the proposed Glanmyddyfi free range poultry unit site. In accordance with the Environment Agency's H1 Environmental Risk Assessment – annex b the impact of the poultry farm in relation to other nearby intensive livestock farms are only assessed if the farm fails the initial screening test and is required to carry out further assessment and ammonia emissions modelling.

Assessment Results 7.4

Screening Inputs 7.4.1

The poultry unit has gable end fans, internal fans, side vents (natural venting). This keeps the building "low profile", quieter and reduces far afield ammonia at the SSSI's when compared to ridge vents.

An emissions factor of 0.034 kg NH₃/animal place per year was used as per the Pollution Inventory reporting – Intensive farming guidance note December 2009.

An assessment of predicted annual mean ammonia concentrations as a result of operation of the proposed free range egg production facility has been undertaken using the EA ammonia modelling tool.

Ammonia Screening 7.4.2

The proposal is to create a new free range egg production unit.

The results indicate that the modelled ammonia concentrations are not likely to exceed the annual mean or hourly mean air quality guidelines for the protection of sensitive habitat sites at a nearby designated habitat site.

Ammonia emission rates from the proposed poultry house have been assessed and quantified based upon the Environment Agency's standard ammonia emission factors. Emissions of ammonia from the proposed ranging area have been assessed and quantified based upon figures obtained from a variety of sources. Emissions of ammonia from the existing field spreading of manure have been estimated by AS Modelling & Data Ltd., based upon estimated tonnage of manure spread, published figures for nitrogen content of poultry manure and percentage of nitrogen emitted as ammonia from field spreading of poultry manure. The ammonia emission rates have then been used as inputs to an atmospheric dispersion and deposition model which calculates ammonia exposure levels and nitrogen and acid deposition rates in the surrounding area.

Modelling Results

The modelling predicts that:

 The process contribution from the proposed poultry housing and ranging to the annual ammonia concentration and the nitrogen deposition rate would below 1% of the Critical Level and/or Critical Load at all the SSSIs considered under all scenarios considered.

• If process contribution from the existing manure spreading are subtracted from process contribution from the proposed poultry housing and ranging the predicted increase less than 0.5% of the Critical Level at Dinefwr Estate SSSI, even under the Unsound Scenario.

Please see appendix 19.

Impact Assessment 7.5

Dust Generated During the Construction Process 7.5.1

This is addressed in Chapter 24, Dust and Bioaerosol Management Plan.

Airborne Pollutants 7.5.2

Levels of airborne pollutants in the vicinity of the proposed facility have the potential for adverse health and environmental effects. Air quality standards and guidelines have been specified, which correspond to levels of airborne pollutants which do not have significant adverse health or environmental effects. The main focus of the air guality study was to assess levels of airborne pollutants against these air quality standards and guidelines.

Despite the worst-case approach adopted in the study, no air guality standards or guidelines are forecast to be exceeded as a result of emissions from the proposed free range unit. Screening thresholds were not exceeded such that a consideration of the project in combination with other projects was necessary. Screened forecast rates of deposition of potentially hazardous substances due to emissions from the proposed free range unit were within the relevant air quality guidelines.

It is concluded that the proposed poultry unit will have no significant effects on air quality. This indicates that there will be no significant adverse effects on human health or the environment as a result of the proposed unit. The potential effects on human health for certain substances of particular concern are evaluated in more detail below.

Designated Habitat Sites 7.5.3

The contribution of emissions from the proposed process to nutrient nitrogen deposition at sensitive habitats is less than the relevant air quality standards and critical load values. It is concluded that emissions from the proposed facility will have no significant adverse effects on designated sensitive habitat surrounding the proposed free range unit, and a more detailed assessment is not required.

Air Quality Benefits of the Proposed Scheme 7.5.4

This chapter has demonstrated that the potential adverse health and environmental impacts due to emissions to air from the proposed free range poultry unit would have no significant adverse effects. While these issues have been assessed on their own merits it is also worthwhile considering the impacts in the context of benefits that will accrue from the proposed free range poultry unit.

Carbon off-set

The poultry unit would result in emissions of carbon dioxide. However, the fossil-origin carbon dioxide emitted from the proposed facility would be offset as a result of avoided emissions from a reduction of transportation via air travel using fossil fuels.

Conclusions 7.6

It is concluded that the nature of the development and environmental controls built into the proposed free range unit mean that emissions to air will have no significant adverse effects on air quality or the health of local people or designated wildlife sites. Therefore, no further mitigation measures are required.

CHAPTER 8 – LANDSCAPE & VISUAL IMPACT ASSESSMENT

8. Landscape and Visual Assessment

This chapter of the ES has examined the potential impacts of the proposed unit on the landscape and visual amenity of the study area. It has considered the potential direct impacts on the fabric of the landscape and the potential impacts on the perception of landscape character. The assessment has also considered the potential impacts of the proposed free range unit on visual amenity. Overall, the assessment established that the proposed free range unit will change the baseline conditions in terms of both landscape character and visual amenity. Measures factored into the site selection and design process will reduce or minimise any potential adverse effects. Therefore, on balance it is considered that the proposed free range unit this context.

8.1 Introduction

This chapter assesses the potential impacts of the proposed free range unit upon land to the North of Glanmyddyfi on the landscape resource and visual amenity. It addresses the following issues:

- Impacts on the landscape resource;
- Impacts on the perception of the landscape; and
- Impacts on visual amenity.

Landscape impacts are changes in the landscape resource and perception of the landscape, and differ from visual impacts, which relate to the appearance of these changes and the resulting impact on visual amenity. The landscape and visual assessment is organised into the following main sections:

- Mintroduction;
- Scope and Method of Assessment an explanation of how the assessment has been carried out, with reference to a accepted published, methodologies and guidelines;
- **Context of the Development** introduction to the study area used in the assessment and the planning context of the site and proposed poultry unit;
- Project Description a description of the aspects of the poultry unit with the potential to cause an impact on landscape and visual amenity in the study area;
- Assessment of Impacts including an assessment of impacts on landscape features, perception of the landscape and visual amenity. The potential cumulative impacts associated with other developments are also considered; and
- **Conclusion** an overview of the landscape and visual impacts arising from the proposed poultry unit.

8.2 Scope & Method of Assessment

8.2.1 General Approach

The landscape and visual assessment (including elements relating to lighting), has been based on guidelines provided in the following publications:

Guidelines for Landscape and Visual Impact Assessment (Landscape Institute and Institute of Environmental Assessment, 2nd Edition, 2002); and

The general approach to the landscape and visual assessment (LVA) includes the following key tasks:

Desk study and preliminary site survey;

- Baseline landscape and visual assessment (consisting of desk study, field survey and reporting); and
- Assessment of residual landscape and visual impacts.

8.2.2 Baseline Assessment

The first stage of the assessment reviewed the existing landscape and visual resource of the study area in terms of its character, quality (i.e. condition) and sensitivity. The baseline assessment forms the basis against which the magnitude and significance of the predicted landscape and visual impacts arising from the proposals are assessed. The assessment is focussed on a 2km radius study area centred on the proposed poultry unit. The size of the study area has been also been based on the scale, context and likely visibility of the poultry unit.

The baseline assessment has three elements as follows:

- Description the process of collecting and presenting information about landscape and visual resources in a systematic manner;
- Classification analytical activity whereby landscape resources, in particular, are refined into units of distinct and recognisable character; and
- Evaluation the process of attributing a sensitivity to a given landscape or visual resource, by reference to specified criteria.

The baseline assessment process comprises three stages: desk study, field survey and analysis.

8.2.3 Desk Study

As part of the desk study, the baseline landscape and visual resource was defined within a 2km radius study (appendix 26) and the main users of the area, key viewpoints and key features were identified. Existing map and written data about the application site and its environs within the study area were reviewed, including:

- Survey map data;
- Detailed survey data for the application site; and
- Plans, elevations and cross-sections of the proposed poultry unit.

The desk study also identified and classified potential visual receptors according to their associated land use (settlements, footpaths, roads etc.) The aim of the baseline visual assessment was to ensure that a representative range of viewpoints were included in the visual assessment. The potential extent of visibility of the proposed poultry unit was identified by reference to Ordnance Survey map data and observations made in the field. Following this, potential visual receptors likely to be affected by the proposed unit were identified and a preliminary selection of viewpoints was made to ensure that the viewpoint assessment included a representative range in relation to the following criteria:

- Type of receptor based on the above, and including different landscape character types;
- Elevation;
- Distance of receptor from proposed poultry unit; and
- Direction of the receptor from the proposed unit, with the aim of achieving a distribution from different compass points around the application site.

The desk study provided the basis for subsequent field survey work. It enabled the analysis of the potential zone of visibility, and identification of the principal viewpoints and receptors, which were subsequently confirmed during the field study.

8.2.4 Assessment of Residual Landscape and Visual Impacts

The impact assessment aims to:

- Identify systematically all the potential landscape and visual impacts of the proposed poultry unit taking account of the proposed mitigation measures;
- Predict and estimate their magnitude as accurately as possible; and
- Assess their significance in a logical and well–reasoned fashion.

The assessment describes the changes in the character and quality of the landscape and visual resources that are expected to result from the proposed unit. It covers both landscape impacts, i.e. changes in the fabric, character and key defining characteristics of the landscape; and visual impacts, i.e. changes in available views of the landscape and the significance of those changes on people.

In assessing landscape impacts, the potential direct impacts on the fabric of the landscape are considered, together with the potential impacts on the perception of landscape character. The latter depends on a number of factors:

- The nature of the landscape character type, including factors such as the nature of views and sense of enclosure;
- The extent of the potential visibility of the proposed poultry unit (e.g. the number and extent of the development seen);
- The proportion of the character type with potential visibility; and
- The distance to the proposed poultry unit.

The baseline landscape character assessment together with an assessment of the potential impacts on each character type, along with consideration of the extent of potential significant impacts on the landscape, is included in the assessment.

A visibility assessment has been carried out using Ordnance Survey data and field observations to ascertain the general extent of visibility of the proposed unit within the study area. The visibility assessment has concentrated mainly on publicly accessible areas such as the road network, public footpaths, residential and outdoor recreational areas.

8.2.5 Assessment Criteria

The aim of the environmental assessment is to identify, predict and evaluate potential key impacts arising from the proposed free range unit. Identified impacts are quantified wherever possible; however, the nature of landscape and visual assessment requires an element of interpretation using professional judgement. In order to provide a level of consistency to the assessment, the prediction of magnitude and assessment of significance of the residual landscape and visual impacts have been based on pre–defined criteria.

The **sensitivity of the landscape** is not absolute and varies according to the nature of existing landscape, the nature of the proposed unit and the type of change being considered. The determination of the sensitivity of the landscape resource to changes associated with the proposed

unit is defined as high, medium, low or negligible and is based on professional interpretation of a combination of parameters, as follows:

- 📓 🛛 Landscape value as reflected by local, regional or national landscape designations;
- Landscape scale which is the relative size of the main landscape elements and components; and
- The nature of views whether open, closed, long or short distance, simple or diverse.

Landscape sensitivity is defined as high, medium or low as set out in Table 14 below:

ruble 14. mjtbenee bj r urumeters on the Sensitivity bj the Lunuscupe				
Landscape Value	Landscape Scale	Nature of Views		Sensitivity
High	Small	Panoramic,	Long	High
		Distance		
Medium	Medium	Open, Medium Dist	tance	Medium
Low	Large	Closed, Short Distance		Low

Table 14: Influence of Parameters on the Sensitivity of the Landscape

The **sensitivity of visual receptors** is based on an interpretation of a combination of parameters as follows:

- The location of the viewpoint;
- The context of the view;
- The activity of the receptor; and
- Frequency and duration of the view.

Visual receptor sensitivity is defined as high, medium, low or negligible as follows:

Table 15: Definition of Visual Receptor Sensitivity

High sensitivity	e.g. users of outdoor recreation such as rights of way or communities where the
	development would result in changes in landscape setting or valued views.
Medium Sensitivity	e.g. people travelling through past the affected landscape.
Low sensitivity	e.g. people at their places of work.
Negligible	e.g. views from heavily industrialised areas

The **magnitude of change** arising from the proposed poultry unit at any particular viewpoint is described as substantial, moderate, slight or negligible based on the interpretation of a combination of largely quantifiable parameters, as follows:

- Distance of the viewpoint from the
- Duration of impact;
- Angle of view in relation to main receptor activity;
- Proportion of the field of view occupied by the unit;
- Background to the unit; and
- Extent of other built visible, particularly vertical elements.

Definitions of magnitude are given within Guidelines for Landscape and Visual Impact Assessment (2nd Edition 2002). Table 16 below provides the definitions of magnitude used for the purposes of this assessment.

Table 16: D	Definitions o	f Maanitude

Level of Magnitude	Definition of Magnitude
Substantial	Total loss or major alteration to key elements / features / characteristics of the baseline (pre–extension) conditions such that post extension character/composition of baseline would be fundamentally changed.
Moderate	Partial loss or alteration to one or more key elements / features / characteristics of the
	baseline (pre-extension) conditions such that post extension character/ composition/
	attributes of baseline would be partially changed.
Slight	Minor loss of or alteration to one or more key elements / features/ characteristics of the
	baseline (pre-extension) conditions. Change arising from the loss / alteration would be
	discernible but underlying character / composition of the baseline condition would be
	similar to pre extension circumstances / patterns.
Negligible	Very minor loss or alteration to one or more key elements/ features / characteristics of the
	baseline (pre-extension) conditions. Change barely distinguishable, approximating to the
	"no change" situation.

The significance of any identified landscape or visual impact has been assessed as major, moderate, minor or no impact. These categories have been determined by consideration of the landscape or visual sensitivity and the predicted magnitude of change as described above, with the following matrix (Table 17) used as a guide to correlating sensitivity and magnitude to determine significance of impacts.

Landscape & Visual	Magnitude of			
Sensitivity	Change			
	Substantial	Moderate	Slight	Negligible
High	Major	Major / moderate	Moderate	Moderate / minor
Medium	Major / Moderate	Moderate	Moderate / minor	Minor
Low	Moderate	Moderate /minor	Minor	Minor / none
Negligible	Moderate / minor	Minor	Minor / none	None

 Table 17: Correlation of Sensitivity and Magnitude of Impact to Determine the Significance of Impacts

 Landscare 8. Visual

Where the landscape or visual impacts have been classified as major or major/moderate, this is considered to be a significant impact referred to in The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011. It should be noted that significant impacts need not be unacceptable or necessarily negative and may be reversible. The potential impacts associated with the proposed unit are referred to as adverse, neutral or positive where applicable.

The matrix is not used as a prescriptive tool, and the methodology and analysis of potential impacts at any particular location must make allowance for the exercise of professional judgement. Thus, in some instances a particular parameter may be considered as having a determining impact on the analysis.

8.2.6 Limitations of the Assessment

Given the degree of subjectivity inherent in landscape and visual assessment there are no methods to quantify effects. As such, the following assessment relies on professional judgement and experience.

8.3 Context of the Proposed Poultry Unit

This section provides a general description of the landscape and visual context of the application site and study area.

8.3.1 The Application Site and Immediate Surroundings

The location of the site is illustrated on Appendix 4.

The proposal is for the creation of a Poultry Unit upon land to the north of Glanmyddyfi to provide accommodation for 16,000 free range birds.

The site lies 400m along an unclassified dead-end road from the junction with the A40, close to The Cottage Inn, 2 miles to the west of Llandeilo.

The site is accessed from the unclassified road, and lies in a land parcel enclosed by well maintained low hedged banks. The road is a dead-end and carries on to service two properties.

The site lies in steeply undulating pasture with views east blocked by the rising topography.

Bounded by the road on two sides of the site, a tree-lined stream runs alongside, this tree cover together with the site hedgerows creates a visually enclosed space.

There are long attractive views west to higher ground, with shorter less attractive views south where the occasional building can be seen (including mainly the rooflines of The Cottage Inn and Glan Myddyfi) and the A40 is evident from the roofs of passing lorries.

The settlement pattern is dispersed, consisting of farm houses and cottages (many have been modernised) dotting the countryside, often hidden by small tree copses or hedgerows, set in a rolling pastoral landscape with mature field and hedgerow trees a feature.

8.3.2 The Study Area

The study area is predominately rural.

Land Cover

Land cover is predominantly pasture farmland with large open fields indicative of the intensified farming activities.

Field boundaries at the site consist of trimmed hedgerows to fence height, most lie on small banks creating a low but very wide dense hedge, dominated by hawthorn and sloe. There are no hedgerow trees at the site although individual mature trees (dominated by oak) are a feature of the area.

Settlements

The settlement pattern is dispersed, consisting of farm houses and cottages (many have been modernised) dotting the countryside, often hidden by small tree copses or hedgerows, set in a rolling pastoral landscape with mature field and hedgerow trees a feature. The nearest settlement is Llandeilo.

8.3.3 Landscape Character

Local

In addition to the landscape baseline, additional information on broader scale landscape character is drawn from the LANDMAP information for Carmarthenshire, published by Natural Resources Wales (formerly the Countryside Council for Wales) and available on-line. LANDMAP describes and evaluates five aspects of the landscape, the key aspect for this type of proposal is the Visual and Sensory aspect.

The extract below is from the Carmarthenshire LANDMAP for the Visual and Sensory aspect for the location of the site and for the nearby adjacent area. Note that evaluation criteria range from Low, Moderate, High to Outstanding and that the descriptions cover a much wider geographic area than the setting to the site.

Tywi Slopes Northern CRMRTVS725 Hillside & Scarp Slopes Grazing - containing the site

Summary description

The scarp slopes between the higher plateau to the north and the Dyffryn/Tywi to the south.

The area is dissected by several steep sided valleys such as the Cloidach north of Nantgaredig, and the valleys to the east of Peniel. The larger Cothi valley is recognised as a separate Aspect Area. While much of the land is very steep the hill land between is fairly level and can be managed for silage, as a result the higher land is mostly improved and the steeper land to a lesser extent. In some parts the mature hedgerows give an impression that the area is more wooded than it actually is, in others area the hedgerows are regularly flailed. At higher elevations there are some feelings of exposure and more distant views whereas the steeper valleys create a sense of enclosure. Farms are scattered and there are only a few small settlements.

Evaluation

Overall Moderate

Scenic Quality Moderate (While the area is attractive, it is not considered to be of county importance.) Integrity Moderate (The area is not interrupted by large scale developments, and could be considered to score high against this criteria but has on balance been evaluated as moderate.)

Character Moderate (While the area has a distinct character, with its steep valleys and hill land, this does occur elsewhere in the county.)

Rarity Moderate (Similar landscapes exist to the west of Carmarthen, however this area is important for the views it affords of the Dyffryn/Tywi and the Brecon Beacons.)

Recommendations

- Conserve and enhance all areas of unimproved grassland, scrub land, woodland, and wetland
- Conserve and enhance hedgerows, and hedgerow trees

- Seek to conserve and enhance the vernacular buildings in the area together with their settings, both domestic and agricultural

- Ensure that new developments/ conversions reflect traditional design and materials, and are in appropriate locations

Dyffryn Tywi Valley Sides North CRMRTVS970 Mosaic Lowland Valleys – nearby adjacent area adjacent

Summary description

Northern slopes to the flood plain, and part of the lowland valley landscape of Dyffryn Tywi, this area is almost undulating, with small rises, some larger - at e.g. Broad Oak elsewhere tributaries of the Tywi broaden out in their own valleys and cut through this area.

Agricultural - grazing dominates, strong field pattern, with some hedgerow trees, but less so than on southern side and in the flood plain. Scattered farms, small lanes other than the main A40 that pass through much of this landscape, and along which there is some road side development, and small villages linear in layout. Includes traditional buildings - e.g. Aberglasney, and other more parkland type landscapes. Scenic views over Dyffryn Tywi, and within the area - a gentle rolling landscape. More woodland than in flood plain, mostly deciduous but some conifers.

Evaluation

Overall Outstanding

Scenic Quality Outstanding (A harmonious agricultural landscape with stunning views across Dyffryn Tywi, towards Brecon Beacons. Largely un-spoilt. An attractive mosaic of grassland, woodlands with traditional buildings.)

Integrity High (Little disrupts this landscape.)
Character High (Distinct character - rolling hills shallow valleys where tributaries of the Tywi traverse this area, woodlands, traditional buildings, small settlements.) Rarity Outstanding (Part of the Dyffryn Tywi and one of only a few valleys of this scale in Wales.

Recommendations

- Conserve and enhance the elements of the agricultural landscapes - trees, hedges, woodlands, water courses and traditional buildings

- Resist development that does not reflect vernacular styles and traditional materials, and that interrupts the rural character of this area

- Conserve and enhance the elements of the planned landscape in this area - parklands, field trees

Landscape Habitats layer

The site lies within the aspect area CRMRTLHo83 'Llandeilo North', described as Dry (Relatively) Terrestrial Habitats/Grassland & Marsh/Improved Grassland.

Evaluation of this aspect area is Moderate, undulating agricultural landscape of improved grasslands. Hedgerows and wooded watercourses as well as occasional semi-improved grasslands form the focus of biodiversity interest.

The immediate management guideline is to 'refer to the Local Biodiversity Action Plan for Carmarthenshire which details key actions to safeguard specific ecological receptors including habitats and species'.

Historic Landscape layer

The site lies within the aspect area CRMRTHL40223 'Nantgaredig-Derwen Fawr', described as Rural environment/Agricultural/Regular Fieldscapes/Medium Fields.

Evaluation of this aspect area is High. This area scores highly in most categories but its potential and rarity scores are moderate. It is a typical example of a Carmarthenshire agricultural landscape. The most significant archaeological elements are: communication route - Roman road etc Medieval fortification, settlement and agriculture, 19th century emparkment.

The site is at the boundary with adjacent historic landscape layer CRMRTHL42450 'Llanfynydd' Rural environment/Agricultural/Irregular Fieldscapes.

Evaluation of this aspect area is High. This area scores highly in most categories but its potential and rarity scores are moderate. It is a typical example of a Carmarthenshire agricultural landscape. Llanfynydd is large area. It includes villages but is dominated by dispersed farms with small irregular fields. Larger fields on higher areas.

Woodlands, particularly on steep slopes, including plantations are a distinctive element of the landscape... Most significant archaeological element(s): Buildings - chapels, dwellings etc, Deserted rural settlements, Small industrial sites - mills.

Geological Landscape layer

The site lies within the aspect area CRMRTGL473 'Salem', Lowland hills and valleys/Undulating lowland hill terrain/Undulating lowland hill terrain.

Evaluation of this aspect area is Moderate. No regionally significant sites/ landforms noted during present survey and geology/ geomorphology considered to be typical of feature/process and is either widespread, better exposed elsewhere or not currently known to be exceptional.

Extensive area of undulating lowland terrain developed over Upper Ordovician slaty mudrock bedrock developed between the Court Henry Dulas and the Dulais valleys, N of Llandeilo. Rises to around 180 m, falling to the SW and with low mounds of bedrock rising

above local areas of glacial clays (Quaternary, Pleistocene). Includes a platform in the Taliaris area formed of Upper Ordovician sandstone dominated rocks with a steep SE face cut by several short cwms.

Cultural Landscape Layer

Information is not available for the site. The Tywi Valley CRMRTCL010 aspect area lies away to the south of the A40.

8.3.4 Landscape Designations

The application site at Glanmyddyfi not occupy any areas of national landscape designation.

8.3.5 Relevant General Policy

National Planning Policy

8.3.5.1 Planning Policy Wales (Edition 6, February 2014) – Chapter 7 Supporting the Economy

8..3.5.2 For planning purposes the Welsh Government defines economic development as development of land and buildings for activities that generate wealth, jobs and incomes. Economic land uses include the traditional employment land uses (offices, research and development, industry and warehousing), as well as uses such as retail, tourism, and public services. The construction and energy sectors are also important to the economy and are sensitive to planning policies.

8.3.5.3 It is essential that the planning system considers, and makes provision for, the needs of the entire economy and not just those uses defined under parts B1-B8 of the Town and Country Planning Use Classes Order. Particular policies on other economic sectors are also found elsewhere in Planning Policy Wales: in relation to Retail and Town Centres (Chapter 10); Tourism, Sport and Recreation (Chapter 11) and Infrastructure and Services (Chapter 12).

8.3.5.4 The planning system should support economic and employment growth alongside social and environmental considerations within the context of sustainable development. To this end, the planning system, including planning policies, should aim to ensure that the growth of output and employment in Wales as a whole is not constrained by a shortage of land for economic uses. Local planning authorities should aim to facilitate the provision of sufficient land required by the market, except where there are good reasons to the contrary. In addition, wherever possible local planning authorities should seek to guide and control economic development to facilitate regeneration and promote social and environmental sustainability. In so doing, they should aim to:

- co-ordinate development with infrastructure provision;
- support national, regional, and local economic policies and strategies;

• align jobs and services with housing, wherever possible, so as to reduce the need for travel, especially by car;

- promote the re-use of previously developed, vacant and underused land; and
- deliver physical regeneration and employment opportunities to disadvantaged communities.

8.3.5.5 Local planning authorities should adopt a positive approach to development associated with farm diversification in rural areas, irrespective of whether farms are served by public transport. While initial consideration should be given to adapting existing farm buildings, the provision of a sensitively designed new building on a working farm within existing farm complexes may be appropriate where a conversion opportunity does not exist.

Local planning authorities should adopt a constructive approach towards agricultural development proposals, especially those which are designed to meet the needs of changing farming practices or are necessary to achieve compliance with new environmental, hygiene or welfare legislation. In addition they should adopt a positive approach to the conversion of rural buildings for business re-use.

8.3.5.6 Development Plans and the economy should:

· Include policies encouraging farm diversification and new rural development opportunities.

Local Planning Policy

Policy GP1 Sustainability and High Quality Design

Development proposals will be permitted where they accord with the following:

a) It conforms with and enhances the character and appearance of the site, building or area in terms of siting, appearance, scale, height, massing, elevation treatment, and detailing;

b) It incorporates existing landscape or other features, takes account of site contours and changes in levels and prominent skylines or ridges;

c) Utilises materials appropriate to the area within which it is located;

d) It would not have a significant impact on the amenity of adjacent land uses, properties, residents or the community;

e) Includes an integrated mixture of uses appropriate to the scale of the development;

f) It retains, and where appropriate incorporates important local features (including buildings, amenity areas, spaces, trees, woodlands and hedgerows) and ensures the use of good quality hard and soft landscaping and embraces opportunities to enhance biodiversity and ecological connectivity;

g) It achieves and creates attractive, safe places and public spaces, which ensures security through the 'designing-out-crime' principles of

Secured by Design (including providing natural surveillance, visibility, well lit environments and areas of public movement);

h) An appropriate access exists or can be provided which does not give rise to any parking or highway safety concerns on the site or within the locality;

i) It protects and enhances the landscape, townscape, historic and cultural heritage of the County and there are no adverse effects on the setting or integrity of the historic environment;

j) It ensures or provides for, the satisfactory generation, treatment and disposal of both surface and foul water;

k) It has regard to the generation, treatment and disposal of waste.

I) It has regard for the safe, effective and efficient use of the transportation network;

m) It provides an integrated network which promotes the interests of pedestrians, cyclists and public transport which ensures ease of access for all;

n) It includes, where applicable, provision for the appropriate management and eradication of invasive species.

Policy EQ6 Special Landscape Areas

Special Landscape Areas are designated in the following locations and as identified on the Proposals Map:

Tywi Valley Carmarthenshire Limestone Ridge Teifi Valley Drefach Velindre Bran Valley (North of Llandovery) Mynydd Mallaen Llanllwni Mountain North Eastern Uplands Mynydd y Betws Gwendraeth Levels Pembrey Mountain Swiss Valley Talley Lwchwr Valley Lower Taf Valley Cwm Cathan Cothi Valley Carmarthen Bay and Estuaries Proposals for development which enhance or improve the Special Landscape Areas through their design, appearance and landscape schemes will be permitted (subject to the policies and proposals of this Plan).

8.4 Project Description and Mitigation Measures

This section should be read in conjunction with the full description of the poultry unit in Chapter 4 of this ES. It summarises how the main aspects of the poultry unit may affect the landscape and visual amenity of the area, and describes the mitigation measures which have been incorporated through the iterative design of the poultry unit in order to prevent, reduce or offset potentially adverse landscape and visual impacts.

Construction

During the construction phase there would be a number of effects on the landscape resource and visual amenity. The ground would be levelled, and the new unit constructed. A number of vehicles would be used during this phase, including excavators, dump trucks and haulage lorries. All elements of the proposed free range facility would be constructed during this phase. The overall duration of the construction phase is anticipated to last three months within 2020.

Completed Poultry Unit

The full details of the completed free range unit are contained in the project description chapter of this ES (Chapter 4 –Description) and Design and Access Statement (included as part of the planning submission).

The proposed building shall be 73 metres long by 19.75 metres wide with a roof pitch of 15°, eaves height of 3.4 metres. The planning application shall allow the business to accommodate a further 16,000 free range birds.

The size of the proposed building is in line with the land availability surrounding the development, at a ratio of 2000 birds for every hectare of land. The maximum ranging distance associate with the building is 350 metres from building to the external perimeter of associated land.

The poultry unit requires bespoke ventilation to ensure the welfare of the birds and the details of the ventilation are provided on the submitted elevation plans in support of the planning application.

Incorporated Mitigation

A number of measures would be incorporated into the proposed poultry unit to reduce and minimise the potential effect on landscape character and visual amenity.

Design Consultants have been involved from the beginning of formulation of proposals for the site. The proposed solution, set out in the Description (Chapter 4) and the Design and Access Statement has been designed to create an as minimal impact on the local area as possible. The design of the poultry unit has been led by their functionality and the requirement to create little adverse impact on the surrounding area and to be in-keeping with the existing farm unit. The building height is as low as practically possible, being lower than other agricultural buildings on the holding.

A sympathetic selection of materials is included in the proposed unit to complement the surrounding landscape; reflective materials and bright colours have been avoided wherever possible.

Lighting of the site would only be required during working hours in winter months and during bird catching, during bird catching lighting would be kept as low as practically possible. Appropriate cowls / shielding of lights would be instigated, the light spread would be minimised through use of directional lighting and hours of lighting would be kept to a minimum to reduce disturbance.

The nature of the proposed poultry installation means that some light sources will be required to allow safe and effective activities within the site to take place. The assessment has identified that the site is located within a relatively dark, rural context with limited existing sources of light. However, the site is located in an intensively farmed area and as such field operations and other activities take place during hours of darkness and use intense lighting for visibility (rather than security purposes).

The main building's gable ends will be lit externally with a single low-wattage fitting of low intensity lighting during normal working hours in winter months. Lighting of the site would only be required during working hours in winter months and during bird catching where lighting would be kept as low as practically possible. Appropriate cowls/shielding of lights would be instigated, the light spread would be minimised through use of directional lighting and hours of lighting would be kept to a minimum to reduce disturbance.

There will be no round the clock external lighting of the site and no use of high intensity security lighting. All external lighting will be downward facing and protected with a cowl to reduce light spill to outside the unit.

During hours of darkness the poultry sheds will be illuminated internally to 5-10 lux. The buildings will be clad with high density metal profile sheeting and therefore no light will escape to outside. Regular tests will be conducted to check the effectiveness of the light proofing. The windows will be shuttered to avoid light escaping to the outside.

During the clear out the site will be lit by low wattage lighting while birds are being removing from the buildings, this operation will be carried out in low light conditions to minimise stress to the birds.

It is anticipated that the potential impact associated with this aspect of the proposed development will be minimal as there will not be round the clock security lighting and the area of lighting (the front gable ends of the buildings) is directed away from the main residential areas, this will respect the rural context of the site. Added to this the lighting will be directed downwards to reduce light escaping from the site plus the light will be protected with a cowl to avoid the lights lighting any areas outside of the site. The lighting has been sited and angled to provide the minimum illumination required by the applicant so as not to adversely affect road users, neighbours, the natural environment or wildlife.

8.5 Assessment of Residual Landscape and Visual Effects

This section identifies the potential impacts on the landscape resource and visual amenity of the study area. It is subdivided into the following sections:

- Assessment of impacts on the landscape resource; and
- Assessment of visual impacts.

8.5.1 Assessment of Direct Impacts on the Landscape Resource

The site lies at the start of the scarp slopes linking the OUTSTANDING Dyffryn/Tywi to the south with the higher plateau to the north. The LANDMAP evaluation for the Visual/Sensory aspect area at the site is MODERATE, with the key element to conserve that is relevant to site and proposals identified as hedgerows. The site lies just outside the Tywi Special Landscape Area.

8.5.2 Landscape Character

The site lies at the start of the scarp slopes linking the OUTSTANDING Dyffryn/Tywi to the south with the higher plateau to the north. The LANDMAP evaluation for the Visual/Sensory aspect area at the

site is MODERATE, with the key element to conserve that is relevant to site and proposals identified as hedgerows. The site lies just outside the Tywi Special Landscape Area.

The key landscape characteristics relevant to the planning application for this site are:

- well maintained dense hedgerows as field boundaries
- pastoral land use
- undulating lowland area
- mature field trees and occasional hedgerow trees
- other tree cover mainly restricted to watercourses, small copses on steep slopes
- dispersed settlement pattern of farmsteads and cottages, often 'improved'
- restricted public access by road or public rights of way

The footprint of the proposed unit and cut and fill extent is sufficiently set back from adjacent hedgerows to allow their retention.

A section of mainly ornamental privet hedge (approximately 40 linear meters) near to and along the A40 will require replanting or relocation to accommodate a new radius kerb and provide an adequate visibility splay to the east.

The proposed building is larger in scale than existing and older generation barns in the area in terms of footprint. Although it will not adjoin farm buildings and is sited in a sloping field requiring cut and fill, it is clearly designed for agricultural use and so is unlikely to significantly influence the perception of landscape character.

The proposal will not impact on the key landscape characteristics of the landscape outlined above and will be enclosed within an existing field parcel ie. will not affect the field pattern.

Mitigation measures will be required to ensure the building fits into the landscape by using a mix of planting, hedge management and careful ground modelling to balance cut and fill.

Infrequent mowing or grass topping will maintain existing pasture within the field parcel.

8.6 Assessment of Potential Visual Impacts

8.6.1 Visibility Analysis

Overview

The sensitivity of the landscape to change could be described as Medium due to the relatively unspoilt character of the area and the evaluation as 'Moderate' by LANDMAP for the Visual and Sensory layer.

There are no national landscape designations and the proposed location for the building lies outside the Tywi Valley Special Landscape Area.

The proposed materials are typical of agricultural buildings however the footprint is larger in scale than other older generation examples in the area.

The magnitude of change will be negative and is assessed as Small. There will be no loss of the key landscape components (field size, hedgerows, trees), with a minor change in the landscape character, few viewers will be affected, there will be a discernible change ie. if looked for.

Although the building scale is large, as an agricultural building and given the lowland location it will be absorbed into the landscape, lying at a low level and cut into an undulating topography with rising land behind, existing trees and hedges will help visually break up the elevations to any views, with mitigation measures helping to further reducing impacts. A Moderate magnitude of change would be concluded if there was considerable change in or loss of the components or characteristics of the landscape and if many viewers were affected and there was a noticeable change in the view. Provided mitigation measures are undertaken, the impact on landscape character is assessed as adverse Minor reflecting a small change proposed in a moderately sensitive landscape.

The following outlines the key likely impacts on views and amenity. The visual impact will correspond to the direction of viewing by the user and be affected by weather conditions for example fog and rain will affect the clarity of the view. Note that the visual assessment has been undertaken at a time of year when most deciduous trees are in leaf (ash is not yet fully in leaf) so that visual impacts may be increased for six months of the year and particularly during the winter months.

For public views, there is a lack of rights of way or open access land in the area and no public access land will be affected. There will be views from the adjacent unclassified road although this is a deadend road servicing two properties and there are no public rights of way leading to or from this.

Views are potentially possible from users of the A₄o although the site would need to be looked for and so is not likely to be viewed by drivers and views from cars are likely to be fully screened.

For most private views, the undulating topography, hedged banks, and tree groups in the area will screen the site. There will be views from a limited number of private residences. As the land is private we are not able to assess the viewing points. The impact will depend on the orientation of windows, elevation of the building or viewer, and position of any external amenity area/garden. Where views are likely these are reviewed in the table below.

The elements involved in attracting visual attention to an agricultural building include:

- cladding materials
- form including protrusions of the ridge line
- massing
- height
- how it appears to 'sit' in the landscape
- security measures at ground level eg. fencing, lighting
- access roads
- associated structures eg. silos
- cumulative impacts from similar structures

From locations where the proposed unit could be seen, views will vary depending on the backdrop. There is good potential to mitigate the visual impact and the likelihood of residual issues is assessed below.

8.7 Night Time Lighting

The potential for the unit to have an adverse effect on landscape character and visual amenity has been highlighted in this chapter. The nature of the proposed free range unit means that some light sources will be required to allow safe and effective activities within the site to take place. The assessment has identified that the site is located within a relatively dark, rural context with limited existing sources of light. However, the site is located in an intensively farmed area, the nature of farming is such that field operations and harvesting activities take place during hours of darkness and use intense lighting for visibility (rather than security purposes).

New light sources are required during working hours in winter months to ensure safety within the site, lighting would also be required during bird catching some of which takes place during hours of low light intensity. It is anticipated that these proposals for the poultry unit would add to this baseline situation. However, it is anticipated that the potential impact associated with this aspect of the proposed unit will be minimal as there will not be round the clock security lighting and the area of lighting (the front gable ends of the buildings) is directed away from the main residential areas, this will respect the rural context of the site. Added to this the lighting will be directed downwards to reduce light escaping from the site plus each light will be protected with a cowl to avoid the lights lighting any areas outside of the site. The lighting will have a minor effect on the visual amenity of local residents and would therefore not be significant.

8.8 Potential Cumulative Effects

The proposed unit would add to existing agricultural units in the locality

8.9 Conclusions

This chapter of the ES has examined the potential impacts of the proposed poultry unit on the landscape and visual amenity of the study area. It has considered the potential direct impacts on the fabric of the landscape and the potential impacts on the perception of landscape character. The assessment has also considered the potential impacts of the proposed unit on visual amenity.

Due to the undulating topography and good hedgerow and tree cover, views are only available from a very limited number of private locations (private residences and The Cottage Inn PH), and from the adjacent public unclassified road which is a dead-end road serving two properties and does not link onto any further public access.

Exact views from the small number of private dwellings affected are difficult to assess but mitigation measures are possible particularly given the extent of the applicants landholding and will over time eliminate or substantially reduce any impacts.

The visual sensitivity of the receptors to change could be described as High given these are private residences, and a pub with a large car park and beer garden, in a landscape which adjoins the Tywi Valley recognised for its natural beauty and historic features.

Where visible, the magnitude of change will be Small. Located in a natural 'dip', the building will not break the skyline and will be seen against a backdrop mosaic of pasture, field hedges and trees.

Overall the visual effects from the proposal from a limited number of viewing points will be adverse Minor, with effects decreasing as hedgerow management and planting mitigation takes effect.

CHAPTER 9-TRAFFIC

Traffic 9.

This Chapter considers the Poultry Unit proposed against National, Regional and Local Policy, and compares existing and future traffic generation and the impact on the local road network. A net reduction in vehicle movements is proposed in many villages across the locality, following this a positive benefit for existing and future users of the road network regarding safety will be realised. No significant effects on pedestrians, cyclists, horse riders or public transport are envisaged.

9.1 Introduction

This chapter of the Environmental Statement (ES) examines the environmental impacts of the proposed free range unit in relation to traffic and transport and importantly the effect of traffic on local amenity. The assessment considers the potential impacts on traffic and transportation associated with the proposed free range unit principally during operation.

9.1.1 Scope of the Assessment

The key issue is not so much whether the local road networks can accommodate the traffic associated with the site (as the increases proposed would be less than 1% of the total traffic on the local road networks), but the effect on local amenity. As such, this assessment focuses on the traffic implication on individual villages affected by the proposal.

This assessment includes the following principal assessments:

- Baseline traffic assessment
- Trip generation and assignment (for bird / feed deliveries, manure / bird removals etc);
- Assessment of traffic impact;
- A routeing plan for the proposals.

Where appropriate, construction traffic has been covered within this ES chapter.

The assessment of other environmental effects associated with road traffic such noise can be found elsewhere in the ES at Chapter 11 – Noise and Vibration.

All highways arrangements have been agreed with the Welsh Government as detailed in their Scoping Opinion response. Please refer to appendix 18 Transport Statement which addresses all highway arrangements linked to the proposal upon Land to the North of Glanmyddyfi.

CHAPTER 10 – AMENITY

10. Amenity

This chapter deals with the potential for odour, dust and flies to be produced by the proposed free range poultry unit and cause an impact in the local area. By conducting risk assessments, and analysing the recent nuisance complaint history of other sites in the area, the assessment concludes that no significant impacts are likely given the lack of complaints made other such facilities, the isolated location of the proposal and the integral controls to be applied.

10.1 Introduction

10.1.1 Context

The proposed free range unit upon land to the north of Glanmyddyfi has the potential to affect amenity issues in the area. This chapter presents the findings of a series of risk assessments that have been carried out to assess the potential implications of the proposed free range unit on local amenity. The issues that have been assessed are:

- dour;
- Dust (construction, operation (including bio aerosols) and decommissioning);
- Flies; and
- 📷 Vermin

It is acknowledged that noise could also be considered to be an amenity issue. However, rather than being assessed here, noise has been included as a separate chapter (Chapter 11 – Noise and Vibration) given the availability of advanced quantitative noise assessment techniques. The overall results are presented in this chapter.

10.2 Legislation, Planning Policy and Other Guidance

10.2.1 Legislation Regulating Nuisance

Statutory nuisances are regulated by Part III of the Environmental Protection Act (EPA) 1990. The powers allow for action to be taken by local authorities or individuals against statutory nuisance that exists or is likely to occur or recur. Statutory Nuisances include:

- smoke, fumes or gases emitted from premises;
- any dust, steam, smell or other effluvia arising on industrial, trade or business premises, which are prejudicial to health or a nuisance.

It should be noted that there is a defence of using Best Available Technique (BAT) to prevent the nuisance or counteract its effects together with reasonable excuse. The granting of planning permission is not a defence.

10.3 Method of Assessment

10.3.1 Method

The risk assessment technique used in this assessment has been based on guidance relating to intensive livestock farming (from the Environment Agency's (EA's) 'Simple assessment of environmental risk for accidents, odour, noise and fugitive emissions (EPR – H1) – Version o80328 (March 2008)) and includes comprehensive management plans based on accepted guidance and Best Available Technique (BAT). The types and sources of potential nuisances are identified, and the potential sensitivity of individual receptors is qualitatively assessed. This is based upon the nature of, and proximity to hazard generating activities, general wind direction frequencies and the nature of the receptor. In addition, the scope and efficacy of integral controls have been accounted for.

In addition to the above method, historic complaints made to the Environmental Health Department regarding other poultry sites in the vicinity have been analysed in order to judge the frequency of complaints in relation to the amenity issues being assessed at similar sites. Magnitude and significance have been assessed using professional judgement based on the general expected intensity and frequency of any potential impact against the number, nature and sensitivity of receptors potentially affected. For example, a major, long term, release of odour, dust or flies etc. affecting large numbers of residential receptors to a level that would be likely to cause nuisance and complaint, and which is assessed to be a probable occurrence, would constitute an impact of Major Significance. Conversely, a minor release, barely detectable by a very limited number of industrial receptors, and which is assessed as being unlikely to occur, would constitute an impact of Minor or Negligible Significance.

10.3.2 Difficulties Encountered

The nature of the issues being assessed (generally relating to highly variable, intermittent and, therefore, unquantifiable emissions and subjective human responses to them) does not allow reliable quantitative assessment to be carried out. As such, the following assessments are based upon professional judgement and qualitative risk assessment, as set out above, and the experience of the agricultural industry.

10.4 Baseline Environment and Sensitive Receptors

In terms of other potential sources of amenity impacts, the Glanmyddyfi site lies within an area of livestock farming, where the land management operations includes application of poultry manure to the land and storage of manure including poultry manure in fields, these activities are potential sources of flies and odour. However, in order to make a worst case assessment of the potential impacts from the proposals, it has been assumed that no amenity issues currently affect sensitive receptors in the locality. The nearest local residential property is some 102.862 metres from the proposed unit with increasing separation distances to the next closes receptors, there are a number of hedgerows and trees which will act as a buffer to the sound.

Sensitive Receptor	Distance	Comment
- Name	(Metres)	
Harlech Barn	102.862	Independent
Glanmyddyfi	258.437	Owned and occupied by parents of Mr
		Terry Davies
Rhiw'r Dorth	292.683	Independent
Llawr y Neuadd	313.324	Independent
Lletty Cottage	354.912	Independent
Cottage Inn	378.454	Independent
Pantybas	398.78	Independent
Brynhawddgar	686.062	Independent
Cherry Cross	718.35	Independent

10.5 Incorporated Mitigation

Standard Odour, Dust, Vermin and Fly management controls will be put into place. These have been taken account of in the assessment as they are an integral part of the overall design and proposed operations and are considered Best Available Technique; these management controls are detailed in Chapter 4.

10.6 Complaints History of local sites

10.6.1 Complaints History

No complaints have been made by the public to the Environmental Health Officer (EHO) for local sites within 5 miles that we are aware.

10.6.2 Odour

Generally complaints about odour from agricultural sources are common but the largest numbers of complaints arise from the spreading of manure. The original MAFF Code of Good Practice for the Protection of Air (The Air Code) since updated by *Protecting our Water, Soil and Air – A Code of Good Agricultural Practice for farmers, growers and land managers* states that there were about 9,000 complaints in England & Wales caused by agriculture in 1995/96, involving an estimated 3,646 farm premises. However odour is rarely an issue at an efficiently operated modern poultry unit.

Research evidence suggests that odour emissions at the time of the growing period during the flock cycle when litter moisture is also rapidly increasing or at high levels. It is known that when litter moisture exceeds 40% there is a progressive decline in the friability of the litter as the moisture increases. When litter moisture reaches 46% the litter becomes capped, i.e. a crust forms, often on top of more friable litter under it. Excreta and moisture accumulate on the capped litter with the result that the activity of anaerobic bacteria break down the excreta and allow moisture to be absorbed is reduced. There is a shift to an aerobic breakdown with consequence that the release of volatile odorants is increased. It is therefore desirable to put strenuous efforts into management practices and building design that lead to low litter moisture levels. Odour emissions will be less and performance, welfare and profitability enhanced. These problems can be avoided and are not anticipated at the application site and will be controlled at source through management practices to keep litter at optimum moisture content for keeping it friable. This will be achieved through management of the shed litter, providing adequate ventilation, controlling shed temperature and humidity, and through dietary manipulation. Odour causes most impact during the cleaning out period and spreading / storage rather than during the laying cycle.

Odour from spreading causes minimal nuisance as the manure is incorporated into the land with cultivation methods soon after being spread therefore the duration of the nuisance is minimal. The nutrient value of manure decreases the longer it is left exposed on field surfaces prior to incorporation, it is therefore a commercial incentive to incorporate rapidly thus reducing the duration of odour instances. Spreading practices are and will continue to be carried out in accordance with the Environment Agency Sector Guidance Note *How to comply with your environmental permit for intensive farming* (Version 2 January 2010), the DEFRA *Code of Good Agricultural Practice (CoGAP)*.

10.6.3 Dust

As for odour the dust / bio aerosols at an operational free range unit are generally not an issue. Within free range buildings the main sources of dust are the birds, their food and the floor litter. Measurements of dust concentrations have been found to be variable depending on the number and age of the birds as well as the level of activity within the buildings. The particle size of dust is variable too. In general terms, particles smaller than 2 microns (2 um) account for around 70% of the number of particles, but only 5% of the mass. Similarly particles greater than 5 microns (5 um) account for under 10% of the number do and 90% of the dust mass.

The particles are emitted into the atmosphere through the ventilation system. The amount of dust emitted is influenced by the level at which the ventilation system is operating. In hot summer weather conditions, for example, the ventilation system will be operating at a higher rate.

Dust baffles will be erected adjoining the ventilation fans to avoid any dust or odour becoming airborne See Chapter 4. The larger dust particles (5 microns/5 um and over) found within the building either tend to fail to migrate to the ventilation fans, or are expelled from the building and are immediately deposited to the ground. Once released to the atmosphere smaller dust particles will be carried on the wind, with deposition continuing under the natural turbulent flow of the air. With increasing distance from the source there will come a point where the concentration of dust particles which originate from the free range buildings fall into a level below air quality guideline values as laid down by the EU and eventually become indistinguishable from normal background dust levels.

10.6.4 Flies

Flies are not a problem on a well-managed and hygienically run free range site; due to the feeding habits of poultry any maggots that hatch in the bedding are soon eaten.

Fly problems at poorly managed free range farms can occur in the following areas:

Feed Storage

Animal feed is attractive to flies as a breeding area. Problems mainly occur when feed is stored in unsuitable buildings or storage bins that do not function effectively.

These breeding areas are designed out of the majority of free range farms by installing modern feed storage systems to meet the requirement of the Food Hygiene Regulations.

Field Manure Storage

No manure will be stored in field heaps.

All manure applied to the land will be done so in accordance with regulations for Good Agricultural and Environmental Conditions regarding soil and water. The manure shall be applied in accordance with the Silage, Slurry and Agricultural Fuel Regulations in line with the businesses' manure management plan. A detailed Manure Management Plan has been submitted in support of the planning application, together with an Ammonia Report. Both of the aforementioned reports set of the process and capacity for dealing with manure generated by the proposal.

It is proposed that the following measures in relation to manure management also be adopted and the applicant is happy for each point to be included as a condition of any forthcoming consent. Discussions have been held with a Planning Solicitor who has confirmed that manure management proposals are enforceable as conditions of consent with the relevant documents referenced as a requirement to be adhered to ie the Manure Management Plan.

1) No manure of any kind will be applied to the 42 acre block of land which the application site forms part of.

2) No manure shall be sold to any individual or business owning or renting land within 1.5km of the boundary of the Dinefwr SSSI.

- 3) A register of purchasers of any manure generated by the application proposal shall be maintained and made available to the LPA upon any request made.
- 4) All recommendations of the Manure Management Plan shall be adhered to at all times.
- 5) Manure moved off site every four days in sheeted trailers.

10.6.5 Vermin

Large quantities of stored feed and stored litter have the potential to attract a variety of animals that are considered vermin. The site will be inspected regularly to check for the presence of vermin and employees will be instructed to report the presence of any vermin immediately. The applicants will be fully trained and certified in vermin control and the companies for which the chickens are grown stipulate strict regimes for vermin control.

Please consult appendix 22 to this Environmental Statement – Pest Management Plan.

10.7 Potential impacts

10.7.1 Sources, Pathways and Potential Impacts

The principal sources of amenity impact, the pathways by which they can be transferred to receptors and their potential impacts are set out for each issue in Table 27.

Table 27: Amenity Issue, Sources, Pathways and Potential Impacts

lssue	Sources	Pathways	Potential Impacts	General Available Mitigation
Odour	Feed Delivery & Storage, Ventilation system, Litter management, carcass disposal, house clean out, used litter, dirty water management	Wind transport. Dispersal tends to be worst in stable night-time conditions in low winds.	Nuisance for walkers on footpaths within 400 metres of the site	Management controls to reduce moisture content of litter. Equipment checks to reduce likelihood of failure. Manure handling controls during cleanout to reduce spillage. Manure transporting controls (e.g. sheeting trailers)
Dust	Dust – vehicles moving over dusty surfaces, wind blowing over dusty surfaces. Dust emissions from within buildings through ventilation.	Wind transport. Tends to disperse more rapidly than gases due to vertical deposition under gravity (nuisance not generally experienced beyond 100m). Greater emissions of dust in high winds but counteracted by greater dilution.	Irritation of respiratory tract/eyes and/or perception of health effects for sensitive receptors on footpaths within 400m of the site.	Dust Baffle over ventilation fans. Internal handling of manure. Good practice during construction (e.g. dampening of surfaces)
Flies	Manure storage	Self dispersal through flight.	General annoyance, buzzing, requirement for swatting and control, and potential for spread of disease.	Storage of manure away from sensitive receptors. Regular inspection to identify infestations. Sheeting of manure heaps to increase temperature of manure heaps to kill flies and larvae.
Vermin	Feed storage	Self dispersal over land	General annoyance, requirement for control and potential spread of disease.	Storage of feed within concealed containers. Maintenance of feed storage containers to avoid damage / deterioration. Removal of feed spillages if they occur.

10.8 Risk Assessment Results

The results of the risk assessments are summarised below. Due to the nature of the proposed operations, the integral controls and the isolation of the facility from sensitive receptors, no receptor was considered to be more than moderately sensitive to any amenity issue potentially arising from the proposed poultry unit.

10.8.1 Odour

Please see appendix 25.

If odour were to be released from on-site operations some limited receptors nearby could potentially be affected. However, this presupposes the regular emission of odours from the proposed free range unit. In reality, during normal operations odour emissions will be minimal due to the proposed management practices. As such, any odorous emissions, if present, would be minor, intermittent and rare. This conclusion is backed up by the low number of odour complaints attributable to modern free range units across Wales.

At this location, for odour to be released in any appreciable amount at the level to cause a significant nuisance to the local population, serious operational failures would be required (e.g. total closedown of the ventilation whilst birds continue to be housed). The houses are alarmed and management personnel will always be within a 2 minutes response zone from the buildings to repair failed equipment as such a failure would result in multiple mortalities and in a worst case scenario entire crop loss.

The results of the risk assessments would suggest that, whilst the majority of potentially sensitive receptors lie some distance away from the proposed poultry unit, a few may lie close enough to potentially be affected if odour were to be released in appreciable amounts.

Recreational areas such as footpaths are relatively low sensitivity as people are present for short periods only.

The receptors surrounding the land on which the applicant is to spread the poultry manure may be affected for short periods of time during the year by odour nuisance. The risk assessment concluded that the overall risk would not be significant as the manure is in incorporated into the soil within 24 hours of spreading.

10.8.2 Dust

Please see appendix 24.

Similar to odour there are few sensitive receptors occurring close enough to be affected by any dust emitted (coarse dust tends not to travel in appreciable volumes further than 100 metres from any local source due to exponential reductions in concentration and deposition with distance). As such the receptors at any risk due to dust emissions are only likely to effectively include roads along which construction vehicles will travel. Such receptors are unlikely to be particularly sensitive to dust the vehicle movements will not alter the baseline significantly. Also, the prevailing wind direction is not towards any receptors sensitive to dust.

In terms of dust emissions, the greatest risks are likely to occur temporarily and intermittently during the construction and decommissioning phases when loose materials are being handled. During the operational phase dust emissions will be controlled at source through management practices and all vehicles removing manure from the site will be covered.

Given that the greatest dust emissions are likely to occur in the relatively short construction and decommissioning phases and there are few sensitive receptors close enough to be effected, and those

that are present are outside the prevailing wind direction from the proposed free range poultry unit, it is considered that no significant impact in terms of dust nuisance will occur. This conclusion is supported by the low level of complaints made at the other free range sites in this area. The one complaint that was made regarding dust was in response to fears regarding Avian Flu. Nevertheless, there is still some minimal risk of dust impacts during construction which will require mitigation via best practice.

10.8.3 Flies

There is a slight occasional risk that the spreading of manure in summer could introduce a potential source of flies into the area that would not otherwise occur. However, with the proposed mitigation controls in place and with prompt incorporation of the manure into the soil it is expected that no significant fly impacts will result. This conclusion is supported by the lack of EHO complaints made. The result of the risk assessment indicates that there would be a considerable number of sensitive receptors in close proximity to areas where manure spreading will take place, however the control measures will limit the effect of flies on these sensitive receptors.

10.8.4 Vermin

Vermin are only a potential risk in close proximity to the source. With the proposed mitigation and management controls it is expected that no significant vermin impacts will result. This conclusion is supported by the lack of complaints made relating to vermin. The results of the risk assessment indicate that the separation distance between the site and sensitive receptors would be too great to have any impact.

Please see appendix 22.

10.8.5 Cumulative Impacts

There are no other similar poultry units within a five mile radius of the proposed site.

10.9 Follow Up Action

During operation the free range poultry unit management plans will be put in place to ensure that amenity issues do not become a problem. The site will be regularly inspected by the staff to ensure that no odour, dust, fly or vermin issues are arising. If complaints are received these will be logged and immediately followed up and assessed as part of the applicant's environmental management systems. Any significant releases of odour, dust, flies or vermin will be dealt with as appropriate at the time to ensure no repetition.

10.10 Residual Impacts and Conclusions

The qualitative risk assessments and complaints analyses carried out suggest that significant adverse impacts on local amenity as a result of the proposed free range unit are unlikely. It is predicted that the impacts of the proposed free range unit would be acceptable, given the distance between existing sensitive receptors and the nature of the proposed operations. However, it is acknowledged that the issues discussed in this chapter are sensitive to local people. As such, a range of standard mitigation measures, that have been highly successful in other similar operations, would be put in place to minimise any potential adverse impacts.

CHAPTER 11 – ECOLOGY

Ecology 11.

This chapter deals with the potential impacts of the proposed free range unit on designated and undesignated habitats and protected species. Habitats are generally of low value given the use of the site for intensive agricultural production. No protected species are known to use the site. Without mitigation the construction, operation and decommissioning of the proposed free range unit may affect habitats and species via disturbance. However proposed mitigation measures (providing habitat including conservation strips, woodland planting and wetland areas and the use of sensitive construction methods) will ensure that impacts are minimal and biodiversity will be enhanced.

Introduction 11 1

This chapter assesses the likely significant impacts of the proposed free range unit on the ecology of the site at Glanmyddyfi and the wider area.

Schedule 4 of the Environmental Impact Assessment (EIA) Regulations states that an Environmental Statement (ES) should include a description of the aspects of the environment likely to be significantly affected by the poultry unit, including flora and fauna, although there is no statutory provision as to the form an ES should take.

To obtain information on the site's baseline ecology, the following have been undertaken:

- A desk based study and consultation; and
- Protected species surveys (great crested newt, bat, reptile, breeding birds, wintering birds and badger).

This chapter describes the findings of the field-based surveys, the desk-based study, considers the potential impacts arising from the proposed free range poultry unit and proposes appropriate mitigation measures.

Legislation 11.2

11.2.1 Designated Sites

Designated sites are areas of high nature conservation value which are protected to varying degrees by statute, international conventions, or local authority planning controls. The sites form a network of habitats which may be of global, international, European, national, regional or local importance.

Generally, the priority for the protection of designated sites is as follows:

- Global/International/European/National sites (Special Areas of Conservation SACs, Special 1. Protection Areas (for birds) - SPAs, Sites of Special Scientific Interest - SSSIs);
- Regional or local sites; 2.
- Other wildlife sites. 3.

The protection afforded to sites by local authority designations, such as Sites of Biological Importance (SBIs), County Wildlife Sites (CWS), Local Nature Reserves (LNR) and Sites of Importance for Nature Conservation (SINC), is normally significantly less than for statutory designations. Such designations are predominantly for planning purposes only and, while a local authority may have a stated policy of avoiding development in these areas, there is no statutory protection process.

11.2.2 Protected Species

In addition to habitats, a number of species are considered to be rare or subject to persecution and are also afforded protection through international/European and national law. Other species are considered to contribute to our 'quality of life'. Although these species do not benefit from legal protection, the possible effect that the unit may have on their habitat can be an important material consideration.

The Wildlife and Countryside Act (WCA), 1981, as amended, The Protection of Badgers Act 1992 and the Habitat Regulations 1994 are the main legislative frameworks for the protection of wild animals in the UK.

Proposers of a development must be able to show that all reasonable measures have been taken to ensure that protected species are not subject to disturbance. The habitats of all Schedule 2 species in the Habitat Regulations, WCA Schedule 1 and some WCA Schedule 5 species are also protected from disturbance and destruction. Again, all reasonable precautions should be taken to ensure that disturbance does not happen.

Planning Policy 11.3

The following sections briefly outline the policies that are relevant to the ecology of the Glanmyddyfi site at International, European, national and local levels.

11.3.1 International, European and National Legislation

The UK is bound by the terms of the Birds and Habitats Directives and the RAMSAR Convention. The Conservation Regulations 1994 (the 'Habitats Regulations') provide for the protection of 'European sites', which are Special Areas of Conservation (SACs) designated pursuant to the Habitats Directive, and Special Protection Areas (SPAs) classified under the Birds Directive.

The Regulations apply specific provisions of the Habitats Directive to candidate SACs (cSACs), SACs and SPAs which require special considerations to be taken in respect of such sites. The RAMSAR convention aims to protect wetlands of international importance for birds.

The protection and management of internationally designated sites are achieved by a combination of the provisions of the Habitats Regulations and Section 28 of the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000.

11.3.2 National Planning Policy

Technical Advice Note 5 (TAN 5) provides the Governments advice on how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The principal aims of TAN 5 are:

The key principles of positive planning for nature conservation;

Nature conservation and Local Development Plans;

Nature conservation in development management procedures;

Development affecting protected internationally and nationally designated sites and habitats; and

Development affecting protected and priority habitats and species.

TAN 5 states that Biodiversity conservation and enhancement is an integral part of planning for sustainable development. The planning system has an important part to play in nature conservation. The use and development of land can pose threats to the conservation of natural features and wildlife. Past changes have contributed to the loss of integrity of habitat networks through land-take, fragmentation, severance, disturbance, hydrological changes and other adverse impacts. But development can also present significant opportunities to enhance wildlife habitats and the enjoyment and understanding of the natural heritage. Whilst the planning system needs to be watchful of the cumulative effects of a series of small, perhaps occasional, apparently insignificant

losses from the natural world, which can combine to seriously deplete the natural heritage, including essential hydrological and ecological systems; small scale opportunities for habitat creation and enhancement can be significant and can build into major contributions over time. This TAN demonstrates how local planning authorities, developers and key stakeholders in conservation can work together to deliver more sustainable development that does not result in losses from the natural heritage but instead takes every opportunity to enhance it.

The key principles for the planning system to deliver nature conservation are appended below and covered within TAN 5:

work to achieve nature conservation objectives through a partnership between local planning authorities, Natural Resources Wales, voluntary organisations, developers, landowners and other key stakeholders (PPW 5.1.5 and 5.2.5);

integrate nature conservation into all planning decisions looking for development to deliver social, economic and environmental objectives together over time (PPW 5.1.3 and 5.1.4);

ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions (PPW 5.3.8-10);

look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally (PPW 5.1);

help to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast (PPW 1.4.14, 2.2.1, 2.3.2 and 5.6.3);

forge and strengthen links between the town and country planning system and biodiversity action planning particularly through policies in local development plans and the preparation of supplementary planning guidance that adds value to Local Biodiversity Action Plans (LBAPs) by highlighting the ways in which the planning system can help to deliver the objectives of LBAPs in practical ways (PPW 5.4.2);

plan to accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change (PPW 2.2.1 and 2.3.2).

The Conservation (Natural Habitats etc) Regulations 1994 transpose the Habitats Directive (92/43/EEC) into national law. The Regulations provide for the designation and protection of "European sites," and the protection of "European protected species." As part of the planning process, the authority is required to carry out an appropriate assessment to establish whether a proposed development would adversely affect the integrity of any such European sites. Such a development could only be granted planning permission under very restricted circumstances.

Other Guidance 11.4

11.4.1 The UK Biodiversity Action Plan (UKBAP)

The UK Biodiversity Action Plan (UKBAP), published in 1994, sets out the UK's response to Article 6 of the European Convention on Biological Diversity. There are currently 391 Species Action Plans (SAP) and 45 Habitat Action Plans (HAP) that extend across the UK. These habitats and species are listed in Section 74 of The Countryside and Rights of Way (CRoW) Act 2000 and are those that the Secretary of State, following consultation with Natural England (NE), consider are of principal importance for the conservation of biological diversity in England. A UK BAP report identifies the following as the prime threats faced by priority habitats and species:

Habitat loss/degradation (particularly due to agriculture or changes in management practice) continues to be a significant threat for a high proportion of species and habitats. Woodland management and loss of trees, and change in habitats due to succession, are also of particular concern for species;

- Infrastructure extension (mainly housing infrastructure and extension on the coast) is emerging as a particular concern for species and habitats. This underlines the importance of the protected sites network and the crucial role of the planning system in safeguarding biodiversity;
- **Global warming** is an emerging threat for a high proportion (47%) of habitats.

11.5 Methodology

11.5.1 Assessment Methodology

The proposed free range poultry unit has the potential to have a range of impacts on several ecological receptors. The primary methodology for this assessment has been based on the current Institute for Ecology and Environmental Management (IEEM) guidelines. This assessment methodology has been used to assess all construction, operation, decommissioning phases and direct and indirect impacts associated with the proposed poultry unit.

IEEM Methodology

Identifying and Valuing Ecological Features

In an EIA context, the starting point is to determine which ecological features or resources are of sufficient value that an impact upon them could be considered significant. These features include populations, species, communities, habitats and sites selected as likely to be impacted (in a positive or negative way) by the environmental changes caused by the proposed unit.

Ecological features can have two types of valuation:

- Biodiversity Value (see below); and
- Social/Community Value (e.g. a patch of bluebells in local woodland).

This chapter primarily concentrates on biodiversity value, with the social value also taken into account where appropriate.

Biodiversity Value

There are various characteristics that identify the ecological features and resources which are to be considered in an assessment. These are:

- Animal or plant species, subspecies or varieties that are rare or uncommon, either internationally, nationally or more locally;
- Ecosystems and their component parts, which provide the habitats required by the above species, populations and/or assemblages;
- Endemic species or locally distinct sub-populations of a species;
- Habitat diversity, connectivity and/or synergistic associations (e.g. networks of hedges and areas of species-poor pasture that might provide important feeding habitat for rare species);
- Notably large populations of animals or concentrations of animals considered uncommon or threatened in a wider context;
- Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetations types – including examples of naturally species-poor communities;

- Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change;
- Species rich assemblages of plants or animals; and
- Typical faunal assemblages characteristic of homogeneous habitats.

The identified ecological features define the nature conservation interest and must be valued to provide a basis for assessing the impacts of the poultry unit. To identify the ecological features, it is first useful to consider the spatial extent of any potential impacts, i.e. establish the baseline zone of influence.

The value of an ecological feature can be determined and defined using the geographical frame of reference shown below:

- 🖬 International;
- 📷 UK;
- National (i.e. England, Northern Ireland, Scotland, Wales);
- 📷 Regional;
- 😹 🛛 County (or Metropolitan e.g. London);
- District (or Unitary Authority, City, Borough);
- Local/Parish; and
- Within Zone of Influence only (which might be the project site or a larger area).

Habitats and species may already have a statutory/non-statutory designation (e.g. a SSSI and the great crested newt (*Triturus cristatus*) are of national and international value, respectively) and can be attributed to the values above. A habitat/species with no designation would need to be valued using professional judgement and against published literature, e.g. Habitat / Species Action Plans, Natural Area Profiles, etc. where possible. It should also be recognised that even though a site that may have no apparent ecological features, it may perform an ecological function, e.g. act as a 'buffer zone' against any negative impacts on a more important habitat or species.

Predicting and Characterising Ecological Impacts

Impacts are assessed in the context of the predicted baseline conditions within the zone of influence of the project during the lifetime of the unit. Where possible, this is assessed in conjunction with the degree of confidence in the assessment of the impact on ecological structure and function. This can be assessed either qualitatively or quantitatively with the use of a four-point scale:

- Certain/Near Certain: probability estimated at 95% chance or higher
- Probable: probability estimated above 50% but below 95%
- Unlikely: probability estimated above 5% but less than 50%
- Extremely Unlikely: probability estimated at less than 5%

Where doubt as to which of the categories of probability best fits the level of professional confidence, the more conservative (higher) level is cited.

In order to fully characterise the likely change and impact, reference is made to the following characteristics:

- Positive or Negative;
- 📷 Magnitude;
- Extent;
- Duration;
- 🖌 Reversibility; and
- Timing and Frequency.

Assessment of Ecological Significance

The significance of the impacts of a poultry unit is a product of the above characteristics of the impact and the importance of the receptor.

An ecologically significant impact is defined as an impact (negative or positive) on the *integrity* of a defined site or ecosystem and/or *conservation status* of habitats or species within a given geographical area. Positive impacts are likely to be rarer but are possible if ecological enhancements are included within a scheme's design at an early stage in the project.

The *integrity* of a site that has a been designated as a SPA or SAC is defined as "...the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified/." (ODPM 2005)

The value of any feature that will be significantly affected is then assessed in terms of control, policy guidance and legislation against the level at which it is valued.

However, when evaluating the significance of impacts on sites and ecosystems at sub-national levels of value, the description of the ecologically important characteristics of the site or ecosystem falls to the ecologists carrying out the assessment.

It is also appropriate to use Biodiversity Action Plan (BAP) guidance, where available, to draw reasonable conservation objectives for those important characteristics. Results from work on levels of ecological value and impact magnitude are both used to assess the significance of ecological impact.

The concept of *conservation status* can be used to determine whether an impact on a habitat or species is likely to be ecologically significant. This may be evaluated for any defined study area at any defined level of ecological value. The definition of conservation status for habitats and species used in this assessment is based on the EC Habitat Directive definition. It has been modified so that evaluation of conservation status can be applied to habitats and species within any defined geographical area. Therefore:

- for habitats, conservation status is determined by the sum of influences acting on the habitat and its typical species, that may affect long-term distribution, structure and functions, as well as the long-term survival of its typical species within a given geographical area;
- for species, conservation status is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.

Level of Significance

A level of significance is deduced by making subjective links between receptor value and the characteristics of the impact whilst giving due consideration to relevant planning policies, conservation status, rarity and legal protection in conjunction with professional experience. The following nominal significance levels have been used in the impact assessment to describe the predicted impact upon the receptor in question, based on known ecological principles and systems:



- Moderate
- Minor
- Nery Minor
- Negligible

11.5.2 Limitations

We are unaware of any constraints or limitations affecting this site.

11.6 Baseline Conditions and Ecological Evaluation – Appendix 12,33 and 34

11.6.1 Introduction

This section describes the existing baseline ecological conditions. For those ecological receptors that might change significantly before the development commences, this has been highlighted where appropriate, outlining any further data collection work that may be required to ensure representative, and up to date, baseline conditions are known at the time of construction.

11.6.2 Desk Based Study

Statutory Sites

There are seven Sites of Special Scientific Interest (SSSIs) within 5 km of Glanmyddyfi and parts of the Afon Tywi Special Area of Conservation (SAC) is also within 5 km. Of these eight sites, only four are designated for their flora (which may be susceptible to damage from excess ammonia and nitrogen and acid deposition), they are: the Dinefwr Estate SSSI; the Caeau Bryn Ifor SSSI, Coedydd Tregyb SSSI and the Allt y wern SSSI.

11.6.3 Field Study

Ecological Assessment

Please see appendix 12, 33 and 34 submitted in support of this application.

11.6.4 Ecological Evaluation

Statutory and Non-Statutory Sites

Please see appendix 12, 19, 33 and 34 submitted in support of this application

Habitats

Please see appendix 12, 33 and 34 submitted in support of this application

Protected Species

Bats

Please see appendix 12, 33 and 34 submitted in support of this application

11.7 Assessment of Potential Impacts

11.7.1 Potential Construction, Operational and Decommissioning Impacts

The potential ecological impacts arising from the proposed free range unit, in the absence of mitigation, are as follows:

Construction: Direct loss and or alteration of habitats for plants or animals, and consequently local loss of species as a result of the physical requirements;

Construction: Habitat fragmentation;

Construction: Direct loss to non-statutory designated sites as a result of the construction of the poultry unit;

Construction, Operation and Decommissioning: Temporary disturbance to surrounding fauna during construction and permanently during operations arising from noise, and human presence;

Construction, Operation and Decommissioning: Indirect or secondary accidental damage to surrounding habitats (including designated sites) as a result of construction/decommissioning or operational activities, including emissions, pollutants, storage of materials, spillages and site drainage; and

Operation: Indirect impact on statutory, non-statutory designated sites, habitats and species resulting from use of the proposed poultry unit (principally from atmospheric emissions and any releases to watercourses).

11.7.2 Predicted Impacts

Effect of the Poultry Unit on Statutory Sites

The effect on designated ecological sites has been assessed in Chapter 6.

Loss of Non Designated Habitats

Construction works will lead to direct habitat loss, through clearance works and earth moving activities. Disturbance to habitats may also occur via vehicle movements, lay down areas used for storage of materials and the siting of buildings for construction workers. The habitats to be lost are of low intrinsic ecological value and include a large area of improved grassland. This loss of habitat will have a certain negative impact of minor significance.

The proposed free range footprint includes an area of pasture land; these habitats are considered to be of low ecological value in terms of vegetation as intensive pasture land contains few species of note. The physical presence of the proposed free range unit may also affect species moving across the site. The operational phase of the proposed free range unit will have an indirect effect on habitats by affecting surface runoff, pollution from vehicles. Without mitigation this will have a certain negative impact of very minor significance.

Impacts on Protected Species

Badgers

There were very few field signs to suggest that badgers use the field and there are no historic records of badger within 1km of the site. No badger setts were found within the site and only one minor excavation/snuffle hole which is probably associated with badgers was seen in Field 3.

Bats

The mature hedgerows around the fringes of the site offer commuting and foraging opportunities for bat species in the landscape. There are no mature trees within Field 1 but several mature oaks mark the line of a former hedgerow across Field 2. These include features such as loose bark which may provide bat roosts for small numbers of bats. No bat species have been recorded within 1km of the site but they are nevertheless likely to use tree and hedge features locally for foraging.

Dormice

The dense hedgerows offer potential habitat to dormice. Bramble, hazel and hawthorn provide good food sources and honeysuckle is present, providing nesting material.

Otters

No evidence of otters was recorded along the banks of the adjacent river. However, the banks are very steep and access to and from the river is difficult on this stretch. It is very likely that otters use this stretch of watercourse regularly but their activity is almost certainly restricted to the watercourse and its channel,

particularly due to the high, steep embankments.

Breeding birds

The site itself is highly likely to be used by breeding birds. Few species were recorded on the survey but the dense hedgerows do provide good potential nesting habitat. Species recorded included dunnock, wren, blackbird and chaffinch.

11.8 Mitigation measures

A number of proposals have been put forward below to compensate and mitigate for any loss of habitat or general disturbance to species resulting from the proposed poultry unit.

HABITAT MITIGATION

No habitat of ecological significance will be lost and no specific mitigation is required.

PROTECTED SPECIES MITIGATION

Bats

Hedgerows on the fringes of the site will be encouraged to grow in height in order to improve visual screening of the site. This will benefit bats in providing richer foraging routes.

External lighting will be avoided or be guided by a wildlife friendly lighting design plan. This will avoid any impact on bat foraging behaviour.

Breeding birds

Hedgerow management will again benefit a range of bird species, notably winter visitors benefitting from an increased source of food.

ECOLOGICAL ENHANCEMENT

Habitats - Woodland planting

A new area of native woodland will be planted to the south of the main site in Field 3 in order to improve screening and also create additional wildlife habitat.

This will comprise locally native species including sessile oak, silver birch, rowan, wild cherry and hazel. The reduction of intense cattle grazing and avoidance of inorganic fertiliser use in Field 1 will allow an increase in floristic diversity to occur.

Species – Bats

The opportunity should also be taken to improve roosting opportunities for bats by erecting three bat boxes in mature oak trees in Field 2. These should be Schwegler Type 2FN boxes.

Species – Birds

The opportunity should also be taken to improve nesting opportunities for birds by erecting six bird nest boxes in mature oak trees in Field 2. These should include six Seville Woodstone nest boxes.

11.9 Follow Up

Special interest groups such as bat, badger and bird enthusiasts will be invited to monitor levels of activity at the site.

11.10 Summary & Conclusions

The poultry unit will occupy an area of improved grassland, a habitat of low ecological interest, and the ecological impact is regarded as minimal. Field 2includes one section of semi-improved grassland with a moderately rich flora, including soft rush.

The site and ranging area are divided by species-rich hedgerows (a Habitat of Principal Importance) with a rich ground flora including ancient woodland indicator species. All hedgerows will be retained and allowed to extend in height to improve screening.

There will be no impact on adjacent habitats of ecological value. These include a small semi-natural woodland and the Afon Myddyfi which flows near to the western boundary of the site.

Access improvements will result in the loss of approximately 30 metres of ornamental, non-native species garden hedgerow.

There is very little evidence of badgers using the site and there are no local records. Several mature oaks in Field 2 may provide roost sites for bats and the hedgerows are likely to be used for commuting and foraging. The hedgerows provide good nesting habitat for breeding birds and potential habitat for dormice, although there are no local records for this species. No evidence of otters was found along the banks of the nearby river although it is highly likely that this watercourse is used by otters and they have been recorded within 1km of the site. No specific habitat mitigation is required. However, habitat enhancement will be achieved through proposed reduced hedgerow management, allowing taller hedgerows to develop. Further enhancement will be achieved through the planting of new native woodland for screening purposes.

The reduction of intense cattle grazing and avoidance of inorganic fertiliser use in Field 1 will allow an increase in floristic diversity to occur. Mitigation for protected species will involve avoidance of external illumination or design of a wildlife-friendly lighting scheme. Further biodiversity gain will be achieved through erection of bat and bird boxes.

CHAPTER 12 – NOISE & VIBRATION

12. Noise & Vibration

This chapter assesses the noise and vibration impacts of the proposed free range facility on nearby residential receptors. Impacts arising from construction, operation and decommissioning and associated traffic are assessed, where appropriate, using quantitative techniques. Using worst case assumptions regarding operational noise emissions, traffic levels and noise insulation levels of the building fabric, all predicted impacts are minor or negligible only. Impacts will be easily mitigated by incorporating appropriate noise baffling and insulation.

12.1 Introduction

12.1.1 Scope

There is the potential for noise from the proposed free range unit to affect sensitive receptors around the site and, as such, the following impacts have been considered within this assessment. Sensitive receptors are predominantly residential properties around the proposed site.

Chapter 4 (Description), sets out the detailed design for the proposed free range unit.

The operation of the proposed free range poultry unit is not considered to have the potential to generate significant sources of vibration. As such, the impacts from vibration during the operation of the proposed free range unit have not been considered further.

For decommissioning of the free range site, the resultant noise impacts would be likely to be similar to those for the construction phase.

12.1.2 Terminology

Relevant British Standards and planning guidance refer to noise in decibels (dB). The decibel scale is logarithmic rather than linear; hence a 3dB increase in the sound pressure level represents a doubling of sound energy present. Judgement of the loudness of a sound is subjective but, as a general guide, nothing less than a change of 1odB corresponds to a doubling of perceived loudness.

The A weighted sound level, dB(A), takes this response into consideration and is used for the measurement of environmental noise. It can be used to indicate the subjective human response to noise.

Environmental noise usually varies continuously from second to second. It is impractical to specify the sound level for each second. As such, human response has been related to various units, which allow for the fluctuating nature of sound.

These include;

- LAeq,t The A weighted equivalent continuous sound pressure level. A representation of a continuous sound level containing the same amount of sound energy as the measured varying noise over the measurement period, t.
- LAgo,t The A weighted sound pressure level that is exceeded for 90% of the measurement period, t. This is commonly used as the background noise level for assessing the effects of industrial noise in the UK.
- **LA10,t** The A weighted sound pressure level that is exceeded for 10% of the measurement period, t. This is commonly used in the UK for describing traffic noise levels.
- **LAMax** The highest A weighted noise level recorded during a noise measurement period.

12.1.3 Legislation, Planning Policy and Other Guidance

Noise nuisance in the UK is principally governed under Statutory Nuisance legislation under the Environmental Protection Act (1990 - as amended). No legal standards regarding noise levels are applied; however, guidelines are provided both in British Standards (BS) and by the World Health Organisation (see later sections of this chapter). Noise nuisance is generally policed by Local Authority Environmental Health Departments.

TAN 11 Noise (1997) provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. It outlines some of the main considerations which local planning authorities should take into account in drawing-up development plan policies and when determining planning applications for development which will either generate noise or be exposed to existing noise sources.

Methodology & Approach 12.2

12.2.1 Documents Consulted

The noise impact assessment has assessed the potential impact of noise and vibration from the proposed free range unit (including both normal noise emissions and any occasional intense noise sources) and alterations to traffic flows during the construction, operation and decommissioning phases. The following guidance has been used for the assessment;

- Technical Advice Note 11 noise 1997
- BS5228: 1997 'Noise and Vibration Control on Construction and Open Sites',
- BS4142: 1997 'Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas',
- BS7445: 2003 'Description and Measurement of Environmental Noise',
- Department of Transport 'Calculation of Road Traffic Noise' 1984
- World Health Organisation 'Guidelines for Community Noise', 1999.
- Institute of Environmental Management and Assessment (IEMA), and Institute of Acoustics (IOA) 'Guidelines for Noise Assessment', 2002
- Highways Agency 'Design Manual for Roads and Bridges Volume II', 1994

12.2.2 Baseline Noise Environment

The main sources of noise in this area are (a) road traffic (b) agricultural operations and (c) aircraft traffic (usually helicopter training). The agricultural traffic peaks during the harvest period (between May and October). During the harvest period it is common for movements of agricultural traffic to occur between the hours of 2300 and 0700.

The noise climate in the area surrounding the Glanmyddyfi site is deemed to be typical of a rural area. The principal noise sources include road traffic noise, which is influenced by reasonably high levels of HGV's associated with local agricultural activities.

12.2.3 Impact Assessment Methodology

In relation to noise, general guidelines are provided in the relevant planning document Technical Advice Note 11 – Noise 1997.

Construction Noise

TAN11 provides detailed guidance on the introduction of noise sources into a noise-sensitive area, and gives recommendations that BS5228 should apply to noise from construction sites and to industrial operations.

BS5228 provides guidance relating to the prediction and control of noise and vibration from open sites where noise from fixed plant and mobile plant has the potential to be an issue with regards to the potential disturbance of residents. In particular, this document provides guidance that is relevant to this noise assessment relating to:

- noise and vibration, and its potential for affecting neighbours of open sites;
- the prediction of environmental noise levels associated with fixed and mobile plant;
- criteria for setting noise control targets;
- the control of noise emissions from open sites; and
- the calculation of noise levels associated with plant which does not operate continuously.

Additionally, this document includes reference noise level data for various types of plant commonly associated with activities on construction sites. Noise and vibration levels generated by construction activities are regulated by guidelines and subject to local authority control. Guidance is contained within BS5228 but no fixed limits are suggested in the document.

Operational Noise

TAN11 contains comprehensive advice on the subject of noise both in the circumstances of a residential development or a noise producing development.

The subject of commercial and industrial development, in this section, reference is made to BS 8233:1987 (now superseded by BS 8233:1999).

This Standard is principally intended to assist in the design of new dwellings; however, the Standard does state that it may be used in the assessment of noise from new sources being brought to existing dwellings.

The BS 8233:1999 limits may be summarised as follows:

Gardens LAeq,16hr = 50 to 55 dB

Living rooms (internal) LAeq, 16hr = 30 to 40 dB

Bedrooms (internal) LAeq,8hr = 30 to 35 dB

Bedrooms (internal) LAmax = 45 dB

BS 8233:1999 was based on the advice contained in a draft of World Health Organisation document "Guidelines for community noise". This document was released in final form in 2000.

The WHO advice is the most useful, comprehensive, and pertinent advice in this case, because it is not specific to the circumstances of the assessment. Instead, it provides guideline values at, for example, schools, dwellings and offices.

The WHO guideline values, set, are appropriate to what are termed "critical health effects". This means that the limits are at the lowest noise level that would result in any psychological, physiological or sociological effect.

It is important to appreciate that the WHO guideline values are very stringent and are not indicative of significant impact. Instead, a report compiled by the National Physical Laboratory for the DETR concluded that noise levels below the WHO guideline values indicate "negligible effects" and significant effects may not occur until much higher values are reached.

In this respect, the WHO values are much more robust than the national planning policy objective, this being to "avoid demonstrable [i.e. real] harm to interests of acknowledged importance" (ref TAN 11).

The WHO guideline values may be summarised as follows:

Day External LAeq,16hr = 50-55 dB Internal LAeq,16hr = 35 dB Night External LAeq,8hr = 45 dB LAmax = 60 dB Internal LAeq,8hr = 30 dB LAmax = 45 dB

These criteria have been used in this case for the assessment of noise impact from site activity: ventilation fans, movements on the service pad. However, because some of these activities will vary widely, over the 16 hour day period or 8 hour night period, the LAeqT index has been normalised over a peak 1 hour period in order to ensure that a robust assessment is undertaken.

Operational Traffic Noise and Vibration

There is also potential for noise from vehicles associated with the proposed free range unit facility to impact upon sensitive receptors along the roads on which they travel. The noise levels, with and without the proposed free range unit, have been calculated using the methodology in 'Calculation of Road Traffic Noise' CRTN. The level of any change has been used to assess the impact of noise and vibration generated by operational traffic on local sensitive receptors.

12.2.4 Assessment Criteria

The impact magnitude and significance has been defined using the criteria in Table 29 and Table 30 below. These criteria have been developed for use in this assessment based on the guidance set out in the draft 'Guidelines for Noise Impact Assessment' (IEMA/IOA, 2002).

	Impact Magnitude			
Subject Area	Major	Moderate	Minor	Negligible
Nearby residents from construction/ decommissioning of proposed unit	Noise levels normally over 75dB(A)	Noise levels normally 65-75dB(A)	Noise levels normally 56 – 65 dB(A)	Noise levels normally less than 55 dB(A)
Nearby residents	Noise Rating Level	Noise Rating Level	Noise Rating Level up	Noise Rating Level >
from operational	>10 dB(A) above	equal to or above	to 10 dB(A) below	10 dB(A) below
noise	Background Noise	Background Noise	Background Noise	Background Noise
	Level	Level (up to 10 dB(A)	Level	Level
Nearby residents	Change in noise level	Changes in traffic	Change in traffic	Changes in traffic
from traffic noise and	of more than 10dB(A)	noise levels between	noise levels between	noise levels of less
vibration		3 and 10 dB(a)	1 and 3 dB(A)	than 1dB(A)

Table 29: Magnitude Criteria

Table 30: Significance Criteria

	Impact Significance		
Subject Area	Significant	Not Significant	
Nearby residents from construction of	Long term (more than a few days)	Minor or Negligible Impact	
unit	major or moderate impacts		
Nearby residents from operational	Major or moderate impact	Minor or Negligible impact	
noise			
Nearby residents from traffic noise	Major or moderate impact	Minor or negligible impact	
and vibration			

12.2.5 Limitations of the Assessment

As mentioned above, construction details to be used are not currently available to accurately estimate actual noise emissions from the proposed facility. Nevertheless worst case assumptions are utilised regarding emissions such that the following assessment is robust.

12.3 Baseline Position

12.3.1 Noise Monitoring Results

In rural areas, background levels may be between 38 - 42 dB adjacent to an existing farm this figure is likely to be towards 42 dB figure if not in excess of this.

12.3.2 Incorporated Mitigation

As part of the assessment the following has been assumed in terms of the features of the basic design and operation of the free range unit which assist in reducing noise emissions:

- Housing of most noise sources within buildings;
- Siting of buildings so that noise emitting areas face away from residential areas;
- Insulation of buildings and using double glazed windows;
- Using noise baffles areas around ventilation fans; and
- Restriction of vehicle movements other than those associated with bird removals to less sensitive periods (deliveries will take place between 07:00 and 21:00 on weekdays, 07:00 and 17:00 Saturdays and 09:00 and 17:00 on Sundays and Bank Holidays).

Assessment of Impacts 12.4

The details of the proposal at Glanmyddyfi are included in Chapter 4. The following elements of the proposal are considered to be noise emitting sources:

12.4.1 Internal Conditions

The sound from birds within the buildings will be transmitted to outdoors through the series of ventilation apertures in the elevations facing the receptors. The sound insulation of the composite material of which the buildings will be constructed is 25 dBA. The presence of ventilation apertures of overall area 1% of the elevation gives an indoors to outdoors sound reduction of 20 dBA. Measured interior sound levels of comparable bird accommodation are no higher than 67dBA.

12.4.2 Vehicle Movements on Site

There will be three main categories of movement on site: first, movements of feed HGVs delivering feed; second, movements of tractors and trailers removing manure; and third, collection of eggs. The three categories will not occur simultaneously.

There will normally be no more than one delivery of feed in any 24 hour period. Unloading of the feed would take approximately 30 minutes. Measured noise levels of delivery vehicles arriving and unloading fluctuate between 66 and 75dB (applicable at 3 metres) and is broken down between arrival (2.5 minutes) at 69dB, blowing off feed (30 minutes) at 66dB and departure (0.5 minutes) at 75dB.

Tractors and trailers removing manure will be loaded by a loader scraping manure from within the building. One loader will operate continuously scraping the buildings, the tractor and trailer will park with the trailer adjacent to the building. Two tractor and trailer units will serve the loader. When not in use all engines will be switched off i.e. when the trailers are being loaded or when the second trailer is waiting to be loaded. Manure will not be removed from the buildings between the hours of 2300 and 0700; manure removal will take place from 0700 to 2100 each day during clear out (fourteen hours). The noise levels of the tractor scraping the sheds and the tractors carting manure will have a similar measured level as the delivery vehicles, therefore the LAeq (14h)r at the garden edge of the closest sensitive receptor would be significantly more than 10 dB(A) below Background noise levels.

12.4.3 Traffic Noise and Vibration

From measurements of delivery vehicle pass-bys at speeds typical for those found on roads such as this, a delivery type vehicle is indicated as generating an LAmax = 75 dB at 3 metres.

To enable an assessment to be made over a period of time, the Single Event Noise level (SEL) for each vehicular movement must be established. In practice this is limited to the time during which the actual noise is within 10 dB(A) of the maximum and may be approximated from:

SEL $LAmax + \Delta A$ = Where

 ΔA = 10 log (((t2 - t1)/2)tref)

And

 t_1 and t_2 are the 10 dB down points of a vehicle drive-by and t_{ref} is one second. (Source - The Noise Council = "A guide to measurement and prediction of the Equivalent Continuous Sound Level").

The 10 dB down points can be calculated on the basis of vehicle speed and the attenuation with distance that would be experienced as a vehicle approaches and departs the reception point. For the vehicle speed of 32kph (20mph), $\Delta A = 5$ dB and the resulting SEL is 80 dB(A) at 3 metres.
The LAeq, T can now be calculated from the equation:

LAeq,T	=	SEL + 10 log n - 10 lo	g T - 10 log d1/3 − screening	q - 10 loq (angle of view/180)
		<u> </u>	J J 'J 'J '.	, , , , , ,

where

n	= number of events in the time period
т	= number of seconds in the time period
D1	= distance from centre line of road to receiver
angle of view	= angle of view of the access road

HGVs collecting birds may collect birds during the recognised night time hours of 2300 to 0700. The Design Manual for Roads and Bridges States that:

"Research has been conducted into the relationship between sleep disturbance, as reported in social surveys, and noise exposure, as measured or predicted by acousticians. There tends to be a rather poor correlation between reported awakenings and recorded intrusive events and, similarly, rather poor correlations between reported sleep quality and observed behaviour such as awakening or changes in sleep stage patterns. Measurements of noise from roads in Britain and Germany both show that night-time traffic noise (ie, noise between 10pm and 6am on the following day) is on average 10 dB(A) less than daytime levels (Railway Noise and the Insulation of Dwellings, DoT, 1991).

In 1982 Rice and Morgan produced a comprehensive synthesis of field and laboratory studies and suggested that sleep disturbance could be significant at quite low noise levels. In 1992, the Department of Transport completed a major study into aircraft noise and sleep disturbance. This study was based on collecting objective data on how people slept in their own homes under normal circumstances. This was done by using actimeters, a wrist-watch sized computer that is put on at night to measure limb movements (which correlate well with sleep disturbance). Data were collected on 400 subjects for 15 nights each. This was the largest set of such data ever collected.

Aircraft noise has many characteristics similar to traffic noise at night. Movements by aircraft tend to occur at irregular intervals and the level of activity is far below normal daytime levels. The main findings of this study were that, once asleep, very few people living near airports are at risk of any substantial sleep disturbance due to aircraft noise, even at the highest event noise levels above100 dB(A). At outdoor peak noise levels below 8odB(a), average sleep disturbance rates are unlikely to be affected by aircraft noise. At higher levels, and most of the noise data on which the conclusions were based were in the range 80-95 dB(A) L max, the chance of the average person being awakened is about 1 in 75. Compared with the overall average of about 18 nightly awakenings from other causes, this probability indicates that even large numbers of noisy night time aircraft movements will cause very little increase in the average person's night awakenings. Therefore, based on expert opinion on the consequences of sleep disturbance, the results of this study provide no evidence to suggest that aircraft noise is likely to cause harmful after effects. (Report of a Field Study of Aircraft Noise and Sleep Disturbance, DoT 1991)"

If the results of this study are broadly valid for road traffic then it would suggest that the risk if sleep disturbance from traffic noise at night is very small, and certainly well below the levels suggested by previous studies or analysis.

12.4.4 Construction Noise

The exact construction process will be determined by the successful contractor. It is therefore not possible to accurately calculate the likely noise and vibration levels during construction which would enable its impact to be fully ascertained.

It is considered unlikely that noise from traffic associated with the construction of the poultry unit will generate a significant impact. This is because HGV traffic levels associated with the construction phase of the poultry unit are predicted to be lower than the operational phase and will not be during night time hours. In addition, although there are likely to be additional car movements generated by construction workers travelling to and from the site, these movements are insignificant when compared to existing traffic levels and will have a minimal effect on a very small number of sensitive receptors.

12.4.5 Decommissioning

Noise from decommissioning would be similar to noise during the construction phase. As such, it is proposed that the noise controls will be put into place to ensure that the impact from decommissioning will not be Significant.

12.5 Mitigation

12.5.1 Construction and Decommissioning

In order to ensure that noise disturbance is minimised, the following noise mitigation measures shall be incorporated during the construction and decommissioning phases and implemented at all times:

- Good maintenance of plant to ensure that excessive noise and vibration levels are not generated;
- Limiting hours of delivery to avoid sensitive periods;
- Regular integrity checks of noise mitigation measures fitted to items of plant. Such measures are likely to include silencers and engine covers. Where repair or replacement is required, the plant will, where possible, be taken out of service until repair or replacement of parts has been undertaken;
- If plant or machinery is found to be generating excessive noise, unless bird welfare is at stake, the free range unit will be taken out of service until repairs can be undertaken to reduce noise levels generated;
- Plant should be switched off when not in use; and,
- High revving of engines will be minimised.

12.5.2 Operation

Noise limits for components of the proposed poultry unit will be set to ensure that background (LA90) noise levels are not exceeded. The following noise mitigation measures will be incorporated into the detailed design to ensure that operational noise impacts from the proposed poultry unit are minimised:

- The adoption of the noise management plan.
- Use of modern ventilation fans.
- Regular maintenance and repair or replacement of noisy equipment.
- Restriction of all vehicle movements other than bird removals outside the hours of 2300 and 0700.
- Insulation of sheds and provision of double glazing.
- Incorporating a noise baffle and fan canopy surrounding the ventilation fans.

12.6 Residual Impacts and Conclusions

A noise assessment of the proposed free range unit has been undertaken please see appendix 16, Noise Impact Assessment.

The report provides noise predictions and a noise impact assessment to TAN 11 and British Standard 4142:2014 for the plant installation associated with the proposed chicken shed on the nearby sensitive receivers around the site.

The significant noise-generating plant involved in the scheme is that of the supply and extract fans.

Noise monitoring exercises were conducted at locations around the site that are representative of the noise-sensitive receivers. Following this, a British Standard 4142:2014 assessment has been carried out on the basis of these measurements and relevant noise emission data.

Once all pertinent factors are taken into account, this assessment has concluded that the difference between the rating and background sound levels is -8 dB at worst and as such this represents a low impact in terms of noise emission to the dwellings in the vicinity.

The proposals are acceptable in terms of environmental noise emission; the requirements of British Standard 4142:2014 and thus TAN 11 are met.

CHAPTER $1_3 - WATER RESOURCES$

13. Water Resources

This chapter deals with the potential impacts of the proposed free range unit on water resources including surface waters, groundwater and flood risk. The main risks identified with the proposal were the risks of pollution of groundwater and surface water from nitrates from spreading and removal of manure and dirty water, the increased in surface water runoff from the site. With the appropriate best practice mitigation in place (including the use of Sustainable Drainage Systems (SuDs) all risks are reduced to minor or less. This chapter should be read in accordance with appendices 11, 14 and 15.

13.1 Introduction

This chapter forms part of the overall Environmental Statement (ES), which has been prepared to accompany the detailed planning application for the proposed free range unit upon Land to the North of Glanmyddyfi.

The chapter assesses the potential significant hydrogeological and hydrological impacts of the proposed free range unit. The assessment is based primarily on a desk-based survey of the existing hydrogeological and hydrological conditions within the area, using information from published sources and specific investigations. The sensitivity of receptors and magnitude of impacts are assessed and combined to determine the significance of each impact. Mitigation measures and the nature of any residual risks, post-mitigation are also discussed

13.1.1 Overview of Potential Impacts on Surface and Groundwater

The potential hydrological and/or hydrogeological impacts of the proposed free range unit relate to three main issues: nutrient pollution events through spreading of manure; chemical/effluent pollution events from on site; and alteration/interruption of surface and/ or groundwater flows as set out below.

13.1.2 Nutrient pollution from spreading

The risks relate to the possibility of applying too much nitrogen or of raising soil phosphorus levels above recommended limits.

13.1.3 Chemical / Effluent Pollution

Oil / fuel / chemical pollution (e.g. from incorrect storage, containment, accidental spillage and malfunction of dirty water system) could affect aquatic ecology and could also impact on the quality of water abstracted from both surface and groundwater for drinking supply,

13.1.4 Alteration / Interruption to Flow

Any alteration of natural drainage patterns could disturb natural surface and subsurface water flows to either water dependent habitats or water supply abstraction points. Concrete hardstanding areas, buildings and bunds could provide new preferential pathways or prevent water ingress into soils and interfere with the retention of flows within catchments. Alteration of surface runoff due to increased areas of hardstanding could potentially cause flooding to receptors downstream of the site.

13.1.5 Summary of Potential Impacts

Table 31 provides a summary of the potential impacts that could occur as a result of the proposed free range poultry unit.

Although a number of potential impacts are identified in Table 31 it does not necessarily follow that they would actually occur.

Key Activities	Specific Element / Activity	Potential Effect	Potential Sensitive Receptors
Construction	Use of vehicles / machinery during construction	Increase of surface run off due to compaction of soil	Surface water hydrology. Impacts on water flow which may lead to potential damage and or flooding
	Materials Management	Leakages of chemicals to ground	Principal aquifer groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems
Operation	General Operations	Leakage of chemicals etc	Principal Aquifer, groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems
	Building wash- down	Leakage of dirty water	Principal Aquifer, groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems
	Application of manure to land	Nutrient concentrations exceed recommended limits	Principal Aquifer groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems
	Use of vehicles	Spillage of Fuel	Principal Aquifer groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems
	Presence of Hard Surfaces	Alteration to run-off flows	Flood risk, effects on catchments and river flows.
Decommissioning	Use of vehicles / machinery during demolition	Increase in surface run- off due to compaction of soil.	Surface water hydrology / channel morphology. Impacts on water flow regime which may lead to potential damage and flooding.
	Materials management	Leakage of contaminants to ground	Principal Aquifer groundwater abstractions and nearby rivers via baseflow, aquatic species / ecological systems

Table 31: Potential Impacts Resulting from Activities

Legislation Planning Policy and other Guidance 13.2

13.2.1 Legislation

Guidance provided from the UK Technical Advisory Group (UKTAG) provides an overview of the environmental standards for water quality and hydromorphology arising from requirements set by the European Water Framework Directive (WFD). Consideration is given to these environmental standards throughout this assessment. The WFD was transposed into English and Welsh law in December 2003 through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.

The Nitrate Pollution Prevention Regulations 2008 regulate the use of organic and inorganic fertilisers within Nitrate Vulnerable Zones.

13.2.2 Planning Policy

The planning policy framework in the context of this development comprises the national Technical Advice Notes (TAN's) and local plans. The TAN that particularly relates to water issues is Technical Advice Note 15 – Development and Flood Risk (2004)

13.2.3 Guidance

With regard to hydrology, management of water-borne pollution and protection of ecologically sensitive areas, Natural Resources Wales has a statutory obligation to manage and control the pollution of water resources. Accordingly, it is reasonable to assume that the adoption of the EA's Best Practice Guidelines and licensing of the poultry unit under Environmental Permitting Regulations will prevent pollution to recognised standards and make any 'significant' impacts unlikely.

The EA's Pollution Prevention Guidelines (PPG

s) are the principal documents used for guidance on preventing the contamination of surface waters from construction activities. The PPGs relevant to this proposal include:

- PPG1: General Guide to the Prevention of Pollution;
- PPG2: Above Ground Oil Storage Tanks;
- PPG5: Works In, Near or Liable to Affect Watercourses;
- PPG6: Working at Construction and Demolition Sites;
- PPG7: Refuelling Facilities;
- PPG8: Storage and Disposal of Used Oils;
- PPG21: Pollution Incident Response Planning; and
- PPG26: Storage and Handling of Drums & Intermediate Bulk Containers.

Other relevant guidance includes:

- 📓 🛛 Guidance on the Groundwater Regulations 1998 (DEFRA);
- The Control of Pollution (Oil Storage) (England) Regulations 2001;
- Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors C532 (CIRIA);
- Environmental Good Practice on Site C650 (CIRIA);
- Sulvert Design Guide C168 (CIRIA);
- Sustainable Drainage Systems. Hydraulic, Structural and Water Quality Advice C609 (CIRIA);
- Sustainable Water Management in Landuse Planning C630 (CIRIA); and
- Control of Water Pollution from Linear Construction Projects: Technical Guidance C649 (CIRIA).

Guidance regarding the application of manure to agricultural land is regulated by the Nitrate Pollution Prevention Regulations 2008. A number of guidance notes in the *Guidance for Farmers in NVZs* series produced by Defra relate to the practical application of manure to the land. Where land is outside the NVZ there are no specific legal requirements, however the Code of Good Agricultural Practice for the protection of Water, Soil and Air should be referred to.

13.3 Methodology

13.3.1 Desk Study

The assessment predominantly entailed a desk study involving collation and assessment of the relevant information from the following sources:

- Grdnance Survey (OS) Landranger Map at 1: 50,000 scale
- 🖬 🛛 Groundwater Vulnerability Map 1: 100,000
- 🖌 🛛 Landmark Envirocheck Report on surface water and groundwater

13.3.2 Manure Management Plan

To assess the risks associated with the application of manure to the land and to estimate storage requirements a Manure Management Plan has been produced. The plan has been produced with reference to Guidance notes for the application of manure to agricultural land and includes a risk assessment and a calculation of land available for spreading. The plan was prepared by Agri Plan Cymru, please see appendix 10 in support of this EIA.

13.3.3 Assessment Criteria (Contamination and General Risks)

The significance of any impacts of the proposed free range unit on baseline conditions is assessed as part of the impact assessment. The sensitivity of the receptor and the magnitude of potential impact combine to determine the significance of that impact. Magnitude, sensitivity and significance criteria were developed for the conditions and environments prevailing at the site.

Magnitude

The criteria used to determine the magnitude of a potential impact are defined in Table 33. Assessment of magnitude includes consideration of the amount and intensity of disturbance and duration (i.e. whether permanent or temporary). In this assessment, consideration of likelihood is incorporated into a final risk based assessment (see below).

Magnitude	Definition
Negligible	Unquantifiable or unqualifiable change in hydrological/hydrogeological conditions (including
	water quality).
Minor	Detectable but minor change to hydrological/hydrogeological conditions. Water quality/quantity
	standards less than threshold and unlikely to affect most sensitive receptors.
Moderate	Detectable change to hydrological/hydrogeological conditions resulting in non-fundamental
	temporary or permanent consequential changes. Some deterioration in water quality/quantity
	likely to temporarily affect most sensitive receptors.
High	Fundamental change to hydrological/hydrogeological conditions (including deterioration in
	water quality/quantity) resulting in temporary or permanent consequential changes.

Table 33: Impact Magnitude Criteria

Sensitivity

Sensitivity criteria can be based both on the degree of environmental response to any particular impact, as well as the 'value' of the receptor (e.g. a n Aquifer or nearby abstraction borehole should be considered more sensitive to any impact than a non-aquifer). The sensitivity criteria developed for this assessment are presented in Table 34.

Table 34: Sens	nivity Criteria
Sensitivity	Definition
Negligible	Environment is insensitive to impact, no discernible changes e.g. non-aquifer where little or no effect on groundwater could occur.
Low	Environment responds in minimal way such that only minor changes are detectable e.g. surface water features present at some distance or groundwater resource with minimal sensitivity e.g. Minor Aquifer.
Medium	Environment clearly responds to effects in quantifiable and / or qualifiable manner e.g. reasonable proximity to a surface water course abstraction point, or Major Aquifer or sited on a Minor Aquifer.
High	Environment is subject to major change due to impact e.g. adjacent to or within 100m of a sensitive watercourse or sited directly upon a Major Aquifer / Source Protection Zone (SPZ).

Table 34: Sensitivity Criteria

Significance

The combination of magnitude and sensitivity logically combine to provide a matrix categorisation of significance. Significance levels are presented in Table 35.

		Sensitivity			
		Negligible	Low	Medium	High
	Negligible	Insignificant	Insignificant	Insignificant	Insignificant
Magnituda	Minor	Insignificant	Minor	Minor	Moderate
Magintude	Moderate	Insignificant	Minor	Moderate	High
	High	Insignificant	Moderate	High	Very High

Table 35: Significance Matrix

Qualitative Risk Assessment Methodology

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risks to receptors. The receptors may be human health, a water resource, a sensitive local ecosystem or even future construction materials. Receptors can be connected with the hazard under consideration via one or several exposure pathways (e.g. the pathway of direct contact or transport via run-off). Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard), pathway and receptor, there can be no risk. Therefore, the presence of a hazard at a site does not necessarily mean that there will be attendant risks.

Sources

Potential sources of contamination have been identified for the Glanmyddyfi site, based on a review of the proposed site uses, potential spillages from construction plant or operational chemical/waste storage etc). The nature, and the likely extent, of any contamination have also been considered, e.g. whether such contamination is likely to be localised or widespread.

Receptors

The varying effects that a hazard has on individual receptors are dependent largely on the sensitivity of the receptor. Receptors include any people, animal or plant populations, or natural or economic resources that are within the range of the potential spread of the source, and which are connected to the source by a transport pathway. Although in this instance the assessment is principally concerned with surface water and groundwater receptors.

Pathways

The mere presence of contamination does not infer a risk. The exposure pathway determines the dose delivered to the receptor and the effective dose determines the extent of the adverse impact on the receptor. A pathway which transports the contaminants to the receptor, generally involves conveyance via soil, water or air, or, in some cases, direct contact.

Exposure Assessment

By considering the source, pathway and receptor, an assessment has been made for each contaminant type, on a receptor by receptor basis, with reference to the significance and degree of risk. In assessing this information, a judgement has been made as to whether the source contamination can reach a receptor, and whether it is of a major or minor significance. The exposure risks are assessed against the present Glanmyddyfi site conditions (i.e. the 'Do Nothing Scenario').

The assessment of risk that is presented within this report is based upon the procedure outlined in the Department for the Environment Transport and the Regions' (DETR) Circular 02/2000. In addition, the DETR (now Defra), with the EA and the Institute of Environment and Health, has published guidance

on risk assessment (Guidelines for Environmental Risk Assessment and Management). This guidance states that the designation of risk is based upon a consideration of both:

- 📕 🛛 The likelihood of an event; (takes into account both the presence of the hazard and receptor and the integrity of the pathway); and,
- The severity of the potential significance (takes into account both the potential severity of the hazard and the sensitivity of the receptor).

Table 36 shows how the risk rating is achieved by combining the likelihood of the event and the degree of significance.

5					
		Significance			
		Insignificant	Minor	Moderate	High
Likelihood	Unlikely	Very Low Risk	Very Low Risk	Low Risk	Moderate / Low risk
	Low Likelihood	Very Low Risk	Low Risk	Moderate / low risk	Moderate risk
	Likely	Low risk	Moderate / Low risk	Moderate risk	High risk
	High Likelihood	Low risk	Moderate risk	High risk	Very high risk

Table 36: Risk Assessment Matrix

Under such a classification system the following categorisation of risk has been developed and the terminology adopted as shown in Table 37.

Tahle 27.	Rick	Criteria
Tuble 37:	RISK	Cinteriu

Term	Description
Very low risk	The presence of an identified hazard does not give rise to the potential to cause significant
	harm to a designated receptor.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard but it is
	likely that, at worst, this harm if realized would normally be minor.
Moderate risk	It is possible that, without appropriate remedial action, harm could arise to a designated
	receptor, but it is relatively unlikely that any such harm would be high, and if any harm were to
	occur it is more likely that such harm would be relatively minor.
High risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without
	appropriate remedial action.
Very High Risk	There is a high likelihood that severe harm could arise to a designated receptor from an
	identified hazard at the site without appropriate remedial action.

The assessment of likely significant impacts of the proposed poultry unit, both from the site and outside the site, is initially based on potential impact before mitigation. Levels of assessed impact which are moderate or above will require mitigation/management to reduce the level of impact to negligible or low levels.

13.3.4 Assessment Criteria (Flood Risk and Drainage)

It is recommended by the EA, the Department for the Environment, Food and Rural Affairs (DEFRA) and the Welsh Assembly Government that the primary assessment tool within a flood risk assessment should be the sequential test as set out in Technical Advice Note 15 Development and Flood Risk (2004). Such an assessment, however, deals almost exclusively with the risks associated with tidal and fluvial sources and not the full range of flooding sources. In addition to this, the sequential test does not provide guidance for assessing the impact of mitigation and residual risk subsequent to development.

Therefore, in order to allow for the wider assessment of flood risk the following more generalised assessment methodology has been developed. It should be noted that where applied to fluvial and tidal sources the results of the assessment should be cross checked against the results of the sequential test.

Assessment Methodology

In line with guidance set out in Technical Advice Note 15 the key to the classification is that the designation of significance (or risk) is based upon the consideration of:

The sensitivity of the receptor – takes into account the nature of the development or receptor and its likely response to increased risk;

The magnitude of the potential hazard (i.e. severity) – takes into account the potential severity and nature of the flooding; and

The probability of occurrence (i.e. likelihood) – takes into account the anticipated frequency of occurrence but also considers both the presence of the hazard and receptor, and the integrity of the pathway.

- The sensitivity of the receptor takes into account the nature of the development or receptor and its likely response to increased risk.
- The magnitude of the potential hazard (i.e. severity) takes into account the potential severity and nature of the flooding.
- The probability of occurrence (i.e. likelihood) takes into account the anticipated frequency of occurrence but also considers both the presence of the hazard and receptor, and the integrity of the pathway.

Sensitivity

When considering off-site impacts there is a general assumption that all developments are highly sensitive. The assumption can, however, typically be relaxed when considering 'Water Compatible' development or undeveloped land. Given this the sensitivity of the receptor is ranked as shown in Table 38 below:

Sensitivity	of	Poultry Unit	Off s	site			
Receptor							
Very Low		Flood Attenuation Features	 -				
Low		Water Compatible	-				
Moderate		Less Vulnerable	Und	eveloped	l Land		
High		More Vulnerable	Othe	er access	routes		
Very High		Highly Vulnerable	All	built	extension	unless	mitigating
			circu	mstance	es exist.		
			Key access routes				

Table 38: Classification of Sensitivity of Receptor

Magnitude

To classify the magnitude of the potential effects it is necessary to look at the nature and scale of the individual impacts. These include, but are not confined to, the extent of flooding, the depth of flooding, the duration of flooding and the velocity of flood waters.

Given this the magnitude of the potential effect is then ranked as shown below in Table 39.

Magnitude of Hazard	New unit	Off Site
Negligible	No potential for flooding, or no identifiable impact of flooding	No likely increase in flood severity at any off site location
Very Low	Planned or permitted flooding that does not adversely impact the built unit	-

Table 39: Matrix for Determining the Significance of the Potential Effect

Magnitude of Hazard	New unit	Off Site
Low	All of the following criteria achieved:	Likely but unquantifiable small
	Flood depths below o.3m,	increases of flood depths, durations,
	Likely flood duration below one hour	flow velocities or extent
	Flood proofing measures planned	
Medium	Any one of the following criteria achieved:	Any other measurable increase of flood
	Flood depths between 0.3m and 1m,	depths, durations, flow velocities or
	Flood flow velocity greater than 0.15m/s	extent
	Likely flood duration in excess of 1 hour	
	Any restrictions to access and egress	
High	Any of the following criteria achieved:	Any marked increase (>10%) increase in
	Flood depths greater than 1m,	flood depth, flood flow velocity or flood
	Flood flow velocities greater than 0.45m/s	duration.
	Likely flood duration in excess of 24 hours	Any change in flood extent that
		impacts additional properties including
		access

Classification of Probability of Occurrence

To classify the probability of occurrence for a potential effect, it is necessary to understand how regularly a given event or outcome is likely to occur. This can be assessed in a number of ways including assessments based on historical data, quantitative analysis, or experience from other similar sites. Often this assessment will be based on standard guidance. The probability of the potential effect is then ranked as shown below in Table 40.

Table 40: Classification of Probability of Occurrence

Probability of Occurrence	Potential Effect
Very Low	It is unlikely that any consequence will ever arise.
Low	It is unlikely that any consequence would arise within the lifetime of the unit.
	Equivalent to an annual probability of less than 0.1% or Flood Zone 1*
Medium	Circumstances are such that an event is possible in the medium term and likely over the long
	term, although not necessarily inevitable.
	Equivalent to an annual probability between 0.1 and 1% (0.1 and 0.5% for tidal) or Flood Zone
	2*.
High	Any consequence would appear likely in the medium term and inevitable in the long term
	(lifetime of the unit).
	Equivalent to an annual probability of flooding of greater than 1% (0,5% for tidal) or Flood
	Zone 3*.

Risk Assessment

Once the magnitude of the potential effect and likelihood of occurrence have been assessed these are then combined using a risk matrix (41) to assess the flood risk of each potential effect.

Table 41: Risk Matrix

		Likelihood of Occurrence				
		Very Low	Low	Medium	High	
Magnitude of	Negligible	Negligible	Negligible	Negligible	Negligible	
Potential	Very Low	Negligible	Very Low	Low	Low	
Effect	Low	Very Low	Low	Low	Moderate	
	Moderate	Low	Low	Moderate	High	
	High	Low	Moderate	High	High	

Typically flood risks assessed as low, or less, are considered acceptable. If the assessment results in moderate or high risk, additional mitigation measure will be required to facilitate development.

In some situations, the risk assessment procedure will result in an artificially low assessment of risk. This is particularly the case in situations where consequences of very rare flooding (i.e. breech scenarios) are so extreme that any residual risk, however low, should not be allowed. In such instances the assessed risk should be elevated. Such decisions must always be accompanied by detailed justification.

13.4 The Receiving Environment and Sensitive Receptors

13.4.1 Geographical Context

The site is located within a rural area.

Surface Water Drains & Sewers

Surface water from the farm land is directed into the ditch. The land has the benefit of full land drains.

Foul Sewers

There is no foul sewer connection in the vicinity to the site.

13.4.2 Hydrogeology

The site is not located within a designated Surface Water Nitrate Vulnerable Zone (NVZ) under the Nitrates Directive.

13.4.3 Flood Risk

Part of the land lies within Zone C2 as defined by the development advice referred to in Technical Advise Note 15, Development and Flood Risk (TAN 15). This means that part of the site is considered to be at risk of flooding during at least the 1 in 1000 year event and is not afforded protection from recognised flood defences. Due to the site being in excess of 1ha it has been necessary to prepare a Flood Risk Assessment for this site please see appendices 14 and 15.

TAN 15 defines the flood zones as: -

Zone A – Considered to be at little or no risk of fluvial or tidal/coastal flooding;

Zone B - Areas known to have been flooded in the past evidenced by sedimentary deposits;

Zone C – Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal);

Zone c1 - Areas of the floodplain which are developed and served by significant infrastructure, including flood defences; and

Zone C₂ – Areas of the floodplain without significant flood defence infrastructure.

The flood zones are based on annual probabilities of flooding. It is unlikely, but possible, that a flood with, for example, an annual probability of 1% will occur two years running. The flood zones show the flooding that would occur to land without the presence of flood defences.

Predicted Impact and Evaluation of Significance (Contamination and General Risks) 13.5

13.5.1 Assessment of Potential Impacts and Risk Basis for Assessment

The impact assessment has been undertaken according to the following basis regarding the nature and extent of the development.

- The proposed development will allow the accommodation of an additional 16,000 birds upon land to the north of Glanmyddyfi.
- Uses of the individual hardstanding areas may include chemical storage. _

13.5.2 Sources, Pathways & Receptors

A variety of sources, pathways and receptors have been identified as outlined below. These are generally associated with the release of chemicals, oils and fuels and dirty wash water.

Sources

- Site storage and use of chemicals, fuels and oils, and concrete and sediment/silt associated with construction; and
- Accidental release of dirty wash water or chemicals delivered to, and stored at, the site entering watercourses; and

Pathways

- Seepage of chemicals to groundwater through permeable ground; and ____
- Any chemicals/oils which seep into groundwater migrating via baseflow to nearby surface water courses;

Receptors

Receptors that would be sensitive to changes in the hydrological regime on the Glanymyddyfi site and within the surrounding area include:

- Surface water –local drainage and associated ponds.
- Groundwater Shallow groundwater and Principal Aquifer; and
- Public and private water supplies.

Impacts

The principal potential impacts are therefore considered to be as follows:

- Pollution of surface water by oil, fuel or chemicals during construction and decommissioning;
- Pollution of groundwater by oil, fuel or chemicals during construction and decommissioning;
- Pollution of surface water and groundwater water abstractions by chemicals or dirty wash water associated with operations;
- Obstruction of surface water courses causing flow alteration.

Potential impacts can be considered during three stages of development, the construction stage, the operational stage and during decommissioning.

Incorporated Mitigation

Several pollution prevention and drainage management features are inherent within the design of the proposed unit; a number of these will provide protection to surrounding water features. These are detailed below. However, the main mitigation feature will be the carrying out of all operations within a building and on hardstanding.

- The floors of the free-range unit will be constructed from reinforced concrete rendering it waterproof and so preventing potential of manure effluent seepage into groundwater.
- During the washing down of the free range unit all dirty water will be directed to a dirty water tank
- Level indicators in the dirty water tanks will be easily visible from the hardstanding area to quickly identify when the tanks need emptying.
- A diverter valve will be connected to the drainage system for the hardstanding area which will divert the yard water either to the Sustainable Drainage System or to the dirty water holding tanks. During wash down the outfall drain from the hardstanding will be diverted to the dirty water collection tanks.
- All chemical substances and hazardous materials are to be stored in accordance with EA guidelines.
- All diesel fuel and lubrication oils used during the construction period will be stored in bunded areas; diesel will be contained within double skinned tanks. Bunded areas will have a 110% capacity of the storage tank; and,
- Additionally, the use of SuDS will assist with the attenuation of any polluting surface water runoff.
- Finished Floor Levels (FFLs) are to be at least 0.3m above surrounding ground level reducing risk from flooding.

Construction and Decommissioning Phases

Impacts associated with construction will be similar to those associated with decommissioning and are considered together within this report. Potential impacts are:

Contamination of groundwater

Construction at the site will require the use and storage of a wide range of chemicals. The construction will also involve delivery of materials by heavy good vehicles and the use of construction plant on the site. Spillage or uncontrolled disposal of chemicals in any areas of the site could result in contamination of the shallow groundwater beneath the site.

Pollution of surface water

As with potential contamination to groundwater, construction will involve the use and storage of chemicals, along with the presence of delivery vehicles and mechanised construction plant. Spillage or uncontrolled disposal of chemicals in any areas of the site could rapidly lead to pollution of surface water runoff from the site from hard-standing surfaces infiltrating into the drainage system.

Table 42 provides a summary of the assessment of potential construction impacts prior to mitigation.

Nature Impact	of	Pathway	Receptor	Sensitivity of Receptor	Magnitude of Impact	Significance of Impact	Likelihood	Risk
Water Quality		Surface water run- off	River	Medium	Moderate	Moderate	Low Likelihood	Moderate / low risk
		Direct infiltration to ground	Shallow Groundwater	Low	Minor	Minot Low Likelihood	Low Risk	
		Infiltration through overlying glacial till	Principal Aquifer	High	Minor	Moderate	Low Likelihood	Moderate / low risk

Table 1.2. Unmitiaated	Construction	and Decommissioning	Phase Impacts
Tuble 42. Ommuguleu			i nusc inpucts

13.5.3 Operational Phase

This section of the assessment relates to both on-site and off-site impacts to the hydrological environment that could potentially arise from operation of the proposed poultry unit.

Potential pollution impacts are:

Pollution of site runoff by oils and hydrocarbons

Routine use / presence of lorries and other vehicles across the site and on access routes and associated accidental spills or minor leaks all have the potential to contaminate runoff in the locality with hydrocarbons or other chemicals. This could then be flushed through the system during heavy rainfall or flooding events which could then lead to contamination of receptors downstream of the site.

If such contamination occurred, it could lead to degradation of water quality in the downstream receptors and associated ecological damage.

Contamination of groundwater

The operational phase will involve the wash down of the hard standing area to the front of the buildings and the buildings themselves. Leakage of dirty water could occur if operational practices are not developed and managed efficiently.

Routine use of heavy goods vehicles, cars and other vehicles across the site and chemicals stored and utilised on site, all have the potential to create contamination which could then infiltrate into the shallow groundwater either through cracks in hardstanding, or through runoff onto non-developed or designed infiltration areas.

Given the permeability of the shallow geology it is likely that there could be some migration of any released contamination, particularly with regards to shallow groundwater.

Table 43 provides a summary of the potential operational phase pollution related impacts prior to mitigation.

Table 43: L	Inmitigatea Operati	onal Phase Impacts						
Source	Nature of Impact	Pathway	Receptor	Sensitivity of Receptor	Magnitude of Impact	Significance of Impact	Likelihood	Risk
Site (operation and storage)	Pollution by oils and hydrocarbon	Surface water run off	Drainage network and associated ponds	Low	Moderate	Minor	Unlikely	Very low risk
		Surface water run off	Local ditches	Medium	Moderate	Moderate	Unlikely	Low Risk
		Direct infiltration to Ground	Shallow Groundwater	Low	Moderate	Minor	Unlikely	Very Low Risk
		Infiltration through overlying glacial drift	Principal Aquifer	High	Minor	Moderate	Unlikely	Very Low Risk
	Pollution by dirty water	Surface water run off	Drainage network and associated ponds	Low	Negligible	Insignificant	Unlikely	Very Low Risk
			Local ditches	Medium	Negligible	Insignificant	Unlikely	Very Low Risk
			Shallow Groundwater	Low	Negligible	Insignificant	Unlikely	Very Low Risk
			Principal Aquifer	High	Negligible	Insignificant	Unlikely	Very Low Risk

13.5.4 Impact Assessment

Whilst some potential impact significances are as high as moderate all risks from the operation of site are classed as low risk or lower.

13.5.5 Mitigation (Contamination and General Risks)

Construction and Decommissioning Phase

Mitigation measures during the construction/ decommissioning phase will help to manage any identified negative impacts deemed to be significant. If possible, works should be avoided, or sensibly managed, in accordance with adverse ground and/or weather conditions occurring such as heavy rainfall or waterlogged soils.

It should also be noted that a minimum 5m wide buffer zone should be left between any works associated with the construction of the proposed building, or the plant itself and any watercourses. Should any of the works during construction be likely to affect a local watercourse (e.g. diversions - whether temporary or permanent), permission will need to be sought from the EA under the Land Drainage Act of 1991 well in advance of construction commencing. At this stage it is not thought that this will be necessary.

Contamination of Groundwater and Surface Water

The storage of polluting materials will be kept to a minimum where practicable, and where less hazardous or inert materials are available these should be specified. For example, construction materials containing sulphides or cement which could potentially alter the pH of runoff will be avoided and the use of biodegradable hydraulic oils could be considered for construction plant. In addition, absorbent mats/pads, absorbent granules and sand will be made available, and site operatives trained in their use, to deal with any spillages.

Further measures to be adopted include locating mobile plant, batching plant, materials storage, topsoil storage, and waste disposal facilities at least 20m from water features. Further, the positioning of fuel storage tanks and other potentially polluting materials and maintenance facilities will be on bunded areas of hard standing with dedicated drainage systems. The bunded areas will be protected from direct rainfall by organic mulch or a temporary sward, and stored materials on site will be checked regularly for containment integrity (both primary and secondary), quantity stored and security of storage.

Construction of concrete structures during the construction phase would be monitored to prevent cementitious material entering any watercourses. Pre-cast work or permanent formwork will reduce the amount of in-situ concreting required adjacent and above the watercourses. Ready mix suppliers will be used in preference to on-site batching. Washing out of concrete wagons or other equipment used in concreting operations will be undertaken in designated contained washout areas. These should be located away from all watercourses, drains and groundwater protection zones, and should be impermeable.

Summary

Given appropriate mitigation as detailed above, the residual potential for impacts on both groundwater and surface water contamination occurring during the construction phase and the significance of any contamination will be minimised.

Operation

Pollution from Process Wastes

Management of manure removal will be undertaken with due caution to prevent pollution release. The SuDS system described below (re: Flood Risk) will also provide some level of protection from waste entering the water environment.

Pollution of Site Runoff and Groundwater by Oils and Hydrocarbons

Any operational activities that carry significant risk of oils/hydrocarbon spillage must comply with TAN15. Any operational activities that carry significant risk of oils/hydrocarbon spillage will be subject to a separate task specific environmental risk assessment under the Environmental Permitting Regulations regime and associated licences from the EA.

Implementation of these mitigation measures will ensure that residual impacts on the identified receptors and their significance are minimised. Table 43 provides a summary of mitigated operational phase impacts to the water environment.

13.5.6 Assessment of Residual Impact Significance

Given the additional mitigation set out above, all significant impacts for the construction/decommissioning and operation of the proposed free range unit will be mitigated to a minor level (or less) for all the identified potential impacts. The risks of impact are also reduced to low risk (or less).

All operations will occur on hardstanding within a building, significant protection from pollution incidents is provided to the underlying principal aquifer and surface waters. The mitigation measures specified will, therefore, minimise any potential impacts. Incorporation of standard best practice during the construction works and during operation will also ensure that no major pollution incidents occur and thus protect the aquifer and surface waters. The resulting post-mitigation impacts are set out below in 44 for the risks from the construction/ decommissioning phase and in Table 45 for the operational phase.

Following mitigation, all risks from potential impacts have been reduced to low (or less than) and likelihood is reduced to low likelihood or lower.

Table 44 Mitiaated Construction and Decommissioni	na Phase Impacts
radie 44. miligalea conscidendir ana Decommissioni	ig i nuse impacts

Nature of Impact	Pathway	Receptor	Sensitivity of Receptor	Magnitude of Impact	Significance of Impact	Likelihood	Risk
Water Quality	Surface water run- off	Local ditches	Medium	Negligible	Insignificant	Unlikely	Very Low Risk
	Direct infiltration to ground	Shallow Groundwater	Low	Minor	Minor	Unlikely	Very Low Risk
	Infiltration through overlying glacial till	Principal Aquifer	High	Minor	Insignificant	Unlikely	Very Low Risk

Table 45: Mitigated Operational Phase Impacts

Source	Nature of Impact	Pathway	Receptor	Sensitivity of Receptor	Magnitude of Impact	Significance of Impact	Likelihood	Risk
Site (operation and storage)	Pollution by oils and hydrocarbon	Surface water run off	Drainage network and associated ponds	Low	Negligible	Insignificant	Unlikely	Very low risk
		Surface water run off	Local ditches	Medium	Negligible	Insignificant	Unlikely	Very Low Risk
		Direct infiltration to Ground	Shallow Groundwater	Low	Minor	Insignificant	Unlikely	Very Low Risk
		Infiltration through overlying glacial drift	Principal Aquifer	High	Minor	Insignificant	Unlikely	Very Low Risk
	Pollution by dirty water	Surface water run off	Drainage network and associated ponds	Low	Minor	Insignificant	Unlikely	Very Low Risk
		Surface water run off	Local ditches	Medium	Negligible	Insignificant	Unlikely	Very Low Risk
		Direct Infiltration to Ground	Shallow Groundwater	Low	Minor	Insignificant	Unlikely	Very Low Risk
		Infiltration through overlying glacial drift	Principal Aquifer	High	Minor	Insignificant	Unlikely	Very Low Risk

13.6 Flood Risk

13.6.1 Flood Risk Assessment

The Flood Risk Assessment was carried out in line with TAN15 for the proposed site as the site exceeds 1 ha. For any site larger than one hectare the EA's standing policy, in accordance with TAN15, states that an assessment must be undertaken. In addition to assessing external risk of flooding to the site, an assessment must demonstrate that the proposed development would not exacerbate flooding elsewhere. On Brownfield sites it is also necessary to demonstrate that peak rates of flow would be reduced back towards the levels that would be expected from a Greenfield site.

Flood Risk

Part of the land lies within Zone C2 as defined by the development advice maps (see Figure 1.1) referred to in Technical Advise Note 15, Development and Flood Risk (TAN 15). This means that part of the site is considered to be at risk of flooding during at least the 1 in 1000 year event and is not afforded protection from recognised flood defences.

13.6.2 External Flood Sources

Within TAN15 it is recommended that a Flood Risk Assessment should consider all possible sources of flooding for a given site. The following sources of flooding are summarised in Table 46;

	<i>y by p c c c c c c c c c c</i>	
Flood Type	Source	Potential Pathway
Fluvial	Drains on site	Blockage and exceedance of channel/retention area
	Ponds and drains off site	Blockage and exceedance of channel/retention area
Tidal	None	None
Drainage	Mains Supply	Pipe burst and overland flow
	Surface drains and sewers	Blockage and surcharge followed by overland flow
	Foul sewers	Blockage and surcharge followed by overland flow
Overland flow	None	None
Groundwater	Sandstone	High groundwater levels expressed at surface

Table 46: Summary of potential flood source

13.6.3 Risk Assessment

- 13.6.4 The risk assessment methodology used is set out in section Table 46 above and is based on guidance provided in TAN15. The guidance recommends that flood risk is assessed through consideration of both the magnitude of potential impacts and the probability of occurrence. The magnitude of impact is dependent on two factors; the sensitivity of potential receptors and the severity of the flooding. There are therefore three criteria on which flood risk is assessed. These are:
 - Sensitivity of the receptor
 - Severity of the flooding; and
 - Probability of occurrence.

13.6.5 Sensitivity of Receptors

The proposed development is a building used for agriculture, thus, under the sequential test defined within TAN15 the development would be classified as a "less vulnerable development". Given this sensitivity has been defined as moderate.

Development in general has the potential to impact the flood risk posed to off-site receptors. All offsite development is considered to have a very high sensitivity to any increase in flood risk and, therefore, it is important that any adverse off-site impacts on flood severity or frequency are avoided.

13.6.6 Severity and Probability of Flooding

The severity and probability of flooding are both fully defined above and the classification of these criteria is discussed in the following sections.

Tidal

Not relevant at the Glanmyddyfi site given the distance from tidal watercourses.

Drainage and Mains Supply

The drainage and mains supply are a significant distance from the site that in the event of a system collapse the total volume of flood waters is not expected to be large enough to cause a flooding event at the site.

Overland Flow

The site is on flat land with rising land to the north of the development and falling to the south and county highway. No potential pathways are therefore identified for flooding from overland flows.

Groundwater

The topsoil across the site is underlain by freely draining which have the potential to transmit large volumes of water, whist the site is flat it is at the bottom of a slope therefore soakaways will be created to retain and control any flow of groundwater. There is therefore a low potential for flooding to occur from groundwater seepage.

13.6.7 Summary of Risks

The probability and severity of each type of flooding has been assessed in line with the methodology and guidance set out above. This is then combined with the assessment of receptor sensitivity to define the level of flood risk on a scale ranging from negligible to high. These are outlined in Table 47.

Typically risks assessed to be low or less are acceptable whereas risks assessed to be moderate or high require additional mitigation or management to enable the development to proceed. All the risks to the poultry unit are assessed as being either low or very low. Thus, no further mitigation or management is required in respect of flood risk.

Table 47: Flo	ood Risk Summary					
Flood	Source	Pathway	Sensitivity	Magnitude of potential hazard	Probability of Impact	Flood Risk
Fluvial	River and drains	Blockage and exceedance of channel/retention area	Moderate	Negligible	Low	Negligible
Drainage	Mains Water	Pipe burst and overland flow	Moderate	Negligible	Very Low	Negligible
	Surface Water Drains and Sewers	Blockage and surcharge followed by overland flow	Moderate	Negligible	Very Low	Negligible
	Foul Sewers	Blockage and surcharge followed by overland flow	Moderate	Negligible	Very Low	Negligible
Groundwater	Underlying glacial Drift	High groundwater levels expressed at surface	Moderate	Very Low	Very Low	Negligible
Increased impermeable areas		Increased surface water runoff	Moderate	Moderate	High	High

13.6.8 Internal Flood Sources

Increases in the area of the site covered by impermeable surfaces will lead to higher peak flows from the site and faster flows off the site. This will then discharge into the local drainage system and could contribute to an increased flood risk from the local watercourses and downstream of the site. The sensitivity of the receptor is classed as medium, and a medium magnitude of potential. The resulting impact is moderate. There is high probability of occurrence, with a resulting high risk of flooding of downstream receptors.

Increased surface water runoff from increases in impermeable areas poses a high risk of flooding to downstream receptors and will require mitigation.

13.6.9 Flood Risk Mitigation

Site Drainage Systems

The proposals will result in approximately 80% of the site area being converted to an impermeable surface (hardstanding). This increase in impermeable surface area could have an impact on receptors downstream of the site and mitigation is required.

EA's policy for site redevelopments is that runoff from a site should not be increased. Drainage systems for the site should be designed based on the 1% annual probability design event. Additionally, potential increases in storm severity associated with climate change need to be considered (20% increase in rainfall depths).

Site drainage should be designed based on sustainable drainage principles as laid out in guidance documents including TAN15. The most preferable option for drainage receptors is infiltration drainage or, where this is not possible, or does not provide sufficient capacity; attenuated discharge to watercourses should be sought. Discharge to sewers should only be considered where the above options are not available.

Site drainage should be designed based on sustainable drainage principles as laid out in guidance documents including TAN15. The most preferable option for drainage receptors is infiltration drainage or, where this is not possible, or does not provide sufficient capacity; attenuated discharge to watercourses should be sought. Discharge to sewers should only be considered where the above options are not available.

Sustainable Drainage System

Policy for site development is that runoff from a site should not be increased and that a decrease of site runoff towards Greenfield levels is desirable. Where possible, this should be done using **Sustainable Drainage Systems** (SuDS).

A quantitative assessment of the anticipated increase in run-off has been undertaken by estimating the greenfield peak run-off rates and peak run-off rates expected upon completion of the development. The volumes of storage required to limit predicted runoff rates to original greenfield rates have been calculated.

13.6.10 Assessment of Residual Impact Significance

Although no significant flood risks have been identified appropriate SuDS will be deployed to ensure the poultry unit does not contribute to flooding of downstream receptors. With regards to flood risk, the application of SuDS will ensure runoff from the site will remain at Greenfield levels, resulting in no impact on flood risk.

13.7 Surface water / Groundwater Pollution – Application and storage of poultry manure

13.7.1 Introduction

This section of the report deals with the issues surrounding the impact of the proposed unit on water resources through generation, storage, transport and application to land of all dirty water, slurry and manure likely to be produced by the birds at the free range unit.

13.7.2 Legislative Framework

The leaching of nitrogen from fields to watercourses has severe implications upon water quality. Consequently the nitrate pollution prevention regulations 2008 have been introduced to implement the European Community's Nitrates Directive, to reduce nitrogen losses from agriculture to water. Glanmyddyfi is not within a Nitrate Vulnerable Zone.

13.7.3 Methodology

The application of animal manure, slurry and dirty water to land is planned using the principles laid out in the Defra Guidance notes for Farmers within Nitrate Vulnerable Zones derived from the Nitrate Vulnerable Zones Regulations 2008 which lays down quantitative limits for the application of nitrogen to land.

A Manure Management Plan has been produced in order to identify the risks associated with the application of poultry manure to the land. The plan is based on an understanding of the soils and climate of the area and the identification of spreading risks, calculation of manure and dirty water production.

First, a water features survey has been carried out to identify land where material should not be spread at any time. A ten-metre strip adjacent to all watercourses should be left untreated to avoid direct pollution of surface waters. Risk of pollution of vulnerable groundwater sources such as wells, springs and boreholes is reduced by designating a 50 metre radius non-spreading zone around such sources, variable according to the local geology and topography. Additional areas upon which materials should not be spread include very steep slopes with a risk of run-off all-the-year-round, areas such as SSSIs that are subject to management agreements.

The next stage is to match the quantities of nutrients supplied by the material to the area of land available for application. Current guidance is that there should be sufficient land available so that material can be spread within the requirement so that the total amount of nitrogen in livestock and other organic materials does not exceed a threshold of 250kg/ha/year. This figure includes manure deposited by grazing livestock. Furthermore, the amount of available nitrogen in organic material applied to crops should not be more than the crop needs.

The third stage is to assess the risk of pollution that might arise from the application of the material to land and estimate the number of months that these risks apply. Cropping and soil conditions might also limit land spreading because of the chance of damage. These limitations have been assessed by the production of the Manure Management Plan, the applicant having undertaken a survey of its own landholding in order to assess the risk of spreading material. No manure will be applied to the farm land at Glanmyddyfi, all manure will be exported off farm but the aforementioned will be adhered to on the land which will receive manure as per the manure management plan.

Land farmed by the applicant has been divided into three categories according to the criteria laid out in DEFRA guidance leaflet: *Leaflet 8 Guidance for Farmers in Nitrate Vulnerable Zones – Field application of organic manures* and are summarised in Table 48.

1 uoic 40. Ciussijie	rate 40. Classification of Lana Spicaling						
Classification	Restrictions on Application	Location of Area					
Non-spreading areas (Red)	At all times of year	Within at least 10 metres of either side of any surface water including ditches, temporary dry ditches and piped ditches.					

Table 48: Classification of Land Spreading

Classification	Restrictions on Application	Location of Area
		Within at least 50 metres of any spring, well, borehole or open reservoir.
		Very steep slopes where run-off is a high risk throughout the year.
Non-spreading areas (White)	At all times of year	Non-farmed areas – buildings, roads, tracks
		Land use – e.g. woodlands etc
		Fields or part fields next to a watercourse, spring or borehole when the surface is severely compacted ¹ or waterlogged.
	No solid or liquid effluent	Fields or part fields that are likely to flood sometime in most winters.
Very High Risk (Orange)	should be applied during the period of Field	Field or part fields next to a watercourse, spring or borehole when the soil is at
	Capacity ²	a steep slope
		a moderate slope and a slowly permeable soil (i.e. a clay soil or one through which water passes only slowly)
High Risk (Yellow)	No more than 50m ³ /hectare of liguid effluent should be	Field or part fields next to a watercourse, spring or borehole when the soil is at
	applied at any one time	field capacity (in winter) and there is:
	whilst the fields are at Field	a moderate slope and a well-drained soil
	Capacity and at least three weeks between	a slight slope and a slowly permeable soil
	applications	All fields or part fields with effective pipe or mole drains
		that are not already coloured red or orange ³ (see extra limitations below).
		Very shallow soils (less than 30 cm) over gravel or rock, e.g. limestone, chalk, slates and shales.
Low Risk (Green)	Most of the year	Areas with no mole drains or any of the above.

¹Severely compacted is when rain stays on the surface after rainfall.

² Field capacity is when the soil becomes fully wetted and more rain would cause water loss by drainage. This normally happens in autumn and lasts until the spring.

Fields or part fields which in the last 12 months have been pipe drained, mole drained or sub-soiled over drains should not be used for spreading.

13.7.4 Identification of land available for spreading

The entire landholdings have been assessed on the basis of 250kg/ha. All surface water features have been surveyed and taken into account during the calculation of the land available for spreading.

13.7.5 Manure and Effluent Production

It is proposed that the whole of the free range unit will have 16,000 birds. Please read this section in the context of appendix 10.

Guidance Note - Assessing the impact of ammonia and nitrogen on designated sites from new and expanding intensive livestock units. Reference Number GN020 Published Oct 2017

Operational Guidance Note – Assessment of ammonia and nitrogen impacts from livestock units when applying for an Environmental Permit or Planning Permission. Guidance Note Reference Number 41 Published March 2017.

Quick Guide 9 - Poultry Units: Planning permission and environmental assessment. Guidance for applicants, local planning authorities and NRW staff. Draft for trail with Powys Local Planning Authority. March 2017.

13.7.6 Dirty Water Production

Wash water from washing down is diluted wash water with a low nitrogen content and therefore can be spread directly on land at all times of the year and does not have to be included within the calculation of nutrient loading for the purpose of field application. Dirty water will be spread directly onto the adjoining land thereby eliminating the need to travel on the local highway.

In providing further detail regarding the stone, free draining areas outside of the pop holes, this area is used to clean the feet of the birds before they enter the unit after ranging and to have such a standard practice within all poultry units across Wales.

13.7.7 Manure Storage

All manure will be exported off the holding. No manure will be stored on site.

13.7.8 Other Nutrient Leaching

Poultry manure is also a significant source of phosphorous, another essential plant nutrient. However, if applied excessively it will lock up other minerals thereby decreasing crop yields. Excessive phosphorous application can lead to eutrophication of watercourses, ultimately killing aquatic life. Current soil indices across the farm are significantly below 4.

13.7.9 Environmental Permitting Regulations

In addition to the measures detailed above, it is a requirement under the Environmental Permitting (England and Wales) Regulations 2011 that the site has a Permit to operate. Under the Environmental Permitting regime the emissions of the proposal to groundwater are assessed within the requirements of Best Available Techniques.

13.7.10 Discussion and Conclusions

The main limitation on stocking rates at the proposed free range unit is the availability of land. In order to maximise the efficiency of the farming operations and reduce the risk of pollution, manure arising from the proposed unit will be applied to the land with the recommendation of good agricultural practice on the land within the control of the applicant as appropriate.

Enough suitable land is available within the applicant's holding to enable manure to be applied to land in a way that is beneficial to crops and presents a minimal risk of pollution to surface waters in line with the Code of Good Agricultural Practice for protecting Water, Soil and Air.

13.7.11 Mitigation against Nutrient Overloading

Regular soil testing is carried out by the applicant across the land farmed by the applicant; nutrient (phosphate and nitrogen) levels of the soils are recorded.

Follow Up Actions 13.8

Short term surveillance monitoring will be undertaken to ensure that no detrimental impacts occur during site construction, decommissioning and operation. This short surveillance monitoring should include specific water quality monitoring for shallow groundwater and surface water monitoring and assessment of existing data regarding the biological health of the adjoining watercourses. Such monitoring will be carried out by the site operator.

Conclusions 13.9

A number of potential impacts on the local hydrology and hydrogeology have been identified as a result of the construction and operation of a free range unit at the site.

Potential impacts include the risk of groundwater and surface water contamination from oils and hydrocarbons and dirty water.

The operation of a free range unit on this site has the potential to negatively impact on the hydrology and hydrogeology of the area through the contamination of surface water and groundwater. Employing appropriate construction techniques and good design will ensure that these risks will be successfully mitigated.

The significance of such impacts has been systematically evaluated and mitigation measures for each of the impacts have been identified. Following mitigation, the significance of residual impacts is all reduced to a minor level or below.

CHAPTER 14 – SOILS

Soils 14.

This chapter assesses the impact of the proposals on soils on site and soils to which poultry manure will be applied. No significant impacts upon soils are envisaged.

Introduction 14.1

14.1.1 Introduction to the Issues

This chapter considers the baseline soil conditions and of the potential impact to soils that may result from the construction, operation and decommissioning of the proposed free range unit and the spreading of poultry manure on agricultural land.

Overview of Potential Impacts on Soils 14.2

In the absence of mitigation, the potential impacts to soils arising from the proposed free range unit include, but are not limited to, the following:

- Construction: Compaction of soils, and removal of surplus soil and isolated occurrences of soil contamination;
- Operation - on-site: Contamination of soils from potential spillages and leaks on site including hydrocarbons and liquids originating from the free range unit; and
- Operation off-site: Compaction of soils from spreading of manure, contamination from ----heavy metal inputs
- Decommissioning: Contamination could arise during the decommissioning process from chemicals/materials stored on-site during operation and the exposure of soil as the hard standing is removed.

Impacts on soils may lead to secondary effects on groundwater, surface water and ecological receptors and therefore reference should also be made to Chapters 10 – Ecology, and 12 - Water Resources.

Summary of Potential Impacts

Table 50 provides a summary of the impacts that could potentially occur as a result of the free range unit. However, it does not necessarily follow that all these impacts would actuality occur.

Key Activities	Specific Element/Activity	Potential Impacts Potential Effect	Potential Sensitive Receptors
Construction	Use of heavy Machinery	Compaction of soil, increased runoff	Soils
Operation	Use of free range unit	Leaks of potential contaminants. Examples include, but not limited to: manure leachates; dust; process chemicals; oils etc.	Soils
Operation	Application of poultry manure to agricultural land	Compaction of soil, increased run off	Soils
Operation	Application of poultry manure to agricultural land	Heavy metal and Veterinary Medicine input to soils	Soils
Decommissioning	Removal of free range unit	Leaks of potential contaminants. Examples include, but not limited to: manure leachates; dust; process chemicals; oils etc.	Soil

Table 50: Potential Impacts Resulting from the Poultry Unit

Key Activities	Specific Element/Activity	Potential Impacts Potential Effect	Potential Receptors	Sensitive
Decommissioning	Removal of hard standing/buildings	Exposure of soils which could lead to leaching of any contaminants and increased sediment load	Primarily soils	

14.3 Methodology

14.3.1 Methodology and Relevant Guidance/Standards

The assessment of potential impacts on soils arising from the proposed free range unit has been undertaken by analysing any interactions between the construction, operational and decommissioning processes on soil conditions. This assessment is inevitably linked with the assessment of water resources (Chapter 12) and follows a similar methodology.

The assessment identifies the likely risks of soil contamination during the construction, operational and decommissioning phases of the free range unit. This involves assessing the significance of any potential effects by determining the sensitivity of the receptor and the magnitude of the potential effect. A qualitative risk assessment has been undertaken to establish the significance of possible effects through consideration of the likelihood of an event and the severity of the hazard to the soil.

14.3.2 Assessment Criteria

The significance of any impacts of the proposed free range unit on baseline conditions is assessed as part of the impact assessment. The sensitivity of the receptor and the magnitude of any potential impact combine to determine the significance of any impact.

Magnitude, sensitivity and significance criteria were developed for the conditions prevailing at the site and are detailed below. In this assessment, consideration of likelihood of the effect occurring is also incorporated into a final risk based assessment.

Magnitude

The criteria used to determine the magnitude of a potential impact are defined in Table 51 below. Assessment of magnitude includes consideration of the amount and intensity of impact and the duration of that impact (i.e. whether permanent or temporary).

Magnitude	Definition
Negligible	Unquantifiable or unqualifiable change in soil conditions
Minor	Detectable but minor change to soil conditions. Soil quality standards less than threshold and
	unlikely to affect most sensitive receptors (e.g. a minor spillage)
Moderate	Detectable change to soil conditions resulting in non-fundamental temporary or permanent
	consequential changes. Some deterioration in soil quality likely to temporarily affect most
	sensitive receptors (e.g. a minor spillage).
High	Fundamental change to soil conditions (including deterioration in soil quality) resulting in
	temporary or permanent consequential changes (e.g. major spillage resulting in dangerous levels
	of contamination).

Table 51: Impact Magnitude Criteria

Sensitivity

Sensitivity criteria can be based both on the degree of environmental response to any particular impact, as well as the 'value' of the receptor (e.g. greenfield soils with an agricultural land use are more sensitive than brownfield soils present on an industrial/commercial site). The sensitivity criteria developed for this assessment are presented in Table 52.

Table 52: Sensitivity Criteria

Sensitivity	Definition
Negligible	Environment is insensitive to impact, no discernible changes e.g. soils are not in use, the land has
	an industrial/ commercial land use and/or mainly covered by hard standing.
Low	Environment responds in a minimal way such that only minor changes are detectable e.g.
	landscaped areas
Medium	Environment clearly responds to effect(s) in quantifiable and/or qualifiable manner e.g. low grade
	agricultural land, recreational ground.
High	Environment responds to major change(s) e.g. agricultural land use for food production,
	allotments.

Significance

The combination of magnitude and sensitivity logically combine to provide a matrix categorisation of significance. Significance levels are presented in 53.

Table 53: Significance Matrix

		Sensitivity					
		Negligible	Low	Medium	High		
Magnitude	Negligible	Insignificant	Insignificant	Insignificant	Insignificant		
	Minor	Insignificant	Minor	Minor	Moderate		
	Moderate	Insignificant	Minor	Moderate	High		
	High	Insignificant	Moderate	High	Very High		

14.3.3 Risk Assessment

Qualitative Risk Assessment Methodology

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risks to receptors. The receptors may be human health, agricultural land, a water system, a sensitive local ecosystem or even future construction materials. Receptors can be connected with the hazard under consideration via one or several exposure pathways (e.g. the pathway of direct contact or indirect transport by wind/water etc). Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard), pathway and receptor, there can be no risk.

Thus, the mere presence of a hazard at a site does not mean that there will necessarily be attendant risks.

Sources

Potential sources of contamination are identified for the site and agricultural land on which manure will be spread, based on a review of the proposed uses. Not only the nature but also the likely extent of any contamination is considered, e.g. whether such contamination is likely to be localised or widespread.

Pathways

The mere presence of a contaminant does not infer a risk. The exposure pathway determines the dose delivered to the receptor and the effective dose determines the extent of the adverse effect on the receptor. The pathway which transports the contaminants to the receptor or target generally involves conveyance via soil, water or air or may be direct.

Receptors

The varying effects of a hazard on individual receptors depend largely on the sensitivity of the receptor. Receptors include any people, animal or plant population, or natural or economic resources within the range of the source which are connected to the source by the transport pathway, although in this instance the assessment is concerned primarily with soils.

Exposure Assessment (Likelihood of Occurrence)

By considering the source, pathway and receptor, an assessment is made for each contaminant on a receptor by receptor basis with reference to the significance and degree of the risk. In assessing this information, a measure is made of whether the source contamination can reach a receptor, determining whether it is of a major or minor significance (as set out above).

The assessment of risk presented here has been based upon the procedure outlined in the Department for the Environment Transport and the Regions (DETR) Circular o2/2000. In addition, the DETR (now Defra) with the EA and the Institute of Environment and Health, has published guidance on risk assessment (Guidelines for Environmental Risk Assessment and Management). This guidance states that the designation of risk is based upon a consideration of both:

- The likelihood of an event; (takes into account both the presence of a hazard and receptor and the integrity of the pathway); and
- The severity of the potential significance (takes into account both the potential severity of the hazard and the sensitivity of the receptor).

Table 54 shows how the risk rating is achieved by combining the likelihood of the event and the degree of significance.

Significance								
	High Moderate Minor Insignificant							
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Low risk			
(likelihood)	Likely	High risk	Moderate risk	Moderate/Low risk	Low risk			
	Low Likelihood	Moderate risk	Moderate/low risk	Low risk	Very Low risk			
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very Low risk			

Table 54: Risk Assessment Matrix

Under such a classification system the following categorisation of risk has been developed and the terminology adopted as shown in Table 55.

Term	Description
Very High Risk	There is a high likelihood that severe harm could arise to a designated receptor from an
	identified hazard at the site without appropriate remedial action.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without
	appropriate remedial action.
Moderate Risk	It is possible that, without appropriate remedial action, harm could arise to a designated
	receptor. It is relatively unlikely that any harm would be high, and if any harm were to occur
	it is more likely that such harm would be relatively minor.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard but it is
	likely that, at worst, this harm, if realised, would normally be minor.
Very low risk	The presence of an identified hazard does not give rise to the potential to cause significant
	harm to a designated receptor.

Table 55: Risk Criteria

The assessment of likely significant impacts of the proposed free range unit is initially based on potential impact before mitigation and is addressed in sections to follow. Levels of assessed impact which are moderate or above require mitigation/management to reduce the level of impact to negligible or low levels. Proposed mitigation is discussed in Section 13.7 and the residual effects after mitigation are presented if required following this section.

14.4 The Baseline Environment and Sensitive Receptors

14.4.1 Geology and Soils

The site geology and the geology of soils on which application of manure is proposed is summarised in Table 56.

Table 56: Soil types across controlled land

on of Named Rock Units » Result Details

The BGS Lexicon of Named Rock Units — Result Details

Nantmel Mudstones Formation

NTM	Preferred Map Code:	Ntm		
Full				
Ashgill Series (OA) — Ashgill Series (OA)				
Silty mudstones with dark burrow mottles. Sever sandstones. Thick unit of interbedded conglome Doldowlodd Conglomerate (Member) locally pre-	ral thick units of laminated h rates, sandstones, pebbly n sent.	emipelagite. Scattered packets with thin nudstones and mudstones known as		
Gradational incoming of sequence, dominated b St Cynllo's Church Formation.	y burrow mottled mudstone	s, above the black laminated mudstones of the		
Sharp incoming of coarse silty mudstones with s the Doldowlod Conglomerate (Member).	ilt laminae or slumped mud	stones, above burrowed mottled mudstones of		
Not defined.				
Central Wales.				
Not Applicable (-)				
Camlo Hill Group (-4815)				
none recorded or not applicable				
Strato	types:			
Road section on A44 west of Nantmel Village.				
Reference(s):				
none recorded or not applicable				
1:50K maps on which the lithostratigraphical unit is found, and map code used:				
	NTM Full Ashgill Series (OA) — Ashgill Series (OA) Silty mudstones with dark burrow mottles. Severed sandstones. Thick unit of interbedded congtomerate sandstones. Thick unit of interbedded congtomerate Doldowlodd Congtomerate (Member) locally pressendstones. Thick unit of interbedded congtomerate bit Cynllo's Church Formation. Gradational incoming of sequence, dominated bit Cynllo's Church Formation. Sharp incoming of coarse silty mudstones with stree Doldowlod Conglomerate (Member). Not defined. Central Wales. Not Applicable (-) Camlo Hill Group (-4815) none recorded or not applicable Strato Road section on A44 west of Nantmel Village. Referencicable 1:50K maps on which the lithostratigrap	NTM Preferred Map Code: Full Ashgill Series (OA) — Ashgill Series (OA) Image: Second Sec		

14.5 Assessment of Impacts and Risk

14.5.1 Basis for Assessment and Incorporated Mitigation Measures

The impact assessment for the proposed free range unit on soils has been undertaken assuming the following:

- Chemicals will be stored on the site for cleaning processes;
- Soils will be excavated and re-graded to allow for a basement level;
- The site will be covered with approximately 80% hard standing areas.

The impact assessment for the free range unit on soils also assumes the following incorporated mitigation measures:

Operation in accordance with Pollution Prevention Guidelines (PPGs) (see Chapter12 – Water Resources) and licensed by Natural Resources Wales under the Environmental Permitting regime;

- 😹 🛛 All bulk storage tanks will be appropriately bunded and located on areas of hard standing;
- All tanks, bunds, drains and hard standing will be inspected frequently for damage, maintained and remedial works conducted if necessary.

14.5.2 Potential Sources, Pathways, Receptors and Impacts

A variety of sources, pathways and receptors have been identified as outlined below. These are generally associated with the release of chemicals, fuels and oils and soil compaction.

Sources

- Storage and use of inorganic and organic chemicals during the construction, operation and decommissioning of the proposed free range unit;
- Use of heavy machinery on site and during application of soil to land (compaction of soils); and
- Heavy metal content of poultry manure, veterinary medicines within poultry manure.

Pathways,

- Leaching of inorganic and organic chemicals;
- Building works affecting soil structure; and
- Application of poultry manure to land.

Primary Receptors

Soils.

Potential Impacts

The principal potential impacts on soil considered in this assessment comprise:

- The contamination of soils by inorganic and organic chemicals during construction, operation or decommissioning phases;
- Contamination of soils through build up of heavy metals; and
- Direct damage to the soils via compaction.

Soil Compaction from Spreading of Manure

The UK poultry flock (including layers and broilers) produces around 4 million tonnes of poultry manure per year (Chambers & Smith, 1998). This contains around 49,000 tonnes of nitrogen following ammonia losses (31,000 t of N) and losses to incineration (20,100 t of N). To comply with the Nitrate Pollution Prevention Regulations 2008, poultry manure applications to agricultural land should supply no more than 170 kg total N/ha per annum (except in some circumstances – for this assessment the lowest possible figure has been used to present a worst case scenario). Poultry manures are therefore spread across around 200,000 hectares of agricultural land. When this is spread in wet soil conditions it can potentially lead to soil compaction (Larsen et al., 1994).

The magnitude of impact without mitigation would be moderate.

Soil Compaction from Construction

The compaction of soils during construction may also increase surface runoff. This risk is assessed in Chapter 12 – Water Resources. Direct damage to the soils on-site via compaction is not considered

significant as the site will require significant areas of made up ground. The soils also do not support important habitats and as such the issues of compaction from construction have not been assessed further in this chapter.

The magnitude of impact without mitigation would be moderate.

Heavy Metals

At the field level, zinc inputs from layer manure are higher than those from any other livestock manure, including pigs (Nicholson et al., 2003). Zinc inputs from layer manure to agricultural land in England and Wales amount to 2.7 kg Zn ha-1 a-1, while copper inputs amount to 0.4 kg Cu ha-1 a-1.

The magnitude of impact without mitigation would be moderate.

Veterinary Medicines

The only veterinary medicines routinely used in layer feed are coccidiostats, endogenous oestrogens.

Data available on endogenous oestrogens (Shore *et al.*, 1988) demonstrate that these compounds can be transported from poultry farms, via agricultural run-off to rivers and streams. Oestrogen (as an endocrine disruptor) can affect reproduction in fish species.

Increased concentrations of oestrogen can give rise to male fish gaining female characteristics, which could in turn impact on reproduction - this has been studied in Atlantic salmon and other species.

There is a scarcity of research about the impacts of free range production on biodiversity.

The magnitude of impact without mitigation would be moderate.

14.6 Assessment of Impact Significance

The significance of potential impacts is assessed from a combination of the sensitivity of the receptor and the magnitude of the impact. This is summarised in Table 57.

The differences between construction, operation and decommissioning are not deemed relevant for this assessment. Differences in construction, operational and decommissioning phases will have an effect on the probability or likelihood of the impact being realised.

Table 57: A	Assessment of	^r Significant	Unmitigated	Impacts

Source	Potential Impact	Receptor	Sensitivity Receptor	of	Magnitude of Potential Impact	Resulting Significance (if realised)
Storage and use of inorganic and organic chemicals during the construction, operation and decommissioning of the proposed free range unit;	Contaminate Soils	Soils	Negligible		Moderate	Insignificant
Use of heavy machinery on site and during application of soil to land (compaction of soils); and	Compaction	Soils	Negligible		Moderate	Insignificant
Heavy metal content of poultry manure, veterinary medicines within poultry manure.	Contaminate Soils	Soils	Negligible		Moderate	Insignificant
Source	Potential Impact	Receptor	Sensitivity Receptor	of	Magnitude of Potential Impact	Resulting Significance (if realised)
--------	---------------------	----------	-------------------------	----	-------------------------------------	--

14.6.1 Unmitigated Risk

The actual likelihood or probability of the above linkages being realised requires assessment so that the level of overall unmitigated risk can be qualified, and the likely significant impacts identified. The overall risk assessment matrices are provided in Table 58. These have been developed based on the combination of the significance of the potential impact and the likelihood of that potential impact occurring.

The assessment of overall risk indicates that there is a low likelihood of many of the impacts has resulted in the risks being very low.

		2		Likelihood			Risk		
Source	Potential Impact	Receptor	Resulting Significance (if realised)	Construction	Operation	Decommissioning	Construction	Operation	Decommissioning
Storage and use of inorganic and organic chemicals during the construction, operation and decommissioning of the proposed free range unit;	Contaminate Soils	Soils	Insignificant	Likely	Low	Likely	Low Risk	Very Low Risk	Low Risk
Use of heavy machinery on site and during application of manure to land and construction of the development	Compaction	Soils	Insignificant	Likely	Likely	Likely	Low Risk	Low Risk	Low Risk
Heavy metal content of poultry manure, veterinary medicines within poultry manure.	Contaminate Soils	Soils	Insignificant	n/a	Likely	n/a	n/a	Low Risk	n/a

Table 58: Risk Assessment Table – unmitigated risks

Mitigation and Management 14.7

Mitigation and management of potential risks to the soils underlying the Glanmyddyfi site and soils across the land on which manure will be spread are as follows:

Application of poultry manure will only take place when weather conditions are favourable and soil conditions would support machinery, this will only be on land at Livs v Nant and Maes yr Haidd, no manure will be applied to the land to the north of Glanmyddyfi.

All manure applied to the land will be done so in accordance with regulations for Good Agricultural and Environmental Conditions regarding soil and water. The manure shall be applied in accordance with the Silage, Slurry and Agricultural Fuel Regulations in line with the businesses' manure management plan. A detailed Manure Management Plan has been submitted in support of the planning application, together with an Ammonia Report. Both of the aforementioned reports set of the process and capacity for dealing with manure generated by the proposal.

It is proposed that the following measures in relation to manure management also be adopted and the applicant is happy for each point to be included as a condition of any forthcoming consent. Discussions have been held with a Planning Solicitor who has confirmed that manure management proposals are enforceable as conditions of consent with the relevant documents referenced as a requirement to be adhered to ie the Manure Management Plan.

No manure of any kind will be applied to the 42 acre block of land which the 1) application site forms part of.

No manure shall be sold to any individual or business owning or renting land within 2) 1.5km of the boundary of the Dinefwr SSSI.

A register of purchasers of any manure generated by the application proposal shall 3) be maintained and made available to the LPA upon any request made.

All recommendations of the Manure Management Plan shall be adhered to at all 4) times.

- Manure moved off site every four days in sheeted trailers. 5)
- Soils are regularly tested across land on which poultry manure is spread. Heavy metal concentrations would be detected, and appropriate remedial action taken.

14.7.1 Regulatory Guidance and Best Practice

There are a variety of best practices and recognised measures to mitigate the identified potential impacts, providing appropriate provisions are made in the construction planning and methodology.

The significance of potential mitigated impacts is assessed from a combination of the sensitivity of the receptor and the magnitude of the impact. This is summarised in Table 59.

Table 59: Assessment of Significant mitigatea impacts								
Source	Potential Impact	Receptor	Sensitivity of Receptor	Magnitude of Potential Impact	Resulting Significance (if realised)			
Storage and use of inorganic and organic chemicals during the construction, operation and decommissioning of the proposed free range unit;	Contaminate Soils	Soils	Negligible	Negligible	Insignificant			

Source	Potential Impact	Receptor	Sensitivity of Receptor	Magnitude of Potential Impact	Resulting Significance (if realised)
Use of heavy machinery on site and during application of soil to land.	Compaction	Soils	Negligible	Negligible	Insignificant
Heavy metal content of poultry manure, veterinary medicines within poultry manure.	Contaminate Soils	Soils	Negligible	Minor	Insignificant

14.7.2 Overall Risk with mitigation

The actual likelihood or probability of the above linkages being realised requires assessment so that the level of overall risk can be qualified, and the likely significant impacts identified. The overall risk assessment matrices are provided in Table 60. These have been developed based on the combination of the significance of the potential impact and the likelihood of that potential impact occurring.

The assessment of overall risk indicates that there is a low likelihood of many of the impacts has resulted in the risks being very low.

				Likelihood			Risk		
Source	Potential mpact	Receptor	Resulting Significance (if realised)	Construction	Operation	Decommissioning	Construction	Operation	Decommissioning
Storage and use of inorganic and organic chemicals during the construction, operation and decommissioning of the proposed free range unit;	Contaminate Soils	Soils	Insignificant	Unlikely	Unlikely	Unlikely	Very Low Risk	Very Low Risk	Very Low Risk
Use of heavy machinery on site and during application of manure to land and construction of the unit	Compaction	Soils	Insignificant	n/a	Low	n/a	Very Low Risk	Very Low Risk	Very Low Risk
Heavy metal content of poultry manure, veterinary medicines within poultry manure.	Contaminate Soils	Soils	Insignificant	n/a	Low	n/a	n/a	Low Risk	n/a

Table 60: Risk Assessment Table – mitigated risks

14.8 **Residual Impacts and Conclusions**

Following mitigation, the overall risks of the free range poultry unit on soils have been assessed as very low and no further mitigation or management issues need to be addressed. Therefore, the proposed unit is unlikely to give rise to any significant adverse impacts on the soils of the site. Furthermore, the regular application of poultry manure to agricultural land can potentially improve soil quality and fertility (Bhogal et al., 2006; Haynes & Naidu, 1998; Hountin et al., 1997; Persson & Kirchmann, 1994; Van Meirvenne et al., 1996).

CHAPTER 15 – SUMMARY & CONCLUSIONS

Summary and Conclusions 15.

It is clear that, in most cases, even without mitigation, impacts are generally insignificant. This has been achieved by appropriate location and design of the proposed free range unit. Even where significant impacts are identified many are effectively reduced to insignificant by the use of appropriate mitigation. Indeed, in some areas, negative impacts are altered to positive impacts via the application of mitigation and enhancement measures (particularly in relation to traffic and ecology). There are no impacts that remain significantly negative.

Bibliography

BIBLIOGRAPHY

Bibliography 16.

ADAS. (2007). The Environmental Impact of Livestock Production. Report for Defra FFG. Assured Chicken Production Ltd. (2009). Poultry Standards. Cobham: Assured Chicken Production Ltd.

Aviagen. (2007). 308 Broiler Performance Objectives. Newbridge: Aviagen.

Bhogal, A. N. (2006). Manure organic carbon inputs and soil guality. In: Petersen, S. O. [ed.] Proceedings of the 12th International Conference of the FAO RAMIRAN: Technology for Recycling of Manure and Organic Residues in a Whole-Farm Perspective, DIAS report no. 122. Danish Institute of Agricultural, 33-35.

Bottcher, R. M. (2000). Designs for Windbreak Walls and Odour emissions from Tunnel Ventilated Buildings. NC State University.

DEFRA. (2009). Guidance for Farmers in Nitrate Vulnerable Zones - Standard values, manures sampling protocol and glossary. London: DEFRA.

Environment Agency. (2003). Horizontal Guidance Note IPPC H1, "Integrated Pollution Prevention Control (IPPC): Environmental Assessment and Appraisal of BAT", Version 6.

Highways Agency (1994) Design manual for Roads and Bridges.

IEMA. (2002). *Guidelines for Landscape and Visual Impact Assessment*. London: Taylor & Francis. King, J. G. (2005). Defra Research in Agricultural and Environmental Protection between 1990 and 2005: Summary and Analyses. Defra Project ES0127.

Landscape Character Network. (2009). Landscape Character Assessment. Retrieved October 21, 2009, from Landscape Character Network: http://www.landscapecharacter.org.uk/lca MAFF. (1998). The Air Code. London: MAFF Publications.

Nicholson, F. S.-S. (2003). An inventory of heavy metals inputs to agricultural soils in England and Wales. Science of the Total Environment 311, 205-219.

The Countryside Agency. (2003). The state of the countryside 2020. Wetherby: Countryside Agency Publications.

Circular 02/99 - Environmental Impact Assessment, Department of the Environment Transport and the Regions (DETR - 1999)

Amended Circular on Environmental Impact Assessment – A Consultation Paper (Department of Communities and Local Government - DCLG – June 2006);

Preparation of Environmental Statements for Planning Projects that require Environmental Assessment, A Good Practice Guide (Department of the Environment, 1995);

Environmental Impact Assessment: A Guide to Procedures (2000) (amended reprint 2001); and

Environmental Impact Assessment: A Guide to Good Practice and Procedures – a Consultation Paper (DCLG June 2006).

Guidelines for Environmental Impact Assessment' (2004) the Institute of Environmental Management and Assessment's (IEMA)

Peter Hakes (2007) The Essex Guide to Environmental Impact Assessment Essex Planning Officers Association

The Nitrate Pollution Prevention Regulations 2008. SI2008/2349. London HMSO

The Air Quality Standards Regulations 2008. SI2007/64. London HMSO

The Conservation of Habitats and Species Regulations 2010. SI2010/490. London HMSO

The Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2006. SI2006/3295. London HMSO.