ATKINS

Application for Planning Permission for an Intensive Dairy Unit (Ref 10/1397/FUL) at Nocton Heath, Lincolnshire

Objection on Behalf of Compassion in World Farming and the World Society for the Protection of Animals

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Plan Design Enable

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1. INTRODUCTION

1.1.1 Atkins Ltd has been commissioned by Compassion in World Farming (CIWF) and the World Society for the Protection of Animals (WSPA) to make an Objection to a planning application for an intensive dairy unit on land at Nocton Heath, Lincolnshire (application reference 10/1397/FUL) (referred to hereafter as "the Application").

1.1.2 We have examined the Application which is for a 3,770 cow intensive dairy unit, and was submitted by Nocton Dairies Ltd (referred to hereafter as "the Applicant") on 17th November 2010 and validated on 10th December 2010. Our Objection on behalf of CIWF and WSPA is set out in this report under the following headings:

- Section 2 considers the requirements for the validation of the Application;
- Section 3 provides a review of the Application documentation including consideration of the Design and Access Statement and Environmental Statement (ES). Key omissions and issues are highlighted and explored. The assessment is supported by technical information provided in the Appendices;
- Section 4 sets out national policy guidance and Development Plan policy and assesses the performance of the scheme against them;
- Section 5 reviews other material considerations relevant to the application, in particular animal welfare; and
- Section 6 provides a summary of the Objection.

2. REQUIREMENTS FOR VALIDATION OF THE APPLICATION

2.1.1 The Town and Country Planning (Development Management Procedure) (England) Order 2010 (Article 6 (1) (c)) requires an application for planning permission to be accompanied by a plan which identifies the land to which the application relates and any other plans, drawings and information necessary to describe the development which is the subject of the application. These are to be drawn to an identified scale and, in the case of plans, shall show the direction of North.

2.1.2 As set out in the letter from AHC Solicitors dated 23rd November 2010, the Application as it stands relates to the intensive dairy unit, its access road and (in outline) residential accommodation. A reservoir and pipeline are not included in the Application, but will be the subject of separate applications to be made on an unspecified date. However, these elements are integral and essential parts of the scheme, providing a water supply and means for disposal of outputs from the anaerobic digester respectively. No explanation or justification for the omission of these elements is advanced in the Application. It is understood that an application for the digestate pipeline has now been received by the Council, although the application appears to not be currently validated.

2.1.3 As set out in the letter of 23rd November 2010, we consider that the Applicant should be required to lodge an additional application(s) immediately relating to the reservoir so all the issues arising from the proposed development can be considered at one and the same time.

2.1.4 Without this, it is considered that the Application is technically inchoate and that the material provided does not constitute a valid planning application. The Application should thus not be determined as it stands.

3. FURTHER INFORMATION REQUIRED AND TECHNICAL ISSUES

3.1 INTRODUCTION

3.1.1 This section provides a preliminary review of the documentation which comprises the Application. The review focuses on the Design and Access Statement and ES, although issues related to other aspects of the documentation are also raised. The following types of issue are highlighted:

- Missing information or areas where clarification is required;
- Areas where best practice has not been adhered to; and
- Inaccurate or misleading statements, information and conclusions.

3.1.2 Where appropriate, additional data and analysis is provided to illustrate key issues. Further information may be provided at a later date on the issues set out below, as well as on additional matters.

3.2 DESIGN AND ACCESS STATEMENT

3.2.1 The information provided in the Design and Access Statement was reviewed in the light of the guidance provided by Circular 01/2006 and guidance issued by the Commission for Architecture and the Built Environment (CABE)[1]. The findings are set out below.

3.2.2 Circular 01/2006 states that a design and access statement must demonstrate the steps taken to appraise the context of the proposed development. Understanding a development's context is vital to producing a good design. Applicants should follow a design process which includes assessment of the site's immediate and wider context and evaluation of the contextual information collected (paragraph 97).

3.2.3 CABE's guidance states that applicants should demonstrate that they have looked at the context of the site and its surroundings. The size of the surrounding area to be surveyed and the detail with which this is done will depend on the sensitivity and scale of the development. Local context includes the physical, social and economic characteristics of the site and surroundings, as well as any existing planning policies. Options for the development of the site should then be developed and evaluated. Following this, applicants can start designing the scheme guided by the information collected in the earlier stages. The statement should tell the story behind the scheme as it is presented in the planning application (page 12, The Process).

3.2.4 The Design and Access Statement provided to support the Application does not provide any contextual information relating to the application site or its wider context. No analysis of opportunities or constraints is provided, and no design principles are set out. There is little or no evidence of consideration of the

[1] Design and access statements: How to write, read and use them, CABE, 2006

application site's particular characteristics and context. No information is given on options considered or their evaluation. No information is provided on the evolution of the scheme and the design decisions taken. The description of the development is functional, suggesting that the scheme has been designed on purely functional grounds with little regard for context or design process.

3.2.5 Circular 01/2006 states that a design and access statement should set out the amount of proposed development in terms of floor space (paragraph 82). The statement should explain and justify the amount of development proposed and how the proposal relates to the site's surroundings (paragraph 83).

3.2.6 The Design and Access Statement provides a schedule of proposed development which sets out the number of buildings (Table 1) and another table which gives the floor area of both indoor and outdoor facilities (Table 2). However, the total floor space to be developed is not clearly set out, and this must be calculated through reference to both tables, the planning application form and planning application drawings. The scheme appears to include the development of 51,784m^2 of non-residential floorspace and an estimated 1,584m^2 of residential floor space. These figures should be clearly set out in the Statement, with the floorspace required for each component of the scheme clearly explained.

3.2.7 While the amount of development is justified in terms of the space required to accommodate physically the number of cattle at the unit, no justification is given for the *decision* to seek to accommodate 3,770 cows. It appears that the scale of the scheme is limited by the land available for the spreading of effluent, rather than any analysis of the nature of the application site and its context, or the character of the local landscape or its ability to accommodate development.

3.2.8 In terms of layout, Circular 01/2006 states that design and access statements should demonstrate how crime prevention measures have been considered (paragraph 87). No information on crime prevention or site security are provided in the Statement, despite the site's rural location and the vulnerability of components of the development to damage which could cause substantial pollution of the environment.

3.2.9 Circular 01/2006 states that a design and access statement should explain and justify the scale of buildings proposed, including why particular heights have been settled upon, and how these relate to the site's surroundings and the relevant skyline (paragraph 90). CABE's guidance states that the statement should show that the scale of the development takes account of the restrictions of the site and the need for good design. It should not try to justify fitting a predetermined amount of accommodation onto a site. The guidance further explains that it is important to get the three-dimensional aspect of scale across. Computer graphics or plans can often flatten or distort a view, and so mislead the people reading the statement. Pictures should also place the viewer where people would really be, and offer a realistic interpretation of the scale of open space as well as buildings (page 16, Scale).

3.2.10 The Design and Access Statement does not provide any visual material to assist the reader in understanding the scale of the scheme, but simply refers to the application drawings which include no information on the site's context. Given the very large scale of the scheme, this is a serious omission. As set out in Section 4, the scheme is of a massive scale relative to its development context.

Scale comparisons show that it is potentially over 6 times the footprint of Lincoln Cathedral, and similar in size to the whole of Dunston village and approximately half the size of Nocton village. The Design and Access Statement is seriously deficient in failing to communicate the massive scale of the scheme, particularly in view of the lack of clear total floorspace information, as set out above.

3.2.11 Circular 01/2006 states that a design and access statement should explain and justify the appearance of the place or buildings proposed including how this will relate to the appearance and character of the development's surroundings (paragraph 96).

3.2.12 The CABE guidance states that the statement needs to explain what the person applying for permission wants the place to look like and why. It also needs to explain how a good appearance will be achieved and maintained. The statement should set out the design rationale that underpins the proposal and how this has informed the detailed aspects of the scheme. The statement should explain how the appearance fits with other aims for the development. For example, if the development is designed to blend seamlessly with its surroundings, its design should take this into account (page 18, Appearance).

3.2.13 The explanation of the proposed development's appearance includes no explanation of the design rationale for the scheme, and only very limited information on how the scheme relates to the appearance and character of its surroundings. The massive scale of the buildings, many of which would measure up to 290m long, is considered likely to be well in excess of any structures within the local area. The industrial, utilitarian layout and architecture of the scheme would introduce an incongruent, low quality element into the open countryside landscape. Further detail on the appearance of the scheme and materials are set out in the review of landscape and visual matters (paragraphs 3.3.8-87).

3.3 ENVIRONMENTAL STATEMENT

3.3.1 A preliminary review has been undertaken of the various sections of the ES. This review considered whether the ES complies with Schedule 4 and Regulation 19 of the Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999, and current best practice, including the advice contained in Circular 02/99. Regulation 19 gives local planning authorities powers to request further information should they consider that an ES should contain additional information. Circular 02/99 states that authorities should only use their powers under Regulation 19 where they consider that further information is necessary to complete the ES and thus enable proper consideration to the likely environmental effects of the proposed development (paragraph 111).

GENERAL

3.3.2 In general terms, the ES is drafted as a promotional document, which describes the development in positive terms. For example, Section 1 which presents the introduction to the scheme, lists a range of positive attributes without balancing this description with negative aspects. An ES should provide an objective assessment of a development, with factual information presented in an unbiased way. The promotional tone of the document brings the objectivity of the ES into

doubt. This issue is exacerbated by a range of sections where the ES text may under-report likely impacts. Examples are explained in detail below and include:

- Description of the B1188 as having a low accident record when it is defined as a red route and there have been a number of recent fatalities;
- Likely impacts from odour are defined as negligible and virtually imperceptible, when the modelling provided in the appendix suggests otherwise;
- The risk of groundwater pollution is described as negligible, when the highly vulnerable nature of the limestone aquifer and the highly potentially polluting nature of the proposed use mean that a more significant rating of likely effects is appropriate; and
- The landscape and visual impacts of this massive scheme are poorly articulated and underplayed.

3.3.3 The ES does not include any summary information, such as a concluding section and summary table drawing together the key findings in a clear, comprehensive and objective way. While summary information is provided by the Non-Technical Summary, the text is drafted in a promotional way, and summary impacts are not clearly and consistently set out. A summary section setting out likely impacts, mitigation and residual impacts, including a table, should be provided as part of the ES.

DESCRIPTION OF SITE AND DEVELOPMENT

3.3.4 The planning application form gives the site area as 12.98 hectares, although paragraph 2.2.1 of the ES gives a site area of 27 hectares and paragraph 14.4.1 states that the total development area is 29 hectares. The Non-Technical summary of the ES states that the main application site encompasses an area of approximately 22 hectares. This is a fundamental issue and should be clarified.

3.3.5 The description of the application site and the proposed development provided in Section 3 of the ES generally omits to provide details of the digestate pipeline and reservoir which are required to serve the scheme. These essential elements have also been omitted entirely from the Applications itself although they are crucial to the development proposal. As set out in Section 2 above, it is considered that the Application should not have been validated without these key elements.

3.3.6 Various parts of the ES (e.g. paragraph 13.3.9) state that the impacts of the reservoir and digestate pipeline have been considered within the ES. However, it is not possible to assess the impact of a development without adequate details of the proposed development. Only limited information is provided on the pipeline (paragraph 3.2.42 and Figure 8.1) and no detailed information is provided on the reservoir. In addition, the assessment of the impacts of the pipeline and reservoir provided in the topic chapters is not set out in a clear and comprehensive way, and the ES is not considered to adequately assess likely impacts.

3.3.7 Contradictory information is provided on the phasing of the development. Paragraph 3.2.56 states that the on-site lagoons will be constructed in Phase 1, while the new reservoir at Nocton will be developed in Phase 2. However, paragraph 3.2.61 states that clay excavated from the proposed reservoir would be transferred to the site of the proposed lagoons. It is understood that the clay from the new reservoir will be used to line the on-site treated effluent lagoons.

This would clearly not be possible with the phasing as proposed. This issue needs to be clarified.

LANDSCAPE AND VISUAL AMENITY, LIGHTING

3.3.8 The likely landscape and visual effects of the proposed development are addressed in Section 13 of the ES and supported by plans and figures in the appendices. Information on lighting is provided by Section 15. This information has been reviewed. Consideration was also given to the following documents:

- OS maps and aerial photographs;
- Guidelines for Landscape and Visual Impact Assessment, 2nd Edition, 2002, The Landscape Institute and the Institute of Environmental Management and Assessment (GLVIA);
- Landscape Institute Advice Note 01/2009: Use of photography and photomontage in landscape and visual assessment;
- East Midlands Regional Plan (March 2009);
- Saved policies of the North Kesteven Local Plan(2007);
- East Midlands Regional Landscape Character Assessment, LDA Design (on behalf of the East Midlands Landscape Partnership and Natural England) (April 2010); and
- North Kesteven Landscape Character Assessment Final Draft prepared by David Tyldesley and Associates for North Kesteven District Council (2007).

3.3.9 This desk-based review was supplemented with site survey work. A preliminary site visit was carried out in during October 2010 (prior to submission of the planning application and ES to the local authority). At this time vegetation cover was still in leaf. The purpose of this visit was to verify the initial findings of the desk study in relation to key landscape features and elements and also to review potential visual receptors, including public rights of way, residential properties, public highways and other public amenity areas.

3.3.10 An additional site visit was undertaken in December 2010 to verify the findings of the landscape and visual assessment chapter of the submitted ES. A series of photographs were taken during both of these site visits, including views taken during hours of darkness to address existing lighting levels. The photographs were taken using a digital camera with a 50mm lens (equivalent focal length) at approximately 1.8m in height. The viewpoints are included in Appendix A as Figures LSC001 to LSC014.

3.3.11 Key findings are set out below and further detail is provided in Appendix A.

Visual Impact Methodology and Approach

3.3.12 Appendix 7 of the GLVIA addresses visibility mapping and outlines the potential variables that should be clarified in order to present an understanding of the accuracy, and therefore robustness, of an assessment. In the context of the proposed scheme such variables include:

- Height of receptor and height of scheme component used for the visibility mapping, both included in the submitted LVIA;
- Description of components included in the visibility mapping, excluded from the submitted LVIA and relevant as scheme components such as the reservoir;

- Data source and accuracy;
- Constraints and/or additional data/changes to the visual envelope; and
- Allowances for any other screening features and the criteria for these.

3.3.13 In summary, a clear and detailed methodology should be provided to ensure that visibility mapping is accurate and robust.

3.3.14 Guidance set out in the GLVIA on visualisations and photomontage is updated by LI Advice Note 01/2009: Use of photography and photomontage in landscape and visual assessment. There are a number of key issues that are relevant, these are listed as follows:

- Type of camera and lens used should be stated, also if the camera was tripod mounted, this enables accurate evaluation of the field of view and effective focal length (for example, to acknowledge the effective flattening and distancing effect of a 35mm compact camera);
- For photomontages explanatory text should be provided to describe the procedure used to fit the rendered image to the underlying photographic view; and
- The advice note states that a single frame photograph based on an SLR / 50mm focal length lens combination (or digital equivalent) is unlikely to convey the amount of visual information required to represent a proposed development. To provide a suitable degree of context a composite view with a considerably greater horizontal field of view than the 'standard' horizontal field of view of 39/40 degrees offered by a single frame would provide a more acceptable representation of the landscape.

3.3.15 In summary, a clear and detailed methodology should be provided. This should clarify the method of photography used for capturing viewpoints to enable a fair evaluation as to the accuracy and robustness of the images, and whether they present a fair and realistic representation of the actual views in the landscape. The methodology should include the detailed process for production of photomontages, including criteria and details for components of the scheme that are included.

3.3.16 In accordance with the advice note, additional explanatory text should be provided for each photomontage including details such as information on the camera, lens, OS grid coordinates for the viewpoint, angle and direction of view, date, time, weather and lighting conditions, and where possible, the horizontal field of view and method of viewing should be indicated.

3.3.17 Furthermore, images (viewpoints and photomontages) should be provided in composite format (panoramic) to present a wider field of view and therefore a more suitable degree of context to represent the wider landscape and landscape character.

3.3.18 Figures LSC 001 to 014 in Appendix A of this Objection provide a comparison of viewpoints included in the ES. These figures illustrate the variance of the submitted visual material with the guidance, but are not intended to comprehensively address gaps in the Applicant's ES.

Planning Policy

3.3.19 The LVIA has made detailed reference to policy C18 (Design) of the NKLP. The LVIA has also made cursory reference to policies C19 (Landscaping) and DC1 (Agricultural Development).

3.3.20 The LVIA fails to make reference to the other relevant policies of the local plan, including policies C2 (Development in the Countryside), C22 (External Lighting Schemes) and LW1 (Landscape Conservation). Each of these policies includes specific reference to the protection of the character or appearance of the countryside. Policy LW1 establishes a link between policies for protection of distinctive landscapes and any special features and identified Landscape Character Areas.

3.3.21 These policies are considered fundamentally relevant to the scheme and the omission of any reference to them in the LVIA undermines the robustness of any conclusions drawn on the proposed scheme in relation to the surrounding countryside.

3.3.22 These policies are considered in more detail in later sections of this technical note and in Section 5.2 of the main text of this Objection.

Contextual and Descriptive Information

3.3.23 The ES provides very limited specific information on the application site's features, physical and landscape context. No bespoke analysis of the application site and its landscape context is provided, with the information given limited to extracts from published character assessments. Paragraph 13.5.5 states that there are many other farm units and other sites, including RAF Waddington and Branston Potato Pack House, which have large buildings within the landscape character area. The paragraph goes on to say that it is not therefore considered that the proposed development would cause a significant change to the local character area either in the locality or over the wider area. The discussion of cumulative impacts in paragraph 13.7.14 also refers to Nocton Ltd's bulb packing plant at Dunston and Blankey Estate's grass drying unit at Scopwick Heath, as well as three mineral sites at Dunston, Metheringham and Scopwick. Paragraph 13.7.15 states that most of these developments do not have a significant impact on the landscape.

3.3.24 However, no analysis is given of these developments in terms of their physical form, scale, layout, massing, height, site coverage, plot ratio, materials or appearance. In addition, no information is given on the functional nature of these schemes, and the reasons for their siting. Furthermore, it is considered that these features are presented in a manner that suggests that this is the predominant baseline position of the landscape character of the area, whereas they actually form discrete features in a wider open landscape setting that is rural and relatively tranquil in its nature. The features noted are generally located some distance from the application site, and do not form the baseline character. The lack of information on these developments is considered to be a serious omission, as the lack of proper contextual information undermines the robustness of the conclusions of the assessment of impacts on the local landscape. This issue is discussed further below.

Visual and Descriptive Material on Landscape Impacts

3.3.25 The proposed development is of a very large scale, with over 50,000m^2 of non-residential floorspace, six residential buildings, supporting infrastructure and plant including large scale effluent and surface water run-off lagoons and feed storage areas. This scale of development is difficult to visualise, particularly within the application site's open, rural context. A variety of visual materials are required to clearly articulate the scale and form of the scheme, including aerial photographs and montages, visualisations and scale comparison illustrations. The lack of specific visual and written information articulating the form and nature of the proposed development within the landscape context means that the impacts of the scheme upon the landscape cannot be accurately assessed.

Plans and Visual Material relating to the Visual Impact Assessment

3.3.26 In terms of the assessment of visual impacts, there is a good range of viewpoint locations and this is welcome. However, a notable omission is the lack of a representative viewpoint from the right of way between the western edge of Top Plantation and Dunston Heath Lane. A view from this location has been included in this Objection (Appendix A, Figure LSC 014).

3.3.27 Paragraph 13.3.9 states that although the construction of the off-site reservoir and underground digestate pipeline are both subject to separate planning applications, their impacts have been considered within this ES. However, there is little or no reference to these elements in the figures or the chapter. These elements should be properly described in the description of the scheme, and their impacts assessed, including through the provision of photomontages as necessary.

3.3.28 In general the viewpoints and photomontages would benefit from additional annotation (as outlined above).

Preliminary Evaluation of the Likely Impacts of the Proposed Development

3.3.29 The following paragraphs address the landscape and visual impacts of the scheme. The text draws on the baseline information available including that presented in the ES as well as other relevant sources referred to in previous paragraphs. This evaluation focuses on the key landscape and visual impacts, and also includes reference to weaknesses or omission in the ES assessment.

3.3.30 The evaluation of landscape and visual impacts are set out under four interrelated key themes. These have been derived from relevant planning policies (see Section 5.2 for details) and are as follows:

- Does the proposed development protect, and where possible, enhance the character and quality of the countryside and the visual amenity and appearance of the area? Does the scheme reinforce local identity and contribute to local distinctiveness?
- Does the design of the scheme, respond satisfactorily in terms of fundamental design criteria (i.e. layout, scale, massing, height, density, detailing, external appearance and use of materials)?

- Is the scheme mitigation (including proposed landscaping) high quality and would it satisfactorily integrate the scheme with its surroundings; and
- Will the lighting scheme adversely affect the amenities of nearby land users and the character of the area?

Protection of the Character and Quality of the Countryside and Visual Amenity

Regional Character Assessment

3.3.31 The East Midlands Landscape Character Area sets out details of landscape character for the region. The site is located in the landscape character area defined as '6a – Limestone Scarps and Dipslopes'. In relation to the aesthetic and perceptual qualities of the area the character assessment states that:

"Despite its relatively low elevation, the Limestone Scarps and Dipslopes is a distinctive and locally prominent landscape, forming both a backdrop to views from the adjacent lowlands and an elevated vantage point with wide panoramas across vast areas.

The visual character of the landscape varies considerably dependent on location. The scarp has a diverse character, with pasture, arable, woodland and hedgerows creating an intricate and textured landscape." (page181)

3.3.32 It goes on to state that:

"...the dip slope has an open and empty character. Wide views across vast treeless fields emphasises the sense of remoteness, although this becomes diminished with proximity to transport infrastructure and the occasional farms, villages and airfields." (page181)

3.3.33 The character assessment includes an evaluation of the trends in landscape change and management, drawing conclusions on the current pressures on the landscape (forces for change) and also recognising potential management issues that would positively influence the recognised character (shaping the future). There are several topics that are relevant to the proposed scheme and the Limestone Scarps and Dipslopes landscape character area. These include built development, infrastructure and agriculture and land management, as set out below.

Built Development

3.3.34 The character assessment states that forces for change include:

- Expansion of ridgeline villages is particularly harmful due to their visually prominent locations;
- Impact of new development on the setting and views of Lincoln Cathedral and village churches which are distinctive regional and local landmarks; and
- Evidence of mixed-use development on the fringes of Lincoln, creating visual intrusion and resulting in the loss of surrounding landscape features.

3.3.35 In response to the forces for change the character assessment makes several recommendations on shaping the future, these include:

- Protect the character of the countryside and consider the visual impact of any new development;
- Specific mechanisms to include planting of new trees to help integrate new development into the landscape; and
- Use of best practice innovative architectural solutions and planning solutions that take inspiration from local distinctiveness and character whilst utilising eco-friendly and high quality design.

Infrastructure

3.3.36 The character assessment states that forces for change include:

- Airfields are a feature of the character area; those that are no longer operational are a potential threat to the tranquillity of the landscape, at risk of either falling into disrepair or being redeveloped.
- There is a threat from telecommunications infrastructure, creating prominent visual features in this predominantly open landscape and reducing the sense of remoteness and isolation.

3.3.37 In response to the forces for change the character assessment sets out several aims and recommendations on shaping the future, these include:

"...The aim should also be to manage redundant airfields, ensuring any new built development follows the footprint of existing structures as closely as possible, limiting visual intrusion and the loss of surrounding landscape features...For abandoned airfields, woodland planting, grassland and the removal of ancillary buildings should be considered.

...The aim should be to protect the character of the landscape by siting infrastructure away from visually prominent locations and ensuring installations are of an appropriate size and scale. Increased sharing of masts and sites between operators should also be considered, along with removal of redundant masts." (page182)

Agriculture and land management

3.3.38 The character assessment states that forces for change include:

- Increasing pressure from intensification of arable cultivation which has resulted in field enlargement, removing field boundaries and creating a more open landscape.

3.3.39 In response to the forces for change the character assessment sets out several aims and recommendations on shaping the future, these include:

- The protection of existing landscape features and encouraging positive management of those features lost or under threat. The restoration of hedgerows and stone walls should be given priority, creating a stronger field pattern and helping to integrate new development into the landscape.

Local Character Assessment

3.3.40 The site is located in landscape character sub-area 8.1, Limestone Heath, as defined by the North Kesteven Landscape Character Assessment (NKLCA) (Sept 2007). The character assessment sets out key characteristics, several of which are relevant to the scheme, these include:

- *"Its position on the upper reaches of the cliff's dip slope gives it a feeling of relative elevation and exposure...*
- *It is predominantly an empty, open landscape with wide views to the skyline in all directions...*
- *Scattered woodland copses pepper the whole of the sub-area, which although relatively small are prominent features because of the openness of the landscape...*

The central plateau area is generally unsettled except for isolated farmsteads and occasional ribbon development along the A15. Larger settlements are situated on the edge of the sub-area characterised by having historic cores with limestone buildings but often surrounded by significant levels of 20th Century development..."

3.3.41 The character assessment also notes that:

"...There are extensive 360 degree views throughout the sub-area afforded by the generally low relief, large field size and absence of field boundaries...

...There is little evidence of industry or commercial activity except on the outskirts of the larger settlements such as Waddington and Bracebridge Heath." (Section 8.1, page 61)

3.3.42 As set out in Section 3 above, the ES provided no information on the physical form, scale, layout, massing, height, site coverage, plot ratio, materials or appearance of the development which currently characterises the local area. The site visit included a preliminary review of the application site's landscape context, although the findings are purely indicative at this time, and further study is required to substantiate the findings. This should be provided by the Applicant as set out in Section 3. The preliminary review indicates that the isolated farmsteads in the local area may have the following typical characteristics:

- Scale – relatively small scale, often forming small complexes that are associated with traditional farmhouses;
- Form – generally traditional farmhouses with some traditional barn structures. There are also examples of more modern barns that are regular geometric form;
- Layout and massing – buildings are generally small and massing is broken up into several building types and styles, layouts vary but there are few complexes with large regular geometric layouts; and
- Materials – a mix of traditional materials for some barns. Other barns attached to traditional farmsteads are more modern, with metal, corrugated cladding in muted colours.

3.3.43 Similarly, the desk top review and site visits provide some preliminary findings on the other large scale and commercial developments in the local area. With the exception of Nocton Ltd's bulb packing plant, these developments are a considerable distance from the application site (over 3km). As set out in Section 3, information on this issue should be provided by the Applicant.

3.3.44 The developments listed in the ES appear to have a clear functional connection or nexus with their chosen locations. The location of RAF Waddington relates to decisions relating to national defence dating from November 1916. The bulb packing, potato processing and grass drying facilities provide packing and processing services for local agricultural industries and appear to relate to agricultural products which are generally produced in the immediate local area. Quarrying areas clearly must be located at the site of the resources. As set out above, the ES should explain the reasons for the siting of these developments. It is important to note that, in contrast with existing developments, there is no functional relationship between the application site and the proposed development.

3.3.45 The local character assessment includes a table that identifies the pressures for change on the landscape and the opportunities for enhancement. An extract of this table is included below.

Table 5.1 – Extract from NKLCA – Limestone Heath pressures and opportunities

Pressures for change and landscape detractors	Opportunities for enhancement
Agriculture: Intensive agricultural activity has led to the removal or neglect of field boundaries of hedgerows or limestone walls. Walls are a particular feature of the sub-area but many are now in a poor state of repair or have been lost altogether.	Replacement hedgerow planting where these have been lost or degraded. Reinstatement and repair of the dry stone walls.
Housing development: Housing development on the edge of settlements has sometimes resulted in intrusive features because of the open and exposed nature of the surrounding landscape. Inappropriate, non-vernacular materials have been used in recent housing developments (e.g. red bricks and tiles)	Better design solutions should be encouraged through the planning process which seeks to deliver more sensitive interface between the settlement and open character of the landscape sub-area. Rigid building lines, uniform building design should be avoided, and better landscaping of indigenous tree belts and appropriate boundary treatment, such as dry stone walling, should be encouraged. Appropriate local material mixes should be used such as limestone for walling and clay pantiles for roofing, particularly at settlement edges.
Infrastructure: A number of power lines and pylons traverse the unit and are particularly dominant because of the openness of the landscape. There are several large limestone quarries e.g. Blankney, Brauncewell and Metheringham and an inert waste landfill site at Harmston which are potential detractors from the landscape.	The visual impact of pylons is difficult to counteract at the present time but long-term under-grounding solutions should be investigated in partnership with the electricity distribution companies and National Grid Company. Whilst the mineral extraction sites are generally well screened, additional tree planting would improve their setting and reduce harmful visual impact.

Pressures for change and landscape detractors	Opportunities for enhancement
MoD: The large RAF establishments in the unit make a major visual and aural impact on the landscape, with massive aircraft hangars, large concrete runways, tall radio masts and large perimeter fences.	There are steps that could be taken to improve the dominant appearance of the RAF establishments, such as additional tree and hedge planting around some buildings and around and away from the perimeter fences. Habitat friendly limestone grass management regimes should be investigated within base boundaries.

Preliminary Evaluation

3.3.46 Paragraph 11.1 of the North Kesteven Landscape Character Assessment states that the design guidance provided addresses landscape considerations which should be met in respect to development which is appropriate, or likely to be permitted, within the open countryside. Key points for consideration in assessing how a good landscape character fit can be achieved for new development are set out in a table entitled "Landscape Design Considerations". The relevant parts of this table are set out in Appendix A. A summary of the findings is set out below.

3.3.47 The regional and local character assessments highlight the empty, open and tranquil nature of the local landscape character. The Regional Character Assessment notes the "*open and empty character*" and "*wide views across vast treeless fields emphasises the sense of remoteness*" (page 181). The NKLCA includes "*it is predominantly an empty, open landscape with wide views to the skyline in all directions*" (page 61) as a key characteristic of the area. The scheme is a large scale, intensive, industrial-type development with lighting and 24 hour operational requirements which is located in an area that is empty, open and tranquil. The application site is located in a raised location.

3.3.48 The regional character assessment acknowledges that re-development on brownfield sites such as disused airfields is a threat to the tranquillity of the area; the scheme is a green field, arable site and therefore an assumption can be made that there would be equivalent, if not greater, threat to the tranquillity of the area. In relation to telecommunications the regional landscape character assessment notes that the area is an open landscape that has a sense of remoteness and isolation. Although the scheme is a different type of development to telecommunications, given the inherent characteristics and nature of the scheme, there is certain to be a reduction in openness and an adverse impact on the remoteness and isolation of this area. In turn this would also reduce the tranquillity of the area.

3.3.49 The Council's Local Character Assessment explains that "*There are very few settlements in the central parts of this landscape character subarea and the lasting impression is of an empty landscape. There are a few isolated farmsteads and agricultural buildings and occasional sporadic ribbon development along the A15*" (paragraph 8.1.13, page 64 of the NKLCA).

3.3.50 Site survey work and examination of the Council's Landscape Character Assessment demonstrates that there are very few large scale commercial developments within the local area. These are not sufficiently common so as to

be a defining feature of the area's landscape character. The Landscape Character Assessment says that "*There is little evidence of industry or commercial activity except on the outskirts of the larger settlements such as Waddington and Bracebridge Heath*" (paragraph 8.1.10, page 63 of the NKLCA).

3.3.51 The proposed development is of a very large scale, consisting of over 50,000m^2 of non-residential floorspace and six residential buildings, as well as a range of additional structures and infrastructure.

3.3.52 In terms of scale, the following comparisons illustrate the scale of the scheme:

- The floor space created will be over 6 times that of Lincoln Cathedral (the cathedral footprint is estimated at approximately 8,600m2);
- The scheme appears larger than the entire village of Dunston;
- The scheme appears almost half the size of the entire village of Nocton; and
- The scheme appears similar in size to the urban area of Branston (the whole section to the east of Station Road).

3.3.53 The ES and Supporting Statement list a range of commercial developments that are considered to be comparable with the proposed development. These are Branston Potatoes packhouse operation, Nocton Ltd's bulb packing plant, Blankey Estates' grass drying plant and local quarries. Preliminary analysis indicates the following:

- Branston Potatoes packhouse operation – this facility, which dates back to the 1960's is located in the heart of British potato-producing country and provides packing lines and cold storage;
- Nocton Ltd's bulb packing plant– this facility includes flower packing lines, cold storage and a bulb grading area serving 3,500 acres of the Nocton Estate;; and
- Blankey Estates' grass drying plant– this facility is related to the Estate's farmed land which is centred around the villages of Blankney, Metheringham and Scopwick.

3.3.54 The commercial developments that already exist within the local area are not sufficiently common as to be typical of the character of the local area, as reflected in NKLCA and should not be considered to be either typical of local development or provide a guide to acceptable future development. They are functionally tied to their locations as they serve local industries.

3.3.55 The NKLCA notes the existence of RAF Waddington with its very large aircraft hangars. The large RAF establishments in the area are highlighted as detractors, and the NKLCA states that they make a major visual and aural impact on the landscape. Suggestions are provided of measures to improve their dominant appearance (summary table, page 66). They are certainly not highlighted as examples of development that typify the landscape character of the area, or as examples of development that should be replicated elsewhere within the local area.

3.3.56 The NKLCA also mentions several active stone quarries located at a number of sites including Dunston. Clearly, the location of the stone quarries is dictated by

the location of the resource, and the presence of a quarry does not indicate that large scale commercial development is acceptable in a location.

3.3.57 In summary, investigation of the character and history of the RAF and larger scale commercial developments in the area shows that they are sited in their respective locations for functional and historic reasons. This contrasts sharply with the proposed development which has no functional or historic relationship with the application site. The scheme would not serve or contribute to existing agricultural activities, and there is no historic or other link between the proposed use and its proposed location.

3.3.58 In terms of layout, the local area is characterised by villages, two small quarries and a bulb packing plant/depot. The villages appear to have grown outward from small linear settlements that have expanded from the minor roads in the area (e.g. Nocton) and there is no formal, regular or geometric layout to the settlements. The proposed large scale, functional and geometric layout of the scheme is not compatible with the character and layout of settlements in the local area. The proposed layout is fundamentally different from that typically found in the local area's settlements as it reflects the functional requirements of an intensive dairy operation rather than being based on design considerations related to the character of development in the local area.

3.3.59 The scheme introduces long stretches of nearly 600m of linear buildings (formed by the close location of cow accommodation buildings each 290m long) with rigid and uniform building lines, as well as a range of other industrial-type structures, plant and infrastructure into an open rural location. The scheme has large unattractive and functional facades which will transform the landscape of the immediate local area. The scheme does not relate to the highway network or traditional patterns of settlement layout.

3.3.60 The proposed architectural style and materials would be inconsistent with the local vernacular, and does not relate well to local design cues or to the characteristics of the application site and its context. The rigid, uniform, non-vernacular building design should have been avoided. Further information on building heights, density and massing is set out below.

3.3.61 The assessment of highway safety provided as part of this Objection indicates that the proposed junction design may be insufficient to deliver a safe access for the scheme. A significantly larger scheme than that proposed by the Applicant, including a right turn facility and lighting may be required to ensure site safety. It is considered unlikely that such a solution would fit well with the rural landscape setting of the area, and would introduce an urbanising feature to the B1188. The highway design requirements that are needed to deliver a safe scheme may result in a disproportionately intrusive element being introduced into the local landscape.

3.3.62 In terms of landscaping, while the proposed scheme is considered acceptable in its approach, the scale of the proposed mitigation is not sufficient to provide the level of mitigation that is suggested in the assessment of landscape and visual impacts. Therefore the level of mitigation is overstated and the residual impacts are understated. This is particularly true given the amount of land that the Applicant controls and the possibilities of landscape and biodiversity mitigation that could have been considered. The landscaping scheme is considered to provide a "bare minimum" approach, and is proposed to be implemented at a

relatively late stage in the construction programme. A more timely, robust and substantial landscaping scheme would have better integrated this proposal into the landscape.

3.3.63 In terms of visual amenity, the development would be conspicuous at a local level. While those working or passing through the area are unlikely to be affected to a significant degree, a right of way and residential properties that would have views to the development and whose visual amenity would suffer adverse impacts and effects. The impacts of lighting are set out below.

3.3.64 In summary, the proposed development is considered to fundamentally conflict with the existing landscape character, local identity and local distinctiveness. It would introduce a very large scale, intensive, industrial, 24 hour, activity requiring lighting into an expansive, open, empty, tranquil, arable landscape. The characteristics of the scheme in terms of scale, layout, density, massing, architectural design and materials would be inconsistent with local development forms and character. The scheme would introduce an incongruent, low quality development into the local rural landscape.

Design of the Scheme

3.3.65 Policy C18 of the North Kesteven Plan sets out the requirements for development in relation to local identity and character or appearance of the surroundings. The policy also sets out a requirement for development to respond satisfactorily to its context in terms of layout, sale, massing, height, density, external appearance and the use of materials. This policy expands on policy that is more general in its requirements for protection and enhancement of the countryside. Examining the detail of the design highlights how and where the scheme is inappropriate in the existing landscape context.

3.3.66 The key findings in terms of layout, scale, external appearance and the use of materials are summarised above. The scheme is considered to perform poorly in terms of all these aspects. In terms of the height, the scheme is generally low rise, although it is located on relatively elevated ground (c.42m AOD compared to c. 9-19m AOD in the local area) and in a relatively open area of landscape (other areas are more enclosed by woodland and landform). In terms of the density and massing, the multiple and very large scale buildings, extensive areas of hard standing, lagoons, plant and other infrastructure mean that the site is intensively used. This does not conform with the tranquil open and expansive setting of the application site, nor does it reflect traditional development forms in the local area.

3.3.67 As set out in Section 3.2 above, the lack of information and analysis of site context and the focus on the functional aspects of the scheme, indicate that the Applicant has had little regard for design principles or process.

Landscape Mitigation

3.3.68 The scheme includes for the boundaries to be reinforced through the creation of new hedgerow. With appropriate detailed design and specification of a thorough maintenance and aftercare period, the hedgerow itself would fit with the existing landscape character.

3.3.69 The scheme proposals also include for the creation of a shelter belt of planting. In principle this is suitable, however the proposals as illustrated on Figure

RAC448/11 C of the submitted ES shows only a very narrow belt of vegetation. The width of this proposed tree belt would need to be a minimum of 6-8m to implement a shelter belt of 3 or 4 rows depth (at c. 2m spacing). If the width of the shelter belt is less than this, the tree planting would establish to be a linear row of trees or just a hedgerow; either way this would be insufficient to mitigate adverse impacts.

3.3.70 Furthermore, the design of the hedgerows and shelter belts has simply traced the boundary of the site, as created by the design and layout of the scheme. This would create an incongruent hedgerow boundary when seen in the context of the surrounding rectangular arable fields. Overall the treatment of boundaries is acceptable in principle but would benefit from additional refinements to the design.

3.3.71 The landscaping scheme is closely linked to the proposed mitigation and proposals for the treatment of boundaries. Aside from hedgerow planting along the boundary there is additional hedgerow planting proposed to 'gap up' or strengthen existing hedgerows and this is welcome. However the landscape scheme fails to make sufficient use of the space available nor does it respond to the surrounding landscape character which includes discrete parcels and blocks of plantation woodland. These break up and provide some variation in this arable landscape.

3.3.72 Overall the landscaping scheme in its current form is acceptable in its approach, however the scale of the proposed mitigation is not sufficient to provide the level of mitigation that is suggested in the assessment of landscape and visual impacts, particularly given the amount of land that the Applicant controls and the possibilities of landscape and biodiversity mitigation that could have been considered. The landscaping scheme is not sufficient to integrate the proposed development into its landscape context.

Lighting

3.3.73 Overall, the influence of lighting in the existing baseline scenario is very limited. The site itself is not lit. Lighting in the nearby vicinity is also very limited and includes some low level security lighting at the bulb plant/depot to the east of the site and also three street lights outside of the housing on the Lincoln Road Nocton/Sleaford Road. Several figures have been included in Appendix A of this Objection to illustrate the current lighting levels on the site and in the surrounding area.

3.3.74 The influence of existing lighting is more dominant in the wider study area. From the site (and immediate vicinity) there are views of lighting associated with RAF Waddington and the northern edge of Metheringham. The lighting impacts are direct (i.e. direct views of the lamps/physical lighting) and also indirect impacts (no direct views of the lamps but views of the resultant sky glow). In both cases the influence of the existing lighting is not sufficient to illuminate the site and the area remains relatively unlit and remote.

3.3.75 In the context of the existing baseline scenario, the scheme would introduce significant level of lighting into an otherwise unlit area. Mitigation measures would partially address the level and direction of lighting, however there would remain an unavoidable introduction of light into an area of otherwise 'characteristic dark sky'.

3.3.76 Furthermore, given the presence of RAF Waddington to the north west and the urban edge of Metheringham to the south east (separated by approximately 8km of open, arable landscape) there is potential for the introduction of the sky glow to contribute to the perception of coalescence between the sites. Effectively the presence of the skyglow, along with partial and/or direct views of lighting, to each of the three areas would become indistinct from one another as receptors experience the landscape (both transient and static receptors).

Evaluation of Landscape, Visual and Lighting Impacts

3.3.77 This section has reviewed the landscape, visual and lighting impacts as set out in the ES in the light of the preliminary evaluation set out above.

3.3.78 In terms of landscape impacts, paragraph 13.7.3 of the ES states that after 15 years the unit would appear much like any other farm unit in the area (albeit larger) and would have assimilated into the landscape.

3.3.79 Our analysis suggests that this is not the case. The proposals are generally significantly larger than contextual developments in the study area. Furthermore mitigation would not fully integrate the proposals into the landscape as the siting, design, layout and massing of the scheme are fundamentally flawed. Reference to published character assessments show that mitigation proposals are a bare minimum approach and do not take full advantage of the opportunities present to reflect and reinforce landscape character.

3.3.80 The conclusions drawn on residual impacts on landscape make reference largely to the benefits of mitigation and not to the significant impacts that have been identified. Overall significance of landscape impacts are judged to be minor negative whereas in reality the introduction of such a large scale feature, loss of openness, loss of tranquillity and introduction of industrial style and scale built form into an open arable landscape would result in much higher impacts.

3.3.81 Based on the methodology and textual scoring presented in the LVIA of the submitted ES the proposals would result in a moderate negative impact as a minimum. The criteria for this textual ranking are defined in the ES as follows (p85, table 13.4):

- Be out of scale with the landscape and at odds with the local pattern and landform;
- Be visually intrusive and would adversely impact on the landscape;
- Not be possible to fully mitigate for in the longer term;
- Would have an impact on the openness and tranquillity which are both important features of this landscape; and
- Would be in conflict with local authority and national policies for protection landscape.

3.3.82 In terms of the visual impacts, this review accepts the position of the ES that mitigation measures would result in a reduced impact for receptors in the locality, however it should be noted that this is after a period of 15 years which is a substantial period of time during which receptors would still be subject to negative

impacts. Furthermore, although mitigation has reduced the significance of residual impacts the impacts assessed in the ES are all still noted as 'negative'.

3.3.83 It is assumed that this residual negative impact would be caused by the rooftops of the unit and the anaerobic digester which are noted as still visible in the landscape, as noted in paragraph 13.8.2 of the ES.

3.3.84 In relation to lighting, paragraph 15.6.1 of the ES states that: *"the introduction of new buildings into a rural unlit landscape has the potential to cause a significant effect on the night-time character of the local LCAs."*

3.3.85 In the summary of the ES chapter on lighting (Chapter 15) the ES concludes that lighting associated with the new development would have a minor residual negative effect on the night-time views of the local landscape after mitigation measures have become established. However this analysis cannot escape the fact that the site and a significant proportion of the surrounding countryside is unlit.

3.3.86 Furthermore, the ES has failed to note that the introduction of lighting into this area would effectively 'infill' an area of dark skies that exists between RAF Waddington and Metheringham. Additional lighting of any sort in this site, and particularly on a site of this scale, would significantly alter the dark skies and night time character of the area.

SURFACE AND GROUND WATER

3.3.87 Sections 10 and 11 of the ES have been reviewed, as well as relevant material from the appendices. The results of this review are summarised below.

Risk of Groundwater Pollution

3.3.88 The application site is located within the Source Protection Zone (SPZ) 2 for Anglian Water Services' public water supply borehole at Waneham Bridge. This zone is defined by a 400 day travel time from a point below the water table, but the method of assessment is open to considerable uncertainty, and water entering the aquifer is likely to reach the borehole much more quickly, particularly as the aquifer is heavily fractured in its upper layers. The Applicant's Preliminary Groundwater Risk Assessment itself estimates that groundwater beneath the site may only take 70-80 days to reach Waneham Bridge borehole. It should be stressed that SPZ1, the inner protection zone where the most stringent restrictions are required, is defined by a 50 day groundwater travel time.

3.3.89 The Environment Agency has designated SPZs around groundwater supplies in order to influence planning decisions at strategic and local levels. Detailed groundwater protection policies that relate to a number of issues, such as discharge of liquid effluent to ground, the protection of water intended for human consumption and the management of diffuse pollution have been laid out in the context of what is permissible in each zone and what measures must be taken to protect groundwater.

3.3.90 The Environment Agency will object in principle to certain activities in SPZ1 but outside of these zones a suitable level of risk assessment needs to be demonstrated and effective protective measures for groundwater put in place,

along with effective management and maintenance of the system. The ES mentions 'appropriate monitoring procedures' being implemented during operation (paragraph 11.1.16), but fails to provide any clear detail. Similarly, the practical implementation of testing and maintenance regimes is not discussed in detail, whereas it should be a key condition of operation in such a sensitive location. Little attention is given to contingency plans in the event of failure of any part of the system. For example, the ability of the dairy to operate with reduced effluent storage capacity should a lagoon lining fail or if it is not possible to transport milk from the site that then needs to be stored or applied directly to ground.

3.3.91 Paragraph 11.6.22 does describe the proposed design and testing of new pipelines but the integrity of existing pipelines that will be used to transport liquid effluent, and whether they will be subject to any testing prior to use is not discussed and remains an area of significant concern (paragraph 17.6.2 states that the liquid fraction would be pumped via existing and planned underground mains). The ES recognises that all structures carrying slurry or digestate have the potential to give rise to chronic pollution (paragraphs 11.5.5 and 11.5.8).

3.3.92 Given the proximity of the proposed development to SPZ1, and, at the location of the dairy, the absence of a significant covering layer of soil or rock above the aquifer to attenuate both the speed with which water from the surface reaches the water table and the concentration of associated contaminants a precautionary approach to the acceptability of the activities involved in the Application must be taken. SPZ1 policy guidelines could be considered appropriate.

3.3.93 Detailed consideration must be given in the ES to the operational and financial consequences to Anglian Water Services that would be associated with pollution of the public water supply, as requested by North Kesteven District Council. The development of the infrastructure required to locate, abstract, treat and distribute groundwater into a public supply is a multi-million pound investment.

3.3.94 The proposed development would introduce a very large scale potentially polluting activity to the application site. The introduction of large volumes of stored pollutants will significantly increase the density of polluting activities. The scheme therefore inherently presents a substantially increased risk of groundwater pollution to the immediate locality and to the underlying aquifer. The ES itself assesses the vulnerability of groundwater beneath the site to pollution as Very High, and provides a good summary of the potential for the development to give rise to 'chronic' and 'acute' pollution incidents via a number of structures and site practices.

3.3.95 The introduction of high numbers of livestock densely accommodated, agricultural and veterinary products increases the potential pollutant load. Handling and storage of animal waste, principally solid and liquid excreta, but also medicines, foodstuffs and sick and dead animals, all present increased potential for pollution, and would introduce a range of forms of pollutant not previously experienced at this site. Mechanised agriculture would increase the presence and therefore risk associated with hydrocarbons (fuels, lubricants, cleaning chemicals, etc.).

3.3.96 Beyond the application site, the scheme also proposes disposal of digested sludge through spreading to agricultural land in the local area. The ES makes a number of claims about the reduction in nitrate leaching (e.g. paragraph 11.6.34, 11.7.7) that the replacement of manufactured fertilisers by output from the

anaerobic digester will generate. However, no quantitative information is provided about the existing fertilization regime, the current levels of nitrate that are applied to land and their leaching characteristics. In addition, insufficient information is provided about the nutrient composition of digestate, its availability to soil in both dry and wet forms and its potential for run-off in these forms. Further information should be provided to clearly demonstrate that the proposed application of effluent to land will not increase the nitrate leaching into the underlying aquifer.

3.3.97 The scheme recognises the shallow and sensitive nature of the Lincolnshire Limestone (exposed at surface at the proposed dairy location), which is identified as a Principal Aquifer by the Environment Agency, and is qualified as highly vulnerable to land use activities within the Application. The sensitivity of the aquifer to agricultural loads, principally nitrates and their current elevated levels is also recognised within the Application. The excavation of aquifer material that is proposed for the construction of the effluent lagoons and effluent pipelines further increases the vulnerability of the groundwater by removing unsaturated material that may otherwise offer some additional protection, and placing pollutants closer to the water table. The location of the water table and hydrogeology of the area has not been properly investigated by the Applicant (see below).

3.3.98 The proposed development seeks to address pollution concerns, and includes a thermophilic stage in the digestion process to increase pathogen kill rates. While the chosen process, if designed and operated correctly, should provide a significant improvement on raw slurry, microbiological organisms are not removed completely. The use of triple liners to the digestate lagoons to reduce risk of groundwater pollution from lagoon leakage is also proposed. Whilst these measures may represent good engineering practice to mitigate an extant or otherwise unavoidable risk, it must be recognised that mitigation measures are only able to reduce risks, rather than eliminating the risk. Engineering measures will always be subject to a residual inherent risk level and indeed the methodology around the design of the lagoon liners recognises that there will be persistent leakage of effluent from the lagoons. Where there is the potential for this leakage to be attenuated before reaching the water table the risk could be considered low, but in this instance the base of the lagoons will be emplaced at depth, bypassing some of the unsaturated zone and increasing the potential for significant groundwater pollution.

3.3.99 The Groundwater Risk Assessment provided in the appendices to the ES (Appendix 11.1) considers only the risks associated with leakage from the storage lagoons, and explicitly excludes other sources (e.g. paved areas, leaking pipelines, runoff lagoon, etc). It also considers the steady-state operation of those lagoons in normal service, and does not model failure conditions. The Groundwater Risk Assessment is therefore considered inadequate, and should be extended to include all potential sources of pollution as well as accident/failure conditions.

3.3.100 The inclusion of additional digestion phases in the anaerobic digestion process may increase pathogen kill rates but will still not guarantee an absolute absence of pathogens in the final product. The movement and attenuation of pathogens in the groundwater environment is poorly understood and the proximity to a public water supply borehole presents a major concern. Improvements in lagoon integrity through adoption of multiple layers may reduce the nominal leakage rates assumed in the modelling, but will not eliminate leakage. Such measures

will also be subject to some "real world" margin for error. Such "real world" factors may include accidental or deliberate (vandalism) puncturing of lagoon liners, failure of anaerobic digestion plants through microbial cultures becoming poisoned or not maintained at adequate temperatures.

3.3.101 An example of this type of "real world" factors is given by a recent pollution incident at another facility within the ownership of the Applicant. In November 2008 the Applicant was reportedly fined for the pollution of more than 2 kilometres of an important tributary of the River Torridge. The Environment Agency stated that the incident was one of the worst they had seen for some time. The Agency explained that milk waste can be very harmful when it enters rivers and streams because it strips the water of oxygen causing fish to suffocate. The Environment Agency managed to recover more than 70 dead trout and coarse fish, although the total number killed would have been considerably higher. An investigation revealed a member of staff, unfamiliar with the farm's waste treatment plant, had accidentally switched on a valve and left it on causing a storage tank to overflow.[2]

3.3.102 Areas where human error, construction and maintenance quality or system failure would lead to increased risks associated with the proposed development as follows:

- Leakage of treated or untreated effluent through cracked or poorly sealed surfaces – escape of nutrients and/or pathogens into the soil and subsequently into the aquifer. This is difficult to detect, unlikely to be noticed without intensive groundwater quality monitoring, and by the time it is detected it may be too late to prevent pollution of aquifer;
- Failure of digestion plant to achieve complete pathogen kill – insufficient treatment time or temperature, microbial activity suppressed in the digester (e.g. due to incorrect balance of nutrients or poisoning of bacteria) leading to the release of digestate containing pathogens to be spread on agricultural land and subsequent pollution of aquifer;
- Leakage of treated effluent through accidentally or wilfully damaged lagoon liner – release of nutrient-rich water into the aquifer;
- Overtopping of lagoons – full lagoons coincide with heavy rain or inadequate monitoring of process leading to the release of nutrient-rich water into soil and subsequent leaching into aquifer;
- Poor control over spreading of digestate onto agricultural land, especially liquid effluent – un-recoverable overload of nutrient-rich material into soil and subsequently into aquifer;
- Escape of liquid effluent from underground pipes – incorrect installation of pipes, damage by injudicious excavation in proximity (particularly as the digestate pipeline would pass under public highways and over the Lincoln to Sleaford railway line) leading to the release of nutrient-rich water to aquifer;
- Incorrect operation of piped system or tanker loading/ unloading – release of nutrient-rich water to aquifer;
- Insufficient testing and maintenance regime for the effluent pipeline would mean that by the time leaks were detected they would have been well established;
- Fallen stock through disease – intensive rearing of animals may increase the potential for disease growth and subsequent increase in risk of the escape of pathogens – the Application recognises that fallen stock will present an issue,

[2] http://www.environment-agency.gov.uk/news/99535.aspx?page=3&month=11&year=2008

and proposes that they be stored in a container for subsequent removal, although detailed controls are unclear;
- Failure to sweep/ suction-clean roads and hardstandings daily;
- Insufficient design capacity of runoff lagoon, stated to be designed for 1:5 year event (Appendix 11.1 Groundwater Risk Assessment Section 2 – "Proposed Development") or under-sizing of piped collection system results in overtopping;
- Leakage of effluent from the chain of "temporary umbilical pipeline networks" to "surrounding third party farming units" and within the third party farming units (Appendix 11.1 Groundwater Risk Assessment Section 2 – "Proposed Development"), particularly where there are existing rather than newly installed pipelines;
- Accidents involving vehicles tinkering digestate; and
- Insufficient infrastructure and measures to deal with surface water run-off.

3.3.103 The ES does not make clear how 'dirty water' from the dairy site will be collected, stored, treated and re-circulated. In addition the open drainage pathways (swales) to the water table that are proposed for the transmission of 'clean' runoff, such as from roofs, form a significant and rapid pollution pathway, and it is not clear how the 'dirty' runoff will be retained and prevented from entering the swales. It is stated that the exact size, location and operation of sustainable drainage (SUDS) measures would be included in a separate SUDS design report. Given the sensitivity of the location it is essential that a clear scheme is presented at the planning application stage (more detail is provided below).

3.3.104 The ES sets out criteria for the ranking of groundwater impacts (Table 11.3). The ES states that the residual risks to groundwater are negligible and minor from construction and operation of the proposed development respectively. While the ES does describe many potential pollution sources and pathways, the conclusions of minor and negligible risks to groundwater quality are not adequately explained. In this hydrogeological setting of rapid groundwater flow, existing high nitrate levels in groundwater and a nearby public supply borehole, a minor risk of chronic and acute pollution of groundwater from both construction and operation of the unit is considered unacceptable. By the Applicant's definition a minor effect results in a measurable change in groundwater quality or vulnerability. However, this would contravene Environment Agency groundwater protection policy and the requirements of the Water Framework Directive. The assessment of impacts and the criteria used in the ES need to be reviewed.

3.3.105 In summary, it is considered that there is a fundamental incompatibility between the proposed use and its location on a highly vulnerable limestone aquifer, very close to SPZ1 of a public water supply borehole. Whilst a range of measures are proposed to address this, it must be recognised that mitigation measures are only able to reduce risks, rather than eliminating the risk. Engineering measures will always be subject to a residual inherent risk level. It is considered that there is a significant risk that the proposed development will lead to an adverse effect on the integrity of surface water and groundwater, and that this risk is understated and insufficiently articulated by the ES.

Water Table and Hydrogeology

3.3.106 The Applicant has failed to properly investigate the water table and hydrogeology of the application site and surrounding area. Paragraph 11.6.7 states that the depth of the underlying water table would be established at the commencement

of works and thereafter monitored to avoid interference with the aquifer. Paragraph 11.7.1 states that all development would be constructed above the water table. This appears to be an unsubstantiated claim, given the statement provided in paragraph 11.6.7. Whether or not the development extends below the water table will depend on the depth of excavations, e.g. of the lagoons, etc. and the height of the water table in the winter. The Environment Agency groundwater protection policy P1-9 states that it will object to the storage of pollutants below the water table in a Principal or Secondary aquifer.

3.3.107 Given the vulnerable nature of the site and local area it is considered essential that the existing groundwater conditions are fully explored to enable a comprehensive analysis of the likely impacts. This should include an assessment of groundwater levels, groundwater flow directions, recharge and the catchment to the public water supply borehole.

Flooding

3.3.108 Paragraph10.4.7 states that no surface water flooding has been seen at the site, although large puddles do form on the surface of existing, well-used but unsurfaced tracks. However, anecdotal evidence provided by local residents indicates that the high water table in July 2007 and January 2008 in the hollow at the head of Dunston Beck, immediately to the north of Dunston Heath Road, close to the proposed location of the lagoons caused prolonged flooding at the surface that flowed directly into Dunston Beck. This indicates the Applicant has failed to fully explore the flooding issues and conditions on and around the application site, creating, as set out above, a possible pathway for pollution. If contaminants were to reach the head of Dunston Beck, they would move rapidly downstream and could have a significant effect on surface water quality.

Proposals for Surface Water Run-off

3.3.109 Paragraphs 10.4.29 to 10.4.35 set out proposals to deal with surface water run-off. The ES recognises the huge increase in surface water flows that the development will generate, but provides very limited information in terms of how this surface water will be accommodated. The proposals consist of conveying “clean” water from roofs and roads to grass swales, and dirty water to a storage pond and then a reed bed before conveying it to the swales (although the latter is unclear). The ES states that the huge volume of water will be handled through SUDS measures, the exact location, size and operation of which would be identified in a separate SUDS design report. Only indicative broad locations and sizes for the swales are provided. The following issues are identified:

- The ES provides insufficient information on measures to deal with surface water run-off particularly the control, transport and storage of ‘dirty’ water. Given the potentially polluting nature of the proposed use and the vulnerable nature of the application site in terms of water pollution, this is a serious omission which needs to be addressed if the likely impacts of the scheme are to be fully assessed;

- The proposal to direct “clean” surface water run-off to swales and dirty surface water to reed beds raises concerns, as the swales provide efficient pathways for pollutants to reach the water table. This could occur from a range of sources including: contaminants entering surface water from

locations which the ES considers to be "clean" such as main roads, internal sites roads and collecting yards; and failure of the processing of dirty water through reed beds to remove contaminants; and

- In the description of impacts on surface water quality, the nearest surface watercourse, the Dunston Beck, seems to be persistently overlooked. This raises concerns about the Applicant's understanding of local hydrology, which is fundamental to risk assessment and mitigation.

WATER RESOURCES

3.3.110 Section 12 of the ES has been reviewed, as well as relevant material from the appendices. The results of this review are summarised below.

3.3.111 The ES provides insufficient information to assess both the proposals and impacts of the scheme on water resources in the local area. The dairy will be a substantial new user of water in the local area, with a reported demand of 129,776m^3/annum, which is equivalent to the water consumption of around 2,430 households (based on an assumption of average household use of 146 litres per day). It should be stressed that the site is located in the UK's driest region.

3.3.112 The information in the ES is deficient in the following key ways:

- Lack of information on the net impact on water resources – Although it is stated in paragraph 1.2.9 that treated water will replace water otherwise abstracted for irrigation, it is not clear what the water requirements of both the dairy and the agricultural activities on the rest of the Applicant's land will be. No quantification of the reduction in spray irrigation demand is given. No details of actual water use over recent years is given, other than a vague statement about 71,000 m^3 coming from the limestone aquifer (over what time period and for what use is not clear);
- For the Environment Agency to properly assess any application to vary the two abstraction licences held by the Applicant, a proper quantification of recent actual use is required, plus a clear justification of need; and
- The ES mentions the development of a new borehole on the dairy site, presumably using water currently licensed from the existing farm borehole in Nocton. It is very unlikely that this would provide a yield equivalent to the existing borehole due to its contrasting hydrogeological setting and an alternative supply of water or distribution system may be needed. Additional confusion comes from statements such as:
    - '*the overall volume held on current licences is adequate to meet the demands of the dairy'* (12.5.6);
    - '*the new unit would create an additional requirement for water in a low rainfall area'* (12.6.3);
    - '*There would be no increase in the abstraction rate of water from the River Witham or local boreholes'* (12.7.1);
    - '*The development proposes to increase abstraction from the River Witham'* (12.8.1).

3.3.113 A clear strategy and justification for water supply is easy to produce but the lack of clarity in the ES is symptomatic of inadequate understanding in this fundamental element of the dairy's operation.

AIR QUALITY

3.3.114 Section 6 of the ES and relevant material from the appendices has been reviewed. This review has identified a range of issues, and these are set out below.

3.3.115 Paragraph 3.3 of Appendix 6.1 sets out ambient odour criteria. The ambient odour criterion for "moderately offensive odours" has been used which is twice that for "highly offensive odours" – the rationale being that local residents will be tolerant of agricultural odours. The justification appears to be based on a general presumption. Given the lack of odours associated with dairy farming in the local area and the year-round operation of the unit (as opposed to the seasonal nature of arable farming) this assumption needs to be substantiated.

3.3.116 The odour modelling work provided in Appendix 6.1 has been undertaken with source terms (model input data) from an American study with a safety factor applied. These numerical values are provided without any demonstration of how they have been derived, and they are wholly arbitrary numbers. Some are described as calculated, while others are described as estimated to the nearest single odour unit, implying an unlikely level of accuracy. This is considered to be a serious deficiency in the analysis, and substantiation of the model input data is essential if the accuracy of the modelling work is to be assessed. It is important to ascertain if the American odour emission rates were genuinely measured in accordance with equivalent UK/EU standards (BS EN 13725:2003) originally based on protocols from the Netherlands. If not, the results cannot be meaningfully compared to UK odour criteria.

3.3.117 It is not clear why the plots for the hourly mean odour concentrations from the dairy and spreading of digestate are disaggregated when odour is otherwise expressed as a single parameter and the effects will be additive, cumulative or synergistic. The 99.9th percentile (worse (but not worst) case) results for maximum hourly odour concentration are presented for spreading but not for the dairy. These 99.9th percentile plots appear to be intended to give a higher degree of confidence around the lack of odour effects from the spreading. However, the same data is not provided for the dairy, indicating that this data would show far higher concentrations than the spreading plots. The aggregate effects should be presented as 99.9th percentile plots.

3.3.118 The Manure Management Plan (Figure 6.1) indicates land that is proposed to be used for the spreading of digestate. Figure 4b in Appendix 6.1 shows the positions of the area sources representing the spreading areas. However, Figure 4b appears to include just the land within the Applicant's ownership, and covers less than half the area proposed for spreading as indicated in Figure 6.1. A wide range of spreading areas appear to have not been included as sources in the odour modelling. The Applicant should clarify this issue, as it appears that the odour modelling and contour plots are not representative of the likely impacts of spreading of digestate.

3.3.119 The analysis appears not to include odour emissions from the anaerobic digester. In order to provide a complete odour assessment, this potentially odour generating activity should be included within the assessment or clear and justifiable assurances made about the lack of odorous emissions from this unit.

3.3.120 The Non-Technical Summary states that there are no public footpaths within 400m of the scheme. However, a public footpath runs from Dunston Heath Lane to the southern edge of the Top Plantation woodland which is within 400m of the western edge of the scheme.

3.3.121 Paragraph 6.7.1 states that the effect of odour arising from dairying and spreading operations on nearby dwellings has been assessed as "Negligible". This is defined in Tables 6.2 and 6.4 as a virtually imperceptible change in any component. Odour dispersion modelling is inherently uncertain, and the modelling presented by the Applicant suffers from a range of deficiencies, as set out above, including in terms of failure to justify model input data and failure to model a representative spreading area. Notwithstanding these issues, Appendix 6.1 concludes that "*The 99.9th percentile values from the modelling probably realistically identifies the areas that would be most frequently affected by odours from spreading operations…it should be noted that the modelling assumes a careful choice of application areas based on an accurate forecast of weather conditions and also that even the 99.9th percentile values do not represent a worst case scenario."* It is considered therefore that the assessment of the likely effects of odour as "Negligible" cannot be supported even by the data presented by the Applicant. The assessment of likely impacts should be reviewed.

3.3.122 Appendix 6.2 is based entirely on ammonia emission rates from a single study. Given that the UK has a wealth of ambient ammonia data from the AGANet monitoring network and establishing such emission rates is a common Environmental Permitting requirement, does this study represent the only genuine source of relevant model input data in the UK? Justification for the use of these data is required.

ECONOMIC DEVELOPMENT

3.3.123 The information provided in Section 16 of the ES has been reviewed. Key issues are set out below.

3.3.124 Paragraph 16.5.12 states that "Although the new unit could potentially compete with the existing dairy businesses, in reality they would be selling to different markets so there would be no adverse impact on local dairy farms". No information relating to the milk supply chain, sub-markets for milk and milk products or the impact of the introduction of a new supply of milk onto the market is provided to substantiate this claim. There has been considerable debate reported in the dairy industry press about the impact of the proposed development on existing UK dairy farms (e.g. http://www.fuw.org.uk/read-press-release/items/610.html). Concerns include the impact of the introduction large scale milk producers on the price of milk, traditional producers and the industry as a whole. It is worth noting that a facility housing a herd of 3,770 cows is the equivalent of around 33 existing dairy farms, based on an average herd size of 113[3]. If the proposed development were to have negative impacts on existing suppliers, a large number of businesses could theoretically be affected. This issue requires thorough investigation.

3.3.125 Paragraph 16.5.2 states that construction would generate the equivalent of 37.5 'full time construction jobs annually'. The Applicant should clarify that this relates

[3] [3] http://www.defra.gov.uk/foodfarm/food/industry/sectors/milk/dairyindustry/index.htm

to jobs created during the construction period only – i.e. for 18 months, and not to operational jobs.

3.3.126 Table 6.8 sets out the estimated jobs to be created by the operation of the facility as 60. The Applicant indicates an unemployment level in North Kesteven of 2%, as set out in Table 16.6. This is a low level of unemployment, and essentially represents a frictional level of unemployment, created by people changing jobs. The Applicant states that the recent decline in the UK agricultural livestock workforce has made many farms reliant on immigrant workers (paragraph 3.2.51), and a 10 room dormitory block to provide short term accommodation is proposed. In order to attract and retain staff, five further houses are proposed for members of the senior management team and their families. Given the low levels of unemployment in the District and the current lack of dairy farming enterprises and expertise, it is likely that a least a proportion of the workforce will come from outside the local area. The number of posts filled by local people is likely to be low.

3.3.127 The planning application form states that the development would involve the construction of 51,784m^2 of non-residential floorspace in addition to the five dwellings and dormitory block described above. Excluding the residential floorspace, this gives a worker:floorspace ratio of 1 job per 863m^2. This compares with the following typical job creation figures:

- 1 job per 20m^2 of office floorspace;
- 1 job per 34m^2 of industrial floorspace; and
- 1 job per 50-80m^2 of warehousing or distribution floorspace.

3.3.128 Therefore a similar amount of employment could be provided by a new office development of only 1,200m^2 or a new industrial facility of around 2,040m^2, for example in Grantham, Lincoln or Boston.

TRAFFIC AND TRANSPORT

3.3.129 Section 18 of the ES and relevant material from the appendices has been reviewed. This review has identified a range of issues related to the assessment of the traffic and transport impacts of the proposed development. The key issues are set out below and further detail is provided in Appendix B.

Trip Generation Methodology

3.3.130 The predicted trip generation has been estimated based on first principles, taking into consideration operational requirements of the proposed development. This includes the number of staff, postal, engineers, deliveries, visitors and consultants, farm workers, dead stock contractor, artificial insemination and industry representative vehicle movements have all been estimated. No supporting evidence is provided to support the predicted vehicle movement estimates for these movement types.

3.3.131 Traffic surveys of an existing large dairy unit (such as that already in the ownership of the Applicant) would have identified typical daily dairy unit trip generation patterns by mode and time period. This information could then have

been used to validate whether the first principles assessment is robust. As the assessment stands there is no evidence to demonstrate that the assumptions underpinning the trip generation are robust compared to the actual trip generation of an existing large dairy unit.

3.3.132 The typical daily trip generation of the proposed development has been calculated based on the number of operational vehicle movements to and from the site. Operational movements have been predicted for either a daily, weekly, monthly, or annual frequency depending on the movement type. The frequency of the movements has then been divided to produce a daily movement vehicle trip. This methodology results in some operational movements occurring less than once per day. Clearly it is not possible to have, for example, 0.4 HGV Livestock Transfer movements per day, as the minimum daily vehicle movements that can occur are two movements (one arrival and one departure). The adopted approach therefore results in a 'hypothetical' average daily trip generation that would not occur in reality.

3.3.133 In reality, it is not possible to have operational vehicle movements of less than 1 vehicle per day. The assessment should therefore provide operational vehicle movements for a 'typical day' and a worst case assessment where all the operational movement trips are occurring. A range of daily movements generated by the proposed development should be provided taking into account the variability of the operational vehicle movements on a daily, weekly, monthly and annual basis. This could be supported by surveys of an existing dairy unit to demonstrate the range and temporal distribution of daily movements to and from the site. Empirical data should be provided to demonstrate the likely vehicle trip generation and vehicle types during the highway peak hours.

3.3.134 The operational vehicle movements table (Table 18.18) also states that a vehicle movement is either onto or off the site. It is not clear from the table for each of the movement types whether the data presented is for a one-way or two-way (arrival and departure) movement. This should be clarified as the combination of one-way and two-way movements in a single table to generate the daily operational vehicle movement total is confusing and misleading. From the data provided it is not clear what proportion of the operational trip generation will be external, resulting in trips on the public highway.

3.3.135 Similar issues exist with the method used to estimate construction vehicles. There is a lack of clarity over what the typical daily construction movements on the local highway network will be. The information should clearly present the two-way construction movements by vehicle type and construction phase. As the frequency of the movements varies by day, week, month and year, a range of movements should be provided demonstrating predicted minimum and maximum daily construction movements. The assessment should also demonstrate that the largest construction vehicles can safely access and egress the proposed development site through the provision of swept-path diagrams. There is a lack of clarity as to whether or not the construction traffic figures presented include the construction of the digestate pipeline and reservoir. As set out above, the impacts of these elements of the scheme should be included in the assessment.

3.3.136 In summary, the information provided on construction and operational vehicle movements is insufficient to enable a soundly-based assessment of the likely impacts of the scheme. The transportation information provided may underestimate the impact of the development on the public highway.

Highway Safety

3.3.137 The supporting transportation information contains an assessment of accident data within the vicinity of the proposed site access during the period of 01/10/2004 to 30/09/2009. This data, whilst covering a total of 5 years, does not cover in full or part the 12 months up to the submission of the planning application. It is understood from local newspapers and informal communications with local residents that there have been two fatal accidents within close vicinity of the proposed sites access as follows:

- "This is Lincolnshire" reports a fatal accident on the B1188 at Dunston on 15th May 2009 in which a pensioner died and her husband was seriously injured[4]; and
- The BBC news website reports a fatal accident on the B1188 at Nocton Heath on 15th November 2010 in which a 23 year old woman died[5]. Paragraph 18.6.14 of the ES briefly refers to the latter.

3.3.138 More up to date and comprehensive accident data should be provided to robustly assess the increased risk to highway safety that the proposed development poses.

3.3.139 Notwithstanding this gap in the data upon which the assessment has been made, we would query the validity of the conclusion that there is no serious highway safety issue in the vicinity of the proposed site access and that the B1188 has a low accident record. The ES repeatedly emphasises these conclusions (e.g. paragraphs 18.4.14 and 18.6.14).

3.3.140 Guidance from Lincolnshire County Council, the Local Highway Authority for the B1188, set out in the table below shows that even based on the figures presented in the ES which exclude the fatal accidents mentioned above, there is a **HIGH** risk of the frequency of collisions along this section of the B1188. This contradicts the assessment made within the ES which is considered to be inaccurate and misleading.

		More than one per year	One every 1-4 years	One every 510 years	Less than one per 10 years
Severity	Fatal	Very high	High	High	Medium
	Serious	High	**High**	Medium	Medium
	Slight	High	Medium	Medium	Low
	Damage	Medium	Medium	Low	Low

Source – Lincolnshire County Council: Road Safety Assessment Guidance

3.3.141 This conclusion is further supported by the designation of the B1188 between Lincoln and Sleaford as a "Red Route" or "High Casualty Route". These routes have been identified by the Lincolnshire Road Safety Partnership as having a high rate of collisions and causalities based upon a detailed investigation of

[4] http://www.thisislincolnshire.co.uk/news/Porsche-driver-jailed-18-months-year-ban-causing-fatal-crash/article-2771978-detail/article.html
[5] http://www.bbc.co.uk/news/uk-england-lincolnshire-11770744

accident data. Below is a photograph of the Red Route sign placed on a road sign approximately 175m north of the proposed site access.

Source – Atkins Ltd

3.3.142 The proposed site access junction, as set out in the previous application, is a simple T-Junction arrangement located to the north of the existing B1202 T-Junction. The B1188 is a derestricted rural road with a relatively flat topography. Concern is therefore raised that increasing vehicle turning movements could result in an increased number of accidents occurring at this location. This is particularly the case with heavy goods vehicles which take longer to accelerate, decelerate and turn when departing and arriving at the junction respectively. An increase in number of heavy goods vehicle movements into the site could increase the opportunity for rear end shunt accidents to occur.

3.3.143 The Draft Routing Agreement (Appendix 18.10) shows the preferred HGV route to the A15 would be via the B1178. The junction of the A15/B1178 does provide a right turn ghost island. However, the potential for increased accidents remains with heavy vehicles joining a 60mph derestricted A-Road.

3.3.144 There will also be movements on other local roads for trips within 5km of the application site. The B1202/A15 junction is a crossroads with no ghost island right turn facility. Any vehicles travelling towards the proposed development from the A15 will have to turn right into the B1202 resulting in additional delays to through movements and increased opportunities for accidents to occur. Heavy goods vehicles will also exit left from the B1202 to join the derestricted A15, again increasing the potential for rear end shunts to occur.

3.3.145 The Lincolnshire LTP 2006-2011 identifies that the majority of Lincolnshire's casualties occur on the rural road network, with 74 percent of all casualties occurring on roads with a speed limit of 50 mph or more. The analysis also shows that the unrestricted A and B roads, which account for just 18 percent of the road network, attract 58 percent of all collisions. This analysis shows that unrestricted A and B roads have a disproportionate number of accidents compared to urban roads resulting in increased safety risks to users. Analysis of accident records on similar rural roads in Cambridgeshire shows that declassified rural roads typically have a higher proportion of serious and fatal accidents compared to the overall road network. The analysis shows that accidents frequently occur at major/minor junction locations such as simple T-junctions and ghost island right turn junctions where vehicle are entering or turning across vehicles travelling at high speeds. The analysis also shows that accidents can occur at site access junctions to single farms/private dwellings as well as at the junctions of rural B and A class roads. More detail is provided in Appendix B.

3.3.146 In summary, it appears that the ES seriously under-represents the highway safety situation in the vicinity of the application site. This issue has been highlighted for the B1188, although there may be similar issues on other local roads. Up to date and comprehensive accident data is required to enable a proper description of conditions on the local road network. The ES is misleading in its repeated assertion that the B1188 has a low accident record, and even based on the data provided in the ES which excludes the two recent fatal accidents, this road has a high accident record. Analysis of similar roads in Cambridgeshire, as well as information from Lincolnshire, show that declassified rural roads typically have a higher proportion of serious and fatal accidents than the overall road network. The analysis shows that accidents can occur at site access junctions to single properties, as well as at junctions of rural B and A roads. The assessment of highway safety issues provided by the ES is considered inadequate and misleading, and underestimates the impact upon highway safety of the proposed development.

Highway Layout

3.3.147 Highway access to the proposed development would be via a simple T-Junction with the B1188 Lincoln Road, and drawing RAC/4448/12 Rev B has been reviewed. The proposed approach raises a range of concerns, as set out below.

3.3.148 The Design Manual for Roads and Bridges (DMRB) TD 42/95 provides the standards for the geometric design of Major/Minor Priority Junctions. DMRB TD 42/95 states that simple junctions must not be used for wide single carriageways and for new junctions should only be used when the flow on the major road are not expected to exceed 13,000 vehicle 2-way AADT in the design year. The Applicant should demonstrate that the B1188 is a standard single carriageway and that the design year flows are not expected to exceed 13,000 AADT on the B1188.

3.3.149 Notwithstanding this, concern is raised than no right turn facility is provided for vehicles turning into the proposed development. It is proposed to route operational vehicles including tankers and HGV's to and from the north of the site. This will result in all HGV movements turning right into and left out of the proposed junction. A right turn facility should be considered as large vehicles waiting on the B1188 to turn right will inhibit the through flow of traffic and thus create a hazard. TRL RR 65 demonstrated that the frequency of accidents

involving a right turn from the major road is some 70 percent less at junctions with a ghost island, than at simple junctions.

3.3.150 Development generated traffic including HGV's have to join the B1188 in gaps in the existing traffic stream. It is therefore essential that operational vehicles exiting the site have adequate visibility in each direction to see oncoming traffic that could be travelling at relatively high speeds. The DMRB TD 42/95 requires a visibility standard of 4.5m x 215m for a major road with a design speed of 100 kph. It is not clear from the junction design submitted that the required visibility splay for the minor arm can be achieved. These needs to be clearly demonstrated, otherwise serious safety concerns are raised with regards to HGV movements exiting the site onto the B1188. In particular there is a concern that the dip in the road to the north of the site may be have an impact on forward visibility for vehicles travelling south on the B1188 and those exiting the site.

3.3.151 The submitted junction layout design shows corner radii of 9 metres for the minor arm. This is not in accordance with the DMRB TD42/95 which states that the minimum circular corner radius at simple junctions in rural areas should be 10 metres. However as the proposed junction will accommodate HGV movements the DMRB recommends the following:

- 15 metre radius at rural simple junctions, with tapers of 1:10 over a distance of 25 metres;
- 15 metre radius at ghost island junctions, with tapers of 1:6 over a distance of 30 metres;
- 15 metre radius at simple staggered junctions, with tapers of 1:8 over a distance of 32 metres; and
- 20 metre radius in all other circumstances.

3.3.152 The DMRB goes on the state that where large goods vehicles comprise a significant proportion of the turning movements, use of the compound curve is recommended. It is therefore considered that the proposed junction layout is not in accordance with the DMRB standards. The Applicant does not appear to have undertaken swept-path analysis of the largest vehicle types predicted to use the junction to demonstrate that it can operate safely. Swept-path analysis should be undertaken to demonstrate that the proposed junction can safely accommodate large HGV movements arriving and departing the junction without resulting in conflicts on the minor arm.

3.3.153 Consideration should also be given to the lighting of the new junction given that large vehicles, visitors and staff are likely to be accessing the site outside daylight hours.

3.3.154 Furthermore, the proposed access design has not been accompanied by a Road Safety Assessment or a Stage 1 Road Safety Audit, in accordance with DMRB and Lincolnshire County Council guidance. This is a serious omission in the design stages and the ability to determine if the proposed design will operate in a safe manner for both vehicular and non-vehicular traffic.

3.3.155 In summary, concerns are raised with the safety and layout design of the proposed site access junction. No right turn facility has been provided and therefore operational and construction vehicles waiting in the carriageway will cause a hazard to existing through movements. The junction layout has not been

designed in accordance with the DMRB corner radii standards and no evidence is provided to demonstrate that the proposed junction achieves the required visibility standards and can safely accommodate HGV movements. The simple T-Junction layout will require HGV movement to cross and accelerate onto a high-speed rural road resulting in safety concerns for existing movements on the B1188.

3.3.156 These safety concerns of the specific junction, along with those expressed above, lead us to question the Applicant's ability to deliver an acceptable development in this location.

Routing Plan

3.3.157 In terms of the proposed approach to the control of HGV routing, there is concern about the adequacy and practical enforceability of routing agreement(s) as a means of ensuring that the development does not impact adversely on the network of unclassified roads in the vicinity of the development site (with adverse impacts on residents and other road users in the locality). Issues may include the practical difficulties associated with supervising and enforcing routing agreements, particularly for HGVs accessing the site who are not directly under the Applicant's control (e.g. feed suppliers).

ENVIRONMENTAL SUSTAINABILITY

3.3.158 Section 17 which aims to assess matters relating to the sustainability of the proposed development has been reviewed. The key findings are set out below.

3.3.159 The Section starts with a planning policy review which lists a range of national, regional and local planning policies covering topics such as design, water resources, flood risk, air quality, landscape conservation, biodiversity and protected species (Section 17.2). Paragraph 17.3.1 states that the section considers both adverse and beneficial impacts arising from the development at a range of scales, local, regional, national and European.

3.3.160 Analysis of environmental sustainability should be broadly framed, and include all relevant topics and issues. For example, the East Midlands Regional Assembly usefully produced an Integrated Toolkit (EMIT) which was developed to assist decision makers, planners and developers throughout the region to evaluate the impacts of their plans, policies and projects on the region's sustainable development objectives. These objectives are set out in the Integrated Regional Strategy (IRS), the sustainable development framework for the region. The Toolkit covers a wide range of topics including built environment, community safety, culture, employment, enterprise, health, housing, learning, lifestyles, location of development, natural environment, natural resources, social capital and transport and accessibility.

3.3.161 Section 17, however, does not assess a comprehensive range of environmental sustainability topics, despite the inclusion of a wide range of planning policies in Section 17.2. Instead the Section relates only to emissions of greenhouse gases, consumption of energy and use of resources. No information, even in summary form, is provided on cultural heritage, biodiversity, water quality and resources, development of an extensive greenfield site rather than development of brownfield land, local flooding issues, encouraging sustainable transport (except for limited information on journeys to work), landscape, countryside and visual

impacts and light pollution. While it is recognised that many of these topics are covered elsewhere in the ES, Section 17 is misleading in that it starts with a wide ranging policy description and states that impacts are considered at a range of scales, but then just deals with three topics. The section should be re-drafted to provide a balanced and comprehensive review of the environmental sustainability of the development.

3.3.162 In terms of the information provided on greenhouse gases, the following key issues are not clearly articulated in Section 17 and Appendix 17.1:

- The rationale for the selection of some items and exclusion of others in the assessment (for example, paragraph 17.3.5 states that emissions associated with non-domestic and domestic sources of feed; manure or slurry transported off-site; excess renewable energy and private water extraction are not included);
- The method by which calculations of CO_2 emissions have been made and the assumptions involved (see Appendix C for more detail on this issue) ; and
- The impacts of the scheme. Paragraph 17.4.5 states that a calculated 983.460 tonnes of CO_2 equivalent is produced under the present land use at Nocton Heath. The land area this applies to is unclear, and the previous paragraph mentions the combine harvesting of 630 hectares of land, whereas the area of the site is given in the Application documentation as ranging from 12.98 hectares to 29 hectares, as set out above. The time period this applies to is also not given. Paragraph 17.4.6 then goes on to provide a measure of CO_2 for a litre of fat-corrected milk, but no figure is given for annual CO_2 emissions. Appendix 17.1 provides a figure of 57,760,999 kg per year, which is 57,761 metric tonnes for total CO_2 emissions. However, paragraphs 17.5.7 to 17.5.9 which cover the likely impacts of the scheme in terms of greenhouse gases do not provide any figures or assess the severity of the impact, but simply state that local greenhouse gas emissions would increase. The ES goes on to state that this is countered by a decline in UK dairy related emissions.

3.3.163 The Applicant should re-work the information on greenhouse gases to provide a clear and reasoned methodology and assessment of impacts. The analysis provided does not enable the reader to draw any informed conclusions about the effect of the scheme on greenhouse gas emissions.

3.3.164 The Non-Technical Summary claims that the unit would have the lowest carbon footprint for milk in the country, if not Europe, although the comprehensive information required to substantiate this claim is not provided. The assumptions, method and details of any calculations made should be clearly set out.

3.3.165 In terms of the use of resources, Section 17.6 considers manufactured fertiliser, feed for cattle, sand and fuel for journeys to work. However, the proposed development is likely to require the use of a wide range of additional resources, for example:

- Construction materials – the construction of over 50,000m^2 of non-residential floorspace, six residential buildings, site access (and digestate pipeline and reservoir although these are excluded from the Application) will involve very large quantities of construction materials. Substantial quantities of plant and machinery will be procured and installed. Very large quantities of concrete, wood, steel and other building materials will be required;

- Water – as set out above, the dairy will be require a very large scale supply of additional water;
- Fuel for all activities other than journeys to work – fuel will be required for a wide range of transport movements, as set out in Table 18.18. These include the movement of milk tankers, transport of livestock, travel by on-site staff, delivery of forage and feed, visitors, trips by external vets, dead stock movements, fuel deliveries, trips associated with facility maintenance, liquid and solid digester output movements, post and parcels. Fuel will also be required for on-site plant, for example for plant associated with vacuuming cow accommodation areas;
- Cattle – the development will depend on the regular import of cattle; and
- Other resources – the scheme will require a range of other resources including medicines, office and domestic supplies.

3.3.166 The resource use of the scheme should be comprehensively analysed and set out.

3.3.167 Paragraph 3.1.8 of the ES explains that the anaerobic digestion complex would have the capacity to produce up to 0.75MW of electricity a year through the use of an on-site combined heat and power (CHP) plant. This electricity would be sold to an energy company, with the electricity needs of the unit met by the national grid. The surplus energy produced by the unit would be expected to be enough to power 830 homes.

3.3.168 The Application provides only very limited information on how much electricity the unit will use, and the potential benefits in terms of net energy supplied to the energy company are not clearly demonstrated. No mathematical formula is included to show how the figure of 830 homes was arrived at.

3.3.169 Since energy generated will be sold back to a third party, the Applicant has no control over what will happen to this energy. It may power homes, it may power other industrial operations, it may or may not be distributed locally. The benefit to the local area of the CHP unit therefore remains unquantified.

PUBLIC HEALTH

3.3.170 Appendix 6.7 provides general information on the public health implications of large scale dairy farming. The issues covered are microbial pathogens, emissions to air of ammonia, hydrogen sulphide, methane, bioaerosols and particulate matter. Paragraph 6.5.15 mentions impacts related to flies, and a Fly Management Plan is provided in Appendix 6.5. The information provided does not amount to an assessment of likely impacts as no (or only very limited/partial) information is given on baseline conditions, methodology, evaluation criteria, potential impacts, mitigation or residual impacts.

3.3.171 In terms of microbial pathogens, as set out above, there is a risk that there is a failure of the digestion plant to achieve complete pathogen kill due, for example, to insufficient treatment time or temperature, or if microbial activity is suppressed in digester. This could lead to the release of digestate containing pathogens to

be spread on agricultural land and subsequent pollution of aquifer. This issue should be properly addressed in the ES.

3.3.172 In terms of the management of flies, mosquitoes and midges, it is considered likely that a management programme which includes the use of pesticides will need to be employed. Use of pesticides can create pollution issues related to spray drift, as pesticides can travel considerable distances in the air. This would be a particular concern if the facility uses "fogging" or "misting" to treat flies. There is also the potential for pollution of surface and ground water. The proposed use of chemicals in combination to combat insect resistance can lead to an increase in the toxic effect. It is therefore considered important that further information is provided by the Applicant on proposals for the control of flies, mosquitoes and midges, and in particularly the use of pesticides.

3.3.173 As set out in paragraph 6.2.3 of the ES, the proposed development is not currently required to operate with a permit under the Pollution Prevention and Control Regulations 2000 (these have been updated by the Environmental Permitting (England and Wales) Regulations 2007). Whilst these regulations cover certain industrial activities including intensive pig and poultry production, intensive large scale dairy units are not currently in existence in the UK, and thus they are not included in the regulatory regime. This means that the proposed development would be subject to less stringent environmental controls than a similarly sized unit for pigs or poultry. Given the highly sensitive location of the site, this indicates a serious issue in terms of lack of proper controls on a large scale potentially polluting activity.

3.3.174 There are a range of further potential impacts on public health which have not been considered within the ES. These include:

- Possible proliferation rats at the facility leading to increased risks to human health, including transmission of Weill's disease to local water courses;
- Release of antibiotic-resistant bacteria in waste milk and manure. The proposed use of milk from mastitic cows under treatment to feed calves poses an increased risk of antibiotic resistance;
- Release of antibiotics into soil and ground water, promoting antibiotic resistance in soil bacteria. A significant percentage of administered antibiotics may be excreted in active forms which could contaminate the environment when digested slurry is applied to land and be disseminated via surface run-off and leaching through the soil into nearby waterways. Repeated applications of digestate in the same location may result in the continuous exposure of soil bacteria to antibiotic residues, and these soil bacteria may then serve as a persistent reservoir of antibiotic resistance in the environment[6]; and
- Increased risks to human health from zoonotic pathogens, including E. coli, Campylobacter, Salmonella, Giardia and Cryptosporidium have not been fully evaluated. Cattle are recognised as an important source of these infections in rural populations, particularly for young children, and high cattle density is

[6] Sarmah *et al* (2006) A global perspective on the use, sales, exposure pathways, occurrence, fate and effects of veterinary antibiotics (VAs) in the environment. *Chemosphere,* 65: 725-759.

considered to be a significant risk factor[7]. This risk is likely to be exacerbated if public visits are encouraged.

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3.3.175 In summary, further information is required to properly assess the likely impacts of the proposed development on public health.

FLORA AND FAUNA

3.3.176 Section 8 of the ES and relevant material from the appendices has been reviewed. Key issues are set out below.

3.3.177 The issues relating to the ammonia and nitrogen deposition modelling have been set out above. Notwithstanding these issues, further concerns remain. The ADAS report on the modelling of impacts of ammonia and nitrogen deposition on SSSIs, Local Wildlife Sites and Ancient Woodlands (Appendix 6.2) provides the following summary "*ammonia concentrations and nitrogen deposition rates are predicted to be at levels where some adverse effects may occur at some of the closest Ancient Woodlands*", and that "*in terms of Critical Level, there are three (sic) receptors (5, 6, 7 and 25) at AWSs where the maxima of predicted annual mean ammonia concentrations are in excess of 100% of the Critical Level*". Therefore the ES states that the ammonia deposition will have an effect on the habitat at these protected sites. These receptors are two ancient woodlands, a part or all of each which is also a Local Wildlife Site (LWS) in Lincolnshire. Receptor 25 does not appear to be an ancient woodland site despite being so described in the ES, but may be at Dunston Heath Pond and Verge LWS, for which there appears to be no citation or location in the Ecology Report (Appendix 8.1). This issue should be clarified.

3.3.178 There are predicted ammonia concentrations and nitrogen deposition rates above 20% at the Potterhanworth SSSI (also ancient woodland) which is further from the application site than the other receptors mentioned. Concentrations above 20% are deemed significant based on the criteria given in the ADAS report (Environment Agency guidelines).

3.3.179 In determining the significance of the effect on local sites, the following points should be considered:

- The ADAS report notes that excessive nitrogen deposition can lead to acidification and eutrophication of soils. Although this effect is highly common alongside intensive farms throughout the UK (mostly through fertiliser leaching and run-off) it is one of the factors that have resulted in a general

[7] Friesema *et al* (2010) Geographical association between livestock density and human Shiga toxin-producing Escherichia coli O157 infections. *Epidemiology and Infection*, 8:1-7.Kaboré *et al* (2010) Association between potential zoonotic enteric infections in children and environmental risk factors in Quebec, 1999-2006. *Zoonoses and Public Health*, 57(7-8): e195-205. Pollock *et al* (2010) Spatial and temporal epidemiology of sporadic human cryptosporidiosis in Scotland. *Zoonoses and Public Health*, 57(7-8): 487-492. Kistemann *et al* (2004) GIS-supported investigation of human EHEC and cattle VTEC O157 infections in Sweden: geographical distribution, spatial variation and possible risk factors. *Epidemiology and Infection*, 132(3): 495-505. Nygard *et al* (2004) Association between environmental risk factors and campylobacter infections in Sweden. *Epidemiology and Infection*, 132(2): 317-325.

loss of biodiversity. Typical effects are the loss of species-richness, as nitrogen-loving species begin to take over; and

- The local sites, as a biological SSSI or LWS, will have been selected for their species-richness and rarity of habitat, so it can be assumed that these sites would be vulnerable to increased nitrogen deposition. Particularly susceptible to the increase would be lichens, bryophytes and calcareous grassland, and these species and habitat are present at the local sites (Dunston Heath Pond and Verge includes limestone grassland).

3.3.180 Two statements made in the ES with regard to the sensitivity of the local habitats are open to question. These are:

- Paragraph 8.5.23 says: "*For most vegetation, where no sensitive lichens or bryophytes are present.... it should be noted that none of the SSSI citations include either of these sensitive groups, and although the woodlands have been regularly worked by specialist recorders for many years*"; and
- In the ADAS report section 3.3 states "*Given the existing intensive agricultural usage of the surrounding land, it is unlikely that the AWSs and LWSs in the area support and sensitive lichens or bryophytes*".

3.3.181 These statements presume that the local woodland lichens and bryophytes are not sensitive to the ammonia deposition but the reports do not provide survey evidence to back this up. A species list for lichens at Potterhanworth Wood (the SSSI) is freely available on the National Biodiversity Network Gateway website. A preliminary review of the list indicates that one species recorded – *Verrucaria fuscella* – is designated as nationally rare (occurring in 15 or fewer hectads in Great Britain). If sensitive species are present, then the correct Critical Level for the assessment of Potterhanworth Wood is 1.0µg/m3 which the ammonia deposition modelling indicates leads to a significant impact rather than the negligible impact set out in the ES. A survey for sensitive species, particularly lichens and bryophytes, should be carried out at the relevant local sites to establish whether or not sensitive species are present.

3.3.182 The ES states that the ADAS report did not model the impacts on Dunston Heath Pond and Verge grassland and supposes that there would be a minor negative impact on the habitat. As set out above, this site can be assumed to be vulnerable to nitrogen deposition and would be likely to be degraded. Further botanical survey should be carried out at this site to determine the rarity of the species present and the sensitivity of the habitat.

3.3.183 In summary, ammonia deposition would likely result in a loss of biodiversity at the woodland and grassland LWSs Neville Wood, Nocton Wood and Dunston Heath Pond and Verge; and possibly may result in a loss of biodiversity at the SSSI Potterhanworth Wood, these effects are significant at least at the local scale. Whether these impacts are more significant will depend on if nationally rare species present at the sites are detrimentally affected, and the extent of the impact on the broader habitats. The additional surveys, as set out above, should be carried out.

3.3.184 The ES proposes habitat management as mitigation which will open up the woodlands and so increase diversity of plants. The impacts of the scheme appear on this basis to be downgraded from moderate/minor (ES paragraph 8.5.27) to minor (Non-Technical Summary), although this conclusion is not clearly

set out in the ES text. However, the habitat management of woodlands might not result in an increase of the plants that are detrimentally affected by excess nitrogen, as the nitrogen levels will still be there. Further evidence is required to support the conclusion that the habitat management plan would reduce the likely impact of the development to the claimed minor level.

3.3.185 There may also be disease implications related to the introduction of large numbers of cattle into the local area, as well as impacts on flora and fauna related to the pollution of groundwater by pathogens, veterinary medicine residues, heavy metals and other potentially toxic substances, which have not been fully evaluated in the ES.

ARCHAEOLOGY AND CULTURAL HERITAGE

3.3.186 Section 7 of the ES and relevant material from the appendices has been reviewed. This review has identified a range of issues, as set out below.

3.3.187 The review of the ES information suggests that the one area where there appears to be archaeological potential is at the site of the lagoons. While it is in this area that the Applicant has carried out additional trial trenching, the ES has not adequately discussed the likelihood of there being further associated remains. This should have been fully discussed (e.g. whether such remains are typically isolated, associated with other features, sparsely distributed, common in this locality etc). Indeed, the Trenching Report (Appendix 7.2) acknowledges that the extent of the archaeological remains is still uncertain and states that *"Without knowing the full extent of this concentration of archaeological remains, the nature of the Iron Age activity is unclear"* (paragraph 9.4). Prehistoric funerary and other remains are often notoriously difficult to detect in evaluation as they are often sparsely distributed so many further trenches may be needed to identify them all.

3.3.188 Although paragraph 7.4.51 of the ES claims that the Iron Age pits at the lagoons site are of Regional importance, there is insufficient discussion or speculation as to what the remains might mean and how important they are. The Trenching Report (Appendix 7.2) states "*the archaeological potential of the lagoons area is high*" (Summary) and "*the evaluation may have found elements of a long tradition of funerary or related activity on the heath*" (paragraph 9.5). Prehistoric sites showing an archaeologically verified continuity of use are extremely rare. For an archaeological assessment to conclude that when added to earlier possibly related finds in the vicinity, the evidence may suggest a prehistoric funerary or ceremonial landscape at Nocton Heath, is potentially a finding which has national significance to archaeologists and academics. There needs to be a much fuller discussion of importance, including looking at similar sites and parallel examples elsewhere.

3.3.189 As the extent and importance, as set out above, of the archaeological evidence at the lagoons site has not been properly addressed, it is difficult to determine the adequacy of the proposed mitigation arrangements. For example, there has not been a discussion as to whether such features would merit preservation *in situ* through re-design of the development layout. This could be the case if the remains transpire to be a prehistoric/Iron Age cemetery. What also needs to be borne in mind is the potential conservation and archiving costs to the developer of any recovered artefacts, which in the case of any funerary landscape involving grave goods, may be considerable.

3.3.190 While the chapter does discuss importance (albeit limited) and impact, it does not look at significance of effect. So while the impact is claimed to be '*cumulative and more significant impact, potentially removing much or all of the archaeological resource*' (paragraph 7.5.5) and '*major significant negative impact on regionally significant (sic) archaeological remains …reduced to moderate or minor … with mitigation*" (paragraph 7.8.7) at the lagoon site, the chapter does not address what the significance of the loss of the archaeological features would be.

ACOUSTICS

3.3.191 Section 5 of the ES and relevant material from the appendices has been reviewed. The findings are set out below.

3.3.192 Para 5.2.7 and Table 5.1 of the ES (and para 11 of Appendix 5.4) claims that PPG24 makes reference to "allowable" levels of noise. This is not the case. Appendix 5.1 to the ES correctly gives the PPG24 advice relating to each of the NECs. For NEC A it notes that noise need not be considered as a determining factor when granting planning permission for new residential properties, and that noise levels at the high end of the Category (i.e. 55 dBL_{Aeq} daytime and 45 dBL_{Aeq} night-time) should not be regarded as desirable levels, contrary to the title of Table 5.1 which refers to them as outdoor Noise Limits. PPG24 (para 9) notes that "*in some cases it may be appropriate for local planning authorities to determine the range of noise levels which they wish to attribute to any or each of the NECs. For example, where there is a clear need for new residential development in an already noisy area some or all NECs might be increased by up to 3 dB(A) above the recommended levels.*" This is clearly not the case here. "*In other cases, a reduction of up to 3 dB(A) may be justified*". This is a more likely situation when seeking to build new houses in a rural environment. The ES therefore puts a favourable gloss on the interpretation of PPG24 noise levels.

3.3.193 The Rating Level versus Background Levels given in para 5.5.31 of the ES correctly use the predicted levels shown in Table 5.1, corrected for character by the addition of 5 dB(A). The claim that the +5 exceedance at Hall Farm and +6 at Grange Farm Cottages are "acceptable" warrants some scrutiny.

3.3.194 The Foreword to BS4142 notes that "*The standard is necessarily general in character and may not cover all situations. The likelihood that an individual will complain depends on individual attitudes and perceptions in addition to the noise levels and acoustic features present.*···· "

3.3.195 "*Although, in general, there will be a relationship between the incidence of complaints and the level of general community annoyance, quantitative assessment of the latter is beyond the scope of this standard, as is the assessment of nuisance*".

3.3.196 It is generally accepted that the onset of annoyance occurs at lower noise levels than those at which people will actually complain. There is therefore no guarantee that the noise impacts from the operation of the proposed unit on the amenity of nearby dwellings can reliably be assessed as "negligible", as claimed in para 5.5.32 of the ES.

3.4 OTHER COMMENTS ON APPLICATION DOCUMENTATION

DESCRIPTION OF DEVELOPMENT

3.4.1 The description of the development as provided on the Council's website and in the letter dated the 14th December 2010 is inconsistent with the development described in the planning application materials. For example, the proposed scheme includes four pairs of buildings providing cow accommodation making eight in total, whereas the description of development refers to 4 no. cattle accommodation buildings. The proposed development description should be thoroughly checked and amended to accurately describe the scheme.

BUSINESS PLAN AND VIABILITY

3.4.2 The planning application documentation does not provide a business plan for the proposed development. The planning consequences of the failure of the business would be to create a large scale, vacant, intensively developed brownfield site in open countryside. It is therefore important that the business plan for the proposed development is made available for consideration by consultees and that the viability of the business is clearly demonstrated.

RESIDENTIAL DEVELOPMENT

3.4.3 The Application attempts to justify a need for what would be a considerable residential development in the local context sited in open countryside amounting to a new hamlet. It is noted that the Application does not deal with what will happen to the housing on decommissioning or if the business should fail. The justification produced by the Applicant for the residential development may be the subject of further representations. If the residential development is indeed required to support the scheme, this is a detrimental aspect of the proposed development, and the introduction of substantial residential development into the open countryside should be taken into account as an adverse material consideration.

SUPPORTING STATEMENT

3.4.4 The Supporting Statement sets out a review of the development against planning policy. Comments on the Supporting Statement are included in the policy analysis in Section 4 of this Objection.

3.5 SUMMARY

3.5.1 The preliminary review of the documentation which supports the Application has highlighted a wide range of issues. These are summarised below.

DESIGN AND ACCESS STATEMENT

3.5.2 The Design and Access Statement fails to conform with Government and other guidance. The key omissions include:

- Lack of information on and analysis of the application site and its context;

- Failure to explain the design process, principles or evolution of the scheme;
- Unclear presentation and justification of the scale and amount of development; and
- Failure to clearly articulate and justify the appearance of the proposed development.

ENVIRONMENTAL STATEMENT

3.5.3 The issues related to the ES highlighted by the preliminary review are summarised below. The significant omissions or inadequacies of the ES on the basis of Regulation 19 are highlighted, as well as other issues which require assessment, information or clarification.

Significant Regulation 19 Omissions from the ES

3.5.4 The significant omissions or inadequacies of the ES have been identified and are set out below.

Site description:

- Contradictory information is provided on the application site area throughout the ES documentation and planning application form. The size of the application site is a fundamental issue and this should be clarified.
- The description of the application site and the proposed development provided in Section 3 of the ES generally omits to provide details of the digestate pipeline and reservoir which are required to serve the scheme. These essential elements have also been omitted from the Application itself although they are crucial to the development proposal. The assessment of the impacts of the pipeline and reservoir provided in the topic chapters is not set out in a clear and comprehensive way, and the ES is not considered to adequately assess likely impacts.

Landscape and visual impact:

- Lack of a clearly documented methodology for identifying baseline conditions and key assessment information. As a result of this, the ES has failed to collect comprehensive and appropriate baseline data to enable evaluation of potential impacts and assess their magnitude and significance.
- The ES has failed to provide specific information on the characteristics of the application site and its landscape context, with particular omissions relating to the characteristics of other development that currently exists within the relevant Landscape Character Areas.
- Given the unprecedented scale and nature of the scheme, the ES should also provide additional visual and descriptive material to articulate the scale and form of the scheme within its setting including aerial photographs and montages, visualisations and scale comparisons.

Ground and surface water:

- The groundwater risk assessment includes only the risks associated with leakage from the effluent storage lagoons and explicitly excludes other sources (e.g. paved areas, leaking pipelines, the run-off lagoon, etc.). The

assessment is therefore considered inadequate, and should be extended to include all potential sources of pollution, as well as accident and failure conditions.

- Insufficient information is provided on how clean and dirty surface water will be dealt with. The ES refers to a forthcoming SUDS report. Given the large volumes of water involved and the sensitivity of the site, detailed information on proposals for collecting, storing, treating and disposing of surface water should be provided.
- Detailed consideration must be given in the ES to the operational and financial consequences to Anglian Water Services that would be associated with pollution of the public water supply, as requested by North Kesteven District Council.
- Given the vulnerable nature of the site and local area it is considered essential that the existing groundwater conditions are fully explored to enable a comprehensive analysis of the likely impacts. This should include an assessment of groundwater levels, groundwater flow directions, recharge and the catchment to the public water supply borehole.
- Information on recent surface water flooding incidents is not provided within the ES which erroneously states that no surface water flooding has been seen at the site. Existing surface water conditions should be thoroughly researched and findings set out.
- Information is required on the existing fertilization regime, as well as on the nutrient composition and leaching characteristics of the proposed effluent. Further information should be provided to clearly demonstrate that the proposed application of effluent to land will not increase the nitrate leaching into the underlying aquifer.

Water resources:

- There is a lack of information on the net impact of the scheme on water resources, with various parts of the ES providing contradictory information (e.g. paragraph 12.5.6, 12.6.3, 12.7.1, 12.8.1). A clear strategy for and justification of the proposed water supply should be provided.

Air quality

- It is essential that the model input data for the odour modelling work is substantiated if the accuracy of the modelling work is to be assessed.
- The area considered as sources for odour from spreading in the modelling work appear to include just the land within the Applicant's ownership rather than the much larger area required for spreading. The odour modelling should be extended to include all the spreading areas.
- The analysis appears not to include odour emissions from the anaerobic digester. In order to provide a complete odour assessment, this potentially odour generating activity should be included within the assessment.
- The assessment of the impacts of the scheme as negligible appears to not be supported by the modelling data, and should be reviewed in the light of the revised modelling information (as set out above).

Socio-economics:

- Paragraph 16.5.12 states that "Although the new unit could potentially compete with the existing dairy businesses, in reality they would be selling to different markets so there would be no adverse impact on local dairy farms". Information relating to the milk supply chain and the impact on existing dairy farms of the introduction of a new supply of milk onto the market should be provided to substantiate this claim.

Traffic and transport:

- In terms of the trip generation methodology, the information provided on construction and operational vehicle movements is insufficient to enable a soundly-based assessment of the likely impacts of the scheme. Issues include lack of supporting evidence of different movement types, lack of survey evidence, failure to produce figures for actual trips generation (typical day and worst case) and unclear presentation of trips (one way or two way).
- The ES seriously under-represents the highway safety situation in the vicinity of the application site. Recent fatal accidents on the B1188 and its classification as a "Red Route" by the Lincolnshire Road Safety Partnership due to the high rate of collisions and casualties are largely ignored. The information on existing highway safety conditions should be updated and redrafted, and the proposed junction layout reviewed.

Public health:

- The information provided in the ES does not amount to an assessment of likely impacts as no or only very limited information is given on baseline conditions, methodology, evaluation criteria, potential impacts, mitigation or residual impacts.

Flora and fauna:

- As ammonia deposition would be likely to result in a loss of biodiversity at a range of local wildlife sites and possibly Potterhanworth Wood SSSI, a survey for sensitive species, particularly lichens and bryophytes should be carried out at the relevant local sites to establish whether or not sensitive species are present. The assessment of impacts should be reviewed in the light of survey findings.

Impacts on on-site accommodation:

- The ES appears to exclude consideration of the impact of the development on the future residents of the site. These impacts would include noise, odour, health, safety and lighting issues. These should be assessed within the ES.

Other Issues Requiring Further Information, Assessment of Clarification

General

- The ES should provide summary information such as a concluding section and summary table drawing together the key findings of the ES in a clear, comprehensive and objective way. The summary section should set out likely impacts, mitigation and residual impacts.

Site description

- Contradictory information is provided on the phasing of the development and the use of clay from the reservoir site to line the lagoons. This issue needs to be clarified.

Air quality:

- The ambient odour criterion used needs to be justified.
- Plots for hourly mean odour concentrations are disaggregated for the dairy and spreading. The aggregate effects should be presented as 99.9th percentile plots.
- Appendix 6.2 is based entirely on ammonia emission rates from a single study although a wealth of ambient ammonia data is available. Justification for the use of these data is required.

Archaeology and cultural heritage

- The ES states that the evaluation of the area proposed for the lagoons may have found elements of a long tradition of funerary or related activity on Nocton Heath. Such prehistoric remains are rare, and there needs to be a full discussion of importance including consideration of similar sites and parallel examples. This would enable evaluation of the suitability of the proposed mitigation measures.

Environmental sustainability:

- Section 17 fails to provide the broad ranging assessment indicated by the introduction of the chapter and its heading. The section should be re-drafted to provide a balanced and comprehensive review of the environmental sustainability of the development, rather than focusing on narrowly defined topics.
- The assessment of greenhouse gases is not considered adequate due to the exclusion of a range of items from the assessment, lack of explanation of and issues related to the method used to calculate greenhouse gases and failure to clearly articulate the impacts.
- The Non-Technical Summary claims that the unit would have the lowest carbon footprint for milk in the country, if not Europe, although the comprehensive information required to substantiate this claim is not provided. The assumptions, method and details of any calculations made should be clearly set out.
- In terms of the use of resources, Section 17.6 considers manufactured fertiliser, feed for cattle, sand and fuel for journeys to work. However, the proposed development is likely to require the use of a wide range of additional resources including: construction materials, water, fuel for all activities other than journeys to work, cattle and a range of other resources. The resource use of the scheme should be comprehensively analysed and set out.

OTHER COMMENTS ON APPLICATION DOCUMENTATION

3.5.5 The description of the development on the Council's website should be revised to tally with the proposed development. In addition, a business plan should be provided by the Applicant and the viability of the scheme should be clearly demonstrated. The detrimental effects of the residential development in open countryside, if justified, should be taken into account as an adverse material consideration.

4. ASSESSMENT OF THE PROPOSED DEVELOPMENT AGAINST NATIONAL POLICY GUIDANCE AND THE DEVELOPMENT PLAN

4.1 INTRODUCTION

4.1.1 Section 54A of the Planning Act 1990 requires that all planning applications should be determined in line with the policies and proposals of the development plan unless other material considerations determine otherwise. The emphasis on the plan-led system continues to provide the policy context for the consideration of planning applications for the development or use of land under Section 38 (6) of the Planning and Compulsory Purchase Act 2004.

4.1.2 Section 3 identified a wide range of technical issues associated with the Application and the proposed development. This section sets out key national policy guidance and policies from the Development Plan and assesses the performance of the scheme against them. It is not a comprehensive review of relevant policy, but focuses on the key policy areas where it is considered that the proposed development is contrary to national guidance and the Development Plan. The assessment is presented on a topic-by-topic basis.

4.1.3 The Development Plan for the site is formed by:

- The East Midlands Regional Plan; and
- The saved policies of the North Kesteven Local Plan.

4.1.4 “Dairy farming” falls within the definition of “agriculture” as set out in Section 336 of the Town and Country Planning Act 1990. However, the proposed development proposed is of a form unprecedented in the UK in terms of scale, built form and operational activities. Although the Application involves what might be described as an “agricultural product”, the process by which it would be obtained would be much more akin to an industrial activity. The key characteristics of the proposed development – very large scale buildings and infrastructure, 24 hour constant activity, intensive use of plant and machinery, traffic, odour and noise generation, with effectively zero grazing for cattle – mean that it most closely resembles an industrial activity. It bears little relation to a typical dairy farm which in the UK are (on average) about 30 times smaller in size, with relative small scale buildings and cattle spending the majority of their time grazing on open pasture.

4.1.5 The proposed development involves a mix of uses including five dwellings and a residential dormitory block, an anaerobic digester and combined heat and power unit, infrastructure for handling, storing and treating effluent, infrastructure for handling, storing and treating run-off, storage areas and facilities, as well as the various elements of the dairy itself. The proposal is thus considered to be a mixed use scheme.

4.1.6 Given the nature of the proposed development as a mixed use scheme with characteristics more akin to an industrial activity than an agricultural activity, it is considered that the scheme is appropriately defined as sui generis.

4.2 DEVELOPMENT IN THE COUNTRYSIDE INCLUDING LANDSCAPE AND VISUAL IMPACTS

NATIONAL POLICY GUIDANCE

4.2.1 Planning policy seeks to protect the open countryside for its own sake, a theme which is articulated through a range of national planning policy documents. PPS 1 (Delivering Sustainable Development) states that planning should facilitate and promote sustainable and inclusive patterns of urban and rural development by, inter alia, protecting and enhancing the natural and historic environment, the quality and character of the countryside, and existing communities (Paragraph 5). Paragraph 20 states that development plan policies should take account of environmental issues such as the protection of the wider countryside and the impact of development on landscape quality. PPS 4 (Planning for Sustainable Economic Growth) states that "*Local planning authorities should ensure that the countryside is protected for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and to ensure it may be enjoyed by all*" (Paragraph EC6.1).[8]

4.2.2 Protection of the countryside is fundamental to national planning policy. The planning application documentation is insufficient to demonstrate that the proposed development would ensure the protection of the countryside. The analysis set out in Section 3.3 indicates that the proposed development would irrevocably change the character of the countryside of the application site and its wider area, transforming it from a tranquil, open, expansive arable landscape, to a large-scale, industrial, intensively developed use, which operates on a 24 hour basis. The Applicant has failed to provide information to show that adverse impacts on the countryside in terms of ground and surface water, odour, lighting, traffic, noise, wildlife sites, archaeology and public health will be avoided. The proposed development is contrary to Paragraph EC6.1.

4.2.3 PPS 4 goes on to say that "*In rural areas, local planning authorities should (inter alia) strictly control economic development in open countryside away from existing settlements or outside areas allocated for development in development plans*" (Paragraph EC6.2). The application site is located in open countryside and is not allocated for development in the North Kesteven Development Plan. The proposed development is contrary to Paragraph EC6.2.

4.2.4 PPS 7 (Sustainable Development in Rural Areas) has been substantially superseded by PPS 4. However, a range of the guidance provided is still current. This includes the key principle that "*All development in rural areas should be well designed and inclusive, in keeping and scale with its location, and sensitive to the character of the countryside and local distinctiveness*" (Paragraph 1 (vi)). In

[8] Paragraph 4 of PPS 4 states that the policies apply to development which achieves at least one of the following objectives: provides employment opportunities; generates wealth; or produces or generates an economic output or product. The proposed development is considered to meet these criteria and thus to be subject to the guidance contained in PPS4.

terms of areas which lie outside nationally designated areas, PPS 7 states that *"The Government recognises and accepts that there are areas of landscape outside nationally designated areas that are particularly highly valued locally"* (Paragraph 24).

4.2.5 The analysis presented in Section 3.3 has demonstrated that the proposed development is not well designed, or in keeping and scale with its location, nor is it sensitive to the character of the countryside and local distinctiveness. The key points are set out in paragraphs 3.3.8-86 and Appendix A, and are summarised below.

4.2.6 The proposed development is considered to fundamentally conflict with existing local landscape character, identity and distinctiveness. The existing countryside is "*predominantly an empty, open landscape with wide views to the skyline in all directions*" (North Kesteven Landscape Character Assessment, Limestone Heath, Key Characteristics). The very large scale of the development with over 50,000m^2 of non-residential floorspace and a wide range of ancillary buildings, structures and infrastructure would dominate the application site and wider local area. It would introduce a very large scale, 24 hour, intensive development into the existing open, expansive, tranquil, arable landscape.

4.2.7 The proposed development is of a very large scale, larger, for example, than the entire village of Dunston. It will dominate the local area, and be an incongruously large element within the local arable landscape.

4.2.8 Paragraph 4.15 of the Supporting Statement submitted as part of the Application states that there are other large scale commercial sites in the area such as Branston Potatoes packhouse operation, Nocton Ltd's bulb packing plant, Blankey Estates' grass drying plant and local quarries. RAF Waddington is also highlighted. It is stated that "*The siting of a new agricultural enterprise within this context, albeit a large-scale dairy unit, while not reinforcing local identity would certainly not detract from it*". This statement is not substantiated by any supporting information on the form, function or scale of existing developments.

4.2.9 The large scale commercial developments that already exist within the local area are not sufficiently common as to be typical of the character of the local area, as reflected in NKLCA. They are considered likely to be discordant, detracting elements in the local landscape, and should not be considered to be either typical of local development or provide a guide to acceptable future development. They are functionally tied to their locations as they serve local industries. RAF Waddington and the local quarries also have clear historic and functional linkages to their locations. This contrasts sharply with the proposed development which has no functional or historic relationship with the application site. The scheme would not serve or contribute to existing agricultural activities, and there is no historic or other link between the proposed use and its proposed location.

4.2.10 The proposed large scale, functional and geometric layout of the scheme is not compatible with the character and layout of settlements in the local area. The proposed layout is fundamentally different from that typically found in the local area's settlements as it reflects the functional requirements of an intensive dairy operation rather than being based on design considerations related to the character of development in the local area.

4.2.11 The scheme introduces long stretches of around 600m of linear buildings with rigid and uniform building lines, as well as a range of other industrial-type structures, plant and infrastructure into an open rural location. The scheme has large unattractive and functional facades which will transform the landscape of the immediate local area. The scheme does not relate to the highway network or traditional patterns of settlement layout.

4.2.12 The proposed architectural style and materials would be inconsistent with the local vernacular, and do not relate well to local design cues or to the characteristics of the application site and its context. The rigid, uniform, non-vernacular building design should have been avoided. The very large scale buildings, extensive areas of hard standing, lagoons, plant and other infrastructure mean that the site would be intensively and densely developed.

4.2.13 The assessment of highway safety provided as part of this Objection indicates that the proposed junction design may be insufficient to deliver a safe access for the scheme. A significantly larger scheme than that proposed by the Applicant, including a right turn facility and lighting may be required to ensure site safety. It is considered unlikely that such a solution would fit well with the rural landscape setting of the area, and would introduce an urbanising feature to the B1188. The highway design requirements that are needed to deliver a safe scheme may result in a disproportionately intrusive element being introduced into the local landscape.

4.2.14 The proposed landscaping scheme mitigation is not sufficient to provide the level of mitigation that is suggested in the assessment of landscape and visual impacts in the ES or to integrate the scheme within the local landscape character as set out by published regional and local landscape character assessments.

4.2.15 In terms of visual amenity, the development would be conspicuous at a local level. While those working or passing through the area are unlikely to be affected to a significant degree, a right of way and residential properties that would have views to the development, and their visual amenity would suffer adverse impacts and effects.

4.2.16 Based on the methodology and textual scoring presented in the LVIA of the submitted ES the proposals would result in a moderate negative impact as a minimum. The criteria for this textual ranking are defined in the ES as follows (p85, table 13.4):

- Be out of scale with the landscape and at odds with the local pattern and landform;
- Be visually intrusive and would adversely impact on the landscape;
- Not be possible to fully mitigate for in the longer term;
- Would have an impact on the openness and tranquillity which are both important features of this landscape; and
- Would be in conflict with local authority and national policies for protection landscape.

4.2.17 In terms of the visual impacts, this review accepts the position of the ES that mitigation measures would result in a reduced impact for receptors in the locality, however it should be noted that this is after a period of 15 years which is a substantial period of time during which receptors would still be subject to negative impacts. Furthermore, although mitigation has reduced the significance of residual impacts the impacts assessed in the ES are all still noted as 'negative'.

4.2.18 It is assumed that this residual negative impact would be caused by the rooftops of the unit and the anaerobic digester which are noted as still visible in the landscape, as noted in paragraph 13.8.2 of the ES.

4.2.19 In summary, the proposed development is a very large scale commercial development with industrial characteristics sited in empty, tranquil, open countryside. The scheme is not well designed and is not sensitive to the character of the countryside or local distinctiveness. The proposed development is contrary to Paragraph 1 (vi) of PPS 4.

REGIONAL POLICY

4.2.20 The East Midlands Regional Plan includes a range of policies relating to protection of the countryside and its landscape. Policy 1 sets out the core objectives for the region which include Objective g – to protect and enhance the environment. This includes protection, enhancement and sensitive management of the Region's natural, cultural and historic assets, avoidance of significant harm and recognition of the limits to the capacity of the environment to accept further development. Policy 2 seeks to promote better design, including encouraging design led approaches which take account of local natural and historic character.

4.2.21 Policy 31 sets out priorities for the management and enhancement of the Region's landscape. This includes establishment of criteria-based policies to ensure that development proposals respect intrinsic landscape character in rural areas including, where appropriate, recognition of the value of tranquillity and dark skies.

4.2.22 Policy SRS 1 for the Lincoln Policy Areas states that Local Development Frameworks should, inter alia, protect and/or enhance the character and quality of the built and natural environment, including greenspace, and the wider surrounding countryside.

4.2.23 For the reasons set out in paragraphs 4.2.6-19 above, the proposed development is considered to fail to protect the Region's countryside and landscape. The scheme is not based on a design-led approach. The Design and Access Statement indicates that the design was driven by functional necessity, with little or no account taken of the principles of good design, local context or character. The introduction of a very large scale, intensive, 24 hour, industrial scheme with lighting into the currently empty, open, tranquil landscape would fail to recognise the value of tranquillity and dark skies at Nocton Heath. The scheme is considered to be contrary to the relevant provisions of Policies 1, 2, 31 and SRS 1.

LOCAL PLAN POLICY

4.2.24 The saved policies of the North Kesteven Local Plan include a wide range of policies which relate to the countryside, landscape and visual impacts. These are set out below and the performance of the scheme is assessed against them.

Policy C2 Development in the Countryside

4.2.25 Policy C2 states that planning permission will be granted for development in the countryside provided that it:

- Will maintain or enhance the environmental, economic and social value of the countryside;
- Will protect and, where possible, enhance the character of the countryside;
- Cannot be located within or adjacent to a settlement; and
- Will not attract or generate a large number of journeys, and is located to provide opportunities for access by public transport, walking or cycling.

4.2.26 Paragraph 3.9 explains that the Council considers that the countryside is one of the District's most important assets, which must be safeguarded for its own sake. Development in the countryside must be strictly controlled in order to avoid, inter alia, changing the countryside's open and uncluttered nature and creating a pattern of development where journeys will be of greater length, and where people will have little choice about how they travel.

4.2.27 Paragraph 3.10 recognises that some types of development need a countryside location, and refers to other policies which set out the circumstances in which planning permission will be granted. The relevant policies related to economic development in the countryside and these are discussed below. Paragraph 3.11 explains that the Council will seek to ensure that new development in the countryside is located to provide opportunities for access by sustainable transport modes, and that development is located, designed and landscaped to respect the established character of the area, reinforce local distinctiveness and make a positive contribution to its surroundings.

4.2.28 The proposed development is contrary to the basic thrust and specific criteria in Policy C2. As set out in Section 3.3, the ES has failed to provide sufficient information to show that the proposed development would maintain or enhance the environmental, economic and social value of the countryside. The information provided is insufficient to demonstrate that the following adverse impacts would be avoided:

- A wide range of environmental impacts including effects on ground and surface water, public health, wildlife sites, odour and highway safety; and
- The economic impacts on existing UK dairy farming businesses.

4.2.29 The proposed development would have detrimental effects on the character of the countryside, and would not protect or enhance it. The impacts of the scheme on the character of the countryside have been set out in paragraphs 3.3.8-86 and

summarised in paragraphs 4.2.6-19 above. The proposed development is considered to fundamentally conflict with existing local landscape character, identity and distinctiveness. The very large scale of the development with over 50,000m^2 of non-residential floorspace and a wide range of ancillary buildings, structures and infrastructure would dominate the application site and wider local area. It would introduce a very large scale, 24 hour, intensively developed, incongruous development into the existing open, expansive, tranquil, arable landscape. The proposed large scale, functional and geometric layout of the scheme, intensive use of the site, utilitarian architectural design and materials are not compatible with the character of settlements and prevailing built form in the local area. The proposed landscaping scheme is not sufficient to integrate the scheme within the local landscape, and the visual amenity of a right of way and residential properties would suffer significant adverse impacts.

4.2.30 The proposed development would generate large numbers of journeys, including HGV movements, and as set out in Section 3.3, the numbers of trips likely to be generated on a typical day or in a worst case scenario has not been clearly articulated by the Applicant. The scheme is not safely accessible to pedestrians and cyclists, due to limited pedestrian and cyclist infrastructure and the high traffic speeds. The low frequency of bus services (stated in the ES at an average of one every 2 hours – paragraph 18.6.17) and the distance of the nearest bus stop (stated in the ES at 0.7 miles from the application site – paragraph 18.6.17) indicate that the scheme is not well served by public transport.

4.2.31 The proposed development is contrary to Policy C2.

Policy DC1 Agricultural or Forestry Development

4.2.32 As set out in Section 4, it is considered that the proposed development is appropriately classified as a sui generis scheme rather than as agricultural development. Notwithstanding this¸ the scheme has been tested against Policy DC1, and the findings are set out below. Policy DC1 states that planning permission will be granted for agricultural development provided that the proposal will not, inter alia, adversely affect the character or appearance of the countryside.

4.2.33 The justification sets out principles related to the location and design of agricultural buildings. The text relates to agricultural developments of a significantly smaller scale than that which is now proposed. For example, the Plan states that "*locating the proposed building or structure amongst or next to existing buildings will tend to greatly reduce its visual impact*" and "*the visual impact of a proposal can also be reduced by the construction of two smaller buildings rather than one large one*" (paragraph 9.8). This demonstrates that the policy and justification were drafted with significantly smaller scale agricultural schemes in mind, and indicates that at the time the development plan was under consideration, no scheme of the scale and form that is proposed by the Application was within the contemplation of Members.

4.2.34 For the reasons set out in paragraphs 3.3.8-86, 4.2.6–19 and Appendix A, it is considered that the proposed development will adversely affect the character of the countryside. It would introduce a very large scale, 24 hour, intensively developed, incongruous development into the existing open, expansive, tranquil, arable landscape.

4.2.35 As set out in Section 3.3, the inadequacies in the ES mean that the visual impacts of the scheme have not been fully articulated, cannot thus be properly assessed and may have been under stated as discussed above. The proposed development is contrary to Policy DC1.

Policy E4 Economic Development in the Countryside

4.2.36 Policy E4 states that planning permission will be granted for new employment development only if, inter alia, it will protect the quality and character of the countryside.

4.2.37 For the reasons set out in paragraphs 3.3.8-86, 4.2.6–19 and Appendix A, it is considered that the proposed development will adversely affect the quality and character of the countryside. The proposed development is contrary to Policy E4.

Policy C18 Design

4.2.38 Policy C18 states that planning permission will be granted for development only if it will:

- Reinforce local identity;
- Not adversely affect the character or appearance of its surroundings;
- Existing site features that contribute positively to the character or appearance of the area are retained, and satisfactorily incorporated into the design;
- The proposal responds satisfactorily to its context in terms of its layout, scale, massing, height, density, detailing, external appearance and the use of materials; and
- The proposal has a cohesive character, and adds interest and vitality to its surroundings.

4.2.39 Paragraph 3.61 explains that proposals will be expected to be appropriate for their context. All new developments should respond to their local context, be visually attractive and integrate successfully with the landscape of their surroundings. Paragraph 3.63 explains that all parts of the District have their own particular character which is established by factors including the height and scale of existing buildings, the materials used, the ratio of buildings to undeveloped space, the orientation of buildings and the design of particular landmark buildings. It is essential that this distinctive context is understood and that any new development respects and adds to the 'sense of place' of its surroundings. New development does not need to mimic what already exists, but must not undermine or reduce the existing 'sense of place' and must, where possible and desirable, makes its own contribution to the character of its surroundings.

4.2.40 The proposed development would be contrary to the overall thrust and detailed criteria of Policy C18. This is explained below.

4.2.41 The proposed development would fail to reinforce local identity and would adversely affect the character and appearance of its surroundings. The impacts of the scheme on the local identity and the character and appearance of the countryside have been set out in paragraphs 3.3.8-86, 4.2.6–19 and Appendix A.

4.2.42 The proposed development does not provide a satisfactory response to its context in terms of layout, scale, massing, height, density, detailing, external appearance and the use of materials as set out in paragraphs 3.3.8-86.

4.2.43 The proposed development does not have a cohesive character or add interest or vitality to its surroundings. The scale, form and layout of the proposed development with its multiple buildings, structures and infrastructure spread over a large site mean that it will create a sprawling, industrial development within the existing open, tranquil arable landscape. The scheme fails to respect the characteristics of local typical built form, and would constitute an incongruous element within the local context due to:

- The very large scale of buildings, structures, plant and infrastructure;
- The functional layout of buildings which does not reflect typical local relationships between built form, open space and the public realm;
- The creation of long, unattractive facades, and the introduction of industrial built form, plant and infrastructure to an arable, rural location;
- Architectural design and the materials used which fail to reflect the local vernacular which includes brick built farmsteads with tiled roofs. The proposed architectural design creates utilitarian and monotonous sheds;
- A “bare minimum” approach to landscaping the scheme which is unlikely to deliver the mitigation benefits claimed by the ES and will not integrate the scheme into the local landscape; and
- The failure to create a ‘sense of place’ that is relevant to context, and a detrimental impact on the existing open, tranquil, arable ‘sense of place’.

4.2.44 The proposed development is contrary to Policy C18.

Policy C19 Landscaping

4.2.45 Policy C19 states that planning permission will be granted for development provided that appropriate provision is made for high quality landscaping which will:

- Protect and enhance the existing landscape character;
- Satisfactorily integrate the development with its surroundings;
- Protect the amenity of occupiers of the development and nearby occupiers;
- Retain and incorporate key landscape features on site; and
- Provide appropriate levels of open space within the development.

4.2.46 As set out above, the landscaping scheme is not sufficient to protect and enhance the existing landscape character of the area which will be irreversibly and significantly harmed by the development. The proposed landscaping

scheme is not sufficient to integrate the development with its surroundings, including in the winter and in the early years of the scheme.

4.2.47 The proposed development is contrary to Policy C19.

Policy C22 External Lighting Schemes

4.2.48 Policy C22 states that planning permission will be granted for proposals which include a scheme of external lighting, only if the proposed lighting scheme:

- Will not compromise highway safety;
- Will not adversely affect the amenities of nearby land-users; and
- Will not adversely affect the character of the area.

4.2.49 As set out in paragraphs 3.3.73-76, the proposed development would introduce a significant level of lighting into an otherwise unlit area. Mitigation measures would partially address the level and direction of lighting, however there would remain an unavoidable introduction of light into an area of otherwise 'characteristic dark sky'.

4.2.50 Furthermore, given the presence of RAF Waddington to the north west and the urban edge of Metheringham to the south east (separated by approximately 8km of open, arable landscape) there is potential for the introduction of the sky glow to contribute to the perception of coalescence between the sites. Effectively the presence of the skyglow, along with partial and/or direct views of lighting, to each of the three areas would become indistinct from one another as both transient and static receptors experience the landscape. These impacts are not clearly articulated in the ES and the significance of impacts is likely to be understated.

4.2.51 The proposed development is contrary to Policy C22.

Policy LW1 Landscape Conservation

4.2.52 Policy LW1 (Landscape Conservation) states that the Council will seek to protect the distinctive landscapes of the identified Landscape Character Areas and any special features which contribute to that character. Where development is acceptable, it will be required to contribute to the local distinctiveness of the area, be well integrated into the local landscape character, protect any features of importance to the local scene, and respect any important views.

4.2.53 The explanatory text goes on to say that the Council considers that all countryside is valuable, and is concerned that new development does not harm landscape quality (paragraph 10.11). Applicants must consider the character and appearance of their site and the landscape that surrounds it, and should consider the effect their proposal will have on the particular character, quality or interest of the area. The fundamental principle across the whole District is that the Council expects development to, at the least, not harm landscape quality and diversity, and preferably to improve it (paragraph 10.12).

4.2.54 For the reasons set out in paragraphs 3.3.8-86, 4.2.6–19 and Appendix A, it is considered that the proposed development will adversely affect the character of the countryside and does not protect or contribute to local distinctiveness. The

proposed development is considered to fundamentally conflict with existing local landscape character, identity and distinctiveness. The very large scale of the development with over 50,000m^2 of non-residential floorspace and a wide range of ancillary buildings, structures and infrastructure would dominate the application site and wider local area. It would introduce a very large scale, 24 hour, intensively developed, incongruous development into the existing open, expansive, tranquil, arable landscape. The proposed large scale, functional and geometric layout of the scheme, intensive use of the site, utilitarian architectural design and materials are not compatible with the character of settlements and prevailing built form in the local area. The proposed landscaping scheme is not sufficient to integrate the scheme within the local landscape, and the visual amenity of a right of way and residential properties would suffer significant adverse impacts.

4.2.55 As set out in Section 3.3, the inadequacies in the ES mean that the visual impacts of the scheme have not been fully articulated, cannot thus be properly assessed and may have been under stated. The proposed development is contrary to Policy LW1.

4.3 SURFACE AND GROUND WATER

4.3.1 PPS 1 sets out the Government's overarching approach to delivering sustainable development. Paragraph 17 states that the Government is committed to protecting and enhancing the quality of the natural environment. Paragraph 19 states that significant adverse impacts on the environment should be avoided, and alternative options which might reduce or eliminate those impacts pursued. Paragraph 20 states that development plan policies should take account of environmental issues such as the protection of groundwater from contamination.

4.3.2 PPS 23 is concerned with pollution control. Paragraph 10 advises that the planning system plays an important role in determining the location of development which may give rise to pollution. The planning system should focus on whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than the control of processes or emissions themselves. Paragraph 15 states that LPAs must be satisfied that planning permission can be granted on land use grounds taking full account of environmental impacts. LPAs should ensure that the relevant pollution control authority is satisfied that potential releases can be adequately regulated under the pollution control framework, and the effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable.

4.3.3 Policy 32 of the East Midlands Regional Plan states that Local Authorities, developers, water companies, the Environment Agency and other relevant public bodies should work together to, inter alia, protect and improve water quality and reduce the risk of pollution especially to vulnerable groundwater.

4.3.4 Policy C11 (Pollution) states that planning permission will be granted for developments that may be liable to pollute (inter alia) groundwater, a water body or watercourse only if:

- The occupiers of the development and the occupiers or users of other land are not exposed to unacceptable risk;

- The area's flora and fauna will not be adversely affected;
- The quality of water resources will not be adversely affected; and
- The general amenity of the area would not be unacceptably harmed.

4.3.5 Issues related to ground and surface water pollution and flooding are set out in paragraphs 3.3.88-109. In summary, it is considered that there is a fundamental incompatibility between the proposed use and its location on a highly vulnerable, fractured limestone aquifer, very close to SPZ1 of a public water supply borehole.

4.3.6 The proposed development would introduce a very large scale potentially polluting activity to the application site, with potential for pollution from a wide range of sources including animal waste, principally solid and liquid excreta, but also medicines, foodstuffs and sick and dead animals, agricultural and veterinary products and pollutants associated with mechanised agriculture (fuels, lubricants, cleaning chemicals, etc.). The scheme also proposes disposal of digested manure through spreading to agricultural land in the local area. The scheme therefore inherently presents an increased risk of groundwater pollution to the immediate locality and to the underlying aquifer.

4.3.7 Whilst a range of measures are proposed to address this, it must be recognised that mitigation measures are only able to reduce risks, rather than eliminating the risk. Engineering measures will always be subject to a residual inherent risk level. The groundwater risk assessment provided by the Applicant considers only the storage lagoons in normal service, and fails to consider other sources of pollution or accident or failure conditions. Insufficient information is provided on contingency plans, testing or maintenance regimes.

4.3.8 The application provides insufficient information in three further key areas:

- The position of the water table and hydrogeology of the area are poorly understood by the Applicant, and this is particularly significant given the proposed excavation of lagoons which may bring large quantities of digested effluent close to or even below the water table in winter months. The presence of Dunston Beck, which provides a pathway for the rapid spread of contaminants, is consistently overlooked;
- Insufficient information is provided on proposals to deal with the very large volumes of clean and dirty surface water run-off. Given the highly sensitive location of the scheme, this is another key omission from the ES; and
- The ES states that no surface water flooding has been seen at the application site. However, ground water derived flooding due to a high water table occurred in July 2007 and January 2008 close to the proposed location of the lagoons which flowed directly into Dunston Beck.

4.3.9 It is considered that the proposed development would result in a measurable change in groundwater quality or vulnerability, and this is recognised by the Applicant. This would contravene Environment Agency groundwater protection policy and the stipulated requirements of the Water Framework Directive. It is considered that there is a significant risk that the proposed development will lead to a significant adverse effect on the integrity of surface water and groundwater, and that this impact is understated and insufficiently articulated by the ES.

4.3.10 It is therefore considered that the proposed development is contrary to national, regional and local plan policies which seek to protect and improve water quality and reduce the risk of pollution especially to vulnerable groundwater. Based on the information provided, the scheme is therefore considered contrary to PPS 1, PPS 23, Policy 32 of the East Midlands Regional Plan and Policy C11 of the North Kesteven Local Plan.

4.4 WATER SUPPLY

4.4.1 The North Kesteven Local Plan includes Policy C15 (Water Supply) which states that planning permission will be granted for development provided that, inter alia, the development does not result in a demand for water that will unacceptably deplete water resources.

4.4.2 Paragraphs 3.1.111-113 set out the key findings of a review of the information provided in the Application on water resources. In summary, the ES provides insufficient information to assess both the proposals and impacts of the scheme on water resources in the local area. The dairy would be located in the UK's driest region and will be a substantial new user of water in the local area, with a reported demand of 129,776m^3/annum. The ES fails to provide clear information on the net impact of the scheme on water resources, recent actual water use in the area and the installation of a possible new borehole. The ES provides a range of contradictory claims on water supply, licences and abstraction and reveals that negotiations with the Environment Agency to secure necessary variations are only at a preliminary stage. In addition, the construction of a new reservoir, which is an essential element of the scheme, is excluded from the Application.

4.4.3 Overall, the Application lacks a clear strategy and justification for water supply, which is a fundamental part of the scheme. This lack of information means that the acceptability of the scheme in terms of its impact on water resources cannot be clearly understood. The Application as it stands is therefore considered to be contrary to Policy C15.

4.5 AIR QUALITY

4.5.1 As set out above, PPS 1 and PPS 23 provide guidance on the protection of the environment and control of pollution. Paragraph 20 of PPS 1 states that development plan policies should take account of environmental issues such as air quality and pollution.

4.5.2 Policy 36 of the East Midlands Regional Plan sets out regional priorities for air quality. These include reducing air pollution in the region and considering the potential effects of new development on air quality.

4.5.3 A range of saved policies within the North Kesteven Local Plan are relevant to air quality issues as follows:

- Policy C5 states that planning permission will be granted for proposals, provided they will not adversely affect the amenities enjoyed by other land users to an unacceptable degree.

- Policy DC1 states that planning permission will be granted for agricultural development provided that the proposal will not create smell, dust or other disturbance that will adversely affect protected buildings to an unacceptable degree.

- Policy C11 states that planning permission will be granted for developments that may be liable to pollute (inter alia) air, only if:

  - The occupiers of the development and the occupiers or users of other land are not exposed to unacceptable risk;

  - The area's flora and fauna will not be adversely affected;

  - The quality of air resources will not be adversely affected; and

  - The general amenity of the area would not be unacceptably harmed.

4.5.4 Issues related to air quality based on a review of the information provided to support the Application were set out in paragraphs 3.3.114-122 and are summarised below.

4.5.5 The review highlighted a range of issues related to the air quality modelling work. No information is provided to substantiate the model input data, without which the input values are wholly arbitrary numbers. This fundamentally undermines the validity of the modelling work. The areas assessed as sources for odour related to the spreading of digestate appears to account for less than half the land proposed for spreading. The results for the dairy and spreading of digestate are disaggregated and are plotted using different criteria suggesting that the presentation of findings has been manipulated. The analysis appears to exclude odour emissions from the anaerobic digester. The assessment states that the effect of odour from the dairy and spreading of digestate will be negligible, which is defined as a virtually imperceptible change. However, this conclusion is not demonstrated by the ES due to the issues related to the modelling work as set out above, as well as the findings presented by the Applicant which identify areas which will be affected by odour, even though a worst case scenario was not modelled. The ammonia emission rates used to calculate ammonia deposition are also questionable, as they are drawn from a single study and their selection is not justified.

4.5.6 It is therefore considered that the ES has failed to demonstrate that the proposed development would not create unacceptable impacts in terms of odour, and that the amenities of other land users and residents will not be affected to an unacceptable degree. The Application as it stands is therefore considered to be contrary to PPS 1, PPS 23, Policy 36 of the East Midlands Regional Plan and Policies DC1, C5 and C11 of the North Kesteven Local Plan.

4.6 ECONOMIC DEVELOPMENT

4.6.1 PPS 1(Delivering Sustainable Development) states that planning should facilitate and promote sustainable and inclusive patterns of urban and rural development by, inter alia, making suitable land available for development in line with economic, social and environmental objectives to improve people's quality of life and contributing to sustainable economic development (Paragraph 5).

4.6.2 PPS 7 (Sustainable Development in Rural Areas) states that planning policies should support development proposals that will enable farming and farmers to become, inter alia, more competitive, sustainable and environmentally friendly and adapt to new and changing markets (Paragraph 27). PPS4 includes development management policy EC10 which directs local planning authorities to take a positive and constructive approach towards planning applications for economic development. Policy EC11 states that local planning authorities should weigh market information and other economic information alongside environmental and social information, and take full account of any longer term benefits of the development including job creation and improved productivity.

4.6.3 Local Plan Policy C2 states that planning permission will be granted to development in the countryside provided that, inter alia, it will maintain or enhance the environmental, economic and social value of the countryside.

4.6.4 As set out in paragraphs 3.3.124-128, while it is recognised that the proposed development would deliver some benefits in terms of job creation and spin-off benefits to the local economy, the scheme may also generate adverse economic effects. The ES states that there would be no adverse impact on local dairy farms, although no information relating to the milk supply chain, sub-markets for milk and milk products, or the impact of the introduction of a new supply of milk onto the market is provided to substantiate this claim. The large scale of the proposed development means that if there were adverse effects on existing UK dairies, these could theoretically affect a large number of existing businesses. The job creation benefits of the proposed development also require scrutiny. Given the low levels of unemployment in the District and the current lack of dairy farming enterprises and expertise, it is likely that a least a proportion of the workforce will come from outside the local area. The number of posts filled by local people is likely to be low. This in turn creates pressure on housing in the area, reflected in the Applicant's attempt to secure a significant amount of on-site residential accommodation as part of the development.

4.6.5 There will be a small number of jobs created compared with the large area of floorspace constructed. For example, the 60 jobs created by the intensive dairy could be generated by the development of an office with floorspace of less than 4% of that proposed. Such a scheme would be likely to generate significantly fewer adverse environmental effects, depending on location and design.

4.7 TRAFFIC AND TRANSPORT

4.7.1 Planning policy seeks to ensure that development does not create problems in terms of congestion or the safety of the highway network. PPG 13 (Transport) states that "*Our quality of life depends on transport and easy access to jobs, shopping, leisure facilities and services; we need a safe, efficient and integrated transport system to support a strong and prosperous economy*" (Paragraph 1). PPG 13 goes on to state that "*The Government places great emphasis on people being able to travel safely whatever their chosen mode. The planning system has a substantial influence on the safety of pedestrians, cyclists and occupants of vehicles through the design and layout of footpaths, cycleways and roads. Planning can also influence road safety through its control of new development"* (Paragraph 29).

4.7.2 Policy 44 of the East Midlands Regional Plan includes a range of policies for the Eastern sub-area within which the application site is located. Objective E6 is to reduce the number of serious and fatal road traffic accidents.

4.7.3 The North Kesteven Local Plan includes saved policies which relate to highway efficiency and safety. Policy T4 (Safety) states that planning permission will be granted for development proposals that will not adversely affect the safety of people using roads, cycleways, footpaths, bridleways or railways.

4.7.4 As set out in paragraphs 3.3.130-157, the information provided in the ES on construction and operational vehicle movements is insufficient to enable a soundly-based assessment of the likely impacts of the scheme. The transportation information provided may underestimate the impact of the development on the public highway.

4.7.5 It appears that the ES seriously under-represents the highway safety situation in the vicinity of the application site. This issue has been highlighted for the B1188, although there may be similar issues on other local roads. Up to date and comprehensive accident data is required to enable a proper description of conditions on the local road network. The ES is misleading in its repeated assertion that the B1188 has a low accident record, and even based on the data provided in the ES which excludes the two recent fatal accidents, this road has a high accident record. Analysis of similar roads in Cambridgeshire, as well as information from Lincolnshire, show that declassified rural roads typically have a higher proportion of serious and fatal accidents than the overall road network. The analysis shows that accidents can occur at site access junctions to single properties, as well as at junctions of rural B and A roads. The assessment of highway safety issues provided by the ES is considered inadequate and misleading, and underestimates the impact upon highway safety of the proposed development.

4.7.6 Concerns are raised with the safety and layout design of the proposed site access junction. No right turn facility has been provided and therefore operational and construction vehicles waiting in the carriageway will cause a hazard to existing through movements. The junction layout has not been designed in accordance with the DMRB corner radii standards, and no evidence is provided to demonstrate that the proposed junction achieves the required visibility standards and can safely accommodate HGV movements. The simple T-Junction layout will require HGV movement to cross and accelerate onto a high-speed rural road resulting in safety concerns for existing movements on the B1188. These safety concerns of the specific junction, along with those expressed above, raise the possibility that it may be difficult to deliver an acceptable development in this location.

4.7.7 The Application as it stands is therefore considered to be contrary to PPG13, Policy 44 of the East Midlands Regional Plan and Policy T4 of the North Kesteven Local Plan.

4.8 FLORA AND FAUNA

4.8.1 The Government's objectives for protecting the natural environment are set out in PPS1 and PPS 9 (Biodiversity and Geological Conservation). As set out above, PPS 1 seeks to protect and enhance the natural environment. Paragraph 20

states that development plan policies should take account of environmental issues such as the conservation and enhancement of wildlife species and habitats and the promotion of biodiversity.

4.8.2 PPS 9 sets out the Government's objectives for biodiversity. These include the promotion of sustainable development by ensuring that biological diversity is conserved and enhanced as an integral part of development, and conserve, enhance and restore the diversity of England's wildlife by sustaining, and where possible improving, the quality and extent of natural habitat and the populations of naturally occurring species which they support.

4.8.3 The East Midlands Regional Plan includes Policy 26 which states that the Region's nationally designated natural assets should receive the highest level of protection and damage to natural assets should be avoided wherever and as far as possible. Unavoidable damage must be minimised and clearly justified by a need for development in that location which outweighs the damage that would result. Unavoidable damage which cannot be mitigated should compensated for.

4.8.4 A number of policies have been saved from the North Kesteven Local Plan which relate to the conservation of wildlife and biodiversity. These include:

- Policy C11 (Pollution) which states that planning permission will be granted for developments that may be liable to pollute groundwater, a water body, a watercourse, air or soil, only if (inter alia) the area's flora and fauna will not be adversely affected;

- Policy LW5 (Sites of Special Scientific Interest) states that planning permission will be granted for proposals that adversely affect a SSSI only if the benefits of development on the SSSI clearly outweigh the likely impacts, the proposed development could not be located in a less sensitive location and measures to minimise, mitigate or compensate for harm are assured; and

- Policy LW6 (County Wildlife Sites and Local Nature Reserves) states that planning permission will be granted for proposals that adversely affect a CWS or LNR only if there is a need for the development which clearly overrides the importance of the CWS or LNR, the proposed development could not be located in a less sensitive location and measures to minimise, mitigate or compensate for harm are assured;

4.8.5 As set out in paragraphs 3.3.177-185, ammonia deposition would likely result in a loss of biodiversity at the woodland and grassland LWSs at Neville Wood, Nocton Wood and Dunston Heath Pond and Verge. Ammonia deposition may also possibly result in a loss of biodiversity at the SSSI Potterhanworth Wood. These effects are significant at least at the local scale. Whether these impacts are more significant will depend on if nationally rare species present at the sites are detrimentally affected, and the extent of the impact on the broader habitats. Additional surveys for sensitive species, particularly lichens and bryophytes, should be carried out at the relevant sites to establish whether or not sensitive species are present.

4.8.6 The ES proposes habitat management as mitigation which will open up the woodlands and so increase diversity of plants. However, the habitat management of woodlands might not result in an increase of the plants that are detrimentally affected by excess nitrogen, as the nitrogen levels will still be there.

Further evidence is required to support the conclusion that the habitat management plan would reduce the likely impact of the development to the claimed level.

4.8.7 The Application as it stands is therefore considered to provide insufficient information to show that the scheme conforms to the requirements of PPS 1, PPS9, Policy 26 of the East Mildands Regional Plan and Policies C11, LW5, and LW6 of the North Kesteven Local Plan.

4.9 IMPACT ON AMENITY

4.9.1 As set out above, a range of national and regional policies seek to protect various aspects of the amenity of local residents. Policy C5 (Effects upon amenities) states that planning permission will be granted for proposals provided they will not adversely affect the amenities enjoyed by other land users to an unacceptable degree.

4.9.2 As set out above, the Applicant has failed to demonstrate that the proposed development will not create significant impacts in terms of the landscape, visual amenity, lighting, pollution of ground and surface water, odour, highway safety and public health. The proposed development may also lead to impacts in terms of noise generated by the dairy, and noise and vibration generated by increased movements of HGVs past existing residential premises. These impacts would combine to generate adverse effects on the amenities of local residents and other land users, such as walkers. The on-site residents would also suffer adverse effects on their amenity.

4.10 SUMMARY

4.10.1 In summary, the proposed development is considered to be contrary to the following national policy guidance:

- PPS 1 – due to adverse impacts on the countryside, landscape, water quality, air quality, and flora and fauna, or insufficient evidence to clearly demonstrate that significant adverse effects would not occur;
- PPS 4 – due to adverse effects on the countryside and landscape;
- PPS 7 – due to adverse effects on the countryside and landscape;
- PPS 9 – due to insufficient evidence to clearly demonstrate that there would be no significant adverse effects on flora and fauna and that the proposed mitigation would be effective;
- PPG 13 – due to inadequate analysis of traffic generation and highway safety issues and inadequate highway design; and
- PPS 23 – due to adverse effects on ground and surface water quality and air quality, or insufficient evidence to clearly demonstrate that significant adverse effects would not occur.

4.10.2 The proposed development is considered to be contrary to the following policies of the East Midlands Regional Plan:

- Policy 1, Objective g – due to adverse impacts on the countryside, landscape, water quality, air quality, and flora and fauna, or insufficient evidence to clearly demonstrate that significant adverse effects would not occur;

- Policy 2 – due to the failure to use a design-led approach or take account of local natural and historic character;

- Policy 26 – due to insufficient evidence to clearly demonstrate that there would be no significant adverse effects on flora and fauna and that the proposed mitigation would be effective;

- Policy 32 – due to potential adverse effects on ground and surface water quality, and insufficient evidence to clearly demonstrate that significant adverse effects would not occur;

- Policy 36 – due to insufficient evidence to clearly demonstrate that significant adverse effects on air quality would not occur;

- Policy 44, Objective E6 – due to the potential issues in terms of highway safety generated by the scheme; and

- Policy SRS 1 – due to failure to protect and/or enhance the character and quality of the built and natural environment and the wider surrounding countryside.

4.10.3 The proposed development is considered to be contrary to the following saved policies of the North Kesteven Local Plan:

- Policy C2 – due to adverse effects on the environmental value of the countryside, failure to protect the character of the countryside and the generation of large numbers of journeys in an inaccessible location;

- Policy C5 – due to a range of adverse affects on the amenity of other land users;

- Policy C11 – due to potential adverse effects on ground and surface water quality and air quality, and insufficient evidence to clearly demonstrate that significant adverse effects would not occur;

- Policy C15 – due the lack of a clear strategy and justification for water supply;

- Policy C18 – due to failure to reinforce local identity, protect the character and appearance of the site's surroundings, respond satisfactorily to context in design terms or add interest or vitality to the site's surroundings;

- Policy C19 – due to failure to protect and enhance the existing landscape character and to integrate the development with its surroundings;

- Policy C22 – due to adverse effects of lighting on the character of the area;

- Policy DC 1 – due to adverse effects on the character and appearance of the countryside and insufficient evidence to clearly demonstrate that significant adverse effects on air quality would not occur;

- Policy E4 – due to adverse effects on the quality and character of the countryside;
- Policy T4 – due to adverse effects on highway safety arising from the proposed development;
- Policy LW1 – due to failure to contribute to local distinctiveness and integrate the development into the local landscape character; and
- Policy LW5 – due to insufficient information to demonstrate that there will be no significant harm to a SSSI.

5. OTHER MATERIAL CONSIDERATIONS

5.1 INTRODUCTION

5.1.1 As set out in paragraph 5.1.1, Section 54A of the Planning Act 1990 requires that all planning applications should be determined in line with the policies and proposals of the development plan unless other material considerations determine otherwise. Any consideration which relates to the use and development of land is capable of being a planning consideration. Whether a particular consideration falling within that broad class is material in any given case will depend on the circumstances.[9]

5.1.2 Relevant material considerations are set out below.

5.2 ANIMAL WELFARE

5.2.1 The Application for the intensive dairy unit at Nocton Heath includes a Cow Welfare and Management Statement. This, along with other information provided by the Applicant has been reviewed. Key issues are set out below.

5.2.2 The Applicant is proposing the establishment of a large herd of 3,770 high yielding cows. The proposed unit would be around 30 times the size of the average UK dairy farm. The animals will have only limited access to outdoor paddocks/loafing areas. It is important to differentiate between access to pasture and access to outdoor loafing areas. The provision of an outside “loafing” area, even if it is grassed to begin with, is no replacement at all for access to grazing.

5.2.3 Scientific research indicates that such a system entails an increased risk of a range of serious health problems and moreover cannot properly satisfy the animals’ behavioural needs.

5.2.4 This section seeks to set out the scientific research and the legal framework that underpin Compassion in World Farming and the World Society for the Protection of Animal’s concerns about farms in which large herds of high yielding cows are kept with limited access to outdoor paddocks.

5.2.5 In 2009 the European Food Safety Authority (EFSA) conducted a major review of the scientific literature on dairy cow health and welfare. The study was requested by the European Commission and will be used to inform any future legislative proposals relating to the welfare of dairy cows in the EU. The study was carried out by a working group of the Animal Health and Welfare Panel of the European Food Safety Authority. The working group includes a number of leading academic experts on dairy cow welfare. The study focuses on the welfare of dairy cows in the EU (including the UK) so the housing and management systems and genetics considered are those that occur in the EU (including in the UK). Throughout the report, there are numerous references to studies conducted in the UK. The literature review also includes international studies where appropriate. EFSA produced a Scientific Report, four Scientific Opinions on different aspects of dairy cow health and welfare and an overall Scientific Opinion

[9] Paragraph 3.62, Planning Law Practice and Precedents, Turrall-Clarke and Tromans

that integrates conclusions and recommendations from the scientific report with the outcomes from the four separate scientific opinions.

5.2.6 EFSA is the body that at the EU level is responsible for providing scientific opinions on the health and welfare of animals. EFSA was established by Regulation (EC) NO 178/2002 of the European Parliament and of the Council laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. Article 22 of Regulation 178/2002 states that the mission of EFSA includes the provision of scientific opinions relating to animal health and welfare.

ACCESS TO GRAZING VERSUS ACCESS TO LOAFING AREAS/PADDOCKS

5.2.7 Examination of the Application suggests that the cows will spend around half of their dry period outside (i.e. around one month per year) and then only if this period coincides with acceptable weather during the summer months. (The dry period is the time when cows are not in milk; normally this would last for two months.)

5.2.8 Under the new proposal lactating cows will also have access to outdoor loafing areas/paddocks as set out in the Cow Welfare and Management Statement: "*gates in the sides of the main accommodation housing will open in the summer and each group of cows – except those that are fresh calved and therefore more susceptible to metabolic disorders – will be given access to outside grassland totalling 1.4 hectares (3.5 acres) for six hours every day, weather permitting. This will be monitored carefully to ensure no risk to health or the environment*" (page 7).

5.2.9 The groups will consist of around 420-426 cows. This means that in the loafing areas/paddocks, 420-426 cows will share access to just 3.5 acres, which is a stocking density of around 120 cows per acre. Where pasture is used for exercise only, the RSPCA recommends a stocking density of 10-12 cows per acre and permits no more than 20 cows per acre. The proposed Nocton stocking density is therefore ten times that recommended by the RSPCA and six times the maximum permitted by the RSPCA. Cattle stocked at such a high density are likely to damage the ground and denude it of any pasture that may be present in the loafing area/paddock.. A build-up of manure on this denuded "pasture" may well present an environmental risk. In terms of its size, the proposed area is clearly inadequate and it is highly unlikely that the ground could be maintained in an acceptable condition without restricting cow access to much less than that suggested in Nocton Dairies' welfare and management statement.

5.2.10 In summary, under the proposal cows will at most spend one month per year outside and may have no time at all if their dry period coincides with the winter months or bad weather. In addition, the proposed outdoor loafing areas/paddocks are so small in relation to the number of cows that they are likely to provide few welfare benefits.

5.2.11 Scientific research shows that such limited access to pasture has a detrimental impact on the health and welfare of dairy cows. In their overall Scientific Opinion EFSA stated, in what they characterized as a high priority conclusion, that "*If dairy cows are not kept on pasture for parts of the year, i.e. they are permanently*

on a zero-grazing system, there is an increased risk of lameness, hoof problems, teat tramp, mastitis, metritis, dystocia, ketosis, retained placenta and some bacterial infections"[10] (paragraph 6.8.10).

5.2.12 Access to outdoor pasture with meaningful grazing is also important in enabling cows to engage in their normal behaviours which EFSA identifies in its scientific report as including:

- Exercise which is needed for normal bone and muscle development;
- Foraging which accounts for a large proportion (up to 80%) of the daily activity of cows kept in a semi-natural situation. EFSA states that "In the absence of an appropriate foraging environment, welfare can be poor" (section 2.3.3);
- The investigation and manipulation of their environment. Cows have a natural tendency to explore their environment and they show a fair amount of curiosity; and
- Appropriate social interactions.

5.2.13 Cows cannot properly carry out these behaviours when they have limited access to outdoor paddocks/loafing areas. In light of this, keeping cows with little or no proper access to pasture or meaningful grazing raises an issue under section 9 of the Animal Welfare Act 2006. Section 9(1) provides that "*a person commits an offence if he does not take such steps as are reasonable in all the circumstances to ensure that the needs of an animal for which he is responsible are met to the extent required by good practice*". Section 9(2) provides that "*an animal's needs shall be taken to include ... its need to be able to exhibit normal behaviour patterns*".

5.2.14 In a high priority recommendation the EFSA overall Scientific Opinion stated that "*When possible, dairy cows and heifers should be given access to well managed pasture or other suitable outdoor conditions, at least during summer time or dry weather*".[11]

5.2.15 The importance of access to the outdoors, in the form of pasture with meaningful grazing is also highlighted by the Council of Europe Recommendation Concerning Cattle adopted by the Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes on 21 October 1988. Paragraph 5 of Appendix B (special provisions for cows and heifers) provides: "*Animals should be given the opportunity to go outside whenever possible and in summertime preferably every day*." The UK has ratified the European Convention for the Protection of Animals Kept for Farming Purposes.

HIGH MILK YIELDS

5.2.16 Anticipated yield is given in the Nocton proposal as 10,000 litres per cow per year. This is 43% (3,000 litres) higher than the national average of 7,000 litres.

[10] Scientific Opinion of the Panel on Animal Health and Welfare on a request from European Commission on welfare of dairy cows. *The EFSA Journal* (2009) 1143, 1-38.
[11] As above

Animals bred for such high milk yields are vulnerable to poor welfare. The EFSA overall Scientific Opinion contains high priority conclusions stressing that:

- "*Long term genetic selection for high milk yield is the major factor causing poor welfare, in particular health problems, in dairy cows*"(paragraph 4.2), and
- "*The genetic component underlying milk yield has also been found to be positively correlated with the incidence of lameness, mastitis, reproductive disorders and metabolic disorders*"(paragraph 4.2) .

5.2.17 EFSA also concluded "*Excessive or prolonged negative energy balance in dairy cows is more likely to occur in the highest producing animals and has been found to be associated with reduced fertility, digestive, metabolic and infectious disease, especially mastitis*"[12] (paragraph 4.3). Cows in negative energy balance lose excessive amounts of body condition.

5.2.18 In addition, the EFSA Report stated that "*with increasing production cows need to spend more time eating and thus have less time available for other activities, and may not be able to allocate time enough to fulfil their need for important activities such as resting*" (section 4.1).

5.2.19 Similarly, Professor John Webster[13], a leading UK expert in dairy cow welfare with four decades' experience in the field, has pointed out that synthesis of high volumes of milk not only presents the dairy cow with an enormous metabolic load, but also that "*the need to consume enough feed to meet this metabolic demand (five to six times that required for maintenance) drives the digestive system to its limits and can seriously compromise their need to rest and sleep*"[14] (page 105). In early lactation high yielding cows simply cannot consume enough, even if they have a well formulated diet, to meet metabolizable energy demand and so lose condition.

5.2.20 While these problems can to some degree be addressed by good management and nutrition, cows bred for high yields are at substantially increased risk of suffering from health disorders and it cannot be assumed that these can regularly be prevented by management practices. Moreover, EFSA has pointed out that the management practices needed to tackle these problems "*may themselves reduce animal welfare e.g. high-starch grain-based diets and minimal grazing*" (section 4.1).

5.2.21 EFSA's point about the potential adverse impact of high-starch grain-based diets is important. High yielding cows cannot sustain these yields on grass alone. In order to provide for their nutritional needs, their diet is supplemented by cereals. However, high levels of cereals in relation to fibre can lead to digestive problems

[12] As above

[13] John Webster is Emeritus Professor of Animal Husbandry at Bristol University, a founder member of the Farm Animal Welfare Council (FAWC) and the original proponent of the 'Five Freedoms' which were first espoused by the FAWC in 1979. These freedoms: freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury and disease; freedom to express normal behaviour; and freedom from fear and distress, are intended to form a logical and comprehensive framework for analysis of animal welfare within any given system.

[14] Webster J., 2010.Food from the dairy: husbandry regained? In: The meat crisis, eds D'Silva J and Webster J. Earthscan.

including excessive fermentation in the rumen and acidosis as well as to laminitis and high herd culling rates.

KEEPING COWS IN LARGE GROUPS

5.2.22 Cows naturally live in relatively small stable groups of animals which are generally related to one another and form a stable hierarchy. EFSA refers to studies that found more agonistic behaviour in larger dairy cow herds. The EFSA Report cites a study by Bouissou et al. (2001) which reports that under conditions of excessively large group size individual animals appear to have difficulty memorizing the social status of all peers which increases the incidence of aggressive interactions.[15]

5.2.23 According to the Applicant's Cow Welfare and Management Statement: *"Cows will live in groups of around 420-426 but freshly calved cows will be in groups half this size to reduce the time they spend being milked and maximise their feeding and rest time. Cows will remain in social groups and individual new animals will not be introduced to established groups to ensure bullying is minimised. Replacement heifers will be kept in their established peer groups throughout their time on the farm to ensure the social order is maintained and aggressive behaviour minimised"* (page 8).

5.2.24 Maintaining stable groups is indeed important to minimize aggression. Cows should not be mixed; transferring cows between groups breaks social bonds and results in aggression as new hierarchies form. However, it is unclear how stable groups can be maintained in practice in farms such as that proposed by the Applicant. Fertility problems in high-yielding cows often lead to a proportion having extended calving intervals which results in some mixing of groups. Where re-mixing is required, cows will be joining a very large group of individuals nearly all of whom will be unfamiliar to them.

5.2.25 Keeping very large groups together is likely also to increase the risk of disease. Keeping a large group in a confined space means that contagious disease would be very difficult to control, even with strict monitoring and an on-site vet.

RISK OF INTRODUCTION OF DISEASE IN THE LOCAL AREA

5.2.26 A major cause of the spread of diseases such as tuberculosis is the transport of animals from one farm to another. This is best avoided by dairy farms breeding their own replacement cattle which avoids the need to import further cattle once a farm is established. We understand that, at least initially, the proposed development is not planning to do this. Bringing in large numbers of cattle from other areas, in numerous batches over several years, will inevitably pose a risk of the introduction of diseases, including tuberculosis, to the area. Movements of tuberculosis-infected cattle have been shown to pose a clear transmission risk[16].

[15] Scientific report of EFSA prepared by the Animal Health and Animal Welfare Unit on the effects of farming systems on dairy cow welfare and disease. *Annex to the EFSA Journal* (2009) 1143, 1-38

[16] Goodchild AV, Clifton-Hadley RS (2001) Cattle-to-cattle transmission of *Mycobacterium bovis*. *Tuberculosis,* 81: 23-41.
Gopal R, Goodchild A, Hewinson G, de la Rua Domenech R and Clifton-Hadley R (2006) Introduction of bovine tuberculosis to north-east England by bought-in cattle. *Veterinary Record,* 159: 265-271.

Cattle movements are the main predictor of the distribution of bovine tuberculosis[17].

5.2.27 If tuberculosis enters the herd (through brought-in cattle or from other external sources) the large number of animals kept in close confinement is likely to facilitate its transmission to other animals in the herd. Herd size is known to be a risk factor for the incidence of bovine TB, both in herds and in individual cattle (Goodchild and Clifton-Hadley, 2001).

5.2.28 In its submission to the planning authority on the previous application, the Lincoln Red Cattle Society has expressed grave concerns with regards to the potential for the importation of disease to Lincolnshire, in particular tuberculosis. The Society considers the facility would pose a possible threat to their County Breed, as most of its population is located in the County of Lincolnshire. The Society points out that the breed is listed with the Rare Breeds Survival Trust.

5.2.29 In addition, if there is a requirement for heifers to be imported from outside (to replace cows that are culled) rather than replaced from within the herd, this would carry a risk of importing disease into the area.

WELFARE CONCERNS RELATED TO CALVES

5.2.30 The Applicant proposes to use milk from mastitic cows under treatment to feed young calves. This directly contravenes advice in the Defra Code of Recommendations for the Welfare of Livestock[18] which states that milk from cows treated with antibiotics or those being treated for mastitis should not be offered to calves fed on whole milk.

CONCLUSION

5.2.31 In conclusion, good welfare in dairy production depends on a combination of good environments, good genetics, good management and good stockmanship. If any of these are poor, welfare will be poor.

5.2.32 Keeping high yielding cows largely indoors on high energy diets has been shown by science to carry a high risk of health and welfare problems including lameness, mastitis and infertility. Very high levels of management, usually including the routine use of antibiotics, are required to maintain physical well-being.

5.2.33 Even if the management is excellent, the potential for good welfare in such systems remains low with limited opportunities for cows to express natural behavior patterns due to the pressure of production and the limited environment.

5.2.34 The proposed development increases the risk of the introduction of disease into the local area.

[17] Gilbert M, Mitchell A, Bourn D, Mawdsley J, Clifton-Hadley R and Wint W. (2005) Cattle movements and bovine tuberculosis in Great Britain. *Nature,* 435: 491-496.
[18] Defra (2003) Code of Recommendations for the Welfare of Livestock: Cattle

5.3 BUSINESS VIABILITY

5.3.1 The Application is for a scheme that is approximately half the size of that proposed by the previous application. It appears likely that the change in the size of the scheme will have an impact on the profitability, resilience and viability of the business.

5.3.2 As set out in Section 3, the planning application documentation does not provide a business plan for the proposed development. There is no evidence which makes clear on what basis the proposal is viable nor which elements of the proposal are critical to its viability or otherwise.

5.3.3 The planning consequences of the failure of the business would be to create a large scale, vacant, intensively developed brownfield site in open countryside, including residential development. It is therefore important that the business plan for the proposed development is made available for consideration by consultees. Should examination of the business plan indicate any concerns related to the viability of the scheme, this would be an important material consideration.

5.4 AGREEMENTS REQUIRED TO SUPPORT THE SCHEME

5.4.1 The Application indicates that the proposed development will require a range of additional agreements, commitments and licences. These include commitments to ensure that there is sufficient land for the spreading of digestate for the life of the scheme, adequate water abstraction licences and sufficient forage. The ES provides insufficient information to show that these agreements can and will be secured.

5.5 CONTROL OF HGV MOVEMENTS

5.5.1 In terms of the proposed approach to the control of HGV routing, there is concern about the adequacy and practical enforceability of routing agreement(s) as a means of ensuring that the development does not impact adversely on the network of unclassified roads in the vicinity of the development site (with adverse impacts on residents and other road users in the locality).

5.6 ENVIRONMENTAL PERMITTING REGIME

5.6.1 PPS 23 is concerned with pollution control. Paragraph 10 advises that the planning system plays an important role in determining the location of development which may give rise to pollution. The planning system should focus on whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than the control of processes or emissions themselves. Planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced. They should act to complement but not seek to duplicate it.

5.6.2 As set out in paragraph 3.3.173, the proposed development is not currently required to operate with a permit under the Environmental Permitting (England and Wales) Regulations 2007. Whilst these regulations cover certain activities

including intensive pig and poultry production, intensive large scale dairy units on this scale are not currently in existence in the UK, and thus they are not included in the regulatory regime. This means that the proposed development would be subject to less stringent environmental controls than a similarly sized unit for pigs or poultry. Given the highly sensitive location of the site, this indicates a serious issue in terms of lack of detailed environmental permitting controls on a large scale potentially polluting activity.

5.7 RESIDENTIAL DEVELOPMENT

5.7.1 As set out in paragraph 3.4.3, the Application attempts to justify a need for what would be a considerable residential development in the local context sited in open countryside amounting to a new hamlet. If the residential development is indeed required to support the scheme, this is a detrimental aspect of the proposed development, and the introduction of substantial residential development into the open countryside is an adverse material consideration.

5.8 TRACK RECORD OF THE APPLICANT

5.8.1 It is understood that the Applicant for the scheme, Nocton Dairies, is led by three farmers, one of whom, Peter Willes, already operates a number of farming operations. The way in which these operations have been managed and developed provide a useful guide to the possible issues at Nocton Heath.

5.8.2 As set out in paragraph 3.3.102, Parkham Farms Ltd which is owned by Peter Willes, was fined for the pollution of more than 2 kilometres of the River Torridge. The incident, which the Environment Agency described as one of the worst they had seen for some time, was reportedly caused by a member of staff who was unfamiliar with the farm's waste treatment plant and accidentally switched on a valve that caused a storage tank to overflow.

5.8.3 Appendix C provides a letter from Parkham Parish Council relating to a retrospective planning application to authorise a slurry lagoon at Sedborough Farm which is also owned by Peter Willes. The Parish Council state that the well-being, safety and amenity of the community continue to be seriously blighted by the cumulative and overbearing development associated with the Applicant's business.

5.8.4 The Parish Council consider that the planning application at Sedborough Farm represents an alarming and cynical example of retrospective planning regulations manipulation. They state that the slurry lagoon has been constructed, knowingly, excessively larger than previously approved and has brought with it even greater detrimental consequences in terms of amenity, safety and well-being which has now caused a 'tipping point' for the community. They highlight what they consider to be the creeping industrialisation of their Parish – arising from what is in their view development by stealth and cynical misuse of retrospective planning procedures by the Applicant, resulting, they state, in the growth of a multi-million pound factory farm operating on an enormous scale in a deeply rural location with restricted access via exclusively single track lanes.

5.8.5 Paragraph 1.4.14 of the ES for the Application at Nocton Heath hints at possible future expansion of the development as follows "*This reduction in cow numbers significantly reduces the potential for negative environmental effects, allowing any*

perceived impacts to be quantified before proceeding with any expansion". The previous application was for a scheme of around double the size of that currently under consideration. Any expansion of the scheme would further exacerbate adverse environmental effects.

5.9 PRECEDENT EFFECT

5.9.1 The precedent which the Application, if consented, would make for large-scale industrial, intensive developments in the countryside on greenfield sites would have far-reaching implications for the future of the countryside extending far beyond the locality of the site.

5.9.2 Those promoting the Application have let it be known that they, or parties associated with them, intend similar schemes in many other parts of the country and it is believed that a mega-installation for the reception, storage and distribution of milk may also be intended, with consequences nationally for the production, distribution and sale of milk. Any such developments would be likely to have a significant effect on dairy farming generally (as reflected, for example, in the recent 'Panorama' television programme on this issue), as well as having potential broader effects on water resources and the future of the countryside.

In summary, this Application is important for the future direction of dairy farming in England, the relationship between food production, public health and the countryside in which it is produced, and animal welfare.

5.10 SUMMARY

5.10.1 In summary, the following material considerations are relevant to the proposed development:

- Animal welfare – the scientific evidence shows that keeping high yielding cows in systems with minimal grazing is detrimental to their welfare, in particular because it presents a high risk of health disorders and to a substantial degree prevents normal behaviour. The proposed development increases the risk of the introduction of disease into the local area and also raises welfare concerns related to the treatment of calves;

- Business viability – the Application fails to demonstrate the viability of the business which, if it were to fail, would result in a large scale, vacant, brownfield site in open countryside;

- The need for supporting agreements – there is concern that it has not been demonstrated that the agreements, commitments and licences required to support the scheme can be secured;

- In terms of the proposed approach to the control of HGV routing, there is concern about the adequacy and practical enforceability of routing agreement(s) as a means of ensuring that the development does not impact adversely on the network of unclassified roads in the vicinity of the development site (with adverse impacts on residents and other road users in the locality);

- Environmental permitting regime – which currently does not include intensive dairy farms as these do not exist, on the scale being proposed, in the UK. This means that the proposed development will have less stringent environmental controls that would be applied to a similar unit for pig or poultry;

- Residential development – the need, if substantiated, for substantial residential development in the open countryside is an adverse material consideration;

- Track record of the Applicant – the Applicant has a track record of environmental pollution and implementing development without planning permission; and

- Precedent effect – this Application is important for the future direction of dairy farming in England, the relationship between food production, public health and the countryside in which it is produced, and animal welfare.

6. SUMMARY

6.1 INTRODUCTION

6.1.1 The section provides a summary of the material set out in this Objection. We object to the proposed development on a wide range of grounds, as summarised below.

6.2 INCHOATE APPLICATION

6.2.1 The Application is considered to be technically inchoate and the material provided does not constitute a valid planning application. This is because the Application does not include a reservoir and pipeline which are integral and essential elements of the scheme.

6.3 INADEQUATE INFORMATION PROVIDED BY THE APPLICANT AND TECHNICAL ISSUES

6.3.1 A preliminary review of the information provided by the Applicant has been carried out. The key findings are summarised below.

DESIGN AND ACCESS STATEMENT

6.3.2 The Design and Access Statement fails to conform with Government and other best practice guidance. The key omissions include a lack of information on and analysis of the application site and its context, failure to explain the design process, principles or evolution of the scheme, and unclear presentation and justification of the scale and amount of development.

ENVIRONMENTAL STATEMENT

6.3.3 The issues related to the ES highlighted by the preliminary review are summarised below. The significant omissions or inadequacies of the ES on the basis of Regulation 19 of the Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999 are highlighted.

Significant Regulation 19 Omissions from the ES

6.3.4 The significant omissions or inadequacies of the ES have been identified and are set out below.

6.3.5 The ES provides contradictory information on the application site area throughout the ES documentation and planning application form. The size of the application site is a fundamental issue and this should be clarified.

6.3.6 In terms of landscape and visual impacts, the ES lacks a clearly documented methodology for identifying baseline conditions and key assessment information, and fails to provide specific information on the characteristics of the application site and its landscape context, with particular omissions relating to the characteristics of other development that currently exists within the relevant

Landscape Character Areas. Given the unprecedented scale and nature of the scheme, the ES should also provide additional visual and descriptive material to articulate the scale and form of the scheme within its setting including aerial photographs and montages, visualisations and scale comparisons.

6.3.7 In terms of ground and surface water, the ES provides an only partial groundwater risk assessment and insufficient information on how clean and dirty surface water will be dealt with. Insufficient information is also provided on existing groundwater conditions and surface water flooding, as well as on the existing fertilization regime and the characteristics of the proposed effluent. The highly sensitive nature of the site and the potentially polluting nature of the proposed development mean that these are serious omissions. Detailed consideration must also be given to the operational and financial consequences to Anglian Water Services of the pollution of the public water supply.

6.3.8 There is a lack of information on the net impact of the scheme on water resources, and contradictory information on water requirements and impacts. A clear strategy for and justification of the proposed water supply should be provided.

6.3.9 In terms of air quality, there are a range of issues related to the odour modelling work including lack of substantiation of input data, failure to consider all the land which is proposed for spreading of effluent and apparent exclusion of the anaerobic digester from the modelling.

6.3.10 In terms of the economic impacts of the scheme, the ES states that the proposed development will not adversely impact local dairy farms. However, no evidence is provided to substantiate this claim and alternative evidence suggests that the scheme is likely, by contrast, to have a detrimental impact on existing UK dairy farms.

6.3.11 In terms of traffic and transport, there are issues related to the trip generation methodology. In addition, the ES seriously under-reports local highway safety issues, and the proposed junction layout is considered inadequate to deliver a safe scheme.

6.3.12 In terms of public health, the information provided in the ES does not amount to an assessment of likely impacts as no or only very limited information is given on baseline conditions, methodology, evaluation criteria, likely impacts, mitigation or residual impacts.

6.3.13 The ES indicates that ammonia deposition would be likely to result in a loss of biodiversity at a range of local wildlife sites, and that there is the possibility of biodiversity loss at Potterhanworth Wood SSSI. A survey for sensitive species, particularly lichens and bryophytes should be carried out at the relevant local sites to establish whether or not sensitive species are present.

6.3.14 The ES appears to exclude consideration of the impact of the development on the future residents of the site. These impacts would include noise, odour, health, safety and lighting issues. These should be assessed within the ES.

6.3.15 There are also a range of issues which require further information, assessment or clarification. Key issues include:

- The lack of a concluding section and summary table drawing together the key findings of the ES in a clear, comprehensive and objective way;
- Contradictory information is provided on the phasing of the development and the use of clay from the reservoir site to line the lagoons;
- Lack of justification for the ammonia emission rates used in the ammonia modelling work;
- Insufficient discussion of Iron Age funerary or related remains which may be present on the application site, and their importance;
- The assessment of the environmental sustainability of the scheme should be re-drafted to provide a balanced and comprehensive review of the environmental sustainability of the development, rather than focusing on narrowly defined topics;
- The assessment of greenhouse gases is not considered adequate due to the exclusion of a range of items from the assessment, lack of explanation of and issues related to the method used to calculate greenhouse gases and failure to clearly articulate the impacts;
- The Non-Technical Summary claims that the unit would have the lowest carbon footprint for milk in the country, if not Europe, although the comprehensive information required to substantiate this claim is not provided. The assumptions, method and details of any calculations made should be clearly set out; and
- In terms of the use of resources, the ES considers only a selection of the inputs required by the facility and overlooks a wide range of additional resources. The resource use of the scheme should be comprehensively analysed and set out.

6.4 EVALUATION OF THE SCHEME AGAINST THE DEVELOPMENT PLAN

6.4.1 Section 54A of the Planning Act 1990 requires that all planning applications should be determined in line with the policies and proposals of the development plan unless other material considerations determine otherwise. The emphasis on the plan-led system continues to provide the policy context for the consideration of planning applications for the development or use of land under Section 38 (6) of the Planning and Compulsory Purchase Act 2004.

6.4.2 The proposed development has been considered against the requirements of national planning policy guidance and the development plan. The proposed development is considered to be contrary to these policies for the reasons set out below.

6.4.3 The proposed development would have detrimental effects on the quality, character and appearance of the countryside by virtue of its scale, layout, density, massing, architectural design, appearance, materials, lighting and 24 hour industrial activities. The scheme would be contrary to PPS 1, PPS4, PPS7, East Midlands Regional Plan Policy 1, Policy 2 and SRS 1, North Kesteven Local Plan Policy C2, C18, C19, C22, DC1, E4 and LW1.

6.4.4 The proposed development would have detrimental effects on the environment as set out below:

- There is considered to be fundamental incompatibility between the potentially polluting proposed use and its location on a highly vulnerable, fractured limestone aquifer, very close to SPZ1 of a public water supply borehole. The Application provides insufficient evidence to clearly demonstrate that significant adverse effects would not occur and the proposed development is contrary to PPS1, PPS23, East Midlands Regional Plan Policy 1 and Policy 32, and North Kesteven Local Plan Policy C2, C5 and C11;
- The Application proposes the introduction of a very large scale dairy facility and the spreading of treated effluent over more than 6,000 acres of farm land. Due to deficiencies in the odour modelling, the Application provides insufficient evidence to clearly demonstrate that significant adverse effects on air quality due to odour would not occur and the proposed development is contrary to PPS1, PPS23, East Midlands Regional Plan Policy 1 and Policy 36, and North Kesteven Local Plan Policy C2, C5, C11 and DC1;
- The proposed development has the potential to result in a loss of biodiversity at a SSSI and LWSs. The Application provides insufficient evidence to clearly demonstrate that significant adverse effects on flora and fauna would not occur and the proposed development is contrary to PPS1, PPS9, East Midlands Regional Plan Policy 1, Policy 26, and North Kesteven Local Plan Policy C2, LW5 and LW6; and
- The Application does not provide a clear strategy for the supply of the required large volumes of water to serve the scheme. The Application provides insufficient evidence to clearly demonstrate the impact of the proposed development on water resources and the proposed development is contrary to North Kesteven Local Plan Policy C15.

6.4.5 The application site is served by a derestricted “Red Route”, which is designated because of the road’s high rate of collisions and casualties. The proposed highway design is inadequate to deliver a safe scheme, and it may be difficult to deliver an acceptable development in the proposed location. The proposed development is contrary to PPG13, East Midland Regional Plan Policy 44 and North Kesteven Local Plan Policy T4.

6.4.6 The effects set out above including impacts on landscape and visual amenity, lighting, pollution of ground and surface water, odour, highway safety and public heath, as well as increased noise from the dairy and noise and vibration from vehicular movements would combine to generate adverse impacts on the amenities of local residents and other land users. The proposed development is contrary to Policy C5 of the North Kesteven Local Plan.

6.4.7 In terms of economic impacts, there is a lack of evidence to show that the proposed development will not have a negative impact on existing UK dairy farmers. The scheme performs poorly in terms of local job creation as the number of jobs created compared with floorspace constructed is very low, and the numbers of jobs expected to be taken by local people is also likely to be low.

6.5 OTHER MATERIAL CONSIDERATIONS

6.5.1 A range of material considerations are also relevant to the determination of the Application as follows:

- Animal welfare – the scientific evidence shows that keeping high yielding cows in systems with minimal grazing is detrimental to their welfare, in particular because it presents a high risk of health disorders and to a substantial degree prevents normal behaviour. The proposed development increases the risk of the introduction of disease into the local area and also raises welfare concerns related to the treatment of calves;

- Business viability – the Application fails to demonstrate the viability of the business which, if it were to fail, would result in a large scale, vacant, brownfield site in open countryside;

- The need for supporting agreements – there is concern that it has not been demonstrated that the agreements, commitments and licences required to support the scheme can be secured;

- In terms of the proposed approach to the control of HGV routing, there is concern about the adequacy and practical enforceability of routing agreement(s) as a means of ensuring that the development does not impact adversely on the network of unclassified roads in the vicinity of the development site (with adverse impacts on residents and other road users in the locality);

- Environmental permitting regime – which currently does not include intensive dairy farms as these do not exist on the scale being proposed in the UK. This means that the proposed development will have less stringent environmental controls that would be applied to a similar unit for pig or poultry;

- Residential development – the need, if substantiated, for substantial residential development in the open countryside is an adverse material consideration;

- Track record of the Applicant – the Applicant has a track record of environmental pollution and implementing development without planning permission; and

- Precedent effect – this Application is important for the future direction of dairy farming in England, the relationship between food production, public health and the countryside in which it is produced, and animal welfare.

6.6 CONCLUSION

6.6.1 In conclusion, the proposed development is considered to be contrary to a wide range of national policy guidance and to the policies of the development plan. The proposed development is contrary to policies which protect the countryside, the environment, highway safety and residential amenity. The Application fails to show that scheme will not have detrimental effects on existing UK dairy farmers.

Other material considerations include animal welfare issues, the unproven viability of the business, the gap in the current environmental permitting regime and the track record of the Applicant of environmental pollution and planning issues. For the reasons set out above, we strongly object to the proposed development and consider that it should be refused planning permission.

APPENDIX A – EXTRACT FROM NORTH KESTEVEN LANDSCAPE CHARACTER ASSESSMENT; LANDSCAPE DESIGN CONSIDERATIONS

Paragraph 11.8 of the North Kesteven Landscape Character Assessment states that key points for consideration in assessing how a good landscape character fit can be achieved for new development are set out in a following table. An extract of this table is reproduced below, with an additional column added which evaluates the proposed development against the criteria of the Landscape Character Assessment.

Design sub-topic	Design criteria and considerations	Evaluation of scheme against design criteria and considerations
Location and siting	• Would the proposal be sited in a way that provides the best fit in the landscape so that it would look as if it belonged there, for example is it well related to other buildings or features in the landscape? • Would it present an isolated and incongruous interruption where there is open character to the landscape? • Is it well related to landform in a way that buildings have traditionally related to the topography?	The proposed development would introduce a very large scale, industrial-type scheme into expansive, open countryside. The scheme will be sited in open countryside and would present an incongruous interruption to the open character of the countryside. Alternative sites, for example, which are already characterised by large industrial buildings and infrastructure, would provide a more compatible landscape context. • The site's location in open countryside means that there are no buildings which provide the proposed development with a context in terms of built form. Overall the scheme is not considered to be well located or sited.
Aspect and orientation	• Would the proposed buildings be consistent with the way other buildings are orientated, for example inward looking to a crew yard or village green, outward looking to a view from a ridge, or fronting or at right angles to a road or lane?	• The scheme introduces long stretches of around 600m of linear buildings with rigid and uniform building lines, as well as a range of other industrial-type structures, plant and infrastructure into an open rural location. This creates large unattractive and functional facades to the development, which will transform and dominate the landscape of the immediate local area. The scheme does not relate to the highway network or traditional patterns of settlement layout.

Scale	• Would the proposal be appropriate in scale to its setting, for example would it dominate other buildings or landscape features around it, detract from views of a church spire, or look incongruously too big or too small?	• The landscape character of the area is mixed in scale, with some open and more expansive areas of large scale arable fields (such as at Nocton Heath or Potterhanworth Heath), intermingled closely with smaller discreet pockets of semi-enclosed or enclosed areas of landscape (such as Metheringham Low Fields or the areas to the north of Nocton Wood).
		• In terms of built form, the area around the site is characterised by villages, small or medium scale isolated farmsteads and ribbon development along the A15. While there are some large scale commercial developments within the broader area, these are smaller scale than that which is proposed and they are functionally tied to their local area as follows:
		  • Nocton Ltd's bulb packing plant – approximate size, reason for location
		  • Branston Potato Pack House – approximate size, reason for location
		  • Blankey Estates' grass drying plant – approximate size, reason for location
		• The proposed development is of a very large scale, consisting of over 50,000m2 of non-residential floorspace and six residential buildings, as well as a range of additional structures and infrastructure. In terms of scale, the scheme is broadly equivalent to:
		  • The floor space created will be approximately 6 times that of Lincoln Cathedral;
		  • The scheme appears larger than the entire village of Dunston;
		  • The scheme appears more than half the size of

		the village of Nocton; or • The scheme appears similar in size to the urban area of Branston (the whole section to the east of Station Road). • The setting of a single and distant view of Lincoln Cathedral would be affected, however not interrupted (once construction of the access road is complete). Furthermore, there are few incidences where the proposals would interrupt distinctive features such as church spires, although the wider setting of the villages would be affected. • Overall, the design of the scheme does not respond well in terms of scale, forming a very large feature in an area that is otherwise characterised by villages and limited, small sale farmsteads in the relevant context of the site. Existing large scale commercial development in the broader area is functionally tied to its location.
Layout	• Would the layout of the proposal be compatible with the surrounding development, traditional layouts and / or landscape character, for example would any existing buildings and the proposed buildings be well related to each other? • Would there be a rational explanation as to why they are laid out in the way they are, would the layout reflect that typically found in the area or vicinity, would it relate well to the layout, inter-relationships and juxtaposition of buildings and / or other features in the setting?	• Surrounding development is limited to nearby villages, two small quarries and a bulb packing plant/depot. In these example villages appear to have grown outward from small linear settlements that have expanded from the minor roads in the area (e.g. Nocton) and there is no formal, regular or geometric layout to the settlements. The large scale, utilitarian, industrial buildings, structures and plant proposed by the scheme would not be compatible with traditional local development forms and layouts. • The proposed layout is of a fundamentally different form to that typically found in the local area's settlements, as it reflects the functional requirements of an intensive dairy operation rather than being based on design considerations related to the character of development in the local area.

Design and materials	• Would the proposed design be compatible with the landscape and/or settlement character, for example would it be in harmony with other features or strikingly discordant? • Would it reflect the traditional approach to design, for example in mass, shape, height, width, depth, openings, fenestration, roof pitch, doorways, porches etc? • Would the proposal be built in external materials that reflect those traditionally used and which make up an important characteristic, avoiding stridently contrasting or other inappropriate materials, colours and finishes, would the colour, texture and reflection of the materials of buildings or infrastructure make the development more conspicuous or out of place? • Does it avoid using reflective materials for large agricultural building's external walls and roofs?	• The existing vernacular is mixed, consisting predominantly of brick built farmsteads and low level brick built barns. Some modern, metal clad barns are also present but these are closely associated with the farm houses. There are some examples of more industrial style development (bulb packing plant and potato plant) although the numbers of these are limited and they are not considered typical of the area. The inherent style and nature of the proposed scheme buildings would be inconsistent with the existing vernacular. Where local materials could be incorporated these would need to be used innovatively and respond to a greater level of detail in order to address specific vantage points and views (therefore providing best quality at most significant adverse impacts). However the design is relatively generic and does not address these matters sufficiently. • In relation to massing, the Design & Access Statement (Reading Agricultural Consultants, December 2010) states that the site has been selected as it satisfies all of the requirements for a large scale dairy unit (para 2.8). No analysis is provided of the site or its context, the evolution of the design or design principles. This suggests that there has been little or no adaptability in the siting of the site or design of the scheme in relation to design issues, and that the functional aspects have taken precedence. • Overall, the design of the scheme, although functional for its intended purpose, would not be compatible with the local vernacular and would be seen as a discordant feature in terms of both design and materials.
Access	• Would the proposed means of access fit well with the landscape setting and the new and existing development? for example would it be a dominant	• The assessment of highway safety provided as part of this Objection indicates that the proposed junction design may be insufficient to deliver a safe access for the scheme. A

	feature, would it require excessive 'cut and fill' because it was not well related to landform, would it be built of appropriate surfacing materials that blended with the surroundings and other land surfaces? • Would it avoid using features which serve to 'urbanise' the setting, such as using concrete kerbs and utilitarian lighting? • Would highway design requirements, including signage be disproportionately intrusive in relation to the scale of development?	significantly larger scheme, including a right turn facility and lighting may be required. It is considered unlikely that such a solution would fit well with the rural landscape setting of the area, and would introduce an urbanising feature to the B1188. The highway design requirements that are needed to deliver a safe scheme may result in a disproportionately intrusive element being introduced into the local landscape.
Boundaries and Landscaping	• Would the proposal require new boundaries to be erected and, if so, what would be the most appropriate type? • Would a hawthorn hedge, plateau limestone walling, estate fencing or brick wall be most appropriate, would any fencing be compatible with the traditional style of agricultural enclosure in the landscape around it? • Which type of gate would best fit in with other landscape elements? • Would it avoid utilising flimsy fences, 'ranch-style' fences, close-boarded fences and crude post and plank fences and, unless the scale and design of the development particularly justify it, very large, over-ornate metal fences and gates? • Is field hedging locally characteristic in species or pattern, and can it be strengthened? • Should hedgerow trees be encouraged and dying or diseased trees replaced, or retained for habitat	• The scheme includes for the boundaries to be reinforced through the creation of new hedgerow. With appropriate detailed design and specification of a thorough maintenance and aftercare period, the hedgerow itself would fit with the existing landscape character. • The scheme proposals also include for the creation of a shelter belt of planting. In principle this is suitable, however the proposals as illustrated on Figure RAC448/11 C of the submitted ES shows only a very narrow belt of vegetation. The width of this proposed tree belt would need to be a minimum of 6-8m to implement a shelter belt of 3 or 4 rows depth (at c. 2m spacing). If the width of the shelter belt is less than this, the tree planting would establish to be a linear row of trees or just a hedgerow; either way this would be insufficient to mitigate adverse impacts. • Furthermore, the design of the hedgerows and shelter belts has simply traced the boundary of the site, as created by the design and layout of the scheme. This would create an incongruent hedgerow boundary when seen in the context of the surrounding rectangular arable fields.

	value? • Can field boundary margins be managed better for landscape value and habitat enhancement? • What kind of landscape treatment would best fit the location and achieve the *purpose* of the landscaping scheme? Is the objective to help to : - Screen the development from particular views, or - Reinforce existing landscape features to improve the fit of the development in the landscape, or • - Provide a largely cosmetic landscaping scheme?	• Overall the treatment of boundaries is acceptable in principle but would benefit from additional refinements to the design. • The landscaping scheme is closely linked to the proposed mitigation and proposals for the treatment of boundaries. Aside from hedgerow planting along the boundary there is additional hedgerow planting proposed to 'gap up' or strengthen existing hedgerows and this is welcome. However the landscape scheme fails to make sufficient use of the space available nor does it respond to the surrounding landscape character which includes discreet parcels and blocks of plantation woodland. These break up and provide some variation in this arable landscape. • Overall the landscaping scheme in its current form is acceptable in its approach, however the scale of the proposed mitigation is not sufficient to provide the level of mitigation that is suggested in the assessment of landscape and visual impacts, particularly given the amount of land that the Applicant controls and the possibilities of landscape and biodiversity mitigation that could have been considered.
Landscape links and 'stepping stones'	• Would it be possible to use new planting to help to link the proposal to existing landscape features such as woodlands, copses or hedgerows? • Could lost landscape features be replaced, can the development contribute to the provision or restoration of landscape features which are important to wildlife as corridors or stepping stones, such as ponds, hedges, trees, woodlands, wetlands or semi-natural grasslands? • Can local Biodiversity Action Plan objectives be facilitated through landscaping schemes?	• The scale and context of the existing arable field boundaries are a strong feature of the landscape character, however, it is likely that the scale of these fields has increased over time. The landscape scheme could have suggested reintroduction of historic hedgerows and boundaries to reduce the scale of the field pattern and to lessen the decline of landscape character due to intensification of agriculture.

Vistas and outlooks	• Would development or landscaping serve to interrupt or otherwise obscure important vistas or inter-visibility between landmarks? • In particular, would views from and up to the Lincoln Cliff to and from the west, and vistas of the characteristic church spires across North Kesteven be afforded proper protection? • Can landscaping in particular serve to reinforce important vistas, such as tree avenues, or focusing the eye towards important buildings or views?	• The setting and experience of views from the track to the north of the site (between Top Plantation and the B1188) towards Lincoln Cathedral. The view itself would not be interrupted however the remote and isolated setting of the view and amenity of receptors along this route would be significantly affected. • More substantial and robust landscaping scheme would have better integrated this proposal into the landscape.
Ancillary development	• Would the proposal include, or lead to pressure for, ancillary buildings or structures, and if so will they clutter the site or spoil the overall design and layout, would they fit well in the landscape, has sufficient consideration been given to their design and integration? • Has the need for likely future requirements such as storage and expansion been taken account of?	• The proposed development includes a wide range of ancillary buildings, structures, plant and infrastructure, all of which will combine to increase the impact of this very large scale development on the local landscape. Their large scale and functional form mean that they will not fit well within the existing expansive, open, arable environment. • The possible future expansion of the scheme has not been accounted for in the application.
Visual amenity	• Would the proposal adversely affect the visual amenity of people who live, work, visit or pass through the area, would important viewpoints be affected, how conspicuous would the development be and what could be done to reduce this?	• The development would be conspicuous at a local level. Those working or passing through the area are unlikely to be affected to a significant degree, although there is a right of way and residential properties that would have views to the development and whose visual amenity would suffer adverse impacts and effects. As set out above, there are issues relating to the method used in the visual impact assessment provided in the ES.

APPENDIX B – CAMBRIDGESHIRE ROAD ACCIDENT EXAMPLES

This Appendix supplements the findings of a review of the traffic and transport information provided as part of the Application. The key findings are set out in the main text of the objection. Details of examples of patterns of accidents from Cambridgeshire, which provide a useful comparator for the application site, are set out below.

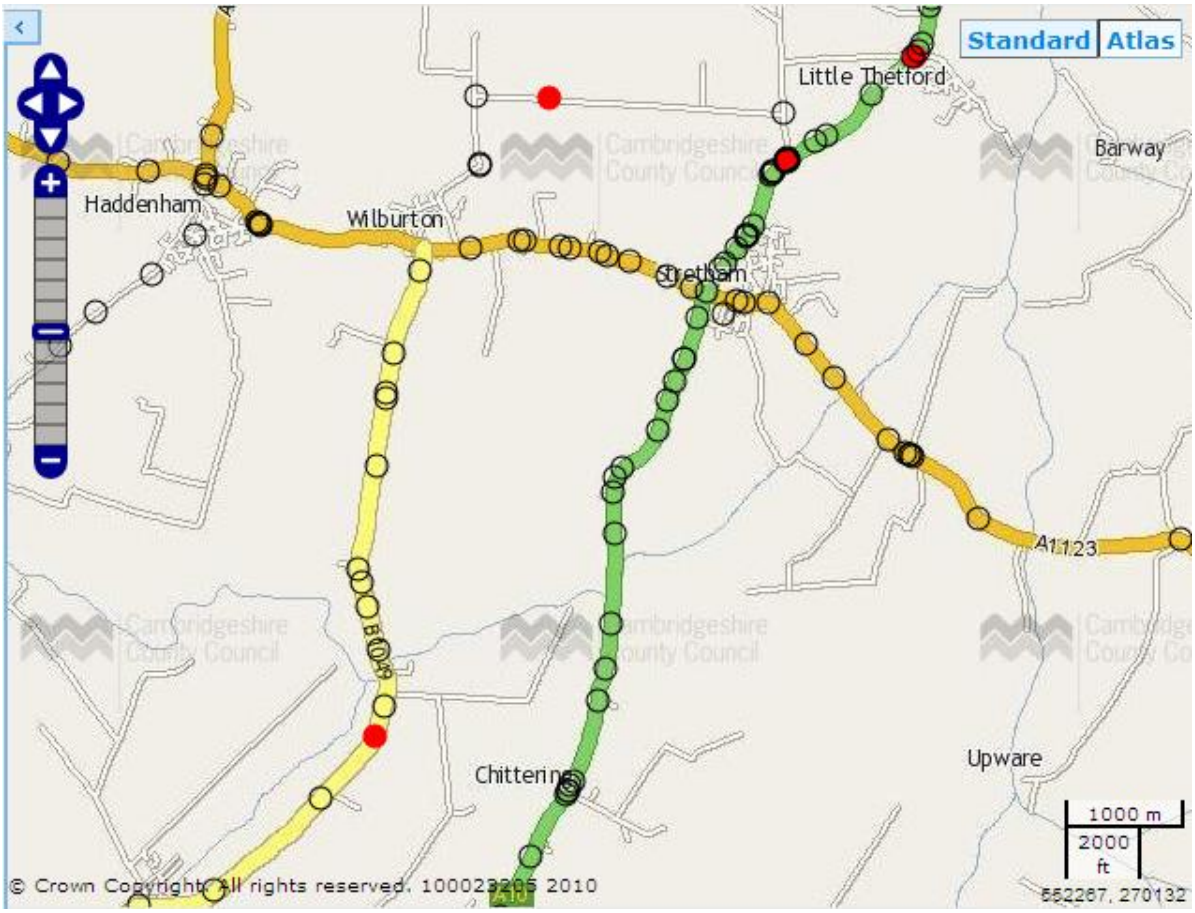
Cambridgeshire Accident Examples

Cambridgeshire provides a good proxy for Lincolnshire. Aside from the geographical proximity and topographical similarities the County has a high proportion of derestricted rural roads accommodating local, regional and agri-industrial traffic movements. In Cambridgeshire 48 percent of all casualties, 58 percent of serious injuries and 91 percent of deaths occurred on rural roads (those having speed limit of more than 40 mph). This pattern is similar to Lincolnshire and shows that a disproportionate number of serious and fatal accidents occur on rural roads.

The plan below shows an example of recorded accidents on typical derestricted Fenland roads. These roads are very similar in character to the roads in the vicinity of the proposed development site. They are characterised by long straight sections that can encourage high speeds in conjunction with infrequent industrial and farm related traffic movements turning into and out of the these roads to gain access to farms and agriculture related factory units.

Source: Cambridgeshire County Council website

The red dots on the above plan show locations where fatalities have occurred. The bold circles represent serious accidents with the black circles representing slight accidents. The plan shows a relatively high number of fatal accidents have been recorded on rural A, B and unclassified fenland roads. There is also a relatively high number of serious and slight injury accidents located at junctions, sharp corners and at regular intervals along the fenland roads.



Source: Cambridgeshire County Council website

The more detailed plan above shows a typical Cambridgeshire rural road network in more detail. The plan shows a series of recorded accidents on the A10 which is a derestricted single carriageway road. A cluster of accidents are shown at the simple T -junction arrangement in Chittering and along the length of this section of the A10. North of Stretham, fatal accidents have been recorded at two junctions, including a staggered crossroads arrangement at Little Thetford.

The above plan also includes a rural B road. The B1049 is a derestricted single carriageway road running parallel to the A10. Again the accident results show a series of recorded accidents, including a fatal accident. Accidents on the B1049 have also been recorded at single farm/private resident access junctions as well as at various locations along the route.

Source: Cambridgeshire County Council website

The detailed plan above shows a close-up of a typical derestricted B class road. The plan shows at a crossroads junction of the two derestricted B class roads an accident cluster site has occurred with 3 serious accidents and 7 slight accidents being recorded. The combination of high speeds and turning movements are likely to be main cause of accidents at this location.

To the west the B road meets a typical rural A class road. The junction type is a right turn ghost island. Despite the right turn facility several slight injury accidents have been recorded at the junction. This detailed plan highlights the number, type and location at which accidents typically occur on rural A and B class roads. The identification of these types of accidents and their locations highlights the highway safety concerns in relation to the impact of increased vehicle movements on the local highway in the vicinity of the proposed development.

The Cambridgeshire accident analysis shows that declassified rural roads typically have a higher proportion of serious and fatal accidents compared to the overall road network. The accident plans for rural roads in Cambridgeshire provide examples of the frequency and types of junctions where recorded accidents can occur. The analysis shows that accidents frequently occur at major/minor junction locations such as simple T-junctions and ghost island right turn junctions where vehicle are entering or turning across vehicles travelling at high speeds. The analysis also shows that accidents can occur at site access junctions to single farms/private dwellings as well as at the junctions of rural B and A class roads.

APPENDIX C – ISSUES RELATED TO THE APPROACH USED TO CALCULATE THE CARBON FOOTPRINT OF THE PROPOSED DEVELOPMENT

METHODOLOGY USED TO CALCULATE THE CARBON FOOTPRINT OF THE PROPOSED DEVELOPMENT

In their Environmental Statement, the Applicant states: *"The carbon footprint of milk production at the proposed unit, based on the E-CO2 Project's dairy carbon calculator is likely to be in the region of 721g CO2/litre of 4% fat-corrected milk, this is compared with 791g CO2/litre of 4% fat-corrected milk achieved at Withgill Farm (see Appendix 17.1)."*

The Applicant states that their carbon footprint figures are based on E-CO_2 Project's dairy carbon calculator. According to the E-CO_2 Project's website: *"The E-CO_2 Project is a joint venture between CMS UK Services, an independent rural consultancy and energy auditing company, Kite Consulting, a modern consultancy focused on customers in farming and the allied industries and its sister company Advance Sourcing, which specialises in securing the best deals on a broad range of specialist products for its farmer clients."*
Source: http://www.eco2project.com/content/about.aspx

They state: *"We meet the requirements of PAS 2050, the carbon footprinting standard. PAS 2050 provides a method for assessing the GHG (greenhouse gas) emissions arising from products across their life cycle, from initial sourcing of raw materials through manufacture, transport, use and ultimately recycling or waste."* Source:
http://www.eco2project.com/content/what.aspx

PAS 2050 is a 'publicly available specification' and is the first standard method for assessing the greenhouse gas emissions associated with a product or service. This is an independent standard which was developed by the British Standards Institute (BSI) and co-sponsored by the Carbon Trust and Defra. It was published in October 2008. PAS 2050 provides a systematic framework for organisations and aims to aid the quantification of GHG emissions associated with a particular product or service across a supply chain. It is available here: http://shop.bsigroup.com/en/Browse-by-Sector/Energy--Utilities/PAS-2050/

However, statements in the Applicant's environmental statement suggest that the method used may not be sufficiently detailed. For example, they state: *"The E- CO2 Project's model uses the 2005 UK national greenhouse gas emissions methodology which is largely based on the IPCC 2001 guidance covering tier 1 methodology for greenhouse gas reporting at the national level. This methodology excludes some offsite inputs and outputs from the farm system that would be of relevance to the projected 3,770 cow dairy scenario. These exclude allowances for emissions associated with:*

- *non-domestic and domestic straights (for feed).*
- *manure or slurry transported offsite;*
- *excess renewable energy produced on site and exported onto the national grid; and*
- *private water abstraction."*

The use of tier 1 methodology, as referred to here, would appear to be inappropriate. Dairy UK, DairyCo and the Carbon Trust published guidelines for the carbon footprinting of dairy products in the UK in September 2010:
http://www.dairyco.net/non_umbraco/download.aspx?media=8791

According to these guidelines: *"Regarding the calculation of non-CO2 emissions from livestock and soils the PAS 2050 (clause 7.8) requires that one of the following two approaches shall be used:*

- *"The highest tier approach set out in the IPCC Guidelines for National Greenhouse Gas Inventories, or*
- *The highest tier approach employed by the country in which the emissions were produced"*

The IPCC Guidelines provide a tiered approach to calculation of emissions from agriculture:

Tier 1

- *Simplistic, use of generic default values for emission factors and key variables*
- *Typically, this approach is only acceptable where the emissions from the product (e.g. milk, beef, lamb, chicken, etc) contribute only a small proportion of the overall emissions from a product*

Tier 2

- *More rigorous assessment of emissions, utilising country-specific emission factors and key variables and, potentially, more advanced equations*
- *This approach is acceptable for the assessment of emissions from the product (e.g. milk, beef, lamb, chicken, etc) production*

Tier 3

- *Primary measurement of emissions to establish country- or regional-specific emission factors; and/or development of more detailed models that more accurately measure GHG emissions*
- *This approach, whilst ultimately desired, is generally not practical. It requires scientific experimentation and research, and requires an extensive international peer review process*

Therefore, when calculating the carbon footprint for dairy products, the IPCC Tier 2 methodology shall be followed unless a Tier 3 methodology is available and can be justified."

The use tier 1 methodology would therefore appear not to be adequate.

Anaerobic digestion

In their Environmental Statement, the Applicant states: *"this calculation does not take into account any reduction in emissions associated with anaerobic digestion, which would probably reduce emissions by a further 10%."*

Unfortunately, the Applicant does not provide any information in support of their assertion that emissions would be reduced by a further 10% due to the anaerobic digestion of manure. It is not clear why this element is not included in the calculations. PAS 2050 does cover the export of energy to the national grid:

"Where energy production from CHP is exported to a larger system (e.g. export of electricity to a national electricity network), the avoided GHG emissions arising from the exported energy shall be assessed in accordance with 8.1.1."

"For example, where a process results in the co-production of electricity that is exported to a larger electricity transmission system, the avoided emissions resulting from this co-production of electricity would be based on the average GHG emissions intensity of grid electricity."

Import of stock from Europe

It is not clear whether the import of stock from Europe has been considered in calculating the carbon footprint. The Dairy UK/DairyCo/Carbon Trust guidelines make it clear that this should be taken into account: *"Also to be considered is the import and export of live animals".* However, it is not clear whether the E-CO2 Project's methodology includes this.

Bias towards intensive systems

The Applicant's environmental statement states: *"No allowance is made for any offsetting of emissions against carbon sequestration in soil and trees on the farm."*

This would appear to bias the results against extensive production systems based on permanent pasture, which would be expected to sequester significant amounts of carbon in soils.

METHODOLOGY OF THE COMPARISON WITH TESCO MILK

In their Environmental Statement, the Applicant states: *"This* [721g CO_2/litre] *compares with Tesco's declared footprint of 900g CO_2/pint for processed milk. Given that it is accepted that in the region of 20% of emissions for processed milk are associated with processing, the direct comparison for Nocton-produced milk would be 561g CO_2/pint of processed milk" (paragraph 17.4.6).*

Firstly, it is not entirely clear how the figure of 561 g CO_2/pint was calculated. Based on 20% of the Tesco figure being for post-production you would expect this to account for 180 g CO_2/pint. 721 g CO_2/litre = 409.5 g CO_2/pint for Nocton milk for the production phase only. 409.5 + 180 = 589.5. So using the 20% figure would suggest a figure of around 590 g CO_2/pint for Nocton.

Secondly, the figure of 20% of emissions attributed to processing is likely to be an underestimate for the comparison with Tesco milk. According to a PowerPoint presentation

by the Carbon Trust in June 2010, the production phase to the farm gate accounts for 70 to 80% of the carbon footprint of milk. Source: http://www.dairyuk.org/index.php?option=com_docman&task=doc_download&gid=5890

A PowerPoint presentation by Emma Jones (Agriculture Manager, Tesco) in June 2010 indicates that the proportion of the carbon footprint attributed to processing, distribution, etc (i.e. post-production) is 24.7% for Tesco standard whole milk. Source: http://www.dairyuk.org/index.php?option=com_docman&task=doc_download&gid=5893

The proportion of emissions attributable to the post-production phase is therefore likely to be between 20 and 30%. In order to draw a direct comparison with the carbon footprint of Tesco milk, it would seem to be appropriate to use the figure of 24.7%.

24.7% of 900 = 222.3 g CO2/pint post-production for Tesco milk

If the same figure is applied to milk produced at the proposed development:

409.5 + 222.3 = **631.8 g CO2/pint**

So this is higher than the figure of 561g CO2/pint suggested by Nocton, but is still well below the Tesco figure of 900g CO2/pint.

However, this is only a single (rather crude) measure of the environmental impact of the dairy. There are a number of problems with assessing the proposed development based on standard carbon footprinting methodology:

- It assumes that high yields can be achieved whilst maintaining cow health and fertility to achieve acceptable replacement rates;
- It does not take account of the contribution that permanent pastures can make to carbon sequestration in traditional pasture-based systems;
- It does not take account of the impact on the overall efficiency of the food production system beyond the dairy sector;
- It does not take account of the alternative option of using dual-purpose breeds to produce both milk and meat, which would be expected to compare favourably when the carbon footprints of both products are considered together;
- It does not take account of the other environmental impacts of intensive dairy farming.

APPENDIX D – LETTER FROM PARKHAM PARISH COUNCIL

PARKHAM PARISH COUNCIL.

PARISH CLERK: MRS SUE SQUIRE.
HAXLEA, 2 THREEWAYS, BRATTON FLEMING, BARNSTAPLE. EX31 4TG.

TEL: 01598 710526. E MAIL: susan.squire@virgin.net

10 March 2010

Mr G Spiller
Planning Department
Torridge District Council
Riverbank House
Bideford
EX39 2QG

Dear Mr Spiller

Application 1/0130/2010/FULM
Sedborough Farm Slurry Lagoon

At a Meeting of the Parkham Parish Council (PPC) held on Monday 8 March 2010, the Council felt strongly about this Application and voted unanimously for rejection. This is consistent with the responses that the PPC have provided for this Application on previous occasions that it has been submitted to TDC. The reasons for rejection are as previously stated in our letter to you on 8 October 2009 but with some additional comments.

The concerns of the Parish of Parkham are well documented and have been put before TDC and the Chief Executive of Torridge District Council on many occasions. You will also be aware that these concerns have been likewise endorsed by extensive communication from the Parkham Parish Conservation Association (PPCA) which represent the collective objections of members of the community whose well-being, safety and amenity continue to be seriously blighted by the cumulative and overbearing development associated with the Applicant's business.

Whilst the history and concerns regarding the negative impact of this business development are a matter of record the PPC would once again draw your attention to the fact that we now have a deeply disturbing 'creeping industrialisation' of our Parish – arising from development by stealth and cynical misuse of retrospective planning procedures by the Applicant which has resulted in the growth of a multi-million pound factory farm operating on an *enormous scale* in a deeply rural location with restricted access via exclusively single track lanes.

The Parish Council would reiterate that this Planning Application represents perhaps the most alarming and cynical example of retrospective planning regulations manipulation by this Applicant. The slurry lagoon has been constructed, knowingly, excessively larger than previously approved and has brought with it even greater detrimental consequences in terms of amenity, safety and well-being which has now caused a 'tipping point' for our community.

We note that since our previous input the development in question has been determined as a 'Major Development' which brings with it a need to meet further criteria. We note that the current submission from the Applicant does not provide a Traffic Assessment, a Noise Assessment, an Odour or Air Quality Assessment, a Landscape Assessment or Visual Appraisal, and Landscape Mitigation Report. The current Application also contains the same repeated inaccuracies regarding the impact on local residents/houses being minimal. This is entirely not the case as we have detailed to you previously.

The PPC strongly recommend that the Conditions imposed by the Planning Committee on 24 September 2008, when the original Planning Application was approved, are maintained. These major conditions are as outlined in the PPC's previous letter – a copy of which is attached.

The Parish Council feel strongly with regard to this Application and recommend its rejection.

Yours sincerely

Ian Pincombe
Chairman – Parkham Parish Council