Parish Council Rebuttal of Stream BioEnergy's Revised Environmental Statement Submitted in Response to the Regulation 25 Request

ANWICK PARISH COUNCIL

11th JANUARY 2026

INTRODUCTION

Scope, Purpose and Evidential Basis of This Response

This submission is made by Anwick Parish Council in its capacity as a statutory consultee in response to the revised Environmental Statement submitted by Stream BioEnergy pursuant to the Regulation 25 request. **It is not a reiteration of general concerns, nor an expression of local opposition in principle. It is a structured, evidence-led and legally grounded rebuttal addressing fundamental defects in the application, the Environmental Statement, and the decision-making basis currently available to the Local Planning Authority.**

The Parish Council has commissioned and assembled independent technical evidence, undertaken detailed comparator analysis, and reviewed the applicant's submissions against statutory requirements, established engineering practice, planning policy and public law principles. The material presented goes directly to the lawfulness of any potential determination. In particular, it demonstrates that the application suffers from systemic failures of disclosure, incomplete assessment of environmental and health effects, and a lack of engagement by competent regulatory bodies on matters central to the acceptability of the proposal in this specific location. The central thrust of this rebuttal is that the proposed development is not merely controversial or finely balanced, but procedurally unsafe and evidentially deficient. **The Environmental Statement does not describe the development as it is likely to be delivered, does not define a worst-case operational envelope, and does not provide the information required by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 to enable a lawful assessment of likely significant effects.** Core process design parameters are omitted, true operational capacity is not defined, and the physical scale of the infrastructure is inconsistent with the throughput presented. Independent comparator analysis (including the applicant's own Monaghan scheme, the Manby facility and the Grange Farm / Spalding EIA benchmark) demonstrates a pattern of selective disclosure and capacity ambiguity which the Authority is being asked to accept without verification.

In addition, the **Environment Agency has confirmed that it has not assessed core issues including odour, cumulative impacts, hazardous substances risk or regulatory feasibility, and has deliberately limited its involvement at the planning stage.** There is **no evidence of engagement with the Food Standards Agency despite the proposed co-location of an animal by-products digestion facility with an operational poultry slaughterhouse.** The interaction between existing odour burden, bioaerosol risk, wildlife vectors, water environment exposure, food safety and residential proximity has not been assessed. These are not peripheral matters and are not capable of lawful deferral to post-consent regimes.

The Parish Council's position is that this application raises serious and acute public law issues. The Authority is being asked to determine an application without the information it is legally required to have, and without the benefit of input from competent regulators on matters central to the proposal's acceptability. This engages the duty in *Secretary of State v Tameside MBC* to take reasonable steps to inform itself, the prohibition on unlawful regulatory deferral confirmed in *R (Champion) v North Norfolk DC*, and the requirement under the EIA Regulations and *R (Finch) v Surrey CC* to assess the likely significant effects of the development on the basis of a defined and auditable worst-case scenario.

For the avoidance of doubt, this response does not argue that anaerobic digestion is unacceptable in principle. It demonstrates that this proposal, in this location, in this form, on the evidence provided, is not capable of lawful determination. The deficiencies identified are not matters of detail capable of resolution by condition or minor clarification. They go to the heart of site suitability, process integrity, environmental protection, public health and regulatory compatibility.

Accordingly, any grant of planning permission in the absence of the information identified in this report would be unlawful in public law terms and would expose the Authority to a high and foreseeable risk of successful judicial review. Conversely, refusal on the grounds set out in this report would be evidence-led, legally robust and defensible on appeal.

Crucially, and as set out in Section 3 below, the evidence **demonstrates that Site 31 at Anwick is fundamentally unsuitable in principle for large-scale industrial anaerobic digestion development.** The deficiencies in the current application are not accidental or scheme-specific; they arise from intrinsic and unalterable characteristics of the site. This is not a case where better reporting will cure a poor proposal. **It is a case where the site itself is the wrong place for this form of development.**

The Parish Council therefore respectfully but firmly advises that the Authority should not proceed to determination unless and until the deficiencies identified in the sections that follow have been fully remedied. Anything less would represent a failure to discharge statutory duties and would place the Authority in a legally vulnerable position.

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APPENDICES

SECTION 1: EXECUTIVE SUMMARY

Response to the Revised Environmental Statement – Proposed Anaerobic Digestion Facility, Anwick

This report concludes that the revised Environmental Statement (ES) submitted by Stream BioEnergy remains fundamentally deficient and incapable of supporting a lawful planning determination. Despite the Regulation 25 request, the applicant has failed to remedy critical evidential gaps, and in several respects the revised material compounds rather than resolves earlier deficiencies. The cumulative effect is an Environmental Statement that does not meet the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 and cannot lawfully be relied upon by the Local Planning Authority.

This is not a marginal or finely balanced case. The evidence demonstrates systemic failures of disclosure, incomplete assessment of environmental and health effects, and the absence of input from competent regulatory bodies on matters central to the acceptability of the proposal in this specific location. **The Environmental Statement does not describe the development as it is likely to be delivered, does not define a worst-case operational envelope, and does not provide the information required to assess likely significant effects**. Core process design parameters are omitted, true operational capacity is not defined, and the physical scale of the infrastructure is inconsistent with the throughput presented.

Independent comparator analysis, including the applicant's own Monaghan scheme, the Manby, East Lindsey facility and the Grange Farm / Spalding, South Holland EIA benchmark, demonstrates a pattern of selective disclosure and capacity ambiguity which the Authority is being asked to accept without verification. In public law terms, the decision-maker is not being properly informed of the nature and scale of the development for which consent is sought.

The Environment Agency has confirmed that it has not assessed core issues including odour, cumulative impacts, hazardous substances risk or regulatory feasibility, and has deliberately limited its involvement at the planning stage. There is **no evidence of engagement with the Food Standards Agency despite the proposed co-location of an animal by-products digestion facility with an operational poultry slaughterhouse**. The interaction between existing odour burden, bioaerosol risk, wildlife vectors, water environment exposure, food safety and residential proximity has not been assessed. These are not peripheral matters and are not capable of lawful deferral to post-consent regimes.

Accordingly, **the application raises serious and acute public law issues**. The Authority is being asked to determine an application without the information it is legally required to have and without the benefit of input from competent regulators on matters central to the proposal's acceptability. **This engages the duty in *Secretary of State v Tameside MBC* to take reasonable steps to inform itself, the prohibition on unlawful regulatory deferral confirmed in *R (Champion) v North Norfolk DC*, and the requirement under the EIA Regulations and *R (Finch) v Surrey CC* to assess likely significant effects on the basis of a defined and auditable worst-case scenario. For the avoidance of doubt, this report does not argue that anaerobic digestion is unacceptable in principle.** It demonstrates that this proposal, in this location, in this form, on the evidence provided, is not capable of lawful determination. The deficiencies identified are not matters of detail capable of resolution by condition or minor clarification. They go to the heart of site suitability, process integrity, environmental protection, public health and regulatory compatibility.

Crucially, and as set out in Section 3 of this report, the evidence demonstrates that Site 31 at Anwick is fundamentally unsuitable in principle for large-scale industrial anaerobic digestion development. The difficulties encountered by the applicant are not accidental or scheme-specific. They arise from intrinsic and unalterable characteristics of the site. This is not a case where better reporting will cure a poor proposal. It is a case where the site itself is the wrong place for this form of development.

1. Fundamental Non-Compliance with the EIA Regulations

The Environmental Statement fails to provide the information necessary to assess the likely significant environmental effects of the development, contrary to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Key deficiencies remain in relation to site selection, cumulative impacts, air quality, odour, health effects, flood risk, and environmental risk management.

The omissions are not technical or peripheral; they go to the heart of whether the proposal is acceptable in principle. As such, the Local Planning Authority cannot lawfully proceed to determination on the basis of the material provided.

1a. Headroom, Elastic Capacity and Manby-Equivalent Capacity Benchmark

On the basis of the **dimensions disclosed by the applicant,** the Anwick proposal incorporates eight digestion tanks each approximately 25 metres in diameter and 25 metres in height. Even allowing for gas space, freeboard and emergency headroom, this configuration implies a combined working liquid volume in the order of 70,000–85,000 m³. At the stated throughput of 120,000 tonnes per annum (approximately 300–350 tonnes per day), this would imply an exceptionally long hydraulic retention time in excess of 200 days, which is inconsistent with normal design practice for continuously fed wet anaerobic digestion systems. Conversely, when assessed against typical hydraulic retention times in the range of 40–60 days, the installed digestion volume is physically capable of supporting several times the declared throughput. In the absence of disclosed working volumes, operating levels, hydraulic retention times, organic loading rates and confirmation of how many tanks operate concurrently, the only reasonable inference is that the plant contains substantial latent headroom beyond 120,000 tonnes per annum.

The scale of this headroom is further illustrated by reference to the disclosed performance of the **Manby anaerobic digestion facility.** Manby processes approximately 304,000 tonnes per annum using nine digesters with a combined installed volume of approximately 113,000 m³, equating to an effective throughput of around 2.7 tonnes per annum per cubic metre of installed digestion volume. **Applying that disclosed and auditable ratio to the Anwick proposal's** installed digestion volume (approximately 98,000 m³ derived from eight digesters of approximately 25 m diameter and 25 m height) **yields a Manby-equivalent throughput in the order of 260,000 tonnes per annum**. Even when conservative allowances are made for working volume, freeboard and operational contingency, the implied capacity remains materially in excess of the stated 120,000 tonnes per annum. The only rational conclusion is that the **Anwick infrastructure is physically capable of substantially greater throughput than is presented for planning purposes, and that the declared 120,000 tonnes per annum** represents an operational management assumption rather than a hard physical design constraint. This goes directly to the integrity of the EIA envelope and demonstrates that the Environmental Statement does not define a worst-case operational scenario as required by the EIA Regulations.

1c. Fatal Inconsistency in EIA Threshold Application – Grange Farm Comparator

A critical and highly material consistency failure arises when the Stream BioEnergy proposal is compared with Lincolnshire County Council's recent Screening Opinion for the proposed Grange Farm Anaerobic Digestion facility at Tongue End, Spalding (Ref: EIA/07/25). In that case, the County Council determined that a scheme processing approximately **39,500 tonnes per annum** of straw and chicken manure, utilising **a single digester tank** and located in **open countryside with limited nearby receptors**, constitutes **EIA development** and requires the submission of a full Environmental Statement. **That determination was made having regard to the characteristics of the development, its location, potential emissions, and the implications of the Supreme Court's decision in *R (Finch) v Surrey County Council* in relation to downstream greenhouse gas effects.**

The Stream BioEnergy proposal at Anwick is, by every objective measure, a **more significant, more intensive and more harmful development**. It seeks consent for a facility stated **to process 120,000 tonnes per annum** – more than **three times the throughput of the Grange Farm scheme** – incorporating eight digestion tanks**,** enclosed reception halls, pre-treatment and conditioning infrastructure, digestate processing and storage, substantial HGV movements, and co-location with an **existing large-scale poultry processing installation.** The site is immediately adjacent to a defined village, with **dense and highly sensitive residential receptors, community facilities and heritage assets in close proximity**, and with a **documented history of odour and amenity impacts.**

In professional planning, environmental and public law terms, it is **untenable to suggest that the Anwick proposal is less likely to give rise to significant environmental effects than the Grange Farm scheme.** If a 39,500-tonne agricultural AD plant in an isolated rural setting requires full EIA, then a 120,000-tonne industrial waste facility in a village context must, **a fortiori**, be subject to at least the same level of scrutiny. Any attempt to treat the Anwick proposal as a lower-impact development would be **inconsistent, irrational and legally unsafe**.

This inconsistency goes directly to the lawfulness of the assessment process. **It demonstrates a failure to apply the EIA Regulations in a rational and even-handed manner and exposes the Authority to significant legal risk.** It further reinforces the conclusion that the Environmental Statement submitted by Stream BioEnergy is not merely incomplete in detail, but **fundamentally incapable of supporting a lawful planning determination**.

2. Failure of the Site Selection and Alternatives Assessment

The **site selection exercise remains fundamentally flawed**. Alternative sites with materially lower environmental and amenity impacts were either discounted without justification or mischaracterised. The assessment appears designed to justify a

predetermined outcome rather than to identify the most suitable site, contrary to the requirements of the EIA Regulations and national policy.

This failure is particularly acute given **the availability of alternative locations** with demonstrably lower proximity to residential receptors, better transport characteristics, and fewer cumulative constraints.

3. Fundamental Unsuitability of the Anwick Site in Principle

The evidence before the Authority goes beyond demonstrating defects in the applicant's site selection exercise. It establishes that Site 31 at Anwick is intrinsically unsuitable in principle for large-scale industrial anaerobic digestion development. This conclusion arises from the inherent characteristics of the site, including immediate residential proximity, existing cumulative environmental burden, unassessed food safety and biosecurity interface with an operational poultry slaughterhouse, floodplain context, constrained highway access, and the presence of sensitive wildlife receptors. These are not matters capable of resolution through improved reporting, mitigation or conditions. They are structural constraints which render the location fundamentally incompatible with the nature of the proposed use.

In this context, the deficiencies in the Alternative Sites Assessment are not merely procedural. They have the effect of obscuring the reality that materially superior and less constrained locations exist, notably Site 18 at Ruskington, which performs better on flood risk, amenity, access, cumulative impact and policy compliance. The persistence with Site 31 in the face of these alternatives is therefore not simply unjustified, but irrational in planning terms. The Authority is entitled, and indeed required, to conclude that this is the wrong site for this form of development.

4. Unacceptable Risks to Health, Amenity and Environmental Quality

The evidence demonstrates that the proposed development would exacerbate existing environmental burdens in an area already experiencing odour and air quality problems. **Independent expert review confirms that baseline conditions are already compromised and that additional emissions would materially worsen impacts.**

Of particular concern is the proximity of the facility to sensitive receptors, including residential properties, **a rehabilitation hospital specialising in inpatient mental health care and vulnerable populations including the elderly, the disabled and children**. The Environmental Statement fails to demonstrate that adverse effects on health, wellbeing, and quality of life can be avoided or mitigated.

5. Failure of Complaint Handling, Regulatory Oversight and Cumulative Odour Control

The **Environmental Statement is further undermined by clear and compelling evidence of systemic failure in the handling of odour complaints by the adjacent operator, Pilgrim's (Moy Park), and by the findings of the Environment Agency.** These failures are not isolated administrative shortcomings; **they directly corroborate the conclusions of Dr Bull's independent assessment that cumulative odour impacts are already occurring and that baseline conditions are unacceptable.**

Environment Agency records and the operator's own complaint logs demonstrate a sustained and escalating pattern of odour incidents affecting the local community. Information obtained under the Environmental Information Regulations (EIR Ref: EIR2025/44150), together with Pilgrim's internal records, confirms the following:

ENVIRONMENTAL AGENCY	PILGRIMS
2020: 18 complaints	18 complaints
2021: 12 complaints	22 complaints
2022: 8 complaints	12 complaints
2023: 0 complaints	17 complaints
2024: 50 complaints	31 complaints
2025: 35 complaints	Data pending from Pilgrim's

This represents in **excess of 120 formal odour complaints recorded by the Environment Agency alone, with a further 100+ complaints recorded directly by Pilgrim's,** and a pronounced escalation in recent years. **These figures fundamentally contradict the applicant's repeated assertion that odour impacts are rare, minor, or well controlled.**

Critically, the **Environment Agency's findings confirm not only the existence of persistent odour problems but also systemic failures in complaint handling and operational control,** including:

- Inadequate investigation and logging of odour incidents;
- Failures in odour control and abatement systems;
- Inconsistent or ineffective operational responses to complaints.

These regulatory **failings align directly with the conclusions of the Bull Report, which identifies that baseline odour conditions in the area are already unacceptable and that odour sources** including the adjacent poultry operation, are contributing to an existing cumulative burden. Dr Bull's analysis demonstrates that odour impacts are not isolated or episodic, but occur with sufficient frequency and intensity to constitute an ongoing environmental harm.

Importantly, the **Bull report also establishes that cumulative odour impacts do not require simultaneous emissions from multiple sources to be harmful.** The addition of any further odour-generating activity in an already affected environment will increase the frequency and severity of odour exposure, even where individual sources operate intermittently. **This directly undermines the applicant's reliance on theoretical "headroom" and exposes a fundamental flaw in the Environmental Statement's approach to cumulative impact assessment.**

Taken together, the documented history of complaints, the Environment Agency's findings of regulatory failure, and the independent technical evidence provided by Dr Bull demonstrate a pattern of ongoing environmental harm and inadequate management. **They conclusively show that the existing environment is already operating beyond acceptable limits and that the introduction of a further odour-generating facility would materially worsen conditions.**

The proposed mitigation measures, including Negative Pressure and Biofilters, are insufficient given the 5-year history of failed odour management at the adjacent Pilgrim's site. The introduction of a second odorous industry creates a "Cumulative Nuisance" that will make identification and enforcement of environmental breaches impossible for the EA.

In this context, **the Environmental Statement's reliance on operator assurances and future management measures is untenable**. The evidence demonstrates not only that such assurances have failed in practice, but that the regulatory and operational framework has been insufficient to prevent harm. **The proposal therefore fails to meet the requirements of the EIA Regulations and cannot be regarded as environmentally acceptable or capable of lawful determination.**

6. Defective Carbon and Climate Assessment

The carbon assessment relies on optimistic assumptions regarding feedstock sourcing, transport distances, methane leakage, and displacement effects. When realistic assumptions are applied, the claimed climate benefits diminish substantially and may be negligible.

The assessment also fails to comply with the principles established in *Finch*, as it does not properly assess downstream emissions or alternative operational scenarios. As such, the claimed climate benefits cannot be relied upon in decision-making.

7. Inadequate Assessment of Flood Risk, Drainage and Ground Conditions

The submission does not provide the necessary hydrological or geotechnical information to demonstrate that the site can be developed safely. Key information on groundwater behaviour, drainage capacity, exceedance routing, and structural stability remains absent. These are fundamental matters that cannot be deferred to post-consent stages.

8. Overall Conclusion

Taken together, the evidence demonstrates that:

- The Environmental Statement is **materially incomplete and unreliable**;
- The proposal **fails to comply with national and local planning policy;**

- **The applicant has not demonstrated that the development** can be delivered without unacceptable harm to health, amenity, or the environment;
- The **history of regulatory non-compliance and failed complaint handling** at Pilgrim's materially undermines confidence in future performance;
- **Failure to assess food safety, biosecurity and wildlife vector risk arising from the co-location** of the proposed AD facility with an operational poultry slaughterhouse, and **failure to engage the Food Standards Agency** on this material interface.

This conclusion is reinforced by **the Authority's own determination that a materially smaller, simpler and less sensitive anaerobic digestion facility at Grange Farm, Spalding constitutes EIA development,** rendering any attempt to characterise the Anwick proposal as lower impact irrational, inconsistent and legally unsustainable.

The cumulative effect of the evidence is that this is not a case where a flawed scheme has been brought forward on an otherwise suitable site. It is a case **where the site itself is fundamentally unsuitable for the form and scale of development proposed**. The location is already environmentally stressed, is immediately adjacent to sensitive residential receptors, sits within a flood risk landscape, presents unassessed biosecurity and food safety interface risks, and is inferior to reasonable alternative sites. In planning and public law terms, this represents a structural incompatibility, not a technical deficiency. **Any future proposal at this location would face the same insurmountable constraints.**

Taken together, **the evidence demonstrates that the Anwick application is not, in reality, an application for a defined 120,000-tonne facility, but for an undefined industrial processing envelope (see Appendix 10).** The applicant's own comparator schemes show that it understands precisely how to disclose plant scale, digester architecture and HGV logistics when it chooses to do so. The absence of equivalent dimensional, hydraulic and capacity-defining information at Anwick is therefore material and deliberate in effect, whether or not in intent. Without digester volumes, hydraulic retention times, feedstock density assumptions and a reconciled capacity calculation, the true processing capability of the plant cannot be verified. The Authority is being asked to grant consent for a scheme whose physical infrastructure is capable of materially greater throughput than is being assessed, with no defined upper bound. That is **fundamentally incompatible with the requirements of the EIA Regulations and the Tameside duty. In public law terms, the decision-maker is not being properly informed of the nature and scale of the development for which consent is sought. The Environmental Statement therefore remains incapable of supporting a lawful determination.**

The cumulative effect of unassessed odour, air quality, biosecurity and food safety interface risks renders the Anwick site fundamentally unsuitable for this form of development. The only defensible course of action is to refuse the application on the basis that it fails to meet the requirements of the EIA Regulations and cannot be determined lawfully.

SECTION 2: PROCESS DESIGN, FEEDSTOCK CHARACTERISTICS & THROUGHPUT DERIVATION

Fundamental Defect in Capacity Definition and Process Transparency

Anwick Parish Council considers that the **Environmental Statement (ES) does not provide sufficient, precise or definitive information to enable the Local Planning Authority to properly assess the likely significant environmental effects of the development as required by Regulation 18 and Schedule 4 of the EIA Regulations.** In particular, the ES fails to disclose the core process design parameters, feedstock characteristics and engineering basis by which the stated throughput of 120,000 tonnes per annum has been derived.

This is not a matter of technical detail. It goes to the heart of whether the Authority understands the development it is being asked to approve, and whether the environmental assessments are based on a defined and auditable operational envelope. **In the absence of this information, the Authority cannot be satisfied that it has identified, described and assessed the likely significant effects of the development, nor that it has discharged its duty under the EIA Regulations and the Tameside principle to properly inform itself before determining the application.**

Systemic Opacity and Elastic Capacity – Evidence from Comparator Schemes (See Appendix 10 and Appendix 12)

The deficiencies in the Anwick submission cannot be regarded as isolated or accidental. Comparison with both the applicant's own Monaghan scheme (see Appendix 12) and established comparator practice at Manby demonstrates a consistent pattern of selective disclosure and capacity ambiguity.

At **Monaghan, NI**, a proposal has been submitted by the applicant comprising six digesters are clearly shown on the General Arrangement drawings **(see Appendix 12),** together with a defined tank farm, gas upgrading plant, evaporator, pellet hall and CHP infrastructure. The scheme is presented as an integrated industrial biomethane complex. However, despite dimensioning multiple ancillary tanks, the applicant does not disclose the diameters, heights or working volumes of the principal digestion vessels. This omission is material. It prevents independent verification of the true processing capacity of the plant and precludes objective capacity arithmetic.

At **Manby in Lincolnshire**, by contrast, both the physical dimensions and functional roles of each digestion tank are fully disclosed, enabling transparent reconciliation between installed plant, process configuration and declared throughput. **This confirms that such disclosure is standard, normal and readily available within the industry.**

Engineers do not omit the dimensions or functions of core process vessels by oversight. The only rational inference is that in the applicant's own schemes, dimensional and functional opacity is being maintained in order to preserve flexibility within the consented envelope, allowing the physical infrastructure to accommodate materially greater throughput than the headline tonnage presented for planning purposes.

Functional Opacity at Anwick – A More Serious Defect

At Anwick, the position is materially worse. Although the diameters and heights of the eight digestion tanks are now disclosed, the Environmental Statement **provides no information** on:

- working liquid volumes;
- hydraulic retention times;
- organic loading rates;
- feedstock density assumptions;
- dilution and water balance; or
- reconciliation showing how the stated 120,000 tonnes per annum is derived from the installed plant.

The functional role of each of the eight tanks is not defined. The Authority is therefore unable to determine whether these are parallel digesters, phased digesters, secondary stages, buffer vessels or latent capacity headroom. Installed but undefined capacity is still capacity. Without functional definition, the development envelope remains undefined.
This creates an illusion of transparency – size is disclosed, but operational meaning is withheld. The result is that capacity arithmetic is prevented and worst-case assessment is frustrated.

Comparative Digestion Volume and Capacity Disparity – Spalding Benchmark

A **stark and highly material discrepancy arises when the physical scale of the digestion infrastructure proposed at Anwick is compared with that of the Grange Farm scheme at Tongue End, Spalding,** which the County Council has determined to constitute **EIA development**. The Spalding proposal comprises a single low-profile digester structure measuring approximately 100.9 m × 26 m × 7.8 m overall, equating to an estimated total digester volume in the order of **10,000–15,000 m³**. **By contrast, the Anwick proposal incorporates eight cylindrical digesters each approximately 25 m in diameter and 25 m in height**, yielding a combined digestion volume approaching **100,000 m³**.

The Anwick scheme is therefore approximately **an order of magnitude larger in digestion capacity** than the Spalding scheme, notwithstanding the applicant's assertion of a stated throughput of only 120,000 tonnes per annum. In professional engineering and process design terms, a facility incorporating circa 100,000 m³ of digestion volume is not credibly designed for a modest industrial throughput; it is physically configured for substantially higher processing capacity.

This comparative analysis reinforces the conclusion that the declared 120,000 tpa figure represents an **operational management assumption rather than a hard design constraint**, and that the Authority is being asked to approve infrastructure capable of materially greater throughput than is disclosed.

When set against the fact that a single modest digester at Spalding has been determined by the County Council to require full EIA, the Anwick proposal's scale, complexity and sensitive village location render any attempt to characterise it as lower impact irrational and legally unsafe.

Public Law Consequence

Taken together, the Monaghan (Appendix 12), Manby (Appendix 10) and Spalding comparisons demonstrate a clear pattern:

- Where full disclosure is made (Manby), capacity can be audited;
- Where selective disclosure is made (Monaghan and Anwick), capacity arithmetic is prevented;
- Where modest scale is transparently presented (Spalding), EIA has been required.

At Anwick, the applicant discloses the physical size of the digestion tanks but withholds their functional definition. The Authority is therefore being asked to grant consent for an industrial envelope whose **scale is known but whose operational meaning is not**. **That is not a lawful basis for determination and engages the Tameside duty in its strongest form.**

Regulation 25 Request – Process Design and Throughput Derivation

Accordingly, Anwick Parish Council formally requests that the Local Planning Authority exercises its powers under Regulation 25 to seek the following further information from the applicant:

Food Safety and Biosecurity Interface – Regulatory Consultation Deficit

The **Environmental Statement is wholly silent on the food safety and biosecurity implications of locating an animal by-products digestion facility immediately adjacent to a regulated poultry slaughterhouse.** This is a material site-specific interface risk which directly engages the remit of the Food Standards Agency. In the absence of any assessment of cross-contamination pathways, wildlife vector exposure or pathogen persistence, and in the absence of any evidence that the FSA has been consulted or has formed a view, the Local Planning Authority cannot be satisfied that it has properly informed itself as required by the Tameside principle. These matters cannot lawfully be deferred to post-consent regulatory regimes. **Anwick Parish Council therefore formally requests that the Authority exercises its powers under Regulation 25 to seek the further information and consultation set out below prior to any determination of the application.**

A. Feedstock Schedule and Characteristics

1. A schedule of all proposed feedstocks, including:
    - individual feedstock types;
    - EWC codes;
    - source category; and
    - anticipated annual tonnage for each feedstock stream.

2. The percentage contribution by tonnage of each feedstock type to the overall annual throughput.

3. Typical physical and chemical characteristics for each feedstock stream, including:
    - total solids (TS);
    - volatile solids (VS); and
    - nitrogen content.

B. Process Design Parameters

4. The design hydraulic retention time (HRT) for the digestion process.
5. The design organic loading rate (OLR) used in the process design.
6. The working liquid volume of each digestion tank, excluding freeboard, gas space and emergency headroom.

C. Tank Function and Operational Configuration

7. Clarification of the operational role of each of the eight 25 m × 25 m tanks (e.g. primary digestion, secondary digestion, buffer, storage).
8. Confirmation of how many of the eight tanks are intended to operate concurrently under normal operating conditions.

D. Throughput Derivation and Design Capacity

9. The calculation or design basis by which the stated 120,000 tonnes per annum throughput has been derived from the digestion tank volumes and process parameters.
10. Confirmation of the maximum design throughput of the installed plant.
11. Confirmation as to whether the stated 120,000 tonnes per annum represents:
    - a physical design limit of the plant; or
    - an operational management limit.

E. Consistency with Comparator Schemes

12. For consistency with established practice, provision of a reconciliation table equivalent to that provided in the Manby AD Environmental Statement, showing:
    - tank volumes;
    - process configuration; and
    - derivation of throughput.

F. Environmental Assessment Envelope

13. Confirmation of whether the odour, air quality, traffic, noise and drainage assessments are based on:
    - the design throughput; or
    - the maximum achievable throughput of the installed plant.

G. Throughput Control and Monitoring

14. An explanation of how the annual throughput limit would be monitored, controlled and enforced in practice.

H. Food Safety, Biosecurity and Slaughterhouse Interface

15. **A site-specific assessment of food safety, biosecurity and pathogen transmission risk arising from the co-location of the proposed anaerobic digestion facility with an operational poultry slaughterhouse**, including:

- potential cross-contamination pathways via air, vehicles, personnel, wildlife vectors and environmental media;
- the risk of pathogen persistence in digestate where digestion temperatures and retention times are insufficient for full inactivation; and
- the implications of digestate storage, transport and land spreading in an environment supporting wild bird populations.

16. **Formal consultation with the Food Standards Agency (FSA)** and provision of their written response addressing:

- the compatibility of an animal by-products digestion facility with an immediately adjacent regulated food production environment;
- the adequacy of proposed biosecurity controls at the food–waste interface; and
- any requirements or constraints arising from food hygiene, contamination control and biosecurity standards.

17. **Confirmation of any engagement with APHA and other competent authorities** in relation to animal by-products handling, disease control and wildlife vector management, together with copies of all correspondence and advice received.

18. **An explanation of how food safety, biosecurity and wildlife vector risks have been assessed cumulatively and in-combination with**:

- the existing poultry slaughterhouse operation;
- known wild bird presence along the adjacent river corridor; and
- the residential village of Anwick.

Conclusion

The information requested above represents standard, routine and readily available process design and operational parameters necessary to understand the true nature, scale and environmental impact of the proposed development. **In the absence of this information, the Environmental Statement does not describe the development as it is likely to be delivered,** does not define a worst-case operational envelope, and does not provide a lawful basis on which the Authority can be satisfied that it has identified, described and assessed the likely significant effects of the development as required by the EIA Regulations.

In light of the demonstrable pattern of selective disclosure identified across the applicant's own schemes, and the stark scale disparity when compared with the Spalding EIA benchmark, Anwick Parish Council considers that failure to seek this information would amount to unlawful regulatory deferral and a breach of the Authority's duty under the Tameside principle.

The Planning Authority is therefore formally requested to exercise its powers under Regulation 25 prior to any determination of the application.

SECTION 3: SEQUENTIAL SITE SELECTION ASSESSMENT

1. Introduction: Legislative and Policy Framework

This document refutes Stream BioEnergy's submitted sequential site-selection assessment for the proposed Anaerobic Digestion (AD) facility at Anwick. **It consolidates the policy analysis, site assessments, flood-risk considerations and ancient woodland/heritage constraints.**

- The assessment is grounded in the following legislation and planning policies:
- Town and Country Planning Act 1990 (sections 70 and 70(2))
- Planning and Compulsory Purchase Act 2004 (section 38(6))
- Waste (England and Wales) Regulations 2011 (Regulation 18 – proximity and self-sufficiency)
- Environmental Impact Assessment Regulations 2017 (Regulation 14(2)(d) – reasonable alternatives)
- National Planning Policy Framework (current) – including policies on sustainable development, flood risk (Chapter 14), irreplaceable habitats (ancient woodland), heritage and amenity
- National Planning Policy for Waste (2014) – particularly Appendix B (locational criteria)
- Waste Management Plan for England
- Lincolnshire Minerals and Waste Local Plan – Policies W1, W2, W4, W5, DM1, DM3, DM6

2. Full Site-by-Site Assessment of the 43 Candidate Sites

The applicant's Alternative Sites Assessment (ASA) considers four principal dimensions relevant to the sequential test and the locational criteria set out in NPPW Appendix B: the broad location and contextual setting of each site; indicative flood risk, derived from Environment Agency flood-zone mapping; the presence of ancient woodland, heritage assets, and other key environmental constraints; and a brief comparative judgement of each site's suitability relative to the applicant's preferred Site 31 at Anwick. Flood risk is expressed in simplified terms (Low, Medium, or High) as a proxy for Flood Zones 1, 2, and 3, with the acknowledgement that more detailed Flood Risk Assessments would be required at the application stage to refine this assessment.

3. Detailed Analysis of Site 18 (Pilgrim Foods Co-Location)

Site 18, located adjacent to the Pilgrim Foods Ruskington factory, represents a clear example of the type of site envisaged by Policy W5 of the Lincolnshire Minerals and Waste Local Plan, offering direct co-location with a major food-processing facility that generates suitable AD feedstock, predominantly Flood Zone 1 land with only limited encroachment of Flood Zones 2 and 3 at the field margins, and excellent access via the B1188 corridor already accommodating significant HGV movements associated with Pilgrim Foods and the wider area. It also benefits from likely favourable proximity to the gas grid, at least comparable to—and potentially better than—Site 31, while presenting a markedly superior residential amenity context, given that Site 31 lies immediately adjacent to a dwelling and in close proximity to Anwick village.

When assessed against the NPPW Appendix B criteria, including traffic and access, air quality and odour, residential amenity, flood risk, nature conservation, and cumulative impacts, Site 18 performs as well as or better than Site 31 in almost all respects. The **applicant's failure to present a transparent and balanced assessment of Site 18 within the Alternative Sites Assessment therefore represents a serious omission under EIA Regulation 14(2)(d) in respect of reasonable alternatives and fundamentally undermines the robustness of the sequential testing exercise.**

For clarity, and to demonstrate the practical consequences of the applicant's claimed reliance on co-location with Pilgrim's, **the following matrix provides a direct sequential and policy-based comparison between Site 31 (Anwick) and Site 18 (Ruskington). It is based on the applicant's own Alternative Sites Assessment, Environment Agency mapping, and independent review.**

Comparative Sequential Test Matrix – Site 31 Anwick vs Site 18 Ruskington

ASSESSMENT CRITERION	SITE 31 – ANWICK (MOY PARK)	SITE 18 – RUSKINGTON (PILGRIM FOODS)	SEQUENTIAL / POLICY IMPLICATION
Policy W5 – Co-location with food processing	Adjacent to Moy Park slaughterhouse	Immediately adjacent to Pilgrim Foods factory	Both meet W5. **Co-location does not distinguish Anwick**.
Flood Risk (NPPF Sequential Test)	Low–Medium overall; southern section in Flood Zones 2/3	Predominantly Flood Zone 1; only minor strips of Zone 2/3 at field edge	**Ruskington performs better on flood risk.**
Residential Proximity / Amenity (NPPW App B, DM3)	Dwelling on boundary; Anwick village approx. 130m away	Significantly greater separation from housing	**Ruskington materially superior for amenity and health protection.**
Cumulative Odour & Environmental Burden	Adjacent to Moy Park + Anglian Water WwTW; documented odour history	No equivalent cumulative odour cluster	**Anwick intrinsically cumulative; Ruskington is not.**
Highway Access & Safety (NPPF 115/116)	A153: narrow, bends, hump-back bridge, multiple recorded fatalities	B1188: wider, straighter, existing HGV access to Pilgrims	**Ruskington demonstrably safer.**
HGV Queuing / Stacking Capacity	No proven on-site stacking; risk of backing onto A153	Existing off-highway stacking serving Pilgrims	**Ruskington infrastructure already proven.**
Gas Grid Connectivity	No evidence of direct mains connection	Connected to mains gas network	**Ruskington strategically preferable.**
Ancient Woodland / Heritage Constraints	Village setting with nearby heritage assets	No ancient woodland or major heritage constraints	**Ruskington less constrained.**
Wildlife / Vector & Biosecurity Risk	River corridor + village interface + slaughterhouse adjacency	Industrial context with fewer sensitive receptors	**Ruskington lower biosecurity risk.**
Overall NPPW Appdx B Performance	Poor on amenity, cumulative impact, health	Strong on access, amenity, flood risk, context	**Ruskington clearly superior on balance.**

4. Evidence that the Site Selection Has Been Engineered to Favour Site 31

Taken together, the mapping, flood-zone overlays, and site-by-site assessment demonstrate that Stream BioEnergy's site selection exercise has been selectively framed to steer the outcome toward Site 31 at Anwick as the preferred option. This is evidenced by a series of clear indicators, including:

- **Misuse of Policy W5** to hard-wire adjacency to a single operator (Moy Park) as the critical criterion, ignoring equally valid co-location opportunities (such as Pilgrim Foods at Site 18).
- **Inclusion of plainly undeliverable sites** (existing AD plant at Site 16, committed solar farm at Site 19) and highly constrained sites (Sites 28–30 and 43 next to Ancient Woodland and/or heritage assets) to artificially swell the long list.
- **Failure to carry forward multiple Flood Zone 1 options** with better or comparable amenity and environmental performance (for example Sites 5–7, 14–15 and 24–27).
- **Shortlisting of Site 43,** which is one of the worst sites on flood, ecology and heritage grounds, as a comparator to Site 31.
- The unsuitability of the site is further compounded by the **unassessed food safety and biosecurity interface with the adjacent poultry slaughterhouse (**see Section 4: Food Safety, Biosecurity and Wildlife Vector Risk).

The applicant's own acknowledgement that Site 31 is the closest of all assessed locations to sensitive residential receptors, yet is nevertheless presented as the preferred option. This unsuitability is further compounded by the **unassessed food safety and biosecurity interface with the adjacent poultry slaughterhouse,** including wildlife vector and pathogen transmission risk (see Section 4: Food Safety, Biosecurity and Wildlife Vector Risk).

5.Transition to Site Unsuitability in Principle

The Parish Council emphasises that the failure of the Alternative Sites Assessment is not merely a matter of flawed methodology. It exposes a deeper and more fundamental issue: that Site 31 at Anwick is inherently constrained and performs poorly against every material locational criterion when assessed objectively. The existence of demonstrably superior alternatives, combined with the intrinsic sensitivities of the Anwick location, means that this is not simply a case of a poorly justified site choice, but of a fundamentally inappropriate site.

The implications of this are addressed in the section below, which sets out why Site 31 is unsuitable in principle for large-scale industrial anaerobic digestion development, irrespective of the detailed configuration of the current scheme.

The approach fails to meet the Tameside duty, as it does not provide the balanced and objective information required for a properly informed decision. It also fails to demonstrate compliance with the NPPF sequential test, NPPW locational principles, and relevant policies of the Lincolnshire Minerals and Waste Local Plan.

The applicant's Alternative Sites Assessment should therefore be afforded little or no weight.

SECTION 4: FUNDAMENTAL UNSUITABILITY OF SITE 31 (ANWICK) FOR INDUSTRIAL ANAEROBIC DIGESTION DEVELOPMENT IN PRINCIPLE

1. Introduction and Strategic Context

Anwick Parish Council considers that, quite apart from the specific deficiencies of the current proposal, **Site 31 at Anwick is fundamentally unsuitable in principle for large-scale industrial anaerobic digestion development.** This conclusion arises not from opposition to anaerobic digestion as a technology, but **from the inherent characteristics, constraints and sensitivities of this specific location.**

The evidence assembled in this report demonstrates that the **difficulties encountered by the applicant are not incidental or technical in nature**. They arise directly from the intrinsic incompatibility between the nature of the proposed use and the context of the site. **The cumulative effect of residential proximity, existing environmental burden, sensitive receptors, biosecurity interface risk, floodplain setting, constrained highway infrastructure and the availability of demonstrably superior alternative sites renders this location structurally inappropriate for the form and scale of development proposed.**

Accordingly, the Parish Council submits that **this is not a case where defects can be remedied through improved reporting, mitigation or reconfiguration. The site itself is the problem.**

2. Immediate Residential Proximity and Sensitive Receptors

Site 31 lies in immediate proximity to residential properties, with dwellings located directly on the site boundary and the core of Anwick village within approximately 130 metres. The settlement includes a high proportion of elderly residents, individuals with underlying health conditions, and vulnerable groups. The site is also proximate to community facilities and a rehabilitation hospital specialising in inpatient mental health care.

In planning policy terms, this places Site 31 at the most sensitive end of the receptor spectrum. National Planning Policy for Waste (Appendix B), the National Planning Policy Framework and Policies DM1 and DM3 of the Lincolnshire Minerals and Waste Local Plan all require waste management facilities to be located so as to minimise adverse impacts on health, amenity and quality of life. Large-scale industrial waste processing facilities generating odour, emissions, noise and heavy vehicle movements are inherently incompatible with such a setting.

This incompatibility is not capable of mitigation through conditions or operational controls. Separation distance is a fundamental planning principle. Where that separation does not exist, the site is unsuitable.

3. Existing Cumulative Environmental Burden

The Anwick location is already subject to a **significant and documented environmental burden arising from:**

- the adjacent poultry slaughterhouse operation;
- the nearby wastewater treatment works; and
- existing industrial and agricultural activities in the locality.

Independent expert evidence (Dr Bull) confirms that baseline odour conditions are already compromised and, in some conditions, unacceptable. Environment Agency records and operator complaint logs demonstrate a sustained history of odour incidents and regulatory non-compliance.

This is a critical point. **Planning policy and case law are clear that cumulative impacts must be assessed and that additional development should not be permitted where an environment is already operating beyond acceptable thresholds.** The introduction of a further odour-generating, waste-handling industrial process into an already stressed environment is not a neutral act. It is an aggravating one.

No amount of theoretical mitigation can alter the simple reality that Site 31 is already environmentally burdened. In such circumstances, the precautionary principle applies. **The site is not a blank canvas. It is a constrained and sensitive environment.**

4. Biosecurity, Food Safety and Wildlife Vector Interface Risk

Site 31 is immediately adjacent to a regulated poultry slaughterhouse and lies within a river corridor known to support wild bird populations, including gulls and waterfowl. **The co-location of an animal by-products digestion facility with a live food production environment creates an inherently high-risk interface in biosecurity and food safety terms.**

This is not a generic rural location. It is a location where:

- animal by-products will be received, handled and processed;
- digestate will be stored and exported;
- heavy vehicle movements will overlap with food production logistics; and
- wildlife vectors are present.

Scientific evidence demonstrates that pathogens, including avian influenza viruses, can persist in organic material where digestion temperatures and retention times are insufficient for full inactivation. Digestate handling and land spreading then create potential pathways for environmental release via aerosolisation, runoff and wildlife exposure.

The Environmental Statement contains no assessment of these pathways and no evidence of engagement with the Food Standards Agency or APHA. That omission is itself fatal to the current application, but it also illustrates a deeper point: this is an inherently awkward and sensitive interface location for such a facility. It is not a neutral industrial estate. It is not an isolated agricultural holding. It is a mixed residential–food production–wildlife corridor environment.

In planning terms, that combination is fundamentally unsuitable for an animal by-products processing facility.

5. Floodplain Context, Ground Conditions and Environmental Risk

The site lies within a flood risk landscape, with parts of the land in Flood Zones 2 and 3 and with known groundwater sensitivity. **The applicant has failed to provide hydrogeological or geotechnical evidence sufficient to demonstrate that the site can safely accommodate heavy industrial infrastructure and contaminated process flows.**

Even if such evidence were to be provided in future, **this does not change the underlying reality that floodplain-adjacent, groundwater-sensitive locations are inherently higher risk for waste processing activities involving digestate, leachate and contaminated runoff.** Policy requires such facilities to be directed to the lowest risk sites first.

Site 31 is not a lowest risk site. It is a compromised one.

6. Highway Safety and Access Constraints

Access to the site is via the A153, a route characterised by:

- constrained geometry;
- bends and a hump-backed bridge;
- limited overtaking opportunities; and
- a documented history of serious and fatal accidents.

There is no proven on-site HGV stacking capacity, creating a risk of queuing back onto the public highway. In contrast, **alternative sites associated with existing industrial operations (notably Site 18 at Ruskington) benefit from established HGV infrastructure and off-highway stacking provision.**

Highway access is not a marginal consideration for waste facilities. It is central. Where the network is constrained and safety is already a concern, the introduction of additional heavy vehicle movements is inherently problematic.

THIS IS A LOCATIONAL CONSTRAINT, NOT A DESIGN FLAW.

7. Availability of Demonstrably Superior Alternative Sites

Perhaps most importantly, the unsuitability of Site 31 must be considered in the context of the availability of alternative sites which perform materially better against all relevant criteria.

Site 18 at Ruskington, adjacent to the Pilgrim Foods factory, offers:

- equivalent co-location with a major poultry processor;
- predominantly Flood Zone 1 land;
- materially greater separation from residential receptors;
- an established industrial context;
- superior highway access and stacking capacity; and
- a markedly lower cumulative environmental burden.

When assessed against the National Planning Policy for Waste Appendix B criteria, the NPPF sequential approach to flood risk, and Policies W5, DM1 and DM3 of the Lincolnshire Minerals and Waste Local Plan, Site 18 outperforms Site 31 in almost every respect. This is not a marginal difference. It is a structural one.

In planning terms, where a materially better alternative site exists, **it is not open to an applicant to persist with a poorer, more constrained and more harmful location and rely on mitigation to compensate**. The sequential and locational tests exist precisely to avoid that outcome.

8. Planning Policy and Public Law Implications

Taken together, the characteristics of Site 31 mean that:

- it is intrinsically sensitive in amenity terms;
- it is already environmentally burdened;
- it presents unassessed and high-risk biosecurity and food safety interfaces;
- it is located in a floodplain context;
- it is accessed via a constrained and hazardous highway network; and
- it is inferior to reasonable alternative locations.
-

In those circumstances, the Parish Council submits that Site 31 is fundamentally unsuitable in principle for large-scale industrial anaerobic digestion development. This conclusion is supported by national policy, local policy and public law principles. It is not dependent on the detail of the current scheme. It arises from the nature of the site.

Accordingly, any future proposal for an anaerobic digestion facility at this location would need to overcome not merely technical objections, but the much higher hurdle of demonstrating why an inherently constrained, sensitive and inferior site should be preferred over more suitable alternatives. On the evidence available, that is not a hurdle which can realistically be overcome.

9. Conclusion

The Parish Council therefore respectfully submits that Site 31 at Anwick should be regarded as unsuitable in principle for the form and scale of development proposed. The deficiencies in the current application are not accidental. They are symptomatic of a deeper incompatibility between the proposed use and the location.

THIS IS NOT A CASE WHERE BETTER REPORTS WILL CURE A POOR SITE. IT IS A CASE WHERE THE SITE ITSELF IS THE WRONG PLACE FOR THIS DEVELOPMENT.

SECTION 5: HEALTH, AIR QUALITY AND ODOUR ASSESSMENT

Health and Environmental Risks Associated with Biomethane and Biogas Production

Based on recent studies and authoritative evidence, the production of biomethane through Anaerobic Digestion (AD) is increasingly recognised as posing material environmental and public health risks (see Appendices 1 and 2). These risks are particularly relevant when assessing the suitability of AD facilities in close proximity to established residential areas.

Key considerations include:

Air Quality Impacts:

The operation of AD facilities involves the release of pollutants such as hydrogen sulphide (H_2S), ammonia, volatile organic compounds (VOCs), and fine particulate matter. **These emissions have well-documented adverse effects on respiratory health, particularly among vulnerable groups such as older residents, children and those with pre-existing conditions.** Given the close proximity of Site 31 to the settlement of Anwick, this raises a significant and material concern for the health and wellbeing of nearby residents, many of whom are elderly and / disabled.

Odour and Health Effects:

Evidence indicates that odours associated with AD operations—**principally arising from hydrogen sulphide and other volatile compounds emitted from AD plants**—can lead to adverse health and wellbeing outcomes, including respiratory irritation, sleep disturbance, stress, and anxiety. Persistent odour exposure is also recognised as a factor contributing to reduced quality of life and mental health impacts. **These risks are particularly acute in this case, as the proposed development would be located approximately 130 metres from sensitive residential receptors, where residents would be directly affected by any odour episodes.**

Legal and Policy Framework

The **objections raised align with several policies under the Lincolnshire Minerals and Waste Local Plan (LMWLP), specifically:**

- **Policy W1** - Sustainable Waste Management: The LMWLP encourages the promotion of sustainable waste management methods that minimize adverse environmental impacts. The proximity of Site 31 to sensitive receptors and the associated health risks from biogas production do not align with the principles of sustainable development promoted by this policy;
- **Policy W5** - Locational Criteria for Waste Management Facilities: This policy highlights that waste management facilities, including AD plants, must be located to minimize adverse effects on local communities and the environment. Given the documented risks associated with the site, including air quality impacts and the potential for environmental degradation, Site 31 fails to meet the locational criteria set out in this policy;
- **Policy DM3** - Impact on Residential Amenity: This policy requires that all proposed waste facilities must demonstrate that there will be no significant adverse impacts on local amenity, including air quality, noise, and odour. Given the proximity of Site 31 to Anwick village and a predominantly retired population, it is clear that the proposed plant would violate this policy.

Failure of Statutory Environmental Scrutiny and Unlawful Deferral of Environmental Assessment

Anwick Parish Council draws particular attention to the Environment Agency's letter to the Parish Council dated 4 December 2025 (Appendix 4), which has profound implications for the lawfulness of the planning process in this case. In that letter, the Environment Agency confirms that it has **not reviewed the applicant's odour assessment, has not assessed cumulative odour impacts**, **has not reviewed dispersion modelling or stack height**, **has not evaluated hazardous substances risk**, and **has not undertaken a detailed regulatory feasibility assessment** of the proposed anaerobic digestion facility. **The Agency further confirms that it has not formed a view on Dr Bull's independent odour review and has deliberately limited its involvement at the planning stage on the basis that these matters will be addressed under the environmental permitting regime.**

The Environment Agency **admits a permit is unlikely due to unresolved deficiencies but simultaneously tells planners to assume the permitting regime will function, without providing any supporting evidence. This contradiction undermines the credibility of the application and breaches the principle that planning decisions must be evidence-based and properly account for material environmental considerations (NPPF paras 7, 35, 174–177). Granting permission in these circumstances would be premature, procedurally unsound, and risks being legally challengeable.**

In public law terms, this creates a material evidential vacuum at the planning stage. The statutory environmental regulator has not assessed the very impacts odour, emissions, cumulative effects, hazardous substances and regulatory feasibility which lie at the heart of this proposal and which are central to its acceptability in a residential setting. **The consequence is that the Local Planning Authority is being asked to determine the application without the information it is legally required to have**. This is precisely the form of **unlawful deferral of environmental assessment prohibited by the Supreme Court in R (Champion) v North Norfolk DC,** and constitutes a breach of the duty in **Secretary of State v Tameside MBC** to take reasonable steps to inform itself before reaching a decision. The principles in **Blewett** further confirm that environmental information must be adequate in substance, not merely present in form.

It is not lawful for the planning authority to assume that fundamental environmental risks will be resolved at the permitting stage where those risks have not been assessed at the planning stage and where the statutory consultee has expressly declined to engage with them. The Environment Agency's position does not reduce the weight of the Parish Council's concerns; it magnifies them. It confirms that key environmental impacts remain unexamined and that the Environmental Statement does not provide a lawful basis for decision-making.

Accordingly, the health, odour and amenity impacts set out below must be read in the context of a complete absence of statutory environmental scrutiny at the planning stage. This renders the Environmental Statement fundamentally deficient and the application incapable of lawful determination.

Alternative Sites Assessment Failure

The Alternative Sites Assessment (ASA) demonstrably fails to provide a robust or objective evaluation of reasonable alternatives. In particular, it does not adequately account for the environmental and public health risks associated with Site 31, calling into question the integrity of the site selection process as a whole. The assessment appears to have been structured in a manner that selectively favours the preferred site rather than objectively comparing all reasonable options.

Key deficiencies include:

- **The unjustified exclusion of Site 18 (adjacent to the Pilgrim's Pride facility at Ruskington)**, which offers demonstrably superior performance in terms of residential separation, environmental sensitivity, and overall suitability when compared to Site 31.
- **The inclusion of clearly unsuitable locations, such as Site 43**, which is subject to significant flood risk, ecological constraints, and heritage sensitivities. The inclusion of such constrained sites serves to distort the comparative assessment and undermines confidence in the robustness of the site selection exercise.
- **A failure to properly assess flood risk and environmental constraints at alternative locations**, including Sites 5–7, which on objective criteria present fewer conflicts with residential amenity and environmental receptors than Site 31. The absence of transparent, evidence-based comparison further weakens the credibility of the ASA's conclusions.

Conclusion and Policy Implications

In light of the substantial body of evidence demonstrating the adverse health and environmental impacts associated with biogas production—particularly where facilities are located in close proximity to sensitive residential receptors—the Alternative Sites Assessment should be afforded little, if any, weight in the decision-making process. Site 31 at Anwick fails to satisfy the locational and environmental criteria set out in both the National Planning Policy Framework and the Lincolnshire Minerals and Waste Local Plan. On this basis, the proposal should be refused or, at the very least, subjected to significantly greater scrutiny, with full transparency regarding site selection methodology and the assessment of environmental and public health impacts.

EVIDENCE FROM DR. BULL'S REVIEW OF STREAM BIOENERGY'S RESPONSE TO LCC'S REGULATION 25 REQUEST

Dr Bull's review (**see Appendix 1 for full report**) **identifies fundamental and persistent flaws in the applicant's odour and air-quality assessment which collectively undermine the reliability of the Environmental Statement.** Most critically, the baseline odour environment has been materially misrepresented. The applicant's own sniff testing was largely undertaken in meteorological conditions where odour detection was improbable, leading to a misleading impression of negligible existing impacts. Subsequent targeted testing demonstrated that odours consistent with poultry waste, effluent and offal are already being experienced in parts of Anwick, including residential areas, confirming that baseline conditions are already unacceptable. This directly contradicts the applicant's assumption of available "headroom" for additional odour sources and invalidates conclusions that cumulative impacts would be insignificant.

The review also exposes serious methodological deficiencies in the modelling of emissions. The applicant's original assessment failed to correctly apply oxygen content corrections when calculating pollutant emission rates, resulting in fundamentally flawed inputs to the dispersion modelling. Although a revised assessment was submitted**, Dr Bull concludes that it remains technically unreliable and potentially based on incorrect assumptions about exhaust flowrates and standardisation of emissions data. In effect, the applicant cannot demonstrate that the predicted odour impacts are robust or representative of real-world conditions, and the true scale of emissions remains uncertain.**

Furthermore, the evidence shows that cumulative impacts have been systematically underestimated. **The applicant's reliance on theoretical "headroom" below benchmark criteria ignores both the already compromised baseline conditions and the fact that odour impacts are governed by frequency as well as intensity.** Dr Bull confirms that odour sources do not need to coincide spatially or temporally to cause cumulative harm; the mere addition of another source in an area already experiencing odour events will increase the frequency and severity of nuisance. The applicant's own data confirm that odour complaints already occur and that the sources are difficult to distinguish, undermining assertions that cumulative effects would be negligible.

In summary**, Dr Bull's review demonstrates that the Environmental Statement fails to provide a sound or precautionary assessment of odour impacts.** The baseline is flawed, the modelling is technically questionable, and the cumulative effects have been materially underestimated. As a result, there is no credible evidential basis to conclude that the proposed development would avoid significant adverse effects on residential amenity, and the assessment cannot be relied upon for decision-making.

Summary of Findings from the Bull Review (Appendix 1)

Overall Conclusion

- The Bull Review confirms that the proposed AD facility at Anwick would exacerbate already unacceptable odour and health impacts.
- Deficiencies in the applicant's assessment significantly undermine the credibility of the Environmental Statement and Alternative Sites Assessment.

Cumulative Odour Impacts

- Existing odour conditions in Anwick are already unacceptable, particularly during low wind (worst-case) conditions.
- Current sources, including the sewage treatment works and the Moy Park facility, already impose a significant odour burden.
- The addition of an AD plant would materially worsen these conditions, with no remaining odour "headroom."
- The proximity of the site to sensitive receptors—particularly elderly residents within approximately 250 m—heightens the severity of potential impacts.

Health Implications

- The Bull review confirms that existing odour exposure is already contributing to adverse health effects, including respiratory symptoms and general discomfort.
- Vulnerable groups, particularly older residents, are at heightened risk.
- Sniff testing and baseline assessments demonstrate that current odour conditions are problematic and would be materially worsened by the proposed development.

Emissions Modelling and Technical Deficiencies

- The applicant's air quality assessment failed to correctly apply oxygen correction factors, resulting in underestimated emission levels.

- Revised modelling does not adequately resolve these deficiencies, casting doubt on the reliability of predicted impacts.
- These technical flaws undermine confidence in the applicant's conclusions regarding air quality and health risk.

Planning and Policy Implications

- The cumulative evidence demonstrates that the site is already operating beyond acceptable environmental thresholds.
- The addition of a further odour-generating facility would conflict with the objectives of the National Planning Policy Framework and the Lincolnshire Minerals and Waste Local Plan.
- The Alternative Sites Assessment should therefore be afforded little or no weight.
- On environmental, health, and policy grounds, Site 31 is unsuitable and the application should be refused.

Food Safety, Biosecurity and Wildlife Vector Risk – Unassessed Interface with Regulated Poultry Operations

A further, unaddressed and material defect in the **Environmental Statement is the complete absence of any assessment of food safety, biosecurity and pathogen transmission risk arising from the co-location of the proposed anaerobic digestion facility with an operational poultry slaughterhouse.** This is not a neutral rural location. **It is an environment already characterised by intensive poultry processing, an existing odour burden, frequent HGV movements and the regular presence of wild birds, including gulls and swans.** The introduction of a waste reception, animal by-product processing and digestate handling operation immediately adjacent to a regulated food production facility creates a non-trivial interface risk which has not been assessed.

Scientific evidence demonstrates that avian influenza viruses and other pathogens can persist in organic material where digestion temperatures and retention times are insufficient for full inactivation, particularly in mesophilic systems. Should poultry by-products or contaminated waste enter the digester during a period of undetected infection, viable virus could remain present in digestate. That digestate is then stored, transported and spread to land, creating potential pathways for environmental release via aerosolisation, runoff to nearby watercourses and direct exposure of wild birds, which are recognised reservoirs and vectors of avian influenza. In the Anwick context, these pathways are not theoretical. The site lies adjacent to a river corridor, within a landscape known to support congregations of wild birds, and in immediate proximity to residential receptors.

The proximity of the proposal to an operational slaughterhouse also engages the regulatory remit of the Food Standards Agency (FSA), which is responsible for food hygiene, contamination control and biosecurity within food production environments. The Environmental Statement **contains no assessment of cross-contamination risk,** no evaluation of wildlife vector pathways, and no evidence that the FSA has been consulted or has formed a view on the compatibility of the proposal with food hygiene controls. In public law terms, this is a material evidential omission. **The Local Planning Authority cannot lawfully assume that such risks will be resolved post-consent, and cannot discharge its duty under the Tameside principle to properly inform itself where a competent regulatory body has not been engaged on an issue directly arising from the site's specific context.**

This omission engages paragraphs 180, 185 and 191 of the National Planning Policy Framework, the **National Planning Policy for Waste**, and **Policies DM1, DM3 and DM6 of the Lincolnshire Minerals and Waste Local Plan**, all of which require planning decisions to prevent unacceptable pollution, protect human health and the water environment, and properly assess cumulative and in-combination effects. **In the absence of a site-specific assessment addressing pathogen survival, digestate management, wildlife exposure and the food safety interface with adjacent regulated poultry operations, the application cannot be regarded as policy compliant or capable of lawful determination.**

CUMULATIVE ODOUR IMPACTS AND HEALTH RISKS

Environmental, Health and Community Impacts of Anaerobic Digestion in Northern Ireland

Appendix 2 presents a comprehensive critique of anaerobic digestion (AD) development in Northern Ireland, **drawing together evidence from environmental organisations, public health bodies, community groups, and sector specialists. While AD is often promoted as a renewable energy solution, its real-world impacts raise significant environmental, health, and planning concerns.** Chief among these are **ammonia emissions, nutrient pollution, methane leaks, odours, fine particulate formation, pathogen risks, and the cumulative effects of multiple AD facilities operating in close proximity to rural communities**. Northern Ireland already experiences some of the highest ammonia levels in Europe, with AD facilities exacerbating pressures on sensitive habitats, water bodies, air quality, and soil health.

A major theme is the health impact of AD-related emissions. **Strong odours, ammonia, volatile organic compounds (VOCs), and fine particulate matter (PM2.5) have been linked to respiratory illness, reduced quality of life, and heightened vulnerability among children, older people, and those with pre-existing conditions. Public health bodies and charities warn that poorly controlled digestate handling and land spreading can expose communities to airborne pollutants and pathogens, while also contaminating watercourses.** Methane leaks during digestion and transport contribute further to greenhouse gas emissions, undermining the claimed climate benefits of AD. These risks are compounded where regulatory oversight is weak, monitoring is inadequate, and cumulative impacts are not properly assessed.

Environmental degradation associated with AD feedstock production and digestate use is also well-documented. Monoculture cropping, particularly maize grown for AD, contributes to soil erosion, nutrient overload, and biodiversity loss. Over-application of digestate can further degrade soil quality and increase nutrient run-off, exacerbating eutrophication in water bodies such as Lough Neagh and the River Bann, which are already under severe ecological stress. Conservation organisations argue that current planning and regulatory systems fail to account adequately for cumulative impacts on habitats, wildlife, ecosystem resilience, and agricultural sustainability.

Community concerns extend to the siting, scale, and management of AD plants. In **Ballymena, significant opposition arose to Stream BioEnergy's proposed facility, promoted as "best practice" and environmentally responsible. Residents raised well-founded concerns regarding air quality degradation, ammonia and VOC emissions, proximity to housing, odour nuisance, noise, traffic, and broader industrialisation of the local environment. Even properties located several hundred meters from the proposed plant reported odour complaints, highlighting the inadequacy of current buffer distances and mitigation measures.** The case illustrates a critical disconnect between industry assurances and lived experience, where claims of high environmental standards and exemplar operation are insufficient to protect public health or local amenity.

Importantly, the level of community opposition reflects a **broader loss of confidence in the ability of developers to manage environmental risks, safeguard public health, and meaningfully engage with affected communities.** Similar concerns have been raised across Northern Ireland in Camlough, Dungannon, and other locations, demonstrating that opposition is not isolated but widespread. Community groups such as Save Our Sperrins and coalitions like No Arc21, alongside environmental NGOs and professional bodies, consistently call for stronger regulation, comprehensive environmental and health impact assessments, greater transparency in planning processes, and a shift toward genuinely sustainable waste and energy strategies.

Appendix 2 underscores that **unchecked AD expansion risks undermining environmental protection, public health, and community trust unless significantly tighter controls, robust monitoring, and alternative approaches, such as source reduction of agricultural waste are implemented.** The opposition documented aligns closely with the findings of Dr Bull's report, which provides a technical foundation supporting many of the concerns long raised by communities, environmental bodies, and health organisations across Northern Ireland.

SOIL INTEGRITY AND ENVIRONMENTAL RISK CONCERNS: ANWICK AD PROPOSAL

It is submitted that the proposed anaerobic digestion (AD) facility at Anwick must be considered with due regard to the integrity and reliability of soil analysis, which is **paramount for environmentally responsible development**. Evidence identified by the Northern Ireland Audit Office demonstrates that a substantial number of planning applications—**108 applications across nine councils, encompassing over 3,400 soil test results—were affected by misrepresented or inaccurate soil data.** While these findings originate outside Lincolnshire, they illustrate the **material risk of environmental and regulatory non-compliance** should soil assessments be inaccurate or unchecked. Although NIEA notified councils and provided detailed records, **less than half confirmed initiating their response plans**, and only a subset referred matters to the Police Service of Northern Ireland for investigation. This demonstrates the **practical significance of rigorous verification** and independent oversight, particularly for AD facilities handling organic feedstocks that, if mismanaged, could adversely impact soil and water quality.

It is further submitted that the Anwick proposal must be assessed in the context of **UK planning and environmental policy**. The **National Planning Policy Framework (NPPF)** requires planning decisions to protect and enhance soils and prevent unacceptable pollution, while the **Farming Rules for Water (2018)** mandate that organic manures and digestate are applied in accordance with soil nutrient requirements, informed by verifiable soil analysis. Government guidance on digestate management reinforces that its use must comply with a nutrient management plan based on soil needs, failing which it may constitute waste under environmental law. In light of the NIAO findings of misrepresented soil data elsewhere, it is respectfully submitted that **without independent**

verification and robust soil assessment at Anwick, Lincolnshire County Council cannot be satisfied that the proposal meets statutory environmental and planning obligations.

Approval in the absence of such evidence would expose the Council to material environmental risk and potential legal scrutiny.

REF: **Northern Ireland Audit Office – Public Bodies' Response to Misrepresented Soil Analysis**
https://www.niauditoffice.gov.uk/publications/public-bodies-response-misrepresented-soil-analysis

The relationship can be summarised as follows:

1. Cumulative Impact and Odour Burden
A central theme of opposition to **AD schemes in Northern Ireland is the cumulative impact of multiple odour sources on communities already experiencing environmental stress.** Dr Bull's report directly supports this position by confirming that existing odour conditions in Anwick are already unacceptable and that the addition of an AD facility would materially worsen conditions. This mirrors long-standing objections raised in NI, where communities have argued that **planning authorities consistently underestimate cumulative odour impacts from clustered or adjacent facilities.**

2. Health and Wellbeing Concerns
Public opposition in Northern Ireland has repeatedly **highlighted health risks linked to odour exposure, including respiratory irritation, stress, sleep disturbance, and reduced quality of life. Dr Bull's analysis reinforces these concerns** by identifying health-relevant odour levels and confirming that vulnerable populations—particularly older residents—would be disproportionately affected. **This directly echoes the evidence cited by health bodies and community groups in NI who argue that AD developments are being permitted without adequate regard to public health outcomes.**

3. Inadequate Baseline Assessment and Monitoring
A recurring criticism of AD proposals in Northern Ireland is the failure to properly characterise baseline environmental conditions before development. Dr Bull's finding that baseline odour conditions were already unacceptable, and that modelling failed to accurately reflect real-world conditions, aligns with wider criticisms that environmental assessments are frequently incomplete or overly optimistic. **This reinforces the argument that planning decisions are being made on flawed or partial evidence.**

4. Flawed Technical Modelling and Regulatory Oversight
Opposition groups in NI have consistently **questioned the reliability of odour modelling and emissions data submitted by AD operators.** Dr Bull's identification of methodological errors—particularly the failure to apply correct oxygen correction factors—validates these concerns and demonstrates that technical shortcomings are not theoretical but demonstrable. This undermines confidence in regulatory assurances that impacts can be effectively managed.

5. Failure of the Precautionary Approach
At a strategic level, Dr Bull's findings support the broader contention that **AD development in sensitive or residential areas conflicts with the precautionary principle underpinning planning and environmental policy**. Where existing environmental stressors are already present, introducing additional sources of odour and emissions contradicts both national planning policy and the precautionary approach advocated by environmental and public health bodies.

In summary, the opposition to AD development in Northern Ireland is not ideological but evidence-led. Dr Bull's report substantiates long-standing concerns that cumulative impacts, inadequate baseline data, and underestimated health risks make such developments unsuitable in sensitive locations. His findings therefore reinforce the legitimacy and credibility of the objections raised and provides a robust technical basis for refusing consent in comparable cases.

DAMNING ASSESSMENT OF PILGRIM'S (MOY PARK) COMPLAINT HANDLING AND ENVIRONMENTAL GOVERNANCE FAILURES

1. Claim of "Very Few Complaints" Is Demonstrably False

Pilgrim's assertion that there have been "very few complaints" from Anwick residents is directly contradicted by their own and the Environment Agency's own records as evidenced in Appendix 6 and Appendix 7 (data shown a second time for further analysis).

The Environment Agency's response under EIR (Ref: EIR2025/44150) and Pilgrims Complaints record confirms the following number of odour complaints recorded against the site – see Appendix 6 and 7:

ENVIRONMENT AGENCY	PILGRIMS
2020: 18 complaints	**2020: 18 Complaints**
2021: 12 complaints	**2021: 22 Complaints**
2022: 8 complaints	**2022: 12 Complaints**
2023: 0 complaints	**2023: 17 Complaints**
2024: 50 complaints	**2024: 31 Complaints**
2025: 35 complaints	**2025: Not Available**

This equates to **over 120 formal odour complaints** recorded by the regulator within a five-year period, and **100 direct to Pilgrims** with a sharp resurgence in 2024–2025. These figures alone fundamentally undermine any claim that odour impacts are rare, trivial, or unsubstantiated.

2. Evidence of Systemic Failure in Complaint Handling

The account provided by residents regarding failed attempts to report odour and noise issues is consistent with, and reinforced by, the Environment Agency's findings.

The incident on **26 November 2025**, where:

- A resident telephoned Pilgrim's to report excessive noise,
- The call was audibly affected by the very noise being reported,
- The receptionist refused to give her name,
- The resident requested that the call be formally logged and an incident reference number issued, in accordance with Pilgrim's stated procedure,
  The call was terminated by the receptionist with no incident logged or follow-up, contrary to Pilgrim's stated complaint procedures."

THIS IS NOT AN ISOLATED PROCEDURAL LAPSE. OTHER RESIDENTS HAVE CONFIRMED THAT THEY HAVE NOT BEEN GIVEN AN INCIDENT NUMBER AND CALL BACKS ARE RARE.

The EA's Compliance Assessment Report explicitly identifies **systemic management failures**, including:

- Failure to operate a functioning management system capable of identifying and responding to complaints;
- Inadequate record-keeping and incident management;
- Failure to ensure staff competence and understanding of critical operational systems;
- Long-term non-compliance with permit conditions governing odour control.

The Environment Agency categorised these failures as a **Category 2 (C2) breach**, meaning **a *significant environmental effect***, with a total compliance score of **31**, **placing the operator in Band D — the most serious performance category short of prosecution**.

3. Regulatory Findings Contradict Operator Assertions

The EA's Compliance Assessment Report establishes that:

- **The odour abatement system had not functioned as designed since at least June 2020**.
- Odour extraction fans were underperforming due to mechanical faults.
- **Management failed to understand or act upon these failures for several years.**
- **Off-site odour impacts were detected repeatedly, including during periods when the operator claimed compliance.**

- The failure to maintain effective odour control constituted a **breach of permit condition 1.1.1**, relating to the duty to prevent pollution.

These findings directly contradict any claim by the operator that odour impacts are isolated, historical, or adequately managed.

4. Structural Failure of the Complaint System

The evidence demonstrates that the complaint process itself is unreliable:

- Residents' attempts to report issues are not consistently logged.
- Call handlers refuse to provide reference numbers.
- There is no assurance of follow-up or investigation.
- The Environment Agency's own data confirms that complaint volumes are far higher than the operator acknowledges.

This creates a self-reinforcing failure: complaints are discouraged or lost, allowing the operator to assert that few complaints exist, thereby masking the true scale of impact.

5. Conclusion: A Pattern of Systemic Non-Compliance and Misrepresentation

Taken together, the documentary evidence demonstrates:

- A sustained history of odour pollution affecting the local community.
- Repeated failures in plant maintenance, monitoring, and management.
- A breakdown in the integrity of complaint handling processes.
- A material discrepancy between the operator's public claims and the regulator's findings.

The assertion that there have been "very few complaints" is not merely inaccurate; it is contradicted by official Environment Agency records and undermined by documented operational failures.

This pattern raises serious concerns about transparency, accountability, and the reliability of any assurances provided by the operator regarding future compliance or environmental performance.

SECTION 6: CARBON ACCOUNTING

Key Findings and Deficiencies

- **Inflated Carbon Savings Claims**
  The applicant claims annual greenhouse gas savings of **47,000–56,000 tCO_2e**, but when realistic assumptions are applied, the net benefit reduces to **approximately 17,000 tCO_2e/year**, and could be lower or negligible in credible scenarios.
- **Non-compliance with Finch principles**
  The Environmental Statement fails to properly assess emissions from the **inevitable combustion of biomethane**, instead treating them as "carbon neutral" and offsetting them through accounting conventions. This approach is inconsistent with the Finch judgment, which requires full consideration of downstream combustion emissions.
- **Overstated Carbon Credits**
  Large claimed savings rely on optimistic assumptions that:
  - Digestate fully displaces synthetic fertiliser;
  - Biogenic CO_2 permanently displaces fossil CO_2;
  - Methane leakage is negligible.
    These assumptions are not supported by evidence and materially overstate carbon benefits.
- **Underestimated Emissions and System Losses**
  The assessment downplays or omits:
  - Methane leakage from digestion and handling;
  - Nitrous oxide emissions from land application of digestate;
  - Transport emissions associated with feedstock, digestate, and CO_2 movement.
    When included, these significantly erode the claimed climate benefit.
- **Misleading Presentation of Climate Performance**
  The carbon model relies on favourable accounting conventions rather than realistic lifecycle analysis. When corrected, the project's claimed climate benefit falls by approximately two-thirds and may be marginal or negligible.

Conclusion on Carbon Claims

The Environmental Statement does not provide a robust or transparent assessment of climate impacts. The claimed "substantial" carbon benefit is not supported by credible evidence and relies on optimistic assumptions that are neither proven nor conservative. As such, the carbon case for the development is fundamentally unsound and cannot be relied upon for decision-making.

FAILURE TO PROVIDE FEEDSTOCK SOURCE DATA: A FUNDAMENTAL DEFECT IN THE CARBON ACCOUNTING AND ENVIRONMENTAL ASSESSMENT

1. Introduction

This section addresses a **critical deficiency in Stream BioEnergy's Revised Environmental Statement (ES),** submitted in response to Lincolnshire County Council's Regulation 25 request. The failure to identify and evidence the sources of feedstock fundamentally undermines the credibility of the applicant's carbon accounting and prevents a lawful assessment of environmental effects.

As set out in the preceding carbon analysis, the claimed greenhouse gas savings rely heavily on assumptions about feedstock origin, transport distances, and lifecycle emissions. However, the applicant has failed to provide the basic factual information required to verify those assumptions. In the absence of site-specific feedstock data, neither the claimed carbon benefits nor the wider environmental impacts of the proposal can be robustly assessed. This omission renders the Environmental Statement incomplete and non-compliant with both Regulation 25 and the principles established in *R (Finch) v Surrey County Council*.

2. Failure to Comply with Regulation 25 Requirements

Lincolnshire County Council's Regulation 25 request (27 August 2025) explicitly required the applicant to provide:

- Information necessary to complete the Environmental Statement;
- A greenhouse gas assessment covering upstream and downstream emissions; and
- Clear identification of feedstock sources beyond the on-site poultry facility.

The applicant has failed to provide:

- **The locations of feedstock suppliers;**
- **Quantified tonnages from each source;**
- **Transport routes, distances, or logistics profiles;**
- **Evidence that the claimed feedstock sources exist within the stated catchment;**
- **Any assessment of how feedstock sourcing affects greenhouse gas emissions.**

This information is fundamental to assessing environmental effects and cannot be deferred or approximated.

3. Materiality of the Omission

3.1 Climate and Greenhouse Gas Assessment

The absence of feedstock source data makes it impossible to assess:

- Upstream emissions from manure handling, food waste processing, and storage;
- Transport-related emissions linked to real-world distances and vehicle movements;
- Methane leakage and associated lifecycle emissions;
- The true carbon intensity of the biomethane produced.

As a result, the carbon balance presented in the ES is speculative and fails to meet the requirements of *Finch*, which requires assessment of all reasonably foreseeable emissions arising from the development.

3.2 Transport, Amenity and Environmental Effects

Feedstock origin directly determines:

- HGV numbers and routing;
- Frequency and timing of movements;
- Noise, air quality, odour and highway safety impacts;
- Exposure of sensitive receptors to pollution and disturbance.

By relying on a notional 60-mile catchment rather than verified supply data, the applicant has prevented any meaningful assessment of these impacts.

4. Consequence: The Environmental Statement Is Incomplete

Regulation 3 of the EIA Regulations is clear: a planning authority may only determine an application where the Environmental Statement contains the information reasonably required to assess the project's environmental effects.
In this case, the ES fails because it:

- Omits fundamental feedstock sourcing data;
- Does not quantify upstream or downstream emissions;
- Relies on hypothetical assumptions rather than evidence;
- Fails to comply with the legal requirements established in *Finch*.

5. Conclusion

The absence of verified feedstock source information represents a fundamental and fatal flaw in the Environmental Statement. Without this data, the claimed carbon benefits cannot be substantiated, the transport and air quality impacts cannot be assessed, and compliance with climate policy and EIA law cannot be demonstrated.

Accordingly, the application cannot lawfully be approved unless and until a full, transparent, and Finch-compliant assessment of feedstock sourcing and associated emissions is submitted.

SECTION 7: BIODIVERSITY & BIODIVERSITY NET GAIN – SUMMARY OF KEY DEFICIENCIES

The submitted Environmental Statement contains fundamental shortcomings that prevent a reliable assessment of ecological impacts and biodiversity net gain.

Inadequate Baseline Evidence

- Ecological surveys are incomplete, outdated, or seasonally inappropriate.
- The Zone of Influence is not properly defined, despite clear pathways for impacts from emissions, lighting, hydrology, and construction.
- As a result, baseline conditions are not robustly established.

Incomplete Assessment of Ecological Impacts

- Key impact pathways are either poorly assessed or omitted entirely, including:
    - Nitrogen deposition and air quality effects;
    - Bioaerosols and odour-related disturbance;
    - Hydrological and water quality impacts;
    - Lighting impacts on bats and nocturnal species;
    - Construction-phase disturbance.
- These omissions undermine confidence in the ecological conclusions.

Failure to Apply the Mitigation Hierarchy

- The assessment does not demonstrate avoidance or minimisation of impacts before proposing mitigation or compensation.
- Reliance on future or speculative mitigation conflicts with established EIA principles and national policy.

Deficiencies in Biodiversity Net Gain (BNG) Assessment

- Habitat, hedgerow, and watercourse units are not clearly defined or properly quantified.
- Habitat condition assessments lack supporting evidence.
- Assumptions regarding habitat creation success and timescales are unsubstantiated.
- No secured or enforceable Habitat Management and Monitoring Plan is provided.
- Off-site BNG proposals, where referenced, lack legal certainty or spatial definition.
- There is no clear demonstration of additionality or avoidance of double counting.

Failure to Assess Cumulative Effects

- The ES does not adequately consider cumulative impacts arising from other developments, including combined effects on habitats, water quality, lighting, and ecological connectivity.

Conclusion

Taken together, these deficiencies mean the Environmental Statement does not meet the requirements of the EIA Regulations. The absence of a robust ecological baseline, failure to apply the mitigation hierarchy, and lack of credible, secured biodiversity net gain measures mean the decision-maker cannot lawfully conclude that the proposal's ecological impacts have been adequately assessed or mitigated.

SECTION 8: SURFACE WATER, DRAINAGE AND ENVIRONMENTAL RISK

Purpose of this Statement

This statement assesses whether the information submitted in response to the Regulation 25 request satisfies the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. It considers whether the Local Planning Authority can lawfully determine the application on the basis of the material currently provided.

1. Legal and Regulatory Framework

1.1 Environmental Impact Assessment Regulations 2017

Regulation 25 enables the Local Planning Authority to require further information where an Environmental Statement (ES) fails to provide sufficient detail to assess likely significant environmental effects. Such information must be available before any decision is made.

The purpose of Regulation 25 is to ensure the decision-maker has all necessary information to properly identify, describe, and assess environmental impacts, in accordance with Regulation 18 and Schedule 4 of the EIA Regulations.

1.2 The Tameside Principle

The principle established in *Secretary of State for Education and Science v Tameside MBC* [1977] requires a decision-maker to take reasonable steps to acquaint itself with all relevant information before reaching a decision.

In the EIA context, this means:

- Decisions cannot lawfully be made in the absence of essential environmental information;
- Gaps in evidence cannot be deferred to post-consent conditions;
- Uncertainty relating to material environmental effects renders a decision unlawful.

This principle is especially relevant where potential impacts relate to hydrology, flooding, contamination, or ground stability.

2. Scope of the Regulation 25 Request

The Regulation 25 request issued by the Local Planning Authority specifically sought information relating to:

- Seasonal groundwater levels and variability;
- Hydrogeological conditions and surface water interactions;
- Surface water drainage design and exceedance routing;
- Flood risk, including off-site impacts;
- Long-term operation, maintenance, and resilience of drainage infrastructure.

These matters are fundamental to determining whether the proposed development is environmentally acceptable.

3. Deficiencies in the Submitted Information

3.1 Absence of Groundwater and Hydrogeological Evidence

The applicant has failed to provide:

- Site-specific groundwater monitoring data;
- Seasonal groundwater level assessments;
- Borehole or trial pit records;
- A hydrogeological conceptual model linking groundwater, surface water, and site infrastructure.

Without this information, it is not possible to assess:

- Ground stability and risk of uplift;
- Interaction between groundwater and drainage systems;
- Potential pollutant migration pathways.

This represents a material information gap.

3.2 Inadequate Drainage and Flood Risk Assessment

Although a conceptual drainage approach is presented, it lacks the technical evidence required for assessment. In particular:

- Drainage designs are not informed by verified groundwater data;
- Exceedance routing has not been modelled or tested;
- The performance of drainage infrastructure during extreme events is unproven;
- Potential failure modes and contingency arrangements are not assessed.

As a result, the authority cannot be satisfied that flood risk and pollution risks have been properly evaluated.

3.3 Ground Stability and Structural Risk

The development includes significant structural loads, yet no geotechnical investigation has been provided to demonstrate:

- Adequate bearing capacity;
- Stability under variable groundwater conditions;
- Resistance to uplift or long-term settlement.

Without this information, the physical feasibility of the development remains unproven.

4. Impropriety of Deferring Assessment to Conditions

The suggestion that outstanding information can be addressed through planning conditions is inconsistent with established legal principles. Where information is fundamental to understanding environmental effects, it must be provided before determination.

Case law confirms that conditions cannot be used to remedy deficiencies in an Environmental Statement or to defer essential assessments. To do so would undermine the purpose of the EIA process and expose the decision to legal challenge.

5. Conclusion: Failure to Meet Regulation 25 Requirements

The submitted information does not satisfy the requirements of Regulation 25. In particular, it fails to provide:

- Verified groundwater and hydrogeological data;
- A robust assessment of flood risk and drainage performance;
- Evidence that the site can safely accommodate the proposed development;
- Assurance that environmental risks have been properly assessed.

These deficiencies are exacerbated by the absence of a defined capacity envelope. Drainage volumes, foul flows, contaminated run-off risk and exceedance scenarios are all functions of throughput. Without a verified maximum capacity, the Authority cannot be satisfied that the drainage and environmental risk assessments represent the worst-case scenario.

In the absence of this information, the Local Planning Authority cannot lawfully determine the application.

6. Required Action

The Local Planning Authority should therefore:

1. Require the applicant to submit the outstanding environmental information in full;
2. Re-consult statutory consultees on the basis of that information; and
3. Refrain from determining the application until Regulation 25 has been fully complied with.

Failure to do so would expose the decision to significant legal risk arising from procedural non-compliance and inadequate environmental assessment.

SECTION 9: REQUEST FOR FURTHER ENVIRONMENTAL INFORMATION

Failure of Statutory Environmental Scrutiny and Unlawful Deferral of Environmental Assessment

Request to the Environment Agency for Further Regulation 25 Information

Summary of Correspondence with the Environment Agency (Appendices 3 and 4)

Anwick Parish Council considers that **the Environmental Statement Addendum does not merely contain gaps in technical detail, but fails to define a verifiable development envelope.** Comparison with the applicant's own comparator schemes demonstrates a pattern of selective disclosure and capacity ambiguity. **The Authority is therefore being asked to determine an application without a defined upper bound on processing capacity. This engages Regulation 25 and the Tameside duty in their strongest form.** The deficiencies identified at Appendix X demonstrate the need for further information under Regulation 25.

Anwick Parish Council sought clarification from the Environment Agency (EA) regarding the adequacy of environmental information submitted in support of the proposed anaerobic digestion facility, particularly in relation to foul drainage, feedstock management, pollution risk, emissions control, hazardous substances and the applicability of regulatory controls.

The Parish Council's request highlighted significant and fundamental gaps in the information provided with the planning application, including the absence of confirmed feedstock sources, uncertainty over foul drainage arrangements, lack of clarity regarding discharge to the public sewer, and the absence of evidence demonstrating that the site could operate without causing pollution or overloading existing infrastructure.

In its response (Appendix 4), the Environment Agency confirmed that it has **not assessed key environmental risks associated with the proposal at the planning stage**. The Agency made clear that:

- It has **not reviewed or endorsed** the applicant's odour, air quality or cumulative impact assessments;
- It has **not assessed the acceptability of odour impacts**, stack emissions, or cumulative effects on nearby receptors;
- It has **not confirmed whether foul effluent or process waste could be accommodated** within existing sewerage infrastructure;
- It has **not evaluated the feasibility or safety of the proposed treatment systems or chemical storage arrangements**.

The Environment Agency further confirmed that:

- Consideration of odour, emissions, and process controls would **only occur at the environmental permitting stage**, not during planning;
- It has **not determined whether an environmental permit could be granted**;
- Its earlier advice should **not be interpreted as endorsement of the proposal's environmental acceptability**;
- The responsibility for assessing land-use suitability, cumulative impacts and residential amenity lies entirely with the **Local Planning Authority**.

Critically, the Environment Agency also confirmed that it has **not undertaken a technical review of the Environmental Statement**, nor validated the assumptions relied upon by the applicant in relation to emissions, feedstock handling, or pollution control. The Agency acknowledged that **the proposed development introduces new environmental risks**, including chemical storage and waste handling, which would only be scrutinised at a later permitting stage if an application were made.

In addition, the Environment Agency confirmed that it had previously advised that it was **unlikely, at that time, that an environmental permit would be granted**, due to the lack of information provided by the applicant. That regulatory uncertainty remains unresolved.

Legal Implications

The Environment Agency is a **statutory consultee** in respect of pollution risk, waste regulation and environmental protection. Its role is not discretionary or peripheral. It is required to advise whether the proposed development is capable in principle of being operated in compliance with environmental law.

The Agency's explicit confirmation that it has **not assessed odour, emissions, cumulative impact, hazardous substances, drainage capacity or regulatory feasibility** creates a material evidential vacuum at the planning stage. The statutory environmental regulator has not examined the very impacts which lie at the heart of the proposal and which are central to its acceptability in a residential setting. In public law terms, this has decisive consequences.

Under **Secretary of State v Tameside MBC [1977]**, a decision-maker must take reasonable steps to inform itself of all relevant matters before reaching a decision. In the EIA context, this means that decisions cannot lawfully be made in the absence of essential environmental information. Under **R (Champion) v North Norfolk DC [2015] UKSC 52**, environmental effects must be assessed **before** planning consent is granted. It is not lawful to defer fundamental environmental assessment to later regulatory regimes.

Under **Blewett v Derbyshire CC [2004]**, environmental information must be **adequate in substance**, not merely present in form. The Environment Agency's position confirms that key environmental risks remain unassessed at the planning stage and are being deferred to the permitting regime. That approach is **not lawful**. It is not open to the Local Planning Authority to assume that these risks will be resolved under permitting when they have not been assessed at the planning stage and where the statutory consultee has expressly declined to engage with them.

This is precisely the form of **unlawful regulatory deferral** prohibited by Champion and constitutes a clear breach of the **Tameside duty** to take reasonable steps to inform oneself before decision.

Failure to Engage the Competent Food Safety Regulator

This regulatory vacuum is not confined to the Environment Agency. **There is no evidence that the Food Standards Agency has been consulted or has formed a view on the compatibility of the proposed animal by-products digestion facility with an immediately adjacent regulated poultry slaughterhouse.** In circumstances where waste handling, animal by-product processing and food production environments directly interface, the absence of competent regulator input is a material evidential gap. The Authority cannot lawfully proceed on the assumption that such risks will be resolved post-consent. This further undermines the Authority's ability to discharge its duty under the Tameside principle to properly inform itself prior to determination.

Conclusion

In effect, the Environment Agency response confirms that:

- Key environmental risks remain **unassessed** at the planning stage;
- The planning authority **cannot lawfully rely** on the existence of future permitting controls to resolve these uncertainties;
- There is **no assurance at this stage that the proposal is environmentally acceptable or capable of being permitted.**

This reinforces the conclusion that the application is premature and unsupported by the level of environmental information required under the EIA Regulations. The absence of confirmed feedstock sources, drainage solutions, emissions control, hazardous substances assessment and pollution safeguards means that the **Local Planning Authority cannot lawfully determine the application** on the basis of the information currently available.

SECTION 10: GREEN GAS SUPPORT SCHEME

SUBSIDY, DELIVERY RISK & IMPLICATIONS FOR THE ANWICK AD PLANT

Summary

Deliverability and Environmental Compliance

The Environmental Statement (ES) submitted in support of the proposed Anwick Anaerobic Digestion (AD) facility remains fundamentally deficient, despite revisions following the Regulation 25 request. **The deficiencies relate to the applicant's reliance on subsidy assumptions, failure to assess realistic operational scenarios, and inability to demonstrate need, deliverability, or environmental acceptability in accordance with the EIA Regulations, NPPF and Waste Policy**.

1. Reliance on Subsidy Without Demonstrated Deliverability
The proposal is predicated on access to the Green Gas Support Scheme (GGSS), yet no evidence is provided that the scheme can be delivered within the required timeframe or that the development could operate viably without it. No construction programme, grid connection evidence, or financing strategy has been submitted**. As such, the ES does not describe the development "as it is likely to be delivered," contrary to Schedule 4 of the EIA Regulations.**

2. Failure to Assess Reasonable Alternatives
The ES assesses only a single operational scenario based on GGSS support. It does not assess the alternative—and foreseeable—scenario of operation under the Renewable Transport Fuel Obligation (RTFO), despite this being the only realistic fallback should GGSS support not be secured. This omission represents a clear breach of the requirement to assess reasonable alternatives.

3. Inadequate Assessment of Environmental Effects
The failure to assess RTFO operation means the ES omits evaluation of:

- Increased HGV movements and fuel transport,
- Different emission and odour profiles,
- Alternative operational risks and safety implications.

These effects are foreseeable and potentially significant but have not been assessed, rendering the ES incomplete.

4. Absence of Demonstrated Waste Need
The ES fails to demonstrate any need for additional AD capacity. The Lincolnshire Waste Needs Assessment (2021) identifies no shortfall in capacity through to 2045. Significant additional capacity already exists or is consented, including:

- The Manby AD facility;
- The Hemswell expansion; and
- Over 350,000 tpa of existing or consented AD capacity countywide.

The applicant has not justified why a further 120,000 tpa facility is required, nor why existing facilities cannot accommodate the waste streams in question.

5. Failure to Address Existing AD Infrastructure (Including Holdingham)
The ES does not assess the relevance of the existing Holdingham AD facility, which is already authorised to process poultry litter and other organic wastes. This omission is critical, as Holdingham directly undermines the claimed need for a new AD plant and should have been considered as a reasonable alternative under EIA regulations.

6. Non-Compliance with National and Local Policy
By failing to demonstrate need, assess alternatives, or evaluate cumulative impacts, the proposal conflicts with:

- National Planning Policy Framework (paras 55, 119, 183–185);
- National Planning Policy for Waste;
- Lincolnshire Waste and Minerals Local Plan policies on capacity, proximity, and sustainability.

7. Overall Conclusion

The Environmental Statement fails to provide a lawful basis for decision-making. It does not:

- Describe the development as it is likely to be delivered;
- Assess reasonable alternatives or cumulative impacts;
- Demonstrate a genuine waste management need; or
- Provide a reliable basis for concluding that the development is environmentally acceptable.

As a result, the application cannot be lawfully determined.

SECTION 11: TRANSPORT AND HIGHWAYS

Regulatory Context

Under Regulation 25 of the EIA Regulations, an applicant must provide sufficient, precise, and robust information to allow the decision-maker to assess the likely significant transport and highway impacts of a development. This includes clear evidence relating to internal circulation, queuing behaviour, peak-hour operations, and interaction with the public highway network. Assertions of manageability are not sufficient; impacts must be demonstrably mitigated.

Transport and Highway Assessment – Policy and Safety Review

Executive Summary

This section provides a comprehensive assessment of the transport and highway implications of the proposed development. It concludes that the submitted Transport Assessment and Environmental Statement **fail to provide sufficient, precise, and robust information to demonstrate that the proposal would operate safely or without unacceptable impact on the highway network**.

Key deficiencies include the absence of queuing and capacity modelling, undefined routing for operational, hazardous and construction traffic, failure to assess cumulative and seasonal impacts, and reliance on untested operational assumptions. The claimed 40% reduction in village traffic is unsupported and internally inconsistent.

On the basis of the evidence provided, the proposal conflicts with national planning policy, the development plan, and the requirements of the EIA Regulations. Approval at this stage would be premature and unsafe.

1. Introduction and Regulatory Context

Under Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended), an applicant must provide sufficient, precise and robust information to enable the decision-maker to assess the likely significant effects of a development on transport and highways. This requires more than assertions of manageability and intent; it requires evidence that impacts have been properly assessed, stress-tested and mitigated.

This report provides a consolidated and integrated review of the transport and highway evidence submitted in support of the proposal. It brings together issues of capacity, queuing, routing, safety, hazardous and construction traffic, cumulative impacts, and policy compliance into a single, flowing technical assessment.

2. Applicant's Position

The applicant's **transport case is founded on the following core assertions**:

- Vehicle arrivals will be controlled through operational and booking systems;
- On-site capacity will be sufficient to prevent queuing onto the public highway;
- HGV movements, including those associated with hazardous materials, can be accommodated safely;
- The development will not result in unacceptable highway safety or capacity impacts; and
- The proposal will deliver a claimed 40% reduction in traffic through the village.

These positions are largely presented as statements of intent and are not underpinned by robust quantitative or route-based analysis.

3. Adequacy of the Environmental Statement and Transport Assessment

Regulation 25 of the EIA Regulations requires the Environmental Statement to contain information that is sufficient, precise and robust. The submitted Transport Assessment and Environmental Statement do not meet this standard.

In particular, **they fail to provide:**

- Formal queuing or capacity analysis;
- Worst-case or abnormal operation scenarios;
- Defined and quantified operational HGV movements (including chemicals and digestate);
- Defined and quantified construction traffic over the construction period;
- Route-based assessment of all realistic approaches to the site.

The assessment relies heavily on assumptions regarding operational compliance rather than demonstrable performance.

4. Queuing, Capacity and Operational Risk

No micro-simulation or queuing analysis has been undertaken to establish:

- Maximum queue lengths during peak operating periods;
- Dwell times at weighbridges, reception or inspection points;
- The impact of delayed arrivals, inspections or equipment failure; or
- The effects of coincident HGV arrivals.

In the absence of this analysis, there is no evidential basis for concluding that vehicles would not queue back onto the A153, particularly under foreseeable peak or disrupted conditions.

In addition, the applicant's assessment is fundamentally flawed because it treats the proposed access as a biogas plant access only, when in reality the scheme functions as a new primary HGV access for the adjacent Moy Park poultry processing facility.

The applicant's **own evidence confirms that approximately 118 Moy Park HGVs per day (236 two-way movements) will be diverted to use the new access arrangement. This is not incidental traffic. It represents a material reconfiguration of the local highway network, concentrating heavy industrial traffic at a single new junction on the A153.**

When combined with the applicant's own "robust" assessed scenario for the biogas plant **(36 HGV movements per day = 72 two-way movements),** the new access is proposed to accommodate in excess of 300 two-way HGV movements per day in a constrained rural environment.

Despite this, the Transport Assessment frames impact on the basis of average hourly flows, **suggesting that HGV movements will be evenly distributed throughout the day**. This is a methodological weakness. **Food processing and animal by-product logistics do not operate as smooth, evenly distributed flows. They are characterised by delivery windows, shift-related bunching, convoy arrivals and time-critical movements. These are precisely the conditions under which right-turn queuing, stacking and spillback onto the running lane occur.**

No junction capacity modelling, queue length assessment or stress-testing of peaked arrival scenarios has been provided for the A153 ghost-island junction. In particular, no assessment has been undertaken of:

- right-turn storage capacity under bunched HGV arrivals;
- simultaneous HGV entry and exit movements;
- interaction between Moy Park flows and biogas plant arrivals; or
- queuing behaviour under disrupted or abnormal operating conditions.

The applicant's **response to Lincolnshire County Council's concern regarding stacking is narrowly focused on inbound queuing associated with the biogas plant weighbridge**. It **does not address the dominant operational driver of queuing at this junction, namely the concentration of Moy Park HGV traffic through the same access**. This is a material evidential gap.

The applicant has accepted that if stacking were to occur onto the A153 it would constitute a severe impact. The current evidence base provides no assurance whatsoever that this will not occur. This is not a matter of detailed design; it is a **fundamental failure to assess foreseeable operational conditions.**

Capacity Ambiguity and Traffic Understatement

The transport assessment is fundamentally undermined by the same capacity ambiguity that characterises the process design. The applicant has not demonstrated that the physical plant is constrained to 120,000 tonnes per annum. In the absence of digester volumes, hydraulic retention times and feedstock characteristics, the true throughput potential of the infrastructure is unknown.

Traffic modelling and HGV forecasts are therefore based on a management assumption, not on the physical capability of the installed plant. If the infrastructure is capable of materially greater throughput – as the number and scale of digestion tanks strongly suggests – then the associated HGV movements, peak arrivals, digestate exports and chemical deliveries would also increase proportionately.

This renders the Transport Assessment unreliable. It does not assess the worst-case scenario required by the EIA Regulations. The Authority cannot lawfully rely on traffic predictions derived from an unverified throughput assumption where the physical envelope of the development permits significantly higher operational intensity.

This risk is compounded by the integration of approximately 118 Moy Park HGVs per day through the same access. The combined effect of capacity elasticity and concentrated industrial traffic creates a foreseeable risk of stacking, spillback and highway safety compromise that has not been assessed. The linkage between capacity opacity and traffic under-assessment is summarised at Appendix 11.

5. Over-Reliance on Operational Management

The applicant places **substantial reliance on operational measures such as booking systems and driver compliance. These are not physical constraints and cannot guarantee performance in all circumstances.**

No contingency arrangements are identified for:

- Non-compliance;
- Early or late arrivals;
- System or technology failure; or
- Exceptional or abnormal operating conditions.

As a result, the conclusions reached are inherently fragile and do not provide a robust basis for decision-making.

This over-reliance on operational management is particularly acute in relation to the proposed diversion of Moy Park HGV traffic through the new access. **The Transport Assessment assumes evenly distributed arrivals and high levels of driver compliance**. No evidence is provided that such assumptions are realistic in the context of food processing logistics, nor is any contingency identified for delivery bunching, shift-related peaks, or disruption at the Moy Park facility. **As a result, the claimed manageability of traffic at the A153 access is speculative and not evidence-based.**

6. Routing, Network Suitability and Undefined HGV Movements

Although the applicant states that materials will be sourced from within a 60-mile radius, **no information is provided on specific origins, destinations or routes. The assessment is therefore limited to a short section of the A153 between the site and Wood Lane.**

This approach fails to assess the wider highway network that HGVs will realistically use, including:

- Tight roundabouts;
- A humpback bridge;
- Narrow or substandard rural road sections;
- Existing congestion and informal HGV waiting behaviour at Wood Lane.

Given the nature of the proposed traffic, including hazardous chemical deliveries, digestate exports and prolonged construction activity, this omission is fundamental.

7. Internal Inconsistency in Traffic Reduction Claims

The applicant claims that the proposal will deliver a 40% reduction in traffic through the village. For this to be credible:

- **Digestate HGVs must avoid the village;**
- **Chemical deliveries must avoid the village; and**
- **Construction traffic must avoid the village.**

No alternative routing strategy is defined or secured. As a result, the claimed traffic reduction is unsubstantiated and internally inconsistent, undermining confidence in the Transport Assessment as a whole.

8. Cumulative, Seasonal and Adverse Condition Impacts

The Transport Assessment **fails to sufficiently account for the cumulative impacts on both directions of the A153 through Anwick village resulting from**:

- Summer tourist and static caravan and standard caravan traffic;
- All year-round agricultural traffic;
- Winter conditions, including fog and reduced daylight on low-lying fen roads; and
- Year-round HGV movements associated with the operation of the development.

These foreseeable conditions materially affect highway safety and residual cumulative impact but are largely ignored or assumed away.

9. Hazardous Loads and Highway Safety Risk

Operational traffic **will include hazardous materials such as sulphuric acid and other process chemicals**, alongside agricultural feedstocks.

No route risk assessment, swept-path analysis, or incident consequence assessment has been provided. When combined with constrained rural road geometry, seasonal congestion and poor visibility, the absence of such analysis represents a significant evidential gap.

The proposed A153 access arrangement also **incorporates a pedestrian refuge island to facilitate crossing movements.** While the applicant asserts geometric compliance with design standards, **the assessment is limited to technical**

layout parameters and does not address operational safety in the context of high-volume HGV turning movements.

This is a critical omission.

The **same access point is proposed to accommodate both the biogas plant HGV traffic and approximately 118 Moy Park HGVs per day (236 two-way movements) diverted through the site.** This concentration of large articulated vehicle turning movements materially **alters the risk profile of the crossing point.**

Pedestrian refuges can be **compliant on paper and still unsafe in practice** where:

- drivers are **negotiating right-turn manoeuvres across fast-moving traffic**;
- **HGVs are overhanging kerbs and encroaching on refuge space**; and
- **driver attention is focused on gap selection and opposing traffic rather than vulnerable users**.

The Transport Assessment does not include:

- any Road Safety Audit of the refuge arrangement;
- **any assessment of HGV swept paths in relation to refuge effective width;**
- any consideration of driver workload and behaviour in high-intensity turning environments; or
- **any analysis of how pedestrians are expected to safely negotiate the crossing when HGV flows are at their highest.**

This is directly contrary to NPPF paragraph 115(b) and Central Lincolnshire Local Plan Policy S48, both of which require the protection of vulnerable road users. A low recorded pedestrian count does not equate to low safety consequence. The design must be safe under foreseeable worst-case conditions, not merely under average conditions.

In addition, the applicant's documentation refers to emergency planning, fire risk assessments and emergency procedures to be developed prior to operation. However, this is largely procedural and does not demonstrate, through layout-based evidence, that the site has robust, resilient emergency access independent of normal HGV circulation.

No assessment has been provided of:

- **emergency vehicle access during HGV queuing or stacking;**
- **emergency response under conditions of delivery bunching or site disruption;**
- **access to all hazard areas if the primary route is blocked; or**
- **evacuation and muster arrangements under peak traffic conditions.**

In the absence of this analysis, the Authority cannot be satisfied that emergency services would be able to access and operate within the site safely and effectively during an incident. This is particularly significant given the nature of the proposed development, which involves combustible gases, digestate storage and industrial process plant.

10. Construction Traffic and Lack of Control Measures

Construction is anticipated to last approximately two years and will involve substantial HGV and abnormal load movements.

However:

- No Construction Traffic Management Plan has been submitted;
- No enforceable construction routing strategy is defined; and
- The suitability of the A153 and adjoining roads for sustained construction traffic has not been demonstrated.

Without these controls, highway safety and free-flow impacts during construction cannot be properly assessed.

11. Policy Compliance Assessment

The proposal has been assessed against the relevant statutory, national and local policy framework, including the EIA Regulations, the NPPF (December 2024), Department for Transport guidance, the Central Lincolnshire Local Plan, and the Lincolnshire Minerals and Waste Local Plan.

On the basis of the submitted evidence, the proposal conflicts with:

- NPPF paragraph 115(b): safe and suitable access for all users;
- NPPF paragraph 116: avoidance of unacceptable safety impacts and severe residual cumulative impacts;
- NPPF paragraph 194: consideration of cumulative risk and safety;
- Central Lincolnshire Local Plan Policies S47 and S48;
- Lincolnshire Minerals and Waste Local Plan Policy DM14; and
- Regulation 25 of the EIA Regulations.

These conflicts arise from evidential failure rather than marginal impact.

The **failure to assess queuing and stacking at the A153 access in the context of the diversion of all Moy Park HGV traffic also directly undermines compliance with NPPF paragraphs 115(b), 116 and 194**. Without junction capacity and queue length analysis, **the Authority cannot be satisfied that access would be safe and suitable for all users,** that severe residual cumulative impacts would be avoided, or that the development is appropriate for its location given the known constraints of the A153 corridor.

This evidential gap is compounded by the absence of any assessment of how high-volume HGV turning movements will interact with the proposed pedestrian refuge facility, as required by Central Lincolnshire Local Plan Policy S48.

12. Policy Compliance Matrix

Policy / Regulation	Key Requirement	Evidence Position	Compliance
EIA Regulations 2017 (Reg 25)	Sufficient, precise and robust information	ES/TA incomplete and assumption-led	□
NPPF para 115(b)	Safe and suitable access	Unsafe routing and undefined impacts	□
NPPF para 116	No severe residual cumulative impacts	Cumulative impacts not assessed	□
NPPF para 194	Development appropriate for location	Hazardous risk not assessed	□
DfT TA Guidance	Evidence-led transport assessment	Routes and HGV numbers undefined	□
CLLP Policy S47	Severe impacts mitigated	No deliverable mitigation	□
CLLP Policy S48	Protect pedestrians/cyclists	No conflict assessment	□
LWMLP Policy DM14	No unacceptable highway impact	Wider network not assessed	□

13. Conclusions and Planning Implications

The transport and highway evidence **does not provide a sound or defensible basis for concluding that the proposal would operate safely or without unacceptable impact on the local highway network.**

Key risks remain unassessed, including queuing and stacking onto the A153 arising from the diversion of all Moy Park HGV traffic through the proposed access, interaction between high-volume HGV turning movements and the proposed pedestrian refuge facility, hazardous and construction traffic routing, cumulative seasonal impacts, and conflict with vulnerable road users. **The reliance on averaged traffic assumptions and untested operational controls fundamentally undermines the credibility of the Transport Assessment.**

These are not matters of detailed design or minor mitigation. They represent fundamental evidential failures which prevent the decision-maker from applying the policy tests in the NPPF and the development plan.

14. Policy-Based Reasons for Refusal

1. **Inadequate Transport Evidence**
   The application is not supported by sufficient, precise or robust transport and highway information to satisfy Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended). The submitted Transport Assessment relies on untested assumptions, fails to define or assess operational, hazardous and construction traffic, and does not assess realistic routes or worst-case conditions. The proposal is therefore contrary to Regulation 25 of the EIA Regulations, Central Lincolnshire Local Plan Policy S47, and Lincolnshire Minerals and Waste Local Plan Policy DM14.
2. **Unsafe and Unsuitable Access**
   The proposal fails to demonstrate that safe and suitable access can be achieved for all users, contrary to paragraph 115(b) of the National Planning Policy Framework (December 2024). Undefined routing for HGVs, constrained rural road geometry, and the absence of safety and capacity analysis give rise to unacceptable highway safety risk.
3. **Severe Residual Cumulative Impacts**
   In the absence of a route-based and cumulative impact assessment, the local planning authority cannot be satisfied that the residual cumulative impacts on the highway network would not be severe, particularly when seasonal traffic, hazardous loads and prolonged construction activity are taken into account. The proposal is therefore contrary to paragraph 116 of the National Planning Policy Framework (December 2024).
4. **Failure to Protect Vulnerable Road Users**
   The application fails to assess or mitigate conflict between HGV movements and pedestrians and cyclists along affected routes, contrary to Central Lincolnshire Local Plan Policy S48 and national policy objectives for safe and inclusive movement.

15. Conclusion

In the absence of robust, route-based and policy-compliant transport evidence, the proposal conflicts with the development plan as a whole and national planning policy. **There is no reliable basis on which the decision-maker can conclude that transport and highway impacts would be acceptable or capable of being mitigated by condition.**

The application should therefore be refused or deferred pending the submission of materially improved evidence capable of addressing the fundamental deficiencies identified in this report.

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A153 ROUTE SAFETY REVIEW USING PHOTOS, AND CHARTS: SPEEDWAY CORNER TO PROPOSED SITE 31, ANWICK

This section reviews road safety concerns associated with increased traffic—particularly heavy goods vehicles (HGVs)—expected from the proposed Biogas Facility at Site 31 Anwick. This assessment identifies hazard locations along the A153, from its junction with the B1188 to the Site 31 entrance in Anwick, approximately 2.70km. It also considers under PART B the route to another nearby assessed Site 18 in Sleaford Road, Ruskington which covers is distance of approximately 640m from A153/B1188 junction.

Of relevance are the assessment scores attributed under the Transport section of the Environmental Statement addendum submitted in response to a Section 25 Notice, issued by Lincolnshire County Council.

Site 31 Anwick was scored 1 on the Assessment Matrix as *No access constraints, direct access to A class road network*

Site 18 Ruskington was scored 3 on the assessment matrix as *Moderate access constraints with mitigation required including engineered solution. Within 500m of A class road network.*

1. Identified Hazard Areas on the A153

1.1 Speedway Corner (A153/B1188 Junction)

Hazard Description:
HGVs negotiating a right turn (north to east) on the A153 face a narrow exit, necessitating encroachment into oncoming traffic and near kerb overruns with trailers. Eastbound HGVs may intrude into the opposing carriageway, presenting a significant risk of collisions. Trailer overruns damage the highway verge and pose risks to pedestrians, as there is no alternative footway.

1.2 Hump Backed Bridge

Hazard Description:
The bridge has minimal carriageway width, raising risks during opposing HGV movements. The hump gradient masks traffic queuing from the roundabout for eastbound vehicles. The bridge crosses the rail network, so HGV collisions here could have severe consequences. Increased HGV traffic will escalate these risks.

1.3 Priory Road Junction

Hazard Description:
Located on a long straight stretch, high vehicle speeds and low sun (setting to the west) impair visibility and judgment for vehicles entering the A153 from Priory Road. Increased HGV movements will heighten these risks.

1.4 Park Lane Junction

Hazard Description:
Reduced visibility due to a bend at the junction. Frequent HGV turning movements are evidenced by striation marks. Increased HGV traffic will further raise collision risks.

1.5 Wood Lane Junction

Hazard Description:
Limited forward visibility for eastbound vehicles, both for the Wood Lane eastern most exit located in the vicinity of the HGV in the image, and the potential location of the Biogas Plant right turn lane and informal pedestrian crossing point, out of sight around the right-hand bend.

1.6 Anwick Village (A153 Westbound Exit)

Hazard Description:

Speeding problem as vehicles exit the 30mph zone westbound in Anwick. Survey data shows an 85th percentile speed of 45.7mph, well above the posted limit, increasing the risk of injury-related collisions.

1.7 Footway Safety Issues

Hazard Description:

The footway on the northern side of the A153 (west of Anwick Drive) is substandard: very narrow, poorly segregated, unlit, and often damaged by vehicular incursions. There is no kerbing, and the footway is at or below carriageway level, presenting high risks to pedestrians in particular associated with HGV incursions.

2. Injury Road Traffic Collision Figures (2014–2024) A153 between J/W B1188 and proposed Site Entrance of Biogas Plant

- **Fatal Collisions: 3**
- **Serious Injury Collisions: 5**
- **Slight Injury Collisions: 16**

3. Summary of Key Risks

- Increased HGV traffic associated with the Biogas Facility will exacerbate existing hazards at multiple points along this section of A153.
- Risks include vehicle collisions (especially involving HGVs), pedestrian safety issues, visibility challenges, and speeding problems.
- The combination of narrow carriageways, poor visibility, and substandard pedestrian infrastructure creates a heightened risk environment for all road users.
- Site 31 at Anwick will require construction of the Biogas facility access and exit road, directly onto A153 just west of Anwick Village. This stretch of road has identified safety issues as set out in items 1.6 and 1.7 above.
- Site 31 proposed entrance is approximately 5km from the main A17.

PART B: B1188 SLEAFORD ROAD FROM J/W A153 TO ASSESSED SITE 18 RUSKINGTON

Road Safety and Access Assessment Report

Section: A153/B1188 Roundabout to Site 18

This report evaluates the road conditions, hazards, and access features between the A153/B1188 Roundabout and Site 18, focusing on vehicle, pedestrian, and cyclist safety, as well as the suitability of the current infrastructure for heavy goods vehicle (HGV) movements.

1. Hazards Assessment

- **No Identified Hazards:**
  There are no hazards identified along the section between the A153/B1188 Roundabout and Site 18.

2. Road Characteristics

- **Alignment and Visibility:**
  The road is straight with clear intervisibility for vehicles exiting the A153 roundabout and entering the B1188.
- **Junctions and Entrances:**
  There are only a couple of private entrances, no side road junctions, and no bends. Sleaford Road is well maintained.

3. Site Access and HGV Movements

- **Pilgrims Factory Entrance/Exit:**
  Site 18 is served by an existing Pilgrims Factory entrance/exit, which already accommodates HGV movements.
- **Entrance Capacity:**
  The entrance/exit is wide enough for simultaneous in and out vehicle movements and provides approximately 200 meters of HGV stacking space off the highway, should Site 18 be selected.
- **Speed Limit:**
  The entrance is within a 30-mph speed limit zone.

4. Pedestrian and Cyclist Facilities

- **Shared Use Track:**
  Sleaford Road features a shared pedestrian/cycle track, segregated from the main carriageway by a grass verge.
- **Crossing Point:**
  An informal crossing for pedestrians and cyclists is located near the A153 Roundabout. Cyclists are advised to dismount when crossing.

5. Road Usage and Dimensions

- **HGV Traffic:**
  The B1188 regularly accommodates HGV traffic and is predominately of the same width as the A153.

6. Road collision history

Injury Road Traffic Collision Figures (2014–2024) B1188 Sleaford Road between J/W A153 and assessed Site 18 for potential biogas plant location.

- **Fatal Collisions: 0**
- **Serious Injury Collisions: 1**
- **Slight Injury Collisions: 4**


Lincoln
Ruskington 1
B1188


ford Rd

7. Conclusion

The stretch of road between the A153/B1188 Roundabout and Site 18 is well designed to ensure the safety of vehicles, pedestrians, and cyclists. The existing infrastructure, including the Pilgrims Factory entrance and exit, adequately supports current and future HGV movements, with no significant hazards identified. Additionally, HGV access to Site 18 via the A17 offers a safer and more direct route, minimizing collision risks and reducing the need for extensive highway modifications.

Site 18 is 2.95km from the A17.

SUMMARY: HIGHWAY & TRANSPORT RISK COMPARISON TABLE (COLOUR-CODED)

The approach to the proposed Anwick biogas plant from Speedway Corner on the A153 presents a narrow, sharply-bending single carriageway, **including a hump-backed bridge, which is regularly used by wide-load static caravan deliveries to Tattershall Lakes. The addition of HGV traffic from the proposed plant along this approach would significantly increase the risk of conflict, forced overtaking, and delays**. Existing road geometry, limited visibility, and high vehicle speeds already make this section hazardous. Baseline safety data shows three fatalities, five serious injuries, and sixteen slight injuries on this corridor over the past ten years, highlighting the constrained and high-risk nature of the route.

Pedestrians and cyclists are also materially exposed, due to narrow, unlit, and poorly segregated footways, increasing the risk of accidents when wide loads and additional HGVs are present. The developer's proposed mitigation measures—turn lanes and routing via Moy Park—**do not address the Speedway Corner approach, leaving slow, escorted vehicles, including static caravans, vulnerable to operational conflicts. In the absence of robust, independent traffic modelling, queuing analysis, and swept-path verification, approval of Site 31 would carry significant, unassessed highway safety risks.** This scenario is in **clear conflict with Central Lincolnshire Local Plan policies requiring safe rural transport, protection of village roads, and minimization of risk to all road users.**

Colour Guide: ● **Red** = High risk / critical issue. ▯ **Yellow** = Medium risk / uncertain / untested. ▯ **Green** = Low risk / safe

CATEGORY	SITE 31 ANWICK (A153)	SITE 18 RUSKINGTON (B1188)	RISK IMPLICATION
Road Alignment & Visibility	Multiple bends, hump-backed bridge, narrow carriageways; limited visibility at junctions (Priory Rd, Park Ln, Wood Ln)	Straight, wide road; clear visibility at all junctions	Site 31 has higher collision risk; Site 18 safer
Junction Safety	Speedway Corner: right-turning HGVs encroach on opposing lane; other junctions with poor visibility	Minimal junctions; existing Pilgrims Factory access handles HGVs	Site 31 junctions are hazardous; Site 18 junctions low risk
Pedestrian/Cyclist Safety	Narrow, substandard, unlit footways; risk from HGVs	Segregated shared pedestrian/cycle track; informal crossing but minimal conflict	Site 31 high risk to vulnerable users; Site 18 low risk
Existing Traffic & Baseline Conditions	A153 already has heavy HGV use; speeding issues; collision history: 3 fatal, 5 serious, 16 slight (2014–2024)	B1188 has regular HGV traffic but wider lanes; collision history: 0 fatal, 1 serious, 4 slight	Site 31 higher baseline hazard; Site 18 safer baseline
HGV Access & Queuing	No formal queuing or capacity analysis; risk of HGVs backing onto A153	Adequate off-highway stacking (200 m); existing operational access	Site 31 uncertain/unsafe; Site 18 capacity proven
Mitigation/Management Reliance	Relies on operational measures (booking systems, compliance) with no contingency plans	Existing infrastructure already mitigates HGV conflicts	Site 31 mitigation unproven; Site 18 infrastructure robust
Highway Safety Risks	High: narrow carriageways, visibility issues, multiple hazard points, pedestrian exposure	Low: straight, wide, minimal hazards, controlled access	Site 31 high risk; Site 18 low risk
Regulatory Compliance (EIA)	Evidence does not meet EIA requirements; lacks robust modelling	Not specifically flagged as deficient	Site 31 may face planning refusal; Site 18 likely acceptable


High Risk Route
Route to Site 31 Anwick (A153 Speedway Corner to Site 31)
B1188
Speedway Corner
Hump Backed Bridge
Priory Road Junction
Park Lane Junction
Wood Lane Junction
Anwick Village
Proposed Site
31 Anwick
Low Risk Route
Route to Site 18 Ruskington (B1188 Sleaford Road to Site 18)
A153 Roundabout
Clear Roadway
Pilgrims Factory Entrance
Assessed Site 18
Hazard Areas
Serious Accident Site
No Major Hazards

SECTION 12: Comparative Evidence from the Manby AD Environmental Statement: Policy-Based Demonstration of Fundamental Deficiencies in the Stream BioEnergy Anwick Proposal

10.1 Purpose, Evidential Context and Policy Framework

This section provides a direct, evidence-based comparison between:

- the Environmental Statement (ES) for the Manby Anaerobic Digestion (AD) facility (notably Chapters 6 and 7 – see Appendix 11); and
- the Environmental Statement and addenda submitted by Stream BioEnergy for the proposed Anwick AD facility, together with the independent technical evidence of Dr Michael Bull on odour and baseline conditions at Anwick.

The purpose is to demonstrate that, when measured against an objectively competent and precautionary benchmark (Manby), the Stream ES materially understates impacts, omits critical engineering information, and relies on optimistic assumptions.

These deficiencies are structural and directly engage:

- **EIA Regulations 2017, Regulation 18 and Schedule 4**;
- the **Tameside duty**; and
- the development plan and national policy tests, including **NPPF**, **NPPW**, **CLLP** and **LMWP**.

The comparison therefore goes directly to policy compliance and legal adequacy.

10.2 Alternative Site Selection and Separation from Sensitive Receptors

Key Finding:

- **The Manby scheme is deliberately located to avoid sensitive receptors. The Anwick scheme is deliberately located adjacent to them and attempts to mitigate that choice.**

- The Manby ES (Chapter 6) demonstrates a genuine **avoidance-led site selection strategy**. The site is a former airfield/agricultural location, physically separated from Manby village, with residential properties approximately 750 metres away, many not facing the site, and with intervening buildings and vegetation providing screening. Public rights of way are limited, distant and screened.

- **By contrast, Stream BioEnergy's Alternative Sites Assessment is feedstock-driven and infrastructure-led**. **It explicitly accepts residential properties within approximately 120–240 metres. The matrix treats "residential within 100–300 m" as mid-range rather than exclusionary.** The narrative relies on layout manipulation and landscaping to "maximise separation" rather than avoiding sensitive receptors.

Comparator Table – Site Selection and Sensitive Receptors

FACTOR	MANBY AD (ES CH.6)	ANWICK AD (STREAM)	PLANNING / POLICY SIGNIFICANCE
Site context	Former airfield / isolated agricultural land	Greenfield edge-of-village site adjacent to food factory	Manby avoids; Anwick accepts sensitivity
Nearest residences	**~750 m, many not facing site**	**~120 m to nearest property; ~240 m to village**	**Anwick proximity is a deliberate planning choice**
Screening	**Existing buildings, vegetation, distance**	**Reliance on proposed planting and layout**	**Avoidance vs mitigation**
Public Rights of Way	Limited, distant, screened	Adjacent / crossing; engineered solutions required	Higher amenity sensitivity at Anwick
Environmental sensitivity	Low-sensitivity arable landscape	Mixed rural / village edge with drainage network	Higher baseline sensitivity at Anwick
Selection philosophy	**Avoid receptors and constraints**	**Make a sensitive site work**	**Fails "least harmful" logic**

Policy Conflict:

- **NPPF paragraph 180(c)** – development must be appropriate for its location, protecting health and living conditions.
- **NPPW (Locational Considerations)** – waste facilities must be well located with regard to sensitive receptors.
- **LMWP Policy W5** – location of waste facilities must minimise impacts on communities.
- **CLLP Policy LP26** – protection of residential amenity.

Conclusion:

Manby demonstrates compliance with avoidance-led policy logic. Anwick does not. The Anwick site fails NPPF 180(c), NPPW and LMWP W5 at the first and most fundamental stage: **location**.

10.3 Process Design, Infrastructure Scale and True Operational Capacity

Key Finding:

Stream BioEnergy has installed digestion infrastructure of a scale comparable to major AD plants, admits a 200,000 tpa design heritage, but fails to disclose the engineering basis required to demonstrate that the plant is genuinely constrained to 120,000 tpa. Stream's Planning Statement confirms the scheme was originally designed for up to 200,000 tpa. The ES/DAS show eight digesters, each approximately 25 m diameter and 25 m height, equating to ~92,000 m³ total digestion volume.

Manby discloses nine fermentation tanks of ~12,566 m³ each (~113,000 m³ total) and aligns this transparently with declared throughput. Crucially, Stream does **not** disclose HRT, OLR, working volumes, tank duty or throughput calculations.

Comparator Table – Capacity, Design and Engineering Transparency

PARAMETER	ANWICK – STREAM	MANBY AD	WHY THIS IS DAMNING
Declared throughput	**120,000 tpa (down-rated from 200,000 tpa)**	**~300,000 tpa**	**Down-rating not evidenced**
Number of digesters	8	9	Comparable scale
Volume per digester	~11,530 m³	12,566 m³	Near-equivalence
Total digestion volume	~92,000 m³	~113,000 m³	Same order of magnitude
HRT disclosed	No	Yes / implied	Core design basis missing
OLR disclosed	**No**	**Yes / implied**	**Loading limits hidden**
Working volume stated	**No**	**Yes / implied**	**True capacity obscured**
Throughput calculation	Absent	Present / implicit	Anwick untestable
Design heritage	**200,000 tpa admitted**	**N/A**	**Raises credibility issues**

Policy Conflict:

- **NPPF 170 & 180** – need to understand scale to assess pollution and appropriateness.
- **NPPW** – authorities must be confident facilities can operate without unacceptable impact.
- **LMWP Policy DM3** – requires demonstration that odour/emissions impacts are acceptable.
- **LMWP Policies W1 & W3** – scale and deliverability must be appropriate.
-

Conclusion: The Authority cannot lawfully assess impacts without knowing true operational capacity. This is a **Tameside failure and a breach of NPPF, NPPW and LMWP DM3.**

10.4 Odour, Bioaerosols and Fugitive Emissions – Process Realism versus Optimism

Key Finding:

Manby is candid about odour generation and designs accordingly. Stream assumes near-perfect containment and negligible fugitive emissions. Dr Bull confirms this is unrealistic. Manby ES Chapter 7 starts from the premise that large odour emissions are expected and then sets out enclosure, negative pressure, ventilation

rates and abatement performance. Stream repeatedly uses “sealed” and “near 100% leak-proof” language, does not disclose ventilation rates, and does not test abnormal scenarios.

Dr Bull confirms:

- baseline odour at Anwick is already unacceptable;
- fugitive emissions are inevitable;
- near-ground releases must be assessed;
- frequency of exposure is critical.

Comparator Table – Odour, Bioaerosols and Fugitive Emissions

ISSUE	MANBY ES (CH.7)	STREAM ES (ANWICK)	PLANNING SIGNIFICANCE
Starting premise	**“Large emissions expected”**	**Near-zero emissions assumed**	**Process realism vs optimism**
Fugitive emissions	**Recognised and minimised**	**Treated as negligible**	**Unrealistic assumption**
Ventilation basis	Quantified (e.g. 3 ACH)	Not disclosed	Modelling not auditable
Abatement targets	Disclosed	Benchmarks cited, no source terms	Scrutiny prevented
Abnormal operation	**Implicitly recognised**	**Not tested**	**Nuisance occurs in failures**
Bioaerosols	**Recognised and controlled**	**Conclusory**	**Unsupported**
Baseline context	**Considered**	**Downplayed**	**Cumulative ignored**

Policy Conflict:

- **NPPF 180(a) & (c)** – prevent unacceptable pollution and protect health.
- **NPPW** – waste facilities must minimise impacts on health.
- **LMWP Policy DM3** – no unacceptable harm from odour/bioaerosols.
- **CLLP Policy LP26** – protection of amenity.

Conclusion:

The Stream odour assessment is methodologically deficient and policy non-compliant.

10.5 Construction Dust and Air Quality – Cumulative Context Ignored

Key Finding:

Manby acknowledges construction dust will occur and commits to a detailed CEMP. Stream downplays construction dust despite immediate residential proximity and an already degraded baseline. Manby treats dust as inevitable and plans for it. Stream describes it as minor and temporary, uses generic mitigation language, and ignores cumulative exposure.

Comparator Table – Construction Dust and Air Quality

ISSUE	MANBY ES	STREAM ES	DR BULL / ANWICK BASELINE	WHY THIS IS DAMNING
Premise	**Dust will occur; manage it**	**Dust minor/temporary**	**Baseline already degraded**	**Underplays risk**
Sources identified	Explicitly listed	Generic	Existing aerosols present	Cumulative ignored
Receptors	**Acknowledged**	**Downplayed**	**Residents already affected**	**Policy breach**
Mitigation	**Detailed CEMP**	**Generic best practice**	**Enforcement concerns**	**Credibility gap**
Baseline	Rural/agricultural	Assumed benign	Not acceptable	Baseline wrong
Cumulative effects	**Implicitly considered**	**Absent**	**Frequency critical**	**Methodological flaw**

Policy Conflict:

- **NPPF 180(a)** – mitigate and reduce pollution, including cumulative.
- **NPPW** – avoid unacceptable impacts on air quality.

- **LMWP Policy DM3 & DM4** – protect amenity and safety.
- **CLLP Policy LP26** – prevent unacceptable dust/disturbance.

Conclusion:
Stream's construction impact assessment is **minimising and non-compliant**.

10.6 Overall Policy-Based Conclusions from the Manby Comparison

THEME	MANBY AD	ANWICK – STREAM	POLICY POSITION
Site selection	Avoids sensitive receptors	Accepts proximity, mitigates	Breach of NPPF 180(c), NPPW, LMWP W5
Capacity & design	Transparent, aligned	Opaque, unproven	Breach of NPPF, NPPW, LMWP DM3
Odour & aerosols	Precautionary, quantified	Optimistic, untested	Breach of NPPF 180, CLLP LP26
Construction impacts	Realistic, controlled	Minimised	Breach of NPPF 180(a), LMWP DM3

These are systemic, not incidental weaknesses.

10.7 Planning and Legal Implication

On the evidence and policy analysis above, the Authority cannot lawfully conclude that the proposal complies with:

- **NPPF paragraphs 170 and 180**;
- the **National Planning Policy for Waste**;
- **LMWP Policies W1, W3, W5 and DM3**; or
- **CLLP Policies LP26 and LP17**.

Nor can it be satisfied that it has complied with Regulation 18 / Schedule 4 of the EIA Regulations or the Tameside duty. Proceeding to determination would expose the Authority to a clear and foreseeable risk of legal challenge.

11.1 Corporate Pattern of Selective Disclosure

The Manby Environmental Statement (Appendix 10) demonstrates industry standard practice in reconciling digester volumes, process configuration and declared throughput. It provides a transparent basis for understanding the scale and capacity of the development.

In contrast, both Monaghan and Anwick omit the dimensional and hydraulic data necessary to verify capacity. The fact that Manby provides this information, while the applicant's own schemes do not, is telling. It demonstrates that the applicant is aware of the importance of such disclosure and chooses when to provide it.

This inconsistency further undermines the credibility of the Anwick submission. It confirms that the absence of capacity-defining information is not due to technical difficulty, but to selective presentation. The Authority must take this into account when assessing whether it has been properly informed.

APPENDICES

APPENDIX 1

File Note

MICHAEL BULL & ASSOCIATES
Consultants in air quality & odour assessment

Project No : 260

Anwick Biogas Plant
Review of Updated Odour and Air Quality Assessments

1. Introduction

Michael Bull and Associates Ltd (MBAL) was commissioned by Anwick Parish Council to review the air quality and odour assessments submitted with a planning application for a proposed Biogas Plant in the village of Anwick (application reference: PL/0016/25 to Lincolnshire County Council). MBAL produced a report on the findings in June 2025 that identified six matters of concern. A Regulation 25 request was then issued by Lincolnshire County Council requesting additional information largely based on the outcome of the MBAL review.

In response to the Regulation 25 Request, an Air Quality and Odour Technical Note (dated 21 October 2025) has been produced by Redmore Environmental that provides a response to matters raised and some additional information. A further dispersion modelling report dated 15 July 2025 was also produced by Redmore Environmental addressing plume visibility issues. MBAL has been asked to review this report.

This note presents the outcome of the review of the new material submitted.

2. Air Quality and Odour Technical Note

As noted above, the technical note provides a response to six matters raised in the original review, these are considered in the following sections using the same reference numbers as detailed in the Technical Note.

2.1 Sniff Testing

MBAL noted that the majority of the sniff testing had presented (~70%) had been carried out at locations where there was no possibility of detecting odours from the source (as the test locations were not downwind of the source).
The response from Redmore Environmental is that the assessment does not use baseline odour levels to determine the significance of the impacts from the proposed development (significance being based solely on the predicted odour concentrations from dispersion modelling) and that therefore the outcome of the sniff testing had no direct bearing on the conclusions of the assessment. Redmore Environmental state that the sniff testing was to “contextualise existing conditions only”.

It is also stated that the assessment was “not focused on the assessment of impacts associated with existing emissions” and that completing the survey in this way “may have provided a false indication of conditions under normal meteorological conditions” giving results for “worst case circumstances only”.

This is an unusual response as significance in odour assessments depends only on worst case conditions. For instance, the dispersion modelling presented only looks at the worst 2% of the hours in the year. Impacts under normal meteorological conditions are therefore irrelevant. Similarly, guidance suggests that “very frequent” odour events occur at a frequency of around three times a week.

Baseline conditions are very important in determining the impact of any proposal in any air quality assessment. Where an area is already experiencing odour impacts from existing activities, then the addition of a new odour source could result in the cumulative impacts exceeding the threshold for acceptability.

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MICHAEL BULL & ASSOCIATES
Consultants in air quality & odour assessment

While reference is made to the use of the methodology detailed in the IAQM guidance for sniff testing, this guidance clearly requires that downwind testing is carried out. The issue with reporting sniff test results that include several locations where odour detection would not have been possible is that this provides a false impression of the existing odour environment. This is because it will inevitably result in a very high percentage of tests being reported as having a negligible impact (as is the case here).

The results of three further sniff tests have been provided. The results from these show that unpleasant odours were detected at several test locations described as poultry waste, effluent and offal. Medium to substantial impacts were found at locations in the south of Anwick village and to the east of the Moy Farms facility – a direction where cumulative impacts from the proposed development would occur during westerly winds.

It is not clear whether the effluent odours noted were from the sewage works (there may be similar processes on the Moy Farm site). The wind direction during the testing was often from the south west and this would have resulted in the sewage works being upwind of the test location. The wind speeds during the testing appear to have included some occasions where speeds were relatively low (i.e. worst case conditions for near ground level odour sources) although most of the testing was carried out in higher wind speeds (and hence not worst case).

MBAL would disagree with the conclusions that the additional testing does not affect the conclusions of the assessment. The testing demonstrates the potential for cumulative impacts and also the existence of unacceptable existing odour conditions in parts of the village of Anwick, meaning that additional odours from the proposal would result in an increase in the frequency of detectable odours for some residents.

2.2 Odour Complaint Information

MBAL had queried whether odour complaint information had been obtained in relation to the Anwick sewage treatment works.

Redmore Environmental therefore requested complaint information from Anglian Water and the local authority. This indicated a few occasional complaints although no confirmation that the sewage works was actually the source of the odour. Redmore consider that odour emissions from the works do not occur sufficiently frequently to cause a "*sufficient level of disamenity*" for complaints to belodged on a regular basis although they acknowledge that it does not indicate that there are no odour emissions from the works.

MBAL would agree that the level of complaint does not suggest a significant impact on amenity from the sewage works alone but that it remains a potential source of odours that can add to cumulative effects.

2.3 Construction Impacts

MBAL noted that the construction impact assessment did not appear to have considered Moy Park as a sensitive receptor. Redmore Environmental has stated that Moy Park was included as a "*human receptor*" in the assessment. It is arguable whether this is strictly the case as the Moy Park facility covers a large area yet the Table only considers there to be very few receptors close to the proposed development (in MBAL's view, the Moy Park facility cannot be considered equivalent to a single or small number of residential properties). However, the applicant is now offering to provide a High level of mitigation as defined by the relevant IAQM guidance which should provide acceptable mitigation.

2.4 Correction of Pollutant Emission Rates from Reference Conditions

MBAL had noted that the calculation of pollutant emission rate did not appear to have used the required correction from reference conditions for the oxygen content of the exhaust gases and consequently the pollutant emission rates used in the modelling were incorrect.

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Redmore Environmental's response is that the oxygen content of the exhaust gas was not available at the time of the assessment and so no correction was made. This response is essentially stating that the applicant knowingly submitted an assessment based on incorrect information. No acknowledgement of this approach was made in the assessment and MBAL would strongly disagree that this is a commonly adopted approach as stated in the Redmore Environmental response, this approach results in incorrect emission rates.

The assessment has now been revised using an oxygen content of 10.3% which is in the expected range for this parameter. Redmore Environmental report that this results in the efflux velocity increasing from 19.34 – 28.92 m/s, this is unusual as the oxygen correction is usually applied to the pollutant concentration rather than the volumetric flowrate.

They also state that this would have no bearing on the calculated emissions rates as they are based on normalised flow rates and normalised pollutant concentrations, however, this is likely to be incorrect as normalised flowrates are not usually provided corrected for oxygen content. They provide revised modelling results based on the higher efflux velocity and previously used pollutant emission rates.

MBAL consider that the assessment is still likely to be erroneous, although this does depend on the exact nature of the information on flowrate at standard conditions that is provided in Table 3 of the original ES Technical Appendix. The relevant information from this table is summarised in Table 1.

Parameter	Value
Stack diameter (m)	0.7
Exhaust temperature (°C)	120
Exhaust moisture content (%)	9.35
Exhaust O_2 content (%)	10.3
Exhaust flowrate at discharge (m^3/s)	7.44
Exhaust flowrate at standard conditions (Nm^3/s)	4.69
Exhaust gas velocity (m/s)	19.34

Table 1 CHP Stack Information

It is assumed that the exhaust flowrate of 7.44 m^3/s is the actual discharge condition (this assumption is consistent with the stated efflux velocity).
Reference should also be made to the formulae for calculating pollutant emission rates in the (former) HMIP Technical Guidance Note D1 (June 1993).
Firstly, the emission limit concentrations are converted from standard conditions (in this case 5% oxygen and dry) to the actual discharge conditions using the following:
$Cd = Cs \times (273 / (273 + Td)) \times ((20.9 – O_2d) / (20.9 – O_2s))$
Where:
Cd = pollutant concentration at discharge conditions
Cs = pollutant concentration at standard conditions
Td = discharge temperature
O_2d / O_2s = oxygen content at discharge and standard conditions respectively

The pollutant emission rate is then found by multiplying the volumetric flow at discharge by the pollutant concentration at discharge conditions.
Emission Rate = Volumetric Flow × Cd

Note that none of these corrections involve changing the discharge volumetric flowrate.

The normalised exhaust flowrate reported in Table 3 of the original ES Technical Appendix of 4.69 m^3/s has been calculated by applying a temperature and water content correction to the reported flowrate of 7.44 m^3/s at discharge conditions; no oxygen content correction has been made.

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The original assessment then multiplied the normalised flowrate by the emission limits detailed in Table 4 of the Technical Appendices to obtain the pollutant mass emission rates. At no point has any oxygen content correction been made.
The only possibility that the emissions calculations are correct is if the exhaust flowrate at standard conditions in Table 1 has been provided already corrected for oxygen content. This would be very unusual as the calculation from discharge to standard conditions only involves correction for temperature and water content, not for oxygen content.

Redmore Environmental should therefore confirm whether or not the flowrate detailed in Nm3/s in Table 3 of their Technical Appendix has had a oxygen content correction applied, if not, then the assessment is invalid and requires revision. If an oxygen content correction has been applied then it would be helpful to also be provided with the sources of the information used in Table 3 of the Technical Appendix to allow verification.

2.5 Dryer Stack Information and Reference Document

The MBAL review firstly noted that information on Table 15 of the Technical Appendix was not consistent. This has been confirmed as a typographical error by Redmore Environmental and the correct value was used in the assessment. The MBAL review also noted that the BAT reference source quoted for the odour emission concentration of 1000 ouE/m3 from the dryer stack emissions did not contain any information regarding odour concentrations from this type of process. The response from Redmore Environmental states that the abatement efficiency quoted in the BAT reference source is 98-99.9% and further note that no odour concentrations above 1000 ouE/m3 were noted in the reported performance of thermal oxidation plant. Odour concentrations will depend on the nature of the plant, while MBAL does not have any alternative information, acceptable odour impacts from the proposal would depend on the assumed performance being achieved which could be assessed through an appropriate condition should permission be granted. This condition would require the measurement of the odour emission rate following plant commissioning and installation of appropriate mitigation measures if the assumed emission concentration is not achieved.

2.6 Cumulative Impacts

The MBAL review noted shortcoming with the four reasons given for why cumulative impacts would not be significant, these are discussed below.

1. MBAL noted that there is no description of the improvements proposed at Moy Park and consequently no judgement could be made on the likely improvements that would occur. The Redmore Environmental response confirms that they have no details of the improvements proposed – consequently, there can be no assessment of the scale of improvement that would occur.

2. MBAL considered that the conclusion that, because the Process Contribution was well below the EA benchmarks, the cumulative impacts are insignificant. Redmore Environmental's response is that MBAL has misunderstood or misrepresented the point being made and no claim is made that the because the PC is below the EA benchmark, the cumulative effects are insignificant. And also point out that the word "insignificant" is not used (although the phrase "not significant" is used). They argue that because they PC is well below the most stringent benchmark, there is considerable headroom for other sources in the area. However, this is not the case, they have not taken into account that the "headroom" in the area is already used (and probably exceeded) by the existing processes as evidenced by their own sniff testing and the level of complaints. The addition of a further odour source in the area can only result in an increase in the frequency of odour events and, in some case, when the wind is blowing upwind of both sources, would result in the odours from both sources combining resulting in higher odour concentrations.

3. The MBAL review noted that it was argued that the relative positions of each of the three odour sources was such that a receptor could not be upwind of all three source simultaneously and therefore not possible for cumulative effects to occur. MBAL noted that the sources do not need to combine simultaneously for there to be a cumulative effect as adverse odour effects occur not only as a result of an increase in odour concentrations but also their frequency of occurrence (And the addition of a new odour source would result in an increase in frequency even if the sources could not combine). Redmore Environmental has not addressed this point in their response. They also refer back to the same point as raised in the previous paragraph that the headroom was sufficient to avoid adverse impacts, which is clearly not the case where the existing conditions are already unacceptable.

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4. Redmore Environmental argued that the potential for cumulative impacts is low as the character of the odours will be different. They note that the character of the odour from Moy Park and the sewage works are different and would not be considered to be of similar character. However, the response to their request for complaints information in Section 2.2 contradicts this, as there have been difficulties distinguishing the source for reported odour complaints. Redmore Environmental then provide additional modelling results examining the 99th and 100th percentile hourly average odour concentrations and showing that these are relatively low (again arguing the same headroom point as before). While this is useful, it ignores the fact that odours are detected over much shorter timescales that one hour and short term averages over a few seconds will be much higher than the one hour average.

3. Additional Dispersion Modelling – Visible Plumes

MBAL has reviewed additional dispersion modelling report dated 15 July 2025 by Redmore Environmental. This report examines the visible plume length from the proposal as a result of water condensing from the plume. The modelling has used the same input data as the original Environmental Statement for the physical stack dimensions, efflux velocity and temperature and the water content.

As noted in Section 2.4, there were some issues with the data used for modelling in the original assessment. If MBAL's assumptions detailed in Section 2.5 are correct, then the data used in the modelling of visible plume length is correct (as only the pollutant emission rates are affected by the oxygen content correction). However, if the efflux velocity is higher than originally reported (as used by Redmore Environmental in the revised modelling), then then visible plume assessment would require updating.

4. Summary of Findings

MBAL has reviewed the response by Redmore Environmental to the Section 25 request. The response concerning the complaints information from Anwick WWTW and the assessment of construction impacts provide the required information and a High level of mitigation is proposed during construction that result in minimal environmental effects.

The response on the odour concentration assumed for the dry stack has clarified some aspects of the assumptions made but it is suggested that an appropriate condition be applied to measure the odour concentration to confirm the actual odour emission rate should planning permission be granted.

On sniff testing, further surveys have been carried out which confirm the existence of unacceptable odours in the village of Anwick during some surveys. This indicates that baseline (existing) conditions are unacceptable as confirmed by the complaints being received in the area. There is therefore no headroom for further odour sources in some locations.

MBAL previously noted that the appropriate correction for oxygen content had not been made in the emission calculations and consequently the assessment was incorrect in the ES. A revised assessment has been made but this may have incorrectly applied the oxygen content correction and still does not represent the impact from the proposed development and consequently the assessment would be invalid. The exact nature of the information used by the assessment requires confirmation and the source information used provided.

MBAL still consider that there is potential for cumulative impacts to occur from the proposed development adding to the frequency (and in some cases the concentration) of the odours. Given that there is no available headroom for additional odours in parts of the village, the addition of a further odour source is likely to result in an increase in the number of odour events experienced by local residents.

Dr Michael Bull
Michael Bull and Associates Ltd
07729 272715

APPENDIX 2

STREAM BIOENERGY – ANAEROBIC DIGESTION POLICY BRIEFING TABLE

The following tables contains the supporting policy briefing summarizing environmental, health, and community impacts of anaerobic digestion developments in Northern Ireland, in relation to the Lincolnshire planning application.

Table 1: Policy Impacts of Anaerobic Digestion (AD) – Detailed

POLICY AREA	RELEVANT POLICY / LEGISLATION	DOCUMENTED IMPACT (NI EXPERIENCE)	POLICY RISK	RELEVANCE TO LINCOLNSHIRE PROPOSAL
Air Quality	Clean Air Strategy; Environment Act 2021	Elevated ammonia emissions from AD plants linked to feedstock handling and digestate management	**Failure to reduce ammonia and PM2.5 as required by national policy**	Lincolnshire already experiences high agricultural ammonia levels
Public Health	Public Health Frameworks; Air Quality Standards	Increased respiratory risk associated with ammonia and secondary particulates	**Avoidable public health harm**	Residential receptors near proposed site
Biodiversity	Habitats Regulations; NPPF paras 174–180	Nitrogen deposition damaging SACs, ASSIs, peatlands, and wetlands	**Legal non-compliance with habitat protection duties**	Sensitive habitats and cumulative nitrogen pressures present
Biodiversity	Biodiversity Strategies	Expansion of maize and energy crops displacing farmland biodiversity	**Conflict with biodiversity recovery objectives**	Risk of feedstock-driven land use change
Water Environment	Water Framework Directive	Nutrient and pathogen run-off from digestate contributing to eutrophication	**Failure to achieve 'good ecological status'**	Lincolnshire catchments already nutrient-stressed
Drinking Water	Drinking Water Regulations	Increased treatment burden and contamination risk	**Threat to potable water supplies**	Groundwater vulnerability in parts of Lincolnshire
Climate Change	Climate legislation and Net Zero strategies	Methane leakage undermining claimed carbon benefits	**Overstated climate gains**	No independent lifecycle carbon assessment provided
Waste Policy	Waste hierarchy principles	Incentivisation of waste generation and energy crops	**Conflict with waste prevention objectives**	Reliance on non-waste feedstocks unclear
Planning – Amenity	NPPF paras 185–186	Persistent odour complaints, noise, and traffic impacts	**Harm to residential amenity**	Rural settlement character similar to NI locations
Planning – Cumulative Impact	EIA Regulations	Failure to assess multiple AD facilities collectively	**Underestimation of impacts**	Risk of precedent and clustering
Rural Policy	Rural development and wellbeing policies	Industrialisation of rural landscapes	**Undermines rural sustainability**	Site located in rural agricultural area
Community Engagement	Planning process requirements	Inadequate consultation leading to opposition and distrust	**Procedural unfairness**	Similar community concerns raised locally

Table 2: Environmental, Health and Community Impacts of Anaerobic Digestion (AD) In Northern Ireland

CATEGORY	ISSUE	KEY IMPACTS	ORGANISATIONS RAISING CONCERNS
Environmental	Ammonia Emissions	High ammonia levels worsen air quality, damage SACs, alter soil chemistry, and reduce biodiversity in wetlands, peatlands, heathlands, and protected areas such as Lough Neagh and the Sperrins.	**Northern Ireland Environment Link (NIEL); Ulster Wildlife**
Environmental	Farmland & Biodiversity Loss	Monoculture crops (e.g. maize) reduce biodiversity, degrade soils, displace wildlife habitats, and increase reliance on chemical inputs.	**Friends of the Earth NI; RSPB Northern Ireland**
Environmental	Digestate Over-application	Nutrient overload damages soil health, causes nitrogen and phosphorus run-off, eutrophication, algal blooms, and aquatic ecosystem collapse.	**Friends of the Earth NI; RSPB Northern Ireland**
Environmental / Climate	Carbon Footprint & Methane Leaks	Methane leakage (a potent greenhouse gas) and transport emissions undermine AD's claimed carbon neutrality.	**Climate Action Network Northern Ireland (CANNI)**
Health	**Odours**	**Persistent unpleasant smells from feedstock and digestate reduce quality of life, cause nausea, headaches, stress, and property devaluation.**	**Public Health Agency NI (PHA)**
Health	**Airborne Pollutants (Ammonia & VOCs)**	**Exacerbation of asthma, COPD, respiratory irritation, increased hospital admissions, and long-term respiratory illness.**	**PHA; Northern Ireland Chest, Heart & Stroke**
Health	**PM2.5 Formation**	**Ammonia reacts with other pollutants to form PM2.5, increasing risks of respiratory disease, cardiovascular illness, cancer, and premature death.**	**Environmental Health Trust NI**
Health / Water	**Pathogen Risks**	**Inadequately treated digestate may contain E. coli, Salmonella, Cryptosporidium; risks include airborne exposure and contaminated water supplies.**	**Northern Ireland Water**
Water Pollution	**Nutrient Run-off & Eutrophication**	**Severe stress on water bodies (Lough Neagh, River Bann), oxygen depletion, fish kills, biodiversity loss, increased water treatment costs.**	**Lough Neagh Partnership; Angling Trust NI**
Planning & Regulation	Proximity to Communities	Noise, traffic congestion, air pollution, odours, and property devaluation in rural and residential areas.	**Rural Community Network NI**
Planning & Regulation	Inadequate Oversight & Cumulative Impacts	Multiple AD plants clustered together increase pollution, infrastructure strain, and environmental damage without adequate cumulative assessment.	**NI Planning Alliance; Green Party NI**
Climate Policy	Conflict with Climate Goals	Focus on energy recovery diverts attention from waste reduction, prevention, and sustainable agriculture at source.	**Zero Waste North West**
Community Opposition	Local Resistance (Camlough, Ballymena, Dungannon)	Odours, air and water pollution risks, biodiversity threats, traffic, and proximity to homes drive strong community opposition.	**Local residents & community groups**
Community Advocacy	Rural & Environmental Protection	Protection of landscapes, ecosystems, farming livelihoods, and community well-being from industrialisation.	**Save Our Sperrins (SOS); No Arc21**
Community Engagement	Lack of Meaningful Consultation	Residents feel excluded from planning processes, limited transparency, lack of genuine influence over decisions.	**Community Places**

Table 3: Policy Impacts of Anaerobic Digestion (AD) – Simplified

POLICY AREA	DOCUMENTED IMPACT (NI EXPERIENCE)	PLANNING RELEVANCE
Air Quality	Ammonia emissions from AD operations	Lincolnshire already agriculturally intensive
Public Health	Respiratory impacts linked to ammonia and PM2.5	Residential receptors present
Biodiversity	Nitrogen deposition damaging protected habitats	Cumulative nitrogen pressure locally
Water Environment	Digestate run-off causing eutrophication	Water bodies under nutrient stress
Climate Change	Methane leakage undermining carbon claims	No full lifecycle assessment provided
Planning & Amenity	Odour, noise, traffic complaints	Rural settlement character affected

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APPENDIX 3

Anwick PC email request to the EA for information

To: Anglian Water – Pre-Development Team

Email: planningliaison@anglianwater.co.uk

Date: 13 November 2025

Subject: PL/0016/25 – Proposed Anaerobic Digestion Facility, Anwick

Re: Request for clarification on AW response dated 9 May 2025 (Ref: 224453/1/0225823)

Dear Sir/Madam,

Anwick Parish Council has reviewed Anglian Water's consultation response dated 9 May 2025 regarding the proposed anaerobic digestion facility at Anwick (LCC application PL/0016/25).

Following review of the project's Environmental Statement and the Environment Agency's subsequent responses, it appears that several matters relevant to Anglian Water's statutory remit may not have been fully addressed within your response. We therefore request clarification on the following points.

1) Foul Drainage & PTP Effluent

Your response states:

"N/A there are no foul proposals for this application."

However, the application proposes:

• Use of a package treatment plant (PTP) for foul drainage;

• Re-use of treated effluent within the AD process; and

• Emergency export of treated effluent off-site.

These represent foul drainage proposals involving potential interaction with Anglian Water infrastructure. In view of this, please clarify:

1) Has Anglian Water assessed the feasibility of connection to the public foul sewer serving Anwick?

2) If connection to the rising main is considered impracticable, please provide:

- Any written conclusions, capacity assessments, and correspondence issued to the applicant.

3) Has Anglian Water considered whether treated PTP effluent could be accepted into the public sewer system or nearby WRC as part of a contingency scenario?

4) Has a Trade Effluent Consent been discussed or assessed?

2) Anwick WRC Capacity & Acceptance

5) Please confirm whether Anwick WRC has capacity to accept:

- Treated PTP effluent,
- Variable-strength feedstock wash-water, and/or
- Contingency high-strength waste streams.

If this has not been assessed, please confirm that no assumptions regarding availability should be made by the applicant.

3) Rising Main Connection Feasibility

The Environment Agency has requested that the applicant provide AW correspondence demonstrating that connection to the local rising main is not feasible.

This correspondence was referenced by the applicant, but not supplied.

6) Please confirm whether:

- Such correspondence exists,
- When it was issued, and
- The technical basis for concluding that connection is not feasible.

If no such written opinion has been issued, please confirm this for the record.

4) Trade Effluent

7) Does Anglian Water consider that any discharges associated with:

- PTP overflow,
- Effluent from Moy Park,
- AD wash waters,

would be classed as trade effluent, and therefore require consent?

8) If so, would such a consent be considered feasible based on:

- Anticipated volumes,
- Biological strength,
- Variable composition?

5) Network Safeguarding / Asset Protection

9) The proposed development includes storage of hazardous substances, including acids. Has Anglian Water assessed:

- Cross-contamination / backflow risk from effluent;
- Material compatibility risks;
- Emergency spill implications for sewer integrity?

10) If not, does AW consider additional information to be necessary prior to planning determination?

6) Pre-Development Engagement

11) Has the applicant submitted a Pre-Development Enquiry (PDE) or equivalent request to Anglian Water?

If so, please provide:

- The reference,
- The scope,
- Conclusions issued.

If not, please confirm this.

Conclusion

Due to the potential for significant environmental and infrastructure impacts, we consider it essential that the issues listed above are resolved prior to determination of the application. We would be grateful for a written response so these matters can be fully understood by the Parish Council and the Local Planning Authority.

We look forward to hearing from you.

Yours faithfully,

Chair

Anwick Parish Council

APPENDIX 4

The EA response to Anwick PC's email request for information

Ceres House, Searby Road, Lincoln, LN2 4DW Customer services line: 03708 506 506 Email: LNplanning@environment-agency.gov.ukwww.gov.uk/environment-agency Calls to 03 numbers cost no more than national rate calls to 01 or 02 numbers and count towards any inclusive minutes in the same way. This applies to calls from any type of line including mobile. .

FAO:
Anwick Parish Council
6 Formans Lane
Anwick
Sleaford
NG34 9SR

Our ref:AN/2025/137246/01-L01
Date:04 December2025

Dear

Request from Anwick Parish Council for clarification on Environment Agency advice on planning application reference: PL/0016/25
Land to the west of Moy Park Facility and the south of the A153, Anwick

Thank you for your email on 13 November 2025, which contained your letter outlining the Parish Council's concerns regarding the proposed anaerobic digestion facility and a request for clarification from the Environment Agency on our advice.
For clarity, the Environment Agency has provided advice to Lincolnshire County Council on the planning application ref: 'PL/0016/25' as required under planning regulations. Our role is to advise the Local Planning Authority (LPA) on environmental matters within our remit, so they can make an informed decision on the application.
We also regulate certain sites and activities under the Environmental Permitting Regulations (EPR). Environmental permitting provides a regulatory framework under which environmental risks can be formerly assessed, mitigated and potential pollution sources are controlled by the operator. Planning and permitting decisions are separate and the advice contained in our letter to Lincolnshire County Council does not relate to the determination of an environmental permit application.
The focus of planning decisions should not be on matters which are subject to other pollution control regimes and therefore we have not advised on matters that we consider are appropriately managed under EPR.
I hope that the following answers your questions:

1. Dr. Bull Odour Report

We can confirm that we have not formed a view on the document 'Review of Air Quality and Odour Assessment', dated 06 June 2025, prepared by Michael Bull & Associates.

We only review air quality and odour assessments as a requirement of applications under the Environmental Permitting Regulations (EPR). We do not review these at the planning application stage as this could be perceived to be pre-determining any future permit application.
We consider that it is for the LPA and Environment Health (EH) team at the Council to consider the air quality assessment and whether it meets the requirements for planning purposes. We would consider an air quality impact assessment when assessing a permit application in relation to the processes and control of emissions.

This approach is supported by Paragraph 007 of the planning practice guidance (PPG) section on Air Quality, which states: *'It is not necessary for air quality assessments that support planning applications to duplicate aspects of air quality assessments that will be done as part of non-planning control regimes, such as under Environmental Permitting Regulations.'.*

2. Cumulative odour and amenity impact

We only consider the detail of odour assessments when determining an application under EPR. We have therefore not undertaken an assessment on the acceptability of adding a new odour source, nor evaluated the cumulative odour arising from the proposed anaerobic digestion facility, Moy Park Facility and Anwick Water Recycling Centre as part of this planning application.
It is for the LPA to consider the scope of an assessment of cumulative odour impacts and whether a proposed development is appropriate for its location and in accordance with Paragraph 198 of the National Planning Policy Framework (NPPF).
Paragraph 201 of the NPPF states: '*The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.'.*
Our approach aligns with that outlined in Paragraph 201 of the NPPF, and the PPG. The assessment requirements for air quality and odour at the planning stage will be different to that required under EPR. It is the LPA's role to consider whether the cumulative odour and amenity impacts are acceptable in determining whether the proposed development is an acceptable land use. Our involvement on the issue of odour will be limited to EPR, which separately manages the control of processes and emissions.

3. Odour modelling and stack height

We have not reviewed the Environmental Statement odour modelling. We would review modelling required as part of a permit application to ensure that the management of odour (and consequent design/stack requirements) is acceptable. We previously advised that the Applicant must ensure through air quality dispersion modelling that there is no pluming in the village of Anwick. We will only form a view on whether the proposed stacks would prevent pluming or unacceptable odour as part of a permit application.

4. Hazardous substances- acids and chemical storage

The storage of acids and chemicals would also be managed under an environmental permit. We accept that the presence of hazardous substances on a site where they were not previously stored introduces a risk to the environment that would have previously been absent. In line with Paragraph 201 of the NPPF, planning decisions should assume that separate pollution prevention regimes will operate effectively. The Environmental Permit will include conditions to control the storage of substances appropriately to manage pollution risk/emergency management. We will not be requesting a 'full inventory and risk assessment' as part of this planning application.

5. Environmental permitting feasibility

In our letter dated 20 June 2025, we stated '*We previously outlined that we considered it unlikely, at this time, that an environmental permit would be granted. This is due to a lack of information that the proposed development will meet the EPR requirements, rather than us having any 'in principle' concerns from a regulatory standpoint.'*. Therefore, our concerns were not technical or locational specific. We have not undertaken a detailed review of this application from a regulatory standpoint. We wished to highlight that based on the planning application submission, there was not enough information to ascertain whether the proposal would meet our requirements to prevent, minimise and/or control pollution. This was to make the Applicant aware that further work would be required and to support our recommendation that the planning application and permit application are twin tracked (this is at the discretion of the Applicant).
We are only likely to advise that a permit is unlikely to be granted and that a planning application should not be proceeded with if there are issues in principle with the proposal. We do not have any in principle issues from a regulatory standpoint with the proposed development. The weight that is afforded to any uncertainty connected with a proposed development obtaining an environmental permit is at the discretion of the LPA.

6. Planning vs permitting responsibilities

The purpose of the planning regime is to determine if a proposed development is an acceptable use of the land. The environmental permitting regime provides a regulatory framework under which environmental risks can be formerly assessed,

mitigated and potential pollution sources are controlled by the operator. Planning and permitting decisions are separate and the advice contained in our letters to Lincolnshire County Council do not relate to the determination of an environmental permit application.
These regimes are closely linked but should not overlap. This is recognised in Paragraphs 198 and 201 of the NPPF.
It is for the LPA to determine whether they have the necessary information required to assess the likely impacts on residential amenity, including cumulative impacts. We have provided the LPA with information that we hold to assist them, as far as we can, with this.

7. Feedstock and operational contingency

The operator has not yet applied for an environmental permit. These matters will be fully addressed through the permit application process. When the operator submits their application, they must demonstrate that all environmental risks associated with their proposed activities, including reliance on feedstock from Moy Park and any fluctuations in volume or composition, will be appropriately managed and minimised. The Environment Agency's role is to assess whether the operator's proposed operating techniques meet the legal requirements and incorporate Best Available Techniques (BAT) to protect the environment. We do not manage the activity; responsibility for ensuring appropriate measures are in place rests with the operator. If their application is successful and an Environmental Permit is issued, the Environment Agency will regulate the site in accordance with that permit to ensure the appropriate measures are in use.
When the application is received, it must contain sufficient information on all aspects of the process. Only once the application has been reviewed will we be able to fully assess if we have received sufficient information to enable us to determine it. A permit will only be issued if the application provides sufficient evidence that the operation can be carried out without posing an unacceptable risk to the environment.

8. Foul drainage and package treatment plant

We can confirm have received the additional information regarding foul drainage, including the correspondence from Anglian Water Services, that is used to justify the use of non-mains drainage. We formally withdrew our objection to the planning application in our letter dated 11 August 2025 as we were satisfied that our objection had been addressed.

9. Relevance of EA findings to planning

The LPA are the decision makers for planning applications. It is therefore for them to determine what matters are material planning considerations.
It is for the LPA to consider the weight afforded to material planning considerations in the planning balance and to make a planning judgement on whether a matter justifies refusal of planning permission.
The EA is a statutory consultee within the planning process. We provide advice to an LPA on technical environmental matters. It is for the LPA, as the decision maker, to weigh our advice into the overall planning balance.
I hope that the above answers your questions and assists you in understanding our position. Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours sincerely

Sustainable Places Planning Advisor

APPENDIX 5

Environment Agency	EPR Compliance Assessment Report	Report ID: NP3832ZA/0579151

This form will report compliance with your permit as determined by an Environment Agency officer

Site	Moy Park- Anwick EPR/NP3832ZA					Permit Ref	NP3832ZA	
Operator/ Permit holder	MOY PARK LIMITED							
Date	11/09/2025					Time in		Out
What parts of the permit were assessed	Review of the risk of odour emissions on site. Condition 1.1.1.							
Assessment	Report/data review	EPR Activity:	Installation	X	Waste Op		Water Discharge	
Recipient's name/position	HS&E Manager and Director's representative.							
Officer's name	Kate Stark, Helen Renshaw					Date issued	26/09/2025	

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations (EPR). A detailed explanation and any action you may need to take are given in the Detailed Assessment of Compliance (section 2) and the Actions (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit Conditions and Compliance Summary			Condition(s) breached
a) Permitted activities	1. Specified by permit	N	
b) Infrastructure	1. Engineering for prevention & control of pollution	N	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	N	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	C2	1.1.1;
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	N	
	2. Land & Groundwater	N	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	N	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates & litter	N	
	4. Pests, birds & scavengers	N	
	5. Deposits on road	N	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	N	
	2. Records of activity, site diary, journal & events	N	
	3. Maintenance records	N	
	4. Reporting & notification	N	
h) Resource efficiency	1. Efficient use of raw materials	N	
	2. Energy	N	

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk),
A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable, O = Ongoing non-compliance – not scored
MSA, MSB, TCM = Management System condition A, Management System Condition B and Technically Competent Manager condition which are environmental permit conditions from Part 3 of schedule9 EPR (see notes in Section 5/6).

Number of breaches recorded	1	Total compliance score (see section 5 for scoring scheme)	31

If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This report should be clear, comprehensive, unambiguous and normally completed within 14 days of an assessment.

Previous CAR form actions

Review of the odour management on site, originally requested in CAR form reference NP3832ZA/0515221, to be addressed in this CAR form.

CAR form reference NP3532ZA/0581145: Complete monitoring of emissions to air in line with condition 3.5.5 of the permit.
Monitoring must have been completed by 31 December 2025.
Submission of monitoring results by 28 January 2026.

Review

Introduction

This Odour report reviews the document: 'Odour assessment Pilgrim's Europe, Anwick. Reference 8812r1' by Redmore Environmental dated 12 August 2025 (The "odour report") and the proposed next steps to be taken by the Operator to bring the Moy Park Anwick site back into compliance.

Summary of the Odour report

The purpose of the Odour report was to quantify odour emissions from the poultry processing facility and assess their impact on nearby sensitive receptors.

Critically the Odour report identified a ventilation issue which has resulted in extract rates across the facility being lower than design specifications, leading to elevated internal odour concentrations, fugitive air transfer between areas (e.g., from scald lines to bleed area) and the main extract fans were underperforming due to mechanical issues (bearing vibration).

The main extract fans serve the odour stack. Therefore the odour stack has not been utilised as designed. From the information supplied it indicates that this has been the case as far back as June 2020. Therefore not all best available techniques have been in place to minimise the odours from the process for a significant amount of time, this is a permit breach and the scoring will be detailed below.

Implications from the Odour report and discussions with the Operator

Following discussions with the Operator during a meeting on 11 September 2025 it is apparent that there is a gap in the understanding of how the fans in the stacks should be operated and maintained. The fix for a vibration issue then impacted the effectiveness of the extraction. This appears to have not been understood as it was not corrected.

In addition the annual checks that a third party carried out, were either being misinterpreted by the Operator or the information being reported was not relevant to ensuring effective operation of the fans servicing the stack i.e. to the design standard.

On the following dates offsite odour checks were carried out and odour detected off site. With the further information now provided, it is likely that the stack was not being operated correctly and therefore not all appropriate measures were in place during these times:
17 July 2024 CAR form reference NP3832ZA/0513936.
5 August 2024 CAR form reference NP3832ZA/0514188.

12 August 2024 CAR form reference NP3832ZA/0514833.
24 August 2024 CAR form reference NP3832ZA/0515221.
9 August 2024 CAR form reference NP3832ZA/0517059.
4 September 2024 CAR form reference NP3832ZA/0518027.
27 January 2025 CAR form reference NP3832ZA/0537804.
25 June 2025 CAR form reference NP3832ZA/0561554.

Management failures have been identified as the root cause of the on-compliance and will be scored accordingly in line with principle 4 of our assessing and scoring permit compliance policy.

Recommended actions from the Odour report
The recommendations extracted from the Odour report:
Scenario 1 – Improved Ventilation and Dispersion:

- Restore main stack fan capacity.
- Improve vertical discharge from key sources.
- Resulted in **up to 91% reduction** in odour concentrations.

Scenario 2 – Engineered Abatement 1:

- Add treatment (e.g., scrubber or carbon filter) to de-feather/scald line emissions.
- Further reduced odour levels, but marginally compared to Scenario 1.

Scenario 3 – Engineered Abatement 2:

- Add treatment to ETP building exhaust.
- Provided additional reductions, but again marginal compared to Scenario 1.

It has been agreed that mitigation will begin with scenario 1 and scenario 2 and 3 will be considered if odour is at levels likely to cause pollution offsite. See action sections for next steps.

The current situation is that the new fan is on site and the crane to lift them into place has been booked for 4th and 5th October 2025. This fan is to replace the mild sheet fan that has corroded.

The existing fans were rebalanced in April or May 2025 which has resolved the vibration issues. The RPM was then returned to 800rpm.

It is not clear as to what created the imbalance that led to the vibration. Full understanding of how and why the stack operates must be understood by all relevant members of staff.

The Operators have implemented increased collection frequencies for the offal and effluent waste trailers to minimise the duration they remain on site, thereby reducing the risk of odour associated with the degradation of their contents.

Non- compliances
Section C2 General Management - Management system & operating procedures. "1.1.1 The operator shall manage and operate the activities: (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints;". You have been scored a **category 2 non-compliance (31 CCS points)** as the root cause and primary breach of the permit.

The environmental management system has not identified that the odour stack was not being maintained to the design standard for nearly 4 years. Failings to use the management system and the gaps in competency of the persons responsible for the stack's operation were also identified. It has been scored a CCS2 due to the significant amount of time this failing was able to continue and during the same period there were in excess of 100 reports of odour in the local community.

Required actions

Submit the timeline for completing the improvement to hang on extract arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels.
Due date: 10 October 2025

Submit the timeline for completing the improvement to lairage axial fan arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels.
Due date: 10 October 2025

Submit the timeline for completing the improvement to the ETP building extract fan arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels.
Due date: 10 October 2025

The Operator shall submit a report confirming the replacement of the mild steel fan in the main stack, its commissioning, and evidence that the main stack is now achieving the design extract capacity.
Due date: 31 October 2025

The Operator will demonstrate to the Environment Agency how they are balancing supply and extract rates across the internal processing areas.
Due date: 31 October 2025

Submit all inspection reports that have been carried out on the odour stack by third parties since its installation, submit copies of their findings to the Environment Agency.
Due date: 9 October 2025

The Operator shall develop and implement a formal procedure outlining the maintenance and management of odour abatement critical equipment on site. This procedure shall form part of the written management system, as required under Condition 1.1.1. The procedure shall, at a minimum, address the following topics:

- Maintenance strategy and approach.
- Planning and scheduling of maintenance activities, including follow-on tasks.
- Review and management of Planned Preventative Maintenance (PPM) schedules.
- Procedure review process, including responsible personnel and review frequency to ensure alignment with current best practice and site relevance.
- Criteria and triggers for initiating a procedure review.
- Roles and responsibilities within the maintenance and engineering teams, including organisational hierarchy.
- Identification and management of critical equipment and associated spare parts.
- Linkages to the maintenance reporting procedure.
- Review, assessment, and prioritisation of maintenance reports.
- Methodology for determining and reviewing maintenance frequencies.
- Definition and prioritisation of maintenance tasks.
- Criteria for identifying Environmentally Critical Equipment.
- Requirements for maintenance record-keeping, including level of detail, completion status and follow-up actions.
- Management of plant and equipment inventory.
- Review of historical maintenance reports to identify recurring issues (“bad actors”).

Due date: 31 October 2025.

Submit the revised Odour Management Plan to replace that currently listed in operating techniques Table S1.2.
Due date: 31 October 2025

Total non-compliance score

The total non-compliance score for this review is 31. The total CCS score for the year (2025) to date is 39, which makes you a Band D operator and means that your subsistence fee is currently 125% of the charge for 2026.

To understand how your band affects your scoring go to:
Waste operations and installations: assessing and scoring environmental permit compliance - GOV.UK

Directly applicable legislation

Not assessed.

Advice and guidance

Not applicable.

Enforcement response

In respect of the above non-compliance, we will consider what enforcement action is appropriate.

In conjunction with this CAR form, the Environment Agency has served a Notice under Regulations 36 and 61 of the Environmental Permitting Regulations. These Notices require you to:

- comply with Condition 1.1.1 of your permit, and
- provide specified information.

Failure to comply with either Notice constitutes a further offence.

Section 3- Enforcement Response	**Only one of the boxes below should be ticked**
You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence* and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below. *Non-compliance with **MSA, MSB & TCM** do not constitute an offence but can result in the service of a compliance, suspension and/or revocation notice.*	
Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.	
In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.	
We will now consider what enforcement action is appropriate and notify you, referencing this form.	X

Section 4- Action(s)			
Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.			
Criteria Ref.	**CCS Category**	**Action Required / Advised**	**Due Date**
See Section 1 above			
C2	C2	Submit the timeline for completing the improvement to hang on extract arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels. Due date: 10 October 2025 Submit the timeline for completing the improvement to lairage axial fan arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels. Due date: 10 October 2025 Submit the timeline for completing the improvement to the ETP building extract fan arrangements to allow unrestricted vertical discharge of emissions to atmosphere at high levels. Due date: 10 October 2025 The Operator shall submit a report confirming the replacement of the mild steel fan in the main stack, its commissioning, and evidence that the main stack is now achieving the design extract capacity. Due date: 31 October 2025 The Operator will demonstrate to the Environment Agency how they are balancing supply and extract rates across the internal processing areas. Due date: 31 October 2025 Submit all inspection reports that have been carried out on the odour stack by third parties since its installation, submit copies of their findings to the Environment Agency. Due date: 9 October 2025 The Operator shall develop and implement a formal procedure outlining the maintenance and management of odour abatement critical equipment on site. This procedure shall form part of the written management system, as required under Condition 1.1.1. The procedure shall, at a minimum, address the following topics: Maintenance strategy and approach. Planning and scheduling of maintenance activities, including follow-on tasks. Review and management of Planned Preventative Maintenance (PPM) schedules. Procedure review process, including responsible personnel and review frequency to ensure alignment with current best practice and site relevance. Criteria and triggers for initiating a procedure review. Roles and responsibilities within the maintenance and engineering teams, including organisational hierarchy. Identification and management of critical equipment and associated spare parts. Linkages to the maintenance reporting procedure. Review, assessment, and prioritisation of maintenance reports. Methodology for determining and reviewing maintenance frequencies. Definition and prioritisation of maintenance tasks. Criteria for identifying Environmentally Critical Equipment. Requirements for maintenance record-keeping, including level of detail, completion status and follow-up actions. Management of plant and equipment inventory. Review of historical maintenance reports to identify recurring issues ("bad actors"). Due date: 31 October 2025. Submit the revised Odour Management Plan to replace that currently listed in operating techniques Table S1.2. Due date: 31 October 2025	9/10/2025, 10/10/2025 & 31/10/2025

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence* and we may take legal action against you.

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.
- A civil sanction Enforcement Undertaking (EU) offer may also be available to you as an alternative enforcement response for this/these offence(s).

See our Enforcement and Civil Sanctions guidance for further information

A breach of permit condition **MSA, **MSB** & **TCM** is not an offence but may result in the service of a notice requiring compliance and/or suspension or revocation of the permit.*

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

MSA, MSB & TCM are conditions inserted into certain permits by Schedule 9 Part 3 EPR

MSA requires operators to manage and operate in accordance with a written management system that identifies and minimises risks of pollution.

MSB requires that the management system must be reviewed, kept up-to-date and a written record kept of this.

TCM requires the submission of technical competence information.

Section 6 – General Information

Data protection notice

The information on this form will be processed by the Environment Agency to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). The Environment Agency may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

The Environment Agency may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The Environment Agency will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within 28 days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If a permit holder disagrees with the CAR form, they should raise their concerns to the officer or team which issued the form. This must be done within 14 calendar days of receipt. If the response does not resolve the issue, a permit holder can request an appeal of the regulatory decision. This request must be made within 28 calendar days of receipt of the response. More details on our regulatory appeals process can be found at https://www.gov.uk/guidance/appeal-a-regulatory-decision-from-the-environment-agency.

If you are still dissatisfied, you can make a complaint to the Ombudsman. For advice on how to complain to the Parliamentary and Health Service Ombudsman phone their helpline on 0345 015 4033.

APPENDIX 6

creating a better place
for people and wildlife

[redacted]

Environment Agency

Our ref: EIR2025/44150
Your ref:
Date: 08 December 2025

Dear M[redacted]

RE: Environmental Information Regulations: EIR2025/44150

Thank you for your request for information regarding Environmental Permit Compliance at Pilgrim's Pride / Anwick Site, which we received on 26 November 2025.

We respond to requests for information that we hold under the Environmental Information Regulations 2004 (EIR). The Regulations requires that we respond to requests by advising you whether information is held or not, and if so by providing you with that information.

Information provided

I enclose response to your questions number 1 to 4:

1. Whether the EA holds records of all complaints received by telephone in relation to the site, and if so, confirmation that all telephone complaints are formally recorded; if not, a description of your process for handling telephone complaints.

Yes, the EA holds records of all reports of incidents attributed to Moy Park Anwick site. These are held within the national incident reporting system (NIRS).

2. How many odour-related complaints about the site have been received by EA (or referred to EA) in that period — broken down by year if possible.

2020 = 18
2021 = 12
2022 = 8
2023 = 0
2024 = 50
2025 = 35

3. Whether all complainants (telephone, email, forms or otherwise) are given a reference number or formal acknowledgement for their complaint.

All reports of incidents are given a reference number (a NIRS number) which is passed on to the reporter. The reporter will only get feedback if they request it when they report the incident.

4. How many times the Pilgrim's Anwick site has breached or failed to comply with its Environmental Permit during the same period (2020–2025). Please include:

- *The date of each breach or compliance failure,*
- *The nature of the breach (e.g. odour, emissions, discharge, permit-condition failure),*
- *Whether the breach resulted in enforcement action (e.g. notice, fine, variation), or remedial requirements,*
- *Copies of any related Compliance Assessment Reports (CARs), enforcement notices or correspondence referencing such non-compliance.*

Find enclosed the compliance assessment report forms that answer all the bullet points in question 4.

Enforcement action taken are site warnings for permit breaches and serving of two enforcement notices in September 2025.

Please refer to the Open Government Licence which explains the permitted use of this information.

The Environment Agency cannot disclose the names of individuals as this is personal data under the Data Protection Act 2018 (DPA 2018) and to disclose it would breach the First Data Protection Principle of the DPA 2018.

The information requested is therefore exempt due to Regulation 13(1) of the Environmental Information Regulations 2004, which explains that:

"To the extent that the information requested includes personal data of which the applicant is not the data subject, a public authority must not disclose the personal data if—

(a) the first condition is satisfied…"

The 'first condition' referred to above is further explained in Regulation 13(2A):

"The first condition is that the disclosure of the information to a member of the public otherwise than under these Regulations—

(a) would contravene any of the data protection principles…"

It is the view of the Environment Agency that the information requested relates to another person(s), and that its disclosure would therefore contravene the First Data Protection Principle of the Data Protection Act 2018.

The First Data Protection Principle requires that we are fair to individuals when we collect, hold and use their personal data. In this case it would be unfair to disclose

information that would identify individuals as those individuals have a reasonable expectation that such information held by the Environment Agency would remain confidential.

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for the Environmental Information Regulations 2004 and the Freedom of Information Act 2000. Please follow this link to the ICO online complaints portal. The address is: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510 Email: icocasework@ico.org.uk | Website: www.ico.org.uk

Yours sincerely,

Nicola Stone
LNA Area Customers and Engagement Team

To report environmental problems please visit www.gov.uk/report-environmental-problem or call the incident hotline on 0800 80 70 60

Please tell us how we did
To help improve your experience as a customer we are currently gathering feedback. If you would like to take part in a short customer satisfaction survey, please click the link below:
Environment Agency FOI Customer Satisfaction Survey

APPENDIX 7

Complaints

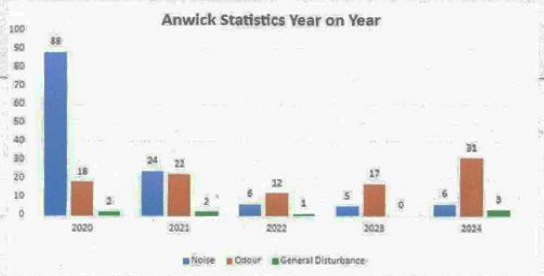
Nuisance Locations

Bus shelter between the shop and factory	1
Shop	2
Shop and Bus stop	1
Bus stop	1
Outside car showroom	1
Sleaford Rd Ruskington	1

Odour Locations

5 minutes away	7
Five minutes	1
East of site	2
The Gardens	5
Chapel Lane	2
Upwind	1
Downwind	1
Downward	2
500 metres	1
5-600 metres	1
250 metres	1
300 metres	1
School Crescent	1
St Ediths Close	1
In the village	1
next to building	1
in Anwick	1

The site have been working with the EA to look at improvements that could be made to ensure we do not stay on this rise trajectory in complaints. New Pest Management Plan and Odour Management Plan reviews are currently underway.



GO FOR ZERO

APPENDIX 8

From: [redacted]
Sent: Wednesday, November 26, 2025 2:29:14 PM
To: Cllr Mervyn Head <cllr_Mervyn_Head@n-kesteven.gov.uk>
Subject: Complaint about Pilgrim's Anwick

Complaint Statement

On Wednesday 26th November 2025 at 12:22pm, I telephoned Pilgrims regarding the deafening noise coming from a digger, which was operating on the site directly opposite the Anwick Community Centre. The noise was comparable to standing on an active building site, making it extremely difficult to hear or speak.
I selected option 1 and spoke to the receptionist, with my phone on loudspeaker. The receptionist immediately said she could barely hear me due to the noise of the digger—noise that was clearly audible through the trees at the end house on River Lane. She took my name and said someone would call me back. I explained that no one ever calls me back, as this has been my experience previously.

The receptionist stated that the noise was from "building work." I questioned why building work was taking place when the planning application has not yet been approved. She said she could not answer that.
When I asked for her name, she refused to give it. I then requested that the call be logged and asked for a reference number, as Pilgrims have previously said they issue these. At this point, the receptionist hung up on me. The call lasted 3 minutes and 2 seconds.

I was standing with Councillor Mervyn Head and his wife Judy at the time. The phone was on loudspeaker, and both of them heard the entire conversation. We had just left the weekly village warm space session.

Please can you escalate this as a matter of urgency.

Kind regards

[redacted]

APPENDIX 9

An online petition titled **“STOP the Biogas Plant in Anwick, Lincolnshire”** has been created on Change.org to demonstrate community opposition to the proposed anaerobic digestion/biogas facility. The petition outlines environmental, health, traffic, and quality-of-life concerns associated with the development and emphasizes the potential for negative impacts on the local landscape, air quality, watercourses, and surrounding communities. As of the latest available count, the petition has been **signed by approximately 1,216 members of the public**, reflecting substantial local and regional objection to the project.

www.change.org/p/stop-the-biogas-plant-in-anwick-lincolnshire

change.org My petitions Subscription Search Start a petition Log in

STOP the Biogas Plant in Anwick, Lincolnshire

1,217
Verified signatures

Sign this petition

First name

Last name

Email

Manchester, M15
United Kingdom

Yes! Tell me if this petition wins, and how I can help other relevant petitions

No, I don't want to hear about this petition's progress or other relevant petitions.

Sign petition

Do not display my name and comment on this petition

We process your information in accordance with our Privacy Policy and Terms of Service

3 Supporter Voices

The Issue

Stream Bioenergy's plan to construct a large regional industrial gas manufacturing plant (Anaerobic Digester) on prime agricultural farmland in the rural village of Anwick is devastating not only to our community but to the entire UK's environment. **The proposed AD plant will process chicken litter and food waste transported from across the East Midlands, and its environmental impact will be felt far beyond Anwick, affecting us all.**

Alarmingly, **the proposed site is located in an area that regularly floods,** posing significant environmental and logistical risks that could worsen as the plant is developed. This site's vulnerability to flooding only adds to the grave concerns surrounding its long-term environmental viability.

Chicken litter, a byproduct of factory farming, is often misleadingly portrayed as a green energy solution, yet its use **has led to disastrous environmental consequences across the UK. Its application has polluted vital waterways such as the River Wye in England and Lough Neagh in Northern Ireland,** contributed to degraded soils, and released harmful greenhouse gases that exacerbate climate change. The widespread use of **chicken litter not only fuels harmful industrial poultry farming practices but also raises serious ethical concerns about animal welfare and ecological destruction across the UK, with consequences that affect us all, regardless of where we live.**

This is not just an Anwick fight—it's a fight for all of us. The repercussions of this project will extend far beyond the borders of our village, impacting the health of our environment, our communities, and future generations

APPENDIX 10

COMPARATOR ANALYSIS: CAPACITY DISCLOSURE AND ENGINEERING TRANSPARENCY

DIMENSION	MONAGHAN (STREAM BIOENERGY)	ANWICK (STREAM BIOENERGY)	MANBY (COMPARATOR – GOOD PRACTICE)	SPALDING (GRANGE FARM – EIA SCHEME)	WHY THIS MATTERS (EIA / REG 25 SIGNIFICANCE)
Number of digesters	6 shown on GA drawings	8 tanks labelled "digester tanks"	9 digesters disclosed	1 elongated low-profile digester	Defines process architecture and scale; higher tank count indicates higher potential throughput.
Digester diameters & heights	Not disclosed	Disclosed	**Disclosed**	Disclosed (100.9 m × 26 m × 7.8 m overall)	Physical scale known, but without functional clarity capacity cannot be verified.
Functional purpose of each tank	Not defined	Not defined	**Defined (primary, secondary, post-digestion, etc.)**	Defined (single digestion channel)	Without functional definition the Authority cannot determine staging vs capacity headroom.
Digester working volumes	Not disclosed	Not disclosed	**Disclosed**	Not explicitly stated but inferable	Dimensions alone do not establish usable capacity.
Hydraulic Retention Time (HRT)	Not disclosed	Not disclosed	**Disclosed**	Not disclosed	HRT determines throughput and stability.
Organic Loading Rate (OLR)	Not disclosed	Not disclosed	**Disclosed**	Not disclosed	OLR controls yield, odour risk and stability.
Feedstock density assumptions	Not disclosed	Not disclosed	**Disclosed**	Partially described	Density drives daily tonnage and traffic impact.
Dilution / water balance	Not disclosed	Not disclosed	**Disclosed**	Partially described	Determines digestate volume and drainage risk.
Capacity reconciliation (plant vs tpa)	Not possible	Not possible	**Possible**	Broadly inferable	Authority cannot verify plant vs declared throughput.
Ancillary tanks dimensioned	Yes (selective)	Yes (partial)	**Yes**	Yes	Selective precision indicates controlled disclosure.
Process flow diagrams	Legible but limited	Narrative-led / schematic	**Detailed**	Simple and legible	Upset and peak scenarios cannot be tested without full flows.
Gas upgrading / CHP detail	Shown	Narrative	**Detailed**	Detailed	Indicates industrial intensity.
Internal HGV routing & tracking	Shown / tracked	Narrative assurances	**Tracked**	Tracked	Necessary to test stacking and conflict risk.

Weighbridge configuration	Defined	Narrative (incl. contingency)	**Defined**	Defined	Affects queuing and residence time.
Reception hall lane capacity	Defined	Narrative (4 lanes)	**Defined**	Defined	Determines backlog risk.
Defined upper capacity bound	No	No	**Yes**	Yes (implicit)	Without functional definition, upper capacity is unknown.
Ability to assess worst case	Constrained	Constrained	**Yes**	Yes	EIA requires worst-case assessment.
Transparency standard	Medium (visual, not functional)	Low (dimensional, not functional)	**High (auditable)**	High (simple, intelligible)	Knowing size without purpose is controlled ambiguity.

Interpretive Note – Capacity Disclosure, Functional Opacity and Legal Risk

This comparative analysis demonstrates a clear and troubling pattern. At **Manby**, both the physical size and functional role of each digestion tank are fully disclosed, enabling transparent reconciliation between installed plant, process design and declared throughput. At **Spalding**, a single modest digester is clearly defined and has nonetheless been determined by the County Council to constitute **EIA development**. By contrast, at **Anwick** the applicant discloses the physical dimensions of eight large digesters but withholds their functional definition, while at **Monaghan** the dimensions themselves are withheld. The common consequence in both Stream BioEnergy schemes is that **capacity arithmetic is prevented and the true operational envelope cannot be verified**. This is not a neutral omission: it frustrates worst-case assessment, undermines the integrity of the EIA envelope, and prevents the Authority from discharging its duty under the EIA Regulations and the Tameside principle to properly understand the development it is being asked to approve. The Authority is therefore being invited to grant consent for an industrial installation whose **scale is known but whose operational meaning is not**. That is not a lawful basis for determination.

Key Findings

Functional opacity at Anwick

Although tank diameters and heights are disclosed, the applicant does not define the operational role of each vessel. The Authority is therefore unable to determine whether these are parallel digesters, phased digesters, buffer stages, or future capacity headroom.

Scale without definition
Physical size without functional explanation prevents verification of throughput and worst-case impacts. The development envelope remains undefined.

Selective disclosure pattern (Monaghan & Anwick)
Monaghan omits dimensions; Anwick provides dimensions but omits purpose. The common feature is that in both cases, **capacity arithmetic is prevented**.

Comparator control (Manby)
Manby defines both size and function, enabling full capacity reconciliation. This confirms that such disclosure is standard, normal and readily available.

EIA benchmark (Spalding)
Spalding discloses a single, simple digester of modest scale, yet has been determined by the County Council to constitute **EIA development**. This establishes a clear benchmark for significance and scrutiny.

Public law consequence
The Authority cannot discharge the **Tameside duty** or comply with the **EIA Regulations** where the functional role of the principal process vessels is unknown.

CONCLUSION

At Anwick, the applicant discloses the **physical size** of the digestion tanks but withholds their **functional definition**. This creates an illusion of transparency while preventing verification of true processing capacity.

When contrasted with:

- **Manby**, where full size and function are disclosed and auditable; and
- **Spalding**, where a single modest digester in open countryside has been determined to require full EIA,it becomes clear that the Anwick proposal represents an **anomalous and legally unsafe level of opacity**.

The Authority is therefore being asked to grant consent for an industrial envelope whose scale is known but whose operational meaning is not. That is not a lawful basis for determination.

APPENDIX 11

READING AGRICULTURAL CONSULTANTS

May 2023

Planning Application for Anaerobic Digester and Fertiliser Production Plant

Environmental Statement

at

Manby Airfield
Manby
Near Louth
Lincolnshire
LN11 8SU

Beechwood Court
Long Toll
Woodcote
RG8 0RR

01491684 233
reading-ag.com

6 Site Selection (Alternatives)

6.1.1 Schedule 4 of the EIA Regulations requires that an outline of the main alternatives (to the Proposed Development) considered by the Applicant should be set out in the ES.

6.1.2 The planning application seeks permission for the construction of an AD and fertiliser manufacturing plant. The experience gained in more than a decade of developing waste management and biogas projects across the UK and Ireland has meant that the applicant has appropriate knowledge when considering the best location of an installation of this type. As the applicant does not own any land in the UK, it has been necessary to approach private landowners of suitable sites.

6.2 Options Appraisal

6.2.1 In order to fully assess which of the available sites would be most suitable for the installation, an options appraisal on the available sites was undertaken. An options appraisal is a decision-making tool used to define objectives, identify ways in which they can be achieved and examine all the important factors which have a bearing on the siting of a development before taking a decision on implementing a project.

6.2.2 There are a number of critical questions which must be considered when examining appropriate sites for the development of a large centralised anaerobic digestion facility:

- the feedstock which is going to be processed and whether it can be sourced in appropriate quantities;
- whether the site is suitably located to avoid environmental impacts on sensitive local receptors;
- whether the local highway network is suitable to manage the proposed number of traffic movements; and
- whether there is a suitable point nearby to connect to the gas grid which could accept the proposed biomethane flows.

6.2.3 The above selection are the initial 'scoping' elements when considering a site. Once these have been reviewed there are other questions which need to be asked by the developer:

- are there other similar projects nearby;
- have there been similar project proposals in the locality, and why;
- are other renewables (wind and solar) developed in the area;
- are the local skillsets available to support and operate such a proposal; and
- are the local representatives of the community, social networks and businesses in favour of supporting such developments.

Developing the Options

6.2.4 The options available to the applicant are as follows:

- do nothing;
- develop the proposed site at Manby Airfield; and
- develop another site.

Do Nothing

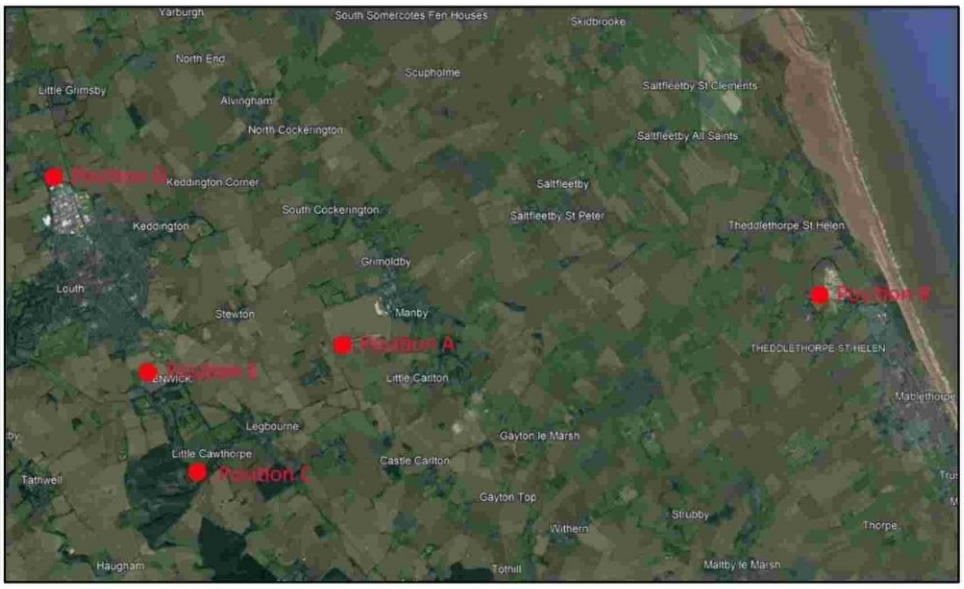
6.2.5 The 'do nothing' would be of no benefit to the applicant as their interests are only as the developer and operator of the Proposed Development. They are not the landowners nor are they the suppliers of the feedstock and as such there is no benefit for them in not progressing the project. With regards to the landowner, it is reasonable to assume that the proposed development area would continue to be farmed in a similar fashion as is currently the case. As for the suppliers of feedstock, it is also reasonable to assume that manures and straw to continue to be used in the same way it is currently, without any of the climate change and sustainability benefits mentioned above. As such, in terms of the options available, the do-nothing approach could see an increase in environmental impacts associated with the development compared to other options.

Assessment of Alternative Sites Including the Proposed Site

6.2.6 The various sites for the Proposed Development which have been considered by the applicant are detailed in Table 6.1 below. Alternative sites have been restricted to those which would still realistically meet the operational needs of the Proposed

Development subject of this planning application. The position of the various alternative options are shown in Figure 6.1 and detailed in Table 6.1 below.

Figure 6.1: Location of Alternative Sites



6.2.7 The various sites have been ranked according to their suitability, with 1 being the most suitable, and the highest number (for example 5) the least suitable.

Table 6.1: Ranking of Alternative Sites

Site	Strengths	Weaknesses	Ranking
Manby Airfield (Position chosen) (Position A)	• good highway access from the site to the national road network. Especially the A16/A1028 connecting the north and south of Lincolnshire. • good access to local feedstock resources. The site has a beef finishing unit adjacent to the site and another nearby. A large number of broiler and egg laying units in the area to provide poultry litter feedstock. A large number of arable producers in the area with surplus straw and providing a ready market for fertilisers.	• the local topography is flat increasing the risk of visual impact; • although unlikely to be affected by noise and odour from the Proposed Development, the residents of Manby Village and other rural residential receptors are likely to raise concerns.	**1**

Site	Strengths	Weaknesses	Ranking
	• the gas connection is only 2.8km to the south west of the site. • sensitive residential receptors to noise and odour are more than 750m away limiting any impacts; • there are a limited number of other sensitive environmental receptors nearby.		
Theddlethorpe Gas Terminal (Position B)	• good access to the gas grid through existing infrastructure, even though the site currently unused.	• road network is not suitable to handle the Heavy Goods Vehicles. Poor access connections to national road network and location on the coast means it is not central to resources needed to supply the AD plant, or the market for fertiliser. • the site is close to several large holiday home parks and other residential receptors; • close proximity to the sea raises risk of flooding; • close proximity to Humber Estuary SSSI/SAC/SPA/ Ramsar site and Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar site; and • the local topography is flat increasing the risk of visual impact.	**2**
Little Cawthorpe AGI (Position C)	• good access to the gas network through the existing about ground connection points; and • surrounding Woodland provides good visual screening.	• the local highway network (Haugham Pastures) is not suitable for HGV's. • the site is in close proximity to residential receptors including Little Cawthorpe Village, Hotel Complex and Golf Course and Kenwick Lodges.	**4**
Land north of Louth at Fairfield Industrial	• Very good highway access from the site to the national road network -	• immediately neighbouring businesses likely to be impacted by odour and	**3**

Site	Strengths	Weaknesses	Ranking
Estate (north west corner) (Position D)	A16/A1028 connecting the north and south of Lincolnshire. • good access to local feedstock resources. Cattle manure and a large number of broiler and egg laying units in the area to provide poultry litter feedstock. A large number of arable producers in the area with surplus straw and providing a ready market for fertilisers.	noise associated with the Proposed Development; • nearby residential receptors to the north of the site; • site is distant from the gas main and the costs associated with building an interconnecting pipeline would leave the project economically unviable.	
Land south of Louth at South Field Farm (Position E)	• good access to local feedstock resources. The site has a beef finishing unit adjacent to the site and another nearby. A large number of broiler and egg laying units in the area to provide poultry litter feedstock. A large number of arable producers in the area with surplus straw and providing a ready market for fertilisers.	• the site is in close proximity to residential receptors surrounding the farm on all sides; • despite being in close proximity to A16, poor local highway access to national highway network; • Proposed Development would have a significant visual impact on nearby visual receptors; and • Sloping sit requiring large amount of earthworks.	**5**

6.3 Results of Site Selection Process

6.3.1 In light of the forgoing options appraisal, it is clear that Position A, the site at Manby Airfield, is the most suitable for the operation of the Proposed Development. Although other positions are better located for highway access or gas grid connections, all of the alternatives assessed have significant weaknesses which would likely result is significant environmental effects.

7 Air Quality, Odour, Ammonia and Dust

7.1 Introduction

7.1.1 This Environmental Statement (ES) chapter reports the potential effects on air quality from the construction and operation of the proposed anaerobic digestion and fertiliser production facility at Manby Airfield, Manby, Louth, Lincolnshire. LN11 8SU (Proposed Development). The assessment of effects uses computer modelling to assess the impact of air emissions from: the air scrubbers and odour control units which serve the manure storage building, the separator process and the digestor drying process; and the exhaust stacks of the Combined Heat and Power (CHP) units at the Proposed Development.

7.1.2 Ammonia emissions from the stacks that serve the air scrubbers and Odour Control Units (OCUs) that are used to treat ventilated air from the manure storage building, the separation process and the digestate drying processes have been estimated based on the designed air flow rates and the designed abatement levels of the air scrubbers/ OCUs.

7.1.3 Emissions of nitrogen oxides (NOx), particulate matter (PM10) and sulphur dioxide (SO2) from the stack serving the CHPs have been assessed and quantified based upon data supplied to AS Modelling & Data Ltd. by the suppliers of the CHPs, 2G Energy Ltd, and Emissions Limit Values.

7.1.4 The emission rates so obtained have then been used as inputs to an atmospheric dispersion and deposition model which calculates ammonia exposure levels and nitrogen and acid deposition rates in the surrounding area.

7.2 Competent Experts

Steven George Smith. Meteorologist/Dispersion Modeller

7.2.1 Qualifications - Advance Level GCEs in Chemistry, Physics, Biology and Pure Mathematics; Higher National Certificates in Physics, Mathematics, Statistics and FORTRAN programming. UK Meteorological Office's Initial and Advanced Forecasting Courses and other UK Meteorological Office courses which included the study of

boundary layer physics, micro-meteorology, numerical weather prediction models and climatology.

7.2.2 Career History - UK Meteorological Office from 1982 to 2013, initially as an Assistant Scientific Officer in the Central Forecasting Office and then as an Assistant Scientific Officer/Scientific Officer in the radio-sonde program at various locations around the UK. From 1991, Scientific Officer/Higher Scientific Officer, working as a weather forecaster at various civil and military sites around the UK and before transferring from forecasting in 2007, working as Senior Forecaster for Northern England and Senior Aviation Forecaster for the UK. 2007, transferred into the Met Office Rural Environment Team as a Senior Scientist, working primarily on dispersion and deposition modelling of pollutants from agricultural sources. Since April 2013 director of AS Modelling & Data Ltd. which specialises in dispersion and deposition modelling of pollutants from agricultural sources.

Philip Richard Edgington. Dispersion Modeller

7.2.3 Qualifications - Advance Level GCEs in Maths, History and Geography; BSc (2:1 Hons) in Geography and Surveying and Mapping Science; MSc (Merit) in Geographical Information Science courses. UK Meteorological Office's in numerical weather prediction and climatology.

7.2.4 Career History - Schlumberger Geco Prakla from 1998 to 2001 as a positioning specialist on a marine seismic crew. Cork International from 2001 to 2003, as Territory Planner, providing work force planning, optimised routes and retail store profiling. University of Derby from 2003 to 2008, as GIS Technician, providing demonstrations and technical expertise to support teaching and research and consultancy for flood risk assessments. ADAS from 2008 to 2012, Environmental Informatics Team as Geographical Information Science Consultant, focussing on spatial modelling, analysis and presentation for a wide range of projects including drinking water safety assessments, agricultural landbank for agricultural or industrial waste, research into agricultural techniques and diffuse pollution, pluvial flood risk modelling, priority habitat assessment. UK Meteorological Office from 2012 to 2016, Met Office Rural Environment Team as Scientist, working primarily on the dispersion and deposition of pollutants, principally from agricultural sources. Since 2016; AS Modelling & Data Ltd.

as Dispersion Modeller, specialising in dispersion and deposition modelling, principally from agricultural sources.

7.3 Legislative and Policy Framework

Legislation

7.3.1 The Department for the Environment, Food & Rural Affairs (Defra) and the Environment Agency (EA) published, in February 2016 (Last update February 2022), the EA guidance titled *Air emissions risk assessment for your environmental permit*[16]. This outlines the EA requirements for assessing the impact of emissions and the standards that must be met.

7.3.2 For the purposes of this assessment, the limit values for protected conservation areas from this guidance and *The Environmental Permitting (England and Wales) Regulations 2016*[17] have been used. This guidance effectively transposes into English law the requirements of the *European Union directive 2008/50/EC Ambient Air Quality Directive*. The Defra/EA guidance limit values are shown in Table 7.1 (ecological receptors).

7.3.3 The current *UK Clean Air Strategy* (CAS)[18] was published in 2019 and set out objectives for local authorities in undertaking their local air quality management duties. The CAS establishes the framework for air quality improvements. The strategy is based upon measures agreed at the national and international level. The role of the local authority review and assessment process is to identify all those areas where the air quality objectives are being, or are likely to be, exceeded.

7.3.4 For the purposes of this assessment, the limit values set out in the *Air Quality Standards Regulations 2010*[19] and the objective levels specified under the current UK CAS have been used. The *Air Quality Standards Regulations 2010* transpose into English

[16] Environment Agency. Air emissions risk assessment for your environmental permit. https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit
[17] UK Government. The Environmental Permitting (England and Wales) Regulations 2016 *https://www.legislation.gov.uk/uksi/2016/1154/contents/made*
[18] UK Government. UK Clean Air Strategy (CAS) https://www.gov.uk/government/publications/clean-air-strategy-2019
[19] UK Government. Air Quality Standards Regulations 2010 https://www.legislation.gov.uk/uksi/2010/1001/contents/made

law the requirements of the European Directives 2008/50/EC and 2004/107/EC on ambient air quality. The relevant *Air Quality Standards Regulations 2010* objectives levels and Environmental Assessment Levels (EALs) for the purposes of environmental permitting are shown in Table 7.2.

Table 7.1: Defra/EA Guidance - target Levels for Ecological Receptors

Pollutant	Limit values (mean)	Averaging period
Nitrogen oxide (as NO_2)	30 µg/m^3	Annual mean
Nitrogen oxide (as NO_2)	75 µg/m^3	Daily mean
Sulphur dioxide	20 ug/m^3	Annual mean
Nutrient nitrogen deposition	Dependent upon location	Annual mean
Acid deposition	Dependent upon location	Annual mean
Ammonia	1 to 4 µg/m^3 (dependant on site sensitivity)	Annual mean

Table 7.2: Defra/EA Guidance - Target Levels for Human Health Receptors

Pollutant	Air Quality Objective Concentration	Averaging period
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate matter (PM_{10})	50 µg/m^3 not to be exceeded more than 35 times a year	1-hour mean
	40 µg/m^3	Annual mean
Sulphur dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
Carbon Monoxide (CO)	10.0 mg/m^3	Maximum daily running 8-hour mean
VOCs (Benzene)	5 µg/m^3	Annual mean

National Planning Policy

7.3.5 The *National Planning Policy Framework* (NPPF)[20] guidance requires that the relevant planning authority works on the assumption that such pollution control regimes will operate effectively.

[20] UK Government. National Planning Policy Framework. https://www.gov.uk/government/publications/national-planning-policy-framework--2

Local Planning Policy

7.3.6 East Lindsey Local Plan[21] states:

> *"East Lindsey District Council is committed to being a strong partner in protecting the natural environment for residents and visitors. The environment is one of the three pillars of sustainability and should be equally balanced alongside economic and social considerations to achieve positive change across the District. The Council recognises the impact of its own operations and is committed to using its powers and influence to minimise and address this while supporting others to do the same. This Environment Policy provides a framework from which more detailed strategic documents and project plans will be developed. It sets out four key themes that provide the context for the Council as it works to deliver the corporate aim of adapting to meet the challenge of a changing natural environment:"*
>
> *"Ensure development proposals maximise opportunities to retain, protect and enhance biodiversity."*

Standards and Guidance

Environment Agency Criteria (for Intensive Farming)

7.3.7 The Environment Agency webpage titled *Intensive farming risk assessment for your environmental permit*[22], contains a set of criteria, with thresholds defined by percentages of the Critical Level or Critical Load, for: internationally designated wildlife sites (Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites); Sites of Special Scientific Interest (SSSIs) and other non-statutory wildlife sites. The lower and upper thresholds are: 4% and 20% for SACs, SPAs and Ramsar sites; 20% and 50% for SSSIs and 100% and 100% for non-statutory wildlife sites. If the predicted process contributions to Critical Level or Critical Load are below the lower threshold percentage, the impact is usually deemed acceptable.

[21] The Environment Agency. Intensive farming risk assessment for your environmental permit. https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit

[22] Available online at: https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit

7.3.8 If the predicted process contributions to Critical Level or Critical Load are in the range between the lower and upper thresholds; 4% to 20% for SACs, SPAs and Ramsar sites; 20% to 50% for SSSIs and 100% to 100% for other non-statutory wildlife sites, whether or not the impact is deemed acceptable is at the discretion of the Environment Agency. In making their decision, the Environment Agency will consider whether other installations might act in-combination and the sensitivities of the wildlife sites. In the case of LWSs and AWs, the Environment Agency do not usually consider other that may act in-combination and therefore a PC of up to 100% of Critical Level or Critical Load is usually deemed acceptable for permitting purposes and therefore the upper and lower thresholds are the same (100%).

Natural England Advisory Criteria

7.3.9 Natural England are a statutory consultee at planning and usually advise that, if predicted process contributions exceed 1% (or lower in some circumstances) of Critical Level or Critical Load at a SSSI, SAC, SPA or Ramsar site, then the local authority should consider whether other installations might act in-combination or cumulatively with the development and the sensitivities of the wildlife sites. However, recent correspondence from Natural England in other cases suggests that a 4% threshold is still used for SSSIs not otherwise designated as a SAC, SPA or Ramsar site.

Environment Agency and Natural England May 2022 Air Quality Risk Assessment Interim Guidance

7.3.10 Although it seems important to include a reference to this document, it appears to be primarily a discussion document about internal Environment Agency screening models and the SCAIL model and AS Modelling & Data Ltd. have been unable to draw any conclusions from the document as to what thresholds may or may not apply, nor in what circumstances the threshold may or may not apply.

Joint Nature Conservancy Committee - Guidance on Decision-making Thresholds for Air Pollution

7.3.11 In December 2021, the Joint Nature Conservancy Committee (JNCC) published a report titled, *Guidance on Decision-making Thresholds for Air Pollution*[23]. This report provides decision-making criteria to inform the assessment of air quality impacts on designated conservation sites. The criteria are intended to be applied to individual sources to identify those for which a decision can be taken without the need for further assessment effort. The Decision-Making Thresholds (DMT) for on-site emission sources provided in the JNCC report are reproduced below:

- for lichens and bryophytes - 0.08%, 0.20%, 0.34% and 0.75% of the Critical Level for high, medium, low and very low development density areas, respectively;
- for higher plants - 0.08%, 0.20%, 0.34% and 0.75% of the Critical Level for high, medium, low and very low development density areas, respectively;
- for nitrogen deposition to woodland (Critical Load 10 kg-N/ha/y) - 0.13%, 0.34%, 0.57% and 1.30% of the Critical Level for high, medium, low and very low development density areas, respectively; and
- for nitrogen deposition to grassland (Critical Load 10 kg-N/ha/y) 0.09%, 0.24%, 0.40% and 0.88% of the Critical Level for high, medium, low and very low development density areas, respectively.

7.3.12 Note that 'development density' is defined as, the assumed number of additional new sources below the DMT within 5 km of the proposed development over 13 years: very low density being 1 development; low 5 developments; medium 10 developments and high 30 developments.

7.3.13 Subject to some exceptions, where the process contribution from an on-site source is below the DMT, no further assessment is required. Where the process contribution exceeds the DMT there are two possible outcomes:

[23] Joint Nature Conservancy Committee. Guidance on Decision-making Thresholds for Air Pollution. https://hub.jncc.gov.uk/assets/6cce4f2e-e481-4ec2-b369-2b4026c88447

- where site-relevant thresholds have been derived these can be applied to see if it is possible to avoid further assessment effort on the basis of site specific circumstances; and
- if site-relevant thresholds have not yet been derived, further assessment in combination with other plans and projects is required.

7.4 Methodology

General Approach

7.4.1 Ammonia emissions have been estimated on the designed air flow rates (based on 3 air changes per hour per building) and the designed abatement levels of the air scrubbing units (a maximum ammonia concentration of 2.0 ppm).

7.4.2 Emissions of nitrogen oxides (NO_X) and sulphur dioxide (SO_2) from the stack serving the combined heat and power units (CHPs) have been assessed and quantified based upon data supplied to AS Modelling & Data Ltd. by the suppliers of the CHPs, 2G Energy Ltd. and Emissions Limit Values.

7.4.3 Odour emissions have been estimated on the designed air flow rates (based on 3 air changes per hour per building) and the designed abatement levels of the odour control units (a maximum odour concentration of 500.0 ou_E/m^3).

7.4.4 The emission rates so obtained have then been used as inputs to an atmospheric dispersion model which calculates exposure levels in the surrounding area. The levels predicted by the dispersion model are assessed against any relevant thresholds.

7.4.5 Full descriptions of the modelling methodologies are available in the following AS Modelling & Data Ltd. reports:

- An Assessment using Dispersion Modelling of the Impact of Airborne Emissions from the Combined Heat and Power Units at the Proposed Anaerobic Digestion and Fertiliser Production Facility at Manby Airfield, near Manby in Lincolnshire (Appendix 7.1);
- A Report on the Modelling of the Dispersion and Deposition of Ammonia from the Proposed Air Scrubbers Serving the Reception Building, the Digestate Separation Building and Drying Equipment Building and Process Air at the

Proposed Anaerobic Digestion and Fertiliser Production Facility, at Manby Airfield near Manby in Lincolnshire (Appendix 7.2); and

- A Report on the Modelling of the Impact of Odour from the Proposed Odour Control Units Serving the Air scrubbers on the Reception Building, the Digestate Separation Building and Drying Equipment Building and Process Air at the Proposed Anaerobic Digestion and Fertiliser Production Facility, at Manby Airfield near Manby in Lincolnshire (Appendix 7.3).

Assessment Methodology

Ecological Receptors

7.4.6 A detailed assessment of the effects on ecological receptors in provided in Chapter 8 Ecology and Biodiversity.

Human health receptors

7.4.7 Where comment on the significance of the impact of emissions is made, it is based upon guidance contained in an Environmental Protection UK publication titled *Land Use Planning & Development Control: Planning For Air Quality*[24] (January 2017). It should be noted, however, that the final judgment on significance is made by the local authority's air quality specialist. The definitions of impact of magnitude for changes in pollutant concentration as a percentage of the assessment level and predicted concentration for an annual mean are provided in Table 7.3. Impact descriptors in brackets have been included to provide assessment continuity with the rest of the ES.

[24] *Land Use Planning & Development Control: Planning For Air Quality* (January 2017) https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf

Table 7.3: Air Quality Impact Descriptors for Changes to Annual Mean Concentrations

Average concentration. (as percentage of Predicted Environmental Concentration)	Change in concentration. (Process Contribution as percentage of Environmental Assessment Level)			
	<1	>=1 and <5	>=5 and <10	>10
<75	Negligible (neutral)	Negligible (neutral)	Slight	Moderate
>=75 to <95	Negligible (neutral)	Slight	Moderate	Moderate
>=95 to <103	Slight	Moderate	Moderate	Substantial (very large)
>=103 to <110	Moderate	Moderate	Substantial (very large)	Substantial (very large)
>=110	Moderate	Substantial (very large)	Substantial (very large)	Substantial (very large)

Odour receptors

7.4.8 In April 2011, the Environment Agency (EA) published *H4 Odour Management guidance (H4)*[25]. In Appendix 3 of this document - Modelling Odour Exposure, benchmark exposure levels are provided. The benchmarks are based on the 98th percentile of hourly mean concentrations of odour modelled over a year at the site/installation boundary. The benchmarks are:

- 1.5 ouE/m3 for most offensive odours;
- 3.0 ouE/m3 for moderately offensive odours; and
- 6.0 ouE/m3 for less offensive odours.

7.4.9 Any modelled results that project exposures above these benchmark levels, after taking uncertainty into account, indicates the likelihood of unacceptable odour pollution.

7.4.10 Odours from the odour control units that would be used to abate odour emissions from the manure storage building, the separation process and the digestate drying process may, as they are expected to be similar to well aerated green waste

[25] H4 Odour Management guidance (H4). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/296737/geho0411btqm-e-e.pdf

composting, be considered in the moderately offensive category. Therefore, for this study, the Environment Agency's benchmark for moderately offensive odours, a 98th percentile hourly mean of 3.0 ou_E/m^3 over a one year period, is used as the baseline to assess the impact of odour emissions from the anaerobic digestor and fertiliser production process at potentially sensitive receptors in the surrounding area.

7.4.11 The descriptors in Table 7.4 and Table 7.5 below are suggested as a means to assess the likely impact of odours. However, it should be noted that odours may be perceived differently by individuals and that there is a large range of olfactometric acuity in humans. Additionally, at some receptor locations it may be more important to protect amenity than others, with residential receptors likely to be most sensitive and areas unlikely to be frequented, farmland for example, the least sensitive. For receptors between most sensitive residential and least sensitive, the nature and frequency of the use should be considered, for example, although both commercial, a fuel station might be considered less sensitive than a restaurant.

Table 7.4: Suggested Receptor Sensitivity Descriptors for Odour

Value of receptor/resource	Examples
Very High	Residences. Hospitals.
High	Amenity areas. Sensitive commercial properties, e.g. restaurants and offices
Medium	Commercial properties e.g. warehousing and industrial. Footpaths and roadways within settlements
Low	Footpaths and roadways outside settlements
Very Low	Farmland

Table 7.5: Suggested Impact Descriptors for Odour

Value of receptor/ resource	Odour exposure				
	Exposure <10% of Baseline	Exposure <50% of Baseline	Baseline	>2x Baseline	>3x Baseline
Very High	Neutral	Slight	Slight	Large or moderate	Very large
High	Neutral	Neutral	Slight	Slight or Moderate	Large
Medium	Neutral	Neutral	Neutral	Slight	Moderate
Low	Neutral	Neutral	Neutral	Slight	Slight
Very Low	Neutral	Neutral	Neutral	Neutral	Neutral

7.4.12 It should be noted that the suggested descriptors in the table above are purely the subjective opinion of the author, but this is also true of any other descriptors that might be published.

Consultation/Engagement

7.4.13 The scooping opinion requires the following:

> *"An assessment of the potential effects, arising from the development, on air quality both during the construction and operation of the development should be undertaken. The assessments should be prepared and reflect the approach and methodology as set out in section entitled 'Environmental Topic - Odour, Dust, Ammonia and other Emissions' of the Scoping Request".*

7.5 Assessment Assumptions and Limitations

Ecological receptors

7.5.1 A detailed assessment of the effects on ecological receptors in provided in Chapter 8 Ecology and Biodiversity.

Air quality

7.5.2 For human health receptors, The Environmental Protection UK Land Use Planning & Development Control: Planning For Air Quality (January 2017) descriptors for significance are only applicable to long term targets. For short term targets, it is assumed that emission would only be significant if the EAL is exceeded and that emissions that do not contribute a major proportion of the EAL are negligible. For permitting purposes for short term EALs is normally assumed that a process contribution of less than 10% is of the EAL is insignificant.

7.5.3 Conversion rates of NO_x to NO_2 are an estimate, but are likely to be rather precautionary.

Odour

7.5.4 Whilst the 98th percentile hourly mean statistic provides a good indication of frequency, duration and intensity of odours and is used in all UK guidance and is the basis of most epidemiological studies of the impacts of odour, it is primarily intended for used where emission a chronic and does not adequately cover acute emissions. The EA H4 guidance is simple and does not stray into the realm of subjective opinion or provide any comment on the effect on amenity, merely a level below which odour exposure is likely to be acceptable which is based on epidemiological studies. The

descriptors suggested in Table 7.4 and Table 7.5 are purely the subjective opinion of the author, but this is also true of any other descriptors that might be published.

Study Area

7.5.5 For ecological receptors, a 10 km radius is considered to be the standard screening distance for statutory wildlife sites and conforms with Natural England's "zones of influence". A 2 km radius is the standard screening distance for non-statutory wildlife sites. It is considered that both are suitable for the emissions from a development of this scale. However, as previously noted there is considerable disagreement amongst various regulators and interested parties about significance of effects and this disagreement does extend into what are suitable screening distances.

7.5.6 For human health and odour a selection of key receptors within approximately 1.5 km has been made. There is very little chance of any significant exposure outside this area; however, contour plots that extend beyond this area and provide predicted exposures in areas not covered by the discrete receptors are provided in in Figures A2a to A2h in Annex 1 of the air quality modelling report (Appendix 7.1) and Figure 6 of the odour modelling report (Appendix 7.3).

7.6 Identification of Baseline Conditions

Source of background levels

Background Ammonia Levels and Nitrogen and Acid Deposition

7.6.1 The source of the background figures is the *Air Pollution Information System*[26] (APIS), March 2023, source attribution data 2017 - 2019). It should be noted that the APIS background levels used are an average over a 5 km grid square (they are also modelled values, they are not measured in any way and no particular sources are included explicitly in the sources attribution data). Ammonia levels vary markedly over relatively short distances and the APIS website itself notes that, the background values cannot be considered representative on any particular location within the 5 km grid square.

[26] Air Pollution Information System. https://www.apis.ac.uk

7.6.2 The most recent 1 km resolution data from APIS is not used as there is, as yet, no proper documentation of the processes used to derive the data and AS Modelling & Data Ltd. has considerable doubts about the veracity of these data, particularly as there is no source data that could be used to derive 1 km resolution data (the source attribution data is stated to be at 0.1 degree resolution, approximately 10 km). It should be noted that ammonia levels vary markedly over relatively short distances and large sources that should be apparent at 1 km resolution (if the 1 km data were valid) are not apparent. Additionally, there are marked differences to the older 5 km resolution data that are thus far unexplained and do not appear to have any rational explanation.

7.6.3 The APIS figures for background ammonia concentration (annual mean) in the area around Manby Airfield is 2.03 µg-NH_3/m^3. The background nitrogen deposition rate to woodland is 31.55 kg-N/ha/y and to short vegetation is 18.48 kg-N/ha/y. The background acid deposition rate to woodland is 1.94 keq/ha/y and to short vegetation is 1.04 keq/ha/y.

Background NO_2 and SO_2 Levels

7.6.4 The background levels are obtained from the Defra website, *Local Air Quality Management (LAQM) support pages*[27]. Details of the methods used to drive these background concentrations are described in the AEA report titled *UK modelling under the Air Quality Directive (2008/50/EC) for 2010 covering the following air quality pollutants: SO_2, NO_X, NO_2, VOCs, $PM_{2.5}$, lead, benzene, CO, and ozone*[28].

7.6.5 The background concentrations of NO_2 and SO_2 are provided in Table 7.6 and Table 7.7.

[27] Available online at: https://laqm.defra.gov.uk/

[28] UK modelling under the Air Quality Directive (2008/50/EC) for 2010 covering the following air quality pollutants: SO2, NOX, NO2, VOCs, PM2.5, lead, benzene, CO, and ozone. https://uk- air.defra.gov.uk/ assets/documents/reports/cat09/1204301513_AQD2010mapsrep_master_v0.pdf

Table 7.6: Background NO_2 Concentrations

NO_2 concentration 2023 (µg/m³)					
OS easting & OS northing	**536500**	**537500**	**538500**	**539500**	**540500**
388500	7.853	7.768	7.749	7.771	7.716
387500	7.800	7.708	7.739	7.914	7.698
386500	7.778	7.714	7.666	7.745	7.666
385500	7.753	7.731	7.663	7.655	7.623
384500	8.094	8.049	7.810	7.728	7.704

Table 7.7: Background SO_2 Concentrations

SO_2 concentration 2001 (µg/m³)					
OS easting & OS northing	**536500**	**537500**	**538500**	**539500**	**540500**
388500	2.820	2.800	2.780	2.740	2.770
387500	2.820	2.750	2.770	3.100	2.810
386500	2.600	2.500	2.530	2.640	2.570
385500	2.590	2.490	2.470	2.480	2.480
384500	2.570	2.490	2.470	2.460	2.470

Background Odour Levels

7.6.6 There are no recorded background odour levels, effectively to do this systematically would be a nearly impossible task, as measurement is both difficult and expensive and in terms of olfactometry laboratories resources for analysis are very limited. However, in residential areas, normal background odours such as those from traffic, vegetation, grass mowings etc, can provide background odour concentrations from 5 to 60 ou_E/m^3, or more, and in agricultural areas background odour concentrations may be considerably greater, particularly in close proximity to large sources of odour, such as the adjacent beef unit.

Uncertainty in baseline conditions

Ammonia

7.6.7 The baseline is supposedly 2018, however, there is no way to know exactly which sources are included in the background modelling. Documentation of the modelling process is poor and there can be little confidence in the accuracy. For this reason, it is our opinion that statements about Predicted Environmental Concentration (PEC) should be avoided. Comments about background ammonia levels in Sections 7.5.1 and 7.5.2 about more recent APIS data should be noted.

Nitrogen oxides

7.6.8 The 2023 values from the Defra website, Local Air Quality Management (LAQM) support pages are used, as future predictions are lower, this is the worst year.

Sulphur dioxide

7.6.9 The 2001 values from the Defra website, Local Air Quality Management (LAQM) support pages are used.

7.6.10 The Local Air Quality Management (LAQM) values are again modelled values, but the source data is defined at 1 km resolution and the process is much better documented than for ammonia. The sulphur dioxide figures are obviously out of date, but current values are very probably lower.

Odour

7.6.11 There are no recorded background odour levels, effectively to do this systematically would be a nearly impossible task, as measurement is both difficult and expensive and in terms of olfactometry laboratories resources for analysis are very limited.

7.7 Potential Impacts

Construction

Air Quality (general)

7.7.1 Emissions to the atmosphere will be controlled and managed during construction through the implementation of a Construction Environment Management Plan (CEMP). The CEMP will include a range of mitigation measures as being suitable to reduce impacts to as low a level as is reasonably practicable.

Air Quality (Human Health)

7.7.2 The closest sensitive receptors are greater than 700 m from the site and at this stage of the assessment no large chronic emission sources have been identified. However, AS Modelling & data would recommend that if, for any reason, large diesel generators are to be used temporarily at the site that the impacts of emissions nitrogen oxides and particulate matter from these should be assessed.

Dust

7.7.3 The closest sensitive receptors are greater than 700 m from the site and therefore to have any significant effect, any source of dust would necessarily be large. The only candidate for large emissions would be the necessary earthworks.

Odour

7.7.4 No impacts relating to odour arising from the Proposed Development are expected during the construction phase. Although inevitably some odours would be generated during the constriction process, none is thought likely to be of a sufficient magnitude to cause any impact beyond the immediate area.

Ammonia

7.7.5 No impacts relating to ammonia arising from the Proposed Development are expected during the construction phase. Potentially ammonia producing urea based concrete additives would not be used.

Operation

Air Quality

7.7.6 Emissions of dust, which would include a PM_{10} fraction, from manure/slurry handling/ temporary storage and digestate separation/drying are expected. However, these emissions are enclosed within buildings and will be treated by air scrubbers and odour control units (ColdOx units followed by an active carbon filter) both of which require low levels of particulate matter in the air to be treated and therefore require pre-treatment filtering of dust. All process buildings will be subject to negative pressure; therefore, fugitive emission are expected to be minimal.

7.7.7 Emissions of nitrogen oxides, sulphur dioxide and particulate matter will occur from the stack(s) serving the combined heat and power engines exhaust. These emissions would be controlled to levels necessary to comply with air quality requirements, these levels and stack parameters are informed by the dispersion modelling.

Odour

7.7.8 Large emissions of odour from manure/slurry handling/temporary storage and digestate separation/drying are expected. However, these emissions are enclosed within buildings and will be fully treated by air scrubbers (ColdOx units followed by an active carbon filter) and all process buildings will be subject to negative pressure; therefore, fugitive emission are expected to be minimal. Residual emissions would be controlled to levels necessary to comply with air quality requirements, these levels and stack parameters are informed by the dispersion modelling.

Ammonia

7.7.9 Large emissions of ammonia from manure/slurry handling/temporary storage and digestate separation/drying are expected. However, these emissions these emissions are enclosed within buildings and will be fully treated by air scrubbers and all process buildings will be subject to negative pressure; therefore, fugitive emission are expected to be minimal. Residual emissions would be controlled to levels necessary to comply with air quality requirements, these levels and stack parameters are informed by the dispersion modelling.

7.7.10 It should also be considered that the Proposed Development would take large amounts of material that are currently producing substantial amounts of ammonia during storage and disposal elsewhere. It would convert this material to more stable pelletised fertilisers, with large amounts of ammonia that would otherwise be released in an uncontrolled manner during storage would be captured by the development. Although the magnitude of the overall benefit would be very difficult, if not impossible, to estimate accurately, it is our firm opinion that facilities such as the Proposed Development offer a pathway to potentially very large reductions in ammonia emission from current storage and spreading of manures and slurries, which would heavily outweigh the effects of any emissions from the Proposed Development itself.

7.8 Design, Mitigation and Enhancement Measures

Construction

Air Quality

7.8.1 The assessment has assumed that the general measures detailed in the CEMP will be implemented. These include:

- contractors being required to manage dust, air pollution, odour and exhaust emissions during construction works;
- inspection and visual monitoring, undertaken in consultation with the local authority, to assess the effectiveness of the measures taken to control dust and air pollutant emissions;
- cleaning (including watering) of vehicle routes and designated vehicle waiting areas to suppress dust;
- keeping soil stockpiles away from sensitive receptors where reasonably practicable, also taking into account the prevailing wind direction relative to sensitive receptors;
- the use of enclosures to contain dust emitted from construction activities; and
- soil spreading, seeding and planting of completed earthworks as soon as reasonably practicable following completion of earthworks.

Dust

7.8.2 With regards to the mitigation of impacts from dust arising from the construction phase of the proposed development, the following recommendations are made:

- sufficient watering equipment and water supply for dust suppression is maintained; and
- earthworks during very dry conditions should be avoided or mitigated against. Avoidance or mitigation might be facilitated by a bespoke weather forecast for the site of the Proposed Development during the period that earthworks are planned. Such forecasts should provide expected, wind speed and direction, surface conditions and also timing of any super-adiabatic near surface lapse rates, which are of primary concern in dust raising and transportation events.

Operation

Air Quality

7.8.3 Nitrogen oxides - Abatement equipment would achieve a maximum of 100 mg- NO_x/ Nm^3 (dry, at 5% O_2) would be used. CHP stack parameters and required levels to comply with air quality requirements are informed by dispersion modelling.

7.8.4 Sulphur dioxide - Hydrogen sulphide would be scrubbed from the biogas produced by the anaerobic digestors and therefore sulphur dioxide emissions would be minimal, with active carbon filters scrubbing any sulphur. Any residual emissions would be adequately dispersed due to the CHP stack parameters that are required to comply with air quality requirements for nitrogen oxides.

7.8.5 Particulate matter - Production in the CHP engines would be minimal, combustion of either mains supplied natural gas or the clean biogas produced by the anaerobic digestors would not be expected to produce any appreciable amounts of particulate matter and the engines would be well maintained, minimising combustion of engine oils likely to produce particulate matter. Any residual emissions would be adequately dispersed due to the CHP stack parameters that are required to comply with air quality requirements for nitrogen oxides.

Odour

7.8.6 All process air would be treated with high tech odour control units and air scrubbers with maximum outlet concentration of 500.0 ou_E/m^3. For the residual emissions, stack parameters and required levels to comply with H4 requirements are informed by dispersion modelling.

7.8.7 In the odour control process, the absorption of the polluting gas is carried out in counter flow inside of two scrubbers in series, and within spaces which are stuffed with large specific areas contact elements. This is combined in order to obtain an optimal contact of the gas/liquid stages and a constant distribution of both fluids throughout the process, where the washing liquid is dispersed and uniformly distributed by means of high-output full-cone nozzles, easily removable for revision or change. These contact elements are supported by dismountable grates with a large pitch area and a low-of-head.

7.8.8 Retention of drops originated by the liquid distribution system is to be carried out within the tower itself by means of a high-efficiency low-pressure-drop vertical-flow demister, that prevents the carryover and emission of drops to the atmosphere, as well as any loss of washing solution. The washing liquid contained in the scrubber's bottom is recirculated through high performance (chemical as well as mechanical) centrifugal pumps. The level of the washing liquid is kept constant by means of a water input through an electro valve controlled by a 3-contact level indicator. Reagent dosage is controlled by a pH meter for H_2SO_4 and NaOH, and a Red Ox meter for NaClO, reagents being kept in separated tanks.

7.8.9 A first stage process in which the NH_3, R-NH_2, other ammonia derivatives and the VOC that can be hydrolysed in an acid medium are absorbed. In the second stage the H_2S and R-SH are absorbed, as well as any other sulphur derivatives, and the VOC that can be hydrolysed in an alkaline medium.

Ammonia

7.8.10 All process would be air treated with high-tech air scrubbers with maximum outlet concentration of 2 ppm. For the residual emissions, stack parameters and required levels to comply with air quality requirements are informed by dispersion modelling.

7.8.11 Ammonia would be removed from all process air using an acidic wet scrubber: details of the scrubbers are provided below.

- scrubber column;
  - scrubber manufactured in Vinyl ester resin/glass fibre with orthophthalic resin;
  - packing manufactured in polypropylene;
  - demister installed in the top of the scrubber, chevron type mist eliminator made from PP. Cleaning nozzles on both sides of the demister. The cleaning nozzles to be operated with clean (fresh) water to remove any deposits;
- removal efficiency > 98% on NH_3;
- acid usage approx. 1,5 litre 95% H_2SO_4 per kg (removed) NH_3;
- recirculation tank integrated in the scrubber;

- scrubber water recycle pump; and
- acid (40% H_2SO_4) storage vessel 6.000 L content, dosing pump and piping.

7.9 Assessment of Likely Significant Effects

Air Quality

Ecological receptors

7.9.1 The results of the dispersion/deposition modelling at the ecological receptors which are provided in, Table 7.9 and Table 7.10 below. Contour plots of the ammonia modelling results are available in Figures 7a and 7b of the ammonia modelling report (Appendix 7.2).

7.9.2 A detailed assessment of the effects on ecological receptors in provided in Chapter 8 Ecology and Biodiversity.

Table 7.8: Nitrogen Dioxide - Predicted Process Contributions at the Ecological Receptors

Receptor Number	X (m)	Y (m)	Name	Annual Mean Nitrogen Dioxide								24 Hour mean NO_2		
				Max ann conc. ($\mu g/m^3$)	Cle ($\mu g/m^3$)	%of Cle	depv (m/s)	N depo (kg/ha/y)	H+ depo (kg/ha/y)	Clo (kg/ha/y)	% of Clo	Max conc. ($\mu g/m^3$)	Cle	%of Cle
E1	538784	387229	LWS	0.387	30	**1.29**	0.0015	0.056	0.004	10	0.56	4.203	75	5.60
E2	539917	386626	LWS	0.315	30	**1.05**	0.0015	0.045	0.003	10	0.45	3.023	75	4.03
E3	539901	386433	LWS	0.290	30	0.97	0.0015	0.042	0.003	10	0.42	3.342	75	4.46
E4	538718	384814	LWS	0.119	30	0.40	0.0015	0.017	0.001	10	0.17	2.373	75	3.16
E5	538403	384709	LWS	0.159	30	0.53	0.0015	0.023	0.002	10	0.23	2.760	75	3.68
E6	538121	384582	LWS	0.159	30	0.53	0.0015	0.023	0.002	10	0.23	2.834	75	3.78
E7	539007	384484	LWS	0.077	30	0.26	0.0015	0.011	0.001	10	0.11	1.685	75	2.25
E8	538654	384353	LWS	0.098	30	0.33	0.0015	0.014	0.001	10	0.14	1.599	75	2.13
E9	538380	384274	LWS	0.119	30	0.40	0.0015	0.017	0.001	10	0.17	2.103	75	2.80
E10	539270	384124	LWS	0.059	30	0.20	0.0015	0.009	0.001	10	0.09	1.429	75	1.91
E11	540373	385865	LWS	0.135	30	0.45	0.0015	0.020	0.001	10	0.20	2.138	75	2.85
E12	539945	387271	LWS	0.242	30	0.81	0.0015	0.035	0.002	10	0.35	1.835	75	2.45
E13	539145	388166	LWS	0.173	30	0.58	0.0015	0.025	0.002	10	0.25	1.939	75	2.59
E14	538181	381414	Muckton Wood SSSI	0.038	30	0.13	0.0015	0.005	0.000	15	0.04	0.581	75	0.77
E15	539159	377718	Swaby Valley SSSI	0.015	30	0.05	0.0015	0.002	0.000	15	0.01	0.251	75	0.33
E16	539804	377433	Calceby Marsh SSSI	0.013	30	0.04	0.0015	0.002	0.000	15	0.01	0.218	75	0.29
E17	528645	388160	Welton-Le-Wold Old Gravel Pits SSSI	0.009	30	0.03	0.0015	0.001	0.000	n/a	-	0.248	75	0.33
E18	545167	394213	Humber Estuary SSSI/SAC/SPA/Ramsar	0.021	30	0.07	0.0015	0.003	0.000	8	0.04	0.288	75	0.38
E19	546087	392744	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.025	30	0.08	0.0015	0.004	0.000	8	0.05	0.295	75	0.39
E20	547326	390868	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.025	30	0.08	0.0015	0.004	0.000	8	0.05	0.397	75	0.53

Table 7.9: Sulphur Dioxide - Predicted Process Contributions at the Ecological Receptors

Receptor Number	X (m)	Y (m)	Name	Annual Mean Sulphur Dioxide					
				Max ann conc. ($\mu g/m^3$)	Cle ($\mu g/m_3$)	%of Cle	depv (m/s)	S depo (kg/ha/y)	H+ depo (kg/ha/y)
E1	538784	387229	LWS	0.144	20.0	0.72	0.012	0.273	0.017
E2	539917	386626	LWS	0.117	20.0	0.59	0.012	0.222	0.014
E3	539901	386433	LWS	0.108	20.0	0.54	0.012	0.205	0.013
E4	538718	384814	LWS	0.044	20.0	0.22	0.012	0.084	0.005
E5	538403	384709	LWS	0.059	20.0	0.30	0.012	0.112	0.007
E6	538121	384582	LWS	0.059	20.0	0.30	0.012	0.113	0.007
E7	539007	384484	LWS	0.029	20.0	0.14	0.012	0.055	0.003
E8	538654	384353	LWS	0.037	20.0	0.18	0.012	0.069	0.004
E9	538380	384274	LWS	0.044	20.0	0.22	0.012	0.084	0.005
E10	539270	384124	LWS	0.022	20.0	0.11	0.012	0.042	0.003
E11	540373	385865	LWS	0.050	20.0	0.25	0.012	0.096	0.006
E12	539945	387271	LWS	0.090	20.0	0.45	0.012	0.171	0.011
E13	539145	388166	LWS	0.065	20.0	0.32	0.012	0.122	0.008
E14	538181	381414	Muckton Wood SSSI	0.014	20.0	0.07	0.012	0.027	0.002
E15	539159	377718	Swaby Valley SSSI	0.006	20.0	0.03	0.012	0.010	0.001
E16	539804	377433	Calceby Marsh SSSI	0.005	20.0	0.02	0.012	0.009	0.001
E17	528645	388160	Welton-Le-Wold Old Gravel Pits SSSI	0.003	20.0	0.02	0.012	0.007	0.000
E18	545167	394213	Humber Estuary SSSI/SAC/SPA/Ramsar	0.008	20.0	0.04	0.012	0.015	0.001
E19	546087	392744	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.009	20.0	0.05	0.012	0.018	0.001
E20	547326	390868	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.009	20.0	0.05	0.012	0.018	0.001

Table 7.10: Ammonia and Acid Deposition - Predicted Process Contributions at the Ecological Receptors

Receptor Number	X (m)	Y (m)	Name	Annual Mean Ammonia							Total Annual Acid Deposition		
				Max ann conc. ($\mu g/m^3$)	Cle ($\mu g/m_3$)	%of Cle	depv (m/s)	N depo (kg/ha/y)	H+ depo (kg/ha/y)		H+ depo (keq/ha/y)	Clo (keq/ha/y)	% of Clo
E1	538784	387229	LWS	0.071	1.0	**7.14**	0.020	**0.371**	0.026		0.048	1.000	**4.75**
E2	539917	386626	LWS	0.051	1.0	**5.08**	0.020	**0.264**	0.019		0.036	1.000	**3.59**
E3	539901	386433	LWS	0.054	1.0	**5.39**	0.020	**0.280**	0.020		0.036	1.000	**3.57**
E4	538718	384814	LWS	0.023	1.0	**2.27**	0.020	**0.118**	0.008		0.015	1.000	**1.49**
E5	538403	384709	LWS	0.030	1.0	**2.99**	0.020	**0.155**	0.011		0.020	1.000	**1.97**
E6	538121	384582	LWS	0.032	1.0	**3.16**	0.020	**0.164**	0.012		0.020	1.000	**2.04**
E7	539007	384484	LWS	0.012	1.0	**1.24**	0.020	0.064	0.005		0.009	1.000	0.88
E8	538654	384353	LWS	0.018	1.0	**1.80**	0.020	0.094	0.007		0.012	1.000	**1.20**
E9	538380	384274	LWS	0.022	1.0	**2.17**	0.020	**0.113**	0.008		0.015	1.000	**1.45**
E10	539270	384124	LWS	0.009	1.0	0.93	0.020	0.048	0.003		0.007	1.000	0.67
E11	540373	385865	LWS	0.023	1.0	**2.34**	0.020	**0.122**	0.009		0.016	1.000	**1.61**
E12	539945	387271	LWS	0.042	1.0	**4.19**	0.020	**0.218**	0.016		0.029	1.000	**2.87**
E13	539145	388166	LWS	0.027	1.0	**2.74**	0.020	**0.142**	0.010		0.020	1.000	**1.96**
E14	538181	381414	Muckton Wood SSSI	0.005	1.0	0.54	0.030	0.042	0.003		0.005	1.795	0.28
E15	539159	377718	Swaby Valley SSSI	0.002	3.0	0.08	0.020	0.012	0.001		0.002	4.856	0.03
E16	539804	377433	Calceby Marsh SSSI	0.002	3.0	0.07	0.020	0.011	0.001		0.001	4.318	0.03
E17	528645	388160	Welton-Le-Wold Old Gravel Pits SSSI	0.001	n/a	-	0.030	0.011	0.001		0.001	n/a	-
E18	545167	394213	Humber Estuary SSSI/SAC/SPA/Ramsar	0.003	3.0	0.11	0.020	0.017	0.001		0.002	n/a	-
E19	546087	392744	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.004	3.0	0.13	0.020	0.021	0.001		0.003	n/a	-
E20	547326	390868	Saltfleetby - Theddlethorpe Dunes SSSI/SAC/SPA/Ramsar	0.004	3.0	0.13	0.020	0.020	0.001		0.003	n/a	-

Human Health receptors

Effects of the Proposed Development

7.9.3 The assessment is based upon the results of the dispersion modelling at the human health receptors which are provided in Table 7.10 below. These results are the maximum at any place in the area around the Proposed Development. Contour plots and results for all discrete receptors and are available in air quality modelling report (Appendix 7.1 - Figures A2a to A2h in Annex 2). Note that the term No Change in the Table means, in this context, that EALs are not and would not be exceeded.

7.9.4 At all receptors effects are deemed negligible/neutral (Tables A1a to A1h of the air quality modelling report, Appendix 7.1).

Cumulative effects

7.9.5 Any impacts above threshold values (EALs) are only likely in close proximity to point sources and for the short term EAL and maxima are unlikely to occur in the same places; therefore, the area where interactions might occur is limited in extent. No other sources either with extant planning permission or in the planning process have been identified in the Manby area.

Table 7.11: Maximum predicted concentrations of NO_2, PM_{10}, SO_2, Benzene and CO at any receptor

Statistic	Maximum Point		PC	Background	EAL	PEC	PC as %age of EAL	%age change from background levels	Air quality impact descriptors	Exceedances of EAL predicted
	X(m)	Y(m)								
Maximum annual mean NO_2 concentration ($\mu g/m^3$)	538575	386325	1.88	7.67	40.0	9.55	4.7	24.5	Negligible (neutral)	No
Maximum 1 hour mean NO_2 concentration ($\mu g/m^3$)	538488	386075	54.08	15.33	200.0	69.42	27.0	352.7	No change	0
Maximum annual mean PM_{10} concentration ($\mu g/m^3$)	538575	386325	0.88	12.79	40.0	13.67	2.2	6.9	Negligible (neutral)	No
Maximum 24 hour mean PM_{10} concentration ($\mu g/m^3$)	538525	386300	12.74	25.58	50.0	38.32	25.5	49.8	No change	0
Maximum 24h hour mean SO_2 concentration ($\mu g/m^3$)	538525	386300	10.19	5.06	125.0	15.25	8.2	201.3	No change	0
Maximum 1 hour mean SO_2 concentration ($\mu g/m^3$)	538488	386075	40.31	5.06	350.0	45.37	11.5	796.6	No change	0
Maximum 8 hour mean CO concentration (mg/m^3)	538300	386263	0.45	0.44	10.0	0.90	4.5	102.1	No change	0
Maximum annual mean VOC (benzene) concentration ($\mu g/m^3$)	538575	386325	0.02	0.1	5.0	0.2	0.4	12.3	Negligible (neutral)	No

Odour

Effects of the Proposed Development

7.9.6 The assessment is based upon the results of the dispersion/deposition modelling at the human health receptors which are provided in Table 7.12 below. Further details of the discrete receptors and contour plots of the predicted odour exposures in the surrounding area are available in the odour modelling report Appendix 7.3.

Table 7.12: Predicted maximum annual 98^{th,} percentile hourly mean odour concentrations at the discrete receptors

Receptor number	X(m)	Y(m)	Name/Location	Maximum annual 98th percentile hourly mean odour concentration (ou_E/m^3) GFS, Calms & Terrain
1	538455	386165	Cattle Farm	1.38
2	537967	385344	Legbourne Grange	0.40
3	537835	385344	Grange Cottages	0.34
4	537577	385251	The Lodge	0.26
5	537421	386574	Legbourne Furze	0.31
6	537350	386472	Oakleigh	0.30
7	537298	386561	Legbourne Furze	0.27
8	538191	387053	Grove Farm	0.38
9	538495	387090	College View	0.37
10	538442	387265	Factory	0.30
11	538718	387180	Residence, Bulldog Crescent	0.31
12	538877	387250	Residence, Bulldog Crescent	0.26
13	538783	387405	Residence, Spitfire Avenue	0.25
14	539164	387055	Business	0.26
15	539157	386909	Business	0.29
16	539247	386786	Business	0.30
17	539043	387178	Showground	0.26
18	539277	387250	Business	0.21
19	539389	387025	School	0.24
20	539424	386756	Business	0.27
21	539531	386922	County Offices	0.24
22	539734	386658	Residence, Park Lane	0.22
23	539824	386413	Residence, Carlton Park	0.21
24	539962	386212	Honeysuckle Cottage	0.19
25	539310	385879	Upphall Farm	0.32
26	539927	386015	Holmefield	0.19
27	539922	385807	Wood View	0.19
28	539857	385628	Willows End	0.19
29	539855	385457	Willows End	0.18
30	539750	385210	Lindum Cottage	0.17
31	539085	384981	Residence, Carlton Road	0.19
32	538945	384786	Duck Pond Cottages	0.15
33	538464	384767	Stralt House	0.20
34	537745	384900	Park House	0.23
35	537439	384738	Holdingham Farm	0.16
36	537201	384847	Fishery	0.16
37	537120	385027	Frog Hall	0.17
38	536531	386257	South House Farm	0.12

7.9.7 At all receptors outside of the Proposed Development boundary, using the EA H4 thresholds, odour levels would be acceptable. At all residential receptors, the modelled levels would suggest that odour would rarely, if ever, be detectable. That is even allowing for short term fluctuation by a factor of 10 from the hourly average, concentrations would be below detection thresholds. If the suggested descriptors in Table 7.4 and Table 7.5 are adopted then at all residential receptors, the effect would be described as neutral.

Cumulative effects

7.9.8 Any impacts above threshold values (EALs) are only likely in close proximity to point sources and maxima are unlikely to occur in the same places, therefore the area where interactions might occur is limited in extent. The only source likely to act cumulatively is the cattle rearing farm to immediately to the east and no other sources either with extant planning permission or in the planning process have been identified in the Manby area.

7.9.9 Odours from the cattle rearing and the Proposed Development may affect southern parts of Manby at the same time and therefore act cumulatively. However, the predicted exposure levels due to the emission from the Proposed Development are low enough that it is very unlikely that there would be any noticeable difference to existing exposures due to the cattle rearing which are probably at least an order of magnitude greater (*A Dispersion Modelling Study of the Impact of Odour from the Proposed Cattle Feedlots at Manby Showground, Manby in Lincolnshire.*[29] AS Modelling & Data 2014).

7.10 Monitoring

7.10.1 Regular periodic monitoring of all emissions from the site would be standard practice in accordance with the plant's EA permit.

[29] A Dispersion Modelling Study of the Impact of Odour from the Proposed Cattle Feedlots at Manby Showground, Manby in Lincolnshire, AS Modelling & Data, 31st March 2014

7.11 Summary

Construction Assessment

Ecological Receptors

7.11.1 No large, or chronic, emissions of pollutants likely to adversely affect any of the wildlife site considered are expected.

Human Health receptors

7.11.2 No large, or chronic, emissions of pollutants likely to adversely affect any nearby areas where residences are present, or the public could reasonably be expected to be present are expected.

Odour

7.11.3 No large, or chronic, emissions of odour likely to adversely affect any nearby areas where residences are present, or the public could reasonably be expected to be present are expected.

Operational Assessment

Ecological Receptors

7.11.4 A detailed assessment of the effects on ecological receptors in provided in Chapter 8 Ecology and Biodiversity.

Human Health receptors

7.11.5 Assuming that regulatory monitoring regimes operate adequately and that manufacturers guaranteed pollutant levels are achieved, pollutant levels in the surrounding area would be acceptable, with no predicted exceedances of any EAL and process contributions a small proportion of the EAL. The level of effect on human health has been assessed as neutral, which is not significant.

Odour

7.11.6 Assuming that regulatory monitoring regimes operate adequately and that manufacturers guaranteed odour levels are achieved, odour levels in the surrounding area would be acceptable, with no predicted exceedances of the Environment Agency's threshold outside the Proposed Development site boundary. At all residential receptors, the modelled levels

would suggest that odour would rarely, if ever, be detectable. Given this, the overall level of effect on these receptors has been assessed as neutral, which is not significant.

APPENDIX 12

McAdam
ENHANCING LOCAL COMMUNITIES

E2594

Proposed Renewable Biogas Plant

Lands in the townlands of Maghernakelly, Drumcall and Drumgole, Co. Monaghan

Engineering Services Report

PREPARED BY	CHECKED BY	APPROVED BY	ISSUE	DATE
I.Porter	R.Malone	P.Alcorn	v1	23/10/2024
I.Porter	P.Alcorn	P.Alcorn	v2	16/05/2025
I.Porter	P.Alcorn	P.Alcorn	V3	07/11/2025

Contents

1 INTRODUCTION

1.1 Overview

Stream BioEnergy Ireland Limited ('the Applicant') is proposing to develop a renewable biogas plant and associated works (hereafter referred to as the proposed development) on a site situated in the townlands of Maghernakelly, Drumcall and Drumgole, near Drum in County Monaghan.

The proposed development will utilise anaerobic digestion (AD) technology to generate renewable energy in the form of biomethane from up to 99,000 tonnes of feedstock per annum consisting of poultry manure, cattle manure, and agri-food organic waste feedstock, sourced from County Monaghan and surrounding areas. AD is a sustainable form of renewable energy production that occurs when micro-organisms break down biodegradable material in the absence of oxygen in an enclosed system to produce a renewable biogas.

Biogas generated by the proposed development will be upgraded at the plant to biomethane and injected into the nearby national gas transmission network (c.3.5 km south of the site at Cootehill)) to replace fossil fuel derived natural gas. The process also produces a sustainable biofertiliser, known as digestate, that can be used in agriculture or horticulture, as well as biogenic carbon dioxide (CO_2) that can be used in industry as a replacement for CO_2 derived from fossil fuel energy intensive processes (such as artificial fertiliser production).

The plant will be a highly regulated state-of-the-art facility utilising best available technologies and operating systems. Several abatement systems are incorporated into the plant design to mitigate the potential for adverse impacts on the environment and human health. These include indoor delivery and handling of feedstock and its processing in an enclosed and sealed system, a multi-stage odour treatment process, acoustic containment of engines and other noise generating equipment and an engineered site drainage containment system. The site will be stringently regulated by the Environmental Protection Agency (EPA), the Health and Safety Authority (HSA) and the Department of Agriculture, Food and the Marine (DAFM), and standards and controls will be applied by those authorities that are designed to protect human health and the environment.

The proposed development site comprises two (2 no.) plots which together cover an area of approximately 8.8 hectares (ha).

1 The primary plot is the biogas plant which shall occupy approximately 6.2 hectares (ha) of a field in agricultural usage;
2 The secondary plot is an agricultural field of approximately 2.6 hectares ('Soil Relocation Area'). This area will host an excess fill material that will arise from the development of the primary plot; and
3 Public roads that adjoin these two plots of land.

The Soil Relocation Area has no operational role in the project other than to enable the beneficial reuse of soil. It will be returned to its current use upon completion of construction.

The project also includes a connection to the national gas grid via a new underground gas pipeline over approximately 3.5 kms within the public road corridor (R189 and R188). This pipeline will be constructed by Gas Networks Ireland (GNI) under permitted development rights, and is not within the scope of this report.

1.2 Consulting Engineer

McAdam Design Limited is one of the largest independent multi-disciplinary consultancies working throughout Ireland, providing a wide range of engineering design support services. McAdam offer a wide range of full project lifecycle services across a variety of engineering sectors and have been appointed by Stream Bioenergy to develop and prepare engineering designs and supporting information to inform the planning application for the proposed development. This includes the following:

- Proposed General Arrangement Layouts, including:
  - A site plan drawing with appropriate scale and dimensions, identifying the building layout, parking areas, access roads, hard and soft landscaping.

  - Establishment of the red line planning boundary for the planning application.
- Drainage Strategy, including:
  - A review of existing drainage infrastructure and identification of suitable discharge point(s) for surface water.
  - Outline design of a suitable drainage/sustainable drainage system (SuDS) strategy to accommodate storage for up to 1 in 100-year rainfall event including an allowance for climate change. Production of drainage/SuDS layout drawings, including a general arrangement of attenuation facilities.
  - Development of foul drainage proposals in accordance with Stream's requirements and cognisant of the local water authority requirements.
- Preliminary Cut & Fill and Earthworks Strategy, including:
  - Determination of preliminary finished ground floor levels and road levels to minimise earthworks so as to achieve a reasonable cut/fill balance (subject to existing site & boundary constraints) and establish a functional site layout to meet Stream's operational needs.
  - Cut & Fill banding drawing showing grid of level differences between proposed and existing ground.
  - Notation/demarcation of retaining features required to achieve proposed levels.
- Preliminary Levels Plan including:
  - Preliminary design of horizontal and vertical highway alignments (including vehicle tracking to establish appropriate gradients and access requirements).
  - Preparation of drawings for private external works including external levels and gradients, ground floor levels, and notation/demarcation of retaining features.
- Existing utilities and services review.
- Fire water retention assessment.

2 Site Description

2.1 Site Location

The proposed development is located on a site situated in the townlands of Maghernakelly, Drumcall and Drumgole, near Drum in County Monaghan, centred at Irish Transverse Mercator (ITM) coordinates X-658967, Y-818422, as shown on drawing ***MON-MCA-ZZ-XX-CE-DR-1000***.

As indicated on Figure 2-1, the proposed development site lies approximately 4.2 km northwest of Cootehill, 11.2 km southeast of Clones, and 17.5 km south of Monaghan Town. It is accessible via the R189 regional road, which connects to the N54 at Monaghan Town (to the north) and the R188 at Dawson Grove Demesne near Cootehill (to the south).

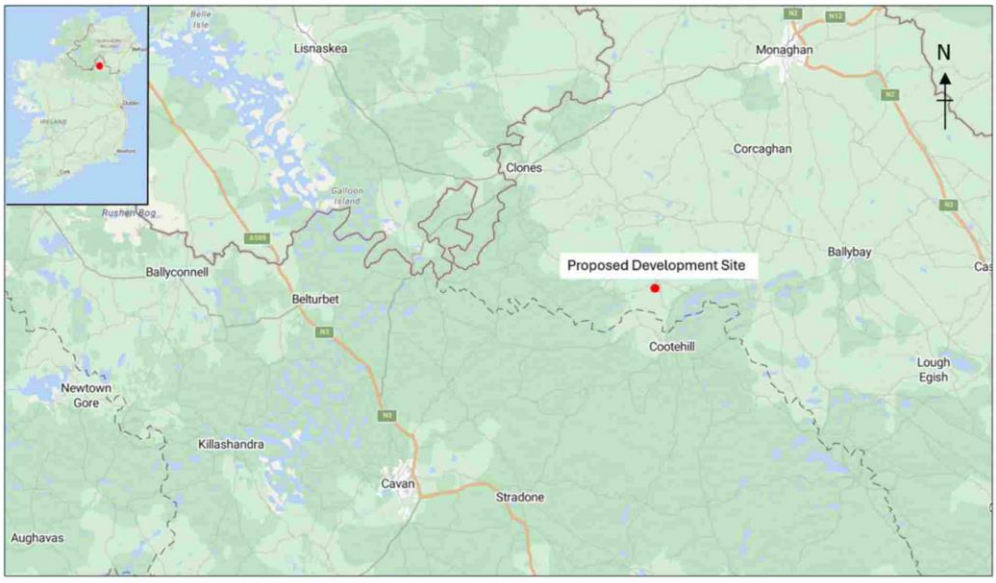


Figure 2-1 – Regional Site Location

As shown on Figure 2-2, the proposed development site spans approximately 6.2 hectares (ha) across two fields which are largely comprised of improved grassland. The fields are separated by a hedgerow, interspersed with a mix of tree species. The field to the west of the central hedgerow encompasses two thirds of the site, with the smaller field to the east encompassing the remaining third. Overhead power lines traverse the site from east to west.

The proposed development site is largely bordered by maintained hedgerows and ditches, with gated field accesses from the adjacent public roads. These roads are:

- R189 which forms the eastern boundary of the site;
- L2280 Drumcall Road which forms the northern boundary of the site; and
- L22802 (McKeever's Road) which forms the western boundary of the site.

The site forms part of an agri-business unit associated with the adjacent farm and residential property to the south, all forming part of the same overall land holding.

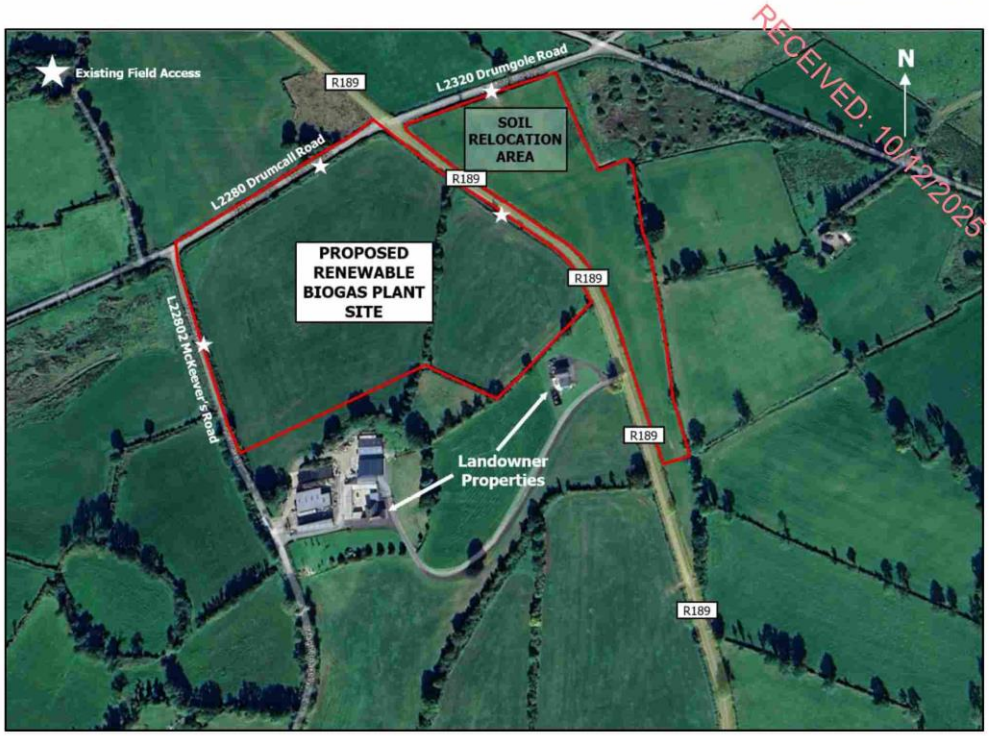


Figure 2-2 - Site Location

Given the topography of the proposed development site, an excess of soil and stone material will be generated during construction works. Whilst a large portion of excess soil will be repurposed as fill material for landscaping within the proposed development site, an estimated 18,600m^3 of excess fill material shall be moved offsite to the soil relocation area, located to the east of the R189 (as shown on Figure 2-2).

This will result in levels across this area being raised by c.1.3m as detailed further within Section 5. As noted previously, the soil relocation area is approximately 2.6 ha, though not all of this space shall be utilised for depositing material, as infilling shall be set back from the land drains adjacent to the field boundary by a minimum of 5m. As shown on Figure 2-2, the field is bordered by ditches, tree-lined hedgerow and a public road (R189/L2320).

The soil relocation area is currently an area of improved grassland under active pastoral use. It will be returned to this condition once construction is completed and shall be graded appropriately to allow for continued agricultural usage. The land shall remain within the ownership of the same farm business unit / land holding as the site.

2.2 Existing Site Information

2.2.1 Topography & Drainage

As shown on topographical survey drawing **5443-2-2D,** the topography of the proposed development site slopes gradually from the adjacent local roads to the northeast and west, then rises steeply towards a high point to the south (close to the adjacent farm property). The highest elevation is in the south-west at 111.75m Above Ordnance Datum (mAOD) and lowest elevation in the north-east at 90.00 mAOD.

The soil relocation area rises gently from an elevation of 88.3 mAOD in the north to 93 mAOD in the south. It also generally falls from west to east.

The topographical data indicates natural drainage towards the north-east. As shown on Figure 2-3, a land drain along the northern field boundary of the proposed development site conveys surface water runoff via a culvert under the R189 into another land drain along the northern boundary of the soil relocation area, which is hydrologically connected to the Coolkill Lough Stream, which rises to the northeast of the L2320.

Within both the proposed development site and soil relocation area, a number of land drains are also aligned along the eastern and western field boundaries which essentially separate these sites from the adjacent local road network. A ditch also runs through the central hedgerow on the proposed development site, connecting with the land drain aligned along the eastern field boundary. As such, all land drains convey field drainage / surface run-off to the land drain running to the north of both the proposed development site and the soil relocation area. With the exception of these land drains, there are no watercourses on or adjacent to either site.

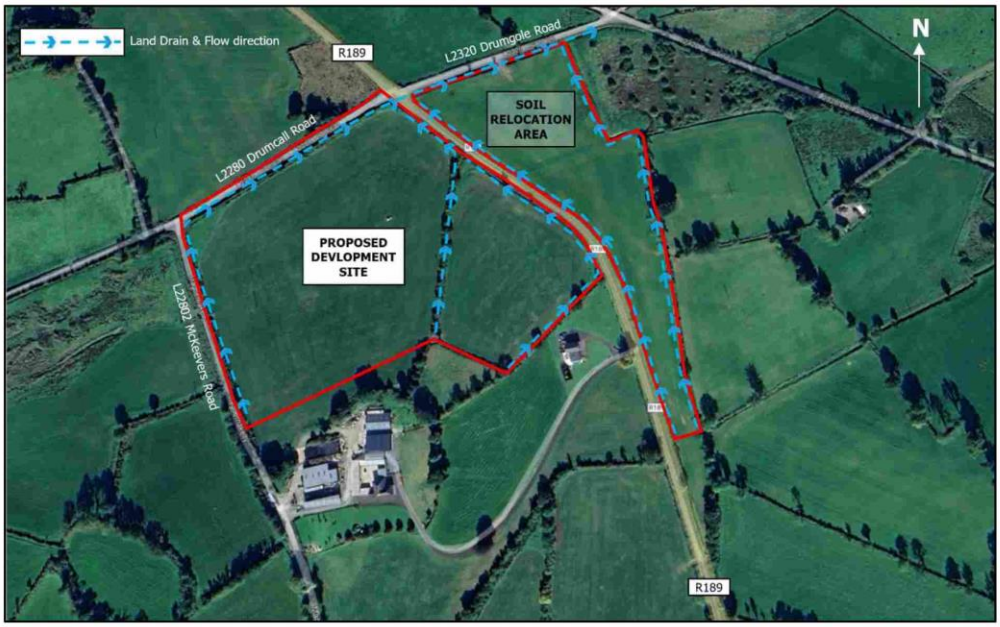


Figure 2-3 - Land Drains & Flow Direction

As described above, the drainage ditch along the northern field boundary conveys surface water runoff via a culvert under the R189 into another drainage ditch, which is hydrologically connected to the Coolkill Lough Stream Coolkill Lough Stream (IE_NW_36D020700) is a registered watercourse located approximately 230 m north-east of the renewable biogas plant site, and approximately 80 m north-east of the soil relocation area.

The floodmaps.ie web portal indicates that neither the renewable biogas plant site, soil relocation area or any of the surrounding area are at risk of flooding in any of the available modelled scenarios. Given the localised topography, it is very unlikely any flooding at present is experienced within the study area.

2.2.2 Existing Services and Utilities

Requests for service records were submitted to the following service/utility providers:

- BT;
- ENET;
- ESB;
- Gas Networks Ireland;

- Uisce Éireann;
- Drumgole Group Water Scheme;
- Open Eir; and
- Virgin Media.

A summary of the responses received is provided below.

2.2.2.1 ESB

The received record drawing shows a network of existing overhead lines which traverse the proposed development site and the soil relocation area.

In terms of power infrastructure, the proposed development site is transected by a medium voltage overhead electricity line with four associated electricity poles within the red line boundary. The line transects the centre of the proposed development site in a west to east orientation before crossing over the R189 and into the soil relocation area. A short section of distribution line connects with the medium voltage overhead electricity line and serves a number of properties to the south of the site, with a pole located on the red line boundary.

The east/west medium voltage line connects to another medium voltage line which is located to the immediate west of the site and is aligned in a north to south orientation (largely parallel to the L22802 McKeever's Road). This provides connection to the nearest substation (Errigal Substation). A review of the ESB substation network within a 15 km radius of the proposed development site identified three substations:

- Drumbear Substation: located approximately 15 km from the site;
- Ballybay Substation: located approximately 12 km from the site; and
- Errigal Substation: located approximately 6.2 km from the site (south of Cootehill).

2.2.2.2 Open Eir

Records received show existing above ground telecommunication cables and associated poles along the northern and eastern boundaries of the proposed development site, running parallel to the public roads (R189/L2280/L2320).

In terms of communication infrastructure, the proposed development site is bounded on its northern and eastern flanks by an overhead telegraph line, with numerous poles located on the site boundary. On the northern flank, the telegraph line is located within the hedgerow that separates the site from the L2280 Drumcall Road, with four poles located along the field boundary. The overhead line briefly transects the site in the north-eastern corner (close to the R189/L2280 Drumcall Road junction), before following the hedgerow to the south that separates the site from the R189. Five of the poles are located along this field boundary.

Above ground telecommunication cables and associated poles are also located along the northern side of the L2320, directly opposite the soil relocation area. There are three poles located along here.

2.2.2.3 Uisce Éireann

Records received show existing watermains installed on the roads which surround the proposed development site on the northern, eastern and western boundaries. There is also a watermain located along the L2320, adjacent to the soil relocation area. These watermains are part of the Drumgole Group Water Scheme and are not owned or maintained by Uisce Éireann, who do not have assets in the local area.

Uisce Éireann reviewed a pre-connection enquiry in relation to the proposed development and on 11th July 2025 advised that a water connection is feasible from Kilkitt Water Treatment Plant (WTP). Upgrades required to facilitate this connection are at an early stage, with completion expected in 2030. This timeline aligns with the assumed opening year of the Proposed Development.

No known existing foul wastewater / drainage infrastructure is located within or in close proximity to the site.

2.2.2.4 Drumgole Group Water Scheme (GWS)

Existing watermain infrastructure within the study area is operated and managed by the Drumgole Group Water scheme. As shown on the topographical survey drawing **5443-2-2D** and confirmed by site visits, there are numerous identified service features which indicate the presence and alignment of water related utilities / services infrastructure along the local road network. These include:

- Scour Valves;
- Sluice valves;
- Bulk Water Meter;
- Fire hydrant; and
- Manholes providing service / utility access points.

Consultation with the Drumgole Group Water scheme indicated that a connection to this network could be facilitated .

2.2.2.5 Gas Networks Ireland

The closest gas grid connection point is located at the Abbott Nutrition facility to the north of Cootehill Town, approximately 3.5 km by road from the proposed development. Based on information provided by Gas Networks Ireland (GNI), the gas network terminates at a skid compound within the grounds of the Abbott facility, immediately adjacent to the R188. This skid serves connection to a 315 PE 100 4 bar pipe located within the road bed of the R188.

Consultation has been undertaken with GNI to confirm the feasibility of a connection to the Cootehill distribution network via a new gas main.

3 PROPOSED DEVELOPMENT

3.1 Overview

The proposed development will utilise AD technology to generate renewable energy in the form of biomethane from up to 99,000 tonnes of feedstock per annum consisting of poultry manure, cattle manure, and agri-food organic waste feedstock, sourced from the surrounding area.

The site layout of the proposed development is provided on drawing ***MON-MCA-ZZ-XX-CE-DR-1050***.

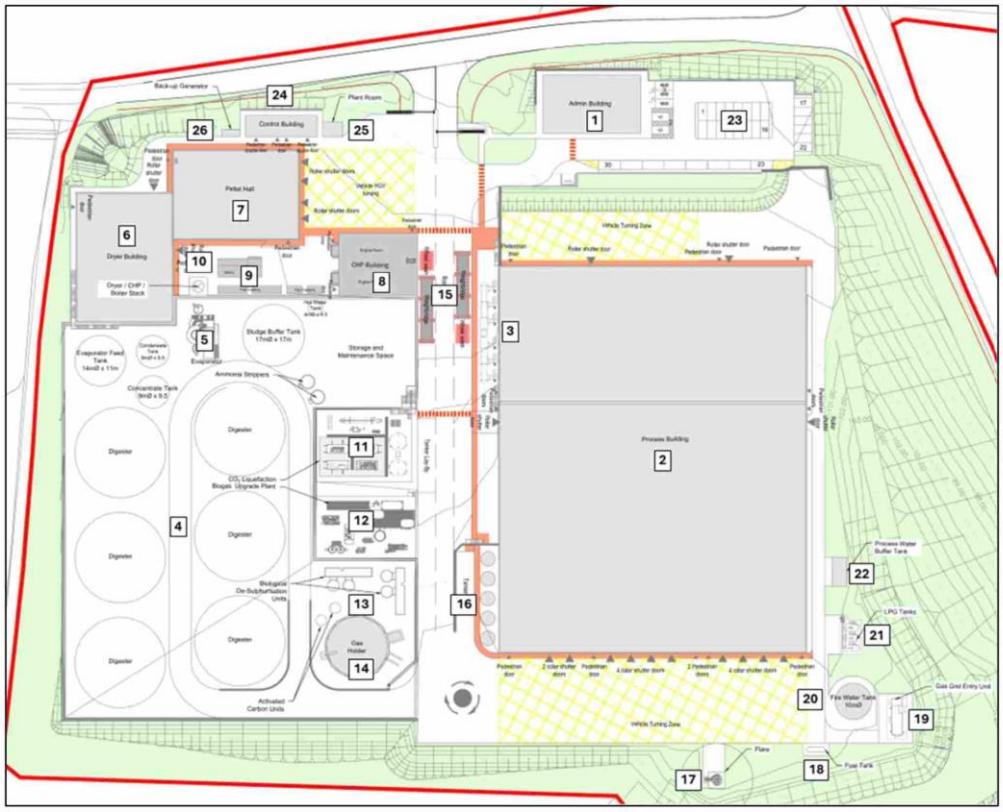


Figure 3-1 - Proposed Development Site Layout

As shown in Figure 3-1, the proposed development comprises a number of integrated elements including:

- 1 - Administration Building (with associated surface level car parking);
- 2 - Main Process Building (with associated vehicle service areas);
- 3 - Odour Control System (with associated emission stack);
- 4 - Bunded Tank Farm (accommodating the vast majority of tanks that require containment);
- 5 - Digestate Treatment Plant (Evaporator);
- 6 - Digestate Drying Plant;
- 7 - Pellet Hall (for fertiliser storage);
- 8 - Combined Heat and Power (CHP) Building (accommodating two CHP engines);
- 9 - Boiler Unit;
- 10 - Shared Emission Stack (Digestate Drying Plant, CHP engines and Boiler);
- 11 - CO_2 Liquefaction Plant;
- 12 - Biogas Upgrade Plant (BUP);

- 13 - Biogas Treatment Plant (Biological De-sulphurisation Units);
- 14 - Gas (Holder) Buffer Dome;
- 15 - Weighbridges and Wheel Washes;
- 16 - Liquid Feedstock Storage Tanks (silos);
- 17 - Backup Gas Flare;
- 18 - Fuel Storage Tank;
- 19 - Gas Grid Entry Unit;
- 20 - Fire Water Storage Tank;
- 21 - Liquefied Petroleum Gas (LPG) Storage Tanks (Propane);
- 22 - Freshwater Storage Tank (Underground);
- 23 - Staff and Visitor Parking;
- 24 - Control Building;
- 25 - Plant Room; and
- 26 - Back-Up generator.

Other integrated elements, though not numbered on Figure 3-1 include:

- Internal road and footway provision;
- Engineered stormwater drainage system;
- Landscaping and Earthworks;
- Lighting;
- Fencing and security gates; and
- Site entrance/exit off the L2280 Drumcall Road with gated frontage. This shall include localised widening and realignment of this road and reconfiguration of the junction with the R189.

3.1.1 Tank Farm Bund

The tank farm bund contains much of the process plant as shown in Figure 3-1.

The bund's containment system capacity has been designed in accordance with Section 4 of CIRIA *'C736F – Containment systems for the prevention of pollution – Secondary, tertiary and other measures for industrial and commercial premises'*.

Section 4.2.1 of CIRIA C736F sets out the "100 percent" and "25 percent" rules. These state that where two or more tanks are installed within the same bund that the recommended capacity of the bund is the greater of:

- 110% of the capacity of the largest tank within the bund;
- 25% of the total capacity of all of the tanks within the bund, except where tanks are hydraulically linked in which case they should be treated as if they were a single tank
- Section 4.3.2 of CIRIA C736F sets out how the "volume of inventory" within the bund should be calculated, with Section 4.3.3 detailing how rainfall events should be included in the calculation models.
- The rainfall allowance will be for a 1-in-10-year event (10% AEP) for:
  - a 24-hour period preceding an incident;
  - the duration of the incident (taken as 24 hours);
  - an eight day period following an incident or other time period as dictated by site specific assessment.

Assessment of the bund capacity confirms that the tank farm bund is capable of accommodating 25% of the total capacity of all tanks within the bund (greater volume), together with an appropriate allowance for rainfall, freeboard, and displacement in line with the methodology specified in C736F. Based on this evaluation, the bund capacity meets the recommended standards for secondary containment performance and is considered adequate for the safe and compliant operation of the facility.

3.2 Site Security

Site security arrangements to prevent unauthorised access at the plant include the following:

- The site entrance will have a 2.4m high mesh panel sliding gates that are only opened to allow for the ingress and egress of plant traffic. The inbound gate is positioned to ensure that an HGV can be clear of the L2280 carriageway when waiting for the gate to open, so not to obstruct through movements.
- Paladin fencing around the entire boundary of the plant footprint, except for the site entrance, will comprise of 2.4m high mesh panel fencing. This shall be located around the operational extents of the site, with the soft landscaping areas largely contained by ditch and hedgerow.
- A CCTV system will also monitor the entrance, and the wider site in general.
- Anti-intruder alarms will be provided to all lockable buildings.
- Security monitoring of the site will be carried out at all times via a combination of in person patrols or remote monitoring

3.3 Lighting

Lighting will provide a safe operational environment and has been designed taking due regard of relevant environmental legislation to minimise light pollution.

The site lighting proposals are designed to SLL LG1 Industrial Environment 2018 & BS 12464 (2024) and based on the design illumination and Rural Environmental Zone. The following presents the best design practice.

- Single & Double lanterns mounted on 8m galvanised steel column c/w bitumen treated root & lockable output enclosure.
- Industrial wall mounted floodlights (8m high) above perimeter walkway around the building facades.

Further to the above, technology shall be implemented to control the lighting. Timeclock controls shall be added to the lighting, so the lights don't operate after 9pm, this can be then over-ridden by a motion detector or linked to the gates, so that the lights will only then operate when a HGV is on the site late at night or illumination is required for pedestrian movements.

3.4 Landscaping

A Landscape Mitigation Plan has been developed to meet the needs of integrating the proposed development within the landscape and minimising visual impact. A planting schedule has been provided within this plan. Planting shall be provided along the boundaries of the site. The landscape schedule provided within the Landscape Mitigation Plan includes a comprehensive list of proposed species, specification, height, density, girth, seed mix and percentage contribution for the following types of planting:

- Native hedgerow;
- Grassland areas (species rich);
- Specimen trees;
- Native Woodland mix; and
- Native Shrub mix.

Landscape planting will be arranged throughout the site to provide maximum screening potential and integration. This shall be enhanced by utilisation of excess fill material to create earthwork screening berms in the southeastern/eastern and northwestern portions of the site. Trees will be planted on the berms to maximise screening potential.

For planning purposes, a landscape specification has been provided within the Landscape Mitigation Plan to set out implementation and maintenance guidelines for the proposed planting and addresses:

- General requirements.
- Site preparation.

- Planting.

4 Proposed External and Internal Access Arrangements

4.1 Site Access

As shown on drawing ***MON-MCA-ZZ-XX-CE-DR-1050***, the proposed site access shall be directly from the L2280 Drumcall Road via a priority T-junction arrangement, located approximately halfway between the R189 junction and McKeever's Road junction. To ensure conformance with appropriate design standards, localised widening of the road (with verge) shall be required along its southern edge to provide sufficient road space for passing HGV's (as detailed below).

It is proposed to provide a direct access from the proposed development site onto the southern side of L2280, approximately 200m west of the R189.

4.2 Public Road Modifications

The existing L2280/R189 junction will also require reconfiguration to conform with appropriate road design standards. To accommodate this, the L2280 will require localised realignment along the section of road to the east of the proposed site access. This will result in construction of new road bed within the proposed development site, thus creating a new priority T-junction arrangement with the R189, slightly south of the existing junction. This still maintains the existing crossroad junction arrangement at this location (avoiding the need for a stagger), whilst achieving the required forward sightlines for turning vehicles in both the northern and southern directions. The proposed works are shown on Trafficwise Drawing ***03208/PL01 'L2280 Road Improvement Works***'

The design introduces a new dedicated all movements access road branching southwards from the realigned L2280, positioned approximately 200 m west of the existing L2280/R189 junction. The access is configured as a priority T-junction with radii and carriageway width designed to facilitate the turning movements of large agricultural and HGV vehicles typical of site operations. The development access incorporates sealed hardstanding areas and appropriate junction radii (compound radius approx. 10–15 m) to ensure safe ingress and egress for all vehicle types. Swept path analyses are provided on Trafficwise Drawing ***30208/PL02 'Swept Path Assessments'***.

The current proposal is for HGV traffic to come and go from the east using the R189 and the easternmost 200m of the L2280. The proposed development will increase the volume of HGV travelling on that section of L2280 to the east of the development access. There are no passing areas along the eastern end of L2280 where the road width is approximately 5.0 m. The proposed haul route is expected to be capable of accommodating the opposed two-way flow of HGV and so formal carriageway widening works are proposed to effect an increased road width that can safely accommodate opposed two-way traffic and the opposed passage of larger commercial and agricultural vehicles.

On site assessment has included a walkover survey of the local road and examination of detailed survey of the geometry of the receiving L2280 and part of R189 that comprises the proposed haul route both north and south from the development. Traffic flow and speed surveys data has also been collected on the receiving road network.

A detailed topographical survey was undertaken to include the L2280 between the R189 and McKeever's Road in the west, L2320 to the east and R189 both north and south of the junction. The topographical survey includes the road and all boundary features along the public road together with all infrastructure between the boundaries. A Haul Route Structural Analysis Survey has not been undertaken of the existing local road. Based on survey work undertaken by Trafficwise, the existing carriageway is currently subject to HGV loading and appears to be in good order, though for the purposes of assessment, the realignment of L2280 will involve road strengthening along the existing sections of the L2280 and full-depth construction over the realigned sections.

An assessment of boundary constraints found that the complete eastern section of L2280 can be widened to a carriageway width of 6.5 m and realigned on lands in the public road and lands in the control of the applicant.

It is proposed to widen the metalled road to an overall width of 6.5 m which is shown on the drawings as a carriageway of 6.0 m marked with yellow road edge markings with an additional 250 mm edge strip on both sides. The swept path assessments provided on drawing ***03208/PL02*** are undertaken using a Freight Transport Association (FTA) 16.5 m Articulated Design Vehicle. The FTA Design Vehicle has a specification, dimensions and steering characteristics likely to representative of the largest articulated vehicles that could be used to service the proposed development. The FTA Design Vehicle is the largest permitted on Irish roads and is therefore likely representative of the largest vehicle that will be generated by the proposed development, so the swept path assessments are considered robust. The vehicle swept path assessments show that the proposed road widening, junction improvement and proposed development access are of suitable geometry to operate satisfactorily. Where widening and realignment of the existing carriageway of L2280 is required to achieve the 6.5 m width and increased verge widening along L2280 these areas are highlighted and dimensioned on the drawings provided.

Where road strengthening is required along L2280, these works will generally involve digging out the existing carriageway and reinstatement with new materials to the specification for roads construction used by Monaghan County Council. Realigned or new road construction will be full-depth and to the standard specified by Monaghan County Council as Roads Authority.

In addition, when the road widening works and road strengthening and repair works have been completed, the applicant proposes to overlay the entire road width over the extent of the works up to and including the proposed site access thus providing a uniform wearing course over the length of the works on L2280. It is currently expected that the proposed road will require a 50 mm overlay between the site access and Regional Road R189. It is understood that the Planning Authority considers the proposed road improvement incorporating strengthening, widening and overlay together with the realignment and junction reconfiguration are comprehensive and will significantly improve L2280 and the junction with the R189 and will satisfactorily accommodate the traffic arising from the proposed development.

The proposal essentially constitutes road maintenance and road safety improvement works including road strengthening, localised pavement widening and realignment and some existing pavement edge strengthening and repair. The road widening, realignment and verge widening works are all on the southern side of L2280 and will impact the hedgerow on that side of the road (northern boundary of the development site). Drawing ***03208/PL01*** highlights the length of hedgerow to be removed. The new boundary will be set back from the visibility envelope at the proposed development site access and also set back form the sightlines at the existing McKeever's Road. The proposed works will create a significantly widened verge between McKeever's Road and the R189. Boundary and verge reinstatement works, including grassed embankments and fencing will match the existing roadside character.

All proposed road works are achieved within the bounds of the public road as defined in the Roads Act 1993 or on lands within the control of the Applicant . Road widening and realignment works are achieved principally in the existing southern verge and the adjoining lands to the south. The proposed road works to L2280 do not require the use of third party lands or consent from third party landowners.

There are no private entrances, driveways or gated field accesses along that part of L2280 proposed as part of the haul route. Based upon the topographical survey and detailed drawings no works are proposed to third party lands since all widening works are proposed only on lands within the control of Monaghan County Council or where lands outside of the public road are required to accommodate road widening, all such lands are in the ownership and control of the applicant.

The existing R189 in the vicinity of the L2280 is generally of a good quality, however there are some surface irregularities and there is evidence of poor utilities reinstatement. The proposed works will reasonably extend to resurfacing the road pavement of the R189 on the approaches to the L2280 where there will be an increase in turning movements by large vehicles

4.3 Internal Roads and Footways

Roads are typically designed as concrete pavements or where appropriate, bituminous macadam pavements, with cross falls and longitudinal falls to promote drainage of the surfaces. Drainage of these roads will be predominantly by means of linear drains and gullies.

Footways are to be provided throughout the site, including zebra crossings, to provide pedestrians the means of safe movements when accessing the various buildings and plant. Each of the crossings is intended as a continuation of the line of footways.

The service yard areas are designed as concrete pavement, with cross falls and longitudinal falls to promote drainage of the surfaces. Surface water drainage from these areas shall be conveyed to the attenuation/rainwater harvesting system. Outflow from the attenuation systems shall discharge, at greenfield runoff rates, to the existing drainage ditch to the northeast. The surface water drainage layout is detailed within Section 7.

4.4 Parking Areas, Service Yard and Ancillary Infrastructure Area

It is proposed to provide a surface level car parking area to service the staffing and visitor needs of the proposed development. This parking area will be located adjacent to the Administration Building in the north-east corner of the site, as shown on drawing ***MON-MCA-ZZ-XX-CE-DR-1050***.

Surface water drainage from this parking area shall be conveyed to the piped network. Edge restraints shall be provided by an appropriate kerbing system.

In terms of parking provision, this shall be as follows:

- 30 regular spaces;
- 3 EV spaces; and
- 2 accessible spaces;

Standard car parking spaces have been provided at 2.45m x 5.0m with parking areas benefiting from a 6m aisle width. A cycle store shall also be provided.

Yellow hatched areas shown on drawing ***MON-MCA-ZZ-XX-CE-DR-1050*** are dedicated turning zones for vehicles to access the buildings. There is sufficient space provided for HGVs to pull up and welfare facilities on site for any required rest breaks. This arrangement shall remove the need for drivers to park up on the public road network.

There is also a considerable amount of space throughout the site for informal parking, (i.e. for service, inspection and maintenance vehicles). On no instance would parking be required offsite to service the needs and operation of the proposed development.

4.5 Service and Maintenance Vehicles

To ensure safe operation of the site, vehicle tracking has been completed to all new access/egress locations, as well as to all internal yards and highways. Drawing ***MON-MCA-ZZ-XX-CE-DR-1700*** shows various routes and turning movements through the site for an articulated HGV. Drawing ***MON-MCA-ZZ-XX-CE-DR-1701*** shows the access routes for a mobile crane to key areas of the site.

Upon entering the proposed development site through the access, HGVs will proceed along the development site internal road to the inbound weighbridge. After being weighed the HGV will enter the main service yard in the southern part of the development site. HGVs will then reverse into the building reception area through automatic rapid open/shut doors. Following unloading of the feedstock, vehicles will exit the reception area and proceed to the outbound weighbridge on the north-south internal road located in advance of the wheelwash wash facility which ultimately leads back to the access and the L2280 public road. Vehicles collecting materials and product to be exported from the site will be required to follow the same haul route and the same general internal circulation regime.

To ensure the satisfactory operation of the site, vehicle swept path analyses have been undertaken using the proprietary software Autodesk Vehicle Tracking which provides an analysis of the road, junctions and service yards to check that provision has been made for the space and geometry required to manoeuvre the specified design vehicles. The design vehicles are of the type and configuration that the proposed development site has the potential to generate. In the case of feedstock delivery, the vehicle swept path turning assessments have

been undertaken using a standard 'Freight Transport Association (FTA) Design Articulated Vehicle (2016)'. The analysis output confirms that the internal circulation route will function satisfactorily for the volume of traffic likely to be generated. It should be borne in mind nonetheless that most internal circulation routes have been designed to accommodate a 400 tonne mobile crane which is the largest vehicle likely to ever require access (however occasional – estimated to be once in 5 years). The swept path of the crane, which would be positively managed on site by a banksman, takes up all the available road space which is typical for such sites.

To ensure safe operation of the site, vehicle tracking has been completed to all new access/egress locations, as well as to all internal yards and highways. Drawing ***MON-MCA-ZZ-XX-CE-DR-1700*** shows various routes and turning movements through the site for an articulated HGV. Drawing ***MON-MCA-ZZ-XX-CE-DR-1701*** shows the access routes for a mobile crane to key areas of the site.

5 Earthworks

5.1 General

The existing topographical conditions across the proposed development site and soil relocation area are detailed within Section 2.2.1 and shown on drawing **5443-2-2D**. In summary, the topography of the proposed development site slopes gradually from the adjacent local roads to the northeast and west, then rises steeply towards a high point to the south (close to the adjacent farm property). The highest elevation is in the south-west at 111.75 mAOD and lowest elevation in the north-east at 90.00 mAOD.

Earthworks for the proposed development would follow the topsoil strip, with project construction activities resulting in excavations and generation of excess soil. Excess soil will be used for landscaping on site (including establishment of screening berms on the southeastern and northwestern portions of the site).Surplus material will be moved to the soil relocation area in the immediate vicinity of the site, which will minimise the requirement for haulage of this material and is deemed to be the environmental best practice approach in terms of managing such materials.

Different site arrangements have been considered to minimise earthworks whilst factoring in the visual impact of the proposed development from the surrounding area. An earthworks model for the current site layout has been developed. Excess excavated material will be used to create sloped earth berms along site boundaries where there is sufficient room. Excess material not used in these berms will be distributed evenly in a field to the east of the site.

Drawing ***MON-MCA-ZZ-XX-CE-DR-1101*** shows the proposed earthworks at the proposed development site, including the landscaping earth berms within the operational site along with the soil relocation area to the east. A table summarising the cut and fill volume for the proposed development is also included.

5.2 Earthworks Strategy and Methodology

The proposed earthworks strategy seeks to balance cut and fill volumes across the wider development to minimise the requirement for bulk import/export of materials during construction. Building floor and external levels have been specified to minimise visual impact, maximise landscape integration, whilst attempting to achieve an optimum net balance of cut and fill. The proposed site levels are shown on Drawing ***MON MCA ZZ XX DR CE 1100***.

The topsoil will be stripped and placed into stockpiles to prevent permanent burial beneath other earthworks. Such soils will be re-used (subject to suitability) in the general earthworks for the proposed development such as landscaping and visual screening berms. The subsoil material will be excavated following topsoil stripping.

In advance of these earthworks, the in-situ soil will be tested for its suitability as fill material. If the material is suitable, it will be transported to the fill area and placed and compacted as defined by the method of compaction procedure (depth of layer, size of compactor, number of passes, etc.). Achieving a high degree of suitability for reuse as embankment fill during construction will depend on good earthworks practice being used, such as:

- Avoiding earthworks in wetter periods;
- Avoiding excessive handling of materials;
- Good pre-earthworks drainage; and
- Providing a fall during construction to allow run off etc.

All earthworks will be undertaken in accordance with a Construction Environmental Management Plan (CEMP) and Soil and Surface Water Management Plan (SSWMP).

5.3 Earthworks – Renewable Biogas Plant Site

As shown on Drawing ***MON MCA ZZ XX DR CE 1100***, earthworks proposals are to regrade the site to provide level surfaces for various proposed buildings and plant. To accommodate this, the existing land will require bulk cut & fill to enable movement of materials to establish the plateau levels required. Any site won material suitable for reuse will be redistributed throughout to maximise use and minimise import and export requirements.

Given the existing site levels, earthworks are generally required to:

- allow site access roads to lead onto the existing public road network.
- limit maximum gradients for proposed roads and footpaths within the site.
- provide relatively flat areas for buildings, tank farms and turning areas for large vehicles.

The proposed development ties into existing site levels at all boundaries. Proposed external levels range from 91.00m to 95.00mAOD across the northeast boundary, with a sequence of tiers being formed across the site to facilitate the development so that the site is functional.

The lower tier of the site (which accommodates the Administration Building, surface level parking, CHP Building, Pellet Hall and Dryer Building) is formed at a level largely between 95.00m and 96.00 mAOD. Due to the undulation across the site, this whole area will require infilling to a relative elevation of between 1 and 4 m above existing ground level.

The middle tier accommodates the bunded tank farm which is formed at a level largely between 96.00m (at the northern end) and 97.00 mAOD (at the southern end), with the bund wall height varying as the external ground level rises to the south. The northern half of the bund is at a level similar to existing ground levels, however within the southern half of the bund, existing ground levels rise quite steeply up to 108 mAOD, thus giving rise to a large volume of cut. At the north end of the bund, the top of wall is approximately 5m above existing ground level, whereas at the south end of the bund, the top of wall is approximately 4m below existing ground level, thus forming a retaining wall at the toe of an engineered slope (cut).

The upper tier accommodates primarily the Main Process Building (MPB) and associated vehicle turning zones, though considering the sheer mass of this building and the areas servicing it, the upper tier shall be constructed on two different platforms. The lower platform (which includes the front third of the MPB) is largely between 96.00 m and 97.00 mAOD, and the upper platform (which includes the remaining two thirds of the MPB) is largely between 101.00m and 102.00 mAOD. To accommodate this, a change in the floor level of the MPB is necessary and is achieved by a 2.3 m high retaining wall passing through the building.

Infilling of the lower platform of the upper tier will be necessary to create the level platform, however the difference between existing and proposed levels is not significant. Infilling to a relative elevation of between 1 m and 3 m above existing ground level will be required before a small amount of cut will be necessary within the MPB.

On the upper platform of the upper tier a small amount of infilling will be necessary to create the level platform, however a much higher volume of cut will be necessary, with excavation required to achieve a relative elevation of between 1 m and 5 m below existing ground level.

Finished floor levels proposed throughout the site are shown on Drawing ***MON MCA ZZ XX DR CE 1100.***

Earthwork screening berms will be constructed to the southeast and northwest of the proposed development site.

The berm to the southeast will raise ground levels along the eastern and southeastern flanks of the site with the levels varying along the crest of the berm. Near the north-eastern corner of the Main Process Building, the berm will raise ground levels by up to 4 m with the vertical profile rising to a high point of 9 m above existing ground level in the vicinity of the gas grid entry unit. At this point the height of the berm is maintained at c.108 mAOD, with existing ground levels rising upwards along the curved section of berm in the south-eastern corner of the site. As such the height of the berm above ground level progressively lessens (i.e. 6, 4, 2m, etc). to where it ties back in with existing ground levels. The shape of the berm attempts to mimic the existing drumlin terrain and is constructed with side slopes of typically 1:2 on the internal (site) face, with a 1:3 slope to the external face visible from the roads and surrounding areas.

The berm to the northwest will be approximately 3 m above existing ground level at the highest point and will also be constructed with side slopes of typically 1:2 on the internal (site) face, with a 1:3 slope to the external face visible from the roads and surrounding areas.

5.4 Earthworks – Soil Relocation Area

As mentioned previously, an estimated 18,600m^3 of excess fill material shall be moved offsite to the soil relocation area, located to the east of the R189. As shown on Drawing ***MON-MCA-ZZ-XX-CE-DR-1101,*** this will result in levels across this area being raised by c.1.3m. The infilling shall commence at a set back from the land drains adjacent to the field boundary. This set back shall be a minimum of 5m and will rise at a gentle slope of 1:10 to the finished fill levels from all sides.

5.5 Retaining Solutions

The cut and fill earthworks and changes in ground level will be supported by reinforced concrete retaining walls as shown on Drawing ***MON-MCA-ZZ-XX-CE-DR-1102***. The retaining walls will also contribute to bunding of the Tank Farm and other areas of containment.

The cut slope on the southern boundary of the site will be stabilised as an earth reinforced embankment. Layers of geotextile fabric will anchor the steep upper slope of the bank in position. A reinforced concrete retaining wall will support the lower part of the cutting. The retaining walls will incorporate waterproofing and directed drainage. The structural form of each wall will be a reinforced concrete vertical cantilever stem with shallow pad foundation. The details of the wall foundations will be determined when full geotechnical investigations are complete and a cross-section of the retaining walls through a section of the site is shown on Drawing ***MON-MCA-ZZ-XX-CE-DR-1200***.

6 Utilities and Services

The following sub-sections outline the utilities and services requirements during the operational phase of the proposed development.

6.1 Power

The design philosophy for the proposed development is to generate the plant's own power demand on-site using gas fired CHP engines, with no intention to export power to grid.

Two CHP engines (each rated up to 2 MW) will be installed to provide sufficient duty standby to the plant during routine engine maintenance or unscheduled downtime. A backup generator will also be installed to provide further security of electrical supply to the plant.

An electrical grid connection will be established to the local 10 kV network on the site boundary as a backup facility. The 10 kV overhead power lines in the area route back to the Errigal substation, which has 38 kV as primary voltage level and 10 kV as secondary voltage level. It is the closest substation to the site, indicating a potentially viable point of connection.

Backup power supply to the site would be c. 500 kVA, with ESB overhead lines at 10 kV typically handling load capacities ranging from 500 kVA to 5 MVA, meaning the site's backup electrical requirements would be at the lower end of likely available capacity. The current loading state and exact capacity of this power line is unknown, with final confirmation of capacity subject to ESB's internal network assessment which can only take place once a connection application is submitted referencing a valid planning application number.

As detailed in Section 2.2.2.1, the proposed development site is transected by a medium voltage overhead electricity line with four associated electricity poles within the red line boundary. As such, it will be necessary to realign these to ensure continuity of supply to the wider area. As shown on Drawing ***MON_SBE_ZZ_XX_GA_XX_1001***, it is proposed to move the overhead line to the south so that it follows the boundary of the proposed development site. This shall minimise impact upon the short section of distribution line that serves a number of properties to the south of the site.

6.2 Water Supply

The estimated water demand for potable / sanitary purposes for on-site staff during operation is estimated to be approximately 2m^3/day. As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2100**, a groundwater supply well will also be installed in the south-east corner of the proposed development site to supply this demand. A Groundwater Abstraction Feasibility Assessment completed for the site by AWN Consulting found that the sandstone bedrock beneath the site has the potential to provide a groundwater yield of up to 45m^3/day. This will be sufficient to supply potable water to the site and supplement process water supply to the site during periods of low rainfall.

A connection will also be sought from the mains supply located adjacent to the site as a back-up water supply source. Water would be drawn down from this source during off peak hours overnight and stored in a dedicated underground water storage tank (80m^3) on site. As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2100**, potable / sanitary water supply connections shall be made direct to the Administration Building, Main Process Building (which includes welfare facilities) and the underground water storage tank.

Anticipated AD process water demand will be c.45m^3/day. The plant design has water sustainability at its core, with processes designed to minimise water demand. The majority of water utilised within the process shall be derived from liquid contained in incoming feedstocks and recirculated liquid generated by digestate processing. The demand profile will be consistent across the year, with no significant seasonal fluctuations.

The plant will prioritise the use of harvested rainwater, reducing reliance on external supplies. As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2000**, rainwater will enter the drainage network via a system of traditional channel drains before flowing into underground pipework and attenuation tanks (3 no tanks and 1 attenuation pipe) with a combined water storage capacity of 1,338m^3 (see Section 7 for details).

Based on Met Éireann long-term average rainfall levels for the nearest weather station in Ballyhaise, Co. Cavan Co. Monaghan, it is estimated that an average of up to 91m^3/day of rainwater will be harvested on the site (average based on annual rainfall levels). This is calculated based on a hardstanding area of 3.6 hectares and a run-off co-efficient of 90%. Given the significant storage capacity included in the design, it is anticipated that this will provide a significant portion of water demand for the site.

As indicated above, estimates would suggest that average daily rainfall would typically exceed the daily water demand of the plant. To minimise the potential for rainwater to be discharged from the plant, any water that runs off from the roof of the Main Process Building shall be directed to the dedicated underground water storage tank (80 m^3) on site before overflowing (if necessary) to the drainage network. This shall maximise the amount of harvested rainwater that can be stored on site and utilised in the process, before the need to seek other sources. The stormwater attenuation tanks also control the release of water, increasing the amount of time available that rainwater can be redirected to the process, via the surface water pumping station.

Water use will be actively managed through a combination of operational controls (i.e. SCADA operated pumps that automatically control water source) and record-keeping (i.e. recording of quantities of each source used). The plant will be automated to minimise water use and ensure harvested rainwater is used over other water sources where possible.

6.3 Fire Water

Requirements of the Planning Authority in relation to fire safety and firefighting requirements shall be fully complied with in the Fire Safety Certificate application for the site, which will be prepared during the detailed design of the plant and in advance of construction.

As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2100**, a c.650m^3 Fire Water Tank shall be installed on site and in terms of the supply hierarchy, harvested rainwater will be prioritised, followed by supply from the groundwater well.

As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2100**, a separate site-wide fire main network will convey water to a network of hydrants and the site buildings from the fire water tank. Hydrants are positioned throughout the site as per requirements of Hydrant locations detailed in Building Regulations Technical Guidance Document B – Fire Safety Clause 5.

The fire water tank/fire water pumps shall be connected to the fire main network which runs around the site. When the fire alarm is activated, the fire pumps start maintaining a setpoint pressure in the fire main. Then the fire brigade can connect to the fire hydrants located around the site with their hoses.

Fire water retention shall be in compliance with the requirements of the EPA Guidance on Fire Water Retention. Fire water, should it arise, would be dealt with in a number of different ways:

- Fire water generated in the Main Building will be directed to drainage sumps within the building, which is effectively a bunded tank;
- Fire water generated in the tank farm will be contained within the bund walls;
- Fire water generated elsewhere in site will be directed to the surface water attenuation tanks via SDS Aquaswirl Vortex Pollutant Separation System Chambers and SDS AquaFilter Surface Water Filtration Units.

Any firewater would be analysed prior to a decision being made with respect to possible tank offsite to an approved wastewater plant, or an approved alternative treatment.

6.4 Washwater

As shown on Drawing **MON-MCA-ZZ-XX-DR-CE-2100**, a network of hose reels will be provided across the site where required for the purposes of cleaning, including around the Main Process Building, Dryer Building and Pellet Hall and at several points in and around the tank farm bund. Two wheelwash facilities will also be located on the internal HGV haul route and shall be connected to this supply.

In terms of the supply hierarchy for these hose reels, harvested rainwater will be prioritised, followed by supply from the groundwater well.

6.4.1 Telecommunications

As detailed within Section 2.2.2.2, existing above ground telecommunication cables and associated poles are located along the northern and eastern boundaries of the proposed development site, running parallel to the public roads (R189/L2280/L2320).

The proposed site entrance on the L2280 is located on the northern boundary of the site and as an operational requirement, no overhead lines shall be located across the site entrance. As such, all existing above ground telecommunication cables shall be grounded through this area, with a new connection established to service the plant.

All other existing above ground telecommunication cables and associated poles should be maintained in their current state, though there may be the requirement to relocate some infrastructure if there is a conflict with the likes of forward sightlines / visibility splays.

7 Surface Water

7.1 Surface Water Drainage Strategy

The proposed site drainage for the proposed development is shown on Drawing ***MON MCA ZZ XX DR CE 2000***. The drainage strategy for the proposed development consists of a number of surface water drainage networks that collect run-off from the proposed building and plant roofs, and external hardstanding areas, provides appropriate levels of attenuation, with an objective to reuse within the process the maximum amount of surface water generated from the operational extents of the site as possible.

Run-off will enter the drainage network via gullies, rainwater downpipes, or linear drains and travel through a network of pipes to underground attenuation tanks and pipes with a storage capacity of 1,338m^3. The tanks will attenuate flows up to and including the 100-year plus 30% climate change allowance and discharge surface water to the downstream network at a restricted flowrate.

A water treatment system comprising of SDS Aquaswirl Vortex Pollutant Separation System Chambers and SDS AquaFilter Surface Water Filtration Units will be installed on the inlet pipework to the attenuation tanks, to reduce the overall amount of total suspended solids and other potential compounds within the surface water run-off. Any harvested surface water used in the plant process or discharged from the site will have undergone treatment via these units.

As noted above, the proposed development will be utilising rainwater within the AD process as part of daily operations. This will significantly reduce the volume of water that would potentially be discharged from the site. As a result, it shall provide betterment over existing greenfield run-off rates that would typically be generated from the site. It is noted that the proposed development site includes permeable areas for landscaping (i.e. earthworks berm). In general, any run-off from these areas shall follow the existing drainage regime, directed to and utilising existing drainage ditches that shall remain along the boundary of the site, with flow directed to the existing discharge point on the north-east site boundary.

As a worst-case scenario, should onsite water re-use be halted, the proposal development will discharge water at a rate equivalent to the greenfield run-off currently experienced with attenuation being provided. The maximum design discharge flow from the site will be 83.5l/s, the calculated greenfield runoff rate for the site for a 1-in-100-year event.

If run-off does leave the site, it will discharge into an existing culvert which sends flows to a ditch located on the opposite side of the R189 to the site, on the north-east site boundary. This is subject to gaining the necessary discharge consent/approvals. This ditch conveys water to the nearest watercourse (Coolkill Lough Stream) to the east of the site.

7.1.1 Surface Water Pumping Stations

There are two Surface Water Pumping Stations on site. SWPS 1 is located within the Tank Farm Bund. SWPS 2 is located directly upstream of the discharge manhole from the site.

SWPS 1 will send flows up to 100l/s to the main process building by default for use in the AD process. This is equivalent to the 1-in-2-year incoming flow rate to the station. During events which generate higher incoming flows the ward flow rate will be capped at 100l/s and excess surface water will be attenuated with the Tank Farm Bund until the event has ceased.

If there is a Plant malfunction, or the plant is offline for maintenance activities, then the pumped flows will be manually diverted to the site storm drainage network. Frequent sampling of the AD Bund drainage water will be undertaken to ensure it is uncontaminated. If the water is contaminated it will be held in the AD Bund Pumping Station and not pumped to the site storm drainage network

The pumping regime within SWPS 2 will be configured so that surface water arriving at the station will be pumped to the Main Process Building in the first instance. In the event of there being no demand or a fault, then the station would overflow to a downstream manhole and surface water will discharge from the site at the restricted flow rate.

7.2 Surface Water Run-off Treatment

Without a suitable level of treatment, impermeable surfacing would cause an increased risk of surface water run-off contamination. The risk posed by surface water run-off to the receiving water environment is outlined within the CIRIA SuDS Manual (C753) and is a function of:

- The pollution hazard at a particular site (i.e. the pollutant source);
- The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels, and/or the effectiveness of underlying soil layers in protecting the receiving groundwater;
- The sensitivity of the receiving environment (i.e. the environmental receptor)

The SuDS proposals within the proposed development will be designed to treat the anticipated surface water runoff contamination to a safe level before discharge into the environment (if necessary).

In line with Table 26.2 '*Pollution Hazard Indices*' in CIRIA's SuDS Manual (C753), the proposed development is considered as high risk under the land use of 'industrial sites' and is to have the following pollution hazard indices.

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Sites with heavy pollution (e.g. haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where raw materials and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways.	High	0.8	0.8	0.9

Copy of Table 26.2: Indicative SuDS mitigation indices for discharges to surface water (CIRIA C753), edited.

Table 7-1 provides an indication of treatment potential for common proprietary treatment devices available on the market.

Proprietary treatment systems used on site - Mitigation Indices			
Type of component	TSS	Metals	Hydrocarbons
Aqua-Swirl Vortex	0.8	0.5	
0	.		7
Aqua Filter Unit 0.7 Aqua-Swirl Vortex Aqua Filter Unit in sequence	>0.85	0.8	>0.95

Table 7-1 Mitigation Indices for Proprietary Storm Water Treatment Devices

As shown in Table 7-1, the proposed development SuDS remove runoff contaminants to appropriate levels. All pipework collecting run-off on-site shall pass through an appropriately sized Aqua-Swirl vortex (or similar) immediately upstream of an Aqua Filter Unit. These two items are installed upstream of attenuation storage tanks.

All surface water run-off treatment shall be provided using proprietary products. All captured surface water within the site will pass through a sequence of Aqua Swirl Vortex and Aqua Filter Unit at least once before reaching Surface Water Pumping Station 2. From here the harvested surface water will either be pumped to the plant process, or discharge from the site via a headwall to the existing drainage ditch in the north-east corner of the site.

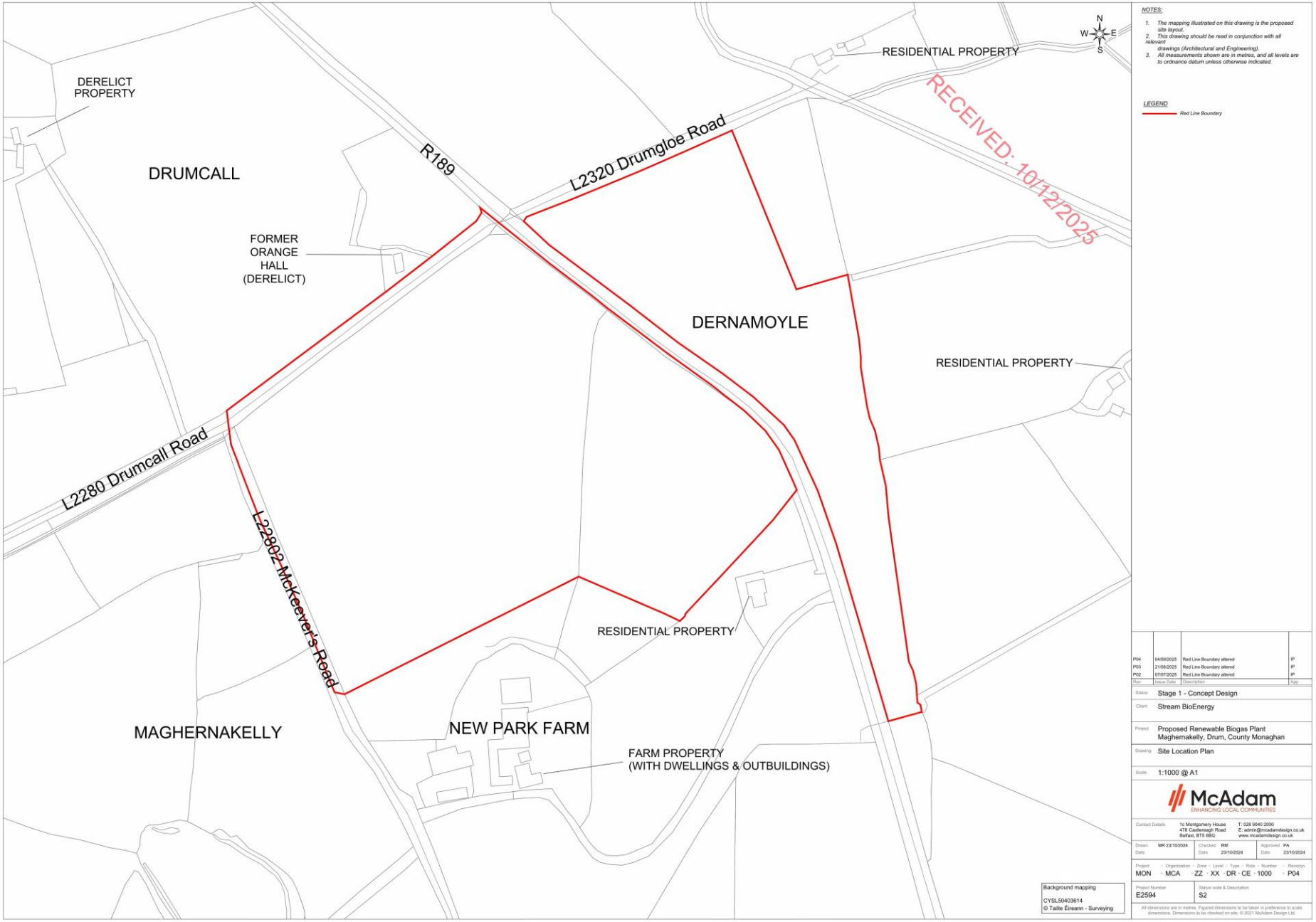
8 Foul Water

Foul drainage collected from the on-site welfare facilities during operation will be directed to a commercially sized package treatment plant via a network of pipes and manholes as shown on Drawing ***MON MCA ZZ XX DR CE 2000.*** It is estimated the plant will generate c.2m^3/day of foul effluent. The use of treated effluent in the AD process is normal practice and is more sustainable than sending to sewer (where available) and adds to the circular economy model for the plant. As such, there will be no trade effluent (waste waters) or domestic type wastewater discharging from the proposed development.

It shall be pumped from the outlet of the package treatment plant via a Foul Water Pumping Station to an above ground storage tank with large volume capacity before being drawn into the main process building to aid the dilution of feedstock process and create a pumpable slurry. This also reduces demand on external water supplies. Occasional removal of solids off-site will be required (estimated once per year) to an appropriate facility, likely the McBreen waste facility at Corranure, Co. Cavan located c.20km southwest of the site.

The Foul Water Pumping Station will be sized to provide 24 hours of storage for the foul flows generated by the site as a contingency should there be a pump or power failure. It will also afford some flexibility to the plant operator with respect to sending the treated water to the AD process.

DRAWINGS


DERELICT PROPERTY
DRUMCALL
R189
L2320 Drumgloe Road
RESIDENTIAL PROPERTY
RECEIVED: 10/12/2025
FORMER ORANGE HALL (DERELICT)
DERNAMOYLE
RESIDENTIAL PROPERTY
L2280 Drumcall Road
L22802 McKeever's Road
RESIDENTIAL PROPERTY
MAGHERNAKELLY
NEW PARK FARM
FARM PROPERTY (WITH DWELLINGS & OUTBUILDINGS)
N
W
E
S
NOTES:
1. The mapping illustrated on this drawing is the proposed site layout.
2. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
3. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated.
LEGEND
Red Line Boundary
Background mapping
CYSL50403614
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P04 04/09/2025 Red Line Boundary altered IP
P03 21/08/2025 Red Line Boundary altered IP
P02 07/07/2025 Red Line Boundary altered IP
Rev Issue Date Description App
Status Stage 1 - Concept Design
Client Stream BioEnergy
Project Proposed Renewable Biogas Plant Maghernakelly, Drum, County Monaghan
Drawing Site Location Plan
Scale 1:1000 @ A1
McAdam
ENHANCING LOCAL COMMUNITIES
Contact Details 1c Montgomery House 478 Castlereagh Road Belfast, BT5 6BQ
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Drawn MR 23/10/2024
Checked RM 23/10/2024
Approved PA 23/10/2024
Project - Organisation - Zone - Level - Type - Role - Number - Revision
MON - MCA - ZZ - XX - DR - CE - 1000 - P04
Project Number E2594
Status code & Description S2
All dimensions are in metres. Figured dimensions to be taken in preference to scale dimensions. Dimensions to be checked on site. © 2021 McAdam Design Ltd.

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Notes:

Contours shown at 1m & 0.5m intervals

The Survey is related to ITM Co-ordinates

and related to O.S.B.M

Project:

Topographical Survey @

Maghernakelly, Co Monaghan

Client:

Vision Design

Engineer:

C. Comiskey

Surveyed by:

CPO Surveying Ltd

15a Drumhillery Road
Middletown
Co Armagh BT60 4SG
Tel: 07738043235
Email: info@cposurveying.ie

Date Surveyed:

24/09/2025

Scale:

1:1250 - A0

Drg No:

5443-2-2D
Sheet 1 of 1


RECEIVED: 10/12/2025
Back-up Generator
Plant Room
Control Building
Admin Building
Pellet Hall
Dryer Building
Dryer / CHP / Boiler Stack
CHP Building
Sludge Buffer Tank 17mØ x 17m
Storage and Maintenance Space
Evaporator Feed Tank 16mØ x 11m
Evaporator
Ammonia Strippers
Concentrate Tank 6mØ x 8.5
Digester
CO2 Liquefaction Biogas Upgrade Plant
Biological De-Sulphurisation Units
Gas Holder
Activated Carbon Units
Process Building
Vehicle Turning Zone
Process Water Buffer Tank
LPG Tanks
Fire Water Tank 10mØ
Gas Grid Entry Unit
Flare
Fuel Tank
NOTES:
1. The mapping illustrated on this drawing is the proposed site layout.
2. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
3. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated.
LEGEND
Red Line Boundary
Stage 1 - Concept Design
Steam BioEnergy
Proposed Renewable Biogas Plant
Maghernakelty, Drum, County Monaghan
Proposed Site Layout
1:500 @ A0
McAdam
MON - MCA - ZZ - XX - DR - CE - 1050 - P16
E2594
S2
Background mapping
CYSLS/0403614
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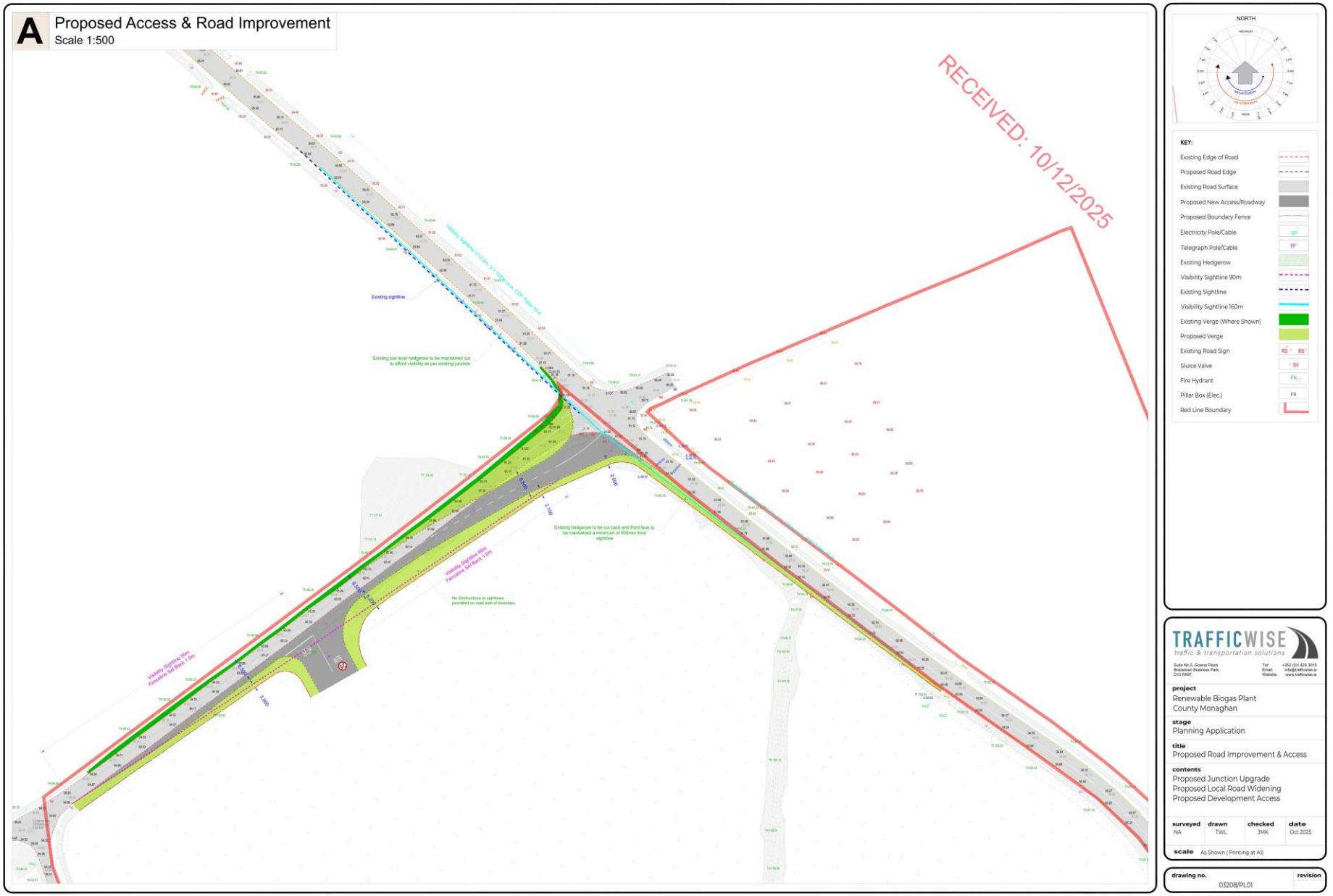
A
Proposed Access & Road Improvement
Scale 1:500
RECEIVED: 10/12/2025
NORTH
KEY:
Existing Edge of Road
Proposed Road Edge
Existing Road Surface
Proposed New Access/Roadway
Proposed Boundary Fence
Electricity Pole/Cable
Telegraph Pole/Cable
Existing Hedgerow
Visibility Sightline 90m
Existing Sightline
Visibility Sightline 160m
Existing Verge (Where Shown)
Proposed Verge
Existing Road Sign
Sluice Valve
Fire Hydrant
Pillar Box (Elec.)
Red Line Boundary
TRAFFICWISE
traffic & transportation solutions
project
Renewable Biogas Plant
County Monaghan
stage
Planning Application
title
Proposed Road Improvement & Access
contents
Proposed Junction Upgrade
Proposed Local Road Widening
Proposed Development Access
surveyed
NA
drawn
TWL
checked
JMK
date
Oct 2025
scale
As Shown (Printing at A1)
drawing no.
03208/PL01
revision


A
Proposed Junction & Road Improvement
Scale 1:200
RECEIVED: 10/12/2025
B
Proposed Access
Scale 1:200
STOP
25
SLOW
NORTH
KEY:
Existing Edge of Road
Proposed Road Edge
Existing Road Surface
Proposed New Access/Roadway
Proposed Boundary Fence
Electricity Pole/Cable
Telegraph Pole/Cable
Existing Hedgerow
Visibility Sightline 90m
Existing Sightline
Visibility Sightline 160m
Existing Verge (Where Shown)
Proposed Verge
Existing Road Sign
Sluice Valve
Fire Hydrant
Pillar Box (Elec.)
Red Line Boundary
FTA Design Articulated Vehicle (2016)
Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Track Width 2.470m
Lock-to-lock time 3.00s
Kerb to kerb turning radius 6.600m
TRAFFICWISE
traffic & transportation solutions
project
Renewable Biogas Plant
County Monaghan
stage
Planning Application
title
Proposed Road Improvement & Access
contents
Swept Path Assessment
surveyed NA
drawn TWL
checked JMK
date Oct 2025
scale As Shown (Printing at A1)
drawing no. 03208/PL02
revision

Notes:

1. *The mapping illustrated on this drawing is the proposed site layout which will be subject to change following design development.*
2. *This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).*
3. *This drawing is provided to illustrate the vehicle movements for the site. All other features illustrated are indicative only and the respective drawing should be consulted if discrepancies occur.*

Vehicle Wheel Track
Vehicle Chassis Track

Articulated Vehicle with Twin Steered Tractor

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.692m
Min Body Ground Clearance	0.425m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.987m

P09	30/10/2025	Updated following client change to plant item	IP
P08	22/10/2025	Updated following client changes to site layout	IP
P7	01/10/2025	Layout Amended	PC
P6	04.09.2025	Tracking and Layouts Updated	PC
P5	14.04.2025	Tracking and Layouts Updated	MR
P4	28.03.2025	tracking updated	RM
P3	26.03.2025	Layout updates tracked	RM
P2	28/11/2024	Access Road for Tank Farm Altered	MR
Rev	Issue Date	Description	App

Status: FOR INFORMATION BioEnergy

Client:

Project: Proposed Renewable Biogas Plant
Maghernakelly, Drum, County Monaghan

Drawing: Proposed Site Layout
Autotracking - Tanker

Scale: 1:500 @ A1

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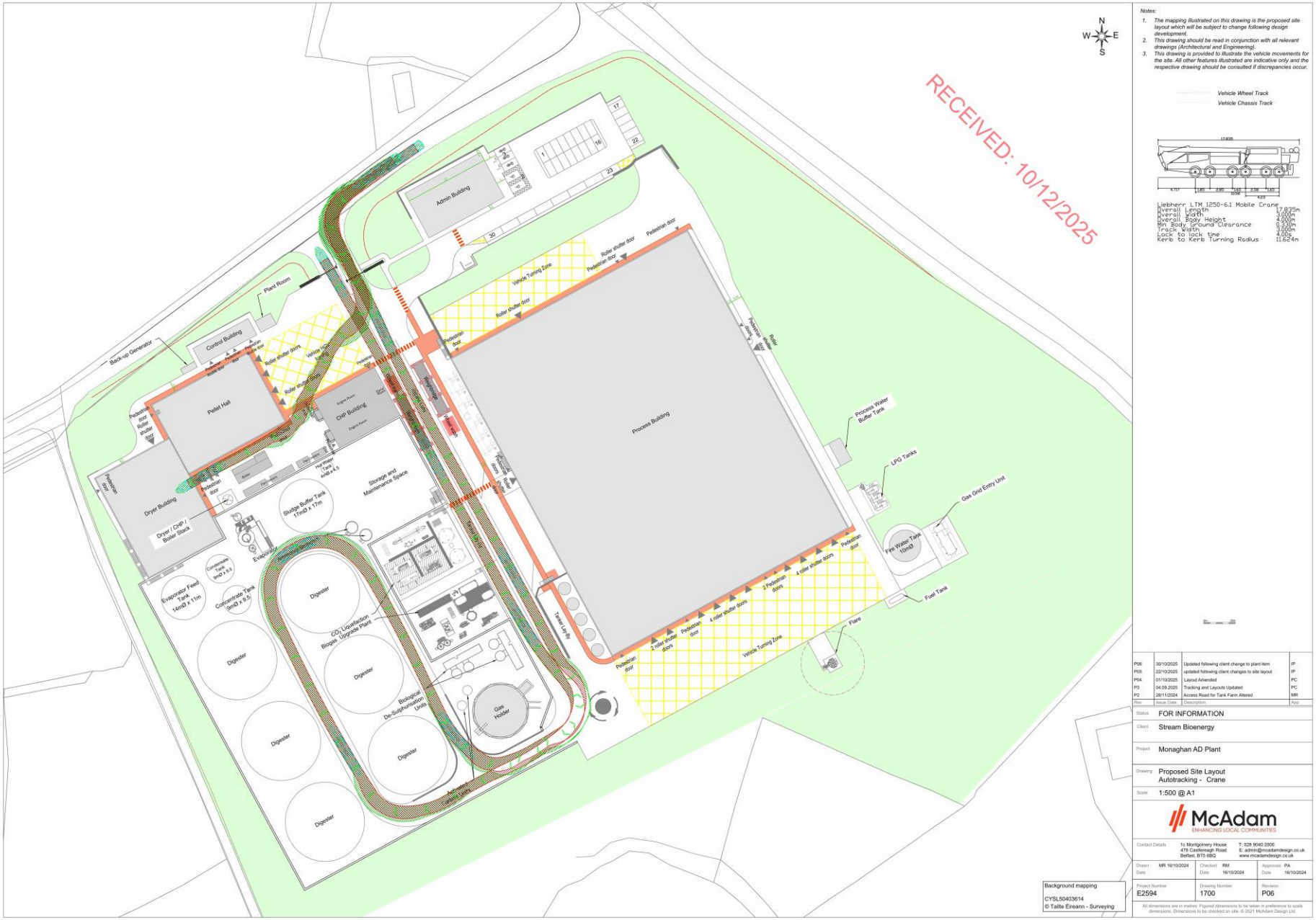
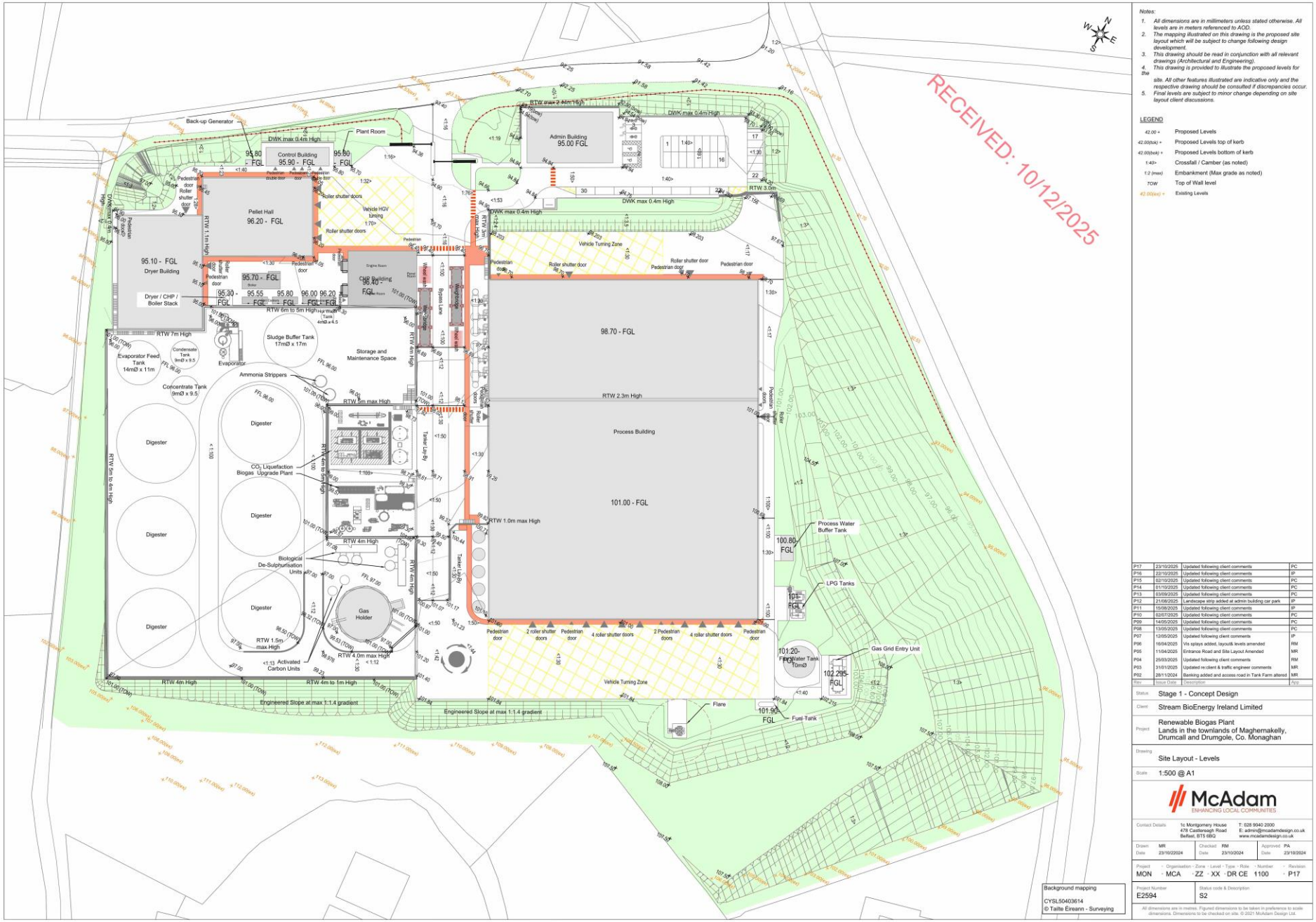
Drawn: Date	Checked: RM, Date: 16/10/2024	Approved: PA, Date: 16/10/2024

Project Number: E2594	Drawing Number: 1700	Revision: P09


RECEIVED: 10/12/2025
Admin Building
Plant Room
Control Building
Back-up Generator
Pellet Hall
CHP Building
Dryer Building
Storage and Maintenance Space
Process Building
Process Water Buffer Tank
LPG Tanks
Gas Grid Entry Unit
Fire Water Tank 10mD
Fuel Tank
Flare
Digester
Gas Holder
Vehicle Turning Zone
Roller shutter door
Pedestrian door
Notes:
1. The mapping illustrated on this drawing is the proposed site layout which will be subject to change following design development.
2. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
3. This drawing is provided to illustrate the vehicle movements for the site. All other features illustrated are indicative only and the respective drawing should be consulted if discrepancies occur.
Vehicle Wheel Track
Vehicle Chassis Track
Liebherr LTM 1250-6.1 Mobile Crane
Overall Length 17.835m
Overall Width 3.000m
Overall Body Height 4.000m
Min Body Ground Clearance 0.320m
Track Width 3.000m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 11.624m
P06 30/10/2025 Updated following client change to plant item IP
P05 22/10/2025 updated following client changes to site layout IP
P04 01/10/2025 Layout Amended PC
P3 04.09.2025 Tracking and Layouts Updated PC
P2 28/11/2024 Access Road for Tank Farm Altered MR
Status FOR INFORMATION
Client Stream Bioenergy
Project Monaghan AD Plant
Drawing Proposed Site Layout Autotracking - Crane
Scale 1:500 @ A1
McAdam ENHANCING LOCAL COMMUNITIES
Contact Details 1c Montgomery House 478 Castlereagh Road Belfast, BT5 6BQ T: 028 9040 2000 E: admin@mcadamdesign.co.uk www.mcadamdesign.co.uk
Drawn MR 16/10/2024 Checked RM 16/10/2024 Approved PA 16/10/2024
Project Number E2594 Drawing Number 1700 Revision P06
Background mapping CYSL50403614 © Tailte Éireann - Surveying
All dimensions are in metres. Figured dimensions to be taken in preference to scale dimensions. Dimensions to be checked on site. © 2021 McAdam Design Ltd.



Notes:

1. All dimensions are in millimeters unless stated otherwise. All levels are in meters referenced to AOD.
2. The mapping illustrated on this drawing is the proposed site layout which will be subject to change following design development.
3. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
4. This drawing is provided to illustrate the proposed levels for the site. All other features illustrated are indicative only and the respective drawing should be consulted if discrepancies occur.
5. Final levels are subject to minor change depending on site layout client discussions.

LEGEND

42.00 +	Proposed Levels
42.00(tok) +	Proposed Levels top of kerb
42.00(bok) +	Proposed Levels bottom of kerb
1:40>	Crossfall / Camber (as noted)
1:2 (max)	Embankment (Max grade as noted)
TOW	Top of Wall level
42.00(ex) +	Existing Levels

Rev	Issue Date	Description	App
P17	23/10/2025	Updated following client comments	PC
P16	22/10/2025	Updated following client comments	IP
P15	02/10/2025	Updated following client comments	PC
P14	01/10/2025	Updated following client comments	PC
P13	03/09/2025	Updated following client comments	PC
P12	21/08/2025	Landscape strip added at admin building car park	IP
P11	15/08/2025	Updated following client comments	IP
P10	02/07/2025	Updated following client comments	PC
P09	14/05/2025	Updated following client comments	PC
P08	13/05/2025	Updated following client comments	PC
P07	12/05/2025	Updated following client comments	IP
P06	16/04/2025	Vis splays added, layoutlk levels amended	RM
P05	11/04/2025	Entrance Road and Site Layout Amended	MR
P04	25/03/2025	Updated following client comments	RM
P03	31/01/2025	Updated re client & traffic engineer comments	MR
P02	28/11/2024	Banking added and access road in Tank Farm altered	MR

Status: Stage 1 - Concept Design

Client: Stream BioEnergy Ireland Limited

Project: Renewable Biogas Plant
Lands in the townlands of Maghernakelly, Drumcall and Drumgole, Co. Monaghan

Drawing: Site Layout - Levels

Scale: 1:500 @ A1

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Drawn	Checked	Approved
MR	RM	PA
Date 23/10/2024	Date 23/10/2024	Date 23/10/2024

Project · Organisation · Zone · Level · Type · Role · Number · Revision
MON · MCA · ZZ · XX · DR · CE · 1100 · P17

Project Number: E2594

Status code & Description: S2

Background mapping
CYSL50403614
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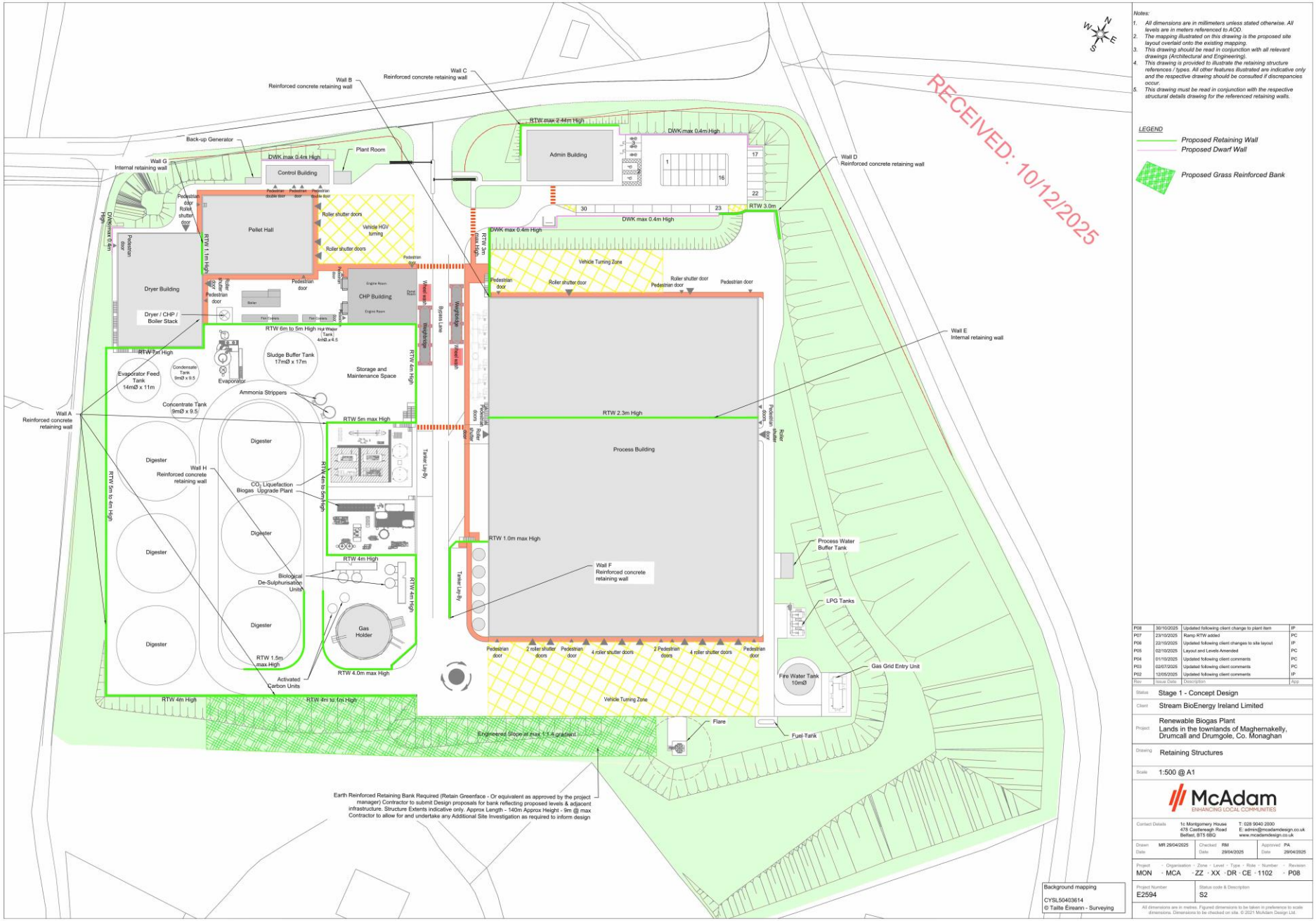
RECEIVED: 10/12/2025
Wall A
Reinforced concrete retaining wall
Wall B
Reinforced concrete retaining wall
Wall C
Reinforced concrete retaining wall
Wall D
Reinforced concrete retaining wall
Wall E
Internal retaining wall
Wall F
Reinforced concrete retaining wall
Wall G
Internal retaining wall
Wall H
Reinforced concrete retaining wall
Back-up Generator
Plant Room
Control Building
Admin Building
Pellet Hall
Dryer Building
CHP Building
Dryer / CHP / Boiler Stack
Storage and Maintenance Space
Sludge Buffer Tank 17mØ x 17m
Evaporator Feed Tank 14mØ x 11m
Condensate Tank 9mØ x 9.5
Evaporator
Ammonia Strippers
Concentrate Tank 9mØ x 9.5
Digester
CO2 Liquefaction Biogas Upgrade Plant
Biological De-Sulphurisation Units
Activated Carbon Units
Gas Holder
Process Building
Process Water Buffer Tank
LPG Tanks
Fire Water Tank 10mØ
Gas Grid Entry Unit
Flare
Fuel Tank
Vehicle Turning Zone
Engineered Slope at max 1:1.4 gradient
Earth Reinforced Retaining Bank Required (Retain Greenface - Or equivalent as approved by the project manager) Contractor to submit Design proposals for bank reflecting proposed levels & adjacent infrastructure. Structure Extents indicative only. Approx Length - 140m Approx Height - 9m @ max Contractor to allow for and undertake any Additional Site Investigation as required to inform design
RTW max 2.44m High
DWK max 0.4m High
RTW 3.0m
RTW 2.3m High
RTW 1.0m max High
RTW 6m to 5m High
RTW 5m max High
RTW 4m High
RTW 4m to 5m High
RTW 5m to 4m High
RTW 4m to 1m High
RTW 1.5m max High
RTW 4.0m max High
RTW 1.1m High
RTW 3m max High
Notes:
1. All dimensions are in millimeters unless stated otherwise. All levels are in meters referenced to AOD.
2. The mapping illustrated on this drawing is the proposed site layout overlaid onto the existing mapping.
3. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
4. This drawing is provided to illustrate the retaining structure references / types. All other features illustrated are indicative only and the respective drawing should be consulted if discrepancies occur.
5. This drawing must be read in conjunction with the respective structural details drawing for the referenced retaining walls.
LEGEND
Proposed Retaining Wall
Proposed Dwarf Wall
Proposed Grass Reinforced Bank
P08 30/10/2025 Updated following client change to plant item IP
P07 23/10/2025 Ramp RTW added PC
P06 22/10/2025 Updated following client changes to site layout IP
P05 02/10/2025 Layout and Levels Amended PC
P04 01/10/2025 Updated following client comments PC
P03 02/07/2025 Updated following client comments PC
P02 12/05/2025 Updated following client comments IP
Rev Issue Date Description App
Status Stage 1 - Concept Design
Client Stream BioEnergy Ireland Limited
Project Renewable Biogas Plant
Lands in the townlands of Maghernakelly, Drumcall and Drumgole, Co. Monaghan
Drawing Retaining Structures
Scale 1:500 @ A1
McAdam
ENHANCING LOCAL COMMUNITIES
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Drawn MR 29/04/2025
Checked RM 29/04/2025
Approved PA 29/04/2025
Project MON · MCA · ZZ · XX · DR · CE · 1102 · P08
Project Number E2594
Status code & Description S2
All dimensions are in metres. Figured dimensions to be taken in preference to scale dimensions. Dimensions to be checked on site. © 2021 McAdam Design Ltd.
Background mapping
CYSL50403614
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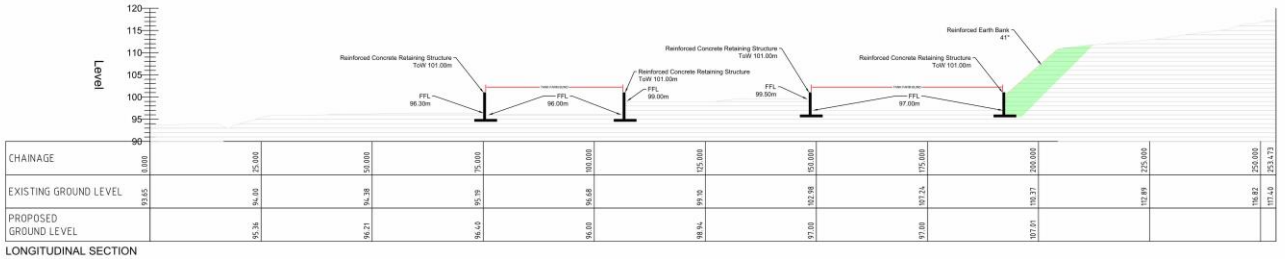
Notes:

1. This drawing illustrates a plan layout and site cross section for the Proposed Renewable Biogas Plant. All details shown on the cross section are for illustrative purposes only.
2. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
3. All dimensions are in millimeters, unless stated otherwise.

LEGEND

Red Line Boundary



LONGITUDINAL SECTION

Rev	Issue Date	Description	App
P02	03/12/2025	To address SBE review comments	IP

Status: PLANNING

Client: Stream BioEnergy Ireland Limited

Project: Renewable Biogas Plant
lands in the townlands of Maghernakelly, Drumcall & Drumgole, Co. Monaghan

Drawing: Site Cross Section
Proposed Retaining Structures

Scale: 1:500 @ A1

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Drawn	Checked	Approved
IP	PA	PA
Date 25/11/2025	Date 25/11/2025	Date 25/11/2025

Project - Organisation - Zone - Level - Type - Role - Number - Revision
MON - MCA - ZZ - XX - DR - CE - 1200 - P02

Project Number: E2594

Status code & Description: S2


RECEIVED: 10/12/2025
*alignment to be confirmed in consultation with ESB Networks
The proposed development site is at Maghernakelly and Dernamoyle, Drum, County Monaghan at the junction of the L2280 Drumcall Road and R189 regional road
ITM X-658967, Y-818422.
NOTES:
1. The mapping illustrated on this drawing is the proposed site layout.
2. This drawing should be read in conjunction with all relevant drawings (Architectural and Engineering).
3. All measurements shown are in metres, and all levels are to ordnance datum unless otherwise indicated.
LEGEND
Red Line Boundary
Existing 10kV Overhead Line
Indicative route of realigned ESB 10kV overhead line*
*subject to approval from ESB Networks.
Potential for the diverted ESB 10kV line to be kept overhead or under-grounded (if deemed a practicable solution).
Background mapping
CYS150403614
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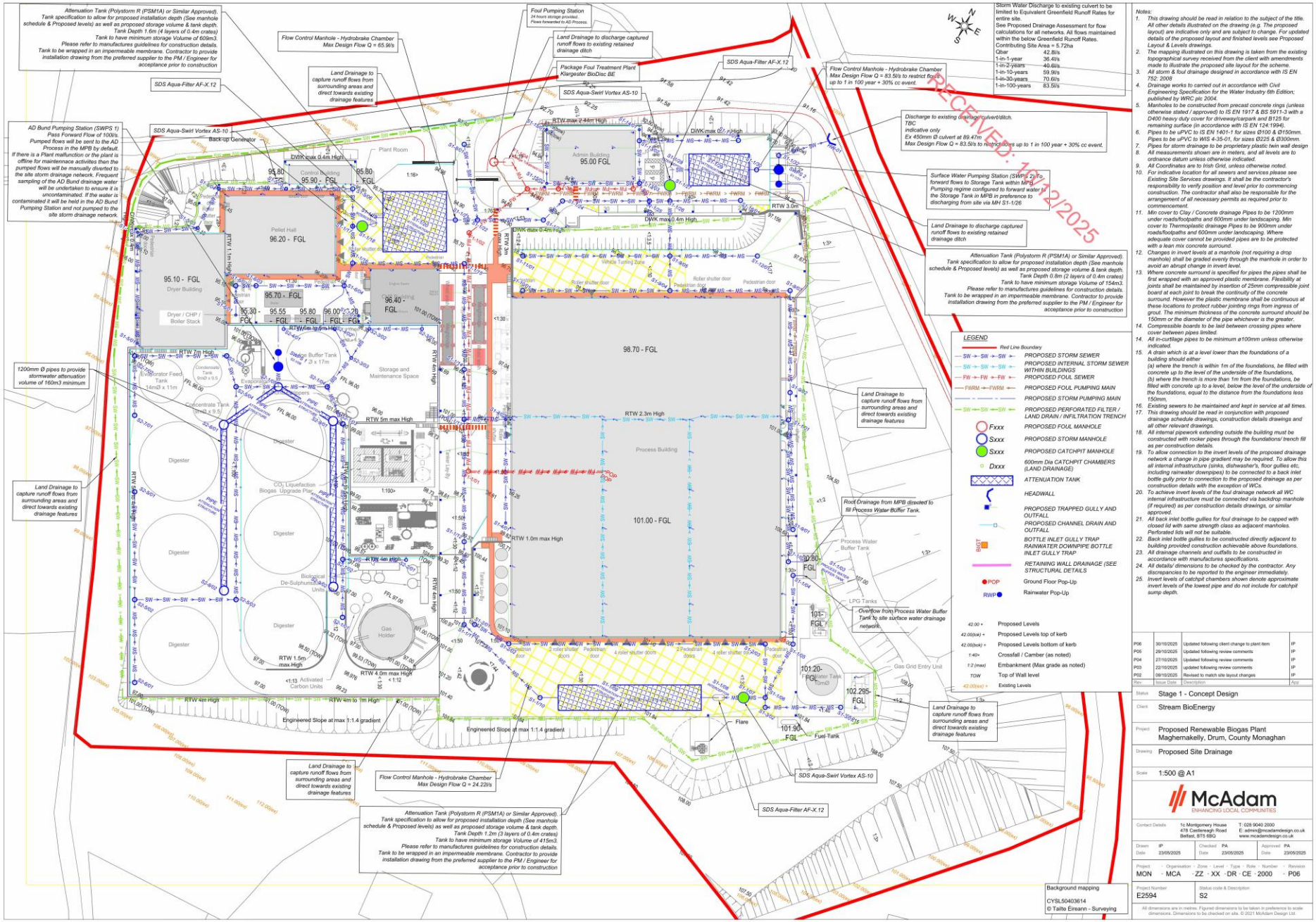
Stage 1 - Concept Design
Stream BioEnergy
Proposed Renewable Biogas Plant
Maghernakelly, Drum, County Monaghan
Proposed Site Layout - ESB Networks
1:500 @ A0
stream bioenergy
E2594
S2


RECEIVED: 12/2/2025
Storm Water Discharge to existing culvert to be limited to Equivalent Greenfield Runoff Rates for entire site.
See Proposed Drainage Assessment for flow calculations for all networks. All flows maintained within the below Greenfield Runoff Rates.
Contributing Site Area = 5.72ha
Qbar 42.8l/s
1-in-1-year 36.4l/s
1-in-2-years 40.6l/s
1-in-10-years 59.9l/s
1-in-30-years 70.6l/s
1-in-100-years 83.5l/s
Notes:
1. This drawing should be read in relation to the subject of the title. All other details illustrated on the drawing (e.g. The proposed layout) are indicative only and are subject to change. For updated details of the proposed layout and finished levels see Proposed Layout & Levels drawings.
2. The mapping illustrated on this drawing is taken from the existing topographical survey received from the client with amendments made to illustrate the proposed site layout for the scheme.
3. All storm & foul drainage designed in accordance with IS EN 752: 2008
4. Drainage works to carried out in accordance with Civil Engineering Specification for the Water Industry 6th Edition; published by WRC plc 2004.
5. Manholes to be constructed from precast concrete rings (unless otherwise stated / approved) to IS EN 1917 & BS 5911-3 with a D400 heavy duty cover for driveway/carpark and B125 for remaining surface (in accordance with IS EN 124:1994).
6. Pipes to be uPVC to IS EN 1401-1 for sizes Ø100 & Ø150mm. Pipes to be uPVC to WIS 4-35-01, for sizes Ø225 & Ø300mm.
7. Pipes for storm drainage to be proprietary plastic twin wall design
8. All measurements shown are in meters, and all levels are to ordnance datum unless otherwise indicated.
9. All Coordinates are to Irish Grid, unless otherwise noted.
10. For indicative location for all sewers and services please see Existing Site Services drawings. It shall be the contractor's responsibility to verify position and level prior to commencing construction. The contractor shall also be responsible for the arrangement of all necessary permits as required prior to commencement.
11. Min cover to Clay / Concrete drainage Pipes to be 1200mm under roads/footpaths and 600mm under landscaping. Min cover to Thermoplastic drainage Pipes to be 900mm under roads/footpaths and 600mm under landscaping. Where adequate cover cannot be provided pipes are to be protected with a lean mix concrete surround.
12. Changes in invert levels at a manhole (not requiring a drop manhole) shall be graded evenly through the manhole in order to avoid an abrupt change in invert level.
13. Where concrete surround is specified for pipes the pipes shall be first wrapped with an approved plastic membrane. Flexibility at joints shall be maintained by insertion of 25mm compressible joint board at each joint to break the continuity of the concrete surround. However the plastic membrane shall be continuous at these locations to protect rubber jointing rings from ingress of grout. The minimum thickness of the concrete surround should be 150mm or the diameter of the pipe whichever is the greater.
14. Compressible boards to be laid between crossing pipes where cover between pipes limited.
14. All in-curtilage pipes to be minimum ø100mm unless otherwise indicated.
15. A drain which is at a level lower than the foundations of a building should either
(a) where the trench is within 1m of the foundations, be filled with concrete up to the level of the underside of the foundations,
(b) where the trench is more than 1m from the foundations, be filled with concrete up to a level, below the level of the underside of the foundations, equal to the distance from the foundations less 150mm.
16. Existing sewers to be maintained and kept in service at all times.
17. This drawing should be read in conjunction with proposed drainage schedule drawings, construction details drawings and all other relevant drawings.
18. All internal pipework extending outside the building must be constructed with rocker pipes through the foundations/ trench fill as per construction details.
19. To allow connection to the invert levels of the proposed drainage network a change in pipe gradient may be required. To allow this all internal infrastructure (sinks, dishwasher's, floor gullies etc, including rainwater downpipes) to be connected to a back inlet bottle gully prior to connection to the proposed drainage as per construction details with the exception of WCs.
20. To achieve invert levels of the foul drainage network all WC internal infrastructure must be connected via backdrop manhole (if required) as per construction details drawings, or similar approved.
21. All back inlet bottle gullies for foul drainage to be capped with closed lid with same strength class as adjacent manholes. Perforated lids will not be suitable.
22. Back inlet bottle gullies to be constructed directly adjacent to building provided construction achievable above foundations.
23. All drainage channels and outfalls to be constructed in accordance with manufactures specifications.
24. All details/ dimensions to be checked by the contractor. Any discrepancies to be reported to the engineer immediately.
25. Invert levels of catchpit chambers shown denote approximate invert levels of the lowest pipe and do not include for catchpit sump depth.
LEGEND
Red Line Boundary
PROPOSED STORM SEWER
PROPOSED INTERNAL STORM SEWER WITHIN BUILDINGS
PROPOSED FOUL SEWER
PROPOSED FOUL PUMPING MAIN
PROPOSED STORM PUMPING MAIN
PROPOSED PERFORATED FILTER / LAND DRAIN / INFILTRATION TRENCH
PROPOSED FOUL MANHOLE
PROPOSED STORM MANHOLE
PROPOSED CATCHPIT MANHOLE
600mm Dia CATCHPIT CHAMBERS (LAND DRAINAGE)
ATTENUATION TANK
HEADWALL
PROPOSED TRAPPED GULLY AND OUTFALL
PROPOSED CHANNEL DRAIN AND OUTFALL
BOTTLE INLET GULLY TRAP
RAINWATER DOWNPIPE BOTTLE INLET GULLY TRAP
RETAINING WALL DRAINAGE (SEE STRUCTURAL DETAILS
Ground Floor Pop-Up
Rainwater Pop-Up
Proposed Levels
Proposed Levels top of kerb
Proposed Levels bottom of kerb
Crossfall / Camber (as noted)
Embankment (Max grade as noted)
Top of Wall level
Existing Levels
P06 30/10/2025 Updated following client change to plant item IP
P05 29/10/2025 Updated following review comments IP
P04 27/10/2025 Updated following review comments IP
P03 22/10/2025 updated following review comments IP
P02 09/10/2025 Revised to match site layout changes IP
Rev. Issue Date Description App.
Status Stage 1 - Concept Design
Client Stream BioEnergy
Project Proposed Renewable Biogas Plant Maghernakelly, Drum, County Monaghan
Drawing Proposed Site Drainage
Scale 1:500 @ A1
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Project Number E2594
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Background mapping CYSL50403614
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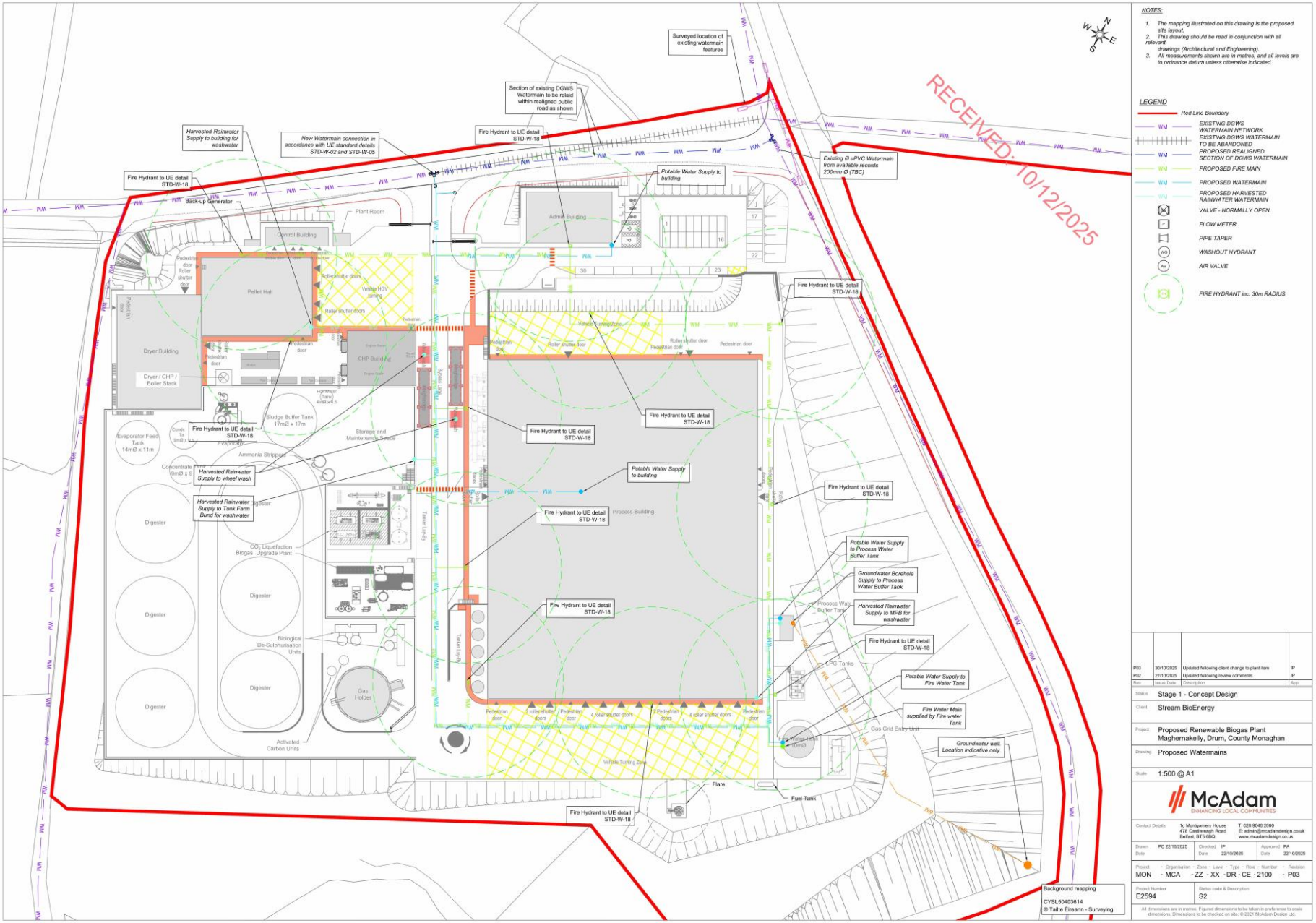
RECEIVED: 10/12/2025
NOTES:
1. The mapping illustrated on this drawing is the proposed site layout.
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LEGEND
Red Line Boundary
EXISTING DGWS WATERMAIN NETWORK
EXISTING DGWS WATERMAIN TO BE ABANDONED
PROPOSED REALIGNED SECTION OF DGWS WATERMAIN
PROPOSED FIRE MAIN
PROPOSED WATERMAIN
PROPOSED HARVESTED RAINWATER WATERMAIN
VALVE - NORMALLY OPEN
FLOW METER
PIPE TAPER
WASHOUT HYDRANT
AIR VALVE
FIRE HYDRANT inc. 30m RADIUS
Surveyed location of existing watermain features
Section of existing DGWS Watermain to be relaid within realigned public road as shown
Harvested Rainwater Supply to building for washwater
New Watermain connection in accordance with UE standard details STD-W-02 and STD-W-05
Fire Hydrant to UE detail STD-W-18
Existing Ø uPVC Watermain from available records 200mm Ø (TBC)
Potable Water Supply to building
Back-up Generator
Plant Room
Control Building
Admin Building
Pellet Hall
Dryer Building
CHP Building
Dryer / CHP / Boiler Stack
Sludge Buffer Tank 17m3 x 17m
Evaporator Feed Tank 14mØ x 11m
Evaporators
Ammonia Stripper
Storage and Maintenance Space
Harvested Rainwater Supply to wheel wash
Harvested Rainwater Supply to Tank Farm Bund for washwater
Digester
CO2 Liquefaction Biogas Upgrade Plant
Biological De-Sulphurisation Units
Gas Holder
Activated Carbon Units
Process Building
Process Water Buffer Tank
Potable Water Supply to Process Water Buffer Tank
Groundwater Borehole Supply to Process Water Buffer Tank
Harvested Rainwater Supply to MPB for washwater
CPG Tanks
Potable Water Supply to Fire Water Tank
Fire Water Main supplied by Fire water Tank
Fire Water Tank 70m3
Gas Grid Entry Unit
Groundwater well. Location indicative only.
Flare
Fuel Tank
Vehicle Turning Zone
Roller shutter doors
Pedestrian door
Background mapping
CYSL50403614
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P03 30/10/2025 Updated following client change to plant item IP
P02 27/10/2025 Updated following review comments IP
Status Stage 1 - Concept Design
Client Stream BioEnergy
Project Proposed Renewable Biogas Plant Maghernakelly, Drum, County Monaghan
Drawing Proposed Watermains
Scale 1:500 @ A1
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Drawn PC 22/10/2025 Checked IP 22/10/2025 Approved PA 22/10/2025
Project · Organisation · Zone · Level · Type · Role · Number · Revision
MON · MCA · ZZ · XX · DR · CE · 2100 · P03
Project Number E2594
Status code & Description S2
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