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ODOUR ASSESSMENT

NENE TRANSPORT (LINCS), SUTTON BRIDGE

Client: Franklin Bros Limited

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FRANKLIN BROS LIMITED

NENE TRANSPORT (LINCS), SUTTON BRIDGE

ODOUR ASSESSSMENT

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1 INTRODUCTION

1.1 Overview

1.1.1 NoiseAir Limited has been commissioned to produce an Odour Assessment in support of a planning application for the operation of a mobile asphalt plant.

1.1.2 The proposals have the potential to result in odour emissions and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour Assessment was undertaken in order to determine baseline conditions and assess potential effects as a result of the scheme.

1.2 Site Location and Context

1.2.1 Nene Transport (Lincs) is located on land off the A17, Sutton Bridge, at approximate National Grid Reference (NGR): 547640, 321000. **Figure 1** details the location of the site.

1.2.2 The proposals comprise the erection of a mobile asphalt plant and associated ancillary infrastructure. Process emissions will be released at a height of 15.3m via a dedicated stack.

1.2.3 There is the potential for odour emissions from the plant during normal operation. These may cause impacts at sensitive locations within the vicinity of the site and have therefore been assessed within this report.

2 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance[1] defines odour as:

> *"[…] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air."*

2.1.2 The stated definition is considered to be relevant in the context of this assessment.

2.2 Odour Impacts

2.2.1 The magnitude of odour impact depends on a number of factors and the potential for complaints varies due to the subjective nature of odour perception. The **FIDOL** acronym (also stated as FIDOR in Environment Agency (EA) guidance[2]) is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM[3] as follows:

- **F**requency - how often an individual is exposed to odour;
- **I**ntensity - the individual's perception of the strength of the odour;
- **D**uration - The overall duration that individuals are exposed to an odour over time;
- **O**dour unpleasantness - Odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score; and,
- **L**ocation - The type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

2.2.2 It is important to note that even infrequent emissions may cause loss of amenity if odours are perceived to be particularly intense or offensive.

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1 Guidance on the Assessment of Odour for Planning v1.1., IAQM, 2018.
2 H4: Odour Management, EA, 2011.
3 Guidance on the Assessment of Odour for Planning v1.1., IAQM, 2018.

2.2.3 The **FIDOL** factors can be further considered to provide the following issues in regards to the potential for an odour emission to cause an impact:

- The rate of emission of the compound(s);
- The duration and frequency of emissions;
- The time of the day that this emission occurs;
- The prevailing meteorology;
- The sensitivity of receptors to the emission i.e. whether the odorous compound is more likely to cause nuisance, such as the sick or elderly, who may be more sensitive;
- The odour detection capacity of individuals to the various compound(s); and,
- The individual perception of the odour (i.e. whether the odour is regarded as unpleasant). This is greatly subjective and may vary significantly from individual to individual. For example, some individuals may consider some odours as pleasant, such as petrol, paint and creosote.

2.3 Odour Legislative Control

2.3.1 The main requirement with respect to odour control from industrial activities is the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments. If a process is deemed potentially odorous then the relevant regulator will usually include an appropriate condition in the site's Environmental Permit to restrict impacts beyond the facility boundary.

2.3.2 Enforcement of the condition is by the relevant regulator, either the EA for Part A(1) processes, or the Local Authority for Part A(2) and B processes. If the regulator is satisfied that odour from a facility is causing pollution beyond the site boundary, then they can serve an improvement notice that requires remedial works to be undertaken to reduce impacts to an acceptable level. The measures that are deemed appropriate will depend on the industry sector and site-specific circumstances and will take costs and benefits into account. Should appropriate actions not be taken by the operator then the regulator has a number of available options, culminating in the revocation of the Environmental Permit and cessation of all activities on site.

2.4 Institute of Air Quality Management Guidance

2.4.1 The IAQM published the 'Guidance on the Assessment of Odour for Planning'[4] on 20th May 2014. This was updated in 2018[5] and specifically deals with assessing odour impacts for planning purposes, namely potential effects on amenity. The assessment methodology outlined in the guidance has been utilised throughout this report where relevant.

2.5 National Planning Policy

2.5.1 The revised National Planning Policy Framework[6] (NPPF) was published in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.

2.5.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to odour:

> *"c) An environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy"*

2.5.3 Chapter 12 of the NPPF details objectives in relation to achieving well-designed place. It states that:

> *"Planning policies and decisions should ensure that developments:*
>
> *f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesions and resilience."*

2.5.4 The implications of the NPPF have been considered throughout this assessment.

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4 Guidance on the Assessment of Odour for Planning, IAQM, 2014.
5 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
6 NPPF, Ministry of Housing, Communities and Local Government, 2023.

2.6 Local Planning Policy

2.6.1 The South East Lincolnshire Local Plan 2011-2036[7], was adopted by the South East Lincolnshire Joint Strategic Planning Committee, a partnership of Boston Borough Council, South Holland District Council (SHDC) and Lincolnshire County Council, on 8th March 2019. Review of the document indicated the following policy of relevance to this report:

> *"Policy 30: Pollution*
>
> *Development proposals will not be permitted where, taking account of any proposed mitigation measures, they would lead to unacceptable adverse impacts upon: […]*
>
> *4. Air quality, including fumes and odour; […]*
>
> *Planning applications, except for development within the curtilage of a dwelling house as specified within Schedule 2, Part 1 of The Town and Country Planning (General Permitted Development)(England) Order 2015, or successor statutory instrument, must include an assessment of: […]*
>
> *9. Impact on the proposed development from poor air quality from identified sources;*
>
> *10. Impact on air quality from the proposed development; and*
>
> *11. Impact on amenity from existing uses.*
>
> *Suitable mitigation measures will be provided, if required. Proposals will be refused if impacts cannot be suitably mitigated or avoided […]."*

2.6.2 Consideration was made to the above policy throughout the assessment.

[7] South East Lincolnshire Local Plan 2011-2036, South East Lincolnshire Joint Strategic Planning Committee, 2019.

3 METHODOLOGY

3.1 Introduction

3.1.1 Odour emissions associated with the proposed development have the potential to cause impacts at sensitive locations. The potential risk of adverse effects has therefore been assessed using the IAQM 'Guidance on the Assessment of Odour for Planning v1.1'[8] document, as summarised in the following Sections.

3.2 Background

3.2.1 The basic concept of risk assessment is that the overall risk depends on the probability of an event occurring together with the likely consequences if it was to occur. For odour assessments, the probability can be considered as the likelihood of exposure (impact), and the consequence can be considered to be the effect on the receptor if that exposure (impact) took place. These two facets can be summarised by the source-pathway-receptor concept.

3.2.2 Behind the source-pathway-receptor concept, is the fundamental relationship:

Effect ≈ Dose x Response

3.2.3 In the specific case of odour assessments, the dose can be considered equivalent to the odour exposure, or impact. This will be determined by FIDO of the FIDOL factors. The effect is the result of the changes on specific receptors (people in the case of odour) taking into account their sensitivities (i.e. responsiveness to odour), the L (location) in FIDOL is to categorise the sensitivity.

3.2.4 The IAQM guidance[9] states that a qualitative risk-based approach is appropriate for:

- Screening of odour impacts;
- Development proposals likely to have a low risk of adverse effects;
- Situations where there is insufficient information to carry out detailed predictive dispersion modelling;
- Situations where the information has wide uncertainties and its use as input to a detailed predictive dispersion model would be at best a waste of time, money and effort or,

[8] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
[9] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

worse, would lead to an illusory and false impression of accuracy and precision in the numbers generated; and,

- When the model is not able to properly represent the reality of the situation being assessed, e.g. if the odour effects are likely to be significantly influenced by accidental, unexpected, or unknown releases. In such instances a qualitative estimate may be more appropriate, on the basis that it is better to be broadly correct than precisely wrong.

3.2.5 It is considered that the first four criteria are met for this project. As such, a qualitative assessment methodology was deemed appropriate for the assessment.

3.3 Risk Assessment Procedure

3.3.1 The first step in the assessment is to estimate the odour generating potential of the site activities. This is termed the Source Odour Potential, which takes into account three factors:

- The scale (magnitude) of the release from the odour source, taking into account the effectiveness of any odour control or mitigation measures that are already in place. This involves judging the relative size of the release rate after mitigation and taking account of any pattern of release (e.g. intermittency);
- How inherently odorous the compounds are. In some cases it may be known whether the release has a low, medium or high Odour Detection Threshold (ODT). This is the concentration at which an odour becomes detectable to the human nose. In most instances the odours released by a source will be a complex mixture of compounds and the detectability will not be known. However, for some industrial processes the odour will be due to one or a small number of known compounds and the detection thresholds will be a good indication of whether the release is highly odorous or mildly odorous; and,
- The relative pleasantness/unpleasantness of the odour.

3.3.2 Using the example risk ranking in **Table 1**, the Source Emission Potential can be categorised as **small**, **medium**, or **large**.

Table 1: Source Emission Potential	
Source Emission Potential	**Comments**
Large	Magnitude - Larger Environmentally Permitted processes of odorous nature or large Sewage Treatment Works (STWs); materials usage hundreds of thousands of tonnes/m^3 per year; area sources of thousands of m^2. The compounds involved are very odorous (e.g. mercaptans), having very low ODTs where known Unpleasantness - processes classed as "Most offensive" in EA Guidance H4[10]; or (where known) compounds/odours having unpleasant (-2) to very unpleasant (-4) hedonic score Mitigation/control - open air operation with no containment, reliance solely on good management techniques and best practice
Medium	Magnitude - smaller Environmentally Permitted processes or small STWs; materials usage thousands of tonnes/m^3 per year; area sources of hundreds of m^2. The compounds involved are moderately odorous Unpleasantness - processes classed in EA Guidance H4 as "Moderately offensive"; or (where known) odours having neutral (0) to unpleasant (-2) hedonic score Mitigation/control - some mitigation measures in place, but significant residual odour remains
Small	Magnitude - falls below Environmental Permit Part B threshold; materials usage hundreds of tonnes/m3 per year; area sources of tens m^2. The compounds involved are only mildly odorous, having relatively high ODTs where known Unpleasantness - processes classed as "Less offensive" in EA Guidance H4; or (where known) compounds/odours having neutral (0) to very pleasant (+4) hedonic score Mitigation/control - effective, tangible mitigation measures in place leading to little or no residual odour

3.3.3 The next step is to estimate the effectiveness of the pollutant pathway as the transport mechanism for odour through the air to the receptor, versus the dilution/dispersion in the atmosphere. Any factor that increases dilution and dispersion of the plume as it travels from source to receptor will reduce the concentration at the end point, and hence reduce exposure. Important factors for consideration are:

- The distance between sensitive receptors and the odour source;

[10] H4: Odour Management, EA, 2011.

- Whether receptors are downwind with respect to the prevailing wind direction. Odour episodes often tend to occur during stable atmospheric conditions with low wind speed, which gives poor dispersion and dilution. Receptors close to the source in all directions can be affected under these conditions. When circumstances are not calm, it will be the downwind receptors that are affected. As such, receptors that are downwind with respect to the prevailing wind direction tend to be at higher risk of odour impact;
- The effectiveness of the point of release in promoting good dispersion e.g. releasing emissions from a high stack will increase the pathway, dilution and dispersion; and,
- The topography and terrain between the source and receptor. The presence of topographical features such as hills and valleys, or urban terrain features such as buildings, can affect air flow and therefore increase, or inhibit, dispersion and dilution.

3.3.4 Using the example risk ranking in **Table 2,** the pollutant pathway from source to receptor can be categorised as **ineffective**, **moderately effective**, or **highly effective**.

Table 2: Pathway Effectiveness

Pathway Effectiveness	Comments
Highly effective	Distance - receptor is adjacent to the source/site; distance well below any official set-back distances Direction - high frequency (%) of winds from source to receptor, or, qualitatively, receptors downwind of source with respect to prevailing wind Effectiveness of dispersion/dilution - open processes with low-level releases, e.g. lagoons, uncovered effluent treatment plant, landfilling of putrescible wastes
Moderately effective	Distance - receptor is local to the source Where mitigation relies on dispersion/dilution - releases are elevated, but compromised by building effects
Ineffective	Distance - receptor is remote from the source; distance exceeds any official set-back distances Direction - low frequency (%) of winds from source to receptor, or, qualitatively, receptors upwind of source with respect to prevailing wind Where mitigation relies on dispersion/dilution - releases are from high level (e.g. stacks, or roof vents greater than 3m above ridge height) and are not compromised by surrounding buildings

3.4 The sensitivity of the receiving receptor is defined based on the criteria shown in **Table 3**.

Table 3: Receptor Sensitivity

Receptor Sensitivity	Description
High	Surrounding land where: Users can reasonably expect enjoyment of a high level of amenity; and,

Table 3: Receptor Sensitivity	
	People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land Examples may include residential dwellings, hospitals, schools/education and tourist/cultural
Medium	Surrounding land where: Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or, People would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land Examples may include places of work, commercial/retail premises and playing/recreation fields
Low	Surrounding land where: The enjoyment of amenity would not reasonably be expected; or, There is transient exposure, where the people would reasonably be expected to present only for limited periods of time as part of the normal pattern of use of the land Examples may include industrial use, farms, footpaths and roads

3.4.1 The estimates of Source Odour Potential and Pathway Effectiveness were considered together to predict the risk of odour exposure (impact) at the receptor location, as shown by the matrix in **Table 4**.

Table 4: Risk of Odour Exposure			
Pathway Effectiveness	**Source Odour Potential**		
	Small	**Medium**	**Large**
Highly effective	Low	Medium	High
Moderately effective	Negligible	Low	Medium
Ineffective	Negligible	Negligible	Low

3.4.2 The final step is to determine the significance of odour effect at the specified receptor location through the interaction between sensitivity and risk, as outlined in **Table 5**.

Table 5: Significance of Odour Effect			
Risk of Odour Exposure	**Receptor Sensitivity**		
	Low	**Medium**	**High**
High	Slight	Moderate	Substantial

Table 5: Significance of Odour Effect			
Medum	Negligible	Slight	Moderate
Low	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

3.4.3 The IAQM guidance[11] states that an assessment must reach a conclusion on the likely significance of the predicted impact. Where the overall effect is **moderate** or **substantial**, the effect is likely to be considered **significant**, whilst if the effect is **slight** or **negligible**, the impact is likely to be considered **not significant**. It should be noted that this is a binary judgement of either it is **significant** or it is **not significant**. This has been considered to determine the overall significance of potential odour effects associated with the development.

3.4.4 The IAQM guidance recognises that assessment of odour requires some degree of professional judgment[12]. Qualitative methodologies such as those utilised within this report provide guidance for assessing potential impacts. However, professional judgement should be exercised in order to take account of the specific details which are unique to each development. This has been considered as necessary throughout the assessment.

11 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
12 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

4 BASELINE

4.1 Introduction

4.1.1 Existing conditions in the vicinity of the site were identified in order to provide a baseline for the assessment. These are detailed in the following Sections.

4.2 Site Description

4.2.1 The proposed development is located on the existing hard standing storage area associated with Nene Transport (Lincs). The site is located within a suburban setting comprised of mixed land use. The site is bordered to the south by the A17 and to the north by vegetation and playing fields, followed by residential receptors. The Nene Transport (Lincs) carpark and warehouse is situated to the west and an open field and vegetation to the east.

4.3 Sensitive Receptors

4.3.1 A desk-top study was undertaken in order to identify sensitive receptor locations in the vicinity of the site that required specific consideration during the assessment. The identified receptors and associated sensitivity are summarised in **Table 6**.

Table 6: Sensitive Receptors

Receptor		NGR (m)		Sensitivity	Distance from Asphalt Plant
		X	Y		
R1	Residential - Railway Lane	547318.4	321261.2	High	395
R2	Residential - Tycho Close	547506.8	321200.7	High	220
R3	Residential - Bridge Lane	547650.6	321196.9	High	180
R4	Residential - Church Lane	547769.4	321053.1	High	140
R5	Residential - A17	548000.9	320900.3	High	390
R6	Residential - Peterpoint Road	547691.0	320508.1	High	515
R7	Residential - Peterpoint Road	547479.9	320517.9	High	520
R8	Residential - Railway Lane	547218.9	320615.3	High	580
R9	Residential - Railway Lane	547323.9	320916.4	High	320
R10	Residential - Railway Lane	547250.3	321148.1	High	420

4.3.2 Reference should be made to **Figure 2** for a map of the sensitive receptor locations.

4.3.3 It should be noted that ecological designations were not considered as part of the assessment as they are not considered sensitive to odour impacts.

4.4 Meteorological Conditions

4.4.1 Unlike many other atmospheric pollutants, the generation and dispersion of odour is particularly dependent upon weather conditions. The prevailing meteorological conditions at any site will be dependent upon many factors including its location in relation to macroclimatic conditions as well as more site specific, microclimate conditions.

4.4.2 Meteorological data was obtained from RAF Marham meteorological station over the period 1st January 2018 to 31st December 2022 (inclusive). This observation station is located at NGR: 574375, 308790 which is approximately 28.8km south-east of the site. It is anticipated that conditions would be reasonably similar over a distance of this magnitude. The data was therefore considered suitable for an assessment of this nature.

4.4.3 The frequency of wind from the 12 sectors which best describe the directions that may cause impacts in the vicinity of the site is shown in **Table 7**.

Table 7: Wind Frequency Data

Wind Direction (°)	Total Frequency of Wind (%)
345 - 15	6.6
15 - 45	6.8
45 - 75	5.6
75 - 105	4.8
105 - 135	7.0
135 - 165	9.7
165 - 195	12.5
195 - 225	15.1
225 - 255	11.3
255 - 285	7.7
285 - 315	6.3
315 - 345	4.8
Sub-Total	98.1

Table 7: Wind Frequency Data	
Wind Direction (°)	**Total Frequency of Wind (%)**
Calms	0.7
Missing/Incomplete	1.2

4.4.4 As shown in **Table 7**, the prevailing wind direction at the site is from the south-west. Winds from the north are relatively infrequent, which is indicative of conditions throughout the majority of the UK.

4.4.5 Reference should be made to **Figure 3** for a wind rose of the meteorological data.

5 ASSESSMENT

5.1.1 There is the potential for odour impacts as a result of emissions from the proposed development. The risk was therefore assessed at the identified receptor locations in accordance with the IAQM methodology[13].

5.1.2 A review of potential odour sources associated with the proposed plant was undertaken as part of the assessment. This identified the following:

- Emissions from the main process stack;
- Emissions during product loading and export; and,
- The aggregate storage bays.

5.1.3 Stack exhaust gases and emissions during product loading will include bitumen fumes. These are likely to be odourous and are therefore considered to represent most significant sources associated with the development. Comparatively, any emissions from the aggregate storage bays are likely to have a low odour potential due to the nature of materials and are therefore considered to be less significant.

5.1.4 A review of proposed operations was undertaken to determine the overall Source Odour Potential. This was classified as **medium** for the following reasons:

- Magnitude - The area of exposed material within the storage bays is anticipated to be approximately 250m^2. In accordance with the IAQM guidance[14], this would indicate a Source Odour Potential of **medium** in isolation;
- Unpleasantness – Odours associated with asphalt emissions have neutral (0) to unpleasant (-2) hedonic scores[15] and are likely to be classified as moderately offensive in accordance with the EA H4 guidance;
- Mitigation/control - The majority of emissions will be released from the main process stack at a height of 15.3m. This is likely to facilitate effective dilution and dispersion of odours and would indicate a Source Odour Potential of **small**.

5.1.5 The Pathway Effectiveness was subsequently defined for each individual receptor based on the distance from the relevant source, the prevailing wind direction in relation to the site, the nature of releases and any constraints to dispersion. The results are summarised in **Table 8**.

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13 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
14 Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.
15 Integrated Pollution Prevention and Control (IPPC) DRAFT Horizontal Guidance for Odour Part 1 – Regulation and Permitting, EA, 2002.

Table 8: Pathway Effectiveness Classification			
Receptor		**Pathway Effectiveness**	**Justification**
R1	Residential - Railway Lane	Ineffective	Receptor is remote from the source Medium frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R2	Residential - Tycho Close	Ineffective	Receptor is remote from the source Medium frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R3	Residential - Bridge Lane	Ineffective	Receptor is remote from the source Medium frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R4	Residential - Church Lane	Moderately effective	Receptor is local to the source Medium frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R5	Residential - A17	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor

Table 8: Pathway Effectiveness Classification			
			The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R6	Residential - Peterpoint Road	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R7	Residential - Peterpoint Road	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R8	Residential - Railway Lane	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials
R9	Residential - Railway Lane	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials

Table 8: Pathway Effectiveness Classification			
R10	Residential - Railway Lane	Ineffective	Receptor is remote from the source Low frequency of winds from source to receptor The most odourous emissions associated with the process will be released via a dedicated dispersion stack at a height of 15.3m. This arrangement is likely to facilitate effective dilution and dispersion of emissions Low level emissions from the aggregate storage bays are unlikely to be significantly odourous due to the nature of materials

5.1.6 As shown in **Table 8**, the Pathway Effectiveness was classified as **ineffective** at nine receptors and **moderately effective** at one location.

5.1.7 The Source Odour Potential, pathway effectiveness and receptor sensitivity were combined to assess potential impacts at the receptor locations. This is summarised in **Table 9**.

Table 9: Risk Assessment						
Receptor		**Source Odour Potential**	**Pathway Effective-ness**	**Exposure Risk**	**Sensitivity**	**Effect Significance**
R1	Residential - Railway Lane	Medium	Ineffective	Negligible	High	Negligible
R2	Residential - Tycho Close	Medium	Ineffective	Negligible	High	Negligible
R3	Residential - Bridge Lane	Medium	Ineffective	Negligible	High	Negligible
R4	Residential - Church Lane	Medium	Moderately Effective	Low	High	Slight
R5	Residential - A17	Medium	Ineffective	Negligible	High	Negligible
R6	Residential - Peterpoint Road	Medium	Ineffective	Negligible	High	Negligible
R7	Residential - Peterpoint Road	Medium	Ineffective	Negligible	High	Negligible

Table 9: Risk Assessment						
Receptor		**Source Odour Potential**	**Pathway Effective-ness**	**Exposure Risk**	**Sensitivity**	**Effect Significance**
R8	Residential - Railway Lane	Medium	Ineffective	Negligible	High	Negligible
R9	Residential - Railway Lane	Medium	Ineffective	Negligible	High	Negligible
R10	Residential - Railway Lane	Medium	Ineffective	Negligible	High	Negligible

5.1.8 As shown in **Table 9**, the predicted effect significance was **slight** at one receptor and **negligible** at nine locations.

5.1.9 The IAQM guidance[16] states that only if the impact is **moderate** or **substantial**, the effect is considered **significant**. As such, impacts associated with odour emissions from the proposed development are considered to be **not significant**, in accordance with the stated guidance.

[16] Guidance on the Assessment of Odour for Planning V1.1, IAQM, 2018.

6 CONCLUSION

6.1.1 NoiseAir Limited was instructed to undertake an Odour Assessment in support of a planning application for the operation of a mobile asphalt plant at Nene Transport (Lincs).

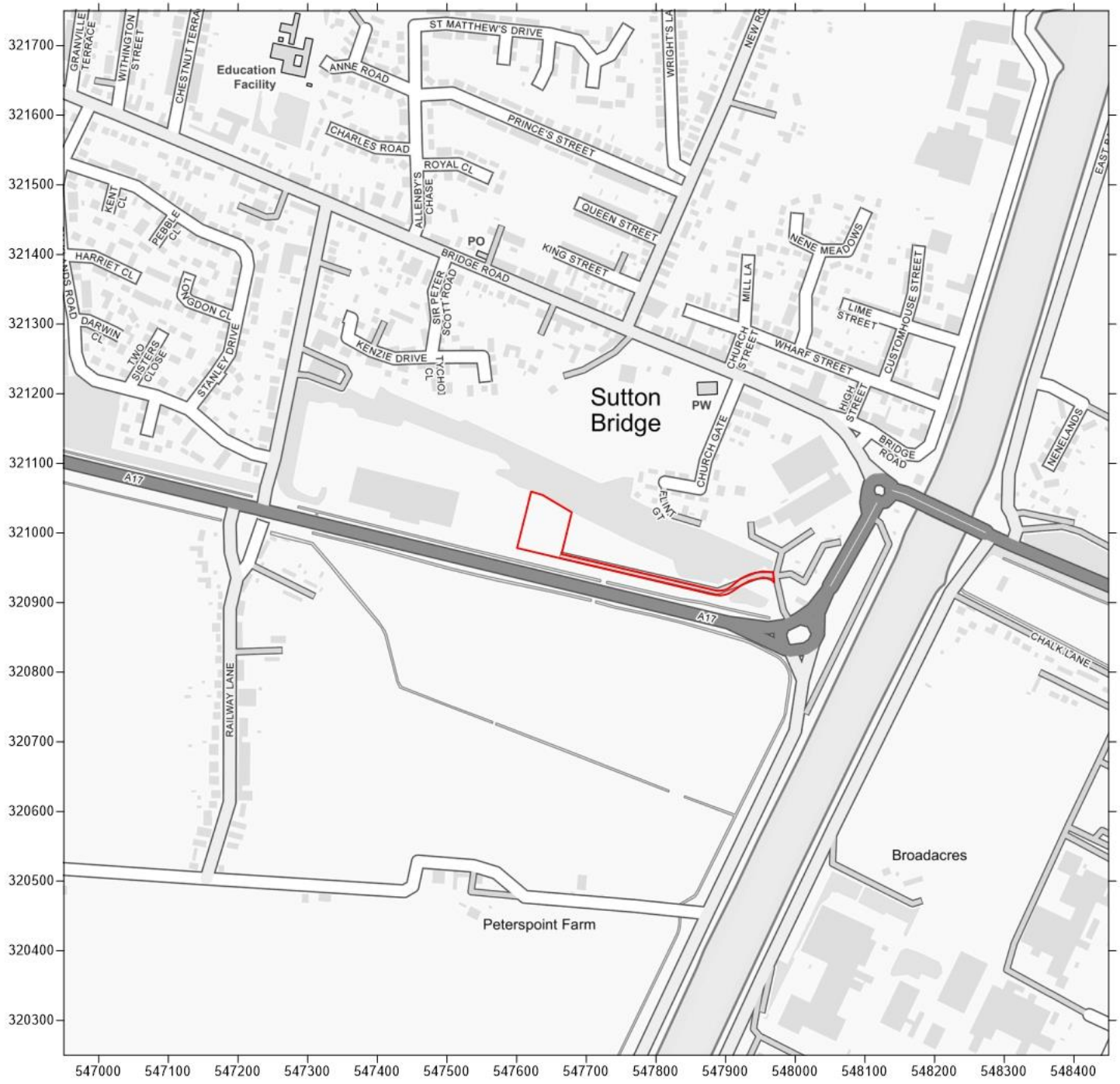
6.1.2 The proposals have the potential to result in odour emissions and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour Assessment was undertaken in order to determine baseline conditions and assess potential effects as a result of the scheme.

6.1.3 The risk of potential impacts as a result of odour emissions was assessed using the IAQM methodology. This included consideration of the Source Odour Potential, Pathway Effectiveness and receptor sensitivity. The results of the assessment indicated the predicted effect significance was **slight** at one receptor and **negligible** at nine locations.

6.1.4 Following review of the relevant factors, overall effects as a result of emissions associated with the proposals are predicted to be **not significant** in accordance with the IAQM guidance criteria. As such, it is considered that odour should not be viewed as a constraint to development.

FIGURES

Figure 1 Site Location
Figure 2 Receptor Locations
Figure 3 Wind Rose of 2018 to 2022 RAF Marham Meteorological Data



Legend

Site Boundary

Title

Figure 1 - Site Location Plan

Project

Odour Assessment
Nene Transport (Lincs) Sutton Bridge

Contains Ordnance Survey Data
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Legend

Site Boundary

Receptor

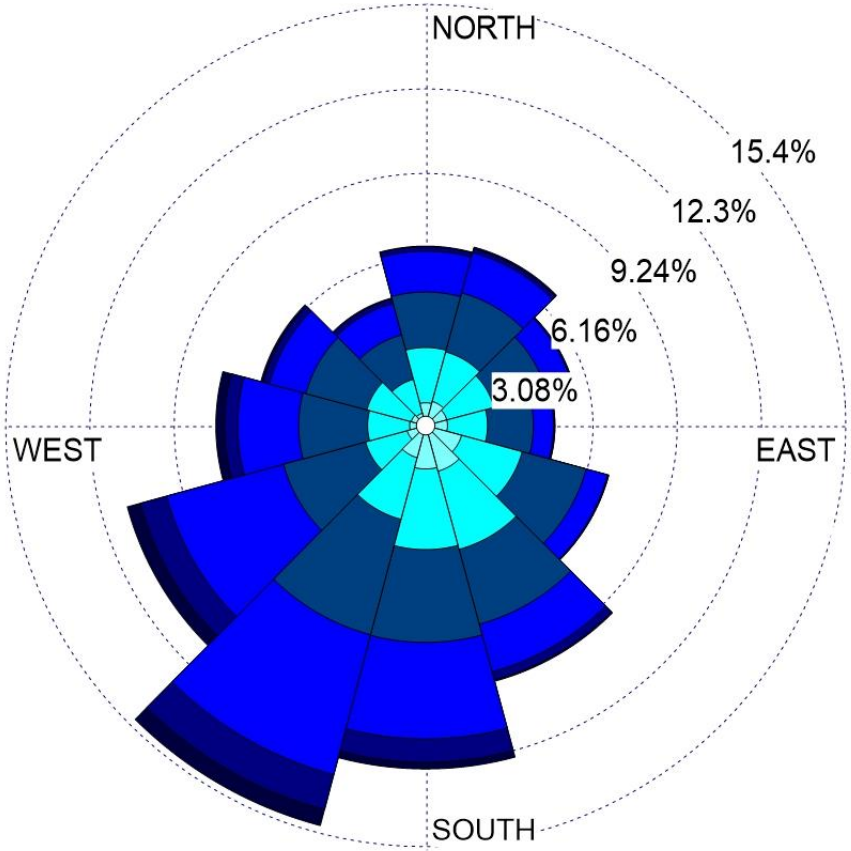
Title

Figure 1 - Site Location Plan

Project

Odour Assessment
Nene Transport (Lincs) Sutton Bridge

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WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.65%

Legend

Title

Figure 3 - Wind Rose of 2018 to 2022
RAF Marham Meteorological Station
Data

Project

Odour Assessment
Nene Transport (Lincs) Sutton Bridge

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APPENDIX B - GLOSSARY

Air Quality Management Area	An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives.
Air Quality Objective	The name given to the maximum ambient pollutant concentration that is not to be exceeded either without exception or within a permitted number of exceedances over a specified timescale for a pollutant outlined in the national Air Quality Strategy.
Air Quality Strategy	A national government document which contains standards, objectives and measures for improving ambient air quality.
Background Concentration	The pollutant concentration assumed to represent baseline concentrations in the atmosphere across the modelled area.

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