

38.1 INTRODUCTION

- 38.1.1 This chapter provides an assessment of the noise impacts expected from construction of the Compensation Site upon nearby noise sensitive receptors. The noise impacts of the AMEP are covered in *Chapter 16*.

38.2 LEGISLATION, POLICY AND GUIDANCE

- 38.2.1 Legislation, policy and guidance on noise which are common to both the AMEP and the Compensation Site and are covered in *Chapter 16*. Any relevant plans and policies contained within the ERYC Local Plan which are specific to the Compensation Site are summarised below.

Local Plan Policy

ERYC Holderness District Wide Local Plan

- 38.2.2 The ERYC Local Plan has no general policy on noise associated with development; however they do have a website on 'Noise and Planning' which provides useful advice, guidance and relevant information on noise issues (ERYC, 2010a). The website refers to the national guidance set out in PPG24 which sets out the Government Policies in relation to using planning controls to minimise the effect of noise either from or on a new development. This guidance is followed by ERYC in their consideration of noise impacts. Developments are assessed on a case by case basis and are appraised in relation to the ERYC Core Strategy (*Chapter 27*).
- 38.2.3 ERYC has produced a Considerate Contractor Advice Note, which details environmental protection requirements, including advice in relation to construction noise (ERYC, 2010b). This leaflet gives guidelines for good site practice and refers developers to BS 5228:2009-Part 1 (BSI, 2008) which contains information on procedures for noise control on construction and open sites. The requirements set out include giving neighbours who may be affected by particular operations at least 48 hours notice before work commences and observing normal working hours as far as possible.

38.3 ASSESSMENT METHODOLOGY AND CRITERIA

Overview

38.3.1 The assessment of noise impacts from the Compensation Site utilises the same methodology as for the AMEP (*Chapter 16*). Due to the nature of the Compensation Site, there will be no operational noise impacts and therefore the assessment has focused on the construction phase only.

38.3.2 As for the AMEP, the methods outlined in BS 5228:2009-Part 1 (BSI, 2008) have been used to predict the likely resultant noise from construction activities associated with the development. Noise source data for the plant that will be used on site has been taken from the data tables in Annex D of BS 5228:2009-Part 1 (BSI, 2008). The assessment has considered the likely intensity and character of construction noise including the following:

- existing ambient noise levels;
- distance to noise sensitive receptors;
- duration of the construction site operations; and
- hours of work.

Noise Surveys

38.3.3 A noise monitoring survey using spot measurement sampling was undertaken on 22 November 2010. The purpose of this survey was to sample ambient and background noise levels in the surrounding area in order to determine the baseline against which any construction noise would be assessed as part of the Environmental Assessment.

Sensitive Receptors

38.3.4 Noise sensitive receptors in the vicinity of the proposed intertidal site at Cherry Cobb Sands and Old Little Humber Farm are shown in *Figure 38.1*. A number of sensitive receptors have been identified which include:

38.3.5 Residential properties, in particular four residential properties which are located on Cherry Cobb Sands Road adjacent to the Cherry Cobb Sands intertidal site (C10, C11, C19 and C20 on *Figure 38.1*), and residential properties on Newlands Lane and Thorn Marsh Road adjacent to the site at Old Little Humber Farm.

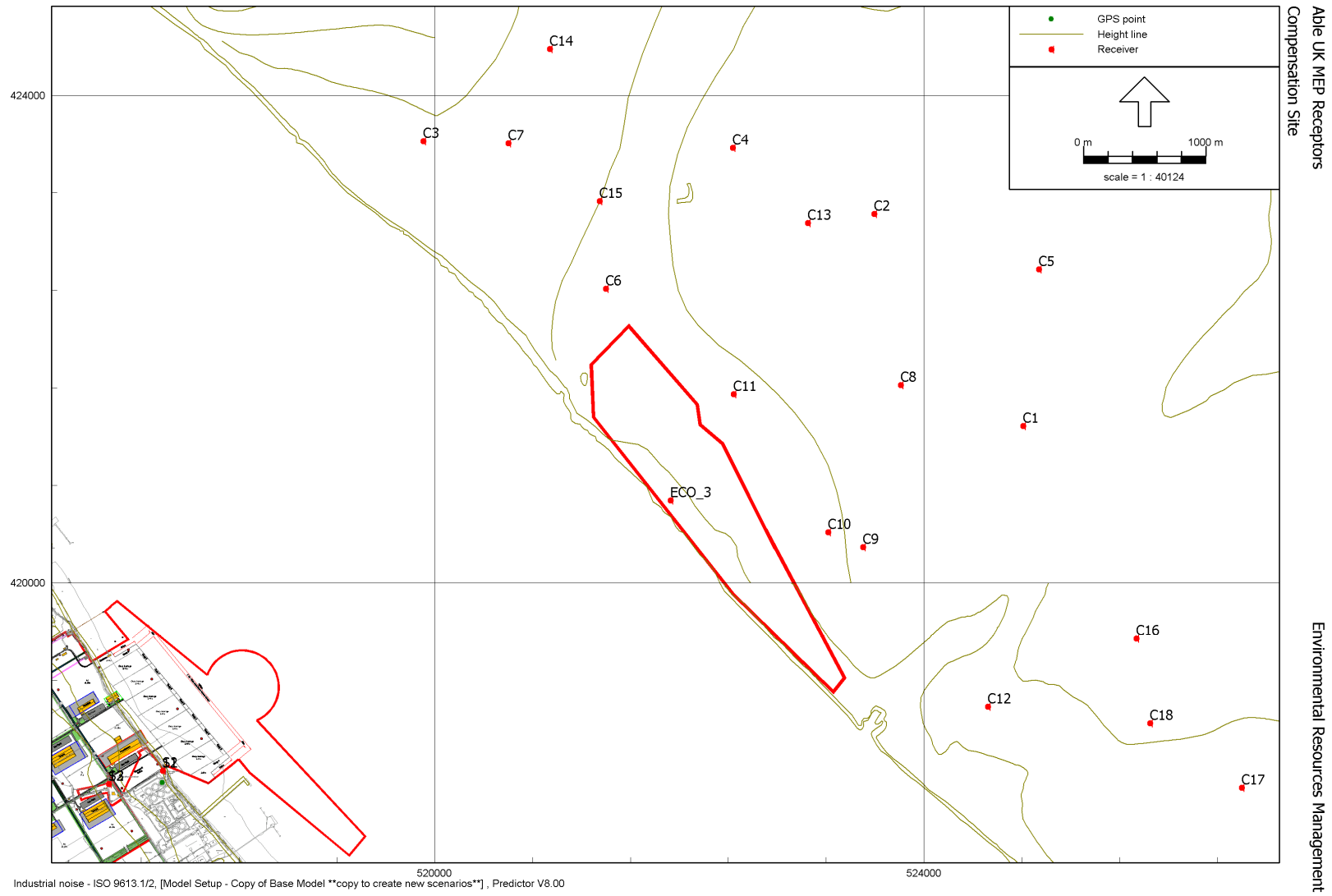


Figure 38.1 Cherry Cobb Sands Compensation Site Sensitive Receptors

- 38.3.6 A coastal footpath which runs along the existing embankment and is used frequently by local dog walkers and recreational walkers; and ecological receptors including local wildlife and birds.
- 38.3.7 Land use within the study area is predominantly agricultural consisting of arable fields and a network of drains and tracks. The closest main road that provides access to the proposed Compensation Site is the A1033. Cherry Cobb Sands Road is a minor road and is approximately 4 km from the A1033; Newlands Lane and Thorn Marsh Road are minor roads approximately 3km from the A1033.

Significance Criteria

- 38.3.8 The assessment of noise from the Compensation Site uses the same significance criteria as for the AMEP as detailed in *Chapter 16*. As there are no universal criteria for assessing construction noise in the UK, guidance is taken from BS 5228:2009 - Part 1 (BSI, 2008).
- 38.3.9 The criterion for the significance of construction noise assessment is set at 70 dB(A) $L_{Aeq,T}$ for the façade noise level during daytime construction hours from 0700 – 1900. This noise level is not necessarily a noise limit for construction activities but is proposed as the criterion for the assessment of the impacts of the predicted noise levels.
- 38.3.10 The relevant criteria for assessing the significance of any impact on receptors during the construction phase of the Compensation Site are shown in *Table 38.1*.

Table 38.1 Magnitude criteria for construction noise in daytime on humans

| IMPACT MAGNITUDE | | | |
|----------------------------|--|--|--|
| Major | Moderate | Minor | Negligible |
| Noise levels over 80 dB(A) | Noise levels generally between 70 dB(A) and 80 dB(A) | Noise levels generally between 60 dB(A) and 70 dB(A) | Noise levels normally less than 60 dB(A) |

- 38.3.11 The significance is determined according to the length of time of exposure. A major or moderate significant effect is based on medium or long term exposure (longer than 12 months). Short term exposure (up to 12 months) is considered to have a minor or negligible impact.

38.4 CONSULTATION

38.4.1 Consultation with ERYC has been undertaken to discuss the assessment methodologies to be used in the impact assessment. During this consultation ERYC confirmed that there are no local policies relating to noise and that the noise impacts of any development would be considered with regard to national legislation and guidance. No further comments relating to noise have been received during the stakeholder consultation process that relate directly to the Compensation Site.

38.5 BASELINE ENVIRONMENT

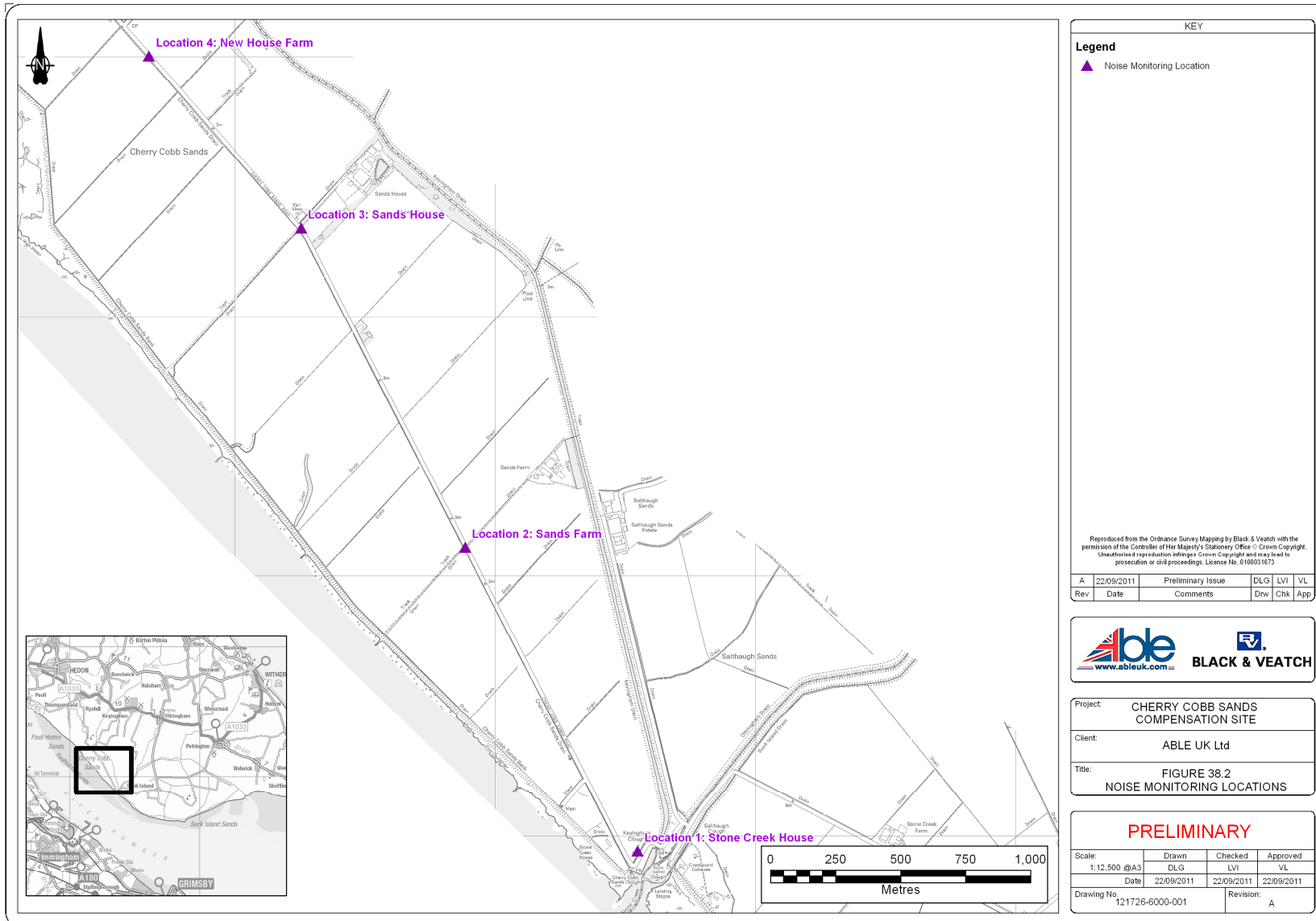
38.5.1 To assess the potential noise impacts from the construction of the Compensation Site it was necessary to understand the existing baseline conditions. The following paragraphs provide a summary of results obtained from the noise survey undertaken for this EIA.

Spot Measurements Survey

38.5.2 Noise monitoring was undertaken on 22 November 2010 at four locations which were close to the residential receptors adjacent to intertidal site at Cherry Cobb Sands (Figure 38.2). The survey was conducted in the evening (between 20:45 and 22:30) and comprised short term measurements of five minutes in duration.

38.5.3 There had been heavy to moderate rain immediately prior to the survey however given a break in the rain it was possible to conduct the survey in dry conditions. Air temperature was approximately 3-4 °C. There was a light breeze during the time of the measurement and the speed of wind was less than 5 m/s with occasional gusts.

38.5.4 Baseline noise levels obtained through the spot measurements for the noise survey are shown in *Table 38.2*. Noise levels obtained at the four sites were very low as would be expected in an isolated rural setting. The $L_{Aeq,T}$ background noise levels were between 42 dB(A) and 51 dB(A).



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Figure 38.2 Noise monitoring locations

Table 38.2 Baseline Noise Levels - Cherry Cobb Sands (short term measurement)

| | Location 1: Stone Creek House | Location 2: Sands Farm | Location 3: Sands House | Location 4: New House Farm |
|--|--|-----------------------------------|------------------------------------|---|
| NGR (National Grid Reference) | TA 235 188 | TA 229 201 | TA222 213 | TA 213 223 |
| Time sampled | 20:48 | 21:14 | 21:35 | 21:57 |
| LAMax,T | 61.9 | 79.5 | 60.1 | 75.6 |
| LAMin,T | 25.6 | 20.1 | 21.0 | 21.9 |
| LAeq,T | 42.1 | 51.0 | 41.6 | 44.0 |
| LA90,T | 27.5 | 21.0 | 22.5 | 23.5 |

All levels are dB(A), T = 5 min

38.5.5 The variation in ambient noise levels between locations is due to passing cars, aeroplanes flying overhead and bird noise.

38.5.6 The baseline survey demonstrates that the noise levels are within the expected range, with a relatively low background ambient noise level as would be expected of a rural setting. On the basis of the results of the baseline survey, in order to derive the most conservative baseline, a value of 40dB(A) was used as the pre-construction ambient noise level.

38.6 **IMPACTS**

Construction Phase

38.6.1 This section considers the potential for construction noise impacts on human receptors from the Compensation Site. Impacts arising from construction on ecological receptors including local wildlife and birds are addressed in *Chapter 35* and utilise the same construction noise predictions based on the same assumptions.

Cherry Cobb Sands

Construction Noise

38.6.2 The sources of construction noise at Cherry Cobb Sands will be mainly from earthworks within the site and also from plant and HGV deliveries. Construction at Cherry Cobb Sands is proposed to be undertaken during the following times:

- Monday to Friday: 07:00 to 19:00;
- Saturday: 07:00 to 17:00; and
- Sunday and bank holidays: No working anticipated.

38.6.3 The construction equipment which is likely to be used on site and the noise levels associated with this plant are detailed in *Table 38.2*.

Table 38.2 Envisaged construction plant and noise levels

| Construction Activity | Typical Plant | Likely Quantity of Plant | BS5228:2009 Sound Pressure Level @10m |
|---|--|---|---------------------------------------|
| Site clearance, excavation and construction of flood embankments. | Tracked excavators | 2 | 77 |
| | Lorries | 1 (<i>one vehicle on site at any particular time</i>) | 80 |
| | Dumper truck | 3 | 87 |
| | Dozer (28 tonne) | 1 | 79 |
| | Wheeled loader | 1 | 71 |
| | Sheep's foot compactor/roller | 2 | 78 |
| | Graders | 1 | 84 |
| | Tractor (towing equipment) | 2 | 80 |
| | General site activities, e.g. lifting, power generation, dust suppression. | Site forklift truck | 1 |
| Generators | | 2 | 74 |
| Dust suppression unit trailer | | 1 | 88 |

38.6.4 Predicted noise levels from the construction at Cherry Cobb Sands are shown in *Table 38.3*. These levels are based on the likely plant and activities that will take place during construction. The noise impacts from construction will have a negligible impact on the majority of receptors. This is based on the magnitude of effect which is deemed to be negligible as predicted noise levels are under 60 dB(A). For three receptors the noise levels are deemed to be minor as the levels fall between 60 and 70 dB(A). The significance is deemed to be minor as exposure to noise of short duration and therefore the overall significance is assessed as being a temporary minor negative impact for three receptors.

Table 38.3 Construction Impact Assessment for Cherry Cobb Sands

| Description | Predicted Construction Noise Level, LAeq, T | Pre Construction Noise Level, LAeq, T | Predicted plus Pre Construction Noise Level, LAeq, T | Increase in noise level, dB | Impact |
|-----------------------|---|---------------------------------------|--|-----------------------------|------------|
| C1 Far Marsh Farm | 47 | 40 | 48 | 8 | Negligible |
| C2 Keyingham Grange | 47 | 40 | 48 | 8 | Negligible |
| C3 Little Humber | 47 | 40 | 48 | 8 | Negligible |
| C4 Marsh House | 47 | 40 | 48 | 8 | Negligible |
| C5 Nearmarsh Farm | 47 | 40 | 48 | 8 | Negligible |
| C6 New House Farm | 50 | 40 | 50 | 10 | Negligible |
| C7 Old Little Humber | 47 | 40 | 48 | 8 | Negligible |
| C8 Saltaugh Grange | 47 | 40 | 48 | 8 | Negligible |
| C9 Saltaugh Sands | 56 | 40 | 56 | 16 | Negligible |
| C10 Sands Farm | 56 | 40 | 56 | 8 | Negligible |
| C11 Sands House | 61 | 40 | 61 | 8 | Minor |
| C12 Stone Creek Farm | 47 | 40 | 48 | 8 | Negligible |
| C13 The Marsh | 47 | 40 | 48 | 8 | Negligible |
| C14 Thorn Marsh Farm | 47 | 40 | 48 | 8 | Negligible |
| C15 Thorney Crofts | 47 | 40 | 48 | 8 | Negligible |
| C16 West Farm | 47 | 40 | 48 | 8 | Negligible |
| C17 White house Farm | 47 | 40 | 48 | 8 | Negligible |
| C18 Crown Farm | 47 | 40 | 48 | 8 | Negligible |
| C19 Stone Creek House | 61 | 40 | 61 | 8 | Minor |
| C20 Fairview | 65 | 40 | 65 | 8 | Minor |

38.6.5 The noise assessment is based on all plant operating at the same time. This conservative approach ensures that the 'worst case' scenario has been assessed. In reality it is unlikely that all plant would operate at all times during construction and therefore the actual noise levels experienced are likely to be lower than the levels which have been presented here.

Road Traffic Noise

38.6.6 Noise from road traffic during construction will be restricted to daytime hours (Monday to Friday 07.00-19.00 and Saturday 07.00-17.00). The delivery of approximately 17 items of plant will result in a temporary impact on noise to residential properties, although given that the deliveries will be made during daytime hours and will only last for a few days, the magnitude is assessed as being very low. The sensitivity of the local residents is medium as they likely to be accustomed to noise levels associated with general farming activities. Given the magnitude of the effect, the overall significance is assessed as being a temporary minor negative significant effect, which is determined to be not significant based on the significance criteria set out in *Chapter 16*.

38.6.7 There are anticipated to be an average of six deliveries of lime and erosion protection by lorry each day over a six month period, with a likely maximum of ten deliveries per day during peak construction time. An assessment of impacts on traffic is presented in *Chapter 37*. The sensitivity of local residents is medium as described in *Paragraph 38.6.6*. Deliveries will be made during daytime hours. The noise from HGVs moving along local roads will still have a temporary impact on local residents and the magnitude of effect is assessed as being low. Based on the significance criteria set out in *Chapter 16*, the temporary minor effect is assessed as being not significant.

Old Little Humber Farm

38.6.8 The works at Old Little Humber Farm to create the wet grassland are anticipated to last approximately two months. The sources of noise and timing of works will be similar to the sources of construction noise at Cherry Cobb Sands. It is possible that up to a maximum of two bulldozers will be required in the four fields at Old Little Humber Farm. Bulldozers have an average noise level of 79dB(A) at 1m (refer to *Table 38.2*).

38.6.9 There will be no additional materials brought to site by lorries, and no waste removed, so construction traffic movements will be limited in comparison to the works at Cherry Cobb Sands.

38.6.10 The proximity of the nearest sensitive receptors was calculated from the centre of the construction activity (an approximate distance of 200 m from the site boundary). The properties within 600 m of the proposed works at Old Little Humber Farm are as follows:

- Thorn Marsh Farm – 290m
- Old Little Humber – 540m
- Little Humber Cottage – 235m
- Little Humber Farm – 500m
- Thorn Marsh Cottage – 580m

38.6.11 Predicted noise levels from the construction at Old Little Humber Farm are shown in *Table 38.4*.

38.6.12 It is anticipated that the noise levels for the works at Old Little Humber Farm will be largely similar to those experienced during general agricultural practices that currently occur at this location. The noise levels from operating farm tractors are similar to those of the envisaged construction plant (75-80) dB(A) at 10m (BSI,2009).

38.6.13 It is assessed that the noise impacts from construction will have a negligible impact on all of the receptors. This is based on the magnitude of effect which is deemed to be negligible as predicted noise levels are under 60 dB(A). The temporary impacts from construction noise at Old Little Humber Farm are therefore deemed to be not significant.

Operational Phase

38.6.14 Due to the nature of the Compensation Site, there will be no operational impacts associated with noise.

38.7 CUMULATIVE IMPACTS

Construction Phase

38.7.1 Construction of AMEP will take place at the same time as the Compensation Site. The cumulative impacts of construction occurring simultaneously have been assessed using the same residential receptors that were considered for the Construction Impact Assessment of the Compensation Site. The results are shown in *Table 38.5* and

Table 38.6. The impacts have been considered for the AMEP site both with and without mitigation for piling activities at AMEP.

Table 38.4 Construction Impact Assessment for Old Little Humber Farm

| Description | Predicted Construction Noise Level, LAeq, T | Pre Construction Noise Level, LAeq, T | Predicted plus Pre Construction Noise Level, LAeq, T | Increase in noise level, dB | Impact |
|-----------------------|--|--|---|------------------------------------|---------------|
| Thorn Marsh Farm | 50 | 40 | 50 | 10 | Negligible |
| Old Little Humber | 43 | 40 | 45 | 5 | Negligible |
| Little Humber Cottage | 52 | 40 | 52 | 12 | Negligible |
| Little Humber Farm | 44 | 40 | 45 | 5 | Negligible |
| Thorn Marsh Cottage | 42 | 40 | 44 | 4 | Negligible |

Table 38.5 Construction Impact Assessment for cumulative impacts of the MEP and the Compensation Site (unmitigated piling)

| Description | Predicted Construction Noise Level at Compensation Site, LAeq, T | Predicted Construction Noise Level from MEP (unmitigated piling), LAeq, T | Predicted cumulative noise level, LAeq, T | Increase in noise level, dB | Impact |
|-----------------------|--|---|---|-----------------------------|------------|
| C1 Far Marsh Farm | 48 | 35 | 48 | 0 | Negligible |
| C2 Keyingham Grange | 48 | 36 | 48 | 0 | Negligible |
| C3 Little Humber | 48 | 42 | 49 | 1 | Negligible |
| C4 Marsh House | 48 | 37 | 48 | 0 | Negligible |
| C5 Nearmarsh Farm | 48 | 11 | 48 | 0 | Negligible |
| C6 New House Farm | 50 | 42 | 51 | 1 | Negligible |
| C7 Old Little Humber | 48 | 41 | 49 | 1 | Negligible |
| C8 Saltaugh Grange | 48 | 37 | 48 | 0 | Negligible |
| C9 Saltaugh Sands | 56 | 40 | 56 | 0 | Negligible |
| C10 Sands Farm | 56 | 40 | 56 | 0 | Negligible |
| C11 Sands House | 61 | 41 | 61 | 0 | Minor |
| C12 Stone Creek Farm | 48 | 38 | 48 | 0 | Negligible |
| C13 The Marsh | 48 | 37 | 48 | 0 | Negligible |
| C14 Thorn Marsh Farm | 48 | 38 | 48 | 0 | Negligible |
| C15 Thorney Crofts | 48 | 41 | 49 | 1 | Negligible |
| C16 West Farm | 48 | 26 | 48 | 0 | Negligible |
| C17 White house Farm | 48 | 15 | 48 | 0 | Negligible |
| C18 Crown Farm | 48 | 17 | 48 | 0 | Negligible |
| C19 Stone Creek House | 61 | 41 | 61 | 0 | Minor |
| C20 Fairview | 65 | 42 | 65 | 0 | Minor |

Table 38.6 Construction Impact Assessment for cumulative impacts of the MEP and the Compensation Site (mitigated piling)

| Description | Predicted Construction Noise Level at Compensation Site, LAeq, T | Predicted Construction Noise Level from MEP (mitigated piling), LAeq, T | Predicted cumulative noise level, LAeq, T | Increase in noise level, dB | Impact |
|-----------------------|--|---|---|-----------------------------|------------|
| C1 Far Marsh Farm | 48 | 33 | 48 | 0 | Negligible |
| C2 Keyingham Grange | 48 | 33 | 48 | 0 | Negligible |
| C3 Little Humber | 48 | 39 | 48 | 0 | Negligible |
| C4 Marsh House | 48 | 34 | 48 | 0 | Negligible |
| C5 Nearmarsh Farm | 48 | 11 | 48 | 0 | Negligible |
| C6 New House Farm | 50 | 39 | 50 | 0 | Negligible |
| C7 Old Little Humber | 48 | 37 | 48 | 0 | Negligible |
| C8 Saltaugh Grange | 48 | 34 | 48 | 0 | Negligible |
| C9 Saltaugh Sands | 56 | 37 | 57 | 0 | Negligible |
| C10 Sands Farm | 56 | 37 | 56 | 0 | Negligible |
| C11 Sands House | 61 | 38 | 61 | 0 | Minor |
| C12 Stone Creek Farm | 48 | 35 | 48 | 0 | Negligible |
| C13 The Marsh | 48 | 34 | 48 | 0 | Negligible |
| C14 Thorn Marsh Farm | 48 | 35 | 48 | 0 | Negligible |
| C15 Thorney Crofts | 48 | 37 | 48 | 0 | Negligible |
| C16 West Farm | 48 | 26 | 48 | 0 | Negligible |
| C17 White house Farm | 48 | 15 | 48 | 0 | Negligible |
| C18 Crown Farm | 48 | 17 | 48 | 0 | Negligible |
| C19 Stone Creek House | 61 | 38 | 61 | 0 | Minor |
| C20 Fairview | 65 | 39 | 65 | 0 | Minor |

38.7.2 Results show that for the unmitigated piling there are four residential receptors that will have an increase of 1 dB(A) LAeq, however this increase does not result in a change in significance of the impact. When piling is mitigated during construction of AMEP, there is no increase in average continuous noise levels at any of the receptors at the Compensation Site.

38.7.3 An onshore cable for an offshore wind farm will be laid around 1km from Cherry Cobb Sands and through the proposed wet grassland at Old Little Humber Farm. Works are unlikely to take place at the same time as those at the Compensation Site. Works are likely to involve digging of a trench to lay cable and will not incorporate any particularly noisy activities and therefore there are unlikely to be any cumulative impacts relating to noise.

38.8 *MITIGATION MEASURES*

Construction Phase

38.8.1 The contractor carrying out the earth works to construct the new embankment at Cherry Cobb Sands and wet grassland at Old Little Humber Farm will follow best practicable means to reduce the noise impact upon the local community, including the following:

38.8.2 All construction plant and equipment will comply with EU noise emission limits.

38.8.3 Proper use of plant with respect to minimising noise emissions and regular maintenance. All vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers and will be maintained in good efficient working order.

38.8.4 Selection of inherently quiet plant where appropriate. All major compressors will be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers.

38.8.5 Machines in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum.

38.8.6 All ancillary plant such as generators, compressors and pumps will be positioned so as to cause minimum noise disturbance. If necessary, acoustic enclosures should be provided and/or acoustic screening.

38.8.7 The new embankment at Cherry Cobb Sands will be constructed in sections. This may provide the opportunity for the bank to act as a shield for noise, which could help to further mitigate for the impact of construction noise.

Road Traffic Noise

38.8.8 The contractor will follow the traffic specific noise mitigation measures listed below to minimise any potential impacts;

- Avoid queuing and bunching of heavy vehicle movements such as deliveries to the site;
- Implement appropriate speed limits along local roads;
- Provide all staff, contractors and HGV drivers with information in the form of site induction, training or provision of a Traffic Management Plan to create awareness of the potential for noise impacts from road traffic and in particular, heavy vehicles;
- Perform regular checks/ audits on driver behaviour through the noise sensitive areas; and
- Review performance and manage public enquiries.

38.8.9 In addition a Traffic Management Plan will also be produced which may identify further mitigation measures to reduce road traffic noise.

38.9 RESIDUAL IMPACTS

Construction Phase

38.9.1 The residual impacts relating to noise from construction works at the Compensation Site do not differ from the predicted levels of significance described in *Section 38.7*. Although the mitigation measures will act to reduce the impacts of noise, it will not alter the significance of the effect.

38.9.2 The residual impact of noise from road traffic is assessed as being of temporary minor negative significance.