



APPENDIX 4.2 -  
SHADOW HABITATS REGULATIONS ASSESSMENT

HAMBLE AIRFIELD  
HAMBLE-LE-RICE  
HAMPSHIRE

NOVEMBER 2021, UPDATED OCTOBER 2022 AND  
OCTOBER 2023

ON BEHALF OF CEMEX UK



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## 1.0 Introduction

- 1.1 LC Ecological Services Limited were commissioned by CEMEX UK to conduct a Shadow Habitats Regulations Assessment for land at the former Hamble Airfield, Hamble Lane, Hamble-le-Rice, Eastleigh, Hampshire, and to devise a mitigation strategy. This was required to support a planning application for phased aggregate extraction on the site, including the erection of a processing plant together with silt lagoons and associated infrastructure, as well as post-quarrying restoration of the land. The application site location and boundaries are depicted on the plan included as appendix I. The Method of Working (MOW) plans are included as appendix II.
- 1.2 The site location lies within 320 metres of three statutory designated terrestrial sites within the national site network (NSN). The three terrestrial sites are: Solent and Southampton Water Special Protection Area (SPA), Solent and Southampton Water Ramsar, and Solent Maritime Special Area of Conservation (SAC). The River Hamble, which lies approximately 410 metres to the east of the site, also forms part of the Solent and Dorset Coast SPA, a maritime SPA designated to protect the foraging habitat of breeding terns. The location of the site relative to these sites is shown on the plan provided in appendix III.
- 1.3 The use of a 2 kilometre area of search to identify sites within the NSN which may be impacted by the proposed project was considered suitable due to the nature of the proposals. Given the distance of the proposed works from the nearest NSN site, direct impacts such as noise and visual disturbance, dust generation and water pollution could potentially result in likely significant effects on NSN sites. Indirect impacts such as recreational impacts or emissions from traffic on NSN sites are considered to be less likely.
- 1.4 These sites receive statutory protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations'). The Habitats Regulations afford a high level of protection to sites classified as areas that hold significant populations of certain bird species (SPAs). They also afford the same level of high protection to tracts of land supporting habitats or rare species (other than birds) considered scarce or vulnerable at a European community level (SACs).
- 1.5 Ramsar sites are designated as wetlands of international importance that are afforded similar legislative protection to SPAs and SACs. The government has issued policy statements relating to the special status of Ramsar sites. This extends the same protection afforded to SPAs and SACs.
- 1.6 Under the Habitats Regulations, Hampshire County Council (HCC) is a competent authority, responsible for ensuring that development management decisions do not adversely affect the integrity of NSN sites. This document provides information for the Habitats Regulations Assessment that HCC will need to undertake in determining the planning application for the site. This document considers the implications of the project for the conservation objectives of the four NSN sites to determine whether the project will have an adverse effect on the integrity of the sites, either alone, or in combination with other plans and projects.

## 2.0 Legislative context and the tests of the Habitats Regulations

- 2.1 SACs and SPAs form part of a network of nature protection areas within the UK known as the National Site Network (NSN) and are protected in the determination of a planning application. Under Regulation 63 of the Habitats Regulations the competent authority is responsible for assessing whether land use plans or proposed developments could adversely affect a NSN site. This requires a process known as a Habitats Regulations Assessment (HRA), encompassing two tests required under Regulation 63(1) of the Habitats Regulations.
- **Test 1:** having ascertained that the plan is not directly connected to, or necessary for site management for nature conservation, the first test of the HRA, commonly referred to as a screening test, considers whether or not a plan or project is likely to have a significant effect on an NSN site either alone or in combination with other plans or projects. A significant effect is any effect that would undermine the conservation objectives for the respective NSN site and may include physical loss and/or damage of a habitat, disturbance effects, and changes to water availability, deposition of contaminants through changes in air quality etc.
  - **Test 2:** The second test of the HRA is relevant to those plans or projects that are screened as likely to have a significant effect alone or in combination with other plans or projects and requires an appropriate assessment. The role of the appropriate assessment is to consider the implications of the plan or project for the conservation objectives of the NSN sites in question, and to determine whether it will have an adverse effect on the integrity of the site. In carrying out an appropriate assessment, a local authority must have regard to the manner in which the project is proposed to be carried out, or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given.
- 2.2 A likely significant effect (LSE) is any effect that is likely to undermine the site's conservation objectives, in light of the characteristics and specific environmental conditions of the SAC/SPA. The likely significant effect test must be based on objective information and the risks must be real, not hypothetical (Boggis vs Natural England 2009).
- 2.3 A recent European Court Judgment (ECJ) *People Over Wind and Sweetman v Coillte Teoranta (C-323/17)* has altered the process of screening for likely significant effects by overturning the 2008 *Hart District Council vs. Secretary of State* judgment (2008), known as *Dilley Lane*. The *Dilley Lane* judgment stated *“there is no legal requirement that a screening assessment... must be carried out in the absence of any mitigation measures that form part of that plan or project”*.
- 2.4 The recent *People Over Wind and Sweetman* ruling states that *“it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site”*. This means that mitigation measures must be excluded from the assessment of whether a project is likely to have a significant effect, either alone or in combination with other plans and projects.
- 2.5 In line with the ECJ ruling in *Briels (2014)* the adverse effect on integrity test that forms part of the appropriate assessment can *“take account of the protective measures forming*

*part of the project aimed at avoiding or reducing any direct adverse effects for the site in order to avoid any adverse effects on integrity”.*

- 2.6 The ECJ ruling in *Grace and Sweetman (C-164/17)* highlights that a measure can only be considered mitigation “*where it is certain it will make an effective contribution to avoiding harm, guaranteeing beyond all reasonable doubt no adverse effect*”.
- 2.7 Guidance produced by the UK government highlights key principles to be considered by the competent authority when considering if an appropriate assessment is required. It notes that measures that have been specifically added to achieve the purpose of reducing its harmful effects on a habitats site should not be considered at the screening stage.
- 2.8 The government guidance notes that “*the scope and content of an appropriate assessment will depend on the nature, location, duration and scale of the proposed plan or project and the interest features of the relevant site. ‘Appropriate’ is not a technical term. It indicates that an assessment needs to be proportionate and sufficient to support the task of the competent authority in determining whether the plan or project will adversely affect the integrity of the site*”.

#### ***Conservation objectives***

- 2.9 Conservation objectives are identified for all NSN sites and cover all features that qualify the site for classification or designation. The conservation objectives apply under the Habitats Regulations, Habitats Directive and Wild Birds Directive, and must be considered during a Habitats Regulations Assessment, including an Appropriate Assessment.
- 2.10 For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, focusing instead on the production of High Level Conservation Objectives because it’s considered that conservation advice available for overlapping European Management Sites is sufficient to support the management of Ramsar interests<sup>1</sup>. European Marine Sites (EMSs) are those areas below mean high water designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).
- 2.11 The Solent European Marine Sites (SEMS) is one of a number of European marine sites in the UK that are designated as internationally important sites for their habitats and species. SEMS covers the harbours, estuaries, areas of open coast and inshore water around the Solent and includes the SSW SPA and the SM SAC. As a matter of policy, the provisions of the Habitats Regulations relating to Habitat Regulations Assessments (HRAs) extend to Ramsar sites. For the purposes of this assessment, the conservation objectives of the SSW SPA and SM SAC are considered to address all relevant interest features in the corresponding Ramsar site.

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<sup>1</sup> <https://www.gov.uk/government/publications/conservation-advice-for-marine-protected-areas-project-background/marine-conservation-advice-project-summary>

### **3.0 Development proposals and scope of assessment**

- 3.1 The site is located to the north of the village of Hamble-le-Rice and it has an area of approximately 62 hectares. The existing residential areas of Hamble-le-Rice lie to the south and south-east of the site. The B3397 Hamble Lane forms the north-western boundary, Satchell Lane marks the north-eastern boundary, and the site is bounded to the north by the Portsmouth to Southampton railway line.
- 3.2 The site is identified in the adopted Hampshire County Council Minerals and Waste Plan (2013) for extraction of 1.5 million tonnes of sharp sand and gravel.
- 3.3 The development will consist of the phased extraction of sand and gravel working from the north to the south of the site along the western edge and then north again along the eastern edge of the site. As the minerals are extracted from the site inert restoration material will then be imported and used to backfill extraction voids and restore previous ground levels. The existing topsoil layers within each working phase of the project will also be used to restore the site, having first been either used temporarily to form the perimeter bunding, or temporarily stored on site. The nature of the imported restoration material is likely to comprise soils, clay and rubble from construction and demolition sites where the material cannot be recycled. The importation of the inert restoration material will require an environmental permit from the Environment Agency.
- 3.4 It is proposed that the development would commence in 2023 and take up to 13 years to complete. Over this period, a phased restoration strategy will be implemented with quarried areas backfilled with inert restoration material and capped with the re-used top-soils from the site as the works progress. The restoration of the site will include the re-establishment of similar vegetation cover to what is currently present on site, as well as some new habitats and features.
- 3.5 The proposals include the construction of an earth bank (bunding) around the perimeter of the site to screen the works and provide acoustics mitigation. There will also be a stand-off buffer zone of between 14 and 103 metres width from the outside edge of the earth bunding to the site perimeter, within which existing habitats will be retained and enhanced and new habitats created as part of the ecological mitigation strategy. In addition to this, there will also be a substantial permissive footpath running alongside the northern and eastern boundaries of the site (provided within the stand-off buffer zone). Although these measures have not been specifically included to reduce impacts on the interest features of the SSW SPA and SM SAC they are considered to and therefore require the undertaking of an appropriate assessment.
- 3.6 The site infrastructure would include a site office and processing plant for the washing and grading of gravel, weighbridge, wheel wash area and car-parking. The site is expected to employ approximately 7 full-time staff.
- 3.7 HGV traffic movements would peak in years 3 to 7 when inert material is being imported into the site and extracted minerals exported. In years 8 to 13 HGV traffic movements would reduce as only importation of inert material to the site would occur during this period. HGV movements in years 1 and 2 would be related only to export of minerals from the site.

- 3.8 Section 4 of this document outlines the interest features of the four sites within the NSN that fall within 2km of the application boundary. Section 5 sets out the likely significant effects assessment where objective information is used to determine if the proposed development will, in the absence of mitigation measures, result in any effect that is likely to undermine the designated site's conservation objectives, in light of the characteristics and specific environmental conditions of the SAC/SPA/Ramsar site.
- 3.9 Section 5 also sets out the rationale for the exclusion of certain likely significant effects from further assessment at this stage. The likely significant effect test must deal with risks that are real, not hypothetical. Potential plausible risk pathways are examined, but if no risk of likely significant effects is identified, these risks are discounted from further assessment.
- 3.10 Section 6 is the appropriate assessment of the likely significant effects of the scheme on interest features of the relevant NSN sites as identified in Section 5. Section 6 deals with impacts from the proposals alone and in-combination with other plans and projects.
- 3.11 Section 7 sets out the conclusions of the shadow appropriate assessment provided by the applicant for the benefit of the competent authority. In undertaking its own Habitats Regulations Assessment of the proposed project, the competent authority will form its own view on the impacts of the scheme on the NSN.



## 4.0 Baseline

4.1 The following section sets out the location, designation criteria and conservation objectives of the NSN sites to be included in this HRA. The locations of these sites relative to the application site are shown in appendix III. This section also provides a brief summary of the bird populations recorded within the site (during baseline field survey work) which are relevant to this assessment.

### *Solent and Southampton Water SPA/Ramsar (SSW SPA)*

4.2 The SSW SPA extends from Hurst Spit to Hill Head along the south coast of Hampshire, and from Yarmouth to Whitecliff Bay along the north coast of the Isle of Wight. The site comprises a series of estuaries and harbours with extensive mud-flats and saltmarshes together with adjacent coastal habitats including saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh. The mud-flats support beds of *Enteromorpha* spp. and *Zostera* spp. and have a rich invertebrate fauna that forms a food resource for the estuarine birds. In summer, the site is of importance for breeding seabirds, including gulls and four species of terns. In winter, the SPA holds a large and diverse assemblage of waterbirds, including geese, ducks and waders. Dark-bellied brent geese (*Branta bernicla bernicla*) also feed in surrounding areas of agricultural land outside the SPA. The proposals lie within 0.89 kilometres of the SSW SPA.

### Qualifying features

4.3 The Solent and Southampton Water SPA qualifies under Article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the GB population of a species listed on Annex I in any season<sup>2</sup>:

- Mediterranean gull (*Larus melanocephalus*) – 2 pairs - representing 8.2 – 13.9% of the GB breeding population (5 year peak mean. Count years 1994-1998).
- Little tern (*Sterna albifrons*) – 49 pairs - representing 2% of the GB breeding population (5 year peak mean. Count years 1993-1997).
- Roseate tern (*Sterna dougallii*) – 2 pairs - representing 3.1% of the GB breeding population (5 year peak mean. Count years 1993-1997).
- Common tern (*Sterna hirundo*) – 267 pairs – representing 2.2% of the GB breeding population (5 year peak mean. Count years 1993-1997).
- Sandwich tern (*Sterna sandvicensis*) – 231 pairs – representing 1.7% of the GB breeding population (5 year peak mean. Count years 1993-1997).

4.4 The breeding bird assemblage of the SSW SPA is largely confined to saltmarsh habitats west of the Beaulieu River or nature reserves such as Titchfield Haven. The Mediterranean gull colony in Langstone Harbour is currently the largest colony in Hampshire that appears to attract most of the breeding birds from along the Solent coast. The breeding tern colonies are mostly associated with salt-marsh habitats or artificial lagoons and are largely inaccessible during the breeding season.

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<sup>2</sup> <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9011061>

4.5 The site also qualifies under Article 4.2 of the Directive (79/409/EEC) because it used regularly by 1% or more of the biogeographic population of a regularly occurring migratory species (other than those listed on Annex I) in any season:

- Eurasian teal (*Anas crecca*) (North-western Europe) – 4400 - representing 1.1% of the population (5-year peak mean, 1992/3-1996/7).
- Dark-bellied brent goose (*Branta bernicla bernicla*) (Western Siberia/Western Europe) - 7506 – representing 2.5% of the population (5-year peak mean, 1992/3-1996/7).
- Ringed plover (*Charadrius hiaticula*) (Europe/Northern Africa - wintering) – 552 - representing 1.1% of the population (5-year peak mean, 1992/3-1996/7).
- Black-tailed godwit (*Limosa limosa islandica*) (Iceland - breeding) – 1125 - representing 1.6% of the population (5-year peak mean, 1992/3-1996/7).

4.6 The site is also regularly used by over 20,000 waterfowl (as defined by the Ramsar Convention) in any season. Five-year peak mean 51361 (1992/93 – 1996/97).

4.7 Solent and Southampton Water also qualifies as a Ramsar site under four criteria (1, 2, 5 and 6):

- **Criterion 1:** The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.
- **Criterion 2:** The site supports an important assemblage of rare plants and invertebrates. At least thirty three (33) British Red Data Book invertebrates and at least eight (8) British Red Data Book plants are represented.
- **Criterion 5:** The site contains avian assemblages of international importance whereby species with peak counts in winter are 51,343 waterfowl (5-year peak mean 1998/99-2002/2003).
- **Criterion 6:** A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Species with peak counts in winter are:

- Black-tailed godwit (Iceland/W Europe) - 1,240 individuals, representing an average of 2.6% of the population (5-year peak mean 1998/9-2002/3);
- Dark-bellied brent goose- 6,456 individuals, representing an average of 3.2% of the population (5-year peak mean 1998/9-2002/3); and
- Eurasian teal (NW Europe) - 5,514 individuals, representing an average of 1.1% of the population (5-year peak mean 1998/9-2002/3).

Species with peak counts in spring/autumn are:

- Ringed plover (Europe/Northwest Africa) – 397 individuals, representing an average of 1.2% of the GB population (5-year peak mean 1998/9-2002/3).

#### Conservation objectives

4.8 The conservation objectives of the SSW SPA are set out in a Natural England

publication<sup>3</sup> and are set for each qualifying feature for which the site is classified. Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

*With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed), and subject to natural change:*

*Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:*

- *The extent and distribution of the habitats of the qualifying features,*
- *The structure and function of the habitats of the qualifying features,*
- *The supporting processes on which the habitats of the qualifying features rely,*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

### ***Solent Maritime Special Area of Conservation (SM SAC)***

4.9 The proposals lie over 1.2 kilometres south-east from the closest point of the SM SAC. The Annex I habitats that are a primary reason for selection of this site are:

#### **1130 Estuaries**

The Solent encompasses a major estuarine system on the south coast of England with four coastal plain estuaries (Yar, Medina, King's Quay Shore, Hamble) and four bar-built estuaries (Newtown Harbour, Beaulieu, Langstone Harbour, Chichester Harbour). The site is the only one in the series to contain more than one physiographic sub-type of estuary and is the only cluster site. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime of four tides each day, and for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting eelgrass (*Zostera spp.*) and green algae, sand and shingle spits, and natural shoreline transitions. The mudflats range from low and variable salinity in the upper reaches of the estuaries to very sheltered almost fully marine muds in Chichester and Langstone Harbours. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete (*Sabellaria spinulosa*) on the steep eastern side of the entrance to Chichester Harbour.

#### **1320 *Spartina* swards (*Spartinion maritimae*)**

The Solent contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. Solent Maritime is a composite site composed of a large number of separate areas of saltmarsh. In contrast to the Severn estuary, the salt meadows at this site are notable as being representative of the ungrazed type and support a different range of communities dominated by sea-purslane (*Atriplex*

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<sup>3</sup> Natural England, 2014: European Site Conservation Objectives for Solent & Southampton Water Special Protection Area. Site Code: UK9011061.

*portulacoides*), common sea-lavender (*Limonium vulgare*) and thrift (*Armeria maritima*). As a whole, the site is less truncated by man-made features than other parts of the south coast and shows rare and unusual transitions to freshwater reedswamp and alluvial woodland as well as coastal grassland. Typical Atlantic salt meadow is still widespread in this site, despite a long history of colonisation by cord-grass (*Spartina spp.*).

4.10 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- 1110 Sandbanks which are slightly covered by sea water all the time
- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1150 Coastal lagoons (priority feature)
- 1210 Annual vegetation of drift lines
- 1220 Perennial vegetation of stony banks
- 1310 Salicornia and other annuals colonising mud and sand
- 2120 “Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”)

4.11 The Annex II species 1016 Desmoulin’s whorl snail (*Vertigo moulinsiana*) is present as a qualifying feature, but not a primary reason for site selection.

#### Conservation objectives

4.12 The conservation objectives of the SM SAC are set out in a Natural England publication<sup>4</sup> and are set for each qualifying feature Annex 1 habitat & Annex 2 species for which the site is classified. Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that habitat type at a UK level. The term ‘favourable conservation status’ is defined in Article 1 of the Habitats Directive. With regard to the SAC and the natural habitats and/or species for which the site has been designated (the ‘Qualifying Features’ listed below), and subject to natural change; Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favorable Conservation Status of its Qualifying Features, by maintaining or restoring:

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species,*
- *The structure and function (including typical species) of qualifying natural habitats,*
- *The structure and function of the habitats of qualifying species,*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely,*
- *The populations of qualifying species, and*
- *The distribution of qualifying species within the site.*

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<sup>4</sup> Natural England, 2014: European Site Conservation Objectives for Solent Maritime Special Area of Conservation. Site Code: UK0030059.

*Solent & Dorset Coast Special Protection Area (SDC SPA)*

- 4.13 The Solent and Dorset Coast Special Protection Area (SPA) was classified in January 2020 to protect important foraging areas at sea used by terns from colonies within adjacent, already classified, SPAs. The qualifying interest features of the SPA are common tern, Sandwich tern and little tern. Solent and Dorset Coast SPA qualifies under Stage 1.1 by regularly supporting more than 1% of the GB population of Sandwich tern, common tern and little tern, species listed in Annex I of the Birds Directive<sup>5</sup>.
- 4.14 The SPA covers all areas to the mean high-water mark in Portsmouth Harbour, sub-tidal areas with Southampton Water and the River Hamble (below the mean low water mark) and to the mean high-water mark along the coast where terns are not already a qualifying feature of existing SPAs between Worbarrow Bay in Dorset and Bognor Regis in West Sussex. It does not cover the sub-tidal areas of Langstone and Chichester Harbour where the landward boundary is formed by the mean low water as breeding terns are already a feature of the Chichester and Langstone Harbours SPA.
- 4.15 Conservation objectives for the SPA were published in February 2020 by Natural England following the classification of the site. With regard to the potential SPA and the individual species and/or assemblage of species for which the site may be classified and subject to natural change these are to ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:
- *The extent and distribution of the habitats of the qualifying features,*
  - *The structure and function of the habitats of the qualifying features,*
  - *The supporting processes on which the habitats of the qualifying features rely,*
  - *The population of each of the qualifying features, and,*
  - *The distribution of the qualifying features within the site.*
- 4.16 The application site does not support any habitat suitable to support foraging terns. The birds associated with the SPA would be feeding or roosting along the River Hamble.

Results of wintering bird surveys.

- 4.17 The former Hamble airfield was identified as having the potential to support wintering brent geese and waders from the Solent in the 2010 Solent Wader and Brent Goose Strategy. At the time the site was classified as uncertain for negative use by waders and there were no records of brent geese. The current version of the strategy has removed the site from the strategy. Data provided by the Hampshire Biodiversity Information Centre (HBIC) in 2021 confirms there are only negative records (confirmed absence of waders and/or brent geese) for this site during surveys.
- 4.18 Wintering bird surveys of the site have been undertaken during the winters of 2015/2016 and 2017/2018. A further update survey, which commenced in October 2021, will conclude in March 2022. The only SPA/Ramsar species recorded during

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<sup>5</sup> Natural England (2016) Solent and Dorset Coast potential Special Protection Area (pSPA). Departmental brief.

these surveys are a single little egret (*Egretta garzetta*) flying over the site, a flock of four black-tailed godwit flying over, a single common snipe (*Gallinago gallinago*) flushed from the site during one survey visit and a record of two great crested grebe (*Podiceps cristatus*) flying over the site. No brent geese have been recorded on site during any of the wintering bird surveys.

- 4.19 The findings of the wintering bird surveys are in line with the current Solent Waders and Brent Goose Strategy 2020 which does not identify this area as being used by SPA/Ramsar species. On the basis of the field survey results to date and the present condition of the habitats on site, it is concluded that the land is not functionally linked to the SPA/Ramsar.

## 5.0 Likely significant effect test

- 5.1 The first test of Regulation 63 of the Habitats Regulations requires an assessment of whether there are elements of the scheme that are likely to have a significant effect on the NSN sites in question, either alone or in combination with other plans and projects.
- 5.2 As set out in paragraph 2.2 a likely significant effect (LSE) is any effect that is likely to undermine the designated site's conservation objectives, in light of the characteristics and specific environmental conditions of the SAC/SPA/Ramsar. The likely significant effect test must be based on objective information and the risks must be real, not hypothetical.
- 5.3 Any measures that have been included in the application to reduce impacts on the European site cannot be considered within this test because they are included in the application as mitigation and would not be included were there not a need to mitigate this impact on European sites (see para 2.3).
- 5.4 Tables 1 and 2 on the following pages show the potential pathways through which impacts could arise through development of the project on the European nature conservation sites.
- 5.5 In order to determine the in-combination effects of the proposed development as part of the wider developments around Hamble-Le-Rice, the Habitats Regulations Assessment for the Eastleigh Borough Local Plan 2016-2036 was consulted. The initial review focused on the in-combination assessment with other plans and projects to evaluate the scope of the assessment. This review confirmed that the in-combination assessment included the Joint Hampshire Minerals and Waste Plan (adopted 2013).
- 5.6 The Eastleigh Borough Local Plan 2016-2036 identifies 4.7ha of land at Mercury Marina and the Riverside Camping and Caravan Park off Satchell Lane allocated for a marina, a range of holiday accommodation and car parking and boat storage (policy HA2). The policy notes that a site level Habitat Regulation Assessment is required to demonstrate how the site will be delivered without adverse effect on any European site.
- 5.7 Policy HA3 covers the restoration of the Hamble Airfield after mineral extraction and states that the site shall be restored in accordance with the Hampshire Minerals and Waste Plan and shall be retained as an area of accessible countryside with grazing,

public access and outdoor recreation facilities laid out to the satisfaction of the Borough Council.

- 5.8 An update search of the registered planning applications on the Eastleigh Borough Council website using the terms “Mercury Marina, Riverside Camping and Caravan Park, Satchell Lane, SO31 4HU, SO31 4ND and SO31 4BU” was undertaken. The search identified no recent major development proposals for the HA2 site. An application by Foreman Homes to construct 61 dwellings immediately adjacent to the application site was refused a second time in December 2022 following an appeal. All other recent applications were for small-scale works and projects in the area, including small-scale modifications within the operational marinas along the River Hamble, modifications / improvements to a number of existing properties alongside Satchell Lane and Hamble Lane, an additional classroom facility at the Hamble Primary School, various minor arboriculture works, and some minor infrastructure installations / upgrades.
- 5.9 There currently appears to be no projects in the immediate vicinity of the site that may have potential to cause significant effects on the relevant NSN sites in-combination with this proposal for the former Hamble Airfield. Should an application be made for the redevelopment of Mercury Marina, in line with Policy HA2, during the operation of the quarry, the site level Habitat Regulation Assessment will need to demonstrate how the site can be delivered without adverse effect on any European site. At this stage, in the absence of any registered planning proposals (that have not been dismissed) pertaining to either the redevelopment of the HA2 site or any other forms of large-scale development on the adjacent land surrounding the site, no potentially significant in-combination effects can be identified.
- 5.10 For the assessment of in-combination issues that, while likely to be insignificant at an individual project level, could have an adverse impact on the interest features of the NSN sites when considered in-combination with other plans or projects, this assessment relies on the conclusions of the Habitats Regulations Assessment for the Eastleigh Borough Local Plan 2016-2036.

**Table 1: Solent & Southampton Water SPA & corresponding Ramsar site and Solent and Dorset Coast SPA – assessment of likely significant effects**

√	Likely significant adverse effect on the Natura 2000 site	x	Not likely to have a significant adverse effect on the Natura 2000 site
-	The principle is not relevant to the screening exercise	?	Uncertain effect on the Natura 2000 site

Check list of change Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
Land take	-	X	X	-	-
<p>The site lies outside the boundary of both of the SPAs. No land take within the SPAs is required, and no direct impacts on populations for which the SPAs are classified will occur.</p> <p>The site does not currently contain any habitats suitable for foraging terns from the SDC SPA.</p> <p>There is no evidence to indicate that the site supports populations of birds associated with the SSW SPA/Ramsar. It is not considered that this site is functionally linked to the SSW SPA/Ramsar. There is no requirement in Policy HA3 of the Eastleigh Borough Local Plan to restore the site to habitats that would be suitable for use by SPA species.</p> <p>The Habitat Regulations Assessment for the Eastleigh Borough Local Plan concluded that there was no likely significant effect on land supporting habitat outside of the boundary of the SSW SPA/Ramsar from the plan alone or in-combination with other plans and projects. The other plans and projects included in the Joint Hampshire Minerals and Waste Plan (adopted 2013).</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p>					
	-	?	?	-	-



<p>Check list of change</p> <p>Potential impacts</p>	<p>Reduction in area of Annex 1 habitats?</p>	<p>Direct effects on the populations of species for which the site is designated</p>	<p>Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?</p>	<p>Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?</p>	<p>Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?</p>
<p><b>Wintering birds: increased recreational disturbance</b></p>	<p>The nature of the development requires relatively few full-time staff to be present on site. It is estimated that at the busiest periods approximately 7 people will be working on the site. Drivers picking up minerals or delivering inert restoration material will be on site only for relatively short periods. There is limited access to the River Hamble in this area with the slipway accessible from Satchell Lane (at Mercury Marshes), providing the closest riverside access. Access to the SSW SPA/Ramsar is also possible at Hamble Common and along the Solent Way in Hamble-le-Rice. All these areas are already accessible to the public and the very small number of potential visits to these areas by staff working at the quarry is not considered to be a significant addition to current baseline activity levels.</p> <p>The former Hamble Airfield site is private land and is not allocated for any form of public recreational use, it does not include any designated public footpaths or rights of way. However, it is currently used informally by the public / local residents for recreation and dog walking purposes. The landowners have made repeated efforts to try and keep trespassers off the site by installing fencing along the boundaries, although this fencing has been continually vandalised by the public. It is within the landowner’s rights to make efforts to prevent the public from accessing this land, such as installing fencing barriers (including more robust palisade type fencing), and they could choose to do this at any time in the future without requiring planning permission.</p> <p>Although the use of this site by the public is technically trespassing, it is apparent that currently the area is regularly used for recreation and this will be curtailed upon the commencement of the project. However, the proposals include the provision of a substantial permissive footpath, approximately 2.1 kilometres in length, running alongside the northern and eastern boundaries of the site (within a generous stand-off buffer zone of retained habitat between 14 and 103 metres width) and connecting with a number of existing off-site pedestrian routes. This will enable public commuting (on foot), recreation and dog walking activities on site throughout the duration of the operational phases and site restoration. Then once the quarrying project is completed and site restoration plan implemented, the permissive footpath will be retained and there will also be a ‘community access meadow’ provided in the far north-east of the site which the public will be able to freely use as a recreational space in perpetuity. It is considered that the permissive path and ‘community access meadow’ provided on site will form a Suitable Alternative Natural Greenspace (SANG) resource in the locality to help divert visits and recreational pressure away from the SSW SPA/Ramsar.</p> <p>There is the potential that the project will cause the public / local residents to seek out other areas for recreation that may include parts of the SPA/Ramsar. This could lead to the disturbance of feeding or roosting birds. Any changes in patterns of recreational activity are likely to be localised in nature as residents are likely to seek out other local sites rather than travel long distances to reach alternative recreational areas.</p>				

Check list of change  Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
	<p>Hamble Common and the Solent Way footpath in Hamble-Le-Rice are considered to be likely alternative locations, however Ordnance Survey maps show that there is also a considerable local network of other public footpaths/rights of way and cycle paths to the immediate north and west of the site which run through areas of land that are a substantial distance from the coastline and it is very likely that these would also be utilised as an alternative.</p> <p><b>Conclusion: Impacts related to displaced recreational activity require appropriate assessment due to the inclusion of embedded mitigation (in the form of a permissive footpath around the perimeter of the site (operational and post restoration phases) and ‘community access meadow’ (post restoration phase only)) as part of the scheme - see Section 6.</b></p>				
<p><b>Breeding birds: increased recreational disturbance</b></p>	-	-	X	X	X
	<p>The breeding colonies within the SSW SPA are located a significant distance from the development for there to be to no likely impacts to the breeding birds. The HBIC data search did not reveal any records within 500 metres of the site for any of the breeding citation features.</p> <p>The closest tern colony is at Titchfield Haven which is located approximately 9.3 kilometers from the proposed development area. Tern species are opportunistic feeders, and their diet consists predominantly of small fish and occasionally planktonic crustaceans and insects. Though they can forage for up to 37 kilometers from their nesting sites, the proposed development area contains no habitat suitable for nesting or foraging for tern species. (Cramp and Simmons, 1985; BirdLife International, 2000).</p> <p>Given the distance from the development and the inaccessibility of breeding sites no likely significant effects are predicted.</p> <p>Access to the water’s edge is highly unlikely to affect foraging terns. Both common and sandwich terns will forage in shallow water close to areas where there are high levels of human activity. This is apparent within the SSW SPA/Ramsar where common terns will fish pools alongside the seawall at Pennington and sandwich terns foraging along the shoreline of Studland Bay and Pool Harbour.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p>				
	-	?	?	X	X

<p>Check list of change</p> <p>Potential impacts</p>	<p>Reduction in area of Annex 1 habitats?</p>	<p>Direct effects on the populations of species for which the site is designated</p>	<p>Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?</p>	<p>Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?</p>	<p>Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?</p>
<p><b>Disturbance of wintering &amp; breeding birds from quarrying activities</b></p>	<p>The works will be located approximately 287 metres from the nearest point of the SSW SPA. For the most part, the SSW SPA boundary is at least 300 metres from the application site boundary and is screened from the SSW SPA by existing built development, hedgerows, scrub and woodland. There are no direct views between the eastern side of the application site and the SSW SPA, this was confirmed on the ground by one of LCES’ ornithologists during a recent fieldwork visit on 09/11/2021.</p> <p>Noise and visual impacts have been ruled out primarily due to the distance of the project from the SPA/Ramsar. The University of Hull has produced a Waterbird Disturbance Mitigation Toolkit to inform estuarine planning and construction projects (Cutts et al, 2013). The toolkit provides information on species’ responses to varying noise levels and sources of visual disturbance.</p> <p>Overall, the toolkit concludes that noise levels below 50dB promoted a low-level response in most estuarine species covered in the toolkit. A low level of response is classed as one where there is unlikely to be an observable response to the noise, e.g. reduction in feeding, birds scanning for danger etc. It should be noted that an observable reaction in a bird species is not the same as an impact. A brief change in behaviour in response to a noise event will not necessarily have any impact on the individual(s) concerned.</p> <p>The toolkit suggests that the most sensitive species of wader will demonstrate an alert response to certain forms of visual disturbance at ranges of approximately 300 metres. In certain circumstances (in countries where brent geese are a quarry species) brent geese have been recorded responding to disturbance stimuli at ranges of 350 metres.</p> <p>There are no breeding tern colonies within 1 kilometre of the site boundary, so noise and visual disturbance is not considered to be an issue for these species. Foraging terns range over wide distances and their use of the Hamble will vary temporally and spatially in response to a range of factors such as the state of the tide, presence of fish and season.</p> <p>As the application area is mainly at least 300 metres from the SSW SPA, and is screened from the SSW SPA by existing residential development, hedgerows, scrub and woodland, operational quarrying noise and visual disturbance is therefore not anticipated to have any impact on wintering or breeding SPA species.</p>				

Check list of change  Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
	<p>However, the application proposes that earth bunds are constructed around the perimeter of the operational quarrying site from the outset of the project in order to screen the works and provide acoustics mitigation. There will also be a generous stand-off buffer zone of between 14 and 103 metres width around the site perimeter between the outer edge of the bunding and the site boundary which will incorporate existing and newly created habitats, most notably retained and newly planted hedgerows along the eastern boundary which will contribute to further visual screening here. Although not included in the proposals specifically to provide mitigation for SPA birds, the noise assessment does take into account the presence of this feature when assessing noise levels on sensitive human receptors outside the site boundary. It is therefore considered to represent mitigation and the assessment of impacts relating to noise should be considered in an appropriate assessment.</p> <p><b>Conclusion: Noise impacts require appropriate assessment due to the inclusion of embedded mitigation (in the form of perimeter bunds) as part of the scheme - See Section 6.</b></p>				
<p><b>Hydrological changes, including:</b></p> <ul style="list-style-type: none"> <li>• <b>water quality</b></li> <li>• <b>flows</b></li> <li>• <b>abstraction</b></li> <li>• <b>nutrient levels</b></li> </ul>	-	-	X	X	X
<p><u>Contamination of surface water</u></p> <p>The hydrological consultant has confirmed that there are currently no surface water features within the footprint of the site and there are no surface water links from the site to the River Hamble. All rainfall within the site will discharge to groundwater. Soakaway tests have been undertaken to confirm the infiltration capacity of the ground. The silt pond identified on the phasing plans will be used to collect silt from the extracted minerals. The silt will be retained on site and used to back-fill voids created by the extraction process as restoration works progress. The water in the freshwater pond will be used for mineral washing, the water will be sourced from rainwater and egress of ground water. As the River Hamble is influenced by tidal input from the Solent and freshwater inputs from upstream, at this point it is not dependant on ground water to maintain flows.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans or projects.</b></p> <p><u>Foul water and water nutrient levels</u></p>					

<p>Check list of change</p> <p>Potential impacts</p>	<p>Reduction in area of Annex 1 habitats?</p>	<p>Direct effects on the populations of species for which the site is designated</p>	<p>Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?</p>	<p>Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?</p>	<p>Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?</p>
	<p>This assessment assumes that all foul water associated with the site offices and infrastructure will be treated at Peel Common, a Southern Water facility and Treatment Works. The development could result in increased nitrogen outputs to the SSW SPA/Ramsar and SDC SPA through the increase of foul water that Peel Common deals with, and the eventual discharge to sea via outfalls into the Solent waters, which can cause an increase in nutrient loading (nitrogen).</p> <p>Current Natural England guidance on nitrogen neutrality advises local authorities that commercial development not providing overnight accommodation should not generally be required to deliver mitigation. This is to prevent ‘double-counting’ of waste water produced by residents living and working in the same region.</p> <p>The proposed restoration scheme for the site will not involve any improvement to the nutrient status of the replaced top-soils via applications of manures, slurries, lime and/or fertilisers. It is therefore not considered that any surface or ground water on the site, comprising the site’s natural hydrology, will become any further enriched in nutrients.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p> <p><u>Flood risk:</u></p> <p>The site is located in Flood Zone 1, defined by the National Planning Policy Framework (NPPF) as having a low probability of flooding from rivers or the sea. The groundwater flood risk at the site is considered to be low given the depth of ground water below the site (measured to be 3 to 5 metres below ground surface across most of the site on average). The water table may be exposed in parts of the site through the extraction of sand and gravels from the cells.</p> <p>During both operation and restoration phases there is no realistic impact pathway for any possible pollutants from the site to enter the River Hamble or Southampton Water through surface water flooding, fluvial or coastal flooding or ground water flooding.</p> <p>Following restoration, the permeability of the fill material used to restore the site will be lower than that of the sand and gravel reserve extracted and therefore infiltration rates across the site are expected to be lower. To mitigate against this a drainage scheme is proposed including</p>				

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	<p>attenuation ponds and conveyance structures to perimeter infiltration trenches. Thus, the majority of rainfall to the site will continue to infiltrate to ground, albeit at the perimeter of the site rather than within it. The results from soakaway tests have been used to ensure that the design of the infiltration trenches is sufficient to deal with surface water runoff from the site. Therefore, little net change in the balance of water discharged via surface water or groundwater is expected.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p> <p><u>Water abstraction</u></p> <p>During the operational phases, water collecting within the worked void will be pumped to other parts of the site where it will infiltrate to ground but the volumes of water requiring to be pumped will be small. A small proportion of the water that will collect within the lagoons constructed in the north of the site will be utilised for washing the mineral. Thus, little net change in the balance of water discharged via surface water or groundwater is expected during the operational phases of the site. Neither will additional abstractions to secure water supply to the site office affect the hydrology of the SPA habitats on which bird populations rely. Domestic water provision will be from Southern Water.</p> <p><b>Conclusion: No likely effect alone or in combination with other plans and projects.</b></p>				
Air quality changes	-	-	X	X	X
	<p>The main pollutants of concern for NSN sites are oxides of nitrogen (NO<sub>x</sub>), ammonia (NH<sub>3</sub>) and sulphur dioxide (SO<sub>2</sub>). The localised deposition of atmospheric nitrogen and ammonia can have directly toxic effects on certain species of plants and lichens, as well as causing eutrophication and acidification effects on semi-natural vegetation communities which in turn can lead to adverse floristic compositional changes, reductions in plant diversity, and other deleterious effects (Bobbink et al., 2010; Krupa, 2003; Pearson and Stewart, 1993). Sulphur dioxide can also have directly toxic effects on semi-natural vegetation, particularly on certain species of lichens (APIS, 2023).</p> <p>Nitrogen oxides (NO<sub>x</sub>) are a group of gases which are mainly formed during the combustion of fossil fuels, with transport, energy industries and industrial combustion being the main source sectors for NO<sub>x</sub> emissions in the UK (DEFRA, 2023a). With all of the embedded efficiency measures to reduce fossil fuel use during the proposed quarrying project, such as the use of a conveyor line and the recycling of the top-soil</p>				

<p>Check list of change</p> <p>Potential impacts</p>	<p>Reduction in area of Annex 1 habitats?</p>	<p>Direct effects on the populations of species for which the site is designated</p>	<p>Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?</p>	<p>Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?</p>	<p>Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?</p>
					<p>layers on site, it is therefore considered that this impact has been mitigated as far as reasonably possible and the project is unlikely to result in a significant local increase in NOx emissions above the current normal levels.</p> <p>The vast majority of ammonia emissions in the UK are from intensive agriculture via the spreading of manures, slurries and fertilisers, with a smaller portion of ammonia emissions resulting from waste and a range of diffuse sources (DEFRA, 2023b). The proposed restoration scheme for the site will not involve any improvement to the nutrient status of the replaced top-soils via applications of manures, slurries, and/or fertilisers. As such, it is highly unlikely that any material increases in NH<sub>3</sub> emissions will result from this development.</p> <p>Sulphur dioxide emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil as well as (particularly on a local scale) shipping. In the UK the decline of heavy industry, as well as the widespread switch from coal to gas in the domestic, industrial and electricity generating sectors, since the late 1970s has led to significant reductions in emissions of SO<sub>2</sub>. Background level concentrations of SO<sub>2</sub> in the UK have now fallen to such an extent that there is no longer considered to be a threat to plant health (APIS, 2023). Very little sulphur dioxide is likely to be generated from the proposed minerals project and associated vehicle and heavy plant traffic.</p> <p><u>Air quality</u></p> <p>Traffic associated with the proposal will access the site via the B3397 (Hamble Lane). This road joins the A27 at the Windhover roundabout. The A27 crosses the River Hamble at Lower Swanwick.</p> <p>Natural England (2018) guidance document <i>Natural England’s approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations</i> explains that it is widely accepted that imperceptible impacts are those which are less than 1% of the critical level or load, which is considered to be roughly equivalent to 1,000 AADT for cars and 200 AADT for HGVs. This was based on the Design Manual for Roads and Bridges (DMRB) screening tool using Department for Transport data to calculate whether the NOx output could result in a change of more than 1% of the critical level/load. The document also suggests an initial 200 metre screening distance from roads when considering impacts on NSN sites.</p>

Check list of change  Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
	<p>Research produced by AQC has highlighted the need to also consider the ammonia released from vehicles when assessing the impact on nitrogen sensitive habitats (<i>Ammonia Emissions from Roads for Assessing Impacts on Nitrogen-sensitive Habitats</i>, AQC (2020)). This is especially important for future years as reductions in NOx emissions have outpaced reductions in ammonia emissions. Both NOx and ammonia contribute to nitrogen deposition and the positive effect of reduced levels of NOx in exhaust gases (reducing nitrogen deposition) is offset for ecological receptors by the elevated levels of ammonia.</p> <p>At no point along the route between the Windhover Roundabout and the entrance to the site is the SSW SPA less than 850 metres away. Along the A27 east of the bridge crossing the Hamble at Bursledon the SSW SPA is over 300 metres from the A27 at the closest point. Beyond the Hamble estuary traffic associated with the proposals will be spread across the wider road network as the destination of lorries carrying aggregates will be determined by regional demand. The Habitat Regulations Assessment for the Eastleigh Borough Council Local Plan concluded that there were no likely significant effects from atmospheric pollution from the plan alone or in-combination with other plans and projects. The other plans and projects included in the Joint Hampshire Minerals and Waste Plan (adopted 2013).</p> <p>SSW SPA is largely unaffected by nitrogen deposits. APIS lists terns using coastal stable dune habitat as vulnerable to nitrogen deposition, and common tern using supralittoral sediment as vulnerable to acid deposition. However, there are no breeding terns in the vicinity of the application site and no suitable nesting habitat (dunes or shingle beaches).</p> <p><b>Conclusion: No likely significant effect alone and in combination with other plans and projects</b></p> <p><u>Dust generation</u></p> <p>Dust and dirt created by traffic can be a problem arising from the operations of certain types of development, notably quarrying and the transport of quarried materials. The guidelines suggest that problems with dust and dirt are unlikely to occur at distances greater than 50 metres from the road. The impact of dust and dirt will depend on the management practices undertaken on site.</p> <p>At no point is the SSW SPA/Ramsar and SDC SPA less than 50 metres from the site boundary. Due to the distance between the site and the NSN sites no potential impact pathway is considered to exist.</p>				



Check list of change Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
<b>Conclusion: No likely significant effect alone and in combination with other plans and projects</b>					

**Table 2: Solent Maritime SAC – assessment of likely significant effects**

√	Likely significant adverse effect on the Natura 2000 site	x	Not likely to have a significant adverse effect on the Natura 2000 site
-	The principle is not relevant to the screening exercise	?	Uncertain effect on the Natura 2000 site

Check list of change Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
<b>Land take</b>	-	X	-	-	-
The site lies outside the boundary of the SAC. No land take within the SAC is required and no direct impacts on populations or habitats for which the SAC is designated will occur.					
<b>Increased damage from recreational activity</b>	-	?	?	X	X
The River Hamble is approximately 300 metres from the application area at the closest point.					

<p>Check list of change</p> <p>Potential impacts</p>	<p>Reduction in area of Annex 1 habitats?</p>	<p>Direct effects on the populations of species for which the site is designated</p>	<p>Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?</p>	<p>Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?</p>	<p>Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?</p>
	<p>As with the SPA and Ramsar, access to the SAC is most likely via Mercury Marshes off Satchell Lane. Access to the SM SAC is also possible in Hamble-le-Rice via Hamble Common and the Solent Way footpath. The Annex 1 citation habitats present along the Hamble (mudflats and saltmarsh) are relatively robust habitats that are unlikely be impacted by trampling. In any case, these habitats occur within the dangerous intertidal zone and there is always a significant risk of people becoming stuck and/or sinking into the soft, wet sediments that comprise these habitats and then potentially drowning. It is considered that this constant danger normally prevents most members of the public from venturing onto saltmarshes or mudflats and they will generally keep to designated, well-maintained footpaths.</p> <p>Desmoulin’s whorl snail is only known to occur within Fishbourne Channel in Chichester Harbour. This is the only recorded site for Desmoulin’s whorl snail within the Solent Maritime SAC and the species was last recorded here in 2005. No individuals were found during surveys in 2009 and 2010. This species is not present within the Hamble estuary (EBC HRA, 2018).</p> <p>The application site will support a small number of full-time employees, it is estimated that at the busiest periods approximately 7 people will be working on the site. Therefore, any visits to the SM SAC by these site personnel are likely to be very infrequent and no measurable direct impact (trampling) deriving from the proposed development is forecast.</p> <p>The former Hamble Airfield site is private land and is not allocated for any form of public recreational use, it does not include any designated public footpaths or rights of way. However, it is currently used informally by the public / local residents for recreation and dog walking purposes. The landowners have made repeated efforts to try and keep trespassers off the site by installing fencing along the boundaries, although this fencing has been continually vandalised by the public. It is within the landowner’s rights to make efforts to prevent the public from accessing this land, such as installing fencing barriers (including more robust palisade type fencing), and they could choose to do this at any time in the future without requiring planning permission.</p> <p>Although the use of this site by the public is technically trespassing, it is apparent that currently the area is regularly used for recreation and this will be curtailed upon the commencement of the project. However, the proposals include the provision of a substantial permissive footpath, approximately 2.1 kilometres in length, running alongside the northern and eastern boundaries of the site (within a generous stand-off buffer zone of retained habitat between 14 and 103 metres width) and connecting with a number of existing off-site pedestrian routes. This will enable public commuting (on foot), recreation and dog walking activities on site throughout the duration of the operational phases and site restoration.</p>				

Check list of change  Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
	<p>Then once the quarrying project is completed and site restoration plan implemented, the permissive footpath will be retained and there will also be a ‘community access meadow’ provided in the far north-east of the site which the public will be able to freely use as a recreational space in perpetuity. It is considered that the permissive path and ‘community access meadow’ provided on site will form a Suitable Alternative Natural Greenspace (SANG) resource in the locality to help divert visits and recreational pressure away from the SSW SPA/Ramsar.</p> <p>There is the potential that the project will cause the public / local residents to seek out other areas for recreation that may include parts of the SAC and this could lead to trampling damage of Annex 1 habitats. Any changes in patterns of recreational activity are likely to be localised in nature as residents are likely to seek out other local sites rather than travel long distances to reach alternative recreational areas. Hamble Common and the Solent Way footpath in Hamble-Le-Rice are considered to be likely alternative locations, however Ordnance Survey maps show that there is also a considerable local network of other public footpaths/rights of way and cycle paths to the immediate north and west of the site which run through areas of land that are a substantial distance from the coastline and it is very likely that these would also be utilised as an alternative.</p> <p><b>Conclusion: Impacts related to displaced recreational activity require appropriate assessment due to the inclusion of embedded mitigation (in the form of a permissive footpath around the perimeter of the site (operational and post restoration phases) and ‘community access meadow’ (post restoration phase only)) as part of the scheme – See Section 6.</b></p>				
<b>Disturbance from construction activities</b>	-	-	<b>X</b>	<b>X</b>	<b>X</b>
	<p>The River Hamble forms the easternmost element of the Solent Maritime SAC and is located approximately 300 metres from the application area at the closest point. The habitats within the SAC are not sensitive to noise and visual disturbance.</p> <p>Desmoulin’s whorl snail is only known to occur within Fishbourne Channel in Chichester Harbour. This is the only recorded site for Desmoulin’s whorl snail within the Solent Maritime SAC and the species was last recorded here in 2005. No individuals were found during surveys in 2009 and 2010. This species is not present within the Hamble estuary (EBC HRA, 2018).</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p>				

Check list of change  Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
<b>Hydrological changes, including:</b> <ul style="list-style-type: none"> <li>• water qual</li> <li>• flows</li> <li>• abstraction</li> <li>• nutrient levels</li> </ul>	-	-	<b>X</b>	<b>X</b>	<b>X</b>
<p>The same conclusion holds as for the SPAs and Ramsar sites – see discussions above in Table 1.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p>					
<b>Air quality changes</b>	-	-	<b>X</b>	<b>X</b>	<b>X</b>
<p><u>Air quality</u></p> <p>Data from the APIS website shows that currently the average critical load for nitrogen deposition across the SAC is exceeding the lower end of the range given for the two most sensitive habitats - Perennial vegetation of stony banks and shifting dunes along the shoreline with <i>Ammophila arenaria</i> “white dunes”. The range given for this habitat is between 8-15kg/N/ha/yr and 10-20kg/N/ha/yr respectively. Critical Loads are defined as: "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge".</p> <p>Traffic associated with the proposal will access the site via the B3397 (Hamble Lane). This road joins the A27 at the Windhover roundabout. The A27 crosses the River Hamble at Lower Swanwick. At no point is the B3397 less than 850 metres from the SM SAC. The A27 crossing the SM SAC at Lower Swanwick. At this point the site comprises the sub-tidal riverbed and an area of saltmarsh downstream of the A27 crossing at Hacketts Marsh. The inter-tidal mudflats in this area are outside the designated site.</p> <p>Across the SAC the maximum level of nitrogen deposition is 18.5 kg/N/ha/yr with the average deposition being 11.6kg/N/ha/yr. For those habitats occurring closest to the A27 crossing: estuaries and Atlantic salt meadows the lower end of the critical load range (20kg/N/ha/yr) given on the APIS website for these habitats is not currently exceeded. Impacts on these habitats are only likely to occur from increased traffic flows on the A27. The contribution of nitrogen deposition from traffic associated with the development is unlikely to result in any significant effects on the interest features of the SAC closest to the A27 crossing.</p>					

Check list of change Potential impacts	Reduction in area of Annex 1 habitats?	Direct effects on the populations of species for which the site is designated	Indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?	Changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?
	<p>As set out in Table 1 the B3397 is too far from the designated site for emissions from traffic associated with the proposals to be a likely impact pathway.</p> <p>Beyond the Hamble estuary, traffic associated with the proposals will be spread across the wider road network as the destination of lorries carrying aggregates will be determined by regional demand.</p> <p>The Habitat Regulations Assessment for the Eastleigh Borough Council Local Plan concluded that there were no likely significant effects from atmospheric pollution from the plan alone or in-combination with other plans and projects. The other plans and projects were included in the Joint Hampshire Minerals and Waste Plan (adopted 2013).</p> <p><b>Conclusion: No likely significant effect alone and in combination with other plans and projects.</b></p> <p><u>Dust generation</u></p> <p>The same conclusion holds as for the SPAs and Ramsar sites – see discussions above in Table 1.</p> <p><b>Conclusion: No likely significant effect alone or in combination with other plans and projects.</b></p>				

- 5.8 The analysis in Tables 1 and 2 established two potential pathways that could result in likely significant effects on the interest features of the SSW SPA and Ramsar the SDC SPA and the SM SAC sites acting alone and in combination with other schemes. These relate to noise disturbance to SPA species present along the River Hamble during the operation of the site and displaced recreational activity potentially impacting on birds and habitats along the River Hamble (within both the SSW SPA/Ramsar and the SM SAC).
- 5.9 In the absence of being able to consider mitigation measures at this stage of assessment, and with regard only to the potential impact shown above, the proposals are considered likely to have a significant effect both alone and in combination with other developments on these sites.
- 5.10 This conclusion generates a requirement for an appropriate assessment to address the impacts deriving from the scheme on the integrity of each of these sites (see Section 6.0).

## 6.0 Appropriate assessment

- 6.1 Section 5 identified the possible pathways likely to have a significant effect on the SSW SPA and Ramsar, the SDC SPA and the SM SAC either alone or in combination with other projects. In the absence of mitigation, the analysis identified the need for appropriate assessment of the impacts of noise disturbance and displaced recreational activity to establish whether the proposals will have an adverse effect on the integrity of the NSN sites, either alone or in combination with other projects.

### *Impacts of noise on birds (SSW SPA and Ramsar and SDC SPA)*

- 6.2 The screening exercise identified that due to the distance between the site boundary and the SPAs, the potential for disturbance due to noise is limited. However, the proposals will involve the creation of earth bunds around the periphery of the site. These bunds will provide noise mitigation and visual screening. There will also be a generous stand-off buffer zone of retained and created habitats, between 14 and 103 metres width, allocated between the application boundary and the outside edge of the proposed earth bunding.
- 6.3 The creation of these bunds is embedded mitigation provided to mitigate impacts on sensitive receptors (although not included in the scheme in response to advice from the ecologist to mitigate impacts on ecological receptors). The calculations undertaken for the noise assessment have shown that due to the distances between the site and the SPA/Ramsar sites, the calculated site noise levels are no more than 4dB(A) above background noise levels at the nearest assessment location to the site.
- 6.4 In this instance the background levels at three receptor locations along Satchell Lane varied between 44 and 48dB, La90, with the average ambient noise levels being in the range 44 to 53 dB LAeq. Noise modelling calculated site noise levels at these receptors during works would be between 45 and 47 dB Leq. These levels would be achieved with the perimeter bunding in place.
- 6.5 These levels are below the 50dB low response threshold identified for estuarine species. The receptors used in the noise assessment are residential receptors and are also closer to the site boundary than the SPA/Ramsar. The noise assessment also assumes a reasonable worst case, the various machines assumed to operate at the closest practical position of the proposed simultaneous extraction/infilling areas for each receptor. It has also been assumed that the plant items work 100% of each hour apart from the tipping of inert material into the extraction void which is assumed to take place 20% of each hour. It should be noted that although this scenario is a possibility, the operation of the plant in this position is unlikely to happen in practice and would be only for a limited period of time if it did occur. Site noise levels at the SPA/Ramsar sites would therefore generally be expected to be below the levels presented in the noise assessment through most of the life of the site.
- 6.6 The predicted changes in noise levels at the SPA/Ramsar sites will be below the

threshold for disturbance to occur to estuarine bird species. The perimeter bunding is necessary to ensure that the site can be worked whilst keeping noise levels within the limits based on current government guidance. With this mitigation in place it is concluded that there is no likelihood of an adverse effect on the interest features of SSW SPA/Ramsar and SDC SPA, either alone or in-combination with other plans and projects.

***Impacts of displaced recreational activity on birds (SSW SPA and Ramsar)***

- 6.7 The screening exercise identified a possible impact on birds using the SSW SPA/Ramsar for foraging and roosting arising from increased recreational pressure on surrounding areas as a result of the existing informal access to the former Hamble Airfield site being curtailed from the commencement of the proposed project. However, given the considerable availability of alternative public rights of way, as well as cycle paths, (identified from OS mapping) in the immediate surrounding area which run through land that is a substantial distance from the local coastline and SSW SPA/Ramsar sites, it is therefore considered an unlikely scenario that the majority of the existing recreational activity on site will suddenly be displaced to the local coastline as a result of the project and that actually the public/local residents will also choose to utilise these other rights of way that are situated away from the coastline as another alternative. Taking this into account it is therefore assessed that the risk and magnitude of any adverse effects on birds using the SSW SPA/Ramsar will be low.
- 6.8 To address the issue of displacement of current recreational users of the site (albeit technically trespassers) during the operational and restoration periods the scheme design includes the provision of a substantial permissive footpath, approximately 2.1 kilometres in total length, running along the northern and eastern boundaries of the site and linking to existing off-site pedestrian routes. The pathway will also be situated within a generous buffer zone of retained and enhanced habitat, ranging from between 14 and 70 meters width along the length of the path, which will make it a pleasant and attractive route for the public to use. In the post operational phase and after the site restoration plan has been implemented, the permissive path will be retained in perpetuity and there will also be a ‘community access meadow’ provided in the far north-east of the site which the public will be able to freely use as an open area of recreational space. It is considered that the permissive path and ‘community access meadow’ provided on site will form a Suitable Alternative Natural Greenspace (SANG) resource in the locality to help divert visits and recreational pressure away from the SSW SPA/Ramsar.
- 6.9 The generous provision of accessible land for informal recreation throughout the operational lifespan of the project and then in the post restoration phase after the project is completed significantly reduces the risk of residents being displaced to the local coastline to undertake regular daily exercise and dog-walking. It should be noted that there are no direct links from the site to the SSW SPA/Ramsar via public rights of way, so therefore the redistribution of recreational activity to the eastern and northern fringes of the site will not increase the risk of locals accessing the River Hamble on foot as no direct links exist.
- 6.10 Taking into account the factors discussed in section 6.7 and the mitigation detailed



in sections 6.8 and 6.9, it is therefore concluded that there is no likelihood of an adverse effect on the interest features of SSW SPA/Ramsar, either alone or in-combination with other plans and projects.

***Impacts of displaced recreational activity on habitats (SM SAC)***

- 6.11 The screening exercise identified a possible impact arising from increased trampling of Annex I habitats within the SM SAC as patterns of recreational activity in the local area alter as a result of the existing informal access to the former Hamble Airfield site being curtailed from the commencement of the proposed project. However, given the considerable availability of alternative public rights of way, as well as cycle paths, (identified from OS mapping) in the immediate surrounding area which run through land that is a substantial distance from the local coastline and SSW SPA/Ramsar sites, it is therefore considered an unlikely scenario that the majority of the existing recreational activity on site will suddenly be displaced to the local coastline as a result of the project and that actually the public/local residents will also choose to utilise these other rights of way that are situated away from the coastline as another alternative. It is also identified that any visiting public to the local coastline and SAC areas are unlikely to venture onto Annex I habitat types occurring within the intertidal zones due to the risk to life of getting stuck in or sinking into soft, wet sediments and drowning, and instead will keep to safe, well-maintained footpaths. Taking these factors into account it is therefore assessed that the risk and magnitude of any adverse effects on Annex I habitats will be low.
- 6.12 As discussed in paragraph 6.8, to address the issue of displacement of current recreational users of the site (albeit technically trespassers) the scheme design includes the provision of a substantial permissive footpath running along the northern and eastern boundaries of the site (operational and post restoration phases) and a 'community access meadow' in the far north-east of the site (post restoration phase only).
- 6.13 The generous provision of accessible land for informal recreation throughout the operational lifespan of the project and then in the post restoration phase after the project is completed significantly reduces the risk of residents being displaced to the local coastline to undertake regular daily exercise and dog-walking.
- 6.14 Taking into account the factors discussed in section 6.11 and the proposed mitigation detailed in sections 6.12 and 6.13, it is concluded that there is no likelihood of an adverse effect on the interest features of SM SAC, either alone or in-combination with other plans and projects.

## **7.0 Conclusions**

- 7.1 The development at the former Hamble airfield could potentially cause disturbance to birds feeding or roosting along the River Hamble, part of the SSW SPA and Ramsar and SDC SPA. Embedded mitigation in the form of 3 - 5-metre high earth bunds and a stand-off buffer zone of between 14 and 103 metres width around the site perimeter will reduce off-site noise levels associated with the operational quarrying works on site.

- 7.2 This mitigation will reduce the changes in noise levels at the SSW SPA and SDC SPA to levels where disturbance to waders, ducks, geese and terns is highly unlikely to occur. There is no potential for any in-combination effects with other plans and projects.
- 7.3 The proposals could potentially displace existing local residents using the site for informal recreation. Displaced recreational activity could potentially impact on birds and habitats along the River Hamble (within both the SSW SPA/Ramsar and the SM SAC). Embedded mitigation in the form of a substantial permissive footpath running along the northern and eastern boundaries of the site (operational and post restoration phases) and a ‘community access meadow’ in the far north-east of the site (post restoration phase only), will provide considerable areas for informal recreation throughout the lifespan of the project and in the post restoration phase.
- 7.4 This mitigation will reduce the potential for existing recreational users of the site to be displaced to other locations within the SSW SPA/Ramsar and SM SAC. With no significant changes in patterns of recreational activity within the SSW SPA/Ramsar and the SM SAC predicted as a result of the implementation of the project and its associated mitigation, no impacts on birds and/or habitat within the NSN sites is therefore predicted. There is no potential for any in-combination effects with other plans and projects.
- 7.5 The screening of the project has identified no other realistic impact pathways that could impact on the interest features of the SSW SPA/Ramsar, the SM SAC and the SDC SPA.
- 7.6 On this basis, it is concluded that the proposals will not have an adverse effect on the integrity of the designated sites identified above, either alone or in combination with other plans and projects.
- 7.7 As Competent Authority, HCC must undertake its own independent appropriate assessment. It may adopt this document as the Council’s own provided the contents have been subject to professional and independent scrutiny to confirm the findings of the assessment presented.

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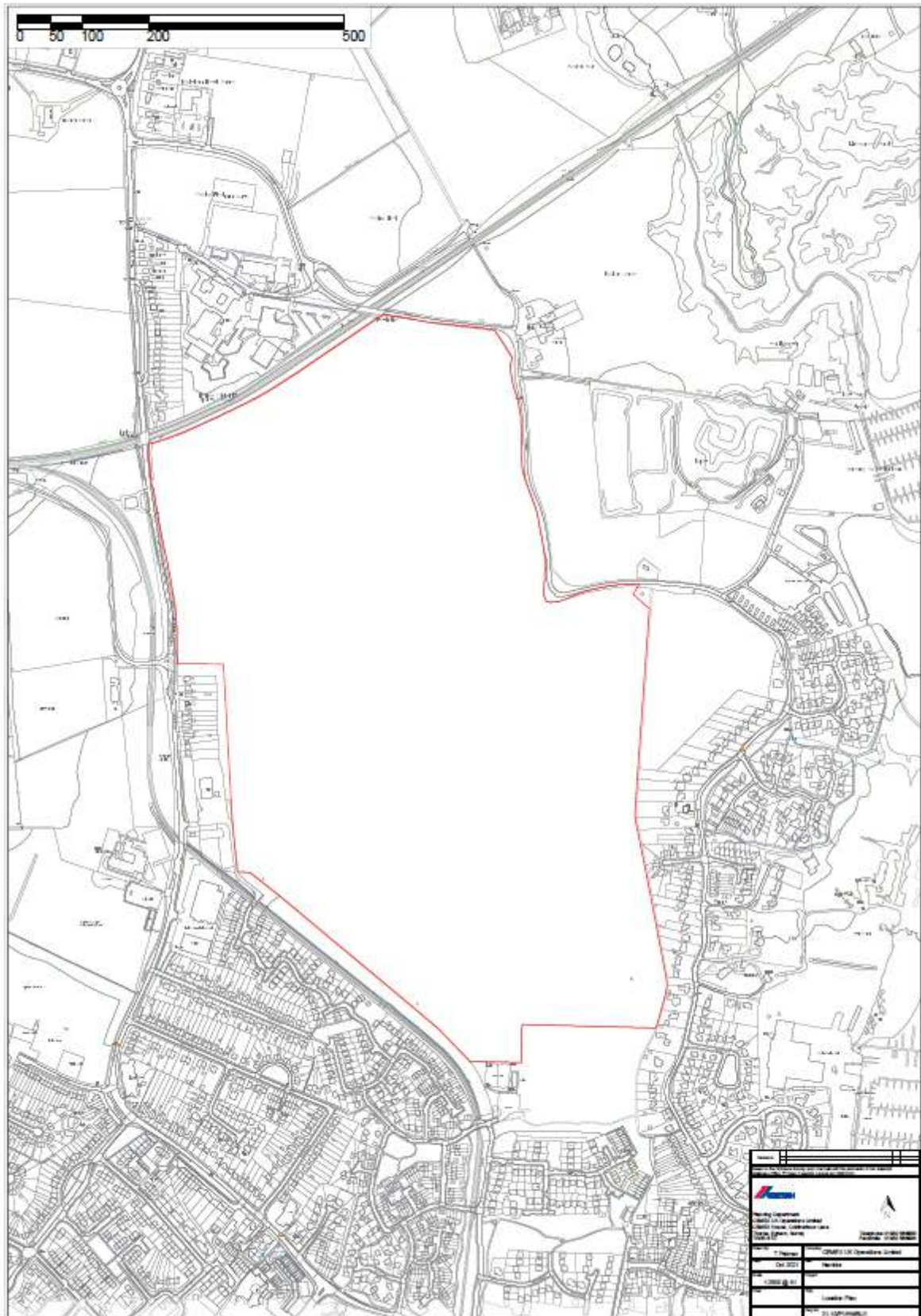
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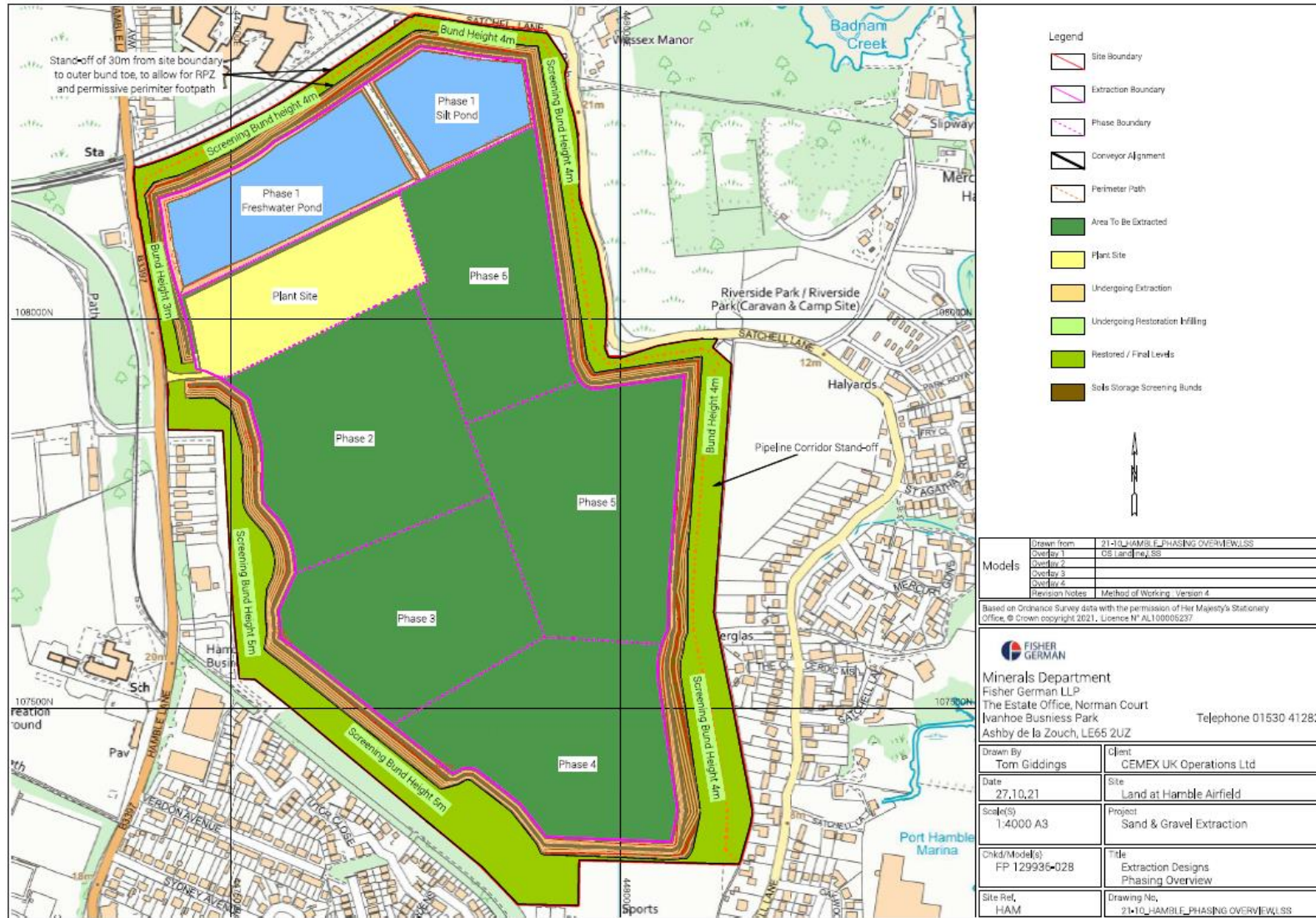
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## Appendix I: Application site location and boundaries





## Appendix II: Method of Working Plans (overview)





## Appendix III: Site location in relation to statutory sites

