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INTRODUCTION

5.1 SLR Consulting Ireland was commissioned by Keohane Readymix Ltd., to prepare a Biodiversity chapter which forms part of the Environmental Impact Assessment Report (EIAR) prepared in support of the proposed sand & gravel extraction at Knockroe, Bandon, Co. Cork.

Background

5.2 Keohane Readymix Ltd. intend to apply to Cork County Council for sand & gravel extraction at Knockroe, Bandon, Co. Cork. This Biodiversity Chapter forms part of the EIAR documentation to support the application for planning permission.

General Description of the Site

5.3 The Site is located at Knockroe, Bandon, Co. Cork, approximately 1 km south of the village of Inishannon (approximate Irish Transverse Mercator (ITM) 555594, 555733). It is adjacent to and directly south of an existing sand and gravel pit which is owned by the Client.

5.4 The lands within and surrounding the Site mainly consist of agricultural tillage lands with mixed broadleaved woodland located to the north of the Site and bordering the internal access road. The Bandon River runs in a north-south direction ca. 35 m east of the Site. A tributary stream (EPA Name: Farranagow 20) runs in a west-east direction directly to the north of the Site.

Brief Project Description

5.5 The Project is the proposed extraction of sand and gravel at Knockroe, Bandon, Co. Cork which will comprise the following items:

- Extraction of sand & gravel over an area of 3.5 Ha.
- Extraction by dry working to 2metres above the groundwater level, at a maximum rate of 100,000 tonnes per year.
- Transport of the extracted sand & gravel to the adjacent Dromkeen Pit (Plan. Ref.: 23/04780) for use in concrete production.
- Upgrading of the existing internal access road and use of the existing access onto the local road.
- Provision of wheelwash and welfare unit.
- Restoration of the lands to natural habitat and agricultural use.

5.6 The proposed development being applied for under this planning application is shown on Figure 2-2 in Chapter 2 'Project Description' of the EIAR, with existing and proposed cross-sections shown on Figure 2-3. Works will take place within an overall application area of c. 4.0 hectares.

5.7 The proposed operational period is 15 years plus 2 years to complete final restoration (total duration sought c. 17 years).

Purpose of this Report

5.8 The purpose of this biodiversity chapter is to inform the Planning Application to Cork County Council by Keohane Readymix Ltd. in respect of the proposed sand & gravel extraction. This chapter forms part of the EIAR that will be submitted with the application for permission to assist the competent authority, in this case Cork County Council, to carry out an Environmental Impact Assessment (EIA) of the proposed project.

Evidence of Technical Competence and Experience

5.9 This report was prepared by SLR Project Ecologist Victoria Molloy and SLR Project Ecologist Kieran Moynihan. SLR Associate Ecologist Michael Bailey carried out the technical review for this report.

5.10 Victoria Molloy holds a BSc. in Zoology from the University of Galway. Victoria is a Project Ecologist with over 4 years' experience, and she is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Victoria has prepared a range of survey reports and impact assessment reports for a variety of project types including quarries, renewable energy, forestry licence applications, housing, road, and industrial developments. She is also responsible for carrying out ecological surveys to inform these assessments including preliminary ecological assessment (PEA), habitat, ornithological, and marsh fritillary surveys.

5.11 Kieran is a Project Ecologist with over three years of experience in ecological consultancy. He holds a BSc in Ecology from University College Cork (UCC) and has developed a strong foundation in field surveys, impact assessments, and ecological reporting. Kieran has extensive experience conducting ecological surveys across multiple taxa, including vantage point surveys for wintering waders, bat emergence and activity surveys, mammal surveys, and detailed habitat assessments using the Fossitt Level III classification method. His work has contributed to Environmental Impact Assessment Reports (EIARs) and Appropriate Assessments (AAs) for a diverse range of projects, including large-scale industrial developments, major road schemes, and numerous wind farms.

5.12 Michael Bailey BSc (Hons) MSc MCIEEM is an Associate Ecologist with SLR and has worked in ecological consultancy in Ireland and the UK and also internationally since 2003. Michael Bailey holds a BSc. in Biology and Ecology from the University of Ulster and an MSc. in Quantitative Conservation Biology from the University of the Witwatersrand in Johannesburg, South Africa. Michael has prepared ecological reports including biodiversity chapters for EIAR, Appropriate Assessment (AA) screening reports and Natura Impact Statements (NIS) for a wide range of extractive and infrastructure projects in Ireland and the UK. He is a full member of CIEEM.

Legislation and Policy

Legislation

5.13 The following legislation are relevant to this report:

- The EIA Directive (2014/52/EU);
- The Habitats Directive (92/43/EEC);
- The Birds Directive (2009/147/EC);
- European Communities (Birds and Natural Habitats) Regulations, 2011 - 2015.
- The Wildlife Acts 1976 as amended;
- Wildlife (Amendment) Act, 2000, 2010, 2012;
- The Flora (Protection) Order 2015.
- The Planning and Development Acts 2000 to 2020 - PART XAB.

5.14 The details of these legislation are summarised in Appendix A of this report.

National Planning Policy

5.15 The National Biodiversity Action Plan 2023-2030[1] sets out objectives relating to biodiversity.

Local Planning Policy

5.16 The relevant local planning policies have been extracted from Volume 1 of the Cork County Development Plan 2022-2028. These policies are specific to "*Chapter 15: Biodiversity and Environment*" and are concerned with the policies and objectives relating to biodiversity. These are detailed further in Appendix A.

[1] https://www.npws.ie/sites/default/files/files/4th_National_Biodiversity_Action_Plan.pdf (last accessed October 2025)

Methodology

5.17 The methods used to carry out the survey of the Site, to evaluate the ecological value and to prepare the biodiversity chapter is outlined in this section. The assessment methodology for this proposal was developed using the standard professional impact assessment guidance published in 2018 by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Scope of the Chapter

5.18 The scope of this Biodiversity Chapter is to identify potential impacts likely to occur as a result of the proposed sand & gravel extraction at Knockroe, Bandon, Co. Cork, and to determine if the effects on biodiversity are significant in the absence of mitigation. The scope of the report includes the provision of mitigation, compensation and enhancement measures as required.

Study Area

5.19 The study area for the desk study and field surveys were identified through considering the nature of the development, the size and location of the project and the ecological features likely, or known, to be present. The experience gained from working on similar projects was also used to determine that the study area chosen was both sufficiently sized and proportionate for the proposed works.

Baseline Data Collection

Desk Study

5.20 A desk study was carried out to collate the available existing ecological information on the Site. The Site and the surrounding area were viewed using existing available satellite imagery using Google maps[2] and Bing maps[3].

5.21 The National Parks and Wildlife Service (NPWS)[4] and the National Biodiversity Data Centre (NBDC)[5] online resources were accessed for information on sites designated for nature conservation and on protected habitats and species known from the 2 km grid squares W55M, W55N, W55S, and W55T. Environmental Protection Agency (EPA) Maps[6] were accessed for other environmental information, such as surface water features, relevant to preparation of this report.

5.22 Cork County Council's website[7] was accessed for information on relevant planning policy, while the planning portal[8] was accessed for information on other proposed or permitted developments within the Site and immediate surrounding area.

5.23 Birds of Conservation Concern in Ireland (BoCCI), published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland. The BoCCI lists birds which breed and/or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber

[2] https://www.google.ie/maps (last accessed October 2025)
[3] https://www.bing.com/maps (last accessed October h 2025)
[4] https://www.npws.ie/(last accessed October 2025)
[5] https://maps.biodiversityireland.ie/ (last accessed October 2025)
[6] http://gis.epa.ie/(last accessed October 2025)
[7] https://www.corkcoco.ie/en (last accessed October 2025)
[8] https://planning.corkcoco.ie/ePlan/searchtypes (last accessed October 2025)

List are of medium conservation concern and Green List are not considered threatened. The BirdWatch Ireland website[9] was accessed for information on birds of conservation concern.

5.24 All bird species are protected under the Wildlife Acts 1976 – 2018 and all birds which are Red or Amber-listed on BoCCI or listed on Annex 1 of the Birds Directive are included from records held by the NBDC and NPWS web searches.

5.25 The conservation status of mammals, amphibians, reptiles, fish and protected flora within Ireland and Europe was determined using one or more of the following documents: Wildlife Acts (1976 - 2012), the Red List of Terrestrial Mammals (Marnell et al., 2009), Ireland Red Lists No.5: Amphibians, Reptiles and Freshwater Fish (King et al. 2011), The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) and the EU Habitats Directive 92/43/EEC.

5.26 The drawings and the full project description are contained within other sections of this EIAR and also informed the desk study. Other chapters of the EIAR reviewed included Chapter 2 – Project Description, Chapter 7 - Water, Chapter 8 - Air and Chapter 13 - Landscape.

Field Surveys

5.27 An ecological field survey was conducted on 22 September 2024 by SLR Senior Ecologist Faolán Linnane to identify the habitats on-site and to determine the baseline ecology of the Site.

5.28 The approach to the field surveys is based on accepted standard practice and methods. Habitats within the study area were classified after '*A Guide to Habitats in Ireland*'[10] and were assessed if they comprise Annex I habitats under the Habitats Directive. The dominant plant species present in each habitat type were recorded during the field surveys and this is considered sufficient to allow accurate classification of the habitats present.

5.29 Incidental sightings or evidence of birds, mammals or amphibians were also noted during the habitat survey and the habitats within the study area were evaluated for their potential to support protected species. Trees or structures suitable for bat roosts and potential suitable bat foraging were noted where they occurred within the study area. Trees or structures within the study area were visually inspected from the ground level for Potential Roost Features (PRFs) where it was considered likely that they may be suitable for use by roosting bats. Potential roosts / roost features and bat foraging habitat were evaluated using the criteria set out in the Bat Conservation Trust (BCT) guidelines[11].

5.30 Invasive species were noted where present. For the purposes of this report "invasive species" are those which are subject to Regulation 49 of the Habitats Directive as listed in Part 1 and Part 2 of the Third Schedule within the Directive.

5.31 A dedicated tree survey was also carried out in preparation of a response to the RFI as requested by CCC.

Limitations

Desk Study

5.32 Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site. Interpretation of maps and aerial photography has been conducted in good faith, using recent

[9] https://birdwatchireland.ie/(last accessed March 2025)
[10] Fossitt (2000) A Guide to Habitats in Ireland
[11] Collins (2016) Bat Surveys for Professional Ecologists – Good Practice Guidelines

imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

5.33 The lack of ecological records returned in the data search does not conclude the absence of a species. Such an absence of records may simply indicate an under-recording of the area.

5.34 In accordance with CIEEM's Advice Note on the Lifespan of Ecological Reports and Surveys[12], the details of this report will remain valid for a period of 18-months from the date of the survey (i.e., until 22/02/2026). After which the validity of this assessment should be reviewed to determine whether further updates are necessary.

Field Survey

5.35 To determine presence or likely absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to those given protection under Irish or European wildlife legislation.

[12] CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys

Assessment Approach

5.36 The ecological evaluation and assessment within this chapter has been undertaken with reference to relevant parts of the 2018 Guidelines for Ecological Impact Assessment in the UK and Ireland developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018). Although this is recognised as current good practice for ecological assessment, the guidance itself recognises that it is not a prescription about exactly how to undertake an ecological impact assessment (EcIA); rather, they "*provide guidance to practitioners for refining their own methodologies*". For the full guidance, refer to https://www.cieem.net/data/files/ECIA%20Guidelines.pdf.

5.37 The approach to impact assessment also has regard to advice set out in the EPA draft guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) published in August 2017.

Important Ecological Features

5.38 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.

Determining Importance

5.39 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International (European);
- National (Ireland);
- Regional (Munster);
- County (Cork);
- Local (i.e., within circa 5km); and
- Site (limited to the red line boundary of the Site).

5.40 The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

5.41 In assigning a level of value to the population of a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Examples of relevant lists and criteria include species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive), species protected under the Wildlife Acts 1976 - 2018 and BoCCI.

5.42 The approach to impact assessment, as set out in CIEEM guidelines, only requires that ecological features (habitats, species, ecosystems, and their functions/processes), that are considered to be important and potentially affected by the proposed development are carried forward to detailed assessment. It is not necessary to carry out detailed assessment of receptors that are sufficiently widespread, unthreatened, and resilient to impacts from the proposed development and will remain viable and sustainable.

Impact Assessment

5.43 The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

5.44 When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

5.45 The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action (e.g., the physical loss of habitat occupied by a species during the construction process). Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process, or feature (e.g., the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland).

5.46 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure, and functions as well as its distribution and its typical species within a given geographical area.
- Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

Significant Effects

5.47 The 2018 CIEEM guidance sets out information in paragraphs 5.24 through to 5.28 of the guidance document which describes the concept of ecological significance. Significant effects are qualified with reference to an appropriate geographic scale, and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

5.48 A significant effect, for the purposes of EcIA, is defined as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.

5.49 The nature of the identified effects on each assessed feature is characterised. This is considered, along with available research, professional judgement about the sensitivity of the feature affected, and professional judgement about how the impact is likely to affect the site, habitat, or population's structure and continued function. Where it is concluded that an effect would be likely to reduce the importance of an assessed feature, it is described as significant. The degree of significance of the effect takes into account the geographic context of the feature's importance and the degree to which its interest is judged to be affected.

Cumulative Effects

5.50 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

5.51 Other plans and projects that should be considered when establishing cumulative effects are:

- proposals for which consent has been applied but which are awaiting determination;
- projects which have been granted consent, but which have not yet been started, or which have been started but are not yet completed (i.e., under construction);
- proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;
- constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
- developments specifically referenced in a National Policy Statement, a National Plan, or a Local Plan.

Avoidance, Mitigation, Compensation and Enhancement

5.52 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

5.53 It is important to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
- Compensation describes measures taken to offset residual effects, i.e. where mitigation *in situ* is not possible; and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

BASELINE ECOLOGICAL CONDITIONS

5.54 This section sets out the current baseline conditions for the ecological features considered within the Site and provides a clear description of the changes that would occur as a result of the proposed development using the findings of the desk study and field survey.

Sites Designated for Nature Conservation

European Sites

5.55 **Table 5-1** and **Figure 5-2** provide a list of and show the European sites which were selected for consideration along with a description of each site and their qualifying interests. European sites are of international importance.

5.56 The AA Screening report (SLR 2025) provided alongside this application as a separate document determined that there are no Source-Pathway-Receptor links and so the proposed development will not give rise to significant effects on any European site (as listed in **Table 5-1**) alone and/or in-combination with other proposed or permitted plans and projects. Therefore, European sites can be scoped out of further consideration.

Table 5-1: Description of European Sites (refer to Figure 5-2)

European Site	Distance[13]	Qualifying Features[14]
Courtmacsherry Estuary SAC (001230)	9.2 km SW	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] • Mediterranean salt meadows (*Juncetalia maritimi*) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]
Courtmacsherry Bay SPA (004219)	9.9 km SW	• Great northern diver (*Gavia immer*) [A003] • Shelduck (*Tadorna tadorna*) [A048]

[13] When measured in a straight line over the shortest distance between the site and European site.
[14] For SPAs, the bird species that are the reason for designation are Species of Conservation Interest (SCIs) and for SACs the habitats and species that are the reason for designation are its Qualifying Interests (QIs). For convenience, the term qualifying features is used here for both SPAs and SACs.
[9] Protected Sites in Ireland | National Parks & Wildlife Service (npws.ie)

European Site	Distance[13]	Qualifying Features[14]
		• Wigeon (*Anas penelope*) [A050] • Red-breasted merganser (*Mergus serrator*) [A069] • Golden plover (*Pluvialis apricaria*) [A140] • Lapwing (*Vanellus vanellus*) [A142] • Dunlin (*Calidris alpina*) [A149] • Black-tailed godwit (*Limosa limosa*) [A156] • Bar-tailed godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata)* [A160] • Black-headed gull (*Chroicocephalus ridibundus*) [A179] • Common gull (*Larus canus*) [A182] • Wetland and waterbirds [A999] • Oystercatcher (*Haematopus ostralegus*) [A130] • Greenshank (*Tringa nebularia*) [A164]
Sovereign Islands SPA (004124)	15.4 km SE	• Cormorant (*Phalacrocorax carbo*) [A017]
Old Head of Kinsale Bay SPA (004021)	16.0 km SE	• Kittiwake (*Rissa tridactyla*) [A188] • Guillemot (*Uria aalge*) [A199] • Fulmar (*Fulmarus glacialis*) [A009] • Shag (*Phalacrocorax aristotelis*) [A018] • Herring gull (*Larus argentatus*) [A184] • Razorbill (*Alca torda*) [A200]
Seven Heads SPA (004191)	16.0 km SW	• Chough (*Pyrrhocorax pyrrhocorax*) [A346] • Cormorant (*Phalacrocorax carbo*) [A017] • Peregrine falcon (*Falco peregrinus*) [A103] • Herring gull (*Larus argentatus*) [A184]
Cork Harbour SPA (004191)	18.7 km NE	• Little grebe (*Tachybaptus ruficollis*) [A004] • Great crested grebe (*Podiceps cristatus*) [A005] • Cormorant (*Phalacrocorax carbo*) [A017] • Grey heron (*Ardea cinerea*) [A028] • Shelduck (*Tadorna tadorna*) [A048] • Wigeon (*Anas penelope*) [A050] • Teal (*Anas crecca*) [A052] • Pintail (*Anas acuta*) [A054]

European Site	Distance[13]	Qualifying Features[14]
		• Shoveler *(Anas clypeata)* [A056] • Red-breasted merganser (*Mergus serrator*) [A069] • Oystercatcher (*Haematopus ostralegus*) [A130] • Golden plover (*Pluvialis apricaria*) [A140] • Grey plover (*Pluvialis squatarola*) [A141] • Lapwing (*Vanellus vanellus*) [A142] • Dunlin (*Calidris alpina*) [A149] • Black-tailed godwit (*Limosa limosa*) [A156] • Bar-tailed godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata)* [A160] • Redshank (*Tringa tetanus*) [A162] • Black-headed gull (*Chroicocephalus ridibundus*) [A179] • Common gull (*Larus canus*) [A182] • Lesser black-backed gull (*Larus fuscus*) [A183] • Common tern (*Sterna hirundo*) [A193] • Wetland and waterbirds [A999] • Whooper swan (*Cygnus cygnus*) [A038] • Gadwall (*Anas strepera*) [A051] • Mallard (*Anas platyrhynchos*) [A053] • Pochard (*Aythya farina*) [A059] • Tufted duck (*Aythya fuligula*) [A061] • Goldeneye (*Bucephala clangula*) [A067] • Coot (*Fulica atra*) [A125] • Ringed plover (*Charadrius hiaticula*) [A137] • Knot (*Calidris canutus*) [A143] • Ruff (*Philomachus pugnax*) [A151] • Spotted redshank (*Tringa erythropus*) [A161] • Green sandpiper (*Tringa ochropus*) [A165] • Turnstone (*Arenaria interpres*) [A169]

(Proposed) Natural Heritage Areas

5.57 NHA and pNHA generally do not form part of the Natura 2000 network (although some Natura 2000 sites are also designated as NHA and pNHA). However, they often provide important roles for locally or nationally important biodiversity.

5.58 There are no Natural Heritage Areas (NHAs) located within 5 km of the Site. There are two proposed Natural Heritage Areas (pNHAs) located within 5 km of the Site and an additional two pNHAs are located either upstream or downstream of the Site via the Bandon Estuary. **Table 5-2** and **Figure 5-3** provide a list of and show the Natural Heritage Areas which were selected for consideration along with a description of each site.

Table 5-2: List of Proposed Natural Heritage Areas (Refer to Figure 5-3)

Proposed Natural Heritage Area	Distance[15] to nearest boundary	Details
Bandon Valley Below Inishannon (001515)	30 m east	*"The Bandon River flows almost due east for much of its course, following a natural synclinal valley that itself extends to Cloyne in East Cork. (…) Four areas of scientific interest are located along the river. This site below Inishannon is the most downstream of the four sites and is located approximately 7km east of Bandon in Co. Cork.* *Below Inishannon the river becomes tidal before it becomes brackish, and extensive reed-beds develop of Common Reed (Phragmities australis), Reed Sweet-grass (Glyceria maxima) and various sedges (Carex spp.). Summer Snowflake (Leucojum aestivum), Yellow Loosestrife (Lysimachia vulgaris) and Sweet-flag (Acorus calamus) occur locally with Smooth-stalked Sedge (Carex laevigata) and Wood Millet (Milium effusum), usually associated with woodlands.* *Shippool Wood is a former separate area of scientific interest which is now joined to the Bandon Valley site. This wood is reported in 1972 in the An Forbas Forbartha report to be a deciduous woodland on the banks of the Bandon River with some oak (Querus spp.) and birch (Betula spp.) and other deciduous species. The woodland has been underplanted with coniferous trees. In 1981 An Foras Forbartha reported the wood in some parts were semi-natural in character and had an ecologically interesting flora and fauna. A recent survey of this woodland found it to be predominantly conifer trees.* *In 1986 the Hairstreak butterfly was reported to occur in Shippool Wood.* *This site is important for its wetlands including the extensive areas of Common Reed and the more diverse areas of wetland vegetation. The general flora surrounding Shippool Wood may also be of interest."*
Bandon Valley Above Inishannon (001740)	690 m northwest 838 m upstream of the Site	*"The Bandon River flows almost due east for much of its course, following a natural synclinal valley that itself extends to Cloyne in East Cork. (…) This site covers a section of the river 3km east of Bandon running approximately a further 4km downstream to Inishannon.* *(…) The woodlands are semi-natural, mostly planted with species such as Sycamore (Acer pseudoplatanus) and Beech (Fagus sylvatica) mixed in with the native oaks (Quercus spp.).*

[15] When measured in a straight line over the shortest distance between the site and European site.

Proposed Natural Heritage Area	Distance[15] to nearest boundary	Details
		Some areas of commercial plantation occur near the railway tunnel and at Drumkeen Wood. The spread of Rhododendron (Rhododendron ponticum) is limited to small areas of the site. *Lower down in the Bandon Valley birdlife is more associated with woodland and involves characteristic species like owls, Sparrowhawk, Woodcock and Jay. Cormorant and Heron fish throughout the river.* *The valley is reported to have Otter in many places, a species listed in Annex II of the E.U. Habitats Directive as it is threatened within the E.U.* *This area is important as it contains an example of oak woodland on steep valley sides. The Bandon Valley is especially valuable for its woodlands and unmodified river bed, which are a rare habitat in a European context."*
Bandon Valley West of Bandon (001034)	7.7 km west 10.4 km upstream of the Site	*"The Bandon River flows almost due east for much of its course, following a natural synclinal valley that itself extends to Cloyne in East Cork. (…) This site covers a section of river approximately 3km in length running downstream to within 1km west of Bandon. The Castlebernard Estate woodlands run along sections of the bank here.* *The banks of the river have old estate woodlands with mature oak (Quercus spp.) and some Ash (Fraxinus excelsior). Rhododendron (Rhododendron ponticum) and Cherry Laurel (Prunus laurocerasus) invasion is occurring but as yet is not widespread.* *Felling of woodlands in this area has recently been widespread and hence greater importance can be placed on the remaining areas.* *The 1986 An Forbas Forbatha report notes that the upper part of the Bandon River, before it sinks into a narrow gorge at Bandon, floods occasionally in winter and at such times attracts birds such as Lapwing and Curlew as well as Mallard and Teal. Cormorant and Heron fish throughout the course of the river.* *The Bandon Valley is reported to have Otters in many places, a species listed on Annex II of the EU Habitats Directive as it is threatened within the EU.* *The main land uses within the site are tree felling and clearing. This has much reduced the area of interest in recent years. Fishing is also important in this area.* *This site is important as it contains remnants of broadleaved oak woodland. The Bandon Valley is especially valuable for its woodlands and unmodified river bed, a rare enough habitat in a European context."*
James Fort (001060)	10.5 km southeast 14.5 km downstream of the Site	*"James Fort occupies a promontory on the Cork coast, in the middle of Kinsale harbour, opposite the town. Its diamond-shaped enclosure and the slopes down to the sea on the north and east sides are included in this site.*

Proposed Natural Heritage Area	Distance[15]to nearest boundary	Details
		(…) *The site is included as an NHA because it is floristically rich with a good number of less common plants, some of them introduced. In addition there is a species-rich meadow of some ecological interest."*

5.59 There is the potential for construction and operational activities, soil stripping and accidental leakage / spillage from vehicles to affect groundwater quality in the groundwater through vertical migration. Bandon Valley Below Inishannon (001515) is the only pNHA which may be indirectly affected by pollution of groundwater.

5.60 There will be no impact on Bandon Valley Above Inishannon (001740) pNHA or Bandon Valley West of Bandon (001034) as these sites are located upstream of the project site. James Fort (001060) is sufficiently distant from the Site not to be affected by the project activities.

5.61 Therefore pNHAs can be is assessed as being of **local (lower) importance**.

Habitats

5.62 Habitats present within the Site, as recorded during the walkover survey, are described in this section. Habitat classification follows that of '*A Guide to Habitats in Ireland*' (Fossitt, 2000). A habitat map for the Site is provided as **Figure 2** at the end of this report.

5.63 No Annex I habitats (under the Habitats Directive) were identified on the Site. The following sections detail each habitat in further detail.

Improved Agricultural Grassland (GA1)

5.64 The majority of the Site is composed of an agricultural field which has been frequently tilled but which at the time of the survey had a thin sward layer composed of grass species comprising GA1 habitat. The sward is dominated by short perennial ryegrass *Lolium perenne* with occasional cock's foot *Dactylis glomerata* and creeping bent *Agrostis stolonifera* present on the fringes of the field. A variety of broadleaved herbs are present in small numbers, also on the fringes, including white clover *Trifolium repens*, dandelion *Taraxacum* agg., curled dock *Rumex crispus*, common ragwort Jacobaea vulgaris, knapweed *Centaurea nigra*, creeping buttercup *Ranunculus repens*, and creeping thistle *Cirsium arvense*.

5.65 This habitat is widespread in Ireland and of limited value to biodiversity. As this field is frequently tilled (**Photograph 5-1**) there are insufficient grasses and sward levels to be utilised by grazing birds such as swans or geese. Therefore, it is assessed as being of negligible importance for biodiversity and can be scoped out of further consideration.

Photograph 5-1: Improved Agricultural Grassland (GA1) on frequently tilled land

Scrub (WS1)

5.66 The Site entrance on the L3204 local road to the north of the Site is comprised of a narrow pathway overgrown with scrub which grades into woodland away from the path. The scrub species include gorse *Ulex sp.*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, hazel *Corylus avellana*, elder *Sambucus nigra*, bramble *Rubus fruticosus* agg., immature oaks Quercus spp., birches Betula spp., and willows *Salix* spp. with an understorey of hart's tongue fern *Asplenium scolopendrium*, purple foxglove *Digitalis purpurea,* and ivy *Hedera helix*. There are some clearings along the pathway where some grassland and more open/lightly shaded species are present including cock's foot *Dactylis glomerata*, sweet vernal grass *Anthoxanthum odoratum*, Juncus spp., knapweed *Centaurea nigra*, red clover *Trifolium pratense*, common eyebright *Euphrasia officinalis*, St. John's wort *Hypericum perforatum*, bird's foot trefoil *Lotus corniculatus*, creeping cinquefoil *Potentilla reptans*, self-heal *Prunella vulgaris*, watermint *Mentha aquatica*, wood rush *Luzula spp.*, and bell heather *Erica cinerea.*

5.67 This habitat is widespread, however if provides some value to local fauna. Therefore, it is assessed as being of **local-level importance**.

Photograph 5-2: Entrance to the Site / Internal Access surrounded by Scrub (WS1)

Mixed Broadleaved Woodland (WD1)

5.68 The scrub grades into broadleaved woodland further away from the internal access leading into the Site. This area is composed of an old quarry void that has been allowed to be re-colonised by woodland and has grown to a canopy height of approximately 15-20 m. This woodland is dominated by downy birch *Betula pubescens* and grey willow *Salix cinerea* with some sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium*, and ash *Fraxinus excelsior* also present. The understorey of the woodland is comprised of a similar species assemblage to that found within the scrub habitat.

5.69 A dedicated tree survey was carried out as requested by Cork County Council. The survey confirmed that while some scrub would be removed as a result of the proposed project, no large trees will be removed, and the report provides measures for the protection of larger trees adjacent to the Site including monitoring (See separate Tree Survey submitted in response to Item 9 of the Further Information Request).

5.70 This habitat provides significant value to biodiversity. However, it is located outside the proposed red-line boundary and will not be removed to facilitate the proposed sand & gravel extraction. Therefore, it can be ruled out of further consideration in this report.

Photograph 5-3: Mixed Broadleaved Woodland (WD1) Located to the North of the Site

Species

Desk Study

5.71 The NBDC database was searched for records of rare and/or protected species from the 2 km grid square W55M, W55N, W55S, and W55T within which the Site is located. The records of rare and/or protected species are presented in **Table 5-3** below.

Table 5-3. Rare and/or Protected Species Recorded Within 2 km Grid Squares W55M, W55N, W55S, and W55T

Species	Date of Last Record	No. of Records	Conservation Status	Dataset
Common frog *Rana temporaria*	2023	3	EU Habitats Directive: Annex V Protected Species: Wildlife Act	Amphibians and reptiles of Ireland
Barn swallow *Hirundo rustica*	2020	4	Birds of Conservation Concern: Amber	Birds of Ireland
Common kestrel *Falco tinnunculus*	2011	2	Birds of Conservation Concern: Red	Bird Atlas 2007 - 2011

Common kingfisher *Alcedo atthis*	2020	3	Birds of Conservation Concern: Amber EU Birds Directive: Annex I	Birds of Ireland
Common redshank *Tringa totanus*	2011	1	Birds of Conservation Concern: Red	Bird Atlas 2007 - 2011
Common shelduck *Tadorna tadorna*	1991	1	Birds of Conservation Concern: Amber	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991
Common swift *Apus apus*	2023	4	Birds of Conservation Concern: Red	Swifts of Ireland
Eurasian curlew *Numenius arquata*	2011	1	Birds of Conservation Concern: Red	Bird Atlas 2007 - 2011
Eurasian teal *Anas crecca*	2011	1	Birds of Conservation Concern: Amber	Bird Atlas 2007 - 2011
House martin *Delichon urbicum*	2011	1	Birds of Conservation Concern: Amber	Bird Atlas 2007 - 2011
Lesser black-backed gull *Larus fuscus*	2011	1	Birds of Conservation Concern: Amber	Bird Atlas 2007 - 2011
Little egret *Egretta garzetta*	2019	3	Birds of Conservation Concern: Green EU Birds Directive: Annex I	Birds of Ireland
Mallard *Anas platyrhynchos*	2020	6	Birds of Conservation Concern: Amber	Birds of Ireland
Mute swan *Cygnus olor*	2020	4	Birds of Conservation Concern: Amber	Birds of Ireland
Peregrine falcon *Falco peregrinus*	2019	1	Birds of Conservation Concern: Green EU Birds Directive: Annex I	Birds of Ireland
Sand martin *Riparia riparia*	2011	1	Birds of Conservation Concern: Amber	Bird Atlas 2007 - 2011
Spotted flycatcher *Muscicapa striata*	2011	2	Birds of Conservation Concern: Amber	Bird Atlas 2007 - 2011
Stock pigeon *Columba oenas*	2011	2	Birds of Conservation Concern: Red	Bird Atlas 2007 - 2011

Yellowhammer *Emberiza citrinella*	2011	1	Birds of Conservation Concern: Red	Bird Atlas 2007 - 2011
Daubenton's bat *Myotis daubentonii*	2017	48	EU Habitats Directive: Annex IV Protected Species: Wildlife Act	National Bat Database of Ireland
Eurasian badger *Meles meles*	2015	4	Protected Species: Wildlife Act	Atlas of Mammals in Ireland 2010-2015
Eurasian red squirrel *Sciurus vulgaris*	2015	1	Protected Species: Wildlife Act	Atlas of Mammals in Ireland 2010-2015
European otter *Lutra lutra*	2017	3	EU Habitats Directive: Annex II and IV Protected Species: Wildlife Act	Mammals of Ireland 2016-2025
West European hedgehog *Erinaceus europaeus*	2022	6	Protected Species: Wildlife Act	Hedgehogs of Ireland
Wall *Lasiommata megera*	1999	1	Red List Status: Endangered	Butterflies of Ireland pre-2022
Andrena (Micrandrena) semilaevis	1974	2	Red List Status: Vulnerable	Bee Records for Ireland (BWARS)
Brown snail *Zenobiella subrufescens*	1984	2	Red List Status: Vulnerable	All Ireland Non-Marine Molluscan Database
Point snail *Acicula fusca*	1984	2	Red List Status: Vulnerable	All Ireland Non-Marine Molluscan Database
Tree snail *Balea (Balea) perversa*	1984	1	Red List Status: Vulnerable	All Ireland Non-Marine Molluscan Database
Large white-moss *Leucobryum glaucum*	2009	1	EU Habitats Directive: Annex V	Bryophytes of Ireland

Plants

5.72 The data search returned no records of protected or threatened plant species recorded within the 2 x 2 km squares.

5.73 The data search returned the following invasive plant species within the 2 x 2 km squares: Canadian Waterweed *Elodea canadensis*, Giant Knotweed *Fallopia sachalinensis*, Indian Balsam *Impatiens glandulifera* and Japanese Knotweed *Fallopia japonica*. These species are listed on the Third Schedule list of the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I.477/2011].

5.74 The data search also returned the following plant species within the 2 x 2 km squares: butterfly-bush *Buddleja davidii*, Himalayan honeysuckle *Leycesteria formosa*, and sycamore *Acer pseudoplatanus* which are listed as a risk of medium impact invasive species and cherry laurel *Prunus laurocerasus* which is listed as a risk of high impact invasive species (Kelly *et al.*, 2013).

5.75 No invasive plant species listed on the Third Schedule list of the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I.477/2011] were identified on-site.

5.76 The following non-native plant species were identified on-site, all of which are located either along the entrance pathway to the Site or within the woodland to the north of the red-line boundary: cherry laurel *Prunus laurocerasus*, sycamore *Acer pseudoplatanus*, winter heliotrope *Petasites fragrans*, milkflower cotoneaster *Cotoneaster lacteus*, and box-leaved honeysuckle *Lonicera pileata*.

5.77 Only cotoneaster is found along the proposed access road (**Figure 5-1**), and this can be removed mechanically and disposed of such that it will not re-root. There are no other invasives likely to be impacted and therefore they can be ruled out of further consideration.

Invertebrates

5.78 The data search returned the following records of notable invertebrate species within the 2 x 2 km squares: wall butterfly *Lasiommata megera*, *Andrena (Micrandrena) semilaevis,* brown snail *Zenobiella subrufescens,* point snail *Acicula fusca,* and tree snail *Balea (Balea) perversa.* Wall butterfly is listed as endangered, and the other species are listed as vulnerable in the Irish red list for their respective group.

5.79 There are limited valuable habitats for invertebrates located within the Site. The scrub on-site has the potential to provide foraging and refuge opportunities for invertebrates.

5.80 Therefore, the Site is considered to be of **local-level importance** for invertebrates.

Amphibians

5.81 The data search returned records of common frog *Rana temporaria* within the 2 x 2 km squares.

5.82 There are no suitable breeding habitats for amphibians located on-site. The improved agricultural grassland on-site may provide suitable refuge habitat but will be of very limited value due to the heavy grazing on-site reducing the vegetation cover. The woodland and scrub habitats to the north of the Site will likely provide more suitable refuge habitat than the agricultural grassland that will be removed to facilitate the proposed development.

5.83 The nearest potentially suitable breeding habitat for common frog is located approximately 30 m from the Site at the Bandon River.

5.84 Therefore, the Site is considered to be of **local-level importance** for amphibians due to its proximity to potentially suitable breeding habitat.

Reptiles

5.85 The data search returned no records of reptiles within the 2 x 2 km squares.

5.86 The habitats on-site are of limited value to common lizard *Zootoca vivipara* with limited basking opportunities. Therefore, the Site is considered to be of **negligible importance** for reptiles and they have been excluded from further assessment in this report.

Birds

5.87 The data search returned records of various amber and red listed birds within the 2 x 2 km squares (refer to **Table 5-3**) including waterbird species, hirundid species, and birds of prey.

5.88 The improved agricultural grassland on-site may provide limited foraging value to lesser black-backed gull, common kestrel, and peregrine falcon, which has been recorded within the 2 x 2 km

grid squares surrounding the Site. However, the agricultural field has been frequently tilled and the poor quality grasses and sward levels means this field has a low value as a foraging habitat for birds. Also, grassland is a common and widespread habitat in the landscape surrounding the Site and there will be no significant loss of foraging habitat for these species.

5.89 The scrub and woodland habitats provide are likely to support a variety of common and widespread passerine birds. The woodland habitats will be retained, however some of the scrub habitat must be removed to construct an entrance into the Site.

5.90 Therefore, the Site is considered to be of **local-level importance** for birds.

Mammals

Bats

5.91 The data search returned Daubenton's bat *Myotis daubentonii* within the 2 x 2 km squares.

5.92 The scrub and woodland habitats may provide suitable foraging habitat for bat species. The woodland habitats will be retained; however a small area of scrub habitat will be removed to upgrade the internal access into the Site.

5.93 Two trees with potential roosting features (PRFs) were identified within the mixed broadleaved woodland through which the existing access road will be upgraded (**Figure 5-1**). PRF #1 and PRF #2 consist of 20 m and 25 m tall sycamores with substantial foliage and ivy cover that may hide potential bat roosting features when viewed from the ground. Both PRFs are assessed as being of low suitability for roosting bats.

5.94 While some of the vegetation in this woodland will have to be removed to facilitate the proposed access road upgrade, neither of the two trees with the PRFs will be affected (see **Figure 5-1**).

5.95 Therefore, the Site is only considered to be of **local-level importance** for bats due to the presence of potentially suitable foraging habitat.

Otter

5.96 The data search returned records of European otter within the 2 x 2 km squares.

5.97 The nearest potentially suitable waterway for otters is located approximately 50 m from the agricultural field at the closest point. The Site is separated from this river by the L3204 local road and a steep bank which is densely vegetated. It is unlikely that breeding otter are present in the vicinity of the Site due to these physical barriers.

5.98 Therefore, the Site is considered to be of **negligible importance** for otters and they have been excluded from further assessment in this report.

Badger

5.99 The data search returned records of Eurasian badger within the 2 x 2 km squares.

5.100 No badger setts or signs of badger activity were noted during the field survey. The habitats on-site are potentially suitable for foraging and breeding badgers. Agricultural grassland is a common and widespread habitat in the landscape surrounding the Site and there will be no significant loss of suitable habitat for badgers.

5.101 Therefore, the Site is considered to be of **negligible importance** for badgers and they have been excluded from further assessment in this report.

Other Mammals

5.102 The data search returned records of Eurasian red squirrel, and west European hedgehog within the 2 x 2 km squares.

5.103 No field signs of other mammal species were noted on-site during the field survey. The extent, location and maturity of the woodland would make this unsuitable for red squirrel and a poor habitat for hedgehog.

5.104 Therefore, other mammals have been excluded from further assessment in this report.

Summary of Important Ecological Features

5.105 **Table 5-4** summarises all important ecological features for which detailed assessment is required. The geographical scale of importance for the ecological features within the Site are summarised along with their legal status and a rationale, where appropriate, for carrying forward any features for detailed assessment.

5.106 All ecological features scoped out from further assessment have been detailed in the previous section.

Table 5-4: Summary of Important Ecological Features Subject to Detailed Assessment

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Proposed Natural Heritage Areas	National/Local	• The Site is located approximately 30 m from the Bandon River at the closest point. This river contains three proposed Natural Heritage Areas. • Bandon Valley Below Inishannon (001515) pNHA is located on the section of the Bandon River which flows adjacent to the Site. • Bandon Valley Above Inishannon (001740) and Bandon Valley West of Bandon (001034) pNHAs are located 838 m and 10.4 km upstream of the Site respectively. • Proposed Natural Heritage Areas are protected under policy BE 15-2 of the Cork County Development Plan. This policy states the following: "*Protect all natural heritage sites which are designated or proposed for designation under European legislation, National legislation and International Agreements. Maintain and where possible enhance appropriate ecological linkages between these. This includes Special Areas of Conservation, Special Protection Areas, Marine Protected Areas, Natural Heritage Areas, proposed Natural Heritage Areas, Statutory Nature Reserves, Refuges for Fauna and Ramsar Sites. These sites are listed in Volume 2 of the Plan.*"
Scrub Habitat	*Local*	• *Scrub habitat is present within the Red Line Boundary and has potential to be suitable for use by foraging and breeding birds as well as refuge habitat for invertebrates.*
Invertebrates	Local	• There is potentially suitable foraging and refuge scrub habitat for invertebrates on-site. • Policy 15-6 of the Cork County Development Plan states: *"Provide for the protection and enhancement of biodiversity in the development management process and when licensing or permitting other activities by: (…) Ensuring that the implementation of appropriate mitigation (including habitat enhancement, new planting or other habitat creation initiatives) is incorporated into new development, where the implementation of such development would result in unavoidable*

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
		impacts on biodiversity – supporting the principle of biodiversity net gain." • Loss of suitable invertebrate habitat would be considered an "unavoidable impact on biodiversity" and, therefore, should be considered further in this report.
Amphibians	Local	• There is potentially suitable common frog breeding habitat located in the vicinity of the Site. • Common frogs are protected under the Wildlife acts 1976 and subsequent amendments.
Birds	Local	• The scrub and woodland habitats on-site may provide foraging and breeding opportunities for a variety of passerine bird species. • All birds are protected under the Wildlife acts 1976 and subsequent amendments during the breeding bird season (i.e., 1st March to 31st August).
Bats	Local	• e scrub and woodland habitats on-site may provide potential foraging opportunities for bats. • All bats are protected under the Wildlife acts 1976 and subsequent amendments.

Detailed Project Description

Extraction Area

5.107 The proposed development will comprise sand & gravel extraction from existing agricultural lands c 3.5 hectares, refer to Figure 2-2 in Chapter 2 of the EIAR.

Phasing Plan

5.108 The phasing of the development is shown on Figure 2-4 in Chapter 2 of the EIAR..

5.109 Phase 1 will comprise removal of topsoil and subsoil from the eastern part of the extraction area and extraction of sand & gravel. The soil stripped from the Phase 1 area will be temporarily stored in the Phase 2 area pending use in the phased and final restoration works.

5.110 Phase 2 will comprise use of the stripped soil temporarily stored in the Phase 2 area for progressive restoration of the Phase extraction area. Soil tripped from the Phase 2 area will be temporarily stored in the Phase 1 area pending use in the final restoration.

Restoration (Reinstatement to Natural Habitat and Agricultural Use)

5.111 The extraction area will be restored to natural habitat and agricultural use (refer to Figure 2-5 in Chapter 2 of the EIAR.). Restoration will be undertaken on a phased basis and a restoration phasing is shown on Figure 2-4 in Chapter 2 of the EIAR. Further restoration details are provided in the Proposed Restoration Scheme section of this chapter.

Aggregate Reserve Assessment

5.112 The total recoverable reserve of sand and gravel from within the proposed extraction area is assessed at c. 0.9 million tonnes.

Rate of Extraction & Duration of the Development

5.113 The extraction rate is estimated to be up to a maximum of 100,000 tonnes per year. Depending on market demand, and assuming an average extraction rate of 60,000 tonnes per year the duration of the extraction will be up to c. 15 years. Allowing a further two years for final restoration this would equate to a total development duration of c. 17 years.

Site Screening

5.114 The existing site is extensively screened from the surrounding roads by existing mature hedgerows and trees along the eastern, northern and western site boundaries. An operational landscaping and planting scheme has been designed to provide additional screening around the perimeter of the proposed development, refer to Figure 2-5 in Chapter 2 of the EIAR.

Removal of Topsoil / Subsoil

5.115 Topsoil / subsoil will be removed as each phase of extraction area is developed. Soil stripping will be undertaken using a mechanical excavator and loaded directly onto dump trucks for haulage to the designated temporary soil storage, refer to Figure 2-6 in Chapter 2 of the EIAR.

5.116 The maximum height of any temporary soil storage areas will be three metres.

5.117 Soils will be reused in the restoration of the lands to agricultural use, refer to the Proposed Restoration Scheme section of this chapter.

Site Drainage

5.118 Rain falling across the application site percolates down through the existing ground surface as recharge to groundwater.

5.119 The final pit floor level will be maintained at 2m above the high groundwater level. Surface water collecting in the pit floor will percolate naturally into the underlying ground.

5.120 There will be no off-site discharges to the Bandon River located to the east of the site.

5.121 A hydrological / hydrogeological assessment has been carried out to determine what the requirements are for the proposed development, with regard to a water regime. It addresses mitigation measures to eliminate and/or minimise the potential impacts, if any, on surface water and groundwater. These measures will be incorporated into the pit design and operation, (refer to EIAR Chapter 7 – Water).

Method of Extraction

Dry Working

5.122 Dry working extraction (i.e. above the groundwater table) will use an excavate, load and haul method. An excavator will be used to extract the sand & gravel materials from the working face and load them onto a truck for transport to the existing off-site processing plant at the adjacent Dromkeen Pit operated by Keohane Readymix Ltd.

Blasting – None Required

5.123 No blasting is required for sand & gravel extraction, and no such operations will be carried out at the proposed development. No rock will be extracted.

Onsite Machinery

5.124 The machinery used for the construction (soil Stripping stage) will comprise 1 no. excavator and 1 no. dump truck. During pit operation the only plant used on site will be 1 no. loading shovel to excavate and loa the extracted sand & gravel onto the tricks for transport to the adjacent Dromkeen Pit for processing. A dozer will be used for the restoration earthworks.

Processing

5.125 There will be no processing of sand & gravel on the site. Extracted sand & gravel will be transported by road to the adjacent Dromkeen Pit for use in concrete production.

Wheelwash

5.126 A wheelwash will be provided and this will continue in use for the duration of the proposed development, refer to Figure 2-2 in Chapter 2 of the EIAR for wheelwash location.

Ancillary Facilities

5.127 A welfare unit (maintained under contract) will be provided, refer to Figure 2-2 in Chapter 2 of the EIAR. Staff will also use the existing office and welfare facilities at the adjacent Dromkeen site.

Fuel and Oil Storage

5.128 There will be no fuel or oil storage at the site. All plant and machinery will be re-fuelled and maintained at the adjacent Dromkeen Pit owned and operated by Keohane Readymix Ltd.

Spill kits and spill kit training will be provided on site to contain / manage any limited accidental spillages in the unlikely event that they arise from the machinery used on site.

Extractive Waste Management

5.129 Topsoil and subsoil stripped from the site will be stored and reused for the restoration of the lands to agricultural use.

5.130 All sand & gravel extracted at the site will be transported to the adjacent Dromkeen site for processing. There will be no extractive waste arising on site.

Proposed Environmental Controls

General

5.131 Extraction and restoration activities at the application site require a number of environmental controls to eliminate or minimise the potential nuisance to the public arising from the site operations. The environmental control measures implemented at the site are outlined in the following sections.

5.132 Any additional control measures, over and above those outlined below, which may be conditioned on foot of the proposed planning application, will also be implemented.

Dust Control

5.133 The proposed development is for extraction of sand & gravel only. No processing – crushing or screening will take place on the site resulting in a significantly lower potential for dust generation compared to a conventional pit / quarry operation.

5.134 In dry, windy weather conditions, site activities may give rise to limited dust generation. In order to control dust emissions, the following dust prevention and suppression measures will be implemented:

- Where required during dry weather water mist will be sprayed from a tractor drawn bowser on dry exposed surfaces (e.g. the section of local road between the site and the Dromkeen Pit, and site internal road), in line with current practice at the Dromkeen Pit. The bowser and water for dust suppression will be sourced from the Dromkeen Pit;
- All HGV's exiting the site are and will be routed through a wheelwash. This will minimise the transport of fines by HGVs over the access / egress road and the public road network.

5.135 In line with current practice at the Dromkeen Pit the amount of dust or fines carried onto the public road network will be further reduced by periodic sweeping of internal paved site roads and surrounding public roads, if required.

5.136 A dust deposition monitoring programme will be implemented as part of the environmental monitoring programme. Monitoring results will be submitted to Cork County Council.

5.137 Existing dust management and mitigation measures will be implemented in accordance with the ICF (2004), DoEHLG (2004), and EPA (2006) environmental guidelines for the sector, refer to EIAR Chapter 8 – Air Quality.

Noise Control

5.138 The proposed development is for extraction of sand & gravel only. No processing – crushing or screening will take place on the site resulting in a significantly lower potential for noise generation compared to a conventional pit / quarry operation.

5.139 The sources of noise located within the planning application area will be related to machinery operation only.

5.140 The potential for noise generation from the planning application area is significantly reduced by the natural screening (topographic and vegetation) that is maximised in the pit design / phasing.

5.141 In addition to the above the following good house-keeping measures are in place to reduce noise emitted from machinery as much as possible:

- Loading of HGV with sand & gravel will minimise drop heights.

- Reversing sirens on machinery will be sensor-controlled and used in conjunction with reversing cameras to reduce noise.
- All machinery used are CE certified for compliance with EU noise control limits;
- The machinery will be regularly maintained. This will include regularly checking any muffler systems and servicing or replacing as required. Servicing required will be undertaken at the adjacent Dromkeen Pit garage facility. It will also ensure any loose or damaged panels or covers that suppress noise are fixed or replaced immediately;

5.142 Existing noise management and mitigation measures will be implemented in accordance with the ICF (2004), DoEHLG (2004) and EPA (2006) environmental management guidelines for the sector, refer to EIAR Chapter 10 – Noise.

5.143 A noise monitoring programme will be implemented at the site as part of the environmental monitoring programme. Monitoring results will be submitted to Cork County Council.

Traffic Control

5.144 The existing permitted access will continue in use. The sand & gravel from Knockroe will be blended with the sand & gravel material from Dromkeen Pit leading to a relatively low annual extraction rate from the proposed development.

5.145 Based on a maximum annual pit output of 100,000 tonnes per year from the proposed development, and the short transport distance (c. 0.5km) to the adjacent Dromkeen Pit, the road haulage fleet will comprise 1 no. heavy goods vehicle (HGV) – for aggregate haulage.

5.146 The maximum number of HGV movements will be one to two HGV trips per hour based on a maximum annual total output of 100,000 tonnes per year, 50-week year, 5.day week ,8-hour day and 30 tonne (sand & gravel) HGV loads.

5.147 Keohane Readymix Ltd. will contribute to the cost of maintenance of the road network and are agreeable to an appropriate special contribution being attached to any future grant of planning permission in relation to same. It is proposed to pay any such contribution on a phased basis, the details of which will be agreed with the Planning Authority.

Proposed Restoration Scheme

Restoration to Natural Habitat & Agricultural Afteruse

5.148 The principal activity which will be undertaken at the application site is the extraction of sand and gravel with final restoration of the lands to a natural habitat and agricultural afteruse. This restoration afteruse is a beneficial afteruse listed in the EPA Guidelines: 'Environmental Management in the Extractive Industry' (2006).

5.149 The restoration plan is shown on Figure 2-5 in Chapter 2 of the EIAR and planning application drawing PL08. It includes a statement confirming that the plan adheres to any statutory obligations of any relevant legislation, including water pollution, air pollution, waste, litter and planning legislation or legal liabilities under any other enactment or regulations whatsoever. No exemptions are required in relation to the restoration plan.

5.150 The restoration plan as set out on Figure 2-5 in Chapter 2 of the EIAR has been prepared by SLR Consulting and approved by KRL (the Applicant). The landowner has provided a written consent letter for the planning application including the restoration of the lands to beneficial agricultural afteruse.

Restoration Phasing, Levels and Soil Thickness /Volumes

Final Restoration

5.151 It is envisaged that final restoration will take 2 years, following permanent cessation of extraction.

5.152 Prior to grass seeding all areas to be restored to agricultural land will be stone picked, then promptly seeded, using a mix suitable to create pasture. When this operation is completed the dry working areas will fully revert back to agricultural land and will blend in with the surrounding landscape.

Long Term Stability of Pit Faces

5.153 The restored pit slopes will be constructed at stable angles, ensuring the long-term stability of slopes and faces.

Long Term Surface Water and Groundwater

5.154 The surface water will percolate to ground. There is no requirement for any active long-term surface water or groundwater management at the site.

Decommissioning Machinery & Ancillary Facilities

5.155 Machinery, the wheelwash and welfare unit will be removed from site on permanent cessation of the extraction activity. Machinery will either be used by Keohane Readymix on other sites or be sold as working machinery or scrap.

5.156 There will be no fuel, oil storage tanks and / or effluent treatment system on site. There will be no potential for fuel, oil or sewage to cause long-term water pollution following completion of extraction activities.

Aftercare and Monitoring

5.157 There will be no on-going requirement for monitoring noise, dust or water after extraction has ceased.

5.158 Monitoring and maintenance will be undertaken over the two-year final restoration period to ensure that the restored agricultural land use is successful.

Assessment of Effects and Mitigation Measures

5.159 This section sets out the potential impacts and their effects on important ecological features. The information available from the desk study and fieldwork has been used to identify impacts and the significant effects including positive, negative, direct, indirect, and cumulative effects. The potential effects resulting from the proposed development works and proposed mitigation measures are discussed in the following sections.

Potential Impacts

Proposed Natural Heritage Areas

Potential Impacts

5.160 As there is no discharge from the Site and all surface water run-off will percolate to ground, and the Site is separated from the Bandon River by roadside vegetation and the local road there will be no potential for silt to be washed into the river.

5.161 There is a potential pathway for an impact on surface water quality in Bandon Valley Below Inishannon pNHA via groundwater baseflow to the watercourse. However, the potential to affect surface water quality (via fuel / suspended solids) in Bandon Valley Below Inishannon, through groundwater baseflow to the estuary is considered unlikely due to the location of works above the groundwater table and natural filtration through the unsaturated zone. Any accidental fuel leakage / spillage from vehicles would be of very limited extent due to the small volume of fuel.

Proposed Mitigation Measures

5.162 The following mitigation measures are proposed to avoid adverse impacts on Bandon Valley Below Inishannon, pNHA.

5.163 Although the removal of sand & gravel material in the proposed extraction area does not pose a significant threat to groundwater or surface waters of the surrounding area, measures will be implemented to prevent any reduction in the quality of the local aquatic environment which could arise. These management and mitigation measures are in accordance with the good environmental practice.

5.164 The following measures will be implemented at the site to prevent a reduction in surface water and groundwater quality:

- There will be no fuel storage within the proposed extraction area.
- No chemicals or petroleum-based products and chemicals will be stored at the site;
- No mechanical repairs to vehicles shall take place within the sand & gravel pit unless they cannot be moved. Vehicle repairs will continue to be undertaken in the existing covered maintenance shed at the existing KRL site at Inishannon.
- Emergency Response Spill Kits will be kept on site to prevent any accidental leaks of petroleum-based products from reaching groundwater or adjoining surface watercourses to the site. In addition to the dedicated spill kits, the pit staff also maintain a quantity of sawdust on site which can be used to soak up any petroleum-based products if they accidently leak on site; and
- There is a wheel wash facility for all HGV vehicles exiting the site and the internal road between the wheel wash and the public road will be surfaced to prevent trucks carrying material from the site onto the public road with their tyres.

5.165 No surface water will be allowed to drain from the site and enter any waters on, adjacent to or around the site, including the public road.

Significance of Residual Effects

5.166 Under the current development proposals and with the recommended mitigation measures in place, it is assessed that the impacts on proposed Natural Heritage Areas will not be significant.

Scrub Habitat

Potential Impacts

5.167 The proposed development will require the removal of some scrub habitat (0.048 ha) to the north of the Site. This habitat is found along the proposed site entrance / exit road which is currently a mix of scrub / open scrub mosaic habitat.

Proposed Mitigation Measures

5.168 The majority of this habitat is disturbed due to the occasional use by landowners for access. This habitat has been heavily disturbed and is, for the most part, in poor condition particularly along the roadway which has been used by the landowner periodically to access the Site. There will be the removal of approximately 0.048 hectare of intact scrub habitat which is assessed as having higher biodiversity value for fauna such as invertebrates or birds. However, this area is very small.

*5.169 Compensatory planting of native hedgerow/scrub will replace the lost scrub habitat, refer to **EIAR Figure 2-5**, see **Appendix B**. The proposed planting consists of 660m of a proposed diverse native hedgerow surrounding parts of the proposed extraction area, to be planted on commencement of the development. It further comprises 800m^2 of a diverse native tree mix in two pockets on the pit floor, when the extraction works are completed. This planting is significantly larger than the area that will be removed to facilitate the proposed development and is detailed in Section 2.4 Compensatory Planning Details and Figure RFI 9-1 of the accompanying Tree Survey report submitted as part of the Further Information response.*

5.170 Furthermore, paragraph 5.180 outlines mitigation measures for removal of scrub habitat to ensure there will be no significant impacts on breeding birds as a result of the habitat removal.

Significance of Residual Effects

5.171 Under the current development proposals and with the recommended compensation measures in place, it is assessed that the removal of a small area of scrub habitat will not have any significant residual effects on the overall ecology of the Site.

Invertebrates

Potential Impacts

5.172 The proposed development will require the removal of some of the scrub habitat to the north of the Site. This habitat has the potential to provide suitable breeding, foraging, and refuge for a variety of invertebrate species.

Proposed Mitigation Measures

5.173 Compensatory planting of native hedgerow/scrub will replace the lost scrub habitat, refer to Figure 2-5. This planting is significantly larger than the area that must be removed to facilitate the proposed development.

Significance of Residual Effects

5.174 Under the current development proposals and with the recommended compensation measures in place, it is assessed that the impacts on invertebrates will not be significant.

Amphibians

Potential Impacts

5.175 There is potentially suitable breeding habitat for common frog located approximately 30 m from the Site in and around the Bandon River. There is a potential pathway for surface and groundwater contamination of this breeding habitat. Unmitigated, this project may result in the introduction of silt and suspended solids into this habitat.

Proposed Mitigation Measures

5.176 The mitigation measures proposed to avoid adverse impacts on the aquatic habitats of the Bandon Valley Below Inishannon pNHA, refer to Section 5.163 above, will also ensure there are no potential impacts on common frog breeding habitat.

Significance of Residual Effects

5.177 Under the current development proposals and recommended mitigation measures in place, it is assessed that the impacts on amphibians will not be significant.

Birds

Potential Impacts

5.178 The proposed development will require the removal of some of the scrub habitat to the north of the Site. This habitat has the potential to provide suitable breeding, foraging, and refuge for a variety of passerine bird species.

Proposed Mitigation Measures

5.179 Compensatory planting of native hedgerow/scrub will replace the lost scrub habitat, refer to Figure 2-5. This planting is significantly larger than the area that must be removed to facilitate the proposed development.

5.180 Vegetation removal required for the proposed development (refer to EIAR Figure 2-6) will be undertaken outside the nesting bird season (i.e., vegetation removal will be limited to September to February) in order to avoid risking harm or disturbance to nesting birds. Any vegetation removal that must be undertaken within the nesting bird season must undergo a nesting bird check by a qualified ecologist. Any nesting birds will be protected by an appropriate buffer to be determined following the nesting bird check.

Significance of Residual Effects

5.181 Under the current development proposals and with the recommended mitigation and compensation measures in place, it is assessed that the impacts on birds will not be significant.

Bats

Potential Impacts

5.182 The proposed development will require the removal of some of the scrub habitat for the internal access upgrade, refer to EIAR Figure 2-6. This habitat has the potential to provide suitable foraging habitat for bat species.

5.183 Two trees within the scrub habitat to the north of the Site were identified as having potential bat roosting features with low suitability (refer to **Figure 5-1**). Both of these trees are outside the red-line boundary and the proposed access route and will not need to be removed. Therefore, there will only be the loss of some immature trees and scrub vegetation along the proposed access route which will not result in the loss of any bat roosting habitat. It will result in the loss of a small area of bat foraging habitat, but this will not significantly reduce the foraging potential of the entire surrounding landscape.

Proposed Mitigation Measures

5.184 Compensatory planting of native hedgerow/scrub will replace the lost scrub habitat, refer to Figure 2-5. This planting is significantly larger than the area that must be removed to facilitate the proposed development.

5.185 If any other mature trees are identified that need to be removed for the development, they must be inspected by a qualified ecologist before felling to assess their suitability for roosting bats.

Significance of Residual Effects

5.186 Under the current development proposals and with the recommended mitigation and compensation measures in place, it is assessed that the impacts on bats will not be significant.

Cumulative Effects

5.187 The following plans were reviewed for strategies and objectives that may act in-combination with the project:

- Cork County Development Plan 2022-2028

5.188 There are no strategies or objectives in the Cork County Development Plan 2022-2028 that are likely to result in significant effects when considered in-combination with the proposed development.

5.189 Cork County Council planning portal was accessed to examine recent (within 5 years) planning applications for potential to act in-combination with the project. The planning applications within 2 km of the Site that were reviewed and none were identified that could lead to cumulative effects on biodiversity.

Summary of Effects

Table 5-5: Summary of Important Features, Effects and Proposed Mitigation

Ecological Feature	Potential Impacts	Proposed Mitigation	Residual Effects
Proposed Natural Heritage Areas	Potential for water quality impacts on pNHAs.	Implementation of good practice environmental management & mitigation measures to protect groundwater / surface waters, refer to Section 5.163.	Not significant
Invertebrates	Loss of potential invertebrate habitat.	Compensatory planting of native hedgerow/scrub to replace lost habitat.	Not significant
Amphibians	Potential for water quality impacts on common frog breeding habitat.	Implementation of good practice environmental management & mitigation measures to protect groundwater / surface waters, refer to Section 5.163.	Not significant
Birds	Loss of potential bird breeding and foraging habitat. Direct impacts on nesting birds during removal of vegetation.	Compensatory planting of native hedgerow/scrub to replace lost habitat. All vegetation removal will be undertaken outside the nesting bird season (i.e., vegetation removal will be	Not significant

Ecological Feature	Potential Impacts	Proposed Mitigation	Residual Effects
		limited to September to February). Any vegetation removal that must be undertaken within the nesting bird season must undergo a nesting bird check by a qualified ecologist.	
Bats	Loss of potential bat foraging habitat. Direct impacts on roosting bats in trees with PRFs.	Compensatory planting of native hedgerow/scrub to replace lost habitat. If any other mature trees are identified that need to be removed for the development, they must be inspected by a qualified ecologist before felling to assess their suitability for roosting bats.	Not significant

Conclusions

5.190 Overall, it is assessed that with the recommended mitigation measures outlined, the proposed development will not have a significant impact on the biodiversity, designated sites, and habitats on the Site. Provided that the proposed works are undertaken in accordance with the proposed design and best practice that is described within this report, significant effects on ecology are not anticipated. As such, the proposed works are in line with environmental and biodiversity planning policy.

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Drawings

Figure 5-1: Habitat and Key Ecological Receptors (KERs) Map

Figure 5-2: European Sites Map

Figure 5-3: Natural Heritage Areas Map

NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- Site Boundary

Key Ecological Receptors

- Box-leaved Honeysuckle
- Cherry Laurel
- Cotoneaster
- Potential Roosting Features
- Winter Heliotrope

Habitats

- BL3 - Buildings and Artificial Surfaces
- GA1 - Improved Agricultural Grassland
- WD3 - Mixed Broadleaved Woodland
- WS1 - Scrub
- Open Scrub Mosaic

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Sand and Gravel Pit

Knockroe, Bandon , Co. Cork

Habitat and KERs Map

FIGURE 5-1

Scale: 1:1300 @ A3

Date: APRIL 2025

N

The Gearagh SPA
The Gearagh SAC
Cork Harbour SPA
Sovereign Islands SPA
Courtmacsherry Estuary SAC
Courtmacsherry Bay SPA
Old Head of Kinsale SPA
Clonakilty Bay SAC
Clonakilty Bay SPA
Seven Heads SPA
Kilkeran Lake and Castlefreke Dunes SAC

0 5 10 km

NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- 15 and 20 km Buffers
- Site Boundary
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)

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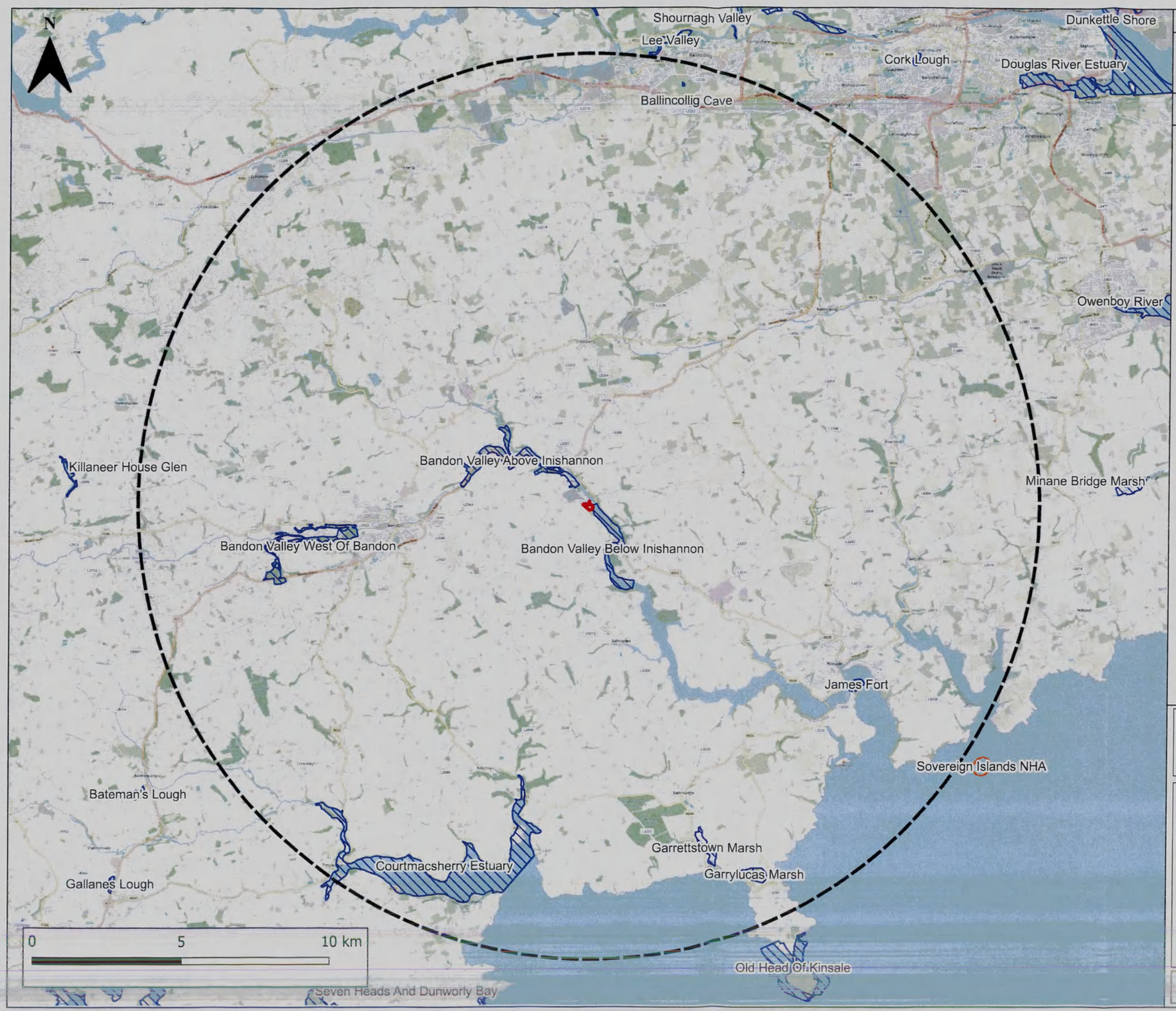
Sand and Gravel Pit

Knockroe, Bandon , Co. Cork

European Sites Map

FIGURE 5-2

Scale	Date
1:150000 @ A3	APRIL 2025



NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- 15 km Buffer
- Site Boundary
- Natural Heritage Areas (NHA)
- Proposed Natural Heritage Areas (pNHAs)

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Sand and Gravel Pit

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Natural Heritage Areas Map

FIGURE 5-3

Scale	Date
1:120000 @ A3	APRIL 2025

Appendix A. Relevant Legislation

Relevant Legislation[16]

EIA Directive

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997, Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011 and amended in Directive 2014/52/EU of 16 April 2014, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given. The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment.

Habitats and Birds Directive

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

National Legislation

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2018 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that 'Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or

[16] Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made'.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

Relevant Planning Policy

The planning policy and legislation that is relevant to the development.

Cork County Development Plan 2022-2028

The relevant local planning policies have been extracted from Volume 1 of the Cork County Development Plan 2022 – 2028. These policies are specific to "*Chapter 15: Biodiversity and Environment*" and are concerned with the policies and objectives relating to biodiversity.

BE 15-1: Support and comply with national biodiversity protection policies

a) Support and comply with the objectives of the National Biodiversity Plan 2017-2021 (and any future National Biodiversity Plan which may be adopted during the period of this Plan) as appropriate,

b) Implement the current County Biodiversity Action Plan and any future updated Plan;

c) Support and comply

BE 15-2: Protect sites, habitats and species

a) Protect all natural heritage sites which are designated or proposed for designation under European legislation, National legislation and International Agreements. Maintain and where possible enhance appropriate ecological linkages between these. This includes Special Areas of Conservation, Special Protection Areas, Marine Protected Areas, Natural Heritage Areas, proposed Natural Heritage Areas, Statutory Nature Reserves, Refuges for Fauna and Ramsar Sites. These sites are listed in Volume 2 of the Plan.

b) Provide protection to species listed in the Flora Protection Order 2015, to Annexes of the Habitats and Birds Directives, and to animal species protected under the Wildlife Acts in accordance with relevant legal requirements. These species are listed in Volume 2 of the Plan.

c) Protect and where possible enhance areas of local biodiversity value, ecological corridors and habitats that are features of the County's ecological network. This includes rivers, lakes, streams and ponds, peatland and other wetland habitats, woodlands, hedgerows, tree lines, veteran trees, natural and semi-natural grasslands as well as coastal and marine habitats. It particularly includes habitats of special conservation significance in Cork as listed in Volume 2 of the Plan.

d) Recognise the value of protecting geological heritage sites of local and national interest, as they become notified to the local authority, and protect them from inappropriate development

e) Encourage, pursuant to Article 10 of the Habitats Directive, the protection and enhancement of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species.

BE 15-6: Biodiversity and New Development

Provide for the protection and enhancement of biodiversity in the development management process and when licensing or permitting other activities by:

a) Providing ongoing support and guidance to developers on incorporating biodiversity considerations into new development through preplanning communications and the Council's guidance document 'Biodiversity and the Planning Process – guidance for developments on the management of biodiversity issues during the planning process' and any updated versions of this advice;

b) Encouraging the retention and integration of existing trees, hedgerows and other features of high natural value within new developments;

c) Requiring the incorporation of primarily native tree and other plant species, particularly pollinator friendly species in the landscaping of new developments;

d) Fulfilling Appropriate Assessment and Environmental Impact Assessment obligations and carrying out Ecological Impact Assessment in relation to development and activities, as appropriate;

e) Ensuring that an appropriate level of assessment is completed in relation to wetland habitats subject to proposals which would involve drainage or reclamation. This includes lakes and ponds, watercourses, springs and swamps, marshes, heath, peatlands, some woodlands as well as some coastal and marine habitats;

f) Ensuring that the implementation of appropriate mitigation (including habitat enhancement, new planting or other habitat creation initiatives) is incorporated into new development, where the implementation of such development would result in unavoidable impacts on biodiversity – supporting the principle of biodiversity net gain.

BE 15-7: Control of Invasive Alien Species

Implement best practice to minimise the risk of spread of invasive alien species, on Council owned or managed land, and require the development and implementation of Invasive Alien Species Management Plans for new developments where required.

BE 15-8: Trees and Woodlands

a) Protect trees the subject of Tree Preservation Orders.

b) Make use of Tree Preservation Orders to protect important trees or groups of trees which may be at risk or any tree(s) that warrants an order given its important amenity or historic value.

c) Encourage the provision of trees for urban shading and cooling in developments in urban environments and as an integral part of the public realm.

d) Preserve and enhance the general level of tree cover in both town and country. Ensure that development proposals do not compromise important trees and include an appropriate level of new tree planting.

e) Where appropriate, to protect mature trees/groups of mature trees and mature hedgerows that are not formally protected under Tree Preservation Orders

BE 15-10: Soils

a) Ensure the protection and conservation of the soils in County Cork by encouraging sustainable management practices and the reuse of brownfield lands.

b) Identify areas of poorer soil in the County acknowledge their potential value for wildlife, and respect their limitations, particularly in terms of their assimilative properties to prevent pollution.

BE 15-11: Contaminated Land

a) Require that prior to permitting development on contaminated sites, developers will carry out a full contaminated land risk assessment to demonstrate:

- How the proposed land uses will be compatible with the protection of health and safety (including the durability of structures and services) during both construction and occupation; and

- How any contaminated soil or water encountered will be appropriately dealt with.

b) In the case of development which requires the removal of soil, stones and invasive species, any removal requires the appropriate permits and disposal to authorised sites.

BE 15-12: Air Quality

a) Monitor air quality and air quality trends in accordance with EU policy directives, preserve good air quality where it exists, and take appropriate action, where required, including the provision of additional air quality monitoring infrastructure in urban areas and along major roads.

b) Radon barriers should be provided in all new developments in compliance with best practice and relevant Building Regulations.

c) Air emissions associated with all new development are to be in line with Environmental Quality Standards as set out in the Air Quality Standards Regulations 2011, or any updated/superseding documents.

BE 15-13: Noise and Light Emissions

a) Seek the minimisation and control of noise pollution associated with activities or development, having regard to relevant standards, published guidance and the receiving environment.

b) Ensure noise-sensitive developments are adequately protected from potential sources of noise (e.g. national roads). New developments should take account of, and mitigate against, any existing noise sources.

c) Support the implementation of Noise Action Plans prepared for the Cork County area.

d) Seek the minimisation and control of light pollution associated with activities of development, having regard to relevant standards, published guidance and the receiving environment and Dark Sky principles.

e) Review and update Cork County Council Policy Guidelines for Public Lighting to take account of impacts of public lighting on wildlife and night skies.

Objective BE 15-14: Waste Prevention and Management

a) Support the policy measures and actions outlined in

- 'A Waste Action Plan for a Circular Economy Ireland's National Waste Policy 2020-2025', and

- Southern Region Waste Management Plan 2015 – 2021, or any successor plans

b) Support circular and climate resilient economy principles and associated strategic infrastructure, prioritising prevention, reuse, recycling and recovery, and to sustainably manage all types of waste by ensuring the provision of adequate waste recovery, recycling and disposal facilities for the county

BE 15-17: Waste Prevention and Management

a) Planning applications for infilling of marginal land through soil importation will be supported where it can be demonstrated that the developments accord with proper planning and sustainable development, ensuring that they are compatible with the protection of environmental resources including water quality, Natura 2000 sites, biodiversity, archaeological and landscape resources.

b) Support will be provided for locating suitable sites within the county for the safe disposal of construction and demolition waste in conjunction with the Southern Waste Region.

c) Construction and Environmental Management Plans (CEMPs)/ Construction and Demolition Management Plans shall be prepared for larger scale projects as set out in paragraph 15.12.24 and

this requirement shall be assessed on a case-by-case basis as part of the development management process.

d) Support the implementation of the recommendations and policies of the National Hazardous Waste Management Plan 2014-2020.

Appendix B. Proposed Landscape and Restoration Plan

LANDSCAPE & RESTORATION SCHEME

The landscape and restoration scheme for the proposed sand & gravel pit at Knockroe aims at minimising the visibility of the extraction works during the operational period, as well as restoring the existing and proposed pit areas to a combination of a natural habitat and a agricultural land use. Both are benficial afteruses, as recommended in the 2006 EPA Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals)

LANDSCAPE PHASE

To be carried out on commencement of the proposed development, consisting of the following elements.

- Retention of all existing trees / scrub / woodland vegetation within the land interest boundary of the applicant, with the exception of a small number of trees / scrub vegetation along the proposed access track (refer to Figure 2-6 Vegetation Removal Plan for further information).
- Native hedge planting along the northern and part of the south-western and eastern boundaries of the proposed extraction area, to mark / secure the edge of the pit slopes, provide habitat linkage and, compensate for the loss of existing trees / scrub

RESTORATION PHASE

To be carried out on completion of all proposed extraction works, consisting of the following elements.

- Restoration of the pit floor to agricultural grassland. This will be achieved by the removal of any machinery and stockpiles, the spreading of subsoil and topsoil (using material stored on site), the cultivation of the ground in preparation for grass seeding and seeding with a suitable agricultural grass mix.
- The pit slopes will be left at stable angles, using subsoil and topsoil material stored on site. They will then be left to be naturally colonised with locally occurring grass and scrub species (i.e. natural regeneration).
- Planting of two pockets of native trees in the north-western corner of the extraction area to support the natural regeneration of the pit slopes.

GENERAL NOTES

Earthworks: All topsoil will be stripped first and will be stored in temporary stockpiles less than 2m in height. The overburden will be stripped next and stored in separate stockpiles.

Grass Seeding: All grass sowing will take place, whilst suitable weather conditions prevail. The surface preparation and the sowing specifications will be as per the seed manufacturer's instructions.

Tree stock: Both proposed mixes contain locally occurring native species. All of the trees/shrubs are proposed to be supplied as transplants at 40-120cm height, as this type of stock is known to establish more successfully compared to larger stock.

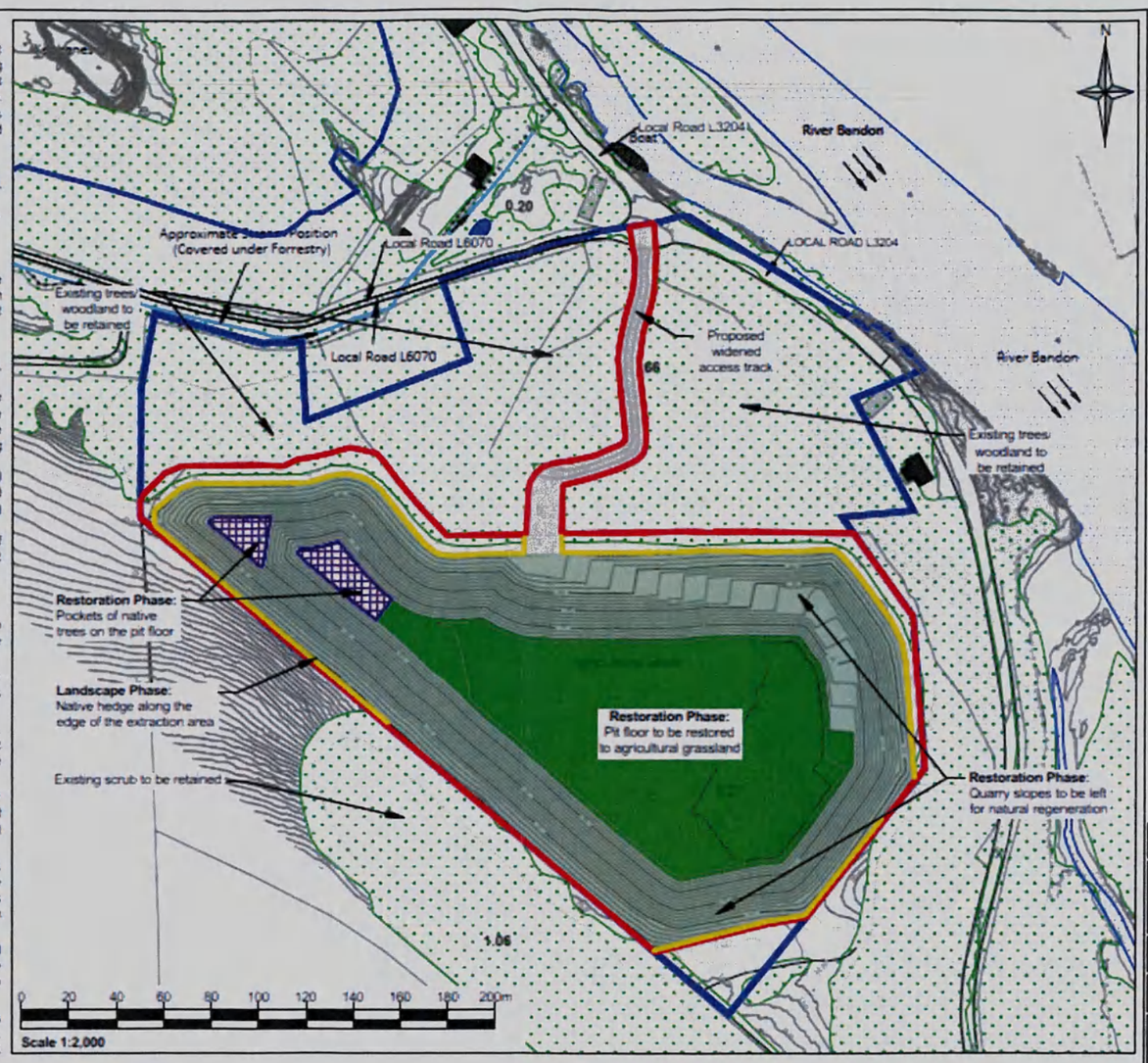
Native Tree Planting: To be planted at 1.5m centres, i.e. 1 plant per 2.25m² (Approx. 800m² in total = 350 plants). Transplants to be planted randomly with no more than 4-8 plants of the same species in a group. All plants to be protected with spiral guards.

Hedge Planting: To be planted as a double row of staggered plants, using 4 plants/meter (40cm between the rows and ca. 25cm between the staggered plants; Approx. 660 lin.m. in total = 2,600 plants). Transplants to be planted randomly with no more than 5 plants of the same species in a row. All plants to be protected with spiral guards.

Planting works: All plant handling, planting and establishment works will be carried out in accordance with current best practice and will take place in the appropriate planting season (e.g. bareroot planting: November to March only) and in favourable weather conditions

Aftercare: Establishment maintenance will be carried out for 2 years following the planting works (minimum 3 maintenance visits per year, i.e. spring, summer and autumn). This will include weed control, replacement planting where required and the adjustment/removal of spiral guards.

All planting and maintenance works will be carried out by a suitably qualified landscape contractor.



Native Tree Mix

No.	Plant Name	Common Name	Height (cm)	Age/Pot Size	%
Transplants					
20	Alnus glutinosa	Common Alder	60-90	1+1	05
50	Corylus avellana	Hazel	60-90	1+0	15
35	Crataegus monogyna	Hawthorn	60-90	1+1	10
50	Ilex aquifolium	Holly	60-80	2L	15
35	Prunus spinosa	Blackthorn	60-90	1+0	10
20	Quercus robur	Peduniculate oak	60-90	1+1	05
35	Rosa canina	Dog rose	40-60	1+1	10
35	Salix cinerea	Sally	60-120	0+1	10
35	Sambucus nigra	Elder	60-90	1+1	10
35	Sorbus aucuparia	Rowan	60-90	1+1	10

NATIVE HEDGE MIX

No.	Plant Name	Common Name	Height (cm)	Age/Pot Size	%
Transplants					
130	Alnus glutinosa	Common alder	60-90	1+1	05
390	Corylus avellana	Hazel	60-90	1+0	15
780	Crataegus monogyna	Hawthorn	60-90	1+1	30
260	Ilex aquifolium	Holly	60-80	2L	10
520	Prunus spinosa	Blackthorn	60-90	1+0	20
390	Rosa canina	Dog rose	40-60	1+1	15
130	Sambucus nigra	Elder	60-90	1+1	05

Notes

1. Aerial photo by ASM Ireland dated August 2024

Legend:

- Land Interest Boundary
- Planning Application Boundary (c. 4.6 hectares)

Landscape Phase
(to be implemented on commencement of the extraction works)

- Proposed native hedge

Restoration Phase
(to be implemented on completion of extraction works)

- Area to be restored to agricultural grassland
- Area to be left for natural regeneration
- Proposed native tree planting

Rev	Amendments	Date	By	Chk	Auth

SLR

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FINAL

Client: KEOHANE READYMIX LTD.

Project: SAND & GRAVEL PIT
KNOCKROE, BANDON, CO. CORK

Drawing Title: PROPOSED LANDSCAPE AND RESTORATION PLAN

Scale	@ A3	SLR Project No.
1:2,000		065557.00001

Designed	Drawn	Checked	Authorised
CN	CN	AM	AM
Date	Date	Date	Date
04/25	04/25	04/25	04/25

Drawing No./Status: FIGURE 2-5 | Rev: 0

Figure 2-5 of EIAR: proposed restoration plan showing replanting of native tree plots