




JBA
consulting



Soil Recovery Facility Kildare

Screening for Appropriate Assessment

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Efficiency

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This report describes work commissioned by Richard Deeney, on behalf of Environmental Efficiency Consultant (Ireland) Ltd, by a letter dated 12-10-2018. JBA's representative for the contract was Bernadette O'Connell. William Mulville and Malin Lundberg of JBA Consulting carried out this work.

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Purpose

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Abbreviations

AA.....	Appropriate Assessment
CIEEM	Chartered Institute of Ecological and Environmental Management
DoEHLG	Department of Environment, Heritage and Local Government
DoPHLG	Department of Housing, Planning and Local Government
EC	European Communities
EPA	Environmental Protection Agency
EU	European Union
IROPI.....	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NOx	Nitrogen oxides
NPWS.....	National Parks and Wildlife Service
PM.....	Particulate Matter
QI.....	Qualifying Interest
RBMP.....	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Protection Area
WFD	Water Framework Directive

1 Introduction

1.1 Background

JBA Consulting Ireland Ltd. has been commissioned by Environmental Efficiency Consultant (Ireland) Ltd to undertake a Screening for Appropriate Assessment in relation to a proposed extension to a proposed soil recovery facility at a worked-out quarry in Graney West, County Kildare.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 / 2011).

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DoEHLG) (2009). These guidance documents identify a staged approach to conducting an AA, as shown Figure 1-1.

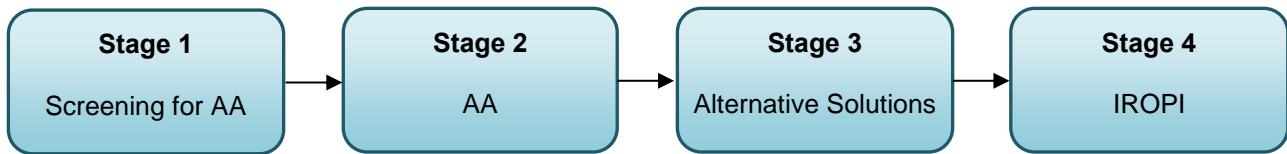


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DoEHLG, 2009)

1.3.1 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

- a. whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
- b. if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

For those sites where potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the sites conservation objectives (i.e. the process proceeds to Stage 2).

1.3.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

1.3.3 Stage 3 - Alternative Solutions

Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

1.3.4 Stage 4 - IROPI

Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site.

This report is for Stage 1 Screening for Appropriate Assessment.

1.4 Methodology

The Screening for Appropriate Assessment has been carried out with reference to the following documents:

- DoEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DoEHLG 2009).

- European Communities (EC) (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission 2000).
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al. 2002).
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission (European Commission 2007).
- CIEEM (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal, Second Ed. (Chartered Institute of Ecology and Environmental Management, 2016)
- Fossitt, J., (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt 2000).

Data has been collected from a range of sources, including:

- Site visits completed by JBA in January and March 2019;
- NPWS website (www.npws.ie);
- EPA maps website (<https://gis.epa.ie/EPAMaps/>);
- River Basin Management Plans (RBMP) (www.wfdireland.ie);
- Planning website (www.eplanning.ie);
- NBDC Biodiversity Maps (<http://maps.biodiversityireland.ie/#/Map>);
- Catchments (www.catchments.ie)

1.4.1 Limitations and Constraints

The screening assessment necessarily relies on some assumptions and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since surveys were undertaken cannot be accounted for.
- Some slight variation in the works methodology may occur, but these will only be minor changes. Where changes to methodology could impact on ecological features, an ecologist will be consulted to determine if the project needs re-screening.
- Adverse weather can cause delays to the schedule and alter the timing of works. This has been accounted for using a worst-case scenario where necessary.

The ecological walkover survey covers Screening for Appropriate Assessment only and does not account for any potential protected species habitats or invasive species.

2 Project Description

2.1 The 'Project'

The proposed development meets the criteria of a 'Project' as defined in the Habitats Directive and is not directly connected with or necessary to the management of any Natura 2000 site. Therefore, the Project is subject to the requirements of the Appropriate Assessment process.

2.2 Site location

The proposed development is an old quarry in Graney West, Co. Kildare (Figure 2-1). The site is located approximately 2 km east of Castledermot town and approximately 8 km west of Baltinglass village. Road L8100 is located north of the site and road L4015 is located to the south. River Graney is running south of the proposed development.

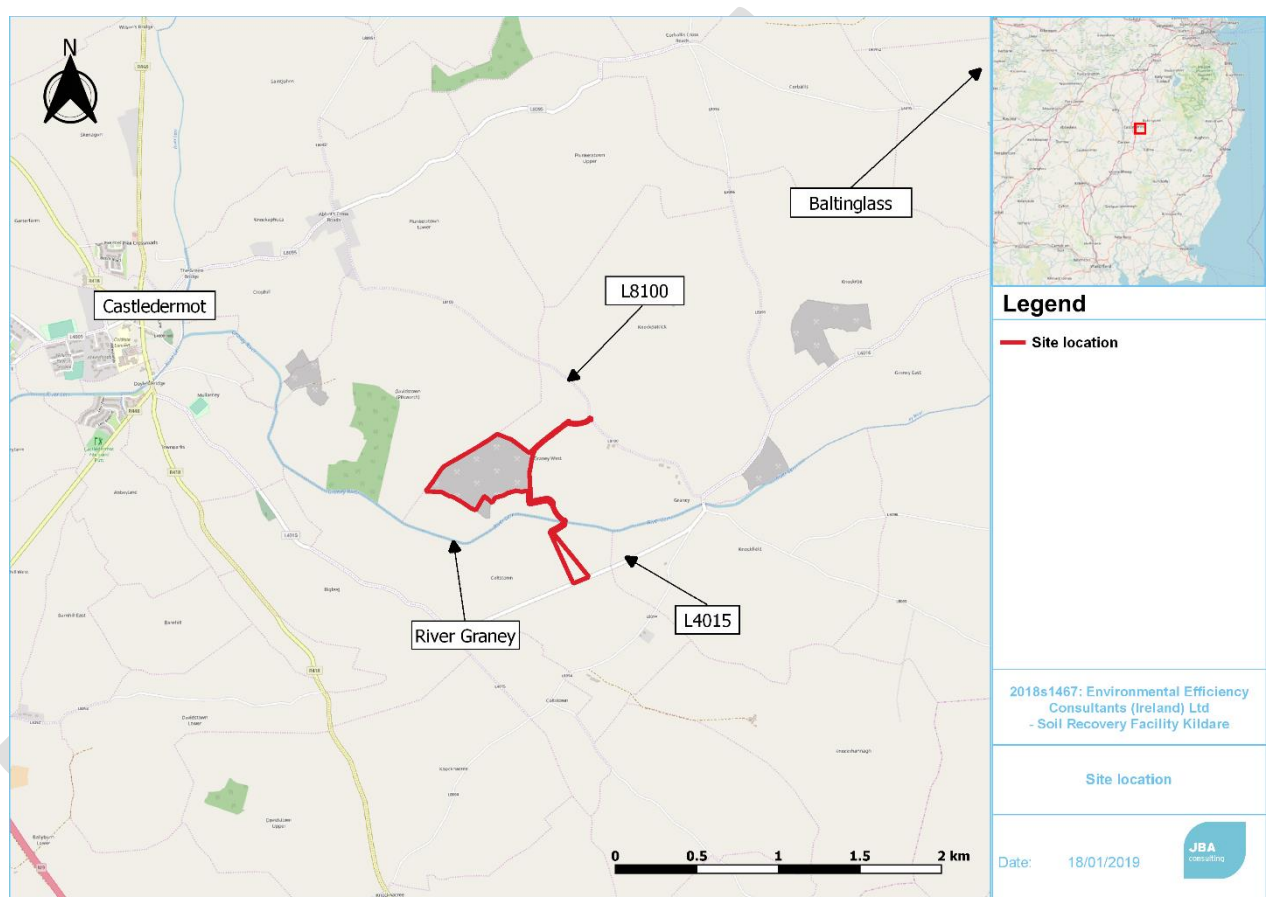


Figure 2-1: Site location (Source: Open Street Map 2019)

2.3 Proposed project

The proposed project includes the construction phase with the principal activity of backfilling a worked-out quarry using uncontaminated soil and stone from construction sites, to backfill and restore existing voids onsite.

The material accepted on-site will be inert and will comprise subsoil, clay, gravels, topsoil, stone and mixtures of such. These materials will be sourced from construction sites in the Greater Dublin Area.

The proposed activity will include the placement of cover soils and seeding and return to use as agricultural grassland.

In addition to the principal waste activity described above, it is proposed to carry out the following secondary waste recovery activities:

- Intake of top-soil, screening at proposed screening plant and resale of such material;

- Intake of gravel and sands, washing at existing washing plant and resale of such materials;
- Intake of concrete, concrete crushing using concrete crushing equipment, mixing with sand and gravel before being fed to the washing plant to form aggregate, and resale of such material, and;
- Intake of garden waste, shredding and composting of this waste within a silage pit over an underground effluent storage tank, for use for agricultural land spreading.

Waste to be processed on site will be in the following quantities:

- 100,000 tonnes per annum of sand and gravel for processing at the sand and gravel plant;
- 100,000 tonnes per annum of concrete for processing at the concrete crushing plant;
- 4000 tonnes per annum of topsoil for screening at soil screening plant, and;
- 3000 tonnes per annum of Garden Waste for shredding and composting.

Water treatment measures on-site are as follows:

- Septic tank will be in place to manage domestic wastewater on-site
- Surface Water Settlement Lagoons will be in place for managing run-off from site and from gravel washing process
- Effluent tank (180,000 litres capacity) will be in place to manage run-off from composting area.
- Silt trap, Class 1 Full Retention Interceptor and Soakaway will be in place to deal with run-off from concrete hard standing areas
- Class 1 Interceptor will be in place serving the car parking area
- Integrated Oil Interceptor will serve the wheel wash along the site access road.

Water from the settlement lagoons will be pumped back to the washing plant via a pump house and recycled within the process. Overflow from the last of these lagoons is via a 300 mm diameter concrete pipe to the Graney River. Surface water also leaves the site by percolation through gravels to ground and underlying groundwater.

The site is 20.2 hectares in size and the area to backfill is 11.9 hectares. **Area needs to be confirmed and updated.** The construction period is expected to be 10-25 years. The traffic will access the site from the south east via a new proposed access road.

Site layout plans are provided in Appendix A.1.

The operational phase is the use of the site as an agricultural field for grazing.

2.3.1 Project Area of Influence

The project will primarily affect the site only, but a wider area of influence is used for impacts relating to noise disturbance (1km), air pollution (10km), surface water (15km) and any supporting habitat for SAC/SPA species (15km).

2.4 Existing Environment

2.4.1 Baseline conditions

Several surveys have been carried out to inform this report. The first ecological walkover survey was conducted on 15th of January 2019 by JBA ecologist Malin Lundberg. The survey recorded habitats and flora in the area within the development site, and to detect the presence or likely presence of protected species, and the presence of good potential habitat for those species. A second survey was carried out on 8th of March 2019 by JBA ecologists Malin Lundberg and William Mulville. This survey included a preliminary Bat roost survey, an Otter survey, an invasive species survey and a preliminary Sand Martin survey. During this visit, plant species were recorded that were not yet visible at the time of the first site visit. A habitat map is provided in Appendix A.2.

The site is a brownfield site of a worked-out quarry, which has previously been used for motorcycle racing. The ground is disturbed, consisting mostly of bare, exposed soil mixed with areas of

recolonising vegetation. Trees and scrub bounds three sides and the existing access road bounds one side. Adjacent land to the site is composed of agricultural fields. The main habitats recorded are listed in Table 2-1 and the individual habitats are outlined below.

Table 2-1: Habitats recorded at the proposed site.

Habitat code	Habitat
WL2	Treelines
ED1	Exposed sand, gravel or till
ED3	Recolonising bare ground
ED1/ED3	Exposed sand, gravel or till/ Recolonising bare ground
WS1	Scrub
WS1/GA1	Scrub/Improved agricultural grassland
FL8	Other artificial lakes and ponds
FS1	Reed and large sedge swamps
FW4	Drainage ditches
FW2	Depositing/lowland rivers
GA1	Improved agricultural grassland
BL3	Buildings and artificial surfaces
BC1	Arable crops

WL2 - Treelines

The north and western site boundaries are defined by treelines (Figure 2-2 and Figure 2-3), located on a higher ground due to the excavations in the quarry. Dominating species are Hawthorn *Crataegus monogyna* and Ash *Fraxinus excelsior* covered with Ivy *Hedera hibernica*, some Willows *Salix* spp., Roses *Rosa* spp. and Brambles *Rubus fruticosus* agg are also present. Some of the trees are mature. Along the western side of the treeline, outside the site boundary, runs an open stream in a north-south direction.



Figure 2-2: WL2 - Treeline along the western boundary. A matrix of GA1 - Improved agricultural grassland, WS1 - Scrub and ED3 - Recolonising bare ground is visible within the site boundary.

ED1 - Exposed sand, gravel or till

In the worked-out quarry there are still areas that are relatively disturbed with no colonising vegetation. The main area is in the east of the site, next to the farmyard where all the machinery is kept. The bare ground is made up of sand and gravel with some larger boulders as well.

ED3 - Recolonising bare ground

The north part of the proposed site, which has also been excavated, is starting to get recolonised by vegetation (Figure 2-3). Recolonising bare ground is also found in the south east of the worked-out quarry, where excavations have previously been made. Vegetation such as Docks *Rumex* spp., Willowherbs *Epilobium* spp, Thistles *Cirsium* spp., Colt's-foot *Tussilago farfara*, Great Mullein *Verbascum thapsus*, mosses and some dandelions *Taraxacum officinale* agg. are mixed with gravel and stones.



Figure 2-3: ED3 - Recolonising bare ground and WL2 - Treelines

ED1/ED3 - Exposed sand, gravel or till/Recolonising bare ground

The main part of the proposed site is the worked out quarry itself. The ground has been excavated and the surrounding banks are several meters high. The ground is hilly and there is a matrix of exposed ground and areas being recolonised by vegetation. The exposed sand and gravel mainly occur in the tracks from where motorcycle racing has taken place, while vegetation is recolonising the surrounding ground. The vegetation includes Gorse *Ulex europaeus*, Docks and Willowherbs.

WS1 - Scrub

In the south part of the proposed site 3-5 m along the south boundary has been left untouched during the excavations of the quarry. An extensive area is dominated by scrub with the potential to support nesting and feeding habitat for birds. Dominating species are Gorse and Bramble, but also some Willows and Hawthorn occur. Mammal tracks are visible in the scrub.



Figure 2-4: WS1 - Scrub

WS1/GA1 - Scrub/Improved agricultural grassland

Next to the scrub habitat there is a matrix of scrub and improved grassland as the grassland is transitioning into scrub. There are scattered Gorse and Willows, the field layer includes Docks, Cock's Foot, Dandelions, Ribwort Plantain *Plantago lanceolata*, Germander Speedwell *Veronica chamaedrys*, Red Dead-nettle *Lamium purpureum*, mosses and grasses.

FL8 - Other artificial lakes and ponds

Within the site there are two artificial ponds in the south west corner and there is one more pond located outside the site boundary in the south east. These ponds have been created with relation to the quarry. They have a natural shape and wetland vegetation along the edges, such as Common Reed *Phragmites australis*, Bulrush *Typha latifolia*, Rushes *Juncus* spp. Willows, Alder *Alnus glutinosa* and Birch *Betula pubescens*.



Figure 2-5: FL8 - Other artificial lakes and ponds

FS1 - Reed and large sedge swamps

There is a small wetland area that is connected to the pond outside the site boundary, just below the bank in the south. Species include Common Reed and Bulrush.

FW4 - Drainage ditches

A drainage ditch of approximately 40 m with running water is feeding into the ponds in the south west. In water vegetation consists of Watercress *Rorippa nasturtium-aquatica* and Horsetails *Equisetum* spp. Along the banks there are some Willowherbs and grasses.



Figure 2-6: FW4 - Drainage ditches

GA1 - Improved agricultural grassland

In the north west there is an area of improved grassland bordering to the treeline in the west. The area is fenced off and grazed by horses at the time of the survey. The proposed access route in the south east will run along fields of improved grassland.

BL3 - Buildings and artificial surfaces

There are a couple of farm buildings and a farmyard in the north. The existing access road to the site splits up in two, where one road connects to the farmyard and the other road goes along the north east boundary and enters the site at the middle of the east border.

BC1 - Arable crops

The proposed access route is crossing an arable field in the south east, with an existing agricultural track.

2.4.2 Waterbodies within the Vicinity of the Proposed Site

The site lies within the Water Framework Directive (WFD) Barrow catchment and the sub-catchment Lerr_SC_010 (EPA 2018). There are several artificial ponds within the site, connected to a drainage ditch draining the area.

Figure 2-7 outlines the watercourses near the proposed development. The River Graney is located approximately 100 m south of the proposed site flowing in an east-west direction. There are several small tributaries to River Graney within the vicinity, of which one runs directly outside the western border to the site. River Graney is feeding into River Lerr which is located approximately 1800 m west of the proposed site, passing through Castledermot town, running in a north-south-west direction feeding into River Barrow and is part of River Barrow and River Nore SAC (EPA 2018).

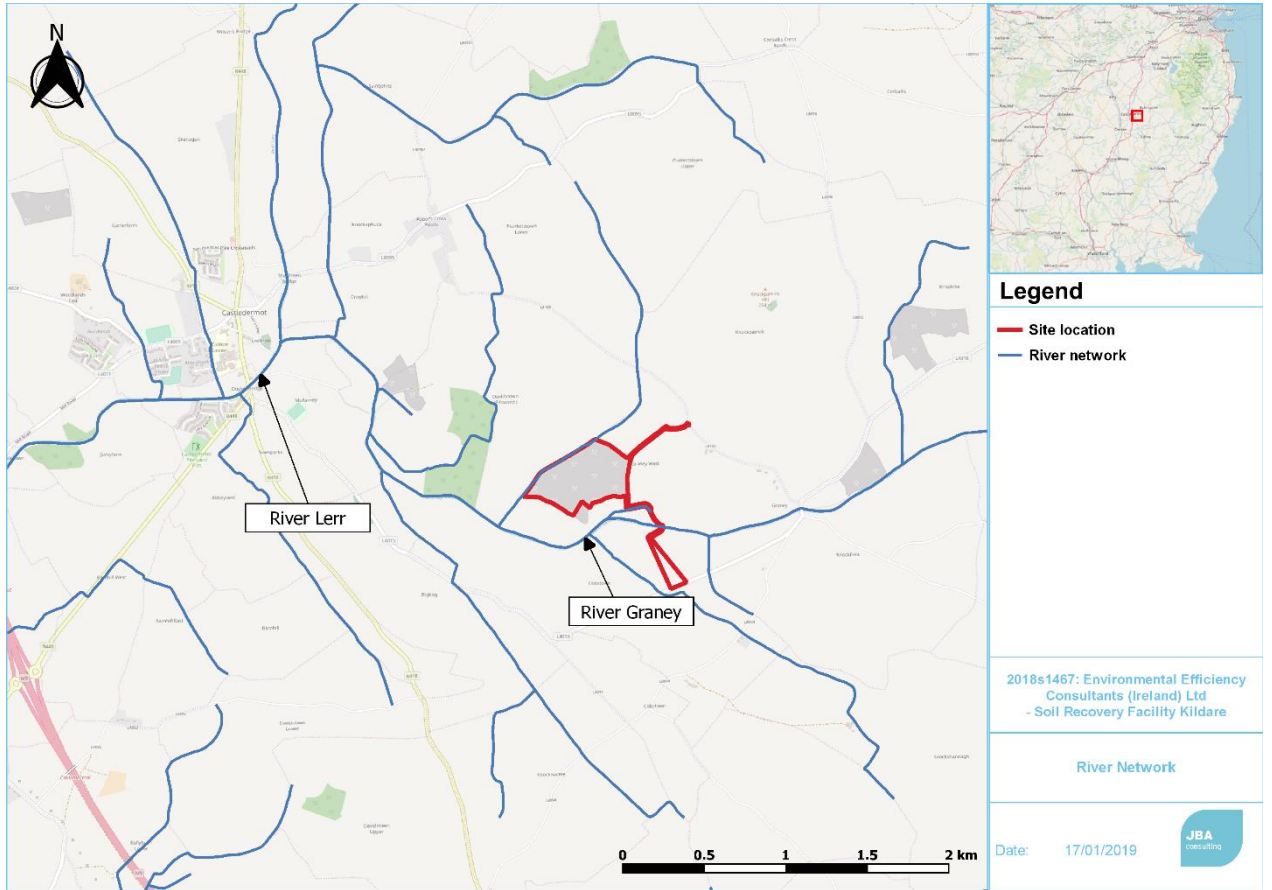


Figure 2-7: Rivers within the vicinity of the proposed site.

3 Natura 2000 Sites

The DEHLG (2009) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

As the proposed works are considered of 'Project' status, only Natura 2000 sites within a 15km range of the proposed development were examined. The Natura 2000 sites within the range are listed in Table 3-1 and their location are shown in Figure 3-1.

Table 3-1: Natura 2000 sites located within 15 km of the proposed development.

Natura 2000 site	Site Code	Approximate distance from site
River Barrow and River Nore SAC	002162	2 km
Slaney River Valley SAC	000781	7 km
Holdenstown Bog SAC	001757	7.8 km

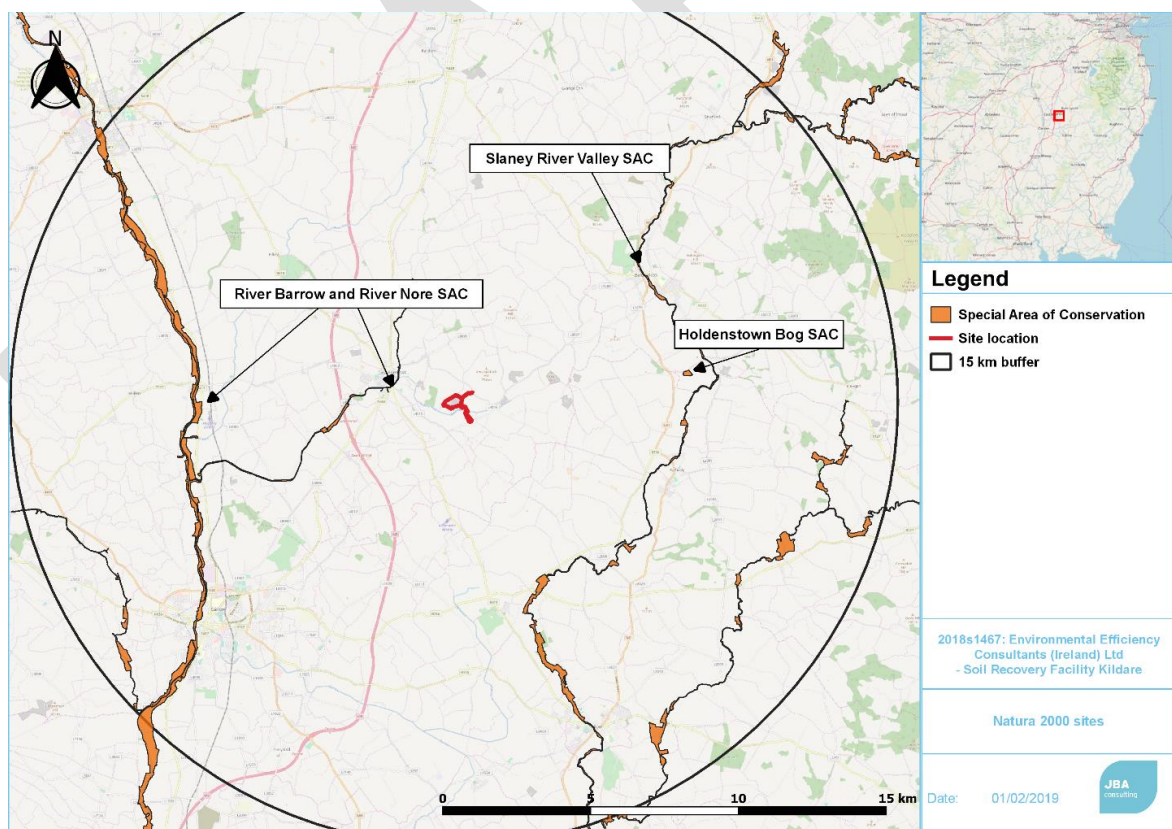


Figure 3-1: Natura 2000 sites and site location (Source: NPWS 2018)

3.1 River Barrow and River Nore SAC (002162)

This site includes the Barrow and Nore River Catchments all the way from Slieve Bloom Mountains in the north to Creadun Head in Waterford in the south. The Nore River, before joining the Barrow River, flows through limestone plains and intrusive rocks poor in silica. The upper parts of the

Barrow also run through limestone, while the middle reaches and many of the eastern tributaries runs through Leinster Granite.

Within the site are several locations with alluvial forest, which is a priority Annex 1 habitat. Accessioned with the alluvial forests are eutrophic tall herb vegetation and elsewhere where the flood plain of the river is intact. Petrifying springs is another priority Annex 1 habitat found within this SAC along the Nore River. Old oak woodlands are found both along the Nore and the Barrow, including the Abbeyleix Woods which is one of the only remaining ancient woodlands in Ireland.

Floating river vegetation is well represented in the Barrow and in the many tributaries of the site. The water quality of the Barrow has improved since the vegetation survey was carried out in 1996. In pockets along the steep valleys of the rivers habitats of dry heath are occurring and is especially prominent in the Barrow Valley and along the tributaries at the foothills of the Blackstairs Mountains. The dry heath generally grades into wet woodland or swamp vegetation closer to the riverbank.

The southernmost area of the SAC is characterised by coastal habitats such as estuaries, mudflats and salt meadows.

The site is important for the presence of a number of E.U. Habitats Directive Annex II species, including Freshwater Pearl Mussel *Margaritifera margaritifera* and *M. m. durrovensis*, White-clawed Crayfish *Austropotamobius pallipes*, Salmon *Salmo salar*, Twaite Shad *Alosa fallax fallax*, three lamprey species – Sea Lamprey *Petromyzon marinus*, Brook Lamprey *Lampetra planeri* and River Lamprey *Lampetra fluviatilis*, the whorl snail *Vertigo moulinsiana* and Otter *Lutra lutra*. The site is also of ornithological importance for a number of E.U. Birds Directive Annex 1 species, including Greenland White-fronted Goose *Anser albifrons flavirostris*, Whooper Swan *Cygnus cygnus*, Bewick's Swan *Cygnus columbianus*, Bar-tailed Godwit *Limosa lapponica*, Peregrine *Falco peregrinus* and Kingfisher *Alcedo atthis*.

(Source: NPWS 2016)

3.1.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)* [91E0]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]
- Brook Lamprey (*Lampetra planeri*) [1096]
- Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]
- Estuaries [1130]
- European dry heaths [4030]
- Floating River Vegetation [3260]
- Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]
- Killarney Fern (*Trichomanes speciosum*) [1421]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]
- Mudflats and sandflats not covered by seawater at low tide [1140]
- Nore Pearl Mussel (*Margaritifera durrovensis*) [1990]
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]
- Otter (*Lutra lutra*) [1355]
- Petrifying springs with tufa formation (*Cratoneurion*)* [7220]
- Reefs [1170]
- River Lamprey (*Lampetra fluviatilis*) [1099]
- Salicornia and other annuals colonising mud and sand [1310]
- Salmon (*Salmo salar*) [1106]
- Sea Lamprey (*Petromyzon marinus*) [1095]

- Twaité Shad (*Alosa fallax fallax*) [1103]
- White-clawed Crayfish (*Austropotamobius pallipes*) [1092]

3.1.2 Site Vulnerability

The threats, pressures and activities that impact the River Barrow and River Nore SAC (NPWS 2017a) are listed in Table 3-2.

Table 3-2: Threats and pressures posed to River Barrow and River Nore SAC (NPWS 2017a).

Threats and pressures	Rank	Source-
	Low (L) Moderate (M) High (H)	inside (i) outside (o) both (b)
Intensive cattle grazing	M	i
Pollution to surface waters (limnic, terrestrial, marine & brackish)	H	b
Water abstractions from surface waters	M	i
Use of fertilizers (forestry)	M	b
Forest and Plantation management & use	M	b
Changes in abiotic conditions	M	i
Removal of hedges and copses or scrub	L	i
Dykes and flooding defence in inland water systems	H	i
Peat extraction	M	o
Modifying structures of inland water courses	M	l
Sand and gravel quarries	L	b
Reduction in migration/ migration barriers	M	i
Invasive non-native species	M	i
Dredging/ removal of limnic sediments	M	i
Erosion	H	i
Industrial or commercial areas	L	o
Human induced changes in hydraulic conditions	M	b
Forestry activities (e.g. erosion due to forest clearing, fragmentation)	M	b
Agricultural intensification	H	B
Professional passive fishing (netting)	L	i
Fishing and harvesting aquatic resources	M	o
Intensive fish farming, intensification	L	i
Leisure fishing	L	i
Port areas	L	i

3.1.3 Other Designations

The Barrow catchment has been designated as a *Margaritifera* sensitive area (DATA.GOV.IE 2017). There are previous records of *Margaritifera* in the Barrow River, but current status is unknown. The status of the freshwater pearl mussel as a qualifying Annex II species for the River Barrow and River Nore SAC is currently under review. The outcome of a review will determine whether a site-specific conservation objective is set for this species (NPWS 2011a).

3.2 Slaney River Valley SAC (000781)

The Slaney River Valley SAC comprises the River Slaney from the Wicklow Mountains in the north to Wexford Harbour in the south, including a number of tributaries. The upper and central regions

of the site have a geology of granite, south of Kildavin the Slaney flows through an area of Ordovician slates and grits.

Among the habitats found within the site is floating river vegetation, which is found along much of the freshwater stretches. Wet woodland is found associated with Macmine marshes, along the banks of the Slaney and its tributaries, and within reed swamps. These woodlands are divided into two types, one is quite eutrophic, dominated by willow and subject to tidal influence, and the other is flushed of spring-fed, subject to water logging but not to flooding and dominated by Alder and Ash. Old oak woodlands are present throughout the site but are best represented at Tomnafinnoge. South of Enniscorthy there are several areas of mixed deciduous woodland with a diverse ground flora.

The south part of the site contains a good example of the extreme upper reaches of an estuary. Other habitats found include tidal reedbeds with wet woodland, mudflats, sandflats and saltmarshes.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, including Sea Lamprey, River Lamprey, Brook Lamprey, Otter, Salmon, small number of Freshwater Pearl Mussel and Twaite Shad. It also supports regional significant numbers of Common Seal *Phoca vitulina*. The site is also of high ornithological importance with a high number of wintering waterfowl.

(Source: NPWS 2015)

3.2.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

Alluvial Forests* [91E0]

Atlantic Salmon (*Salmo salar*) [1106]

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]

Brook Lamprey (*Lampetra planeri*) [1096]

Common (Harbour) Seal (*Phoca vitulina*) [1365]

Estuaries [1130]

Floating River Vegetation [3260]

Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]

Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

Old Oak Woodlands [91A0]

Otter (*Lutra lutra*) [1355]

River Lamprey (*Lampetra fluviatilis*) [1099]

Sea Lamprey (*Petromyzon marinus*) [1095]

Tidal Mudflats and Sandflats [1140]

Twaite Shad (*Alosa fallax*) [1103]

3.2.2 Site Vulnerability

The threats, pressures and activities that impact the Slaney River Valley SAC (NPWS 2017b) are listed in Table 3-3.

Table 3-3: Threats and pressures posed to Slaney River Valley SAC (NPWS 2017b).

Threats and pressures	Rank Low (L) Moderate (M) High (H)	Source- inside (i) outside (o) both (b)
Leisure fishing (bait digging / collection)	M	i
Modifying structures of inland water courses	M	i
Water abstractions from surface waters	M	i
Removal of hedges and copses or scrub	M	i
Fishing harbours	L	i
Diffuse pollution to surface waters due to household sewage and waste waters	M	b
Forest and Plantation management & use	H	b
Erosion	M	i
Bridge, viaduct	M	i
Surface water abstractions for agriculture	M	i
Invasive non-native species	H	b
Storage of materials	L	i
Paths, tracks, cycling tracks (includes non-paved forest roads)	M	i
Predator control	M	i
Cultivation	H	b
Discharges	M	i
Diffuse pollution to surface waters due to agricultural and forestry activities	H	b
Pollution to surface waters (limnic, terrestrial, marine & brackish)	M	i
Siltation rate changes, dumping, depositing of dredged deposits	M	i
Pollution to surface waters by industrial plants	M	b
Dykes and flooding defence in inland water systems	M	i
Marine and Freshwater Aquaculture - Bottom culture (e.g. shellfish)	M	i
Sand and gravel extraction	M	i
Fertilisation	H	b
Irrigation	M	b

3.2.3 Other Designations

The Slaney Upper catchment has been designated as a *Margaritifera* sensitive area and is categorised as Catchments of other extant populations (DATA.GOV.IE 2017). The status of the freshwater pearl mussel as a qualifying Annex II species for the Slaney River Valley SAC is currently under review. The outcome of a review will determine whether a site-specific conservation objective is set for this species (NPWS 2011b).

3.3 Holdenstown Bog SAC (001757)

The site is a small raised bog surrounded by transition mire which has developed in a kettle hole. The bog is very wet and the surface has a hummock-hollow topography, where Heather *Calluna vulgaris* dominates the hummocks and a range of bog mosses *Sphagnum* spp. are found in the

hollows. The margins support wet scrub vegetation in which Alder and Rusty Willow *Salix cinerea* subsp. *oleifolia* are prevalent (NPWS 2013). An area of semi-improved grassland is included for practical boundary purposes and the surrounding area is agricultural land (NPWS 2017c).

Transition mires associated with raised bogs are very rare in the region and this is probably the most easterly example in the country (NPWS 2017c).

3.3.1 Qualifying Interests

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- Transition mires and quaking bogs [7140]

3.3.2 Site Vulnerability

The threats, pressures and activities that impact the Holdenstown Bog SAC (NPWS 2017c) are listed in Table 3-4.

Table 3-4: Threats and pressures posed to Holdenstown Bog SAC (NPWS 2017c).

Threats and pressures	Rank Low (L) Moderate (M) High (H)	Source- inside (i) outside (o) both (b)
Infilling of ditches, dykes, ponds, pools, marshes or pits	H	i
Human induced changes in hydraulic conditions	H	b
Forest planting on open ground	H	i
Grazing	M	i
Cultivation (includes increase of agricultural area)	H	o
Suspended electricity and phone lines	H	i

4 Other Relevant Plans and Projects

4.1 Cumulative effects

4.1.1 Kildare County Development Plan 2017-2023

The County Development Plan aims to meet the challenges facing the county with a sustainable development and focus the planning for future growth. The core strategy includes consolidation of existing settlements, new developments focused in key locations to integrate with public transport provision and promotion of economic development and renewable energy. It should also support rural economy and its role as a key resource for a range of services in the county. The quality of the landscape and provision of open space and recreational recourses is to be preserved (Kildare County Council 2017a).

The county has a positive growth trend with an increase of 13% between the years 2006 to 2011. In 2011 the county had a population of 210,312 (Kildare County Council 2017a). The census of 2016 showed a population of 222,504 which means a continuing increase in population growth (CSO 2019), however this population growth is slower than anticipated by the Regional Planning Guidelines (Kildare County Council 2017a). County Kildare has a target to increase the population by the end of this plan giving rise to the need of building 32,497 new residential units by 2023.

In the Castledermot Small Town Plan it is stated that the town did not have a significant residential development during the period of the last plan. However, in 2011 the population was 1,389 persons, which is an increase with 58% since 2006. The town has a housing target of 162 units during the period 2011-2023 (Kildare County Council 2017b).

Tourism contributes to the county's economy and is set out as important to develop and promote. There is a strong potential for eco-tourism, which includes natural attractions such as the River Barrow (Kildare County Council 2017a).

Wastewater treatment is carried out in several plants across the county. The two largest are located at Leixlip and Osbertown, and there are several small plants, one located in Castledermot. The Council will work in conjunction with Irish water to protect drainage infrastructure and invest in the network to support environmental protection and facilitate a sustainable growth (Kildare County Council 2017a). The sewage network in Castledermot was upgraded in 2005 and has sufficient capacity for the needs of the town during the full period of this plan (Kildare County Council 2017b).

An Appropriate Assessment has been carried out on the County Development Plan which conclude that the risk of impact on any qualifying interests (QIs) and conservation objectives of the Natura 2000 sites have been addressed by the inclusion of mitigation measures. The mitigation measures are put in place to avoid impact and mitigate impacts where they cannot be avoided. Considering the mitigation measures, the Plan will not have an significant adverse effect on the Natura 2000 sites (Kildare County Council 2017a).

Other Projects

As of January 2016, the projects listed below, which are not retention applications, home extensions and/or internal alterations, has been granted permission in the vicinity of the proposed development.

Planning Application Reference 18518

Development address Narraghbeg and Roscolvin, Castledermot, Co. Kildare

Description: (A) Retention of existing machinery workshop as constructed on site. (B) Retention of existing agricultural straw bedded shed as constructed on site. (C) Change of use of existing agricultural straw bedded shed to a proposed milking parlour, dairy and ancillary rooms, handling facilities, calving pen and cow waiting yard. (D) Change of use of existing calving shed to an agricultural cubicle shed. (E) Permission for the construction of an extension to existing calving shed which will include cubicles and an underground slatted slurry tank. (F) Permission for the construction of an unroofed cow waiting yard and underground slatted soiled water tank. (G) Permission for the erection of a meal bin (H) Permission for the construction of 2 no. Silage pits and all associated site works

Final Decision on Application Grant with conditions

Decision Date 25/07/2018

Distance from proposed project 3 km

Planning Application Reference 18400

Development address Plunketstown Lower, Castledermot, Co. Kildare

Description: erect a farm building to include a milking facility, calving area, slatted underground effluent storage tank, meal storage bin and all associated site works.

Final Decision on Application Grant with conditions

Decision Date 23/05/2018

Distance from proposed project 900 m

Planning Application Reference 171387, 171388

Development address Mullaghreelan, Castledermot, Co. Kildare.

Description: construction of a single storey dwelling, single storey garage, bored well, new domestic entrance off existing laneway, new wastewater treatment system, percolation area and all associated site works.

Final Decision on Application Grant with conditions

Decision Date 19/04/2018

Distance from proposed project 6 km

Planning Application Reference 171218

Development address The Shamrock Bar, Main Street, Castledermot, Co. Kildare

Description: (a) Re-establishment of use and making good of public house and restaurant use of existing two-storey Shamrock Bar (previously burnt out) a protected structure Ref. No. B40-20; now a partially roofed shell and construction of new and refurbished buildings around an internal patio courtyard; (b) Installation of a mezzanine floor into the existing two storey shell and reinstatement of elevational treatment to Main Street; (c) Demolition of the existing single storey bathroom extension to northern rear end; (d) Construction of new two-storey range linked to adjoining gable to north containing bathrooms and administration offices with gated enclosed public entrance courtyard accessed off Main Street; (e) Demolition of the remains of existing two storey rear return adjoining National Wholesalers; (f) Construction of replacement double height return to include adjoining new conservatory, kitchen and service areas and glazed link to rear; (g) Demolition of existing Dutch barn corrugated shed; (h) Construction of two-storey staff accommodation over bottle store and service entrance accessed off new rear car-parking area; (i) Change of use and elevational modification and extension of the existing detached rear stone outbuilding for use as staff accommodation 2 No. bedrooms; (j) Provision of a surface carpark shared with National Electrical Wholesalers to the rear of the development with associated site works and boundary fence.

Final Decision on Application Grant with conditions

Decision Date 08/06/2018

Distance from proposed project 2 km

Planning Application Reference 17813

Development address Grangeford, Castledermot, Co. Kildare

Description: Permission and retention permission for development at existing premises, the proposed scheme seeks the retention of storage tanks / containers/ plant, office / packing / lab / airlock and bucket store buildings, hardcore yards / access road, concrete yards, landscaping works, concrete wall / palisade fencing, light stands, installation of a waste water treatment system and change of use from agriculture to storage area for food manufacturing and access road. Permission is sought for an extension to the existing processing building to comprise of prefill, packing, airlock, office and raw materials storage buildings, an extension to the existing office / packing building to provide additional packing space, an extension to the existing processing shed to provide a storage shed, a finished product storage building and a barrel / IBC storage building; concrete yards, gantry walkways, 5 No. car parking spaces, associated landscaping works including palisade fencing and crash barrier and all site development works above and below ground. It is also proposed to provide for a separate vehicular entrance to Bolton Biofuels Ltd. and install a wetland area to the south of the site to treat surface water runoff. The application site is c. 2.2 hectares.

Final Decision on Application Grant with conditions

Decision Date 04/05/2018

Distance from proposed project 4 km

Planning Application Reference 16482

Development address Horans Service Station, Main Street, Castledermot, Co. Kildare

Description: The demolition of an existing metal clad shed to the rear of the existing service station shop building and construction of a new single storey shop extension to include an increase of the retail area a from 100 sqm to 271 sqm, a food preparation area of 50.00 sqm, seating area of 30.00 sqm and an administration area of 142.00 sqm located within the existing building roof space. The development will include the installation of an external passive grease trap, the installation of stormwater attenuation and associated site works

Final Decision on Application Grant with conditions

Decision Date 04/07/2016

Distance from proposed project 1.8 km

4.1.2 River Basin Management Plan for Ireland 2018-2021

The River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The Graney and Lerr rivers are included amongst 190 prioritised areas for action where collaboration between the Government and the dairy industry aims to promote best agricultural practice in order to address existing environmental pressures (DoHPLG 2018a). The criteria for these prioritised areas for action is that they are identified as *At Risk* of not achieving their objectives or *Under Review* (DoHPLG 2018b). The River Graney has the WFD status Moderate and the River Lerr has the status Poor to Moderate. Both rivers are identified as being At Risk (EPA 2019).

4.1.3 Summary

The County Development Plan, RBMP and projects near the proposed project are considered in combination with the currently proposed project in the Screening Assessment section below.

5 Screening Assessment

5.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 sites identified in Section 3 above.

This section identifies the potential impacts which may arise as result of the proposed project. It then goes on to identify how these impacts could potentially impact on the Natura 2000 sites of River Barrow and River Nore SAC, Slaney River Valley SAC and Holdenstown Bog SAC. The significance of potential impacts is also assessed, with any potential in-combination effects also identified.

5.1.1 Assessment Criteria

Description of the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites

The potential impacts that could cause a significant effect on the QIs of the River Barrow and River Nore SAC during the construction of the project are via surface water pathways, groundwater pathways and land and air pathways. Surface water pathways can impact on surface water quality and habitat quality inside and along River Barrow. Groundwater pathways can impact on groundwater quality and quality of groundwater dependent habitats. Land and air pathways can impact by release or discharges of sediment or chemicals to surface or groundwater.

The proposed project could also cause a significant effect on the QIs of Slaney River Valley SAC via land and air pathways as airborne particles could travel far and impact on water quality in this Natura 2000 site.

The proposed project is not anticipated to impact on the QIs of Holdenstown Bog SAC due to the absence of pathways between any potential source of impact and receiving environment. The rationale for excluding impacts via the main pathways is given in more detail in the following section.

Surface water

The proposed site is connected to River Graney via a small stream running along the western boundary of the site. River Graney feeds into River Lerr, which is within the River Barrow and River Nore SAC.

During the operating period, waste soil and stones will be used to backfill the worked-out quarry, which could impact on surface water as a result of surface water runoff from heavy rainfall. The Settlement lagoons will collect surface water runoff, however, these are connected to Graney River via a concrete pipe. An increased water load could result in an increased sediment load to the watercourses of the SAC. This, along with the possible entry of pollutants from unintentional spill such as hydrocarbons, has the potential to impair the water quality of the River Lerr and River Barrow, which may cause effects such as eutrophication, increased algal and macrophyte growth, increased turbidity and increased sedimentation of the river substrate. This may in turn adversely impact potential floating river vegetation further down the river, as well as macroinvertebrate communities. It could also have an impact on the water and substrate quality requirements of Salmon, Lamprey and White-clawed Crayfish. The impacts to the River Lerr and River Barrow via surface water pathways could also impact the food supply available to Otter.

QIs of River Barrow and River Nore SAC which are sensitive to surface water quality and may be impacted are listed below:

- Floating River Vegetation [3260]
- Petrifying Springs* [7220]
- Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]
- Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]
- White-clawed Crayfish (*Austropotamobius pallipes*) [1092]
- Sea Lamprey (*Petromyzon marinus*) [1095]
- Brook Lamprey (*Lampetra planeri*) [1096]
- River Lamprey (*Lampetra fluviatilis*) [1099]

- Twaité Shad (*Alosa fallax*) [1103]
- Atlantic Salmon (*Salmo salar*) [1106]
- Otter (*Lutra lutra*) [1355]

The proposed site has no surface water connectivity to the Slaney River Valley SAC or Holdenstown Bog SAC, as those Natura 2000 sites are located in separate catchments. Therefore, the proposed project is not anticipated to have an impact on the QIs of the Slaney River Valley SAC or Holdenstown Bog SAC via surface water pathways.

Groundwater

The River Barrow and River Nore SAC is partly located within the same groundwater body as the proposed site, giving potential for diffusion of substances within the groundwater. The aquifer vulnerability in the area is high (Figure 5-1). Given the distance to the Natura 2000 site, approximately 2 km, the nature of the proposed works on the site where excavations are ca 12 m in depth at the lowest point and the potential for water from the settlement ponds to percolate through the ground to the groundwater, there are potential impacts via groundwater pathways.

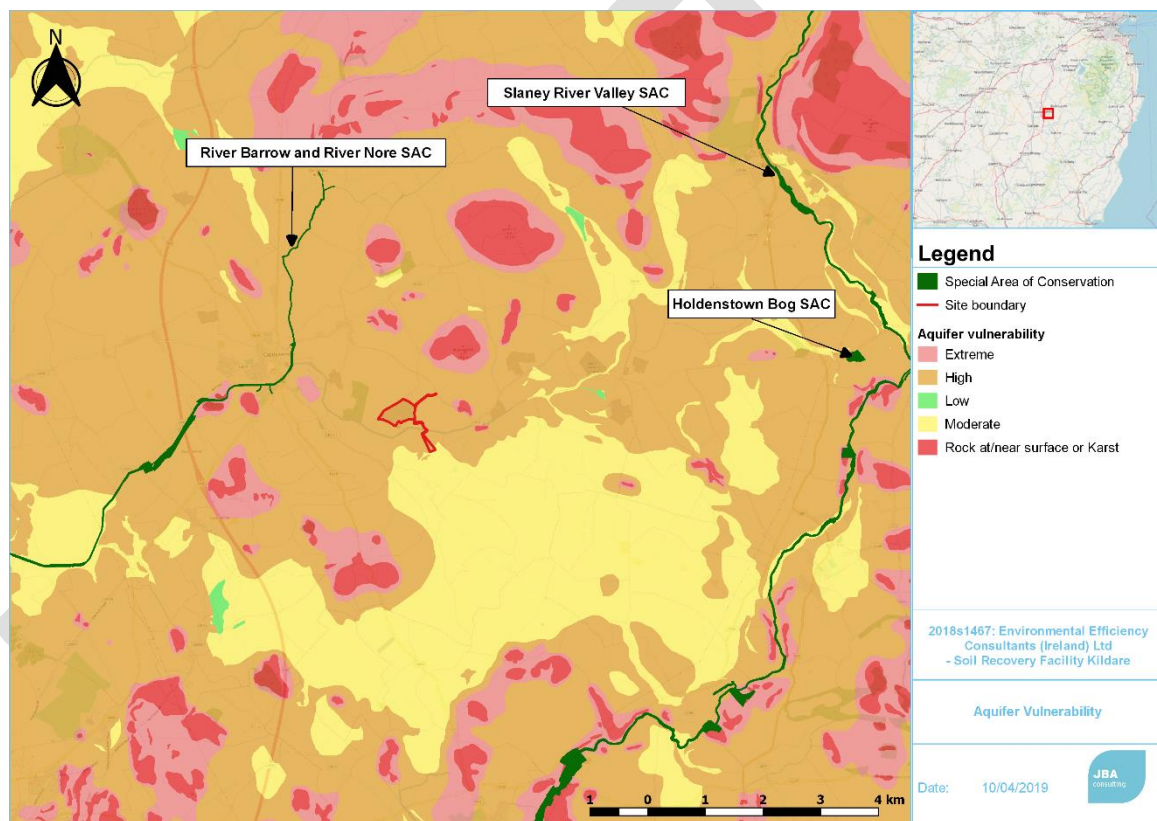


Figure 5-1: Aquifer vulnerability (source: EPA 2018b)

The proposed site is not located within the same groundwater body as Slaney River Valley SAC or Holdenstown Bog SAC, thus limiting the potential for any diffusion of substances within the groundwater. The two Natura 2000 sites are within a separate bedrock aquifer from the site and the aquifer vulnerability is high, with parts of Slaney River Valley SAC within areas of moderate and extreme aquifer vulnerability. Given the distance of the site from the Slaney River Valley SAC (7 km) and Holdenstown Bog SAC (7.8 km) and the separate groundwater bodies, negative impacts via groundwater pathways are not anticipated.

Land and air

River Barrow and River Nore SAC

The proposed site is located approximately 2 km from River Barrow and River Nore SAC. This SAC is designated for several water dependent habitats and species, which are stated in Section 3.1.1.

The main pressures and threats to these habitats and species are from pollution, fertilization and hydrological changes (Section 3.1.2).

Land

Loss of supporting habitat outside the River Barrow and River Nore SAC could have an impact on some of the QIs of the SAC, such as Desmoulin's Whorl Snail, White-clawed Crayfish and Otter.

The proposed new road for traffic attending the site will cross Graney River, thus could impact on Otters by causing a barrier across the river. This could lead to fragmentation of the Otters habitat along the river and casualties if Otters try to cross the road.

Impacts on Desmoulin's Whorl Snail and White-clawed Crayfish are not anticipated as the site is a worked-out quarry thus not supporting habitats for these species and is not directly adjacent to the SAC.

Air

Dust: Dust release and vehicle emissions can sometimes travel up to 10km and could potentially affect the Annex 1 habitats Floating River Vegetation [3260], Dry Heath [4030], Hydrophilous Tall Herb Communities [6430], Petrifying Springs [7220], Old Oak Woodlands [91A0] and Alluvial Forests [91E0], even if they are not located within close distance to the proposed project. Typically dust emissions are divided into settleable dust, respirable dust and PM10's and PM2.5 (10 um and 2.5 um respectively). Settleable dust will, depending on its size and weather conditions, settle out close to the source. The respirable fraction can travel a little further but typically settles out close to production. The lighter smaller PM10 and PM 2.5 fraction can travel even further. The distance and direction of travel is dependent upon wind speed and direction. The prevailing wind at the proposed site of the development is south south-east and west north-west (based on observations from Carlow taken between 2010-2018 (Windfinder.com 2018)). As River Barrow and River Nore SAC is located north-west, west and south-west of the site, this means that on average winds will blow in the direction of the SAC from the site.

With regards to PM10 monitoring carried out by the EPA at the nearest air monitoring station to the proposed site (Carlow town, 12 km south of Castledermot), the mean daily value during the measuring period (244 days) was 16.6 ug/m³, which is below the annual average for the protection of human health of 40ug/m³ (EPA 2005). However, the EPA air monitoring found that Carlow is above the upper assessment threshold for PM10 (which is 30 ug/m³), as it was exceeded on 13 occasions. Any dust arising from the project could potentially increase the daily average and could contribute to exceeding the upper assessment threshold.

Traffic attending the site during the operating period will access via road L4015 or L8100 and result in an increase in local traffic, therefore vehicular emissions has the potential to impact on the ambient air quality of the SAC.

The EPA air quality monitoring programme in Carlow (2005) found that the mean daily NOx concentrations (27.4 ug/m³) exceed the upper assessment threshold concentration for the protection of natural vegetation and natural ecosystems (24 ug/m³), though the applicability of this standard to urban air quality monitoring is uncertain. Given the construction period of 10-25 years, NOx emissions from vehicular construction traffic can have a significant impact on ambient air quality in the SAC.

Slaney River Valley SAC

Slaney River Valley SAC is located approximately 7 km from the proposed site. This Natura 2000 site is designated for several water dependent habitats and species, which are stated in Section 3.2.1. The main pressures and threats to these habitats and species are from pollution and fertilization (Section 3.2.2).

Land

Loss of supporting habitat outside the Slaney River Valley SAC could have an impact on some of the QIs of the SAC, such as Otter, Salmon, Twaite Shad, and Sea-, Brook- and River Lamprey. However, given that the site is a worked-out quarry and the distance to the SAC, impacts via land pathway to the Slaney River Valley SAC are not anticipated.

Air

Considering that Slaney River Valley SAC is located to the north-east, east and south-east of the proposed site and the prevailing wind at the proposed site is south south-east and west north-west

(Windfinder.com 2018), on average winds will blow in the direction of the SAC from the site. Dust from works and vehicular emissions from construction traffic can potentially have a significant impact on the ambient air quality of the SAC and affect the Annex 1 habitats Floating River Vegetation [3260] and Alluvial Forests [91E0].

Holdenstown Bog SAC

Holdenstown Bog SAC is located approximately 7.8 km from the proposed site. This Natura 2000 site is designated for Transition mires and quaking bogs [7140] and the main pressures to this Annex 1 habitat are changes in hydrological conditions and land use such as forestry and agriculture. Given the distance to the SAC and the prevailing wind directions at the location of the proposed site, impacts via land and air pathways on Holdenstown Bog SAC from the proposed works are not anticipated.

Cumulative Impact

Of the other plans, projects and developments listed in Section 4.1, there are several other granted developments located close to River Lerr. The impact of surface water drainage from the proposed project, in combination with these developments could have a cumulative impact on the **River Barrow and River Nore SAC**.

Summary

Due to the site location, and the nature and scale of the proposed project, impacts via surface water, groundwater and land and air pathways to **the River Barrow and River Nore SAC** are anticipated, both alone and in combination with other projects.

Impacts via land and air pathways to **Slaney River Valley SAC** are anticipated from the proposed project.

Holdenstown Bog SAC is not anticipated to be significantly impacted from the proposed project via any of the pathways.

5.1.2 Description of likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 sites

Project Elements	Comment
Size and scale	<p>The site is 20.2 hectares in size and the area to be backfilled is 11.9 hectares in size Area needs to be confirmed and updated. The construction activity will be the filling of the worked out quarry with waste soil and stone involving the use of subsoil and overburden sourced from construction sites, to backfill and restore existing voids onsite created by past extraction of materials.</p> <p>In addition to the principal waste activity described above, it is proposed to carry out the following secondary waste recovery activities:</p> <ul style="list-style-type: none"> • Intake of top-soil, screening at proposed screening plant and resale of such material; • Intake of gravel and sands, washing at existing washing plant and resale of such materials; • Intake of concrete, concrete crushing using concrete crushing equipment, mixing with sand and gravel before being fed to the washing plant to form aggregate, and resale of such material, and; • Intake of garden waste, shredding and composting of this waste within a silage pit over an underground effluent storage tank, for use for agricultural land spreading. <p>Waste to be processed on site will be in the following quantities:</p> <ul style="list-style-type: none"> • 100,000 tonnes per annum of sand and gravel for processing at the sand and gravel plant;

	<ul style="list-style-type: none"> • 100,000 tonnes per annum of concrete for processing at the concrete crushing plant; • 4000 tonnes per annum of topsoil for screening at soil screening plant, and; • 3000 tonnes per annum of Garden Waste for shredding and composting.
Land-take	There will be no land take from River Barrow and River Nore SAC, Slaney River Valley SAC or Holdenstown Bog SAC.
Distance from Natura 2000 site or key features of the site	<p>The Natura 2000 site of closest proximity to the proposed site is at a distance of approximately 2 km - River Barrow and River Nore SAC.</p> <p>Other Natura 2000 sites within the zone of interest are at a distance of approximately 7 km - Slaney River Valley SAC, and 7.8 km - Holdenstown Bog SAC.</p>
Resource requirements (water abstraction etc.)	Groundwater is abstracted for use in the gravel washing process. There is no surface water abstraction.
Emissions (disposal to land, water or air)	<p>Temporary impacts:</p> <p><i>Water:</i></p> <p>Waste material from construction and demolition sites will be used to backfill the quarry. These could potentially leak pollutants into the groundwater. After heavy rain these could end up in the surface water drainage system and thereafter into the protected watercourses of the River Barrow and River Nore SAC.</p> <p><i>Air:</i></p> <p>The backfilling material will have to be crushed which will produce loose fine particles, possible to be transported via air to the Natura 2000 sites River Barrow and River Nore SAC and Slaney River SAC. After heavy rain this could enter the surface water drainage systems and increase the sediment load into the protected watercourses of the River Barrow and River Nore SAC.</p> <p>Permanent impacts:</p> <p>No permanent impacts are anticipated.</p>
Excavation requirements	The existing excavation depth of the site is ca 12 m at the lowest point.
Transportation requirements	<p>Temporary impacts:</p> <p>Levels of traffic to the site during the construction phase will increase traffic to the area. Traffic to and from the proposed project will be on a new developed road south east of the site. Given the distance to the Natura 2000 site and the size and scale of the proposed project, transportation requirements are anticipated to affect River Barrow and River Nore SAC.</p> <p>Permanent impacts:</p> <p>During the operational phase, traffic going to and from the site will be less than during construction phase and when the quarry was in operation. The traffic will not affect the Natura 2000 sites.</p>
Duration of construction, operation, decommissioning etc.	<p>The duration of the construction phase is proposed to be 10-25 years.</p> <p>The operational phase is permanent and no decommissioning is expected.</p>
Other	None

5.1.3 Description of likely changes to the Natura 2000 Sites

Potential Impact	Comment
Reduction of habitat area	There will be no reduction in habitat area.
Disturbance to key species	<p>Temporary Impacts: The works will temporarily increase the noise level and disturbance locally. Otters, which is a QI of the River Barrow and River Nore SAC, are present along River Graney and can potentially be impacted by the traffic crossing the river when attending the site.</p> <p>Permanent impacts: No disturbance to key species is anticipated during operation of the site.</p>
Habitat or species fragmentation	During the construction of the project there is a risk of supporting habitats for the Otter to be fragmented as the traffic of the proposed project will be crossing River Graney. Otter is a QI of River Barrow and River Nore SAC .
Reduction in species density	There is potential for reduction in density of surface water dependant species.
Changes in key indicators of conservation value (water quality etc.)	<p>Temporary Impacts on Water Quality: Given the close location to the Natura 2000 site and the connection through surface water, the construction works could impact on water quality of the River Barrow and River Nore SAC.</p> <p>Permanent Impacts on Water Quality: The operational phase of the project is not anticipated to impact on water quality.</p>
Climate change	N/A

5.1.4 Description of likely impacts on the Natura 2000 sites as a whole

Impact	Comments
Interference with the key relationships that define the structure of the site	The proposed project could interfere with key relationships that define the ecological structure of River Barrow and River Nore SAC and Slaney River Valley SAC that enables the sites to sustain habitats, complex of habitats and/or levels of populations of species.
Interference with key relationships that define the function of the site	The proposed project could interfere with key relationships, between water quality, habitats and supported species, that define the function of the River Barrow and River Nore SAC and Slaney River Valley .

5.1.5 Provide indicators of significance as a result of the identification of effects set out above in terms of:

Impact	Indicators
Loss (Estimated percentage of lost area of habitat)	No loss of habitat area is anticipated.
Fragmentation	Uncertain. During construction phase, there is a risk of supporting habitat for the Otter, which is a QI of River Barrow and River Nore SAC, to be fragmented by the access road crossing the River Graney. The fragmentation is anticipated for the whole duration of the construction.

Impact	Indicators
Disruption & disturbance	Uncertain. During construction phase, there is the potential for disturbance of Otters, which is a QI of River Barrow and River Nore SAC, when traffic is crossing River Graney.
Change to key elements of the site (e.g. water quality etc.)	Uncertain. There is potential for polluting incidents which could impact on water quality, with pollutants potentially impacting on habitats and species of QI during the operating phase.

5.1.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

Following initial screening, and based upon best scientific judgement it is concluded that there could be significant impacts on the following Natura 2000 site:

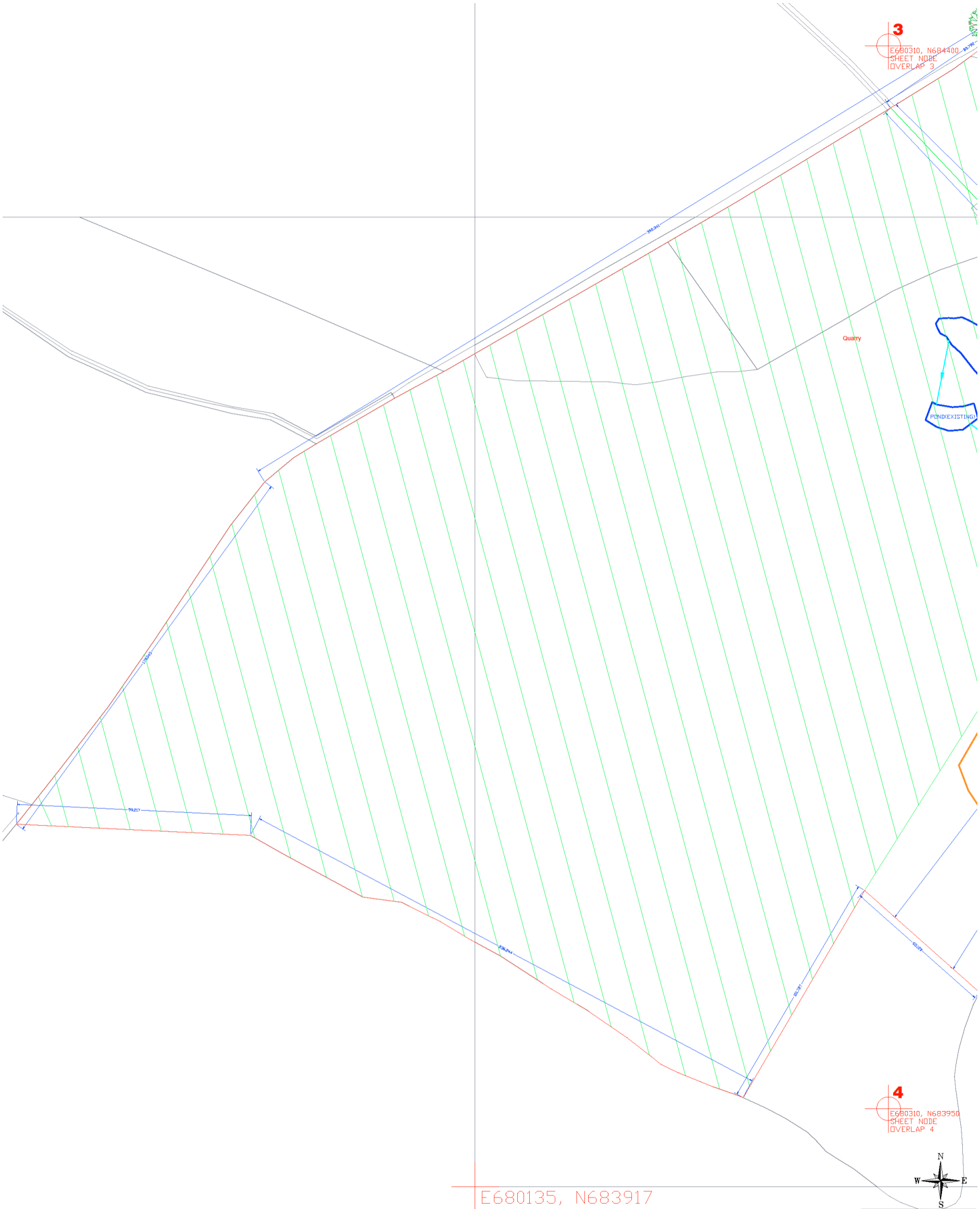
- River Barrow and River Nore SAC (002162)
- Slaney River Valley SAC (000781)

It will therefore be necessary to carry out Stage 2 of Appropriate Assessment to determine whether the impacts would have a detrimental effect on site integrity, and if so whether the impacts can be avoided or reduced sufficiently to prevent any impacts. The Stage 2 assessment will focus on the following impacts:

- Potential release of pollutants from waste material into the water through surface water drainage and groundwater which could affect some of the designated features of River Barrow and River Nore SAC
- Potential increase of sedimentation load into the water through surface water drainage could affect some of the designated features of River Barrow and River Nore SAC
- Potential dust release spread by wind and air could affect some of the designated features of River Barrow and River Nore SAC and Slaney River Valley SAC

All other pathways for impacts are screened out and do not need to be considered in the Stage 2 AA.

If any changes occur in the design of these works, a new Screening for Appropriate Assessment is required.



SITE TRAFFIC MANAGEMENT PLAN (CIRCULATION ROUTES)	
[Pink Line]	CIRCULATION ROUTES (GOODS IN)
[Blue Line]	CIRCULATION ROUTES (GOODS PROCESSED)
[Green Line]	CIRCULATION ROUTES (GOODS OUT)
[Orange Line]	CIRCULATION ROUTES (PERSONNEL OUT)

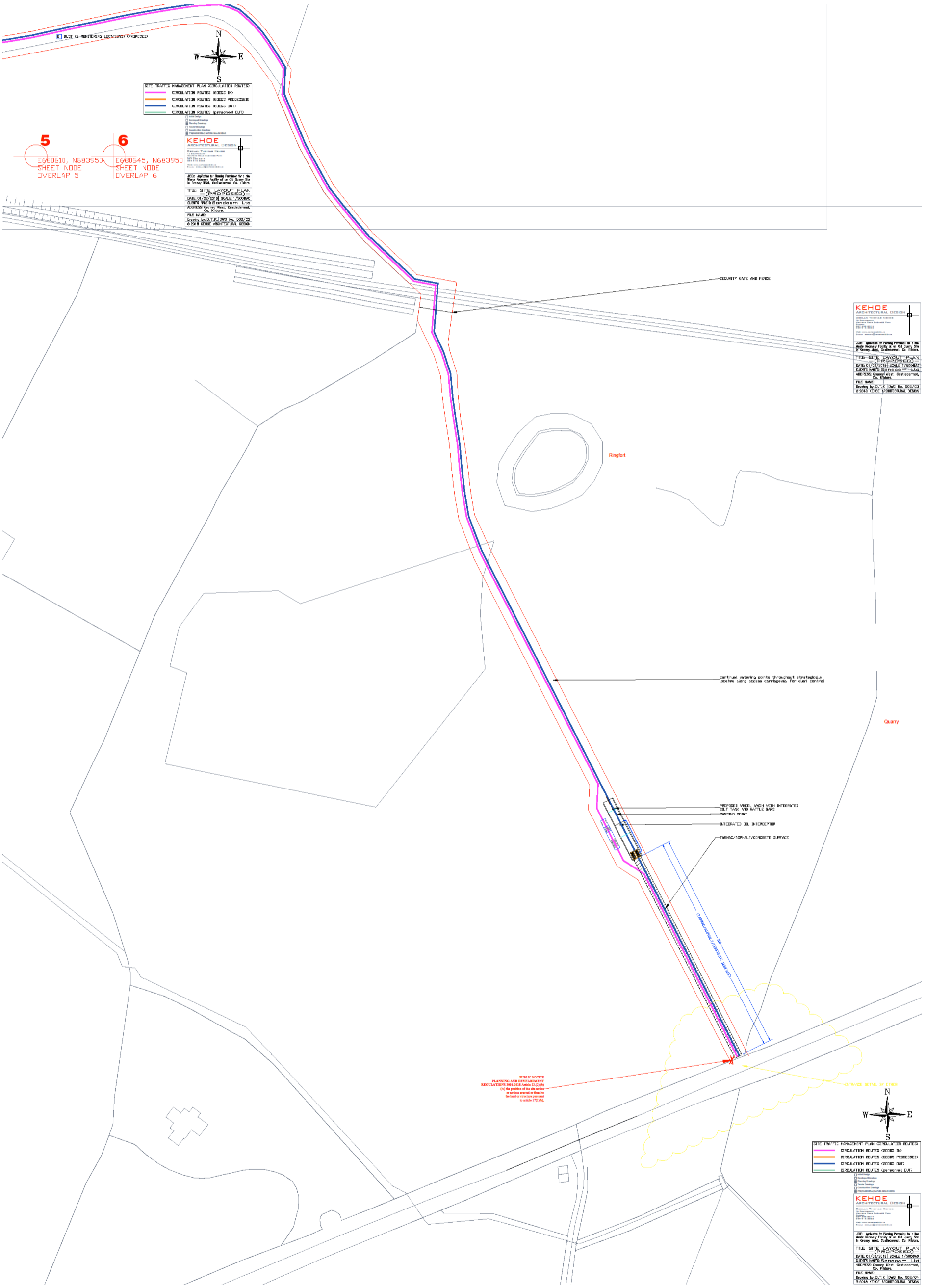
KEHDE
ARCHITECTURAL DESIGN

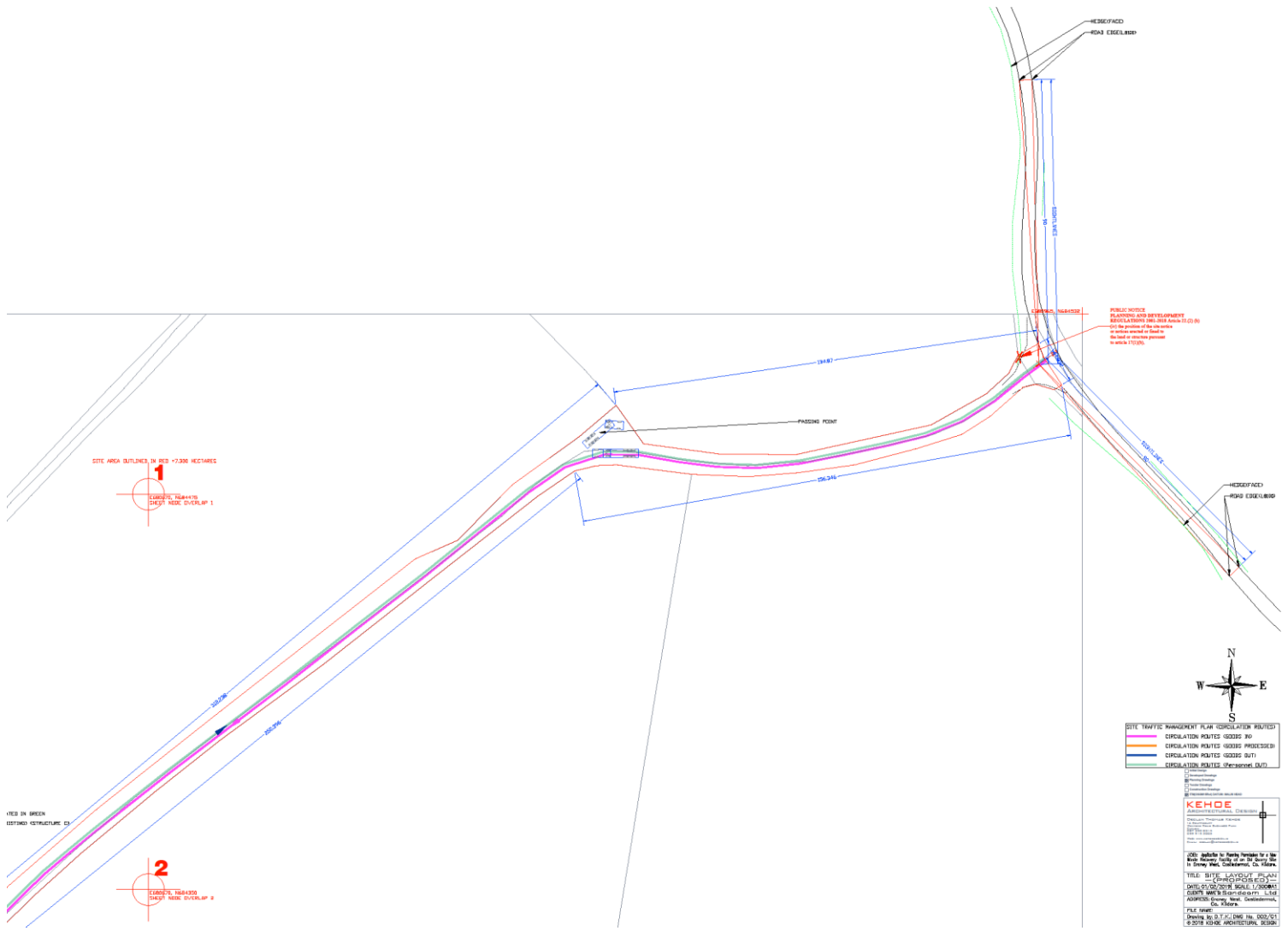
Architectural Design
2018
2021

2021 Application for Planning Permission for a new Waste Recovery Facility at an old Quarry Site in Grange Walk, Castleknock, Co. Dublin

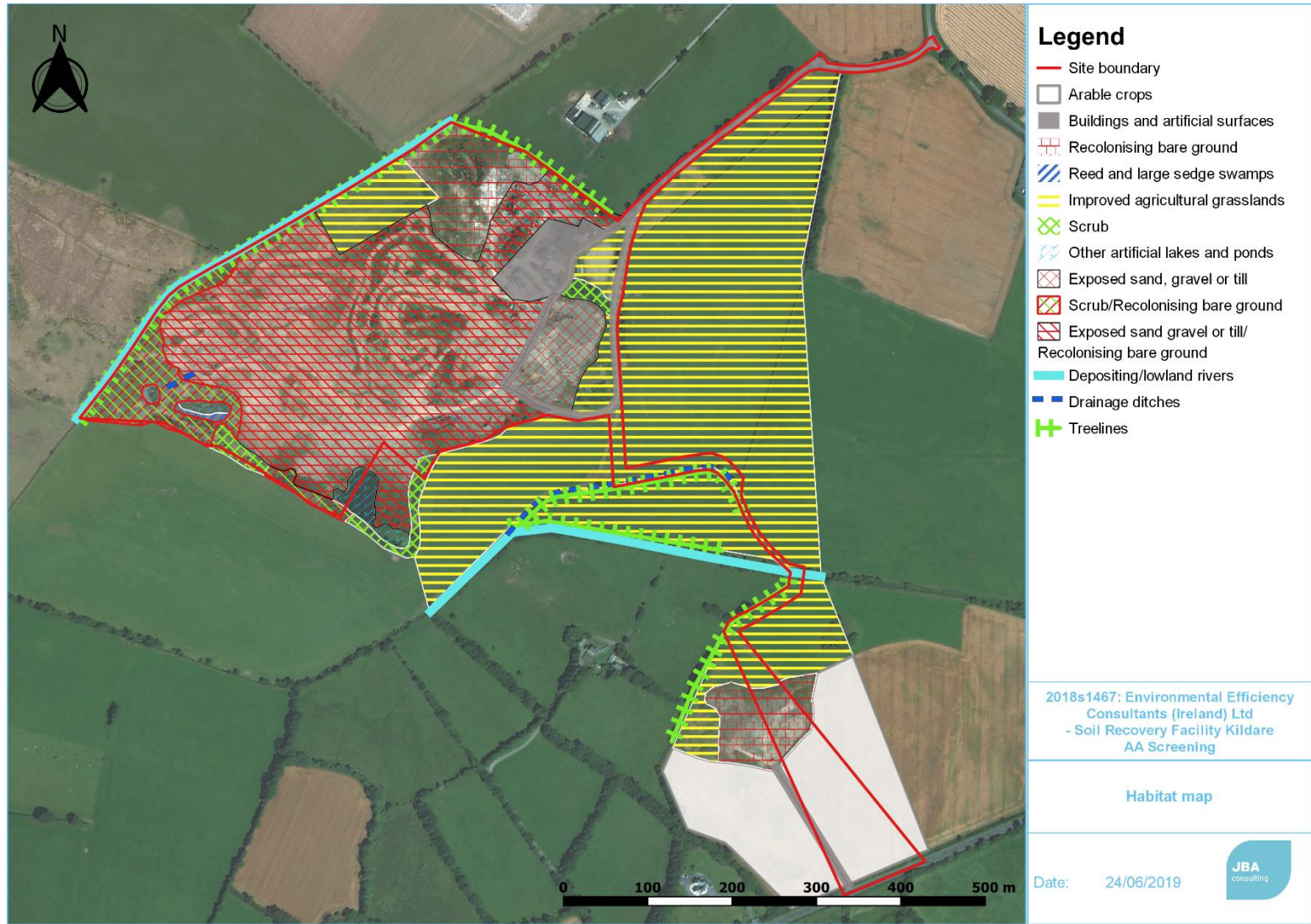
TITLE: SITE LAYOUT PLAN
DATE: 07/10/2018 SCALE: 1:2500MS
CLIENT: WASTE RECOVERY (IRELAND) LTD
ADDRESS: GRANGE WALK, CASTLEKNOCK, CO. DUBLIN

FILE NAME:
Drawing No. D.T.K. DWG No. 002/03
© 2018 KEHDE ARCHITECTURAL DESIGN





A.2 Habitat Map



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