Spink Quarry, Knockbaun, Abbeyleix, Co. Laois

Spink Quarry

Environmental Impact Assessment Report

Section 13

Material Assets

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13.1 INTRODUCTION

This section of the EIAR provides an overview of the material and amenity resources within the vicinity of the proposed development, coupled with an assessment of the potential impact, if any, of the development on the existing environment in respect of these assets.

The assessment of economic assets tends to be concerned with ensuring their equitable and sustainable use, whereas the assessment of cultural assets tend to be concerned with securing their integrity and continuity, and their necessary context. Key issues of residential development, amenity, land use, roads and utility services are addressed. Natural resources of economic value (Refer to Table 13.1 below) which are also considered as material assets, are dealt with where necessary in their respective EIAR sections (EPA 2015).

Material Assets is considered to include architectural and archaeological heritage and cultural heritage. For the purpose of this EIAR an assessment of the potential impact, if any of the development on the existing environment with respect to these assets is considered in EIAR Section 4.9 Section - Cultural Heritage.

Material assets may be defined as resources that are valued and that are intrinsic to specific places, and may be either human or natural origin, and the value may arise from either economic or cultural reasons (EPA 2015). The developments utilisation of, or proximity to, the area's material assets, can directly and indirectly result in potential environmental impacts. Therefore, the objective of this assessment is to identify the material assets of the area, determine the potential impacts of the proposed continuance or recommencement of quarrying operations on these assets, and propose mitigation measures where necessary to ensure that they are addressed in an appropriate manner. This section also indicates the associated sections within the EIAR that consider these impacts and any proposed mitigation measures.

13.2 REGULATORY BACKGROUND

13.2.1 INTRODUCTION

There are no policies, plans, acts, regulations or technical standards that are specific to this chapter.

13.2.2 GUIDANCE

There is no specific guidance on Material Assets other than, in respect of the preparation of EIARs, the EPA's Draft Advice Notes for Preparing an Environmental Impact Statement (EPA 2015).

13.3 METHODOLOGY

The assessment of material assets has been prepared in accordance with the Advice Notes for Preparing Environmental Impact Statements, Draft, published by the EPA (EPA 2015). Table 13.1 outlines the categories of assets, which the EPA suggests may need to be examined as part of the material assets study.

On the basis of categories in Table 13.1 and the nature of the proposed development, the material assets that could potentially be impacted by the quarry, and which have been identified for assessment are: (1) non-renewable resources (minerals, soils); (2) settlement - residential development; (3) land use; (4) transport infrastructure; (5) built services; (6) waste management infrastructure (7) cultural assets - archaeological, historic and architectural heritage; and (8) landscape and natural heritage. Most of these assets have been considered elsewhere within other sections of the EIAR, as indicated below:

- Settlement, Commercial & Industrial Development, Property, Tourism & Recreational Infrastructure and land use are discussed in Section 4 – Population & Human Health;
- Natural Heritage is discussed in Section 5 – Biodiversity;
- Non-renewable resources (minerals, soils) & Agronomy (Soil Management) are discussed in Section 6 – Land, Soils and Geology;
- Landscape is discussed in Section 11 – Landscape;
- Cultural assets are discussed in Section 12 - Cultural Heritage; and
- Roads, as a component of Transport Infrastructure, are discussed in Section 14 – Roads & Traffic.

Table 13.1 EPA's Classification of Types of Material Assets

Asset Type	Asset
Economic Assets - Natural Origin	- Assimilative capacity (air, water) - Non-renewable resources (minerals, soils) - Renewable resources
Economic Assets - Human Origin	- Cities, towns, villages and settlements - Transport infrastructure (roads) - Major utilities (water, sewage, power, telecommunications) - Ownership and access - Agronomy - Commercial & Industrial Development - Property - Tourism & Recreational Infrastructure
Cultural Assets – Physical Type	- Archaeology - Architecture - Settlements - Monuments, features and landmarks - Historic sites and structures - Landscape - Geological heritage
Cultural Assets – Social Type	- Language and dialects - Folklore and tradition - Religion and belief - Literary and artistic association

13.3.1 DESK STUDY

The study involved a virtual, but comprehensive, aerial examination of the study area and surrounding region using Google Maps and available OSI maps to identify the material assets. All assets identified during this survey were interrogated, described, and evaluated in terms of scale and significance prior to inclusion in the study.

The impact assessment, which determined the potential impacts of the proposed development on nearby material assets, was based on standard criteria issued by the EPA (2017) (Refer Appendix 3, Section 3.2.1).

13.3.1.1 Sources of Information

The main sources of information are listed in section 13.7 References.

13.4 BASELINE DESCRIPTION OF RECEIVING ENVIRONMENT

13.4.1 NON-RENEWABLE RESOURCES

The Laois County Development Plan 2017-2023 (Laois County Council 2017), specifically Section 5.10, recognises that the aggregate and concrete products industry contribute to the development of the national, regional, and local economies by the proper use and management of natural resources for the benefit of the community and the creation of employment opportunities. These products are required as essential building materials in the social and economic development process including the provision of housing and infrastructure.

The nature of the extractive industry is such that aggregate extraction can only take place where suitable aggregate resources occur—they are a 'tied' resource. This may give rise to land-use and environmental issues that must be considered in the planning process. Like many forms of development, extractive industries have the potential to cause harm to the environment, heritage, and the landscape if not appropriately designed and managed. Thus, it is necessary to ensure that aggregates can be sourced without significantly damaging the landscape, environment, groundwater and aquifer sources, road network, heritage and / or residential amenities of the area.

However, aggregates are a necessary resource and are of great importance to the economy and society, and Laois County Council will seek to safeguard these valuable resources for future extraction. Since aggregates can only be worked where they occur, it is important to identify the location of these resources with a view to safeguarding them. Planning policies need to be carefully constructed to avoid adverse effects on aggregate resources and the related extractive industries and added value production that are essential for the built environment, infrastructure, and future economic development.

In addition, well managed and designed quarry sites minimise environmental effects. There is also the potential for habitat creation through the restoration of quarry sites following the cessation of operations. The National Guidelines on Quarries and Ancillary Activities for Planning Authorities (DoEHLG 2004) is the guiding document against which applications for quarries and ancillary activities will be considered.

It is the policy of the Council in respect of the extractive industry "Investigate the feasibility of mapping the full extent of aggregate resources of the county during the lifetime of the County Development Plan 2017-2023 and seek to prevent the sterilisation and inappropriate development of aggregate and mineral resources in order to ensure a sustainable supply of these non-renewable resources."

There is a concentration of mineral resources in the Hills and Uplands of the southeast of the county. The hills and upland areas have a remote character and existing low-density development and are considered moderately sensitive in landscape terms. Elevated locations for quarries have the potential to significantly affect the local landscape by visual intrusion, especially when the development reaches primary ridgelines.

The policy of the Council is to "support in principle the expansion of the aggregates and concrete products industry which offers opportunity for employment and economic development generally subject to environmental, traffic and planning considerations and ensure that any plan or project associated with extractive industry is subject to Appropriate assessment screening in compliance with the Habitats Directive and subsequent assessment as required, applicants for planning permission shall have regard to the GSI-ICF Quarrying Guidelines".

Aggregate products are generally of low unit value, with the most significant cost being transportation. Therefore, most quarries typically operate within a radius of c. 25 km of their market. The proposed development has the benefit of good access to the regional and national road network to meet future demands for aggregates in the area. It will ensure the continued viability of the aggregate supply in County Laois, which is the second fastest growing county in Ireland in terms of population. Numerous towns and villages lie within the natural market of Spink Quarry (i.e., < 25 km), and include Abbeyleix (c. 9.5 km), Castlecomer (c. 10 km), Stradbally (c. 13.5 km), Portlaoise (c. 16 km), Athy (c. 17.5 km), Carlow Town (c. 19.5 km), Mountrath (c. 20.5 km), Mountmellick (c. 25 km) and Kilkenny City (c. 27 km), where the northern outskirts of Kilkenny City are within 25 km (Refer Figure 1.1). Thus, the quarry's market includes three county towns (Portlaoise, Carlow and Kilkenny), where Kilkenny was identified as a Hub in the National Spatial Strategy (NSS), while the remainder are identified as urban centres except for Mountmellick, which was identified as a small town (DoELG 2002).

Laois has significant, albeit finite, resources in terms of aggregates, a resource that had come under pressure due to increased demand prior to the collapse of the construction industry in 2008. The plan acknowledges that mineral and aggregate resources are generally located within the rural area, but that the extractive industry is an important sector of both the rural and wider economy.

The site at Knockbaun has an established history of quarrying using explosive techniques to break and extract the sandstone/siltstone rock followed by crushing and screening to produce aggregate products. These activities have co-existed with other land uses in the area, including agriculture and silviculture, intermittently since before the 1970s.

Spink quarry has provided employment for local people, both directly and indirectly. The proposed development at the quarry site will directly employ a work force of three persons including quarry manager and general operatives. In addition to these three employees, there will be up to an additional three contractors employed on site with respect to contract crushing, screening and haulage.

The geological bedrock exposures within the existing quarry were not considered of sufficient interest or importance to warrant designation or protection for earth science or geological heritage purposes.

There are no geological sites of interest or proposed Geological National Heritage sites near the site of the quarry at Knockbaun. The nearest site, Moyadd Stream (IGH-9: Upper Carboniferous and Permian) is listed by GSI (2020) and Laois County Council

(2017) as an area of Geological Interest or Heritage. It consists of a small river channel that has exposed bedrock in the bed and banks for approximately 1 km.

However, in response to a request for pre-application consultation (Refer to Appendix 4, the GSI requested that the operator might incorporate two commitments into the restoration/ closure plan, and these might also be made conditions of planning as appropriate by the planning authority. These are:

1. Allowing access to quarry faces by appropriate scientists (upon request and with due regards to Health and Safety requirements) during quarrying to record any new or significant stratigraphies / relationships as they might become exposed and to establish if the quarry site is worthy of geoheritage recognition post extraction and through aftercare/restoration planning.
2. If deemed appropriate in (1) above, leaving a representative section of the quarry face at the end of the quarry life or inclusion of information panels to promote the geology to the public or develop tourism or educational resources if appropriate depending on the future use of the site. Natural exposures are few, or deeply weathered; this measure would permit on-going improvement of geological knowledge of the subsurface.

Mineral extraction by quarrying is defined as a heavy industry and requires the use of heavy plant and machinery, each of which are energy intensive. The crushing, screening and transport of rock and aggregates are typical examples of the use of machinery in quarry operations. It is proposed to install one value-added process (i.e. concrete batching plant) on-site at Spink Quarry, which will be significantly less in terms of scale and energy requirements than the previous asphalt plant which has been removed from site. Most plant used in the quarry is likely to run on diesel, especially as the use of mobile crushing and screening plant is proposed.

Quarries in Ireland produced c. 0.18 million tonnes of CO_{2eq} emissions in 2019, accounting for 0.3% of the national CO_{2eq} emissions budget. If we assume 500 active quarries (estimate by the GSI 2021), then the average quarry (e.g., Spink Quarry) produces c. 360 tonnes CO_{2eq} emissions per annum.

13.4.2 SETTLEMENT

The site of the proposed development is located in rural southeast Laois on the northwestern flank of the Castlecomer Plateau. The quarry is located on the south side of, and with direct access onto, regional road R430, which connects the towns of Mountrath and Abbeyleix to the west with the village of Swan and Carlow to the southeast. The N77 National Secondary Road can be accessed at Abbeyleix, which is c. 9.5 km west of the site, while the N78 National Secondary Road can be accessed near Swan, c. 3 km to the southeast, thus connecting the site to the principal transport arteries in southeast County Laois.

The settlement pattern in the Knockbaun area can be described as low-intensity rural settlement, with some ribbon development and clusters of houses, albeit peripheral to the towns of Abbeyleix, Stradbally, Castlecomer and Carlow, and the settlements of Swan, Clogh-Chatsworth, Newtown, Moneenroe, Ballinakill, Ballyroan, Durrow,

Timahoe, Newtown, etc. Indeed, Clogh, Newtown and Moneenroe more closely resemble ribbon development than coherent settlements. The nearest residential settlements close to the site, include the nearby villages of Swan c. 3 km to the southeast, Clogh c. 4 km to the south, Newtown c. 7 km to the southeast, and Ballynakill c. 7.5 km to the west, while the nearest major urban centre is Abbeyleix c. 9.5 km to the west.

Residential property in the area typically comprises one-off single residences along public roads or farmsteads at the end of lanes off the latter (Refer to Figures 1.2 and 1.3). Each house fronts onto the road with its own separate entranceway, typical of ribbon development. While residential development consists of individual, one-off residences, there are distinct clusters of residences that do not qualify as villages, but might constitute hamlets, craigs or small settlements.

There are a number of residences within 1 km of the application site boundary, with 6 residences within 250 m, 9 residences within 500 m, and 36 residences within 1 km. The closest residential property is situated c. 175 m west of the northernmost corner of the application site and is one of a cluster of three residences at Larkin's Cross, where the R430 intersects rural roads L7792 and L77921. Two further residences are situated nearby along rural road L77921, while a sixth residence is situated on the L77922 c. 240 m directly across from the site entrance. Due to the intervening hill into which the quarry was driven, the residence situated c. 240 m opposite the site entranceway is the only residence within 250 m that has views of the quarry workings (i.e., No. 4 in EIAR Figure 4.1). There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, phasing and direction of working with respect to receptors so as to reduce visual impact, while impacts due to noise and dust are substantially attenuated.

With the exception of the R430 Regional Road and the N77 and N78 Secondary National Roads, the roads in the area (< 10 km) are of a local character and typical of a rural location.

Adequate fencing, signage and other barriers have been erected around the site for the safety of the general public and to prevent livestock straying into the development area. Large lockable gates are in place to guard against unauthorised and unsupervised entry to the site outside of working hours.

13.4.3 LAND USE

The landholding and application site are shown edged blue and red, respectively, in Figure 1.2. The site includes the entire landholding and covers an area of c. 19.6 ha, which is located on the southwest side of regional road R430. The site gateway provides access directly onto regional road R430, which connects Abbeyleix and Mountrath in the west and Swan and Carlow in the east.

Spink Quarry lies in the Nore River Catchment, but straddles two subcatchments—namely the Nore subcatchment to the west and the Dinin North subcatchment to the east. The Nore subcatchment contains the tributaries and mainstream of the Owenbeg River, which flows west and south to drain into the Nore River just north of Ballyragget.

Two tributaries of the Owenbeg River, the Knockbaun and Garrintaggart, rise south and north, respectively, of the quarry, and flow to the northwest to drain into the mainstream of the River Owenbeg c. 500 m from the site. The Dinin North subcatchment contains tributaries and the mainstream of the Clogh River. One of the tributaries of the Clogh River rises on-site close to the main entrance and flows to the southeast and subparallel to the R430 as a drainage ditch/stream, draining into the Clogh River, Dinin River and ultimately the Nore River just north of Kilkenny City. It is also proposed to potentially discharge water, with a maximum envisaged discharge of 1,454 m^3/d. Because the discharge water quality will be good, favourable habitats in the local surface water receptors of the groundwater will be maintained, whether that is the Clogh or Owenveg (Nore) Rivers.

The site is situated in a predominantly rural area of southeast County Laois. The surrounding landscape is characterised by a rolling landform typical of the hills and uplands of the Castlecomer Plateau. The lands occur on the northwestern flank of the Castlecomer Plateau, which is developed on more weather resistant, and hence topographically prominent, Upper Carboniferous siliciclastic sediments as opposed to the Lower Carboniferous limestones that underlie the central plain of County Laois, which lies to the west and north. Thus, the site lies within rolling, hilly land on the northwestern flank of the Castlecomer Plateau, but without any views of the central plain. The general topographical trend of the holding is the lower land to the east and south, with the higher ground of the NW-SE orientated hill/ridge occupying the northwestern section of the holding and forming the ridge line immediately to the west.

The quarry was reopened by L. Behan & Sons Ltd in 2003. The quarry was acquired by Lagan in 2014, which is now the full owner of the freehold interest in the lands.

The development will consist of the continued use and operation of the existing quarry including deepening of the quarry. Extraction will be confined to the existing permitted quarry area (P.A. Ref. 10/383) comprising an extraction area of c. 14.5 ha within an overall application area of c. 19.6 ha. The development will include provision of new site infrastructure, including portacabin site office, canteen, toilets, concrete batching plant and truck washdown facility, hydrocarbon interceptors, mobile crushing and screening plant, upgrading of the water management system, provision of holding tank for wastewater, and other ancillaries. The proposed development will utilise/upgrade the existing insitu quarry infrastructure, including site access, internal roads, storeroom, wheel wash, weighbridge, aggregate storage bays, refuelling hard stand, water settlement pond system, and other ancillaries (Refer to Figure 1.3).

The landholding occurs in a roughly rectangular shape with a NW-SE orientation. The site is serviced by an existing secured, industrial-style gateway with a tarmacadam apron and internal access road to the wheelwash and weighbridge, when recommissioned. The landholding has a c. 700 m of frontage onto regional road R430. The main entranceway occurs c. 200 m southeast of the intersection of local road L77922 with the R430 and is provided with a ghost island for traffic turning right into the quarry.

The 2018 Corine map (Refer to Figure 11.6) shows that the predominant land use within the application site was given as pasture, although by definition it is mineral

extraction related to the quarrying of sandstone/shale and associated activities. Prior to the commencement of quarrying, the lands had been kept in agriculture use, with a small quarry used intermittently. Ultimately, the site will be reclaimed in accordance with the approved quarry restoration scheme, and most probably undergo a change of land use to wildlife amenity.

Land-use in the wider area consists of a patchwork of agricultural fields, which are predominantly held in pasture, but with significant areas designated as: (a) coniferous forest; (b) land principally occupied by agriculture with significant areas of natural vegetation; and (3) transitional woodland shrub. There are relatively high levels of forest cover in the area, mostly due to mono-type afforestation comprising scattered, rectilinear patches of coniferous forest. There is also forest cover associated with river corridors and common mature, overgrown hedgerows, while there is a conspicuous absence of the planned landscapes or parkland of demesnes in the area. The dominant land use in the wider area of the quarry is largely agricultural land principally held in pasture, and is largely devoid of any history of quarrying, except for the Lagan Clay Products facility at Swan and several pits near Ballinakill.

Field dimensions vary from small to medium, while hedgerows vary from over-grown to less commonly well-managed. The predominance of smaller field sizes and mature hedgerows tends to create a less open rural landscape, with some enclosed road corridors with restricted views. The area is generally characterised by rolling topography, poorer drainage, vigorous hedges and many hedgerow trees. The land is mostly used for stock rearing with minor mixed tillage, with blocks of coniferous forestry and some deciduous and successional woodland associated with river corridors.

As stated above, the lands are bounded to the north by a public road, namely the R430 regional road, while it is bounded by agricultural land and afforestation on all other boundaries. A grassed earthen berm with mature deciduous tree planting fringes the northern boundary of the site along the R430, while the other boundaries are largely maintained with stock fencing and hedgerows.

Quarry workings have been a feature of this site since before the 1970s. On completion of site activities, the site of the quarry will be decommissioned and reinstated in accordance with the approved quarry restoration scheme, and thus integrated back into the surrounding landscape. It is envisaged that the land use will change to a beneficial after-use, most probably as a wildlife amenity.

13.4.4 TRANSPORT INFRASTRUCTURE

The site at Knockbaun is located c. 10.5 km west of Abbeyleix on regional road R430, which is known as the Abbeyleix-Carlow Road. The quarry is located on the southern side of, and with direct access onto, regional road R430, which connects the towns of Mountrath and Abbeyleix to the west with the village of Swan and Carlow to the southeast. The N77 National Secondary Road can be accessed at Abbeyleix, which is c. 9.5 km west of the site, while the N78 National Secondary Road can be accessed near Swan, c. 3. km to the southeast, thus connecting the site to the principal transport arteries in southeast County Laois.

The road network in the wider area can be summarised as two National Secondary Roads running with a roughly NNE-SSW orientation, the N77 west at Abbeyleix and the N78 east near Swan, while there are two Primary National Roads also running with a roughly NNE-SSW orientation, the M7/M8 west of Abbeyleix and the M9 east of Carlow. The R430 regional road has a WNW-ESE orientation and represents a transverse route across the northern half of the Castlecomer Plateau connecting the above four national routes. In contrast, the R426 runs roughly NNW-SSE connecting Castlecomer, Clogh, Swan, Timahoe and Portlaoise. Thus, the roads of the wider area form a crude box-like network of regional and national roads connecting all the urban centres. Most site traffic serving the quarry will be: (1) off the N78 near Swan from Athy, Castlecomer and possibly Kilkenny; (2) off the N77 at Abbeyleix from Portlaoise, Durrow and Ballyragget; or (3) simply off the R430 from Mountrath, Abbeyleix, Swan and Carlow.

The National Spatial Strategy 2002-2020 (NSS) envisaged that Mullingar-Tullamore and Athlone could act as the only Gateway within the Midlands Region, but this lies c. 45 km to the north at the closest point of Tullamore. However, the county town of Portlaoise and many of the towns and urban centres, such as Stradbally, Mountmellick, Mountrath, Abbeyleix and Moneenroe (DoEHLG 2002) are located on a national transport corridor and within 25 km of the site (Refer Figure 1.1). These urban centres are located on major transport corridors and are the focus of strong growth and investment under the National Development Plan, in order to achieve sustainable development.

The significant roads in the region are summarised below:

- M7/M8 is the National Primary Route connecting the capital city, Dublin to Naas, Newbridge, Kildare, and ultimately Limerick City, and Cork City via the M8 (at junction 19, just west of Abbeyleix). The road is the dual carriageway between the M50 in Dublin and Naas, where it becomes motorway. It is one of the strategic radial corridors as identified in the National Spatial Strategy (DoEHLG 2002);
- N77 is the National Secondary Road connecting Kilkenny to Ballyragget, Durrow, Abbeyleix and Portlaoise. The road is a single carriageway that extends 49 km. It is not one of the strategic radial transport corridors identified in the National Spatial Strategy (DoEHLG 2002);
- N78 is the National Secondary Road connecting with the N77 c. 3.5 km north of Kilkenny City with Castelcomer, Moneenroe, Ballylynan and Athy, ultimately terminating at Junction 3 of the M9. The road is a single carriageway that extends c. 50 km. It is not one of the strategic radial transport corridors identified in the National Spatial Strategy (DoEHLG 2002);
- R430 Regional Road is a c. 6.0 m wide, single carriageway roadway with no hard shoulders. The road is oriented WNW-ESE and connects the towns of Mountrath and Abbeyleix in the west to Swan and Carlow Town in the east. The site has direct access onto the R430, which is the sole access for the delivery of aggregate and concrete products from the site. The R430 is provided with a ghost island for traffic turning right into the quarry;

- R426 Regional Road is oriented roughly N-S, and connects Castlecomer with Clogh, Swan, Timahoe and Sheffield Cross just south of Portlaoise;
- L7792 is a local road oriented roughly N-S, and connects the R430 at Larkin's Cross c. 3.5 km north to a T-junction with local road L7791 at Baunogemeely Crossroads in the townland of Baunogemeely;
- L77921 is a local road oriented roughly N-S, and connects the R430 at Larkin's Cross c. 2 km south to an unnamed 4-way crossroads in the townland of Aughatubbrid;
- L77922 is a local road oriented roughly E-W, and connects the R430 c. 200 m northwest of the site entrance to the L77923 c. 1 km to the east where terminates in a T-junction with the L77923;
- L77923 is a local road oriented roughly NW-SE, and connects the R430 c. 1.5 km east of the site to the eastern terminus of the L77922 and continues further north in the townland of Knockbaun; and
- L7793 is a local road oriented roughly NW-SE, and connects the R430 to the L7797 (Boleybeg Road) at Graigue Cross in the townland of Graiguenasmuttan.

The local roads in the Knockbaun area are typical of a rural location, and consist of single surface dressed carriageways, generally connecting to other local roads or forming Cul De Sac's that penetrate as far as to service several houses or farmsteads.

There has been a long association with quarrying and quarry related traffic accessing the R430 at this location. The R430 has been the established haulage route for the shipment of the quarry products since 2003. Traffic entering and leaving the site will use the existing site access onto regional road R430, and this entrance will be the sole access for the delivery of aggregates and concrete from the site and will be maintained for the proposed life of the development. Traffic destined for the N77 and M7/M8 (incl. Abbeyleix, Portlaoise, etc.) will exit travelling west on the R430, whereas traffic destined for the N78 and M9 (incl. Castlecomer, Carlow, Athy, etc.) will exit travelling east on the R430.

The R430 regional road is a c. 6.0 metre wide hot rolled asphalt surfaced single carriageway roadway with no hard shoulders and minimal grass verges of < 0.5 m in width. Overall carriageway width is generally 6–7 m. Visibility is generally good (i.e., of the order of 200–400 m), and the route is not subject to an excessive number or severity of bends. The surface of the roadway is in moderate to good condition. The road corridor is typically enclosed with earthen banks, hedgerows, and a few large mature trees. The road is subject to a continuous white line in the vicinity of the quarry site and has been widened for the imposition of a ghost island in order to provide for right turning traffic into the entrance of the quarry.

There is a well set-back, splayed, and paved entrance with large heavy-duty lockable metal gates. The access road surface is composed of wearing course macadam. The access road is 9 m wide with a 2 m high palisade double gateway. There is a steel box beam single swing barrier with single swing 3 m the roadside of the gateway. There is a dwell area of 25 m from the regional road edge to the gateway.

The site access junction has existing sight distances of 300–500 m to the west and east and is located on a slightly curved section of the R430. There is an existing right turning lane for turning into the quarry on the western approach to the quarry access. The junction is located within the 80 km/hr speed limit area.

The pavement is in good condition, although the line markings of the right turning lane require renewal. Pavement upgrading and repair will be a mitigation of any damage caused by the increased quarry traffic. This improvement to the pavement will be enjoyed by all the road users in the area. The purpose of the application is for continuation of quarrying operations, although it is expected that output will be c. 200,000 tonnes per annum—substantially less than that prior to the Global Financial Crisis in 2008. An annual output of the order of 200,000 tonnes equates to traffic volumes from the development of approximately 38 truckloads (76 truck movements) per day leaving the site on a 48 working week per year basis. These figures also include for the production of 15,000 cu. m of readymix concrete per annum.

During the 2005 to 2016 period, there were 11 road collisions on the c. 13 km stretch of the R430 between Swan and Abbeyleix, which is an average of one collision per annum (Refer to Figure 13.1 RSA 2021). Of these, only one was severe, while none were fatal. Nine of the collisions involved cars, one a pedestrian, and one a goods vehicle at the Ballypickas Crossroads. There were no collisions near the entrance to the quarry nor along its c. 700 m frontage, and the nearest collision was at Spink. These data suggest that the HGV traffic from the quarry had no significant impact on road safety on the R430.

Further details with respect to the road network and the impact and mitigation of traffic are contained within this report (Refer to Section 14).

Laois is serviced by Iarnrod Eireann's Dublin to Limerick and Cork mainline railway service, which crosses the county from Monastrevin in Co. Kildare to Templemore in Co. Tipperary following a NE-SW path that traverses central County Laois, with stations at Portarlington, Portlaoise and Ballybrophy. The nearest station is at Portlaoise c. 16.5 km north northwest of the site. The rail line meanders with the M7 as far south as Kilcotton near Borris-in-Ossory, Co. Laois. The nearest designated Gateway is the linked gateway of Athlone-Tullamore-/Mullingar (DoEHLG 2002), and Dublin Airport is the nearest airport at c. 85 km due northeast of the site, whilst Dublin Port is the nearest port at c. 85 km.

Leisure boating can be accessed to the southeast on the Old Barrow Line and Barrow Navigation, a significant canalized waterway, from Robertstown in County Kildare to Waterford Harbour. With some prominent deviations, the waterway follows the Laois-Kildare border from c. 1.5 km southwest of Monastrevin south via Athy to c. 2 km south of Carlow Town.

13.4.5 BUILT SERVICES

13.4.5.1 Electricity Network

Power to local residences is provided by overhead lines, which form part of ESB's country-wide, medium and low voltage, electricity distribution network. A three-phase overhead power line supplies electricity to the northeastern corner of the property, where a roadside pole-mounted distribution transformer steps down the voltage.

The transmission grid does not cross the Castlecomer Plateau, such that there are no transmission lines in the area of southeastern Laois. A 400kV line from Moneypoint to Dunston passes c. 10 km northwest of the site. The power to the area is delivered by a 100 kV line connecting Portlaoise and Carlow via Athy (Refer Figure 13.2).

EirGrid has rolled out GRID25, which sets out the development of the transmission infrastructure to ensure that grid reinforcements enable connection of significant amounts of renewable energy generation. In particular, the plan requires a 400/110kV substation in the Laois area to support the 110 kV networks and provide the requisite level of security of supply in counties Laois, Carlow and Kilkenny.

13.4.5.2 Gas Network

Indigenous natural gas is supplied from the Kinsale Head Gas Pipeline, which comes ashore at the Inch Terminal near Whitegate, County Cork, and the Corrib Gas Pipeline, which comes ashore at Bellanaboy Terminal, County Mayo. Bord Gais also have two subsea gas pipeline interconnectors with Scotland that come ashore near Gormanstown, County Meath and Loughshinny, County Dublin. These pipelines connect into the network, which in the east of Ireland consists of a main line running from Cork to Dublin and up the east coast to N. Ireland, with multiple spurs to supply towns on route. The transmission pipeline network does not cross the Castlecomer Plateau, with the main transmission line skirting the eastern margin of the Castlecomer Plateau. The line runs through Carlow and supplies Kilkenny and Ballyragget by individual spur-lines, whereas it supplies Athy and Portlaoise by a looped spur-line. Thus, the gas pipelines do not pass within c. 15 km of Spink Quarry (Refer Figure 13.3), although as far back as 2007, Bord Gais had developed plans to install a pipeline to supply Abbeyleix.

13.4.5.3 Water Supply Infrastructure

The source of the Swan Public Water Scheme (PWS), which services 188 houses, is located 2.6 km east of the site, and the outer source protection area (SPA) of the Swan PWS lies within 1.25 km of the southeastern site boundary. Nonetheless, residential properties in the local area are serviced by private bored wells. Most houses are serviced by septic tank systems and proprietary effluent treatment systems.

There is no mains water supply to the property, which was previously supplied by a bored well adjacent to the canteen. With respect to an on-site supply, the site has three new production wells that can supply the site with potable water. Water quality results suggest that groundwater is of suitable quality for use at the site. Should planning be

successfully obtained, it is proposed to convert PW3 to a Production Well (Refer to Figure 3.1 for location). Headworks shall be sealed with a concrete pad. An appropriate water treatment facility, including ultraviolet filter, shall be fitted to ensure water complies with the requirements of the Drinking Water Regulations (2014) prior to supply to staff at the site.

It is proposed that surface/groundwater water accumulating within the processing and extraction area will be conveyed to the existing series of settlement ponds. This water will be utilised for dust suppression, if required, and/or discharged off-site to an external watercourse subject to the requirements of Trade Effluent Discharge Licence.

As the proposed extension includes extraction at depths down to 190 m AOD, groundwater infiltrating into the lower benches will require dewatering. The excess water in the system will require discharge off site to an external watercourse and will be managed in compliance with the requirements of a Discharge Licence.

13.4.5.4 Telecommunications Network

An overhead telephone line serving the property is suspended on poles running along the eastern side of the R430, and crosses the road c. 175 m north of the entrance and opposite the location of the former site office.

There are several mobile masts or base stations for the transmission and reception of mobile telecommunication in the region around Spink Quarry. These masts house both point to point microwave links and cellular technologies used in the provision of telecommunication services. The nearest cell masts to the Spink Quarry site are located at Ballycapple, c. 5.0 km northeast of the site. The next nearest cell masts are at Upper Crubeen, near Ballyroan, c. 7.5 km northwest of site, and at Kelly's of Laois, on the R430 at Ballymaddock near Abbeyleix, c. 8.0 km west of the site.

13.4.5.5 Sewerage System

A portacabin toilet block with washing facilities will be installed with the proposed site office / canteen adjacent to the weighbridge (Refer to Site Layout Plan 3.1 for location).

A holding tank will be provided for wastewater management of foul water effluent. This holding tank will be routinely cleaned out by a licenced waste contractor.

13.4.6 WASTE MANAGEMENT INFRASTRUCTURE

Although the waste produced by the development will be minimal, there will be waste bins suitably positioned on site for the purpose of general waste management. A suitably licensed waste collection contractor will remove any office, canteen or other general waste requiring recovery/disposal to a licensed waste management facility.

13.4.7 CULTURAL ASSETS

The proposed development was the subject of an assessment that involved the investigation of cultural heritage including the archaeological, structural and historical

background of the application area and the surrounding area using a wide range of existing information, as well as a field assessment (Refer to EIAR Section 12).

There are no known items of cultural heritage, archaeological sites or monuments, protected structures or non-designated structures of heritage value within either the extraction or application area. The quarry is not expected to have indirect impact on items of cultural heritage, archaeological sites or monuments, protected structures or non-designated structures of heritage value in the vicinity of the application site area, although there are five Recorded Monuments and Places (RMPs) within 1 km of the site.

The five RMPs form a cluster north of the site in the townlands of Knockbaun and Cleanagh (Refer to EIAR Figure 12.1). These are:

- Standing stone c. 925 north of the site in the townland of Gleanagh (RMP Site Code LA024-048---);
- Megalithic structure c. 465 north of the site in the townland of Knockbaun (RMP Site Code LA024-052---);
- Standing stone c. 555 northeast of the site in the townland of Knockbaun (RMP Site Code LA024-053---);
- Enclosure c. 875 northeast of the site in the townland of Knockbaun (RMP Site Code LA024-054---); and
- Megalithic structure c. 850 northeast of the site in the townland of Knockbaun (RMP site Code LA024-055---).

There are no Protected Structures (RPSs) that are listed in the National Inventory of Architectural Heritage (NIAH), within the proposed development site nor within the 1 km study area. The nearest RPS is a Church/Chapel dating to 1845-1850, known as St. Lazarian's Catholic Church, c. 1.5 km west of the site in the townland of Graiguenahown (Reg. No. 12802409).

13.4.8 LANDSCAPES & NATURAL HERITAGE

Although Laois is an inland county, it nonetheless hosts a wide range of landscapes within the framework of a central lowland plain with the Slieve Bloom Mountains in the northwest, uplands (incl. Cullenagh, Fossy and Killsehin Mountains) in the southeast, substantial bogs concentrated in the Abbeyleix-Portlaoise area and several prominent esker systems. Inland waterways consisting of the River Barrow (forming the Laois–Kildare and Carlow border in the east), the River Nore (incl. tributaries such as the Clogh and Owenbeg Rivers) in the southwest, and the Grand Canal in the northeast (i.e., the Barrow Branch joining the River Barrow just south of Athy), provide important visual and recreational amenities within the landscape. These landscapes intrinsically constitute invaluable elements of the natural resource base of the county, and need to be protected from inappropriate development.

The site lies within rolling uplands of the northwestern flank of the Castlecomer Plateau—a prominent outlier (c. 20 km x 30 km) of Pennsylvanian (i.e., Upper Carboniferous) siliciclastic sediments surrounded by lowlands composed of

Mississippian (i.e., Lower Carboniferous) limestones. The topography of the wider area is that of rolling hilly landscape with the site situated on the northwestern margin of the Castlecomer Plateau, where elevations typically vary from 180 to 270 m AOD.

The site occurs at a maximum natural elevation of 261 m AOD along the southern boundary and a minimum natural elevation of 215 m AOD along the R430 Regional Road (northern boundary). As the quarry was developed on the northeastern flank of a hill, the general topographical trend of the landholding is the lower lands to the southeast. The surrounding lands are largely agricultural with varying degrees of intensity, but with afforestation abutting the site to the south. The landscape of the Spink Quarry site is defined by mainly disturbed ground resulting from the operation of quarrying in the area of the ridge or hill.

The topography in the area of the site is hilly, with the general landform descending to the northwest towards the central plain of Laois, and comprise the Nore and Barrow catchments, which occupy almost the entire county. This wider regional landscape is a relatively uninterrupted, flat to undulating broad lowland plain, with the nearest higher ground c. 13.5 km north at Hewson Hill, just east of Portlaoise. The Slieve Blooms lie c. 30 km to the northwest in an otherwise vast tract of flat lowland plain that covers much of the eastern midlands. Thus, the adjoining area to the west comprises relatively flat low-lying land below the elevation of the site, whereas the landscape to the east is dominated by the Castlecomer Plateau and the Wicklow Mountains.

The landscape is characterised by mature hedgerows with many hedgerow trees, whilst the land is predominantly in pasture, used mostly for stock rearing, and some mixed tillage. Significant areas of coniferous forestry and some successional woodland also occur in this landscape area. Although mature hedgerows with many trees tend to create enclosed rural road corridors with restricted views, the rolling topography presents abundant short and middle distance views.

The lands are bounded to the northeast by the R430, while it is bounded by farmland and afforestation along the remaining boundaries. Because the quarry has been developed by excavating into the northeastern flank of the hill, the latter screens all views of the workings in an arc from the northwest to west to south. Presently, there are only intermittent views of the workings along the R430 east of the entranceway with most views of the current quarry workings screened by existing perimeter berms and screen planting along the roadside boundary. well as There are also middle-distance intermittent views from rural road L77922 and possibly also rural road L7792. These intermittent limited views generally amount to views of the upper quarry face, against the coniferous forest forming the southern site boundary.

The proposed development is situated within the Hills and Uplands Landscape Character Type (i.e., LCT1), which probably has a medium landscape sensitivity. LCT1 has a limited capacity to absorb development, as the partially enclosed landscape with minimal long distance views can physically or visually absorb some development, mitigating the visual impact on the landscape, which can otherwise have a disproportionate visual impact. This rural landscape has a limited capacity to physically or visually absorb development, while any adjoining areas of high amenity would be of higher sensitivity. However, there are no scenic views sufficiently near the

site (< 5 km) to experience any adverse visual impact due to the development. Nonetheless, sensitive development and conservation of the landscape resource is essential to the underpinning of the rural economy and quality of life of the area.

The application site occurs in an area classified as a Structurally Weak Area, which are rural areas that generally exhibit characteristics such as persistent and significant population decline as well as a weaker economic structure based on indices of income, employment and economic growth. These rural areas are more distant from the major urban areas and the associated pressure from urban generated housing.

The settlement pattern in the wider Spink area can be described as low intensity rural settlement, with several towns and villages and some ribbon development interposed between them. Residential property in the rural area typically comprises single or clusters of one-off residences along public roads, as well as farmsteads along public roads or at the end of lanes off the latter. Many of the one-off residences are relatively new and lack the screening of mature hedgerows and vegetation, whereas the farmsteads tend to be relatively well screened by hedgerows.

The locality is of a rural, pastoral character, but is not noted particularly for amenities/activities, and lacks designated scenic routes, and walking and cycling trails. There are several general recommendations with respect to the LCT in this regard (Refer to Appendix 6 of CDP; Laois 2017), and these are: (1) respect the remote character and existing low-density development in these LCTs; (2) implement improvements to the visitor attractions of these areas; and (3) further define popular walking routes such as Cullahill Mountain and create new routes to additional areas of interest.

The nearest designated amenity views and prospects to Spink Quarry are at Killamuck c. 10.5 km to the west, the Windy Gap c. 12.5 km to the north northeast, Oughaval Woods, Stradbally c. 13.5 km to the north northeast, and the Rock of Dunamaise c. 15.5 km to the north (Refer Figure 11.7). The site at Knockbaun is sufficiently remote from these sites (>10 km), and lies out of the viewshed due to intervening uplands. Fossy Mountain (elev. 330 m), Cullenagh Mountain (elev. 317 m) and the nearer hills of Knockacrin (elev. 293 m), Knocklead (elev. 317 m) and Scotland (elev. 326 m) form a screen covering an arc from NW to NE, while the hill into which the quarry has been worked forms a screen to all views from the west. Thus, the development is not open to views from these designated points, such that the development will not have any significant visual impact on the views and prospects in the county (Refer to Figure 11.7). The visual impact of the proposed development is discussed in more detail in Section 11 - Landscape.

The application site is not included in any area with an ecological designation (SAC, SPA, NHA or pNHA). There are four Natura 2000 sites located within 15 km of the site (Refer to Figure 5.1), the nearest being River Barrow & River Nore SAC (Site Code 002162); followed by Lisbigney Bog SAC (Site Code 000869); River Nore SPA (Site Code 004233); and Ballyprior Grassland SAC (Site Code 002256). With the exception of the River Barrow & River Nore SAC (i.e., c. 1.1 km to the northwest), these sites are distant (> 8.5 km) and occur in different subcatchments, such that there is no

reasonable pathway by which the quarry at Knockbaun could impact their habitats or species.

Thus, the site does not have a direct ecological connection with any of the Natura 2000 areas, except for the River Barrow & River Nore SAC site. The River Nore SPA does not extend downstream to where the River Nore and the Barrow merge north of New Ross.

The main risk associated with the proposed extension to depth for a portion of the existing quarry at Spink, Co. Laois, is the potential adverse impact it could have on receiving surface and groundwaters. However, dewatering volumes are relatively low, envisaged to range from 256 to 1,453 m^3/d, approximately, in the course of development. Furthermore, the competent solid nature of the rock and the GSI's classification on groundwater recharge suggest that the site's potential interference in the wider groundwater catchment's water balance **is insignificant.**

Assimilation capacity simulations have been completed for a potential maximum envisaged discharge volume of 1,453 m^3/d. However, that volume will not be encountered all at once. The planned extraction rate and lifetime of the quarry suggests that a maximum of 1,453 m^3/d will be encountered in the future close to end of life of the site. The ELVs proposed for the discharge will meet the requirements of all surface water receptors for the maximum discharge volume. The ELVs proposed are justifiable in the context that they are calculated to result in concentrations that comply with the Surface Water Regulation's EQS concentrations and this ensures maintaining favourable habitat in local surface water receptors of groundwater. This is because the discharge quality will be good.

Appropriate assessment was introduced by the EU Habitats Directive as a way of determining if a planned project is likely to have a significant effect on one of the Natura 2000 sites so far designated (i.e., the candidate SAC's and SPA's), or their conservation objectives.

An ecological assessment and screening for Appropriate Assessment was carried out with respect to the proposed development.

The screening for Appropriate Assessment (Refer to Appendix 8) found that the potential for significant adverse effects on the River Barrow and River Nore SAC (Site Code 002162) and the River Nore SPA (004233) is uncertain in the absence of control of potential pollution of discharge water during operation.

The proposed development will require a Water Management Plan to avoid potential impacts on the receiving environment of the Owenbeg and Clogh Rivers and the River Nore downstream.

In the absence of mitigation measures for the control of surface water discharge, it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site and as such Stage 2 AA is required.

The NIS (Refer to Appendix 9) has reviewed the predicted impacts arising from the Project and found that with the implementation of appropriate mitigation measures

specifically with regard to surface water, significant effects on the integrity of the River Barrow and River Nore SAC and the River Nore SPA can be ruled out.

It is the conclusion of this NIS, on the basis of the best scientific knowledge available, and subject to the implementation of the mitigation measures set out in the NIS that the possibility of any adverse effects on the integrity of the European Sites considered in this NIS, or on the integrity of any other European Site (having regard to their conservation objectives), arising from the proposed development, either alone or in combination with other plans or projects, can be excluded beyond a reasonable scientific doubt.

The only designated natural heritage site within 15 km of the Spink Quarry site is Coan Bogs NHA (Site Code 002382) c. 10.5 km to the southwest. The nearest pNHA is the Timahoe Esker (Site Code 000421) c. 7 km to the north, followed by Lisbigney Bog pHNA (Site Code 000869) c. 8.5 km to the southwest. Other pNHA's within 15 km of the site are: Clopook Wood (Site Code 000860); River Nore/Abbeyleix Woods Complex (Site Code 002076); Shanahoe Marsh (Site Code 001923); Ballylynan pNHA (Site Code 000857); Stradbally Hill (site Code 001800); Ridge of Portlaoise (site Code 000876); Dunamase Woods (Site Code 001494); Rock of Dunamase (Site Code 000878); and Kilteale Hill (site Code 000867). As noted above, the nearest NHA or pNHA site is a segment of the Timahoe Esker pNHA at c. 6.9 km. Given the size and scale of the proposed development, the nature of the materials, and the large standoff distances, no direct or indirect impact is expected on these or any pNHA as a result of the recommencement of quarry operations at Spink Quarry.

The impact of continued quarrying operations on this application site will be considerable in local terms, but will not result in any loss of heritage values in the locality.

The geological feature upon which the quarry was developed, and from which rock aggregates are extracted, is not designated as a County Geological Site (CGS) nor as a NHA Site (Parkes et al. 2016). There are no geological sites of interest or proposed Geological National Heritage sites near the site of the quarry at Knockbaun (Refer to EIAR Section 13.4.1 above).

On completion of quarrying, the site will be reinstated in accordance with the proposed quarry restoration scheme (Refer to Figures 3.2 and 3.3). Therefore, in the long term, the site will be assimilated back into the landscape in a planned manner, with the attendant improvement to the visual amenity of the area.

13.4.9 SENSITIVE RECEPTORS

The site is located in a sparsely populated rural area. The surrounding lands are largely agricultural, although a forestry plantation abuts the site to the south. The R430 Regional Road bounds the landholding to the north with c. 700 m of frontage.

There are numerous established individual residences and clusters of residences in the area with 36 residences within a 1 km radius of the quarry site (Refer EIAR Figure 4.1). The closest residence is located c. 175 m west of the site and is one of a cluster of three houses at Larkin's Cross. There are only four residences within 250 m of the

site, but all but one of these residences (i.e., No. 4; Refer Figure 4.1) are sheltered, in terms of visual, noise and dust impacts, behind the hill into which the quarry is developed. Indeed, another 12 residences between 500 m and 1 km of the site (i.e., Nos. 11 to 22) are similarly sheltered behind the hill. Of the 13 residences within 1 km of the site that are not sheltered behind the hill, one lies within 250 m (No. 4), four more lie between 250 m and 500 m (i.e., Nos. 7-10), and seven more lie between 500 m and 1 km (i.e., 23-30). There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, phasing and direction of working with respect to receptors.

The Knock National School is located c. 1.75 km to the west, while Headen's Bar in Spink is located c. 850 m to the west along the R430, both of which community facilities are sheltered behind the hill. There are no industrial and commercial developments within 1 km, such that the number of sensitive receptors primarily relates to residences 4, 7, 8 and 10 (Refer to Figure 4.1) which have partial views of the quarry workings.

The five RMPs located within the 1 km study area, but beyond the site boundary, also constitute sensitive receptors which may be impacted by the proposed development.

13.5 ASSESSMENT OF IMPACTS

The following Impact Assessment Matrix provides an indication of the significance of potential effects arising during the life cycle of the development not accounting for any mitigation measures (Table 13.2).

As stated above, the impact assessment, which determined the potential impacts of the proposed development on the material assets in the area, was based on standard criteria issued by the EPA (Refer Appendix 3, Section 3.2.1).

The proposed development arises from the continued demand of human beings to have their buildings, roads and structures, modified and improved. The supply of construction materials is therefore essential to material progress of human society and their built environment.

The location of Knockbaun with ready access to the N77, N78, N80, M7/M8 and M9 in southeast Laois and within 25 km of numerous towns, two county towns (i.e., Portlaoise and Carlow) and the southern outskirts of Kilkenny City, renders the proposed quarry development well positioned to serve this vibrant construction market. The location of the quarry in Laois, one of the fastest growing counties in the country, should alone ensure access to a strong, growing market for good quality aggregate.

Table 13.2 Material Assets - Impact Matrix

'Do Nothing' Impacts	🟢		
Factors	**Construction**	**Operation**	Decommissioning
Direct Impacts	🟢	🟡	X
Indirect Impacts	X	X	X
Cumulative Impacts	X	X	X
Residual Impacts	X	X	X
`Worst Case' Impacts	X	🟡	X

None/imperceptible: X; Slight: 🟢; Moderate: 🟡; Significant/Very significant: 🔴.
Refer to Appendix 3 for definition of Significance

Table 13.3 Material Assets – Potential Impacts & Mitigation.

Ref.	Material Asset	Relevant EIAR Section
13.4.1	Non-Renewable Resources	3.4.1, 6
13.4.2	Settlement - Residential Development	3.2.1, 4, 9, 10, 11
13.4.3	Land Use	3.2.1, 4, 5, 6, 11,
13.4.4	Transport Infrastructure	3.3.3.16, 4, 14
13.4.5	Built Services	3.3.4,
13.4.6	Waste Management Infrastructure	None
13.4.7	Cultural Assets	12
13.4.8	Landscape & Natural Heritage	3, 4, 5, 9,10, 11
13.4.9	Sensitive Receptors	3, 4, 7, 9, 10, 11, 12, 14

The impact on material assets resulting from the proposed recommencement of the quarry is assessed here, and possible mitigation measures proposed to reduce any significant impacts. It is expected that the potential negative impacts on material assets of the area arising from the quarry will relate primarily to nuisance from noise, dust and traffic. Indirect or cumulative impacts associated with other similar developments within the area are dealt with where necessary under the respective topic in the EIAR.

The potential impacts associated with the quarry and any proposed mitigation measures in relation to the material assets described above are covered under relevant sections of the EIAR in Table 13.3.

13.5.1 'DO NOTHING' IMPACTS

If the development did not proceed, the aggregate resource would remain unused in situ, and the local supply of quality aggregates and concrete products would be more restricted. The existing site permitted under P.A. Ref. 10/383 comprises a moderate-sized (i.e., c. 16.8 ha), hardrock quarry, which has been extensively worked with some remaining infrastructure and stockpiles on the quarry floor. Under the 'Do Nothing' scenario, all quarrying and ancillary activities would cease. The site would be restored as per the requirements of the existing planning permission (P.A. Ref. 10/383).

As the quarry area is currently inactive, the absence of the proposed development would have no significant impact on the material assets within the area, other than to preserve in place the aggregate resources within the site.

13.5.2 DIRECT IMPACTS

Potential impacts on the material assets of the area can arise out of the construction and decommissioning stages, but particularly the operational stage of the quarry development (Refer to Table 13.4).

The quarry will enable the production of quality aggregates for the wider Laois-Carlow-Kilkenny region and thus help sustain economic development in the region. It is expected that the potential negative impacts on material assets of the area arising from the quarry, will relate primarily to nuisance from noise, dust, and traffic.

As an existing quarry with much of its infrastructure in-situ, only a brief construction phase is envisaged.

The development will consist of the continued use and operation of the existing quarry including deepening of the quarry. Extraction will be confined to the existing permitted quarry area (P.A. Ref. 10/383) comprising an extraction area of c. 14.5 ha within an overall application area of c. 19.6 ha. The development will include provision of new site infrastructure, including portacabin site office, canteen, toilets, concrete batching plant and truck washdown facility, hydrocarbon interceptors, mobile crushing and screening plant, upgrading of the water management system, provision of holding tank for wastewater, and other ancillaries. The proposed development will utilise/upgrade the existing insitu quarry infrastructure, including site access, internal roads, storeroom, wheel wash, weighbridge, aggregate storage bays, refuelling hard stand, water settlement pond system, and other ancillaries (Refer to Figure 1.3).

The operational stage will require maintenance and repair of the R430 roadway in the vicinity of the site. Waste Management will require the removal and reuse / recycling / disposal, as appropriate, of general waste produced by the office and canteen, as well as waste oils and lubricants. It is proposed that future wastewater management at this location will comprise a holding tank which will be routinely emptied by an approved Waste Collection contractor.

The decommissioning stage will involve demolition and removal of all infrastructure, and thus the removal of all built services, in order to establish a wildlife amenity.

The potential impacts associated with the proposed development and any proposed mitigation measures in relation to the material assets described above are covered under relevant sections of the EIAR (Refer to Table 13.3 above). Human health risks will be managed by preventing public access to the site and having appropriate health and safety measures in place for staff working on the site.

On completion of site activities, the site of the quarry will be decommissioned and left safe and secure. Furthermore, the site will be reinstated in accordance with the approved quarry restoration scheme, and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity of the area (Refer to Figures 3.2 and 3.3).

It is considered that following restoration and the mitigation measures incorporated in the design that there will be no significant adverse effects in terms of material assets.

The restoration of the site to beneficial after-use, most probably as a wildlife amenity, will result in a permanent significant positive effect in the long-term.

Table 13.4 Direct Impacts by Stage of Development

Direct Impact	Construction Stage	Operational Stage	Decommissioning Stage
Non-Renewable Resources	None	Moderate, permanent due to removal of natural resources due to extraction.	None
Settlement - Residential Development	Slight, short-term, negative due to minor noise and dust.	Slight to Moderate, medium-term, negative due to minor noise and dust.	Slight, long-term, positive due to restoration and improved local amenity.
Land Use	None	Slight to Moderate, medium term, negative due to continued development of quarry to east.	Moderate, long-term, positive due to restoration of site to wildlife amenity.
Transport Infrastructure	Slight, short term, negative due to increased traffic by contractors.	Slight to Moderate, medium term, negative due to quarry HGV traffic	Slight, short-term, negative due to removal of plant and infrastructure off-site.
Built Services	None	None	None
Waste Management Infrastructure	None	None	None
Cultural Assets	None	None.	Slight, long-term, positive due to improved context of RMPs.
Landscape & Natural Heritage	Slight, short-term, negative due to overburden stripping, construction of berms and landscaping works to southeast.	Moderate, medium-term, negative due to continued development of quarry to east with increased visual prominence of back face.	Moderate, long-term, positive due to restoration to wildlife amenity.
Sensitive Receptors	Slight, short-term, negative due to minor noise and dust.	Slight to Moderate, medium-term, negative due to noise, dust and visual impact on residential amenity.	Moderate, long-term, positive due to improved local amenity and context of RMPs.

13.5.3 INDIRECT IMPACTS

Indirect impacts are dealt with where necessary under the respective topic in the EIAR.

13.5.4 CUMULATIVE IMPACTS

Cumulative impacts associated with other developments within the wider area are dealt with where necessary under the respective topic in the EAR. There are no other significant developments within c. 3.0 km of the site at Knockbaun. The absence of any extractive or industrial developments within c. 3 km renders the likelihood of significant negative cumulative impacts on the material assets of the area highly improbable.

13.5.5 TRANSBOUNDARY IMPACTS

The EIA Directive 2014-52-EU invokes the Espoo Convention on Environmental Impact Assessment in a Transboundary Context, 1991, and applies its definition of transboundary impacts. Given the location (c. 135 km from the border with N. Ireland), nature, size and scale of the proposed development, it is expected that the impacts of the development would not have any significant transboundary effects on material assets.

13.5.6 RESIDUAL IMPACTS

As a result of the proposed mitigation and enhancement measures incorporated in the design, there will be no significant, adverse residual impacts on the material assets of the area during the operational phase, other than the development of mineral resources due to extraction.

It is considered that following full restoration and closure of the site that there will also be no significant, long-term, adverse impacts in terms of the material assets. The restored quarry will provide a more manageable and sustainable, long-term environment than is currently the case, with a change in land-use to a beneficial after-use as a wildlife amenity.

13.5.7 'WORST CASE' IMPACTS

There are no large residential settlements close to the site, with nearest large population centre being the town of Abbeyleix c. 9.5 km to the west, although the villages and hamlets such as Swan and Newtown are situated closer.

There are no residences within or abutting the site and landholding, while only four residences are located within 250 m.

A possible worst case impact would have been significant in the medium term if the quarry was developed in an uncontrolled manner with no consideration given to provision of screening of the development along the northeastern boundary, which would open up the quarry from views from the north and east. However, consideration has been given to screening using reinforcement of existing screening berms as

necessary, restoration of the upper quarry faces, and the final restoration of the quarry site once operations at the site cease (Refer to EIAR Sections 3.4 and 11.6 and EIAR Figures 3.2 and 3.3).

It is expected that in the absence of mitigation measures (primarily noise, dust and visual) that there will be slight to moderate negative effects with respect to local amenity and residential receptors as a result of the development of the quarry at Knockbaun.

13.6 MITIGATION & MONITORING

Potential impacts on the material assets of the area can arise out of the construction, operational, and decommissioning stages, and different sets of mitigation measures may be required under each stage. As an existing quarry with much of the original infrastructure still on-site, only a brief construction phase is envisaged. The decommissioning stage will involve demolition and removal of infrastructure as well as landscaping and contouring of overburden and topsoil, and thus will require mitigation measures largely relating to noise and dust suppression. The operational stage will require a full set of mitigation measures to mitigate the impacts of noise, dust, water quality, visual intrusion and traffic, particularly on sensitive receptors.

The Company has established an environmental management system (EMS) designed to comply with the environmental requirements of the ISO 14001:2015 standard and the Quality Management requirements of ISO 9001:2015 (Refer to EIAR Section 3.3.3.1.2). A copy of the Environmental Management Plan (EMP) for the Spink Quarry is included in Appendix 10. This will be updated in accordance with any new planning consents or licences. The EMP addresses such matters as Emergency Preparedness & Response in dealing with accident and emergency situations resulting in effects on the environment (Refer to EIAR Section 3.3.5).

The applicant has established an environmental monitoring programme for the quarry site. The programme allows for on-going monitoring of environmental emissions (e.g., noise, dust, blasting, water) from the site, thereby assisting in ensuring compliance with requirements or regulations. Future environmental monitoring programmes for the site will be submitted to Laois County Council for their approval prior to the recommencement of quarry activities

A quarry manager will be appointed to ensure that the EMS, Environmental Objectives & Targets and Environmental Management Plan are fully implemented (Refer to EIAR Section 3.3.3.1).

This quarry is located in a rural area of low population density. The boundaries of the quarry are enclosed by a combination of berms, hedgerows and fencing, which is designed to blend into the surrounding landscape. There will be ongoing monitoring to ensure that site boundaries are maintained in a proper manner, and these include thickening of hedgerows, fencing of the landholding, provision and maintenance of quarry signage, routine cleaning/housekeeping and the removal of unsightly features. Appropriate warning signs to the public will be provided on the approaches to the site, and the access gate will be kept padlocked shut outside of the normal working hours.

The development can be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by conditions imposed by the relevant regulatory authority. The development does not have a significant impact on lands, property, or amenity within the area and hence there will be no significant effect on material assets.

13.7 REFERENCES

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13.8 FIGURES

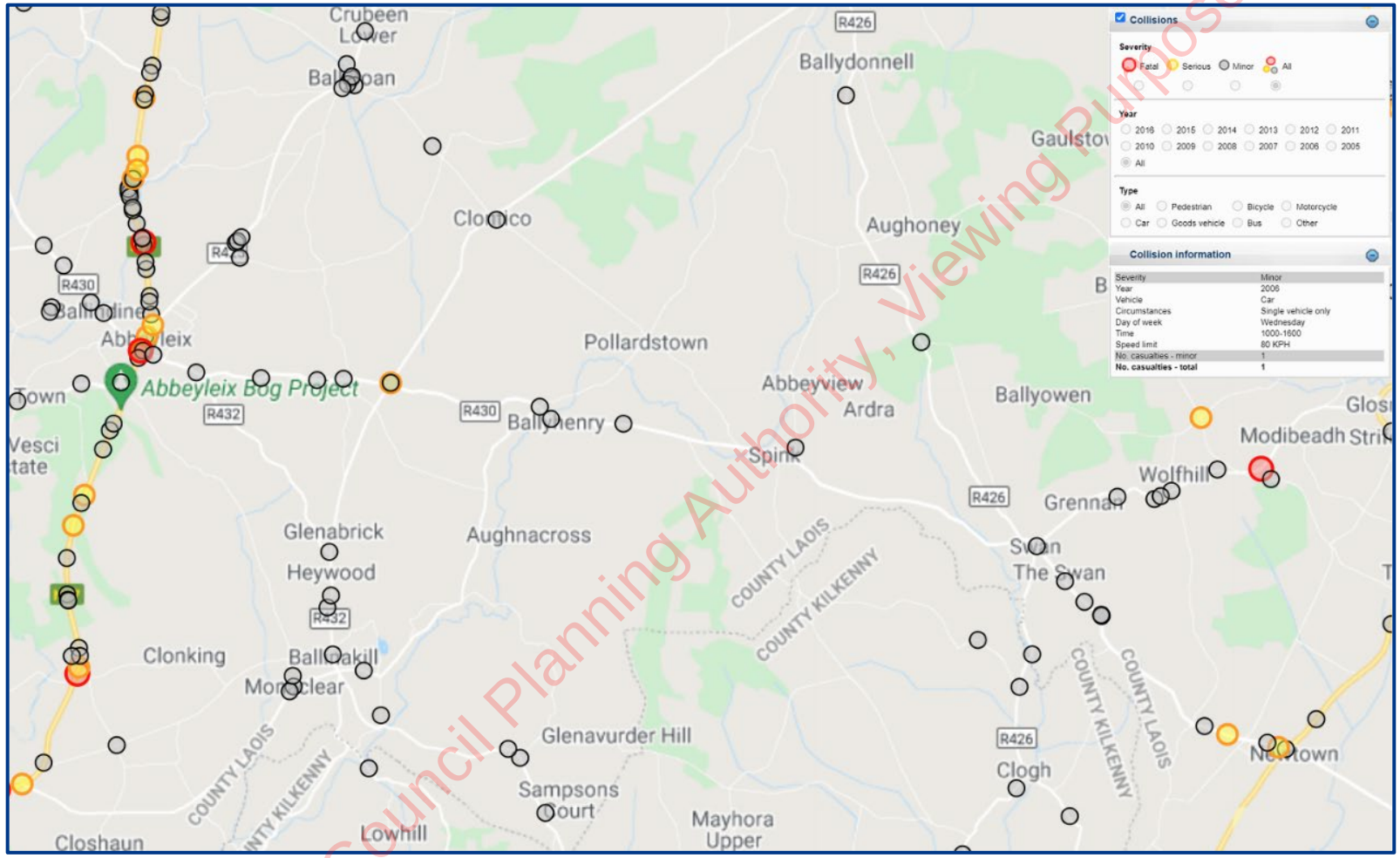

Figure 13.1 Map of Road Collisions in the Region including Abbeyleix, Swan and Newtown

Scale: Horizontal width of field = c. 20 km. Redrawn from Online Map of Collisions in Ireland (RSA 2021).

Figure 13.2 Eirgrid's Electricity Transmission Network in the Midlands

Scale: Horizontal width of field = c. 85 km. Redrawn from Transmission System of Ireland (Eirgrid 2013).

Figure 13.3 Bord Gais' Transmission and Distribution Gas Pipeline Network

Scale: Horizontal width of field = c. 350 km. Extracted from Bord Gais (2020).