

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Volume 1 – Non-Technical Summary

S37L – Redrock Quarry

Prepared for:

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CONTENTS

1.0	Introduction.....	1-1
1.1	EIA Process	1-1
1.2	Need for Environmental Impact Assessment Report	1-2
1.3	Purpose of Environmental Impact Assessment Report.....	1-3
1.4	Scoping of the Environmental Impact Assessment Report	1-4
1.5	EIAR Methodology & Format.....	1-5
1.6	EIAR Study Team & Guarantee of Competency & Independence	1-6
2.0	Site Location and Context.....	2-7
2.1	Description of the Subject Site and Context.....	2-8
2.2	Existing Quarry	2-8
2.3	Surrounding Area	2-9
3.0	Description of Development	3-10
3.1	Summary of the Proposed Development.....	3-10
3.1.1	Overview of Historic Quarrying at the site.....	3-11
3.2	The Quarrying Process.....	3-11
3.2.1	Blasting of Rock Faces.....	3-11
3.2.2	Transport to Crusher.....	3-12
3.2.3	Crushing of Rock.....	3-12
3.2.4	Stockpiling of Crushed Rock	3-12
3.3	Phasing of Works	3-12
3.4	Potential for Environmental Impacts.....	3-13
3.4.1	Biodiversity and Appropriate Assessment (AA).....	3-13
3.4.2	Land, Soils, and Geology.....	3-14
3.4.3	Emissions (Air & Water).....	3-14
3.4.4	Quarry Blasting.....	3-15
3.4.5	Visual Impact	3-15
3.5	Restoration Plan	3-16
3.6	Quarry Operations.....	3-16
3.7	Planning History	3-17
4.0	Alternatives	4-18
4.1	Rationale for the Proposed Development.....	4-18
4.2	Main Alternatives Studied	4-19
4.2.1	Alternative Locations.....	4-19
4.2.2	Alternative Designs/Layout	4-20

4.2.3	Alternative Mitigation Measures.....	4-20
4.2.4	“Do Nothing” Alternative	4-20
5.0	Population and Human Health	5-21
6.0	Biodiversity	6-24
6.1	Overview	6-24
6.2	Existing biodiversity environment	6-24
6.2.1	Designated sites and ecological sensitivities	6-24
6.2.2	Habitats and flora	6-24
6.2.3	Fauna	6-25
6.2.4	Non-volant mammals	6-25
6.3	Bats	6-25
6.4	Birds	6-25
6.5	Amphibians and aquatic ecology	6-25
6.6	Likely effects and mitigation measures	6-26
6.6.1	Enabling and construction stage	6-26
6.7	Operational stage	6-26
6.8	Restoration and aftercare stage	6-26
6.9	Monitoring and environmental management	6-27
6.10	Conclusion	6-27
7.0	Land, Soils and Geology	7-28
8.0	Hydrology	8-30
9.0	Air Quality	9-32
9.1	Baseline	9-32
9.2	Impact Assessment	9-32
9.3	Mitigation Measures	9-32
9.4	Residual Impacts	9-32
10.0	Climate	10-33
10.1	Baseline Environment	10-33
10.2	Impact Assessment	10-33
10.3	Mitigation Measures	10-34
10.4	Residual Impacts	10-34
11.0	Noise and Vibration	11-35
11.1	Introduction	11-35
11.2	Baseline Conditions	11-35
11.3	Assessment of Construction Effects	11-35

11.4	Operational Noise Assessment.....	11-35
11.5	Mitigation Measures	11-35
11.6	Residual Effects.....	11-35
11.7	Conclusion	11-35
12.0	Material Assets – Waste	12-37
12.1	Introduction.....	12-37
12.2	Potential Impacts and Mitigation Measures of the Proposed Development	12-37
12.2.1	Construction Phase.....	12-37
12.2.2	Operational Phase	12-37
12.3	Residual Effect of the Proposed Development.....	12-37
12.3.1	Construction Phase.....	12-37
12.3.2	Operational Phase	12-37
12.4	Cumulative Impact of the Proposed Development	12-38
12.4.1	Construction Phase.....	12-38
12.4.2	Operational Phase	12-38
13.0	Traffic	13-39
13.1	Introduction.....	13-39
13.2	Characteristics of the Proposed Development.....	13-39
13.2.1	Site Access Arrangements	13-39
13.2.2	Proposed Development Description and Site Layout.....	13-39
13.3	Predicted Impacts of the Proposed Development	13-39
13.3.1	Construction Phase.....	13-39
13.3.2	Operational Phase	13-40
13.4	Mitigation Measures	13-40
13.4.1	Construction Phase.....	13-40
13.4.2	Operational Phase	13-40
13.5	Residual Impacts.....	13-41
14.0	Archaeology.....	14-42
14.1	Section Purpose.....	14-42
14.2	Setting and Existing Conditions	14-42
14.3	Potential Effects and Mitigation	14-42
15.0	LVIA.....	15-43
16.0	Interactions and Cumulative Impacts.....	16-45
16.1	Introduction.....	16-45
16.2	Inter-Relationships/Interactions.....	16-45

16.2.1	Interaction between Archaeology & Cultural Heritage and Land, Soils & Geology	16-1
16.2.2	Interaction between Population & Human Health and Hydrology	16-1
16.2.3	Interactions between Population & Human Health and Air Quality	16-1
16.2.4	Interactions between Population & Human Health and Climate	16-2
16.2.5	Interactions between Population & Human Health and Noise & Vibration.....	16-2
16.2.6	Interactions between Population & Human Health and Landscape & Visual Impact	16-2
16.2.7	Interactions between Population & Human Health and Traffic	16-3
16.2.8	Interactions between Biodiversity and Hydrology	16-4
16.2.9	Interactions between Land, Soils & Geology, Hydrology and Waste Management	16-4
16.2.10	Interactions between Air Quality and Traffic.....	16-5
16.2.11	Interactions between Noise & Vibration and Traffic & Transportation	16-5
16.2.12	Interactions between Material Assets (Waste) and Population & Human Health	16-5
16.3	Cumulative Impacts	16-6
16.4	‘Do Nothing’ Scenario	16-6
16.5	Mitigation and Monitoring	16-6
17.0	Mitigation and Monitoring	17-7
18.0	Difficulties Encountered	18-8

1.0 INTRODUCTION

This Environmental Impact Assessment Report (EIAR) has been compiled by Gavin Lawlor and Bernard Dwyer of Tom Phillips + Associates on behalf of the Applicant – Milford Quarries Limited. The EIAR accompanies an application under Section 37L of the Planning and Development Act 2000, as amended for development at an existing sandstone quarry at a site in the townland of Clogrennane, Bilboa, Co. Carlow.

The site is located within the townland of Clogrennane, Co. Carlow and directly sits along the Co. Laois/Co. Carlow border. The site is approximately 6 km south west of Carlow town and approximately 3 km north-west of Ballinabranna.

This application is following an application for substitute consent made to an Coimisiún Pleanála under section 177E of the Planning and Development Act, as amended. Section 37L states that:

Where a person applies for substitute consent in respect of development of land under section 177E, the person may also apply for permission for the following:

(a) development of the land the subject of the application for substitute consent;

(b) development of land adjoining the land the subject of the application for substitute consent

The proposed development will consist of further quarry extraction over an area of 16.17Ha to include the pre-existing quarry and additional agricultural lands with a projected lifespan of c. 20 years. The proposed development will involve blasting, extraction and processing of rock using mobile primary crushing / screening and associated plant on the proposed quarry floor. The proposed quarry void will be extracted over 4 no. phases to a depth of 2 no. benches of c. 10m each to a quarry depth of c. 300m AOD with a proposed rate of extraction of c. 200K tonnes per annum. The proposed development will include for construction of earthen screening berms, soil storage areas and will utilise existing quarry entrance from the northern boundary linking to the L7130 local road to the east. Existing and proposed access tracks and existing settlement ponds will be utilised as part of the proposed development. The proposed development will be accompanied by a phased restoration plan.

1.1 EIA Process

EIA requirements are governed by Directive 2014/52/EU, which amends the Directive 2011/92/EU. The primary objective of the EIA Directive is to ensure that projects that are likely to have significant effects on the environment are subjected to an assessment of their likely impacts.

EIA forms part of the planning consent process and is carried out by the Competent Authority. An EIAR is prepared by/on behalf of the Applicant in respect of a project seeking planning consent. Therefore, the EIAR becomes an integral informing element in the Competent Authority's EIA. The 2014 Directive has introduced strict new requirements in respect of the competency of experts responsible for the preparation of the EIAR (see Table 1.2 below and Appendix 1.1 for details on the experts involved in the preparation of this document).

The EIA process may be summarised as follows:

1. Screening – Is EIA required?
2. Scoping – If EIA is required, what aspects of the environment should be considered?

3. Preparation of EIAR.
4. EIAR informs EIA (as part of the consent process).

1.2 Need for Environmental Impact Assessment Report

The EIA Directives have been transposed into Irish law for the purposes of this planning application by the provisions of *Part X of the Planning and Development Acts, 2000 (as amended)* and *Part 10 of the Planning and Development Regulations, 2001 (as amended)*.

The EIAR Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II).

Annex I projects are listed in Part 1 of the Schedule 5 of the Planning and Development Regulations 2001 (as amended) ("the Regulations").

The Project is not listed within Part 1 of Schedule 5 of the Regulations and therefore a mandatory EIA is not required under this Schedule.

With regard to Part 2 of Schedule 5 (Annex II) projects, the relevant thresholds relating to the subject proposal are outlined below:

Class 2(b)

"Extraction of stone, gravel, sand or clay, where the area of extraction would be greater than 5 hectares."

The proposed development provides for the extension of an existing extraction area of c. 16.17 ha and is therefore greater than the threshold listed above.

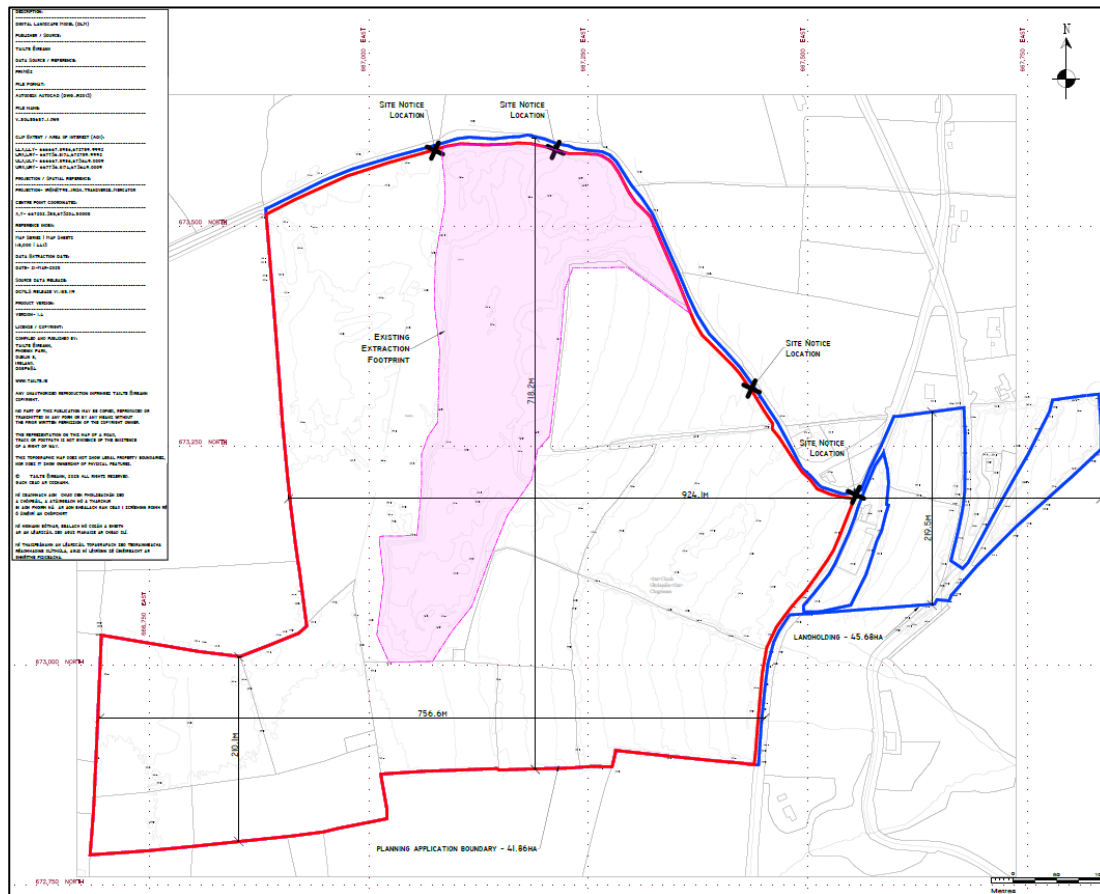


Figure 1.1: Extract from Dwg. No. P1687-0-1225-A2-102-00G 'Site Layout Map' prepared by Hydro-Environmental Services.

1.3 Purpose of Environmental Impact Assessment Report

As noted, the 2014 Directive has redefined an EIA as a process, whereby an Environmental Impact Assessment Report is a key informing element.

An EIAR's purpose is to predict and assess likely significant effects (direct and indirect) on the environment arising from the proposed development. It is used during the consent process to inform EIA.

As per Article 5(1) of the amended Directive, an EIAR should provide the following information:

- Description of Project
- Description of Baseline Scenario
- Description of Likely Significant Effects
- Description of Avoidance/Mitigation Measures
- Description of Reasonable Alternatives (and rationale for chosen option)
- A Non-Technical Summary

Annex IV of the Directive sets out a more detailed outline of the information required in an EIAR. The subject EIAR has been prepared in full accordance with these stated requirements of Annex IV.

The preparation of the Environmental Impact Assessment Report has been coordinated by Tom Phillips + Associates, Town Planning Consultants (80 Harcourt Street, Dublin 2, D02 F449) in association with other members of the Project Team. Details of the members of the Project Team and their competencies are set out in Appendix 1.1 of Volume 2 of this EIAR.

A copy of the full EIAR is available for reference/purchase at An Coimisiún Pleanála (64 Marlborough Street, Dublin 1, D01 V902).

1.4 Scoping of the Environmental Impact Assessment Report

A non-statutory scoping exercise was conducted for this EIAR to establish what format the EIAR would take and the range and aspects of the environment to be considered and led to a decision on the matters to be addressed and the format to be used (the so-called 'grouped' ER format – see Section 1.6). This exercise was conducted following consultations between the Applicant and its professional advisors.

The scope of the Environmental Impact Assessment conducted in regards to the proposed development includes the following:

- The requirements of the EIA Directive (Directive 2011/92/EU, the codified EIA Directive), the *Planning and Development Acts 2000 – 2015, and the Planning and Development Regulations, 2001 – 2015*;
- European Commission *Impact Assessment Guidelines, 2009*;
- *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (Draft), September 2015*;
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, May 2022*;
- Regard was also had to the EIA Directive 2014/52/EU adopted on 16th April 2014, and which came into force on 15th of May 2014 and the Circular Letter PL 1/2017 issued by the Department of Housing, Planning, Community and Local Government (15th May 2017); and
- The requirements of Carlow County Council, as elaborated in the current *County Development Plan 2022 – 2028* and as advised by the Officers, to facilitate evaluation of the proposed development.
- The likely concerns of local residents and other third parties.
- The nature, location and scale of the proposal.
- The existing environment, as well as any vulnerable or sensitive features and current issues.
- The likely and significant impacts of the proposed development on the environment.
- Available methods of reducing or eliminating undesirable impacts.
- The Planning and Development Regulations, 2001 (as amended) specify the aspects of the environment likely to be significantly affected by the proposed development, including in particular:
 - Population and Human Health, Biodiversity, (Flora and Fauna).
 - Soil, Water, Air, Climatic Factors, Noise and Vibration, the Landscape and Visual Impact.
 - Material Assets – Site Services, Traffic, and Transportation, Waste Management
 - Architectural, Archaeological and Cultural Heritage.
 - The inter-relationship between the above factors and an indication of difficulties encountered in compiling the required information.

These considerations are addressed in the EIAR.

1.5 EIAR Methodology & Format

In addition to the 2014 Directive, the subject EIAR has been informed by:

- *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements* (EPA, 2003);
- *Guidelines On the Information to Be Contained in Environmental Impact Assessment Reports* (EPA, May 2022);
- *Draft Advice Notes for Preparing Environmental Impact Statements, Draft*, (EPA draft September 2015a);
- *Draft Revised Guidelines on the Information to be Contained in Environmental Impact Statements* (EOA draft September 2015b);
- *Environmental Impact Assessment of Projects: Guidance on Screening* (European Commission, 2017);
- *Environmental Impact Assessment of Projects: Guidance on Scoping* (European Commission, 2017);
- *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017);
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*, (August 2018);
- *Guidance of Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (European Commission, 2013);
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Environment, Community, and Local Government 2013);
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Government of Ireland, 2018);
- *Key Issues Consultation Paper on the Transposition of 2014 EIA Directive (2014/53/EU) in the Land Use Planning and EPA Licensing Systems* (Department of Housing, Planning, Community and Local Government 2017);
- *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions* (European Commission, 1999);
- *Implementation of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment* (European Commission, 2003);
- *Circular PL 05/2018 – Transportation into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive) and Revised Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Housing, Planning and Local Government, 2018);
- *Planning and Development Act 2000, as amended*; and
- *Planning and Development Regulation 2001, as amended*.

In addition to these guidance documents, all EU Directives and National Legislation relating to the specialist areas (e.g. Biodiversity, Air Quality, Climate and Noise) have been considered under each relevant environmental aspect. Specific guidance is addressed in the relevant chapters of this EIAR.

Environmental Impact Assessment Reports require the assimilation, co-ordination and presentation of a wide range of relevant information in order to allow for the overall assessment of a proposed development. To allow for ease of presentation, and consistency when considering the various environmental factors considered, a systematic structure is used for the main body of the Report.

1.6 EIAR Study Team & Guarantee of Competency & Independence

The *Environmental Impact Assessment Report* was completed by a project team led by Tom Phillips + Associates, who also prepared a number of the chapters.

The members of the team, their qualifications and their respective inputs are outlined below in Table 1.1. The appendices for the EIAR Chapters, as set out in Table 1.1, are provided in Volume 2 of the EIAR.

In accordance with EIA Directive 2014/52/EU, we confirm that experts involved in the preparation of the EIAR are fully qualified and competent in their respective field. Each has extensive proven expertise in the relevant field concerned, thus ensuring that the information provided herein is complete and of high quality.

Chapter	Aspects of the Environment Considered	Contributor	Person Responsible
Chapter 1	Introduction & Methodology	Tom Phillips + Associates (TPA)	Bernard Dwyer
Chapter 2	Site Location & Context	TPA	Bernard Dwyer
Chapter 3	Description of the Historic Development	TPA	Bernard Dwyer
Chapter 4	Key Alternatives Considered	TPA	Bernard Dwyer
Chapter 5	Population & Human Health	TPA	Bernard Dwyer
Chapter 6	Biodiversity	Ecology Ireland	Gavin Fennessy
Chapter 7	Land, Soils, & Geology	Hydro Environmental Services (HES)	Michael Gill
Chapter 8	Water (Hydrology & Hydrogeology)	HES	Michael Gill
Chapter 9	Air	AWN	Ciara Nolan
Chapter 10	Climate	AWN	Ciara Nolan
Chapter 11	Noise & Vibration	Wave Dynamics	James Cousins
Chapter 12	Material Assets - Waste	AWN	Chonail Bradley
Chapter 13	Material Assets – Traffic & Transportation	Transport Insights	Eoin Munn
Chapter 14	Archaeology	Charles Mount Archaeology	Dr. Charles Mount
Chapter 15	Landscape Visual Impact Assessment	Macroworks	Richard Barker
Chapter 16	Interactions & Cumulative Impacts	TPA	Bernard Dwyer
Chapter 17	Mitigation & Monitoring	TPA	Bernard Dwyer
	Non – Technical Summary	All Contributors outlined above	Compiled by TPA

Table 1.1: Interdisciplinary Team appointed to this EIAR.

2.0 SITE LOCATION AND CONTEXT

The subject site encompasses a total area of approximately c. 41.86 ha in a wider landholding of 45.68 hectares, under ownership of the applicant, Milford Quarries Ltd. The land is located within the townland of Clogrennane, Co. Carlow and directly sits along the Co. Laois/Co. Carlow border. The site is approximately 6 km south west of Carlow town and approximately 3 km north-west of Ballinabranna.

Within the overall landholding is the subject site, which consists of a sandstone rock quarry, Redrock. The site is bounded by a private rural road that is connected to the L7129 Road to the west and the L7134 Road to the east. The M9 motorway can be accessed via junction 6 approximately 5.5km to the south east of the site.

The site is c. 2.1km west of the River Barrow, and the associated River Barrow and River Nore Special Area of Conservation (SAC - 002162).

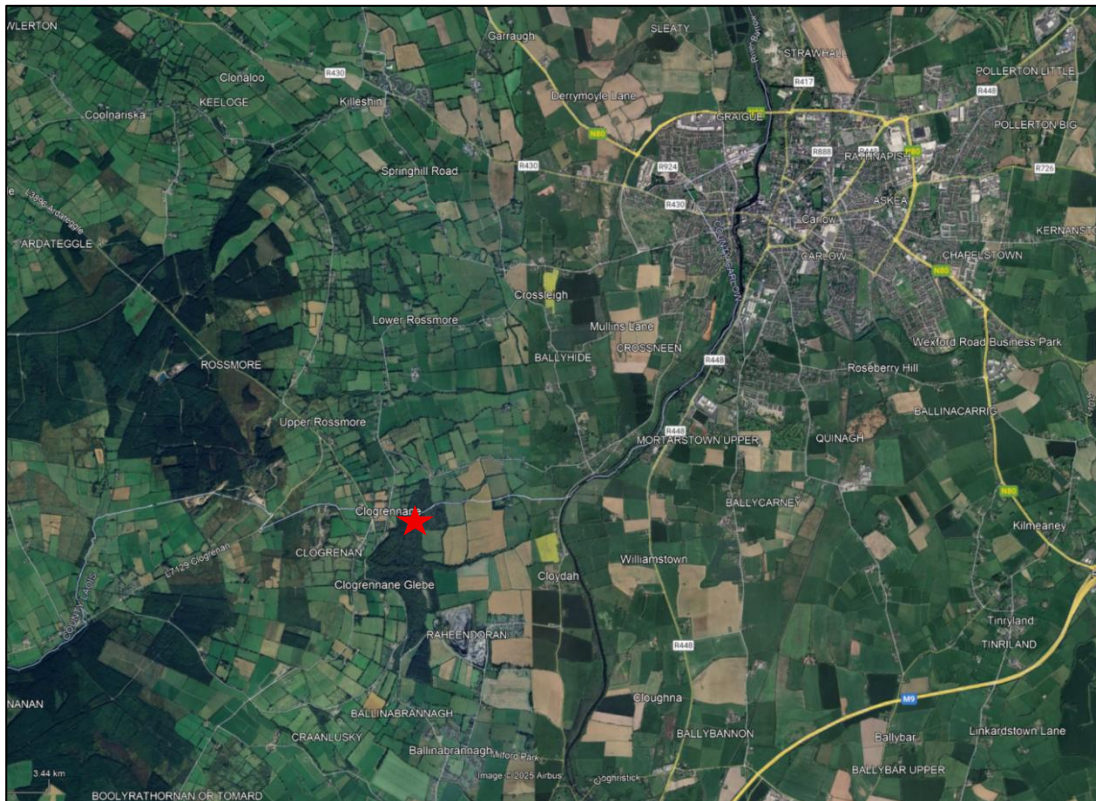


Figure 2.1: Location of existing disused quarry indicated by red star in relation to Carlow (source: Google Earth; annotated by TPA, December 2025)

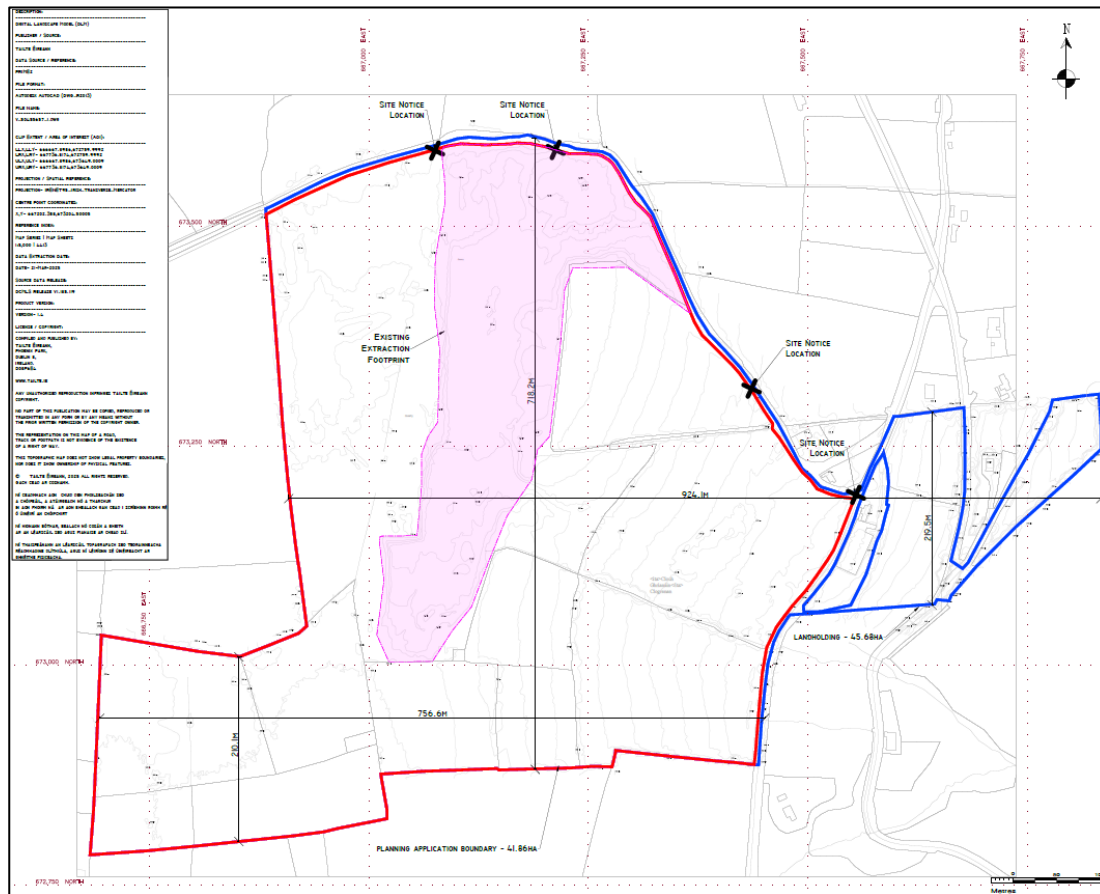


Figure 2.2: Extract from Dwg. No. P1687-0-1225-A2-102-00G 'Site Layout Map' prepared by Hydro-Environmental Services.

2.1 Description of the Subject Site and Context

The subject lands are in an elevated location west of the River Barrow Valley in an area dominated by agricultural lands and forestry. There are several inactive quarry pits in the surrounding area with the Clogrennane Lime Ltd. Quarry located to the south east. There are a number of small settlements in the immediate area including Ballinabranna, Kileeshal and Bilboa. Connectivity in the area is characterised by several intersecting local roads which have been shared by the topography of the area.

2.2 Existing Quarry

The quarry was registered in 2005 under a different operator and included for the extraction of sandstone and siltstone, conducted primarily through mechanical methods. The total area extracted over the lifetime of the quarry was approximately 8.66 hectares. The quarry was originally registered on the basis of pre-63 origins owing to historical maps which showed a borrow pit in the north eastern corner of the site.

The applicants acquired the site in 2023 and there has been no extraction activity on the lands since this date. This S177E Substitute Consent application is being sought in order to regularise historic unauthorised development identified during the S261A process.

The need for substitute consent arises from previous S261A proceedings. Carlow County Council's determination in 2012 that historic extraction had taken place at the site which would have required a mandatory Environmental Impact Assessment as per Section 261(2)(a)(i) of the Planning and Development Act 2000 (as amended).

The Planning Authority also determined that development had occurred post 26th of February 1997, which would have required an Appropriate Assessment and this had not been conducted. Please refer to Section 3 for a detailed breakdown of the site's planning history in respect to quarry operations that occurred on site.

The S261A determinations and decision was referred to An Coimisiún Pleanála (then An Bord Pleanála) who upheld the determinations and decision of Carlow County Council.

The operators at the time were not in a position to remedy the above and as a result, large scale commercial extraction ceased in 2014 following the determination of An Coimisiún Pleanála in relation to the S261A proceedings.

It should be noted that to the best of our knowledge, no significant extraction activities began at the site until the period between 2000 and 2005, as evidenced by historic aerial imagery and based on discussions between the applicants and the previous operators of the site. Further assessment of historic aerial imagery of the site, confirms that the bulk of extraction at the site took place between 2005 and 2010-2012 timeframe. This is consistent with economic activity at the time.

The Aerial imagery further suggests that there was a small level of extraction from the lands following the S261A proceedings. Information on this is limited but we understand that relatively modest quantities of material were removed in campaigns c. 2018 and 2021. This material would most likely have been used locally for agricultural purposes.

As outlined on drawings prepared by Hydro Environmental Services, it is estimated that 650K m³ have been extracted in total from the site. The majority of this extraction took place in the period between 2005 and 2012. By 2012 550K m³ had been extracted. Following this a further 100K m³ were removed up until the applicants took ownership in 2023. This equates to just over 8K m³ per year on average over that period (2012 – 2023). The lands during this period had effectively reverted to serving as a borrow pit for local users where small scale extraction took place to serve local agricultural road building etc.

The lands are currently in a disused state, with previous surface water management features still intact and operational.

2.3 Surrounding Area

The site is bounded by the Co. Carlow and Co. Laois border and is situated within rural Carlow. The site is surrounded by a mixture of agricultural uses with localised commercial enterprises and rural one-off houses. Further, the site is located in close proximity to Clogrennane Woods, that is owned by Coillte and is located to the East of the subject site.

Clogrennane has long been associated with the extractive industry with much of the limestone used to construct buildings and monuments in Carlow town sourced from this area.¹ An additional active quarry, Clogrennane Lime Ltd. is located approximately 1.5 km to the south-east of the subject site.

¹ Carlow Tourism, Clogrennane Wood Looped Walk, <https://carlowtourism.com/outdoor-activities/clogrennane-wood-looped-walk-2/>

3.1.1 Overview of Historic Quarrying at the site

The quarry was registered by the previous owner in 2005 over an area of 25.7 hectares and had 18 conditions imposed in 2007 by Carlow County Council under Section 261(6)(a)(i), (Carlow County Council reg. ref.: QY14). A small gravel pit is indicated on historic maps dated 1913, and evidence of a quarry is shown on a map dated 1906 which accompanied the registration application.

As part of the registration the site was declared as Pre-63 with output 300-500,000 tonnes per annum. In 2012, Carlow County Council measured the current extraction area as 15.52 hectares and reasoned that the pit appeared to have been abandoned from 1913 (0.16 hectares) until 2000, when works recommenced and intensified in the period 2005-2010.

In August 2012, Carlow County Council determined under section 261A(2)(a)(i) that quarry development was carried out after 1st February 1990, which development would have required, having regard to the EIA Directive, an environmental impact assessment but that such an assessment was not carried out. The reason given was that the site exceeded the mandatory threshold of 5 hectares for an EIA.

The determinations and decision of the Planning Authority were referred to the Board by the previous owner for review (ABP ref.: QV01.QV0145).

The subsequent Board order dated January 2014 confirmed the determination of the Planning and concluded that the development would have required EIA and the decision that the extraction works do not have a pre-1964 authorisation and do not have a valid planning permission,

Milford Quarries Limited acquired the abandoned quarry in 2023 and applied for leave to seek substitute consent in May 2023 (ABP Ref: LS01.317194). Following the enactment of the Planning and Development Amendment Act 2023 the need to apply for Leave for Substitute Consent was removed from the legislation with effect from 16th December 2023. This application was therefore considered withdrawn by An Bord Pleanála.

Historical excavation has removed materials over an area of approximately 8.66 hectares.

3.2 The Quarrying Process

There are five broad stages in the Quarrying Process. They are listed below:

1. Blasting of rock faces;
2. Transport to crusher;
3. Crushing;
4. Stockpiling; and
5. Conveying to Cement plant.

Each of these steps is outlined below.

3.2.1 Blasting of Rock Faces

In order to extract the sandstone, the active rock face must be blasted using explosives. The blasting frequency will align with the 6 - 8 week crushing campaigns i.e. a single day of blasting followed by 6 – 8 weeks of crushing and screening using mobile equipment and transportation offsite in articulated trucks.

All blasting at the site are subject to a specific design, which is carried out in accordance with the relevant standards, which establishes best practice and safety. Each blast is specifically designed to release a quantum of rock from the working quarry face. In this regard, a pre-determined grid of vertical holes are drilled on top of the quarry face to a required depth. The intervals between the drill holes are specifically designed having regard to the explosives to be placed within each of the holes and the depth of the rock, which is sought to be released. There are pre-determined intervals or delays in the detonation of explosives in the drilled holes. This process minimises vibration arising from the blasting and increases the efficiency with which the rock can be removed. The short firing of the blasts and the explosives used are monitored by the Quarry Manager.

3.2.2 Transport to Crusher

Once blasting has occurred, the rock is loaded into mobile dump-trucks, which then transport the blasted rock to the primary crusher, which is located on the quarry floor.

3.2.3 Crushing of Rock

There are two crushing stages, primary crushing and secondary crushing. Each crusher consists of a set of electrically operating rotating drums, which function to reduce the particle size of the rock to a scale that can be easily transported using belt conveyors. The primary crusher reduces the rock size to a maximum diameter of 100mm and the rock is then conveyed out of the quarry to the secondary crusher by an elevated conveyor. The secondary crusher reduces the rock size to a maximum diameter of 50mm.

3.2.4 Stockpiling of Crushed Rock

The crushed rock is conveyed to temporary stockpiles located in the northern and southern portions of the application site. The northern stockpile will serve phases 1 and 2 of the proposed development with the southern stockpile serving phases 3 and 4. The stockpiles also act as reserves in the event of a crusher or mobile equipment failure.

3.3 Phasing of Works

It is the intention of the applicant to continue to extract from the application site until its end of life, a period of approximately 20 years, and conduct the subsequent restoration of the entire site. The restoration of the quarry including the current subject site is illustrated in the Restoration Plan produced by Macroworks and referenced in Chapter 15 of this EIAR.

The proposed extraction extension of the existing quarry will be consistent with the proposed depths and is intended to facilitate the efficient extraction material from the overall quarry site.

Figure 3.2 below illustrates the proposed phasing of the development. The completion of all phases will involve the extraction of sandstone rock to a final depth of 300 metres above Ordnance Datum (AOD).

It should be noted that the phases are indicative in illustrating the intended direction of works within the proposed development. In this regard, there may be need to alter the area or direction of extraction, in order to obtain rock with the correct qualities depending on customer requirements or for operational and safety reasons.

All production benches will be subject to ongoing geo-technical monitoring on a regular basis in keeping with the highest industry standards, best industry practices, and current health and safety regulations and guidelines.



Figure 3.2: Overview of indicative proposed phasing of future quarry extraction (Source: Hydro Environmental Services).

3.4 Potential for Environmental Impacts

The proposed development will involve the extension of an existing disused extraction area. The various chapters in this EIAR include detailed assessment of the potential of the proposed development to produce effects in terms of population and human health, biodiversity, water, land, air, noise, landscape, and visual etc. The following represent a brief summary of some of the key considerations in relation to the proposed quarrying activity.

3.4.1 Biodiversity and Appropriate Assessment (AA)

Chapter 6 of this EIAR (Biodiversity) has been prepared by Ecology Ireland Wildlife Consultants Ltd. and describes the habitats, flora and fauna present at the application site of the proposed development at the existing quarry and includes:

- A detailed desktop review of available ecological data of the study area, including a review of designated nature conservation sites in the adjacent hinterland.
- Results of ecological field surveys carried out in order to obtain information on the baseline ecology of the study area.
- Evaluation of the ecological importance of the importance of the ecological resources of the study area.
- Assessment of the potential impacts on the existing ecology that could arise from the proposed continuation of quarry works within the application site.
- Details of avoidance and mitigation measures to eliminate or reduce potential negative impact(s) on the existing local ecology arising from the continuation of quarry operation.

3.4.2 Land, Soils, and Geology

The potential impacts of the proposed quarry extension in relation to land, soils, and geology are outlined in detail in Chapter 7 of this EIAR by Hydro Ecology Services.

The chapter has determined that following implementation of appropriate mitigation there will be no significant residual effects in terms of land take and topographic changes or in relation to the removal of soils and subsoils to facilitate the development. IT also determines that there is no potential for significant effects on soil, subsoil and bedrock due to oil / fuel spillages and leaks. No significant effects on local bedrock due to extraction activities are envisaged. In terms of restoration the chapter indicates that once the extraction of bedrock has ceased within the proposed extraction area, a thin layer of crushed rock will be spread over the floor of the extraction area followed by the spoil material stored in the spoil storage area and in the boundary berm. The restored areas will revert to grassland/scrubland via natural regeneration. In addition, hedgerows will be planted and stonewalls inserted across the Proposed Development Site to reinstate the field boundaries.

3.4.3 Emissions (Air & Water)

The proposed development is not anticipated to result in any significant changes in terms of impacts or required mitigation when compared to the wider existing permitted quarry operation.

As outlined in Chapter 8 (Hydrology), due to the nature of the Proposed Development (*i.e.* a lateral extension to a previous bedrock quarry which is located on a topographic high), and the local hydrogeological regime (Poor Bedrock Aquifer), surface water is considered to be the main receptor. Water falling within the existing quarry void currently gathers in ponds on the quarry floor and there is an existing surface water outfall which connect to the Mortarstown Stream. The low permeability of the underlying bedrock rejects a significant proportion of the potential groundwater recharge. Therefore, surface waters are considered to be the main sensitive receptor in terms of the Proposed Development.

The determination of Hydro Environmental Services, who compiled the chapter, is that with the implementation of the mitigation measures, there will be no change in the Groundwater body status or surface water body status in the underlying groundwater bodies or downstream surface water bodies resulting from the Proposed Development. The Proposed Development will not result in the deterioration in the WFD status of any surface or groundwater body nor will it jeopardise the attainment of good status in the future.

In addition, no significant effects are predicted on groundwater well supplies, group water supplies, groundwater levels or groundwater / surface water quality.

As assessed in Chapter 9 (Air) and 10 (Climate) of this EIAR, the main potential impacts on air quality with the existing at the site relate to emissions of dust, PM10 and combustion gases such as SO₂ and NO₂. The proposed quarry extension will not result in any change in the nature of the emissions from the existing and related activities at the site. Please refer to Chapters 9 and 10 of this EIAR for more information.

3.4.4 Quarry Blasting

The proposed development will utilise intermittent blasting in order to extract the sandstone, from the active rock face using explosives. The blasting frequency will align with the 6 - 8 week crushing campaigns i.e. a single day of blasting followed by 6 – 8 weeks of crushing and screening using mobile equipment and transportation offsite in articulated trucks.

Chapter 11 (Noise and Vibration) of the EIAR includes various measures that can be used to control noise impacts during blasting activity including the following:

- Earth mounds erected around the site boundary can provide acoustic as well as visual screening. A buffer zone can be maintained between the excavation area and the site boundary; the width of the zone needs to be decided on a case-by-case basis, depending on such factors as the nature and scale of extraction and the settlement pattern in the vicinity. Soft ground (e.g. grassland and cultivated fields) attenuation can sometimes have a greater impact in reducing noise than barrier attenuation, especially if the ground supports sound-absorbing vegetation;
- Conveyor belts and crushing/screening equipment can be housed to provide acoustic screening. It is important that sound-reduction equipment fitted to machinery is used and maintained properly;
- Haul roads within the site should have as low a gradient as possible, and paving should be considered if practicable where noise-sensitive receptors are likely to be affected;
- For deep workings, quarry faces may provide a barrier, depending on the relative location of the quarry face and the noise-sensitive area or property;
- The professional control of drilling and blasting operations can ensure, through design of the layout of the workings, that blasts are directed away from sensitive neighbouring dwellings. Use of the “delayed” blasting technique, whereby the blast takes place in a series of timed small explosions rather than a single large blast, helps to minimise the vibration in the rock body; and
- It is recommended that quarry operators provide advance notification of blasting to nearby residents, e.g. through written notices or by using warning sirens, or other locally agreed arrangements.

3.4.5 Visual Impact

The proposed development has been fully assessed in terms of visual impact as outlined in Chapter 15 of this EIAR. The proposal will be entirely hidden from surrounding receptors and the visual impact of the proposal will be consistent with the baseline’s conditions. It is therefore not considered that the proposed extension of the existing quarry will noticeably detract from the integrity of landscape patterns or the productive landscape character that prevails in the area.

It is considered that the magnitude of landscape impact is in the order of high-medium in the immediate vicinity of the application site (c.<500m from the site boundaries). The magnitude of impact will soon reduce thereafter as the proposed extraction extension is in the operational phase and will read in conjunction with the overall landscape fabric.

3.5 Restoration Plan

Once fully exhausted the quarry area will be subject to a comprehensive restoration plan including introduction of wetlands to the main extraction areas and extensive tree and grass planting.

The overburden stripped from the extended extraction area will be firstly used to construct screening berms, primarily along the eastern site boundary. These berms will ensure that the extraction works will be almost fully screened in views from locations to the east, in particular in combination with the proposed woodland screen planting.

Any additional overburden material will be stored in the soil storage areas in the northern portion of the quarry. All topsoil and subsoil will be handled separately. The topsoil will be stripped first and temporarily stored within the site. Once the screening berms/overburden storage area are constructed using subsoils, the topsoil will be spread over the surface, to provide a suitable growing medium for the proposed woodland screen planting and grass seeding.

Soil storage areas will be planted with a native woodland mosaic aimed at promoting and enhancing ecological corridors and increasing habitat biodiversity. Woodland areas will include high and low canopy trees in addition to understory and shrub species.

All earthworks will be carried out in suitable weather conditions and in accordance with current best practice guidance.

On completion of the extraction works the quarry void will be left to naturally fill with water. The resultant waterbody will provide a valuable wetland habitat.

All areas surrounding the quarry lake and not covered by woodland planting or grass seeding will be cleared from plant, machinery and stockpiles. Where feasible, these areas will be deep-ripped to de-compact the existing ground and thereby provide suitable conditions for the natural recolonisation by locally occurring grass and scrub species.

The accompanying restoration plan prepared by Macroworks, provides visual details on the proposals once the quarry is retired.

3.6 Quarry Operations

It is proposed that the quarry extension will be operated in alignment with standard practice and procedures applicable to quarry operations. In this regard, the working of the quarry extension will take place between 7:00 and 18:00 hours on Monday to Friday and 7:00 and 13:00 on Saturdays. Except in the event of an emergency, in addition to the advice of the Planning Authority, working will not take place on Sundays and Bank Holidays.

The quarry will be staffed by one permanent member of staff with up to 3 additional staff attending on site when crushing campaigns occur following a blast (ie every 6-8 weeks for approximately 1 week).

Given the limited staffing levels, staff facilities are provided by way of a self-contained, prefabricated, welfare unit. The unit uses potable water stored in an IBC and foul water in the form of kitchen and toilet waste water is stored in a storage tank within the unit. Foul water is emptied on a weekly basis by a licenced contractor and the potable water tank is replaced as required but generally on a weekly basis.

3.7 Planning History

No previous Planning Applications have been lodged in respect of the subject site, however we note that a concurrent s177E Application is being lodged alongside this s37L Application.

We understand that lands outside of the Applicant's ownership, adjacent to the main site entrance, were previously used as a yard and additional access road for the site, without the benefit of Planning Permission. This area has since been reinstated to its original agricultural use and does not form part of this Application.

4.0 ALTERNATIVES

This Chapter assesses the key alternatives considered by the Applicant in line with Schedule 6 of the Planning and Development Regulations 2001 (as amended), Section 2(b), which states:

“A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the person or persons who prepared the EIAR, which are relevant to the Proposed Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Proposed Development on the environment.”

It is important to note that the development site comprises of an existing disused quarry. This 37L Application, proposing the reopening of the quarry in addition to the expansion of quarry works on greenfield lands within the development boundary, is intended to run concurrently with the associated Substitute Consent Application under Section 177E of the Planning and Development Act 2000 (as amended).

The proposed development will involve the blasting, extraction, and processing of rock using mobile primary crushing/screening and associated plant on the proposed quarry floor. The proposed quarry void will be extracted over 4 no. phases to a depth of 2 no. benches of c.10m each to a quarry depth of c.300m AOD with a proposed rate of extraction of c.200k tonnes per annum. The proposed development will include the construction of earthen screening berms, soil storage areas, and will utilise the existing quarry entrance from the northern boundary linking to the L7130 local road to the east. Existing and proposed access tracks and existing settlement ponds will be utilised as part of the proposed development. The proposed development will be accompanied by a phased restoration plan.

4.1 Rationale for the Proposed Development

The rationale for the proposed development is based on the need to safeguard the existing and future operation of the quarry, as well as all buildings and ancillary industries/uses. The site currently exists as an unused quarry that has been inactive for some time. The quarry in its current state has the facilities to accommodate active extraction works once recommissioned. The site itself has an abundance of sandstone and shale resources that have the potential to contribute further to the robust extraction industry made up of Limestone material, where sandstone/shale quarries, such as Redrock, bring a wider variety of raw materials to Ireland's market. Moreover, given that the quarry void has already been opened working faces established, the cost and construction effort required to remove the valuable materials from the quarry is considerably more cost effective and sustainable than opening a quarry on a greenfield site.

The proposed development aims to recommission and expand the existing site, as the site has been historically used as a fully operational quarry, with land that is appropriate for further extraction.

This proposal is supported by the Department of the Environment, Heritage and Local Government's Quarries and Ancillary Activities – Guidelines for Planning Authorities (2004), which states the following regarding proposals for quarry extensions:

“In considering whether a further permission should be granted, the planning authority should have regard (inter alia) to the following factors:

- a) The extent of the remaining mineral resources; and*
- b) The extent of existing capital investment in infrastructure equipment, etc.”²*

The proposed extraction area consists of c. 15.52 hectares which is currently a combination of lands previously subject to extraction (c. 8.75 ha) and agricultural land (c. 6.77 ha) but encompasses a wider landholding of 45.68 ha.

Given the quality of rock reserves in the existing quarry and adjoining lands, the importance of the continued/recommissioned extraction activities on-site (and all associated ancillary buildings) result in a significant capital investment made at the site. Therefore, the proposed quarry recommissioning and extension, in addition to the continuation of other ancillary and related activities are considered appropriate and in accordance with the provisions of the Guidelines.

4.2 Main Alternatives Studied

4.2.1 Alternative Locations

As previously stated, the Development Site is part of a disused quarry, with historic extraction activities and ancillary machinery still evident on site. The Applicant, Milford Quarries, obtained the site in 2023 with the intention to recommission the site and realise the full potential of the resources that have already been identified within the quarry. Recommencing extraction operations on site would be beneficial to the local economy, as the operation itself would generate additional jobs and the quarry extraction would bring additional resources (i.e. gravel, aggregate) to businesses and works, particularly at a local level. The material available at the quarry is very suitable for farm roads. The proposed quarry extraction boundary also has regard for additional sensitive receptors that have arisen since the quarry ceased operation in 2014.

Additional desirable factors of this location include its relative remoteness from sensitive receptors and lack of visual impact due to its elevation. The site is in proximity to the national road network, approximately 8 km from the M9 and 10 km from the N78 which provides an onward connection to relevant destinations.

Further, as a result of Section 261 and Section 261A of the Planning and Development Act, 2000 (as amended), a large number of quarries across Ireland were required to cease operations. As a consequence, due to the current development pressures (housing crisis) there is a growing demand for locally won raw materials. The extraction of rock from suitable sites proximate to large growth centres such as Carlow is important as it reduces the tonnes miles that the materials must travel thereby minimising emissions, traffic and noise.

² Department of Environment, Heritage and Local Government (2004), Quarries and Ancillary Activities – Guidelines for Planning Authorities, p.30 – 31.

Quarries are not a footloose form of development and raw materials can only be extracted where they exist. The location of the proposed quarry has significant advantages in terms of its proximity to a key development centre, Carlow. Allied to this, the site is not a green field site and as such the construction efforts required to recommission the quarry is a lot less than that of a greenfield quarry. This will mean that the carbon footprint of this project is significantly less than if Milford sought to develop a quarry on a separate greenfield site. As such the proposed development is a more sustainable alternative than the development of a new quarry on a greenfield site.

The proposed continuance and extension of the existing quarry at the subject site is considered to be the most appropriate development.

4.2.2 Alternative Designs/Layout

The Applicant was not involved in the historic extraction at this location, but it is understood that the previous landowner extracted materials from the site due to the presence of valuable sandstone. The experience of the Applicants in the operation of other quarries in the vicinity has aided in the preparation of the proposed quarry design, particularly in terms of the proposed phasing. There are no real alternatives to the design of the quarry as proposed having regard to the existing quarry void the land ownership boundaries and the topography of the site.

4.2.3 Alternative Mitigation Measures

The mitigation measures outlined in this EIAR, where appropriate, have been developed by competent experts relevant to the aspect of the environment under consideration and represent best practice with a view to avoiding or otherwise minimising potential impacts on the environment. Any specific alternative mitigation measures that may be available are discussed directly in the relevant chapters.

In addition, a separate Substitute Consent Application under S177E of the Planning and Development Act 2000 (as amended) has been submitted in tandem with this 37L Application in order to regularise any development that has occurred on the site to date. A grant of the Substitute Consent Application would further confirm that the historic development has not resulted in a significant impact to the receiving environment and is not resulting in any negative impacts on the natural environment and that the site is suitable for this type of extraction works.

As assessed in this EIAR, there are no predicted residual impacts once mitigation measures have been successfully applied and as such alternative mitigation is not considered necessary.

4.2.4 “Do Nothing” Alternative

A ‘Do Nothing’ Scenario would comprise of leaving the site as is, with no further quarrying or expansion. The site would restore naturally without any management or mitigation of any potential future impacts. It would result in an unusable site that could attract antisocial activity, such as illegal dumping, and could potentially have significant environmental impacts such as the breakdown of the settlement pond system which would allow for sediment run-off to pollute the adjoining waterways.

5.0 POPULATION AND HUMAN HEALTH

This chapter of the Environmental Impact Assessment NTS examines the potential impacts of the historic quarry development on human beings. The scope of the work includes an evaluation of the potential and indirect effects on the human populations of the surrounding environs and addresses impacts on amenity, the local economy, and health.

The assessment of impacts on population and human health entailed in the identification of key populations potentially affected by the proposed development, a definition of the study area; and quantitative, qualitative, and documentary research.

Key populations potentially affected by the proposed development have been identified as persons residing and engaging in activities in close proximity to the quarry, persons with a stake in the general economy of the area, and persons enjoying the recreational and cultural amenities of the area.

The primary Study Area has been defined as the Electoral Division (ED) of Clogrennane (Id: A017012001) where the site is located. Due to the proposed development being situated along the County Laois border, the Rossmore ED (Id: A107087001) has been Included in order to effectively analyse the surrounding environs of the site. The study area has been identified having regard to both data availability and the location of the subject site.

Lands surrounding the subject site can be described as rural in character. Residential properties in the vicinity of the site comprise of one-off dwellings and farm holdings along county roads that are primarily to the north, south, and east of the site. Further details of the receiving environment are provided in Chapter 2 of this EIAR.

The subject site is located at Clogrennane. In the 2022 Census, the relevant SA (017012001) had a total population of no. 348 persons representing a population percentage change of +7% from the 2016 Census. This percentage change in population compares with the neighbouring SA (107087001), which has experienced a population change of +2% increase from 2016. Both areas saw their population decrease slightly in the 2016 Census, but their 2022 populations are marginally higher than in 2011. The overall population in the wider area has therefore remained largely static over the last 15 years since the quarry was in full operation.

The A107087001 Small Area (within the Electoral Division of Rossmore) borders the subject site and has a total population of 464 no. persons in 2022. The rate of change in the neighbouring SA is even more marginal than the subject SA. This indicates the remote, rural character of the area. The two areas are compared with the county and the state across a range of relevant statistics that considers the number of households, age breakdown, water supply, sewerage system, disability and quality of health.

An assessment of employment and deprivation are also provided.

Based on the qualitative analysis of the sensitivity of the receiving environment in relation to human health, there would appear to be very low health sensitivity in the area indicating no long term impacts from the historic development of the quarry.

With proposed mitigation measures in place, it can be concluded that the proposed development will have a long-term, localised, direct, negative and not significant effect on air quality.

It has been concluded based on the assessment, the information provided and assumptions outlined in this section that, once operational, noise levels associated with the proposed development will not exceed project criteria provided guidelines outlined in this EIAR are followed.

It is considered that the magnitude of landscape impact is in the Low risk in the immediate vicinity of the site. The magnitude of impact will soon reduce thereafter as the proposed extraction extension area will become a smaller component of the overall landscape fabric and will be worked in conjunction of the existing quarry as well as the various surrounding existing quarries.

Further to this, the Low landscape sensitivity judgement attributed to the study area coupled with a Low magnitude of landscape impact is considered to result in an overall significance of no greater than slight-imperceptible within the immediate vicinity of the site and reducing to slight and imperceptible at greater distances.

A restoration plan is also proposed as part of the application, which outlines the proposed restoration of the site once it is decommissioned. This will involve the pulling back of steep slopes for both safety and native vegetation establishment in a naturalistic mosaic pattern that maximises potential for biodiversity.

Retention of existing vegetated berms around the site will retain visual screening of the quarry from visual receptors in the surrounding area. The implementation of additional restoration planting will ensure dense and consistent screening of the quarry in perpetuity.

Following the implementation of recommended mitigation measures, the assessment does not envisage any significant residual effects on Groundwater, groundwater supplies, surface water or downstream designated sites from the proposed development.

The proposed development is expected to generate a limited number of additional traffic movements on the local network. Based on the number of staff expected to work on site i.e. 3 no., a total of 6 no. staff trips are generated i.e. two LV trips per staff member.

Regarding HV movements, the subject application is for the intake of up to 200,000 tonnes of material per annum. It is noted that a typical payload departing site will be 25 tonnes. This equates to an average of 29 no. HVs arriving and 29 no. HVs departing the site each day (including ad hoc HV trips).

Traffic volumes on the L7134 in the development's assumed year of opening (2026) are expected to increase by 4%. This will decrease to 3% to the Year of Opening +15 (2041). Traffic on L7130 shall increase by more than this, however this is a reflection of its local access function.

In respect of waste, the associated effect will be long-term, imperceptible and neutral.

The proposed development relates to the extension of the existing disused quarry. It will support 3 no. full time jobs directly at the quarry while also resulting in positive knock-on effects for indirect employment in the local community as well as the County as a whole. The continuation of extraction at the quarry will contribute to the requirement for aggregates to supply the development industry in the region.

In the absence of the proposed development, the quarry will continue to remain in a disused and unsightly state. Therefore, in absence of the proposed development, the long-term prospect of clearing and restoring the lands will be impacted.

No mitigation measures are deemed to be necessary other than those outlined elsewhere in this EIAR.

The residual impact of the proposed development following implementation of a quarry restoration plan will be long term positive in terms of the effects on population and human health.

6.0 BIODIVERSITY

6.1 Overview

This non-technical summary presents the key biodiversity findings and conclusions from Chapter 6 (Biodiversity) of the EIAR for the proposed quarry extension at Redrock Quarry. It focuses on the existing ecological environment, the main potential effects, the mitigation measures proposed to avoid or reduce impacts, and the likely residual effects. It is consistent with the conclusions of the Natura Impact Statement (NIS) prepared for the project. For full technical detail, including survey records and assessment tables, reference should be made to Chapter 6 of the EIAR.

6.2 Existing biodiversity environment

6.2.1 Designated sites and ecological sensitivities

The proposed development site is not within, or immediately adjacent to, any designated wildlife conservation site. The nearest European site with a potential pathway is the River Barrow and River Nore SAC (site code 002162), located approximately 2.1 km overland and more than 2.5 km downstream. The only plausible pathway to this SAC is via water quality, through the Mortarstown Stream and its downstream connection to the SAC. There is no credible pathway for effects from dust, noise, or visual disturbance to reach the SAC due to distance and intervening land use.

European sites: The River Barrow and River Nore SAC is the only hydrologically connected Natura 2000 site within the project Zone of Influence.

National sites: The only nationally designated site downstream and hydrologically connected is Cloghrick Wood pNHA (000806), located approximately 3.4 km overland and about 6 km along the flowpath.

Field surveys did not record regular usage of the quarry lands by River Barrow and River Nore SAC qualifying interest species, and no SAC qualifying habitats occur within the development site.

6.2.2 Habitats and flora

Habitats within the landholding comprise a mosaic typical of an inactive quarry and surrounding farmland. The quarry itself includes exposed rock, bare ground, stockpiles, and areas of recolonising spoil. Around the quarry are agricultural fields, hedgerows, treelines, scrub, and small wet features including ponds. No habitats listed on Annex I of the EU Habitats Directive were recorded within the proposed development site.

Principal habitats recorded include quarry workings and exposed rock, spoil and bare ground, recolonising spoil, scrub, improved agricultural grassland, wet grassland, hedgerows, treelines, drainage ditches, and ponds.

The majority of the existing biodiversity value is associated with field boundaries (hedgerows and treelines), scrub patches, and wet features (ponds and ditches).

No plant species protected under the Flora Protection Order 2022 were recorded within the development site during the surveys summarised in Chapter 6.

No Schedule 3 invasive plant species were recorded within the proposed development site during the surveys.

6.2.3 Fauna

The site supports a range of common fauna associated with farmland and quarry habitats. Targeted ecological surveys informed the assessment of bats, birds, non-volant mammals, amphibians, and aquatic ecology.

6.2.4 Non-volant mammals

The quarry and adjoining farmland provide limited suitability for protected mammal species, with the main ecological features being hedgerows, treelines, and wet features.

No evidence of regular use of the site by River Barrow and River Nore SAC mammal qualifying interests (for example, otter) was recorded at the site.

6.3 Bats

Bat activity recorded across the wider site was dominated by Common Pipistrelle and Soprano Pipistrelle, with additional records of Leisler's bat, Daubenton's bat, and Brown Long-eared bat.

No confirmed bat roosts were identified within buildings or trees in the development footprint. Trees assessed were considered to have low roost suitability.

Key bat habitats are linear features such as treelines and hedgerows, and areas of scrub and wet features used for foraging.

6.4 Birds

Birds recorded were largely typical of farmland and scrub habitats. The nearest Special Protection Area (SPA) referenced in Chapter 6 is the River Nore SPA (004233), located approximately 22 km to the southwest, and no significant effects are predicted due to lack of a plausible pathway.

Sand Martin burrows were recorded within exposed quarry faces, and the quarry also provides suitable nesting habitat for other birds associated with cliffs and quarries.

Invasive or high-risk pathways affecting designated bird sites were not identified due to distance and absence of connectivity pathways.

6.5 Amphibians and aquatic ecology

The site includes ponds and drainage features that can support common amphibians. Smooth Newt and Common Frog were identified as potentially present based on eDNA sampling and analysis and habitat suitability.

The principal biodiversity sensitivity in relation to aquatic ecology is the need to protect local watercourses from suspended solids, hydrocarbons, and alkaline residues during enabling, operational, and restoration stages.

6.6 Likely effects and mitigation measures

6.6.1 Enabling and construction stage

The main biodiversity risks during enabling and construction relate to temporary habitat disturbance and the potential for pollution of surface waters. Potential effects include removal of vegetation, disturbance to nesting birds, and mobilisation of fine sediments in rainfall events. Uncontrolled run-off could, in the absence of controls, affect local watercourses and, indirectly, downstream designated sites.

Good site practice measures will be applied to control dust, noise, and lighting, and to avoid unnecessary disturbance of retained habitats.

Works will be planned to avoid impacts on breeding birds, with pre-works checks of suitable nesting areas and appropriate buffers where nesting is confirmed.

Surface-water protection measures will be implemented to prevent sediment-laden or contaminated run-off entering watercourses, including appropriate drainage controls and settlement treatment.

Fuel and chemical storage, refuelling, and plant maintenance will be managed to minimise spill risk, with spill response procedures in place.

6.7 Operational stage

During the operational phase, potential effects are similar in nature but are managed through embedded design measures, operational controls, and ongoing monitoring. The key biodiversity consideration remains protection of surface water quality and retention of valuable boundary habitats.

A closed-loop washing system is proposed, which avoids discharge of wash water to the receiving environment.

Operational controls will maintain the integrity of the surface-water management system, including inspection and maintenance of drainage and treatment features.

Lighting will be designed and managed to minimise spill onto treelines, hedgerows, and wet features, reducing potential disturbance to bats.

6.8 Restoration and aftercare stage

The restoration plan includes rehabilitation and final landscaping to provide a site with increased local biodiversity value. The approach focuses on habitat creation and enhancement appropriate to the surrounding landscape, while maintaining safety and stability of restored areas.

Creation and management of habitats such as species-rich grassland, scrub, woodland blocks, hedgerows, and wet features (including ponds) where feasible.

Provision for ecological features such as stone and timber refuges, and, where appropriate, bird and bat boxes to supplement nesting and roosting opportunities.

Long-term aftercare and management to help ensure that created habitats establish and provide sustained biodiversity benefits.

6.9 Monitoring and environmental management

An Ecological Clerk of Works (ECoW) will support implementation of biodiversity mitigation and enhancement measures. Environmental monitoring, including water quality monitoring, will be used to verify that control measures are functioning as intended.

Pre-works ecological checks, toolbox talks, and supervision of sensitive activities by the ECoW. Routine inspection and maintenance of surface-water management measures, with monitoring at agreed locations during enabling and operational stages.

Adaptive management where monitoring identifies a need to improve controls or practices.

6.10 Conclusion

With the mitigation measures incorporated into the design, construction, operation, and restoration of the project, the EIAR concludes that significant adverse residual impacts on biodiversity are not expected. The NIS concludes that the only credible pathway to the River Barrow and River Nore SAC is hydrological. With best practice measures and mitigation in place to control run-off and protect water quality, there is no residual risk of adverse effects on the relevant qualifying interests of that Natura 2000 site.

No direct effects on European designated sites are predicted, due to separation distance and absence of disturbance pathways.

Potential indirect effects are limited to water quality mediated pathways, and these are addressed by embedded design and operational controls, monitoring, and contingency measures.

Overall, it is concluded that the project will not give rise to significant effects on Natura 2000 sites, including the River Barrow and River Nore SAC, either alone or in combination with other plans or projects.

7.0 LAND, SOILS AND GEOLOGY

The Proposed Development comprises the extension to Red Rock Quarry, a former sandstone bedrock quarry located at Clongrenan, Co. Carlow. The Proposed Development Site is located at the eastern edge of the Castlecomer Plateau, ~5km southwest of Carlow town and ~7.5km northwest of Leighlinbridge.

The floor level of the existing quarry void stands at ~304mOD. This planning application proposes a final quarry floor depth of 300mOD and a lateral phased extension of the existing quarry void into agricultural pastures to the southwest. The Proposed Development also includes restoration plan with the site being restored to agricultural lands and areas of native woodland.

The geological characteristics of the Proposed Development Site have been investigated through the completion of site walkover surveys, inspections of the existing quarry faces, geophysical surveys and borehole drilling.

The soils/subsoils at the Proposed Development Site are relatively thin, with a range of subsoil conditions noted across the site. Soils and subsoils have been removed from the existing quarry void to facilitate the previous extraction of bedrock at Red Rock. Subsoils encountered in the lands surrounding the existing quarry comprised typically of silty, gravelly CLAY. The soils and subsoils encountered during the site investigations correlate with the published Teagasc/GSI soils and subsoils maps of the local area.

The Proposed Development Site is mapped to be underlain by the Moyadd Coal Formation (shale, siltstone and sandstone) and the Bregaun Flagstone Formation (sandstone and siltstone). The existing quarry void provides excellent exposures of the local bedrock, with sandstone located towards the southwest of the quarry and shale more dominant elsewhere. Borehole drilling confirmed the presence of sandstone, shale and siltstone bedrock in the lands surrounding the existing quarry.

There are no geological heritage sites located within the Proposed Development Site. An abandoned coal mine, Old Rossmore County Geological Site (CGS), is located ~300m to the northwest. The Proposed Development has no potential to impact this CGS.

The Proposed Development will extract sandstone bedrock at Red Rock Quarry and all effects relating to the land, soils and geology environment will be contained within the Proposed Development Site. The extraction will be completed across several phases and a phased restoration will be implemented at the site. In total, the Proposed Development will require the removal of ~145,000m³ of soil and overburden from the proposed extraction areas across 4 no. phases. The soils/subsoils will be used in the final restoration of the site. The Proposed Development will extract ~200,000 tonnes of bedrock per year for a period of 20 years. The removal of soils and subsoils and extraction of bedrock is considered to be an acceptable part of the Proposed Development.

Hydrocarbons, in the form of fuels and oils, will be used on-site during the proposed works. However, the volumes will be small and will be handled in accordance with best practice mitigation measures. Similar mitigation measures are being implemented at bedrock quarries across the country. The potential residual effects associated with land, soils and geology from contamination and subsequent health effects are negligible.

The phased restoration of the Proposed Development Site will have a positive effect with respect land, soils and geology. The mitigation will include the adoption of suitable restoration plan which considers the natural local topography and land use.

Due to the lack of significant residual effects from the Proposed Development that would affect the wider environment, there will be no significant cumulative effects to land, soil and geology resulting from the Proposed Development, and other local existing developments, projects and plans.
No significant effects to the land, soils and geological environment will occur.

8.0 HYDROLOGY

The Proposed Development comprises the extension to Red Rock Quarry, a former sandstone bedrock quarry located at Clongrenan, Co. Carlow. The Proposed Development Site is located at the eastern edge of the Castlecomer Plateau, ~5km southwest of Carlow town and ~7.5km northwest of Leighlinbridge.

The floor level of the existing quarry void stands at ~304mOD. This planning application proposes a final quarry floor depth of 300mOD and a lateral phased extension of the existing quarry void into agricultural pastures to the southwest. The Proposed Development also includes restoration plan with the site being restored to agricultural lands and areas of native woodland.

The hydrological and hydrogeological regime at the Proposed Development Site has been investigated through the completion of walkover surveys, drainage mapping, surface water quality monitoring, surface water flow monitoring, borehole drilling, groundwater sampling and groundwater level monitoring.

The majority of the Proposed Development Site is located in the River Barrow surface water catchment with a small area in the southwest situated in the River Nore surface water catchment. Within the River Nore catchment, the Proposed Development Site is located in the Dinin River sub-catchment. However, within this sub-catchment there are no watercourses located in the vicinity of the Proposed Development Site. Within the River Barrow catchment, the EPA map a watercourse, referred to as the Raheendoran Stream to flow to the east, through the Proposed Development Site. However, site inspections and walkover surveys have shown that this watercourse is no longer present within the site. Water at the site currently gathers in flooded areas on the floor of the quarry void, and is discharged at 2 no. locations which merge downstream of the quarry, before travelling to the northeast and discharging into the Mortarstown Stream. The Mortarstown Stream is a tributary of the Fushoge River which in turn discharges into the River Barrow. A direct hydrological connection exists between the Proposed Development Site and the River Barrow and River Nore SAC.

The Site is underlain by the Bregaun Flagstone Formation and the Moyadd Coal Formation. The sandstones, siltstones and shales comprising these formations are of low permeability and are classified by the GSI as Poor Bedrock Aquifers. This means that the hydrogeological regime of the Proposed Development Site is characterised by high rates of surface water runoff and low rates of groundwater recharge. Any groundwater flows will be short, will follow local topography and will discharge into nearby streams. Surface waters are therefore considered to be the primary receptors associated with any potential qualitative effects. Furthermore, there will be no significant effects on groundwater levels due to the low permeability of the bedrock aquifers, the topographical setting of the site at the side of a hill, and given that the floor of the quarry will be restricted to 300mOD. It is noted that there are no significant inflows of groundwater into the existing quarry void.

The proposed water management system will direct all water within the quarry void to new proposed settlement ponds on the floor of the quarry, which will in turn discharge to the existing settlement ponds. Water will outfall to the existing drain which directs water towards the Mortarstown Stream. There will be no discharge of untreated or unattenuated waters. All discharge will be completed in accordance with conditions to be set out in a discharge licence.

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The implementation of tried and tested, best practice mitigation measures, designed for the protection of both surface and groundwater quality will be implemented at Red Rock Quarry with respect to hydrocarbons, blasting and wastewater. Similar mitigation measures are being implemented at bedrock quarries across the country.

The implementation of the mitigation measures prescribed in the EIAR will ensure that the Proposed Development will not result in any significant effects on downstream surface watercourses, downstream designated sites, local groundwater and groundwater well supplies.

Furthermore, with the implementation of the prescribed mitigation measures there will be no change in the WFD status of the underlying groundwater body or downgradient surface waterbodies. The Proposed Development has been found to be fully compliant with the WFD and will not prevent any waterbody from achieving its WFD objectives.

Due to the lack of significant residual effects from the Proposed Development that would affect the wider environment and with the implementation of the proposed mitigation measures, there will be no significant cumulative effects on the hydrological and hydrogeological environment.

No significant effects on the local hydrological and hydrogeological environment will occur.

9.0 AIR QUALITY

The potential air quality impacts associated with the proposed development are detailed within Chapter 9 of the EIAR. The assessment focussed on potential impacts to air quality as a result of operational quarrying activities.

9.1 Baseline

In terms of the existing air quality environment, data available from similar environments indicates that levels of dust, particulate matter less than 10 microns (PM₁₀) and particulate matter less than 2.5 microns (PM_{2.5}) are generally well below the National and European Union (EU) ambient air quality standards.

9.2 Impact Assessment

Impacts to air quality associated with the development will result from day-to-day quarrying activities, movement of vehicles on site and processing of materials. Air dispersion modelling was carried out using the United States Environmental Protection Agency's regulatory model AERMOD. The aim of the study was to assess the contribution of operational emissions of dust, PM₁₀ and PM_{2.5} from the proposed and existing operations at the quarry to off-site levels of the pollutants. This study was carried out based on worst case predicted levels of operation at the quarry and the operational hours proposed.

The worst-case dust deposition level at the site boundary, including background levels, peaks at 109.7 mg/m²/day which is 31% of the TA Luft Limit Value of 350 mg/m²/day. With regard to PM₁₀, the modelling assessment has found that ambient PM₁₀ concentrations (including background concentrations) are in compliance with the relevant limit values, reaching at most 35% of the 24-hour limit value (measured as a 90.4thile) and 28% of the annual limit value at the worst-case residential receptor. With regard to PM_{2.5}, the modelling assessment has found that ambient PM_{2.5} concentrations (including background concentrations) are in compliance with the relevant limit values, reaching at most 25% of the annual limit value at the worst-case residential receptor.

Dust and particulate matter emissions from the quarrying activities on site have been assessed to be **localised, long-term, negative** and **not significant**.

Air dispersion modelling of operational activities at the site was undertaken to assess the impact of the development with reference to EU ambient air quality standards which are based on the protection of human health. As demonstrated by the modelling results, emissions of dust deposition, PM₁₀ and PM_{2.5} as a result of the development are compliant with all National and EU ambient air quality limit values and, therefore, will not result in a significant impact on human health.

9.3 Mitigation Measures

There are a number of mitigation measures proposed to reduce dust emissions. These measures were included in the assessment. Provided these measures are implemented on site, no significant air quality impacts are predicted. The required measures are listed in Section 9.6 of Chapter 9 of the EIAR.

9.4 Residual Impacts

Overall, there are no significant air quality impacts predicted as a result of the proposed development. The predicted impact is **long-term, direct, localised, negative** and **not significant**.

10.0 CLIMATE

The potential impact on climate associated with the proposed development is detailed within Chapter 10 of the EIAR. The climate assessment has focussed on:

- The potential greenhouse gas emissions during the construction and operational phases of the development.
- The vulnerability of the project to climate change, including considerations for increased rainfall and other projected climate impacts.

10.1 Baseline Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total GHG emissions of 57.64 Mt CO₂e in 2024. This is 1.03 Mt CO₂e higher than Ireland's annual target for emissions in 2024. EPA data indicate that from 2021- 2024 Ireland has used 82.5% of the 295 Mt CO₂e Carbon Budget for the five-year period 2021-2025. This leaves 17.5% of the budget available for 2025, requiring a substantial 10.3% annual emissions reduction for 2025 to stay within budget.

10.2 Impact Assessment

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

The impact of the construction and operation of the proposed development on Ireland's total national greenhouse gas emission is compared to Ireland's 2024 total greenhouse gas emissions, the relevant sectoral emissions ceilings and 2030 carbon budgets. Any adverse impacts are predicted to primarily occur during the operational phase, with the dominant sources of greenhouse gas emissions as a result of the development due to site activities, fuel usage and traffic emissions.

Calculation of the GHG emissions associated with the operational site fuel usage and traffic emissions was calculated using the online Transport Infrastructure Ireland Carbon Tool. The GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's 2030 carbon budget of 27.7 MtCO₂e and the sectoral emissions ceilings for the Industry and Transport sectors. The proposed development will incorporate some mitigation measures which will aim to reduce climate impacts while the development is operational.

A climate change risk screening assessment was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog; wildfire and landslides. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is considered **direct, long-term, negative and imperceptible**, which is considered overall **not significant** with regard to the construction and operational phase.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

10.3 Mitigation Measures

A key target in CAP25 is reducing the embodied carbon of construction materials. The Applicant (Milford Quarries) are actively engaged with the Sustainable Energy Authority Ireland (SEAI) under its Excellence in Energy Efficient Design (ExEED) program to support the electrification of the aggregate production process. It is anticipated that further carbon reduction projects will be implemented at Milford Quarries. These measures will include the addition of renewable technologies such as solar.

The above indicates that at a company level the Applicant has a commitment to reducing its climate impact and the effects of their identified strategies through the ExEED projects can apply to the proposed development where appropriate. These identified measures will aid in reducing the impact to climate during the operational phase of the proposed development in line with the goals of the Climate Action Plan. Full details of the mitigation measures is included in Section 10.6 of Chapter 10 of the EIAR.

10.4 Residual Impacts

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII PE-ENV-01104 guidance references the ISEP guidance which states that the crux of assessing significance is *“not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050”*. The proposed development has incorporated some measures to reduce climate change impacts and the Applicant is committed to reducing its climate impact at a company level. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered **direct, long-term, negative** and **slight**, which is overall **not significant** in EIA terms.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change. The residual effect of climate change on the proposed development is considered **direct, long-term, negative** and **imperceptible**, which is overall **not significant** in EIA terms.

11.0 NOISE AND VIBRATION

11.1 Introduction

Chapter 11 Noise and Vibration focuses on assessing the potential impacts and significant effects of noise and vibration associated with the construction and operation of the Proposed Development. It aims to provide a comprehensive understanding of the existing noise environment, the methodology used for the assessment, the potential effects of noise and vibration, and the proposed mitigation measures to minimise any adverse impacts from the overall proposed development.

11.2 Baseline Conditions

The study area's baseline environment, including existing noise sources and receptors, established the foundation for the assessment's scope and methodology. A detailed attended noise survey was conducted to measure background levels and operational noise specific to the proposed quarry in Clogrennane, Co. Carlow. The analysis derived from this survey, combined with baseline traffic flow data, provides the critical reference point used to evaluate the overall impacts of the Proposed Development.

11.3 Assessment of Construction Effects

Construction of the Proposed Development will introduce temporary noise into the environment. Mitigation measures detailed in Section 11.8 of Chapter 11 will ensure that these impacts would be imperceptible at nearby sensitive receptors. Minimal vibration impact is expected during the construction phase. While some vibration may occur during substructure earthworks, a worst-case assessment demonstrates that these impacts will also be imperceptible at nearby Noise Sensitive Locations (NSLs).

11.4 Operational Noise Assessment

Operational noise and vibration impacts on NSLs were assessed as imperceptible, leading to negligible effects. The project noted the absence of historical noise complaints during past quarry operations. Given that future operations will be similar in nature, the assessment predicts that operational noise will continue to have an imperceptible significance and a negligible impact on NSLs.

11.5 Mitigation Measures

Section 11.8 of Chapter 11 details several good-practice mitigation measures for noise and vibration. These include the deployment of noise barriers, strategic scheduling of construction activities to avoid sensitive periods, and the specification of low-noise machinery and equipment. The implementation of these mitigation measures will lower construction noise levels and minimise impacts on NSLs.

11.6 Residual Effects

With the implementation of the proposed mitigation measures, the assessment evaluates the remaining effects of noise and vibration. The conclusion is that the residual effects of construction noise from the proposed development are expected to be temporary and of negligible significance. Similarly, operational noise is also anticipated to have an imperceptible impact on noise sensitive locations (NSLs).

11.7 Conclusion

Chapter 11, focusing on Noise and Vibration, provides a comprehensive evaluation of the impacts related to the Development. It identifies potential effects during both the construction and operational phases. By applying established methodologies and implementing effective mitigation measures, the project seeks to minimise adverse noise and vibration impacts. This approach ensures compatibility between the development and the surrounding environment, helping maintain the quality of life for nearby noise sensitive receptors.

12.0 MATERIAL ASSETS – WASTE

12.1 Introduction

AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by Carlow County Council (CCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

There will be waste materials generated from site clearance works, excavations, construction of the development and from the operation of the development.

12.2 Potential Impacts and Mitigation Measures of the Proposed Development

12.2.1 Construction Phase

During the construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

12.2.2 Operational Phase

The potential impacts on the environment during the operational phase of the proposed development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

12.3 Residual Effect of the Proposed Development

12.3.1 Construction Phase

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the quarry operator, who will appoint a Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (Appendix 12.1) and chapter 12 during the construction phase, this will ensure that the effect on the environment will be **short-term, neutral and imperceptible**.

12.3.2 Operational Phase

During the operational phase, waste will be generated by the Operator. Dedicated waste storage areas (WSAs) will be allocated for the development for the use by the staff. The WSA will appropriately sized to accommodate the estimated waste arisings from the development. The WSA will be allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

Provided the mitigation measures outlined in chapter 12 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be **long-term, neutral** and **imperceptible**.

12.4 Cumulative Impact of the Proposed Development

12.4.1 Construction Phase

There are existing residential and commercial developments in the surrounding area, along with the multiple permissions remaining in place in the area. In a worst-case scenario, multiple developments in the area could be developed concurrently or overlap in the construction phase. Due to the high number of waste contractors servicing the CCC region, as provided from the National Waste Collection Permit Office and the EPA, there would be sufficient contractors available to handle waste generated from a large number of these sites simultaneously, if required. Similar waste materials would be generated by all of the developments.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the cumulative effect will be **short-term, imperceptible** and **neutral**.

12.4.2 Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such the cumulative effect will be a **long-term, imperceptible** and **neutral**.

13.0 TRAFFIC

13.1 Introduction

Transport Insights has been commissioned by Kilcarrig Quarries Limited to prepare an Environmental Impact Assessment Report (EIAR) Traffic and Transport Chapter in relation to the development of a quarry at a site at Clogrennane, Co. Carlow. The quarry shall have a projected lifetime of ca. 20 years and is located on a site subject to an application for substitute consent to regularise previous unauthorised development.

13.2 Characteristics of the Proposed Development

13.2.1 Site Access Arrangements

The proposed development will be accessed from via the site access junction on the L7130 and travel along the northeastern boundary of the site via a site access road and enter the site at the north of the development ca. 600 metres northwest of the site access junction.

The two existing site access locations at the north of the site will be replaced (over time) by a single site access point which links to the site access road. The new site access will link to an internal access track to allow for access around the site.

13.2.2 Proposed Development Description and Site Layout

The proposed development will involve blasting, extraction and processing of rock using mobile primary crushing / screening and associated plant on the proposed quarry floor. The proposed quarry void will be extracted over 4 no. phases to a depth of 2 no. benches of c. 10m each to a quarry depth of c. 300m AOD with a proposed rate of extraction of c. 200K tonnes per annum. The proposed development will include for construction of earthen screening berms, soil storage areas and will utilise existing quarry entrance from the northern boundary linking to the L7130 local road to the east. Existing and proposed access tracks and existing settlement ponds will be utilised as part of the proposed development. The proposed development will be accompanied by a phased restoration plan.

13.3 Predicted Impacts of the Proposed Development

13.3.1 Construction Phase

As noted in the preceding section, the proposed development shall be delivered in an existing quarry site, and as such construction phase impacts are anticipated to be minimal i.e. the existing facility shall be largely fit for purpose to accommodate the proposed development.

The construction phase shall however include creation of a staff welfare area and car parking, in addition to upgrades to the proposed site access.

Based on figures provided by the design team, it is estimated that on average 3 no. construction workers will be based on site each day. This would likely equate to a daily average of 2 no. contractor staff vehicle trips (assuming a vehicle occupancy of 3 no. contractors per vehicle) or a peak of 5 no. contractor staff vehicle trips. In regard to construction related deliveries, it is estimated a daily average of 5 no. HV trips (e.g. excavated materials off-site, import materials, delivery HGVs, etc.) and 2 no. LV trips (delivery vans)

will occur during construction. Given the temporary nature of the construction related traffic, the impact of the estimated construction traffic is expected to be minimal.

Construction traffic activity is expected to take place between 07:00hrs and 18:00hrs, Monday to Friday, and between 08:00hrs and 13:00hrs on Saturdays. Construction related traffic will access/ egress the site from the access point at the eastern boundary of the site. Construction traffic shall use the same haul routes (separate access and egress routes) utilised for the operational phase and illustrated in Figures 13.9 & 13.10.

During site clearance, the site shall be cleared to allow for parking of all staff and construction vehicles within the boundary of the proposed development site in order to ensure that no construction related parking takes place on the adjoining local road network.

13.3.2 Operational Phase

The proposed development is expected to generate a limited number of additional traffic movements on the local network. Based on the number of staff expected to work on site i.e. 3 no., a total of 6 no. staff trips are generated i.e. two LV trips per staff member.

Regarding HV movements, the subject application is for the intake of up to 200,000 tonnes of material per annum. It is noted that a typical payload departing site will be 25 tonnes. This equates to an average of 29 no. HVs arriving and 29 no. HVs departing the site each day (including ad hoc HV trips).

13.4 Mitigation Measures

13.4.1 Construction Phase

As part of the construction phase, a number of mitigation measures are proposed. These are as follows;

- In order to minimise the potential impact on the local road network surfaces, road cleaning is proposed to be implemented on site during the earliest construction phase (e.g. earth extraction) to mitigate against material such as dust, earth, debris etc. from entering the local road network, as required.
- Furthermore, the site shall be cleared to allow the parking of all construction vehicles including staff vehicles within the bounds of the subject site.
- Haul routes outlined within the EIAR will be strictly adhered to by construction vehicles so as not to have an undue impact on unsuitable local roads.
- These haul routes shall be strictly controlled by the client or the appointed main constructor during the duration of the construction phase with all construction vehicle operators employed being issued maps of sanctioned haul routes to and from the site and under strict instructions to follow these routes.

13.4.2 Operational Phase

As part of the operational phase, several mitigation measures are proposed, which are as follows:

- To ensure adequate visibility for vehicles egressing the site of oncoming traffic to both the north and south, it is proposed to ensure that the required sightlines of 90 metres (in accordance with the County Development Plan) are achievable in both directions to ensure adequate visibility of drivers egressing the site of oncoming traffic. See Appendix xx of this document.

- The site access junction will also be provided with stop road markings and signage to ensure that vehicles egressing the site are mandated to come to a full stop before turning onto the L7130.
- Haul routes outlined within the EIAR shall be strictly controlled by the client for the duration of the operational phase with all heavy vehicle operators employed being issued maps of sanctioned haul routes to and from the site and under strict instructions to follow these routes.

13.5 Residual Impacts

The predicated residual impact of the proposed development in terms of traffic and transportation is that there will be a marginal increase in LVs and HVs on the adjoining road network due to the operation of the proposed development.

14.0 ARCHAEOLOGY

14.1 Section Purpose

Section 12 of the EIAR provides an assessment of the effects on the archaeological, architectural and cultural heritage of the application site and the surrounding area of a proposal for continued use and extension of the existing sand pit. This assessment included consideration of both potential effects from the proposal and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

14.2 Setting and Existing Conditions

The application site is located in the Townland of Clogrennan, Co. Carlow on OS Six Inch sheet No. 6, east of the I7129 road, and c.1.5km east of the town of Bilboa.

There will be no direct or indirect effects on any known items of archaeology, cultural heritage, or buildings of special architectural significance in the application area or the vicinity. In the worst-case scenario soil-stripping of unstripped land within the application area in areas 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 may have a significant, permanent, negative/adverse effect on previously unknown subsurface archaeological deposits or artefacts without preservation by record taking place.

14.3 Potential Effects and Mitigation

Due to the possibility of the survival of previously unknown subsurface archaeological deposits or finds within the unstripped part of the application area in areas 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 all soil-stripping in these areas should be archaeologically monitored under licence from the National Monuments Service.

15.0 LVIA

The Landscape and Visual Impact Assessment (LVIA) contained in Chapter 15 describes the landscape context of the proposed development and assesses the likely landscape and visual impacts of the scheme on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

- **Landscape Impact Assessment (LIA)** relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- **Visual Impact Assessment (VIA)** relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements.

This LVIA methodology is based on the Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3) in combination with best practice. This methodology requires a separate consideration of landscape effects and visual effects. The assessment combines the sensitivity of landscape / visual receptors against the magnitude of landscape / visual impacts to determine whether significant effects are likely to occur. A 3km radius study area is employed for the LVIA on the basis that significant effects are very unlikely to occur beyond this distance even in the context of highly sensitive receptors.

The proposed development is located on the border of County Carlow and County Laois, just inside the former and therefore designations of both the Carlow County Development Plan (2022-2028) and Laois County Development Plan (2021-2027) are relevant. In relation to the Carlow Landscape Character Assessment, the site is contained entirely within the 'Killeshin Hills' Landscape Character Area. Within the Laois Landscape Character Assessment where landscape character types are used to define different areas, the proposed development is adjacent to the 'Hills and Uplands' area, which also occupies much of the southern half of the study area.

According to the maps available in the Laois and Carlow County Development Plans there are two scenic views that fall within the study area. In both County Development Plans a description of the scenic view and what it is protecting is provided, they are as follows:

Carlow CDP

- SV33- View from Milford on local road L3039, protecting views north and east of the River Barrow.

Laois CDP

- SV21- View from Killeshin, Rossmore on local road L3896, protecting views towards lowlands of Graiguecullen/Carlow.

The Carlow scenic designation (SV33) is just at edge of the study area and oriented in the opposite direction to the proposed development. The Laois designation (SV21) is oriented away from the proposed development and also falls outside of the Zone of Theoretical Visibility (ZTV – See section 15.4.2) indicating no potential for visibility. Therefore, neither of the scenic designations are considered relevant to the visual impact assessment

In terms of the current landscape condition (baseline condition), the proposed development is located in an upland area ranging between 310m AOD and 330m AOD. The proposed site is located on relatively flat to gently undulating land at the eastern edge of the Castlecomer Plateau. The plateau stretches to the west, while the landform immediately to the east of the site falls rapidly as an escarpment towards the flat landscape of the Barrow River valley. In terms of watercourses, the River Barrow is the most prominent within the study area, running north-south through the study area and approximately 2km to the east of the proposed development at its nearest point.

The site itself is occupied by the existing quarry and a mixture of scrubland and rough grazing within its western sections with improved grassland and hedgerows occupying the eastern side which begin to slope towards the Barrow valley.

The principal land use within the study area is that of rural agricultural farmland comprising of small to medium sized fields bound by a network of mixed hedgerow vegetation. There are also multiple dense areas of commercial conifer forestry surrounding the proposed development. Large areas of forest are located to the north-west and south-west of the site and Clogrennane Woods is located approximately 130m from the proposed site boundary at its nearest point. Other notable land uses include the Clogrennane Lime Works Quarry located to the south east of the proposed site adjacent to Clogrennane Woods. The study area encompasses a modest and dispersed rural population residing in farmsteads and clusters of rural dwellings, noting that the more notable settlement of Carlow lies just beyond the study area to the northeast. The closest local receptors to the proposed development are situated approximately 50m from the proposed development to the east of the red line boundary. Much of the immediate surrounds of the site is made up of a network of local roads connecting the central study area. The R448 is a regional route that connects Carlow to the M9 and passes just beyond the study area to the east.

In terms of landscape impacts, the proposed development involves an extension over an area of 15.52 ha to include pre-existing quarry and additional agricultural lands with a projected lifespan of c. 20 years with an estimated extraction rate of 200k tonnes per annum. This is a productive rural landscape containing the operational Red Rock Quarry, with intensive arable agricultural, other quarrying and transport infrastructure present throughout the wider landscape context. The proposed development represents an intensification and extension of an established feature of the local area rather than the introduction of a new and unfamiliar one. It will replace some of the existing field pattern within the site, but generally low productivity areas of scrub and rough grazing in the southwestern corner, as opposed to the better quality agricultural fields and hedgerows that occur within the eastern portions of the site. In terms of quarrying related activities, such as the movement of heavy vehicles within, as well as to and from Red Rock Quarry are already commonplace in the immediate context of the application site. As such, landscape effects are not considered to be significant.

Visual impacts were assessed at 7 no. viewpoint locations throughout the 3km study area, representing a range of viewing angles, distances, and contexts. The sensitivity of each of these visual receptors within the study area is deemed Medium-low, which reflects the robust working nature of this typically rural landscape context. Due to the degree of inherent screening around the site and its position atop a plateau, both the pre-mitigation and residual visual effects are deemed to be Imperceptible / Neutral at all representative viewpoints.

16.0 INTERACTIONS AND CUMULATIVE IMPACTS

16.1 Introduction

This section of the EIAR has been prepared by Tom Phillips + Associates and deals with the likely interactions between effects predicted as a result of the proposed development.

In addition to the requirement under the Planning and Development Regulations 2001 (as amended) to describe the likely significant effects of the proposed development on aspects of the environment, it is also required to consider the interaction of those effects. As such, these are assessed below.

This section addresses the intra-project significant effects (i.e. those occurring between the environmental topics within the project). Inter-project effects (i.e. those which were likely to occur as a result of the likely impacts of the proposed development interacting with the impacts of other projects in the locality) have also been considered and it has been established that there are no other known planned/permitted projects that would have interacted to a significant degree the operational phase of the quarry.

Further detail relevant to the interaction of impacts may be found in the earlier chapters of the EIAR.

16.2 Inter-Relationships/Interactions

It is noted that all aspects of the environments are likely to interact to some extent and to various degrees of complexity. The likely significant interactions between factors arising from the proposed development are set out below.



Table 16.1: Matrix of Interactions Between Environmental Factors

	Archaeology, & Cultural Heritage	Population & Human Health	Biodiversity	Land, Soils & Geology	Hydrology	Air Quality	Climate	Noise & Vibration	Landscape & Visual	Traffic	Waste Mgmt
Archaeology & Cultural Heritage				x							
Population & Human Health					x	x	x	x	x	x	x
Biodiversity					x	x	x				
Land, Soils & Geology											x
Hydrology											x
Air Quality										x	
Climate											
Noise & Vibration										x	
Landscape & Visual											
Traffic											x
Waste Mgmt											

16.2.1 Interaction between Archaeology & Cultural Heritage and Land, Soils & Geology

The interaction between Archaeology & Cultural Heritage and Land, Soils and Geology are discussed in Chapters 7 and 14.

Topsoil will be removed in order to quarry the rock and will be stored at identified locations throughout the quarry. In order to mitigate against such impacts, it is recommended that all ground disturbances, such as topsoil stripping, that are associated with the proposed development, be monitored by a suitably qualified archaeologist.

16.2.2 Interaction between Population & Human Health and Hydrology

The impact of the proposed development on the hydrology and hydrogeology of the area and on the population and human health of the area is assessed in Chapters 5 and 8 of this EIAR.

In terms of the predicted impact on humans, potential health effects arise mainly through the potential for groundwater contamination and impacts on local wells. Hydrocarbons, in the form of fuels and oils, will be used on-site during aggregate extraction.

Due to the local hydrogeological regime, characterised by high rates of surface water runoff and low rates of groundwater recharge, there is very limited potential for effects on groundwater quality. A high proportion of potential groundwater recharge will be rejected due to the low permeability of the underlying bedrock aquifer. Any groundwater will discharge locally to nearby streams

Based on the existing geological and hydrogeological characteristics at the Proposed Development Site, any change in the groundwater vulnerability rating will be minor and will not represent a significant increase in the groundwater vulnerability rating.

The groundwater present at the Proposed Development Site is hosted in bedrock that has a low permeability and groundwater flowpaths will be short.

Therefore, based on the hydrogeological and topographic setting of the Proposed Development Site there will be no significant effects on groundwater levels. Due to the low permeability of the bedrock aquifer any minor effects will be localised.

16.2.3 Interactions between Population & Human Health and Air Quality

The interaction between Population & Human Health and Air Quality is discussed in Chapters 5 and 9.

The primary sources of emissions to air will be associated with plant and machinery undertaking day to day activities such as extraction, onsite processing and transportation of material and dust blow generated during dry, windy conditions. Potential impacts associated with day to day activities have been separated into dust deposition, PM₁₀ and PM_{2.5} emissions.

The results of the dispersion modelling assessment show that dust deposition levels and concentrations of PM₁₀ and PM_{2.5} from the proposed quarrying operations are below the relevant limit values provided the mitigation measures outlined in Section 9.6 are in place. With proposed best practice mitigation in place the results indicate that the impact of the operational phase (i.e. Proposed Operations Scenario) is **localised, direct, long-term, negative** and **not significant**.

16.2.4 Interactions between Population & Human Health and Climate

The interaction between Population & Human Health and climate are discussed in Chapters 5 and 10.

With design mitigation in place, there are no significant risks to the proposed development due to climate change. In accordance with the EPA Guidelines (EPA, 2022), the significance of effect of the impacts to the proposed development due to climate change during the operational phase are direct, long-term, negative and imperceptible, which is overall not significant in EIA terms.

16.2.5 Interactions between Population & Human Health and Noise & Vibration

The interaction between Population & Human Health and Noise & Vibration are discussed in Chapters 5 and 11.

The operational noise impact from the development includes:

- Operational noise from quarrying activities at the proposed site, this includes the extraction stage.
- Operational noise from quarrying activities and the cumulative impact of the existing operations.

At this stage of the design the exact make and model for each piece of plant and equipment is not known for the quarry, therefore, for the purpose of the assessment the plant and equipment for the quarry has been assessed based on assumed plant and machinery from quarries of similar size and purpose, and reference taken from BS 5228-1. The plant and equipment noise levels should be reviewed at design development stage when the actual make and model of the plant and equipment is known, to ensure that the noise levels for the development achieve the criteria outlined in this report. The typical operational noise sources include:

- Screening,
- Loading material,
- Excavating material,
- Infilling material,
- Lorry's transporting material inwards/outwards.

It can be concluded based on the assessment, the information provided and assumptions outlined in this section that, once operational, noise levels associated with the proposed development will not exceed project criteria provided guidelines outlined in this EIAR are followed.

16.2.6 Interactions between Population & Human Health and Landscape & Visual Impact

The interaction between Population & Human Health and Landscape & Visual Impact are discussed in Chapters 5 and 15.

Landscape value and sensitivity are considered in relation to a number of factors highlighted in the Guidelines for Landscape and Visual Impact Assessment 2013, which are set out below and discussed relative to the proposed development site and wider study area.

This is a robust rural setting of reasonably high integrity located south-west of Carlow town. The study area consists primarily of agricultural grassland and forestry along with a reasonable scattering of rural

dwellings. It is a diverse and productive rural landscape where values principally relate to sustaining the local rural economy. There is an existing quarry a short distance to the southeast, which along with the existing quarry within the proposed development site, establishes the extractive industry as part of the baseline landscape setting.

Much of the study area presents has a traditional pastoral aesthetic afforded by a patchwork of small to medium sized agricultural fields within the Barrow Valley and on the Castlecomer Plateau. There are also small sections of riparian vegetation concentrated along the River Barrow as it flows south through the study area providing some localised sense of the naturalistic. Otherwise the vegetation tends to align to the road network and fields within the study area.

On balance of these factors outlined above and in accordance with the criteria set out. The landscape sensitivity is deemed to be **Medium-low**, with localised areas of higher and lower sensitivity throughout the study area.

16.2.7 Interactions between Population & Human Health and Traffic

The interaction between Population & Human Health and Traffic is discussed in Chapters 5 and 13.

For the purposes of the traffic assessment, two separate scenarios will be analysed and their impacts reported. These scenarios are as follows;

- The Do-Nothing scenario will reflect traffic on the surrounding road network factored up to reflect forecast background growth over time.
- The Do-Something scenario builds on the Do Nothing scenario and includes the assessment of expected development related traffic on the surrounding road network. This is considered the 'worst case' scenario.

These scenarios will detail the traffic impacts for the following years;

- YoO (2026);
- YoO + 5 (2031) and
- YoO +15 (2041).

During the operational period, 3 no. staff are expected to be present on site with core work hours as follows;

- 07:00hrs to 18:00hrs - Monday to Friday
- 07:00hrs to 13:00hrs – Saturday

This equates to an estimated approximately 275 no. operational days per year (taking into account anticipated annual leave of staff).

The proposed development is expected to generate a limited number of additional traffic movements on the local network. Based on the number of staff expected to work on site i.e. 3 no., a total of 6 no. staff trips are generated i.e. two LV trips per staff member.

Regarding HV movements, the subject application is for the intake of up to 200,000 tonnes of material per annum. It is noted that a typical payload departing site will be 25 tonnes. This equates to an average of 29 no. HVs arriving and 29 no. HVs departing the site each day (including ad hoc HV trips).

The predicated residual impact of the proposed development in terms of traffic and transportation is that there will be a marginal increase in LVs and HVs on the adjoining road network due to the operation of the proposed development.

16.2.8 Interactions between Biodiversity and Hydrology

A comprehensive Assessment of Biodiversity and Hydrology is provided in Chapters 6 and 8 of this EIAR, respectively.

The River Nore SPA (004233) is located 22km southwest of the proposed development site. The River Nore SPA is located downgradient of the proposed development site via the Dinin River within the River Nore catchment, with only a very small area of the proposed development site located in this catchment. The length of any potential hydrological flowpath would be in excess of 30km. Additionally, there is no surface water discharge from the site to any tributary of the Dinin River. Furthermore, the proposed development site is not connected hydrogeologically with this SPA as the ground water is expected to flow to the east of the proposed development site.

The only nationally protected site hydrologically connected to the proposed development site is the Cloghrystick Wood pNHA (000806), located a minimum of 3.4km overland to the southeast of the proposed development site. The flowpath between the proposed development site and Cloghrystick pNHA is approximately 6km. The Cloghrystick Wood pNHA is located on the eastern banks of the River Barrow downstream of the proposed development site. This pNHA includes some wet woodland adjacent to the river. No direct hydrogeological connection exists between the proposed development site and the pNHA due to the short groundwater flowpaths in the underlying aquifer.

With the application of the identified mitigation measures there is no likelihood of significant negative residual impacts with respect to biodiversity during the construction, operational or restoration (and post-closure) stages of the proposed development. With the implementation of the biodiversity mitigation and enhancement measures it is likely that there will be net positive results for local biodiversity, particularly in the post-closure period.

The design and mitigation measures outlined in Chapter 8 (Hydrology and Hydrogeology) will be effective in minimising any risk to water quality downstream of the site. The accompanying NIS concludes that with implementation of the mitigation outlined that there is no potential for residual adverse impacts upon River Barrow and River Nore SAC or any other Natura 2000 sites in the wider hinterland.

16.2.9 Interactions between Land, Soils & Geology, Hydrology and Waste Management

The interaction between Land Soils and Geology and Waste are outlined in Chapters 7 and 12.

During site walkover surveys and site investigations, no evidence of soil contamination was recorded at the Proposed Development Site. Whilst previous quarrying operations were completed at the Proposed Development Site, there is no evidence of contaminated tailings. The spoil heaps comprise of shale and have begun to revegetate.

According to the EPA online mapping database (www.epa.ie), there are no licenced waste facilities or dump sites within the Proposed Development Site or in the surrounding lands. The closest mapped waste facility is located in the townland of Cappanboe (Site Code: W0158), located ~7.5km to the north-northeast of the Proposed Development Site.

Furthermore, there are no Industrial Emissions (IE) licences/Integrated Pollution Control (IPC) Licence facilities in the immediate area of the Proposed Development Site. The closest mapped IEL licence is located ~1km southeast of the Proposed Development Site. This IEL site is operated by Clogrennane Lime Limited (Carlow) (P0400-03).

The GSI online database (www.gsi.ie) records the presence of several historic quarries in the Clogrennane area. These historic quarries typically date from the early to mid-20th century. No historic quarries are mapped within the proposed lateral extension land which may have contaminated tailings.

16.2.10 Interactions between Air Quality and Traffic

The interaction between Air Quality and Traffic are discussed in Chapters 9 and 13.

As outlined in chapter 9, there is the potential for emissions from road vehicles accessing the site to impact air quality. Pollutants such as NO₂, PM₁₀ and PM_{2.5} are emitted from road vehicles.

The TII guidance *Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106* (TII, 2022), states that road links meeting one or more of the following criteria can be defined as being ‘affected’ by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects, the approach can be applied to any development that causes a change in traffic.

Chapter 13 Traffic & Transport has analysed the predicted increase in traffic volumes based on the proposed extraction of 200,000 tpa of material. As per Chapter 13 and Table 94, the proposed development results in a maximum of 3 no. one-way staff trips and 29 no. one way HGV trips per day. This results in a maximum change of 64 AADT on the L7130 and a maximum change of 58 HDV AADT on the L7130. Therefore, the development does not result in a greater than 1000 AADT change or greater than 200 HGV AADT change. Thus, a detailed assessment of operational phase traffic emissions has been scoped out and there is no potential for significant impacts to air quality from operational phase traffic emissions.

16.2.11 Interactions between Noise & Vibration and Traffic & Transportation

The interaction between Air Quality and Traffic are discussed in Chapters 11 and 13.

The potential for cumulative noise impacts from traffic associated with the proposed quarry operations has been considered. Under the proposed development, there will be a managed transition of quarrying activities from the existing site to the new extraction area. As part of this transition, associated heavy vehicle (HV) movements will also transfer from the existing quarry to the proposed development. There will be no simultaneous or additional HV traffic generated by the two sites operating in parallel. Rather, the proposed development represents a continuation of existing traffic volumes along the local road network, not an intensification. Given that the total volume and routing of quarry-related traffic is expected to remain consistent with current levels, and considering the absence of other significant traffic-generating developments in the area, no cumulative traffic noise effects are anticipated.

16.2.12 Interactions between Material Assets (Waste) and Population & Human Health

The potential impacts on human beings in relation to the generation of waste during the construction and operational phases are that the incorrect management of waste could result in littering, which could cause a nuisance to the public, attract vermin and cause a visual impact. Adherence to the mitigation measures detailed in Chapter 12 and Chapter 5 (Population & Human Health), along with a carefully planned

approach to waste management, adherence to the project-specific RWMP (Appendix 12.1) will ensure appropriate management of waste and avoid any negative impacts on the local population. The associated effect will be ***long-term, imperceptible and neutral***.

16.3 Cumulative Impacts

A review of the Carlow County Council planning system database was carried out and, no significant permitted or planned projects have been identified.

The majority of permitted developments in the area are residential or agricultural in nature.

Given the nature of the development proposed, no significant impacts are envisaged arising from cumulative impacts with other projects.

16.4 'Do Nothing' Scenario

If the development did not proceed, there will be no cumulative impacts arising.

16.5 Mitigation and Monitoring

It is not proposed that any mitigation or monitoring was undertaken specifically in relation to cumulative impacts.

17.0 MITIGATION AND MONITORING

This Chapter provides a consolidated list of all of the environmental commitments/ mitigation measures that have been recommended by the various specialists throughout the Chapters of this EIAR.

The mitigation and monitoring measures have been recommended on that basis that they are considered necessary to protect the environment during both the construction and operational phases of the proposed project. All mitigation measures are provided in Chapter 17 of Volume 2 of this EIAR.

18.0 DIFFICULTIES ENCOUNTERED

In general, no significant difficulties, in terms of technical deficiencies or lack of sources of information, were encountered in compiling the specified information contained in the EIAR.

The proposed development seeks to regenerate and extend extraction at the quarry for a projected lifespan of 20 years. The proposed quarry void will be extracted over 4 no. phases to a depth of 2 no. benches of c. 10m each to a quarry depth of c. 300m AOD with a proposed rate of extraction of c. 200K tonnes per annum. The proposed development will include for construction of earthen screening berms, soil storage areas and will utilise existing quarry entrance from the northern boundary linking to the L7130 local road to the east. Existing and proposed access tracks and existing settlement ponds will be utilised as part of the proposed development. The proposed development will be accompanied by a phased restoration plan. The assessment provided for the proposed development has had regard to the documentation compiled and submitted as part of previous applications at the site and the Planning Authority Reports which formed part of the analysis for those applications.

References to published sources of information are acknowledged in the text. A list of all consultations involved in the compilation of information for this Assessment Report is provided in Chapter 1. It has also had regard to recent and planned developments in the area. The full impact analysis was carried out by experienced consultants, and the best available methods were employed to forecast environmental effects.