

1 INTRODUCTION, SCOPE AND METHODOLOGY

1.1 INTRODUCTION

WSP Consulting Ireland Ltd (WSP) have been commissioned to prepare this Environmental Impact Assessment Report (EIAR) to accompany an application for permission for further development of an existing quarry over approximately 10.03 hectares (ha.) located in the townland of Hempstown Commons, Co. Kildare. This EIAR is submitted on instruction of Shillelagh Quarries Ltd (SQL), owner and operator of this quarry who will be the applicant.

It is noted that this EIAR has been prepared in tandem with an rEIAR to accompany an application for substitute consent for the existing quarry under the Planning and Development Act, 2000 as amended by the same applicant.

The further development of the quarry is proposed over areas directly adjacent to the operational lands within the existing quarry for the purpose of recovering the economic reserve that remains in the void. The proposed development site lies to the north of an established landholding located within the townland of Hempstown Commons, Co. Kildare. The landholding has been the subject of historic, current and intended future extraction. The northeastern boundary of the Site is delineated by the Wicklow and Kildare county boundaries.

The proposed development site (application site) extends to 10.03 ha and encompasses current workings, stockpiling and processing areas, vehicle parking and proposed future workings.

The EIA project boundary encompasses areas of historic, current and intended future extraction in the landholding. It also reflects the previous planning permission held for quarrying operations on the application site (Planning Reg. Ref.: 07/443; ABP Ref. PL09.233338). The lands the subject of this EIAR (the subject lands) at approximately 18.45 ha. entirely encompass the application area of approximately 10.03 ha.

The reserve at this quarry is greywacke rock, overlain by sand and gravel, currently worked to a maximum depth of 210 mOD. The rock reserve is traditionally excavated by blasting and mechanical means, primarily processed by mobile plant at the working face. Excavated and processed blast rock (aggregate) is exported to market in road trucks via an onsite weighbridge and wheelwash.

Figure 1-1 shows the regional location of the Site, whilst Figure 1-2 provides a depiction of the application area and the EIA project boundary.

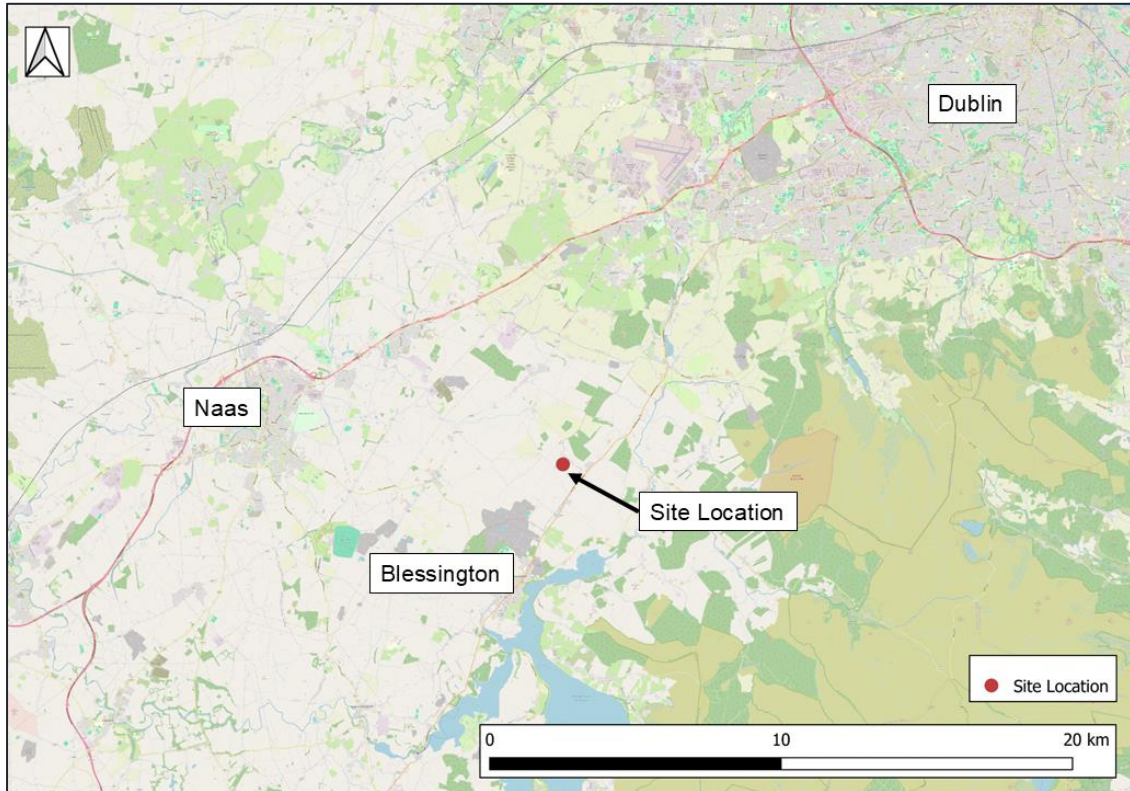


Figure 1-1 - Regional site location



Figure 1-2 – 37L application area and EIA Boundary overlain on October 2024 aerial

The SQL operation is located adjacent to another quarry and associated land uses operated by unrelated parties.

1.2 REQUIREMENT FOR EIAR

Certain proposed developments, due to their typology, or scale automatically attract the requirement for EIA by a competent authority as part of that authority's formal assessment of a development proposal seeking permission, consent or licensing.

As set out in the next section, a hierarchical suite of European and national legislation and guidance govern EIA and direct EIAR content.

The further development of a quarry proposal is over a site area of approximately 10.03 ha. that automatically attracts the requirement for EIA. The applicant seeking this development permission is therefore bound to provide an EIAR for the purposes of EIA.

The permission for development sought in this instance is under Section 37L of the Planning and Development Act, 2000. This type of planning permission may only be sought where an application for substitute consent is in being.

In this instance the concurrent substitute application with rEIAR and this EIAR to accompany the application for further development of the quarry is being made following the submission of an application for substitute consent under Section 177E of the Planning and Development Act 2000, as amended.

1.2.1 CONTEXT AND DESCRIPTION OF PREVIOUS APPLICATIONS AND PRECLUSION OF KILDARE COUNTY COUNCIL FROM DETERMINING A PRIOR APPLICATION FOR FURTHER QUARRY DEVELOPMENT

Section 37L of the Planning and Development Act 2000, as amended is entitled 'Further matters in relation to control of quarries' and allows for the making of an application for planning permission for the further development of a quarry site for quarrying only. Furthermore, this section of the Act restricts the circumstances timing of the making of the application to within 6 weeks of the submission of a subsite consent application on the same site.

As noted in the last section, the current Section 37L application is made on foot of a submission to An Bord Pleanála of an application for substitute consent under Section 177E of the Planning and Development Act 2000, as amended.

A description of permissions and prior applications is provided in section 2.3.1 in Chapter 2 (Project Description) of this EIAR.

1.2.2 S.37L APPLICATION AND EIA PROJECT BOUNDARY

The Section 37L planning application unit extends to approximately 10.03 ha. and reflects the main pit extraction area of the quarry and a proposed northeastern extension. The existing quarry void extent is approximately 5.1 ha in area. The quarry extension design extent provides for an extraction area of approximately 1.89 ha lateral extension of the quarry extent to the northeast of the existing void space.

A restoration proposal for the site is presented in this EIAR (see Appendix 2B of Chapter 2 (Project Description)) and in submitted application drawing set. The restoration proposed principally consists of the regrading of the current void and use of stored top and subsoils on site for restoration purposes.

The EIA project boundary envelopes an area of approximately 18.45 ha. that encloses lands under control of the applicant including previous permitted quarry areas, current workings and intended future workings.

The EIA project boundary is therefore larger than the associated planning application units in order to capture the currently proposed substitute consent and Section 37L application boundaries and associated infrastructure.

1.3 STRUCTURE AND CONTENT OF THE EIAR

EIA is a process undertaken for certain types of development. It provides a means of drawing together the findings from a systematic analysis of the likely significant environmental effects of a scheme to assist local planning authorities, statutory consultees and other key stakeholders in their understanding of the impacts arising from the development.

The following subsections outline the evolution of EIA Directives and their interpretation in the Irish jurisdiction, statutory provisions and guidance that provide the purpose and content of the EIAR which is summarised at the end of this section.

1.3.1 EIA DIRECTIVES AND TRANSPOSITION

The requirement for an Environmental Impact Assessment (EIA) process arises from European Union (EU) Directives required to be adhered to by member States and transposed into national laws.

The original EIA Directive 85/337/EEC has been amended and superseded by Directives 97/11/EC, 2003/35/EC, 2009/31/EC to Directive 2011/92/EU.

Having regard to the transposition of the original environmental assessment Directive into Irish Law it is determined by reference to the Planning and Development Act, 2000 as amended, that the appointed day at which the requirement for same arose is 01 February 1990.

On 16 April 2014 Directive 2011/92/EU was amended by Directive 2014/52/EU of the European Parliament and of the Council (2014 EIA Directive).

The amending 2014 EIA Directive consists of 16 no. Articles and 5 no. Annexes that define EIA and the supporting information and processes available and required for EIA determination in the form of reasoned conclusion by the competent authority.

This is the EIAR by the developer defined at Article 1 and required under Article 3. This report relates to application lands of 10.03 ha. Extraction area of that magnitude attracts automatic requirement for EIA as an Annex 1 project and is therefore subject to an assessment in accordance with articles 5 through 10.

Article 5 of the 2014 EIA Directive sets down the minimum information to be supplied in an EIAR including those matters at Annex IV as follows;

(a) a description of the project comprising information on the site, design, size and other relevant features of the project;

- (b) a description of the likely significant effects of the project on the environment;*
- (c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*
- (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*
- (e) a non-technical summary of the information referred to in points (a) to (d); and*
- (f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected."*

The 2014 EIA Directive required that "Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 16 May 2017."

The requirement for the current EIAR arises under the Planning and Development Act, 2000 as amended. Therefore, the competent authority undertaking EIA is An Bord Pleanála.

1.3.2 STATUTORY PROVISIONS

The Planning and Development Act, 2000 as amended, defines an EIAR as follows;

"means a report of the effects, if any, which proposed development, if carried out, would have on the environment and shall include the information specified in Annex IV of the Environmental Impact Assessment Directive,"

Regulations have been made to administer EIA. For the purposes of this EIAR and the statutes under which the requirement for its preparation has arisen, the following Statutory Instruments are relevant and have informed this report:

- European Communities (Environmental Impact Assessment) Regulations.
- European Union (Environmental Impact Assessment and Habitats) Regulations.
- European Communities (Environmental Impact Assessment) Regulations.
- Planning and Development Regulations.

1.3.3 GUIDANCE

The structure and content of this EIAR is in accordance with the following guidance:

Guidelines issued by the Housing, Local Government and Heritage Department:

- 2020 Environmental Assessments and Planning in Ireland – Planning Leaflet 11, Office of the Planning Regulator
- 2018 August Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, Department of Housing, Planning and Local Government
- 2012 July Section 261A of Planning and Development Act, 2000 and related provisions Supplementary Guidelines for Planning Authorities, Department of the Environment, Community and Local Government
- 2012 January Section 261A of Planning and Development Act, 2000 and related provisions Guidelines for Planning Authorities, Department of the Environment, Community and Local Government

- 2009 December (revision February 2010) Appropriate Assessment of Plans and Projects in Ireland, Department of Environment, Heritage and Local Government
- 2009 November The Planning System and Flood Risk Management Guidelines for Planning Authorities, Department of Environment, Heritage and Local Government
- 2004 April Quarries and Ancillary Activities Guidelines for Planning Authorities, Department of the Environment, Heritage and Local Government

Guidance issued by the Environmental Protection Agency [EPA]:

- 2022 May Guidelines on the Information to be Contained in Environmental Impact Assessment Reports
- 2006 Environmental Management Guidelines, Environmental Management in the Extractive Industry (Non-Scheduled Minerals)

1.3.4 PURPOSE & CONTENT OF EIAR

The EIAR has been prepared in a 'Grouped Format' structure having regard to the prescribed environmental factors of the EIA Directive and the 2022 EPA Guidance; "Population and Human Health; Biodiversity, Land & Soils, Water, Air, Climate, Material Assets, Cultural Heritage, Landscape, Interactions."

In this way each aspect of the environment is presented as a separate section referring to the environment as it existed before development commenced, the existing development, experienced and / or likely impacts, and employed / proposed remedial mitigation measures.

The EIAR has therefore been systematically organised to provide the information and environmental aspect chapters identified in Table 1-1.

Table 1-1 - Overall structure of the EIAR

Content	Section
Context and Requirement for EIAR	1 Introduction, Scope and Methodology
A description of the existing environment.	2 Project Description; and as appropriate in the respective discipline chapters.
A description of the project.	2 Project Description
Identification of experienced / likely significant impacts during construction and operation of the development and a description of the measures employed / envisaged in order to avoid, reduce and, if possible, remedy significant adverse impacts.	3 Population and Human Health 4 Ecology and Biodiversity 5 Land, Soils and Geology 6 Water 7 Air Quality 8 Climate 9 Noise and Vibration 10 Cultural Heritage 11 Landscape and Visual Impact 12 Traffic

Content	Section
	13 Material Assets 14 Major Accidents and Disasters
Sets down the cumulative and in combination significant effects of the project and considers expected / experienced effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned	Cumulative: As appropriate in the respective discipline chapters and in 15 Interactions, Cumulative and Combined Effects In combination: 15 Interactions, Cumulative and Combined Effects Major accidents and/or disasters: Section 14

Alternatives are examined by reference to locations, design and processes, as appropriate.

Likely and significant impacts arising from the existence of the development, its use of natural resources, the emission of pollutants and the creation of nuisances are identified, described as direct, indirect, secondary, cumulative; by duration as short, medium and long-term, permanent and temporary; and by type as positive and negative, as appropriate.

A Non-Technical Summary (NTS) accompanies this EIAR and provides a summary of the key findings of the EIA in non-technical language.

Table 1-2 identifies the data and information to be included by the developer in the EIAR as describes in Annex IV of the amended EIA Directive, and the location of this information within the document.

Table 1-2 - Requirements of 2014/52/EU Annex IV and where these have been addressed in this EIAR

Item	Requirement of Annex IV item	Reference in EIAR
1	Description of the project, including in particular: (a) a description of the location of the project; (b) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; (d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.	(a) and (b) Section 2 – ‘Project Description’. (c) and (d) Section 2 – ‘Project Description’, and identified in the relevant technical chapters.
2	A description of the reasonable alternatives (for example in terms of project design, technology, location, size and	Section 1.9 – ‘Alternatives’.

Item	Requirement of Annex IV item	Reference in EIAR
	scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	
3	A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	A 'Baseline Conditions' section has been provided in each technical chapter' along with a section which summarises a 'Do-Nothing' scenario without development.
4	A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	Each relevant study area which has been scoped into the EIAR is provided within a dedicated technical chapter. Sections 3 – 13.
5	<p>A description of the likely significant effects of the project on the environment resulting from, inter alia:</p> <p>(a) the construction and existence of the project, including, where relevant, demolition works;</p> <p>(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;</p> <p>(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;</p> <p>(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);</p> <p>(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;</p> <p>(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;</p> <p>(g) the technologies and the substances used.</p> <p>The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects</p>	<p>a), (b) and (c) Each technical chapter, as appropriate.</p> <p>(d) Section 3 (Pop. and Human Health), Section 10 (Archaeology and Cultural Heritage), and Section 14 (in relation to accidents and disasters).</p> <p>(e) Each technical chapter, as appropriate.</p> <p>(f) Section 8 (Climate).</p> <p>(g) Each technical chapter, as appropriate.</p> <p>Descriptions of effects are identified in each technical chapter, as appropriate.</p>

Item	Requirement of Annex IV item	Reference in EIAR
	of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.	
6	A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	Assessment methodology is identified in each technical chapter, as appropriate, or a common framework and terminology has been identified in Section 1.8. Difficulties encountered in compiling the EIAR have been identified in each technical chapter, as appropriate.
7	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.	The identification of mitigation measures is provided in each technical chapter, as appropriate, and has been consolidated in Section 16 Mitigation and Monitoring.
8	A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	Section 13 - Major Accidents and Disasters.
9	A non-technical summary of the information provided under points 1 to 8.	Submitted as a separate document with this application.
10	A reference list detailing the sources used for the descriptions and assessments included in the report.	Final Section of each technical chapter.

1.4 SUMMARY DESCRIPTION OF DEVELOPMENT THE SUBJECT OF EIAR

This EIAR has been prepared to accompany an application for further development of a quarry as a quarry at an existing quarry at Hempstown Commons, Co. Kildare, that is the subject of a concurrent application for substitute consent, itself accompanied by an rEIAR.

The proposed development for further extraction of rock is to be within the existing quarry void area with lateral extension of the void proposed in a north-easterly direction. The estimated total quantity of aggregate resource to be extracted in the life-of-quarry is c. 1,757,500 tonnes. A proposed 12 year life-of-quarry requirement is based on an average production rate of ca. 2,929 tonnes per week for rock. Dry processing of mechanically broken and blast rock onsite will comprise crushing and screening to produce aggregate materials for market.

SQL proposed to relocate the existing office container, wheel wash and water recycling tank, weighbridge to fully within the Application Site to provide space for realignment of the private access lane on SQL lands and to develop dedicated carparking facilities for the quarry operation on SQL owned lands.

The proposed car parking facilities will provide parking for HGVs and private vehicles, including guest parking.

SQL propose to decommission the existing abstraction borehole located off the access road to facilitate the road realignment on their own lands. SQL propose to undertake periodic extraction of groundwater from an abstraction borehole located on Stresslite Precast Ltd to provide water for SQL's closed-loop system wheelwash recycling tank and the mobile bowser.

There will be no direct discharge to surface or groundwater from the quarry operations. Collected waters from the base of the quarry void will continue to be pumped to the primary soakaway (which is connected to an overflow soakaway). It is proposed that the collect waters will pass through a bypass separator prior to discharge to the primary soakaway. It is proposed to extend the existing sump on the quarry floor to provide additional temporary holding capacity for collected waters, if required.

Following end-of-quarry life, a 2 year restoration period is proposed. This is detailed in a Restoration and Habitats Management Plan provided in appendix 2B of Chapter 2 (Project Description) of this EIAR.

A description of the Development, Site access, and surrounding land uses are provided in Chapter 2 (Project Description).

1.5 DESCRIPTION OF SITE BASELINE

Section 3.6.1 of the 2022 EPA EIAR Guidance states that together with the description of the project *"...the description of the baseline scenario is the second of the two factual foundations of the EIAR."*

In this instance the EIAR relates to proposed development at a site already in operation as a quarry with related ancillary processing activities and supporting welfare facilities. Please refer to submitted site layout for identification of the below summarised current quarry operation description:

The quarry operation is accessed via a privately-owned lane-way connecting to a local road, the L6030 which itself connects to the N81, national road. SQL share land ownership of the private site entrance with the adjacent landowner, Stresslite Precast Ltd since 21 June 2021. A short section of the northern part of the access road located north of the site entrance is owned by an adjacent landowner (Michael Murphy). SQL have an existing right of way agreement in place with that landowner. A small triangular folio (ref 28880F) within the existing access road is in the ownership of Stresslite Precast Ltd and SQL have an existing right of way agreement in place with that landowner.

An office container, weighbridge, and wheelwash and tank, and abstraction borehole are located by the access point to the SQL quarry site. By existing agreement, vehicle parking is available for SQL staff and site visitors on third party owned lands located to the north of the office container.

In terms of the general operation of the existing quarry since quarrying commenced, rock has been extracted within a quarry area of ca. 5 ha through drilling, blasting, and mechanical breaking of greywacke (and shale) rock (Pollaphuca Formation). Mechanically broken and blast rock is processed through mobile crushing, and screening of the rock into specific aggregate sizes using dry processes. Screened aggregate is temporarily stockpiled in an area to the south and west of the quarry void space. Stockpiled aggregate materials are loaded onto road trucks for sale and distribution.

Collected waters on the quarry floor are currently pumped from the quarry void space to soakaways located within the south of the Site. The soakaways onsite comprise 1 no primary soakaway and 1 no smaller soakaway used to manage overflow of surface water from the primary soakaway as required.

There is periodic extraction of groundwater from an abstraction borehole to provide water for the closed-loop system wheelwash recycling tank and the mobile bowser.

1.6 LIMITATIONS & DIFFICULTIES IN COMPILING THE SPECIFIED INFORMATION (SCHEDULE 6 OF SI 600 OF 2001, AS AMENDED)

Limitations and difficulties encountered in preparing this EIAR having regard to the Planning and Development Regulations and Section 3.7.2 of the 2022 EPA Guidelines.

Throughout this EIAR, monitoring and survey data and analysis, previously submitted in earlier planning applications, or monitoring records held by the applicant are relied upon to model the subject site throughout its lifetime and discern impacts on the environment of the subject site.

Further relevant difficulties or survey limitations specific to each study area / section have been identified therein, as appropriate.

Conservative assessments have been applied where information concerning methodology or program could not be fully determined.

As appropriate, information from publicly available sources has been used in the course of this assessment. This includes mapping sources such as the EPA, Geological Survey of Ireland, Department of Environment, Climate and Communications, etc., and other information including Census returns. Due care has been taken in the review of these data sets however no responsibility can be taken for inaccuracies which may be present within this public data.

1.7 EIAR CONTRIBUTORS AND GUARANTEE OF COMPETENCY AND INDEPENDENCE

S172(1B) requires that the EIAR be prepared by experts with the competence to ensure its completeness and quality.

In the interests of consistency and the leveraging of existing specialist knowledge of the subject site, alongside the applicant, competent experts have been retained to compile this EIAR.

The EIAR was completed by a project team led by WSP, who also prepared a number of the chapters. The members of the team and their respective inputs are presented in Table 1-3.

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.

Table 1-3 - EIAR Contributors

Discipline Lead	Specialist	Qualifications	Accreditations	Years of prof. experience
Introduction, Scope and Methodology; Project Description	Dr. Rhian Llewellyn	MGeol Geology with Palaeobiology; PhD Earth Science; Adv. Dip. Planning and Env. Law	PIEMA	9+
Population & Human Health; Land, Soils & Geology; Climate; Material Assets; Major Accidents and Disasters	Dr. Rhian Llewellyn	MGeol Geology with Palaeobiology; PhD Earth Science; Adv. Dip. Planning and Env. Law	PIEMA	9+
	Lisa Cleary	B.A. (Mod) Environmental Science	GradIEMA	1+
Water	Kit Pannell	MSc Hydrogeology		11+
Biodiversity	Steven Tooher	BSc (Hons) Zoology MSc (Agr) Environmental Resource Management	ACIEEM (Associate Member – Chartered Institute of Ecology and Environmental Management)	9+
Air Quality	Justin Lingard	BSc (Hons) MRes PhD CSci	MIAQM MIEEnvSc AMEI	15+
Noise & Vibration	Gregor Massie (SLR)	Associate member of the Institute of Acoustics (AMIOA)	IoA Certificate of Environmental Noise Measurement,	6+

Discipline Lead	Specialist	Qualifications	Accreditations	Years of prof. experience
		MSc Environmental Sustainability BEng (Hons) Civil Engineering	IOA Diploma in Acoustics and Noise Control	
Cultural Heritage	Vidhu Gandhi	BArch, MSc, PhD (cultural heritage and planning).		20
Landscape & Visual	Richard Baker (Macroworks)	MLA, PG Dip Forestry, BA Env	Corporate Member Irish Landscape Institute	20+
Traffic & Transport	Kevin Harley	BEng Civil Engineering, Queens University Belfast, 2001	CEng MIEI	20

1.8 EIAR SCOPE & METHODOLOGY - PREDICTION OF IMPACTS AND EFFECTS AND ASSESSMENT OF REMEDIAL MITIGATION MEASURES

1.8.1 DETERMINING THE EXTENT OF THE ASSESSMENT

It is necessary to define the extent of the EIA in both spatial and temporal terms, and this has been described below.

1.8.1.1 Geographical Extent

The EIA directly covers the physical extent of the Site as shown in the EIA boundary plan (**Figure 1-2**). Also, as many predicted impacts can extend beyond the immediate EIA boundary, for example the use of the Site for foraging by a species that is primarily located off-site.

For certain topic areas a wider 'zone of influence' has been considered, as described in the individual topic chapters.

The geographical extent of the EIA boundary also includes the cumulative impacts from related and unrelated development activities in both the construction and operational phases.

1.8.1.2 Temporal Extent

Under this programme, it is expected that the duration of the proposed extraction operations will be 12 years depending on market conditions. The restoration of the Proposed Development is proposed to be 2 years.

1.8.2 PREDICTION OF IMPACTS AND EFFECTS PRIOR TO MITIGATION

Prediction methods are required to identify and assess the significant effects of the development on the environment. The predictive methods used for each technical discipline are detailed in the respective chapter. For several topic areas, predictive methods have been developed by professional bodies. Where these are available they have been identified in the individual chapters as appropriate.

For topics where there is no topic specific guidance available, a common framework of assessment criteria and terminology has been used based on the EPA's draft Guidelines on the Information to be Contained in EIARs (EPA, 2022).

This common framework follows a 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the value (sensitivity) of the receptor. The terms used in the common framework are described below. Details of how these specifically relate to the individual topic areas are provided, where appropriate, within the respective topic chapters. The descriptions for value (sensitivity) of receptors are provided in Table 1-4.

The descriptions for magnitude of impact are provided in Table 1-5.

The approach followed to derive effects significance from receptor value and magnitude of impacts is shown in the Table 1-6 below. Where two significance categories are identified the topic chapters shall support the reporting of a single significance category.

A description of the significance categories used is provided in Table 1-7.

Table 1-4 - Environmental value (sensitivity) and descriptions

Value (sensitivity) of receptor / resource	Typical description
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Table 1-5 - Magnitude of impact and typical descriptions

Magnitude of impact (change)		Typical description
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Low	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.

Magnitude of impact (change)		Typical description
Negligible	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
	Adverse	Very minor loss or alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.

Table 1-6 - Significance Matrix

Environmental value (Sensitivity)	Magnitude of Impact (Degree of Change)				
		Negligible	Low	Medium	High
	High	Slight	Slight or moderate	Moderate or large	Profound
	Medium	Imperceptible or slight	Slight or moderate	Moderate	Large or profound
	Low	Imperceptible	Slight	Slight	Slight or moderate
	Negligible	Imperceptible	Imperceptible or slight	Imperceptible or slight	Slight

Table 1-7 - Significance categories and typical descriptions

Significance Category	Typical Description
Profound	An effect which obliterates sensitive characteristics.
Large	An effect which, by its character, magnitude, duration or intensity alters a significant proportion of a sensitive aspect of the environment.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Imperceptible	An effect capable of measurement but without significant consequences.

The approach to assigning significance of effect included reasoned argument, the professional judgement of competent experts and using effective consultation to ensure the advice and views of

relevant stakeholders were taken into account. The assessment of the significance of environmental effects covered the following factors:

1. The receptors/resources (natural and human) which would have been affected and the pathways for such effects;
2. The geographic importance, sensitivity or value of receptors/resources;
3. The duration (long or short term); permanence (permanent or temporary) and changes in significance (increase or decrease);
4. Reversibility - e.g. is the change reversible or irreversible, permanent or temporary;
5. Environmental and health standards (e.g. local air quality standards) being threatened; and
6. Feasibility and mechanisms for delivering mitigating measures, e.g. Is there evidence of the ability to legally deliver the environmental assumptions which are the basis for the assessment?

1.8.3 DESIGN AND MITIGATION

The environmental assessment and design of the Proposed Development incorporated mitigation measures using a hierarchical system as follows:

1. Avoidance and prevention: design and mitigation measures to prevent the effect (e.g. alternative design options or avoidance of environmentally sensitive sites);
2. Reduction: where avoidance is not possible, then mitigation is used to lessen the magnitude or significance of effects; and
3. Remediation: where it is not possible to avoid or reduce a significant adverse effect, these are measures to offset the effect.

Any enhancement measures have also been described (measures that are over and above what is required to mitigate the adverse effects of a project), as well as any requirements for monitoring of mitigation measures associated with any significant environmental effects.

1.8.4 REDUCTION OF RESIDUAL IMPACTS AND EFFECTS

Following the assessment of the level of effect significance, mitigation measures will be presented that will be used to further avoid, prevent or reduce the magnitude of the potential impact. If necessary, the significance of the effect taking into account the mitigation measures is then assessed to give the residual effect significance. Any monitoring that will be required to measure the success of the remedial measures will also be presented.

Residual effects of 'large' or 'profound' significance are considered to be 'significant' for the purposes of this assessment.

1.8.5 CUMULATIVE ASSESSMENT

The EIAR assesses cumulative effects including those from:

1. The development itself (e.g., numerous different effects impacting a single receptor); and
2. Other appropriate developments in the surrounds of the Site (together with the development itself) where effects could have foreseeably resulted from the Proposed Development and from other known developments in the assessment study area.

The cumulative effects were assessed when the conclusions of individual environmental topic assessments had been reached and reported.

The assessment of cumulative effects from different developments included:

1. Establishment of the zone of influence of the development together with other projects;
2. Establishment of a list of developments which had the potential to result in cumulative impacts, including.
3. Obtaining further information and detail on the list of identified projects to support further the assessment.

1.9 THE NEED FOR THE DEVELOPMENT AND CONSIDERATION OF ALTERNATIVES

Identification and consideration of alternatives of design and scale for a quarry development, particularly for a continuation of extraction, are limited in scope. The extraction of aggregates is controlled by the availability and quality of the materials (both sand and gravel, and rock) which in turn controls the overall design plan for the quarry.

The greywacke rock and sand and gravel reserve at the subject location is of a proven good quality capable of being used for a range of materials in the construction industry. Therefore, the reserve material assumed to be present at the subject site provides suitable aggregates for construction purposes.

In considering alternative sites, it is a basic principle that aggregates can only be worked where they naturally occur, (a factor recognised in the Kildare County Development Plan 2023-2029). The products are generally of low unit value and the most significant cost is transportation. As with all aggregate extraction development the nearer the supply of aggregate to the market, the more economically viable it is and given the nature of aggregate deposits. In this case the Site has the benefit of being strategically located adjacent to the National Road Network (N81). Aligned to this economic situation is the environmental and social preferability of locally sourced aggregates. Aggregates sourced close to their market are preferable to those sourced at more remote locations as this lessens road traffic and associated environmental impacts and economic costs. Socially, the local sourcing of construction aggregate strengthens the local economy through job provision and associated spending and exploits advantages and opportunities inherent in local supply chains.

Aggregates are an essential material for the construction industry and are used in all major development plans (housing, road surfacing, infrastructure etc.). As such, they are of major significance to the overall growth of their local areas and the country and an important economic resource despite fluctuations in levels of construction due to wider economic forces, or events such as the COVID-19 pandemic suspension of construction.

The purpose of this EIAR is to assess the site with regard to potential impacts on the environment, and to propose measures to avoid, reduce or remedy undesirable potential impacts, as appropriate.

In this case, the quarry site represents the predominant land asset upon which the developer's companies and employees rely. The developer has a personal intergenerational association with the lands and is a quarry operator and employer who wishes to maintain this asset as a sustainable extraction and processing development. In order for this operation to continue, planning permission for further extraction is sought to continue to feed market demand for aggregate and its products.

The concurrent substitute consent application and rEIAR may only seek permission for development that has already occurred and as such the further extraction of reserve is the subject of the Section 37L application that this EIAR accompanies.

Maintaining the quarry site and adjacent suitable lands as a viable quarry with associated will ultimately realise the sustainable extraction potential of this extant, established quarry and will maintain those direct and indirect jobs.

1.9.1 SITE SELECTION

In this instance the EIAR has arisen as a direct requirement of the proposed extraction area exceeding EIAR preparation thresholds. The site for which proposed development permission is sought is not a new site but rather an existing extraction site.

The necessity for the application this EIAR accompanies arises as the concurrent substitute consent application may only permit development already undertaken. As such, without a Section 37L application and permission for further extraction of reserve, the continuation of the existing quarry will not be possible. Therefore, site selection methodology employed is primarily driven by the existence of the existing quarry and remaining reserve at the quarry. In this way, the site selected was required to be functionally conjoined or capable of being conjoined to the extant internal access routes and quarry entrance.

The proposed development represents the immediate reserve available for extraction at the site: a lateral northeastern extension of the void to ensure aggregate product to meet existing market demand from the quarry site.

The existence and continued use of the established quarry will have less net environmental and economic impact than developing a new greenfield quarry.

1.9.2 ALTERNATIVE DESIGNS CONSIDERED AT THE SUBJECT SITE

The north eastern extension of the site is proposed due to the optimised layout which utilises the existing void and accesses good quality underlying greywacke. The base of the main existing pit has been profiled to extract existing side slopes and maintain an existing depth. The extension is entirely located on lands in the ownership of SQL.

The proposed development utilises the existing primary soakaway which is connected to an overflow soakaway. It is proposed to provide additional temporary holding capacity of collected waters in the existing quarry void through extension of the existing sump. This approach seeks to maximise use of the topography of the existing quarry floor to manage any capacity pressures on the overflow soakaway during wet periods (i.e. winter months). It also seeks to avoid upgrades to the existing soakaway structures (if required) and thereby avoid the potential for adverse effects to nearby nesting birds (sand martins) and a potential badger sett located adjacent to the primary soakaway.

There will be no direct discharge to surface or groundwater from the quarry operations. It is proposed that the collect waters will pass through a bypass separator prior to discharge to the primary soakaway. It is anticipated this would improve the water quality of collected water in the soakaways.

SQL proposed to relocate the existing office container, wheel wash and tank, weighbridge within the Application site to provide space for realignment of the private access lane on SQL lands and to develop dedicated carparking facilities for the quarry operation on SQL owned lands.

The proposed car parking facilities will provide parking for HGVs and private vehicles, including guest parking on SQL owned lands. It is noted that the introduction of dedicated carparking facilities is intended to avoid reliance on the third-party parking facilities currently used. The proposed development envisages that all SQL and visitor parking will take place at parking facilities within SQL owned lands only. The proposed location of HGV parking is located closer to the working face than existing facilities so it is anticipated that internal truck movements to use parking facilities will be shorter than the existing arrangement.

SQL propose to decommission the existing abstraction borehole located off the access road to facilitate the road realignment on their own lands. SQL propose to undertake periodic extraction of groundwater from an abstraction borehole located on Stresslite Precast Ltd to provide water for SQL's closed-loop system wheelwash recycling tank and the mobile bowser. This approach avoids the necessity to install a new abstraction borehole at the Application Site.

The realignment of the private access lane will promote drainage of surface water on the majority that lane into SQL lands, thereby reducing the potential for run off into local road drainage.

The stored overburden in the existing quarry void is incorporated into the design of the Restoration Plan with benches providing additional riparian habitat along the north-west face of the existing quarry void space.

1.10 REFERENCES

EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. Available at: https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf

EU Environmental Impact Assessment Directive (Council Directive 2014/52/EU).